EXHIBIT 31

Why ‘Made in China 2025’ triggered the wrath of President Trump

SEPTEMBER 11, 2018

BY ALICE TSE

JULIANNA WU

‘Made in China’ is often associated with cheap and poor quality goods, but Beijing has ambitious plans to transform itself into an innovative hi-tech powerhouse by 2025

The Chinese government announced the ‘Made in China 2025’ strategic plan in 2015. Aimed at closing the gap with Western hi-tech prowess and lessening China’s dependency on imported technology, it specified 10 areas where the country should take the lead. But as the trade war between

tariffs, the plan became a focus of Washington's discontent with Beijing

2014

Preparation

Led by the Ministry of Industry and Information Technology (MIIT), 20 government ministries and departments work with at least 150 experts to help plan 'Made in China 2025'

2015 March

First mention

Premier Li Keqiang makes the first public mention of 'Made in China 2025' at the government work report during China's Two Sessions

Confirmation

The implementation of 'Made in China 2025' is accelerated at the State Council Executive Meeting which is presided by Premier Li Keqiang

2015 May

Issue

The State Council releases an action plan

the first of three phases, 'Made in China 2025' is a ten-year plan

Phase 1
Become one of the world's strongest manufacturing powers

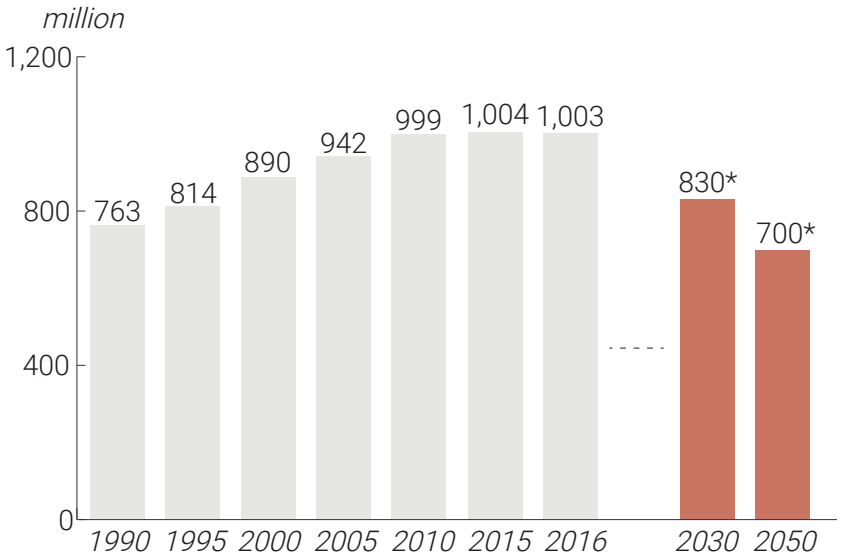
Phase 2
Rise to the intermediate level among the world's manufacturing powers

Phase 3
Become the leading manufacturer in the world

The reality

After the meteoric rise of recent years, China's economy now faces a number of potential issues. Maligned as 'big, but not powerful', the manufacturing sector in particular has reached a bottleneck, with a slowdown in sales of cheap exports like shoes and toys. Many of these products have reached market saturation and it is hard to keep sales buoyant in sectors requiring little innovation or hi-tech development. What is more, the country's working-age population is expected to fall sharply by 2030 as a result of the 'one-child' policy

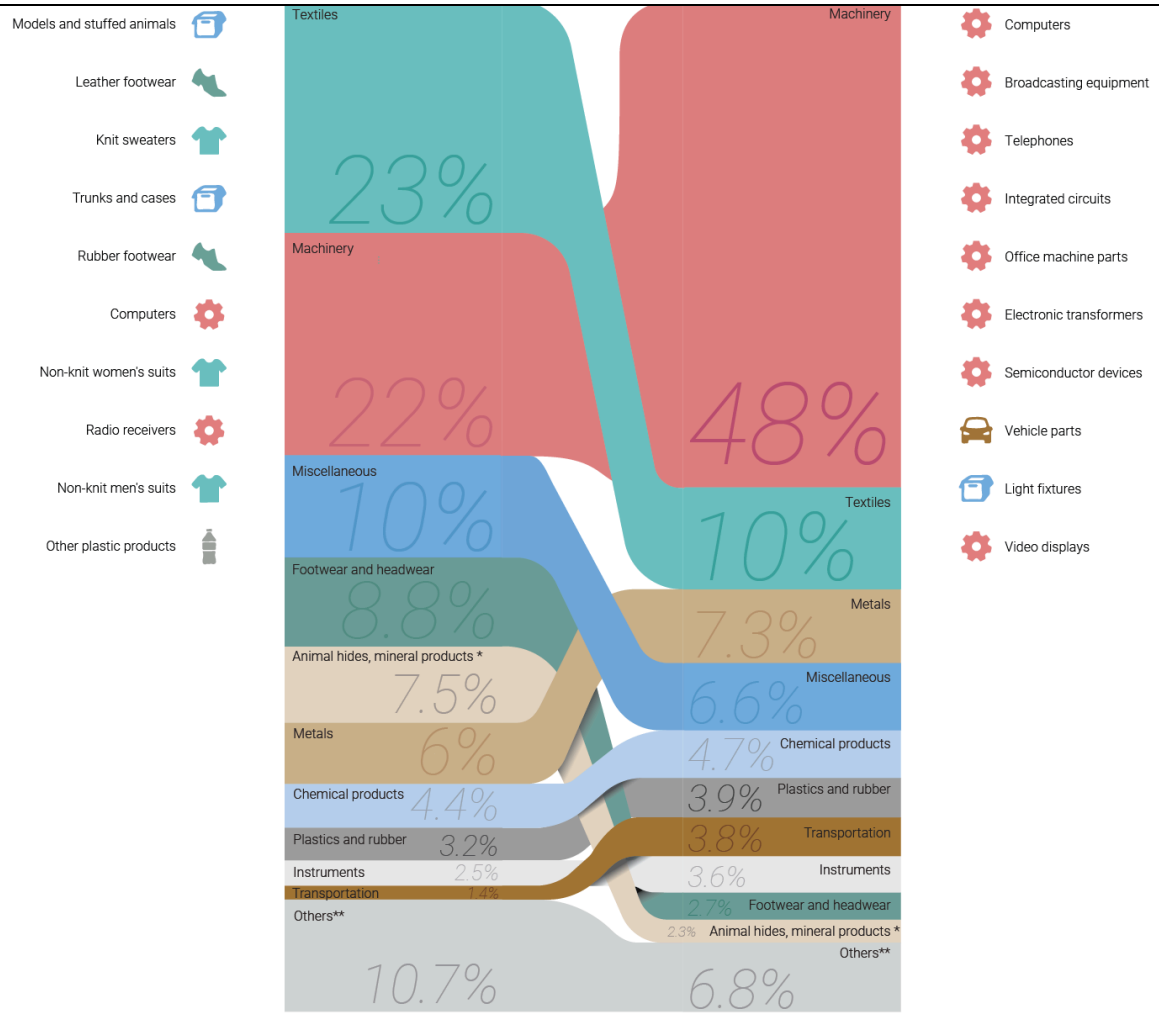
15-64 age population of China



*Estimated by Ministry of Human Resources and Social Security

‘MADE IN CHINA’ CHANGES

China travelled a long and hard road to establish itself as the world’s largest export economy, and the ‘made in China’ tag is now assigned to more sophisticated products than was the case two decades ago. In 1996, Chinese exports were largely textiles and footwear. But by 2016, computers, telephones and other electrical devices began to dominate the export list



** "Animal hides" and "Mineral products" are combined into one category*
*** "Others" includes foodstuffs, vegetable products, animal products, stone and glass, wood products, paper goods, animal and vegetable bi-products, weapons, precious metals*

Strategy

To realise the plan, the Ministry of Industry and Information Technology has set up 'five principles, five major tasks', focusing on improving 10 key manufacturing sectors

TEN KEY SECTORS

The plan highlights 10 key prioritised industries including robotics, new energy and green vehicles. China sets the targets as follows:

Robots and key parts with IP rights to supply 70 per cent of domestic market. Models of the next generation of robots to be developed and put to use on a certain scale. One to two companies to rank among the top five in the world.

New generation information technology

Handful of companies becomes top-tier internationally. 14-20nm design and manufacturing technique will be achieved. Domestically-produced mobile communications equipment meets 80 per cent and 40 per cent of domestic market and international market demand respectively.

Aviation and aerospace equipment

China aims to have domestically produced commercial aircraft and turboprop regional airliners to supply to 10 per cent and up to 20 per cent of mainland Chinese market and international market respectively. Major development work of prototype of large aircraft engine to be completed.

ships

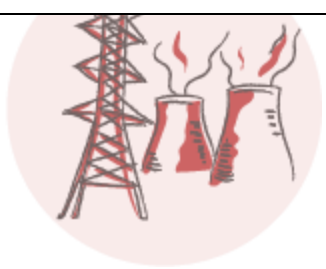
China to have more than five internationally renowned manufacturing companies. Maritime equipment to supply 40 per cent of international market. Hi-tech ship design and manufacturing equipment to supply 50 per cent of the international market. Breakthrough to be achieved in key design, manufacturing, testing and installing technologies for under water production systems.

Railway transport

Overseas business to account for 40 per cent with China occupying the high end of the value chain for global railway transportation.

New energy and energy-saving vehicles

Domestic products with IP rights to supply 50 per cent of domestic market. Fuel consumption of passenger vehicles will not exceed 4L/100km, self-sufficiency rate for key parts to exceed 60 per cent. China aims to export 20 per cent of all commercial vehicles and have three companies that are ranked in the top five for sales internationally.



Globally competitive companies of energy equipment to be established. China aims to reach globally advanced level in producing large-scale thermal power, hydropower and nuclear power equipment. New energy and renewable energy equipment with original IP rights to account for 80 per cent of market. Industry size of power electric power transmission to reach three trillion yuan.

Agricultural equipment

Industrial output aims to reach 800 billion yuan and China will become the world's biggest agricultural equipment maker. Domestically manufactured equipment will meet 95 per cent or more of Chinese market demand. Automation technologies and equipment to reach advanced international standards.

Domestically produced basic materials products should meet 90 per cent of local demand.

Biopharma and hi-tech medical devices

Biopharma innovative development and production to reach international standards. Industrial output of medical devices to reach 1.2 trillion yuan. 85 per cent of core components of devices to be domestically manufactured. Commercialisation of innovative chemical medicines and Chinese medicines to be achieved.

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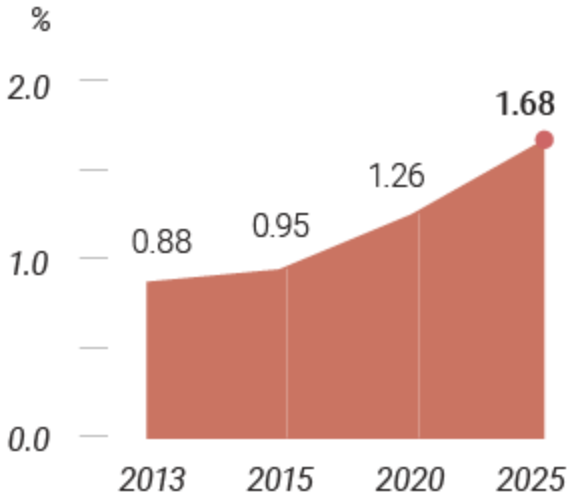
INDICATORS

The results of ‘Made in China 2025’ will be evaluated by 12 indicators in the four following areas. Here we list one example for each category:

Research and development (R&D) revenue expenses

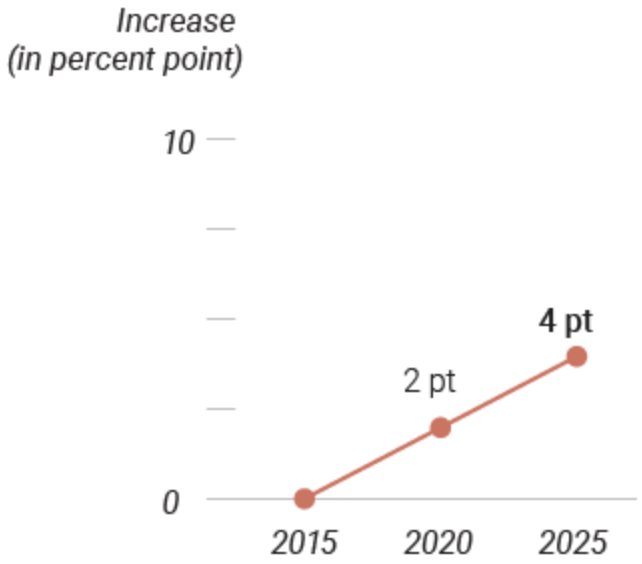
Percentage of sales allocated to R&D expenditure



2. Product quality

Growth rate of improved quality

The projected growth rates due to improved manufacturing quality are two and four per cent points higher than the rate in 2015

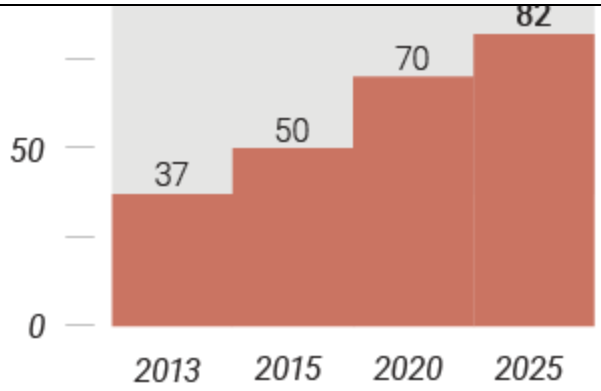


3. Digitalisation

Broadband internet penetration

The projected penetration rates of 70 per cent by 2020 and 82 per cent by 2025, means 400 million and 480 million households will have access to broadband internet, respectively

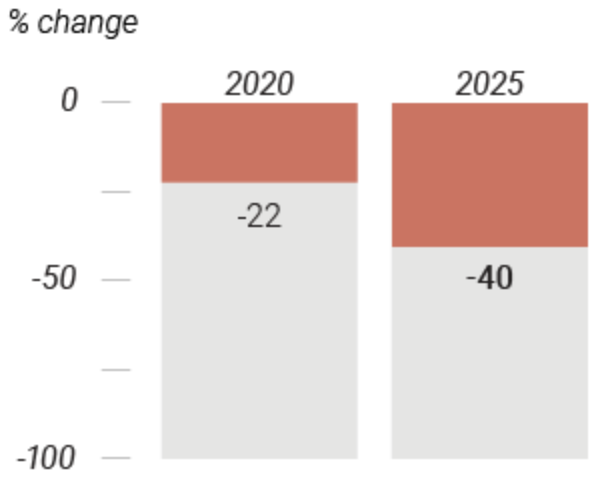
%



4. Green production

Decrease of CO2 Emission

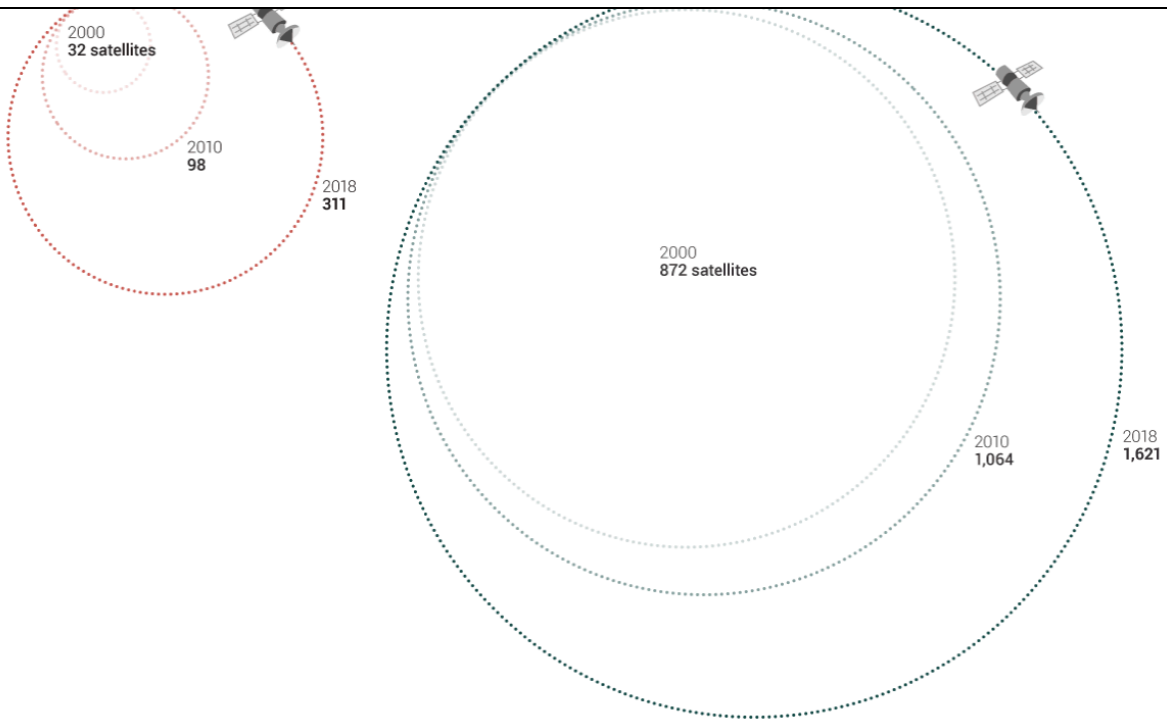
Carbon dioxide emission is expected to decrease from 2015 by 22 per cent in 2020 and 40 per cent in 2025

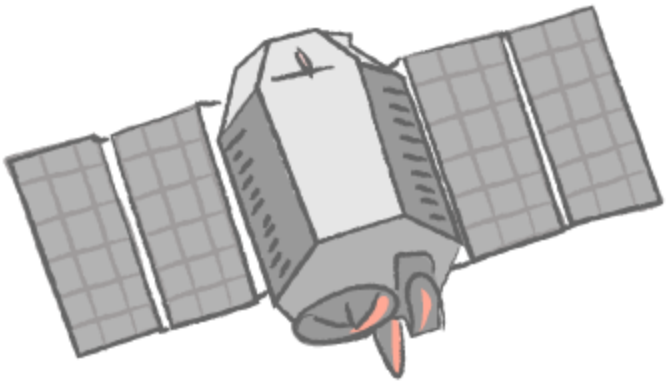


Long way to go

SATELLITES IN ORBIT

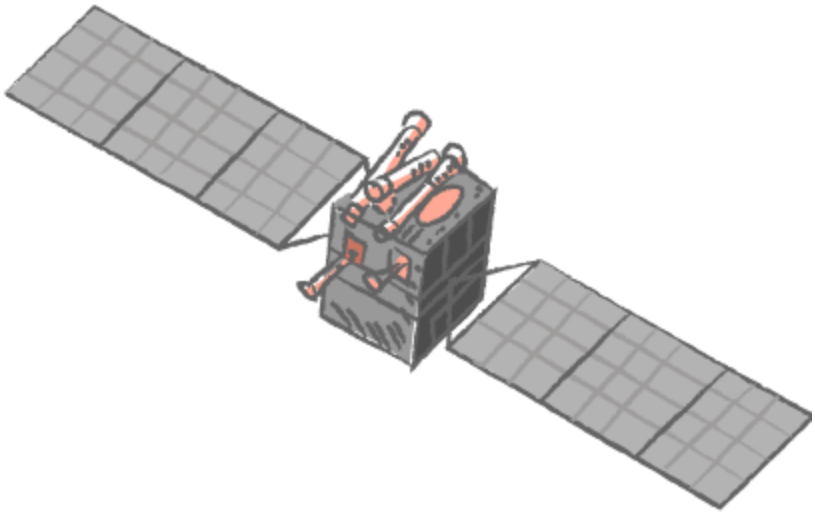
The first Chinese satellite, 'Dong Fang Hong', was launched In 1970. Today, there are 311 Chinese satellites in orbit, about one-fifth of the US, but China aspires to increase long-term and stable spatial information services like satellite remote sensing, communication and navigation


2000
32 satellites
2010
98
2018
311
2000
872 satellites
2010
1,064
2018
1,621



Pujiang-z1

In 2015, China successfully launched ‘Pujiang-1’ to help promote and monitor the construction of smart cities. It is the first satellite to feature 3D printed parts. Developed by the Shanghai Academy of Spaceflight Technology, the frame inside the satellite was made using 3D printing



Ziyuan III-02

The satellite 'Ziyuan III-02' was launched in 2016. A remote sensing satellite monitoring land use, natural disasters and water resources, it will join 'Ziyuan III-01' (launched in 2012) to form a network capturing high-definition, 3D multi-spectral images

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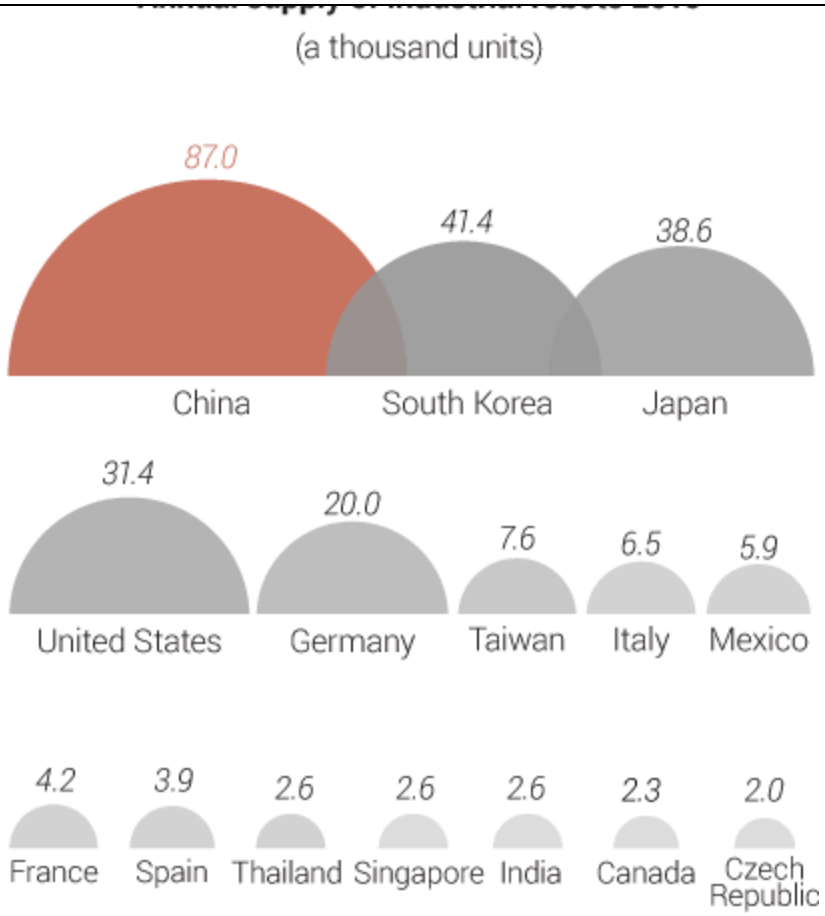
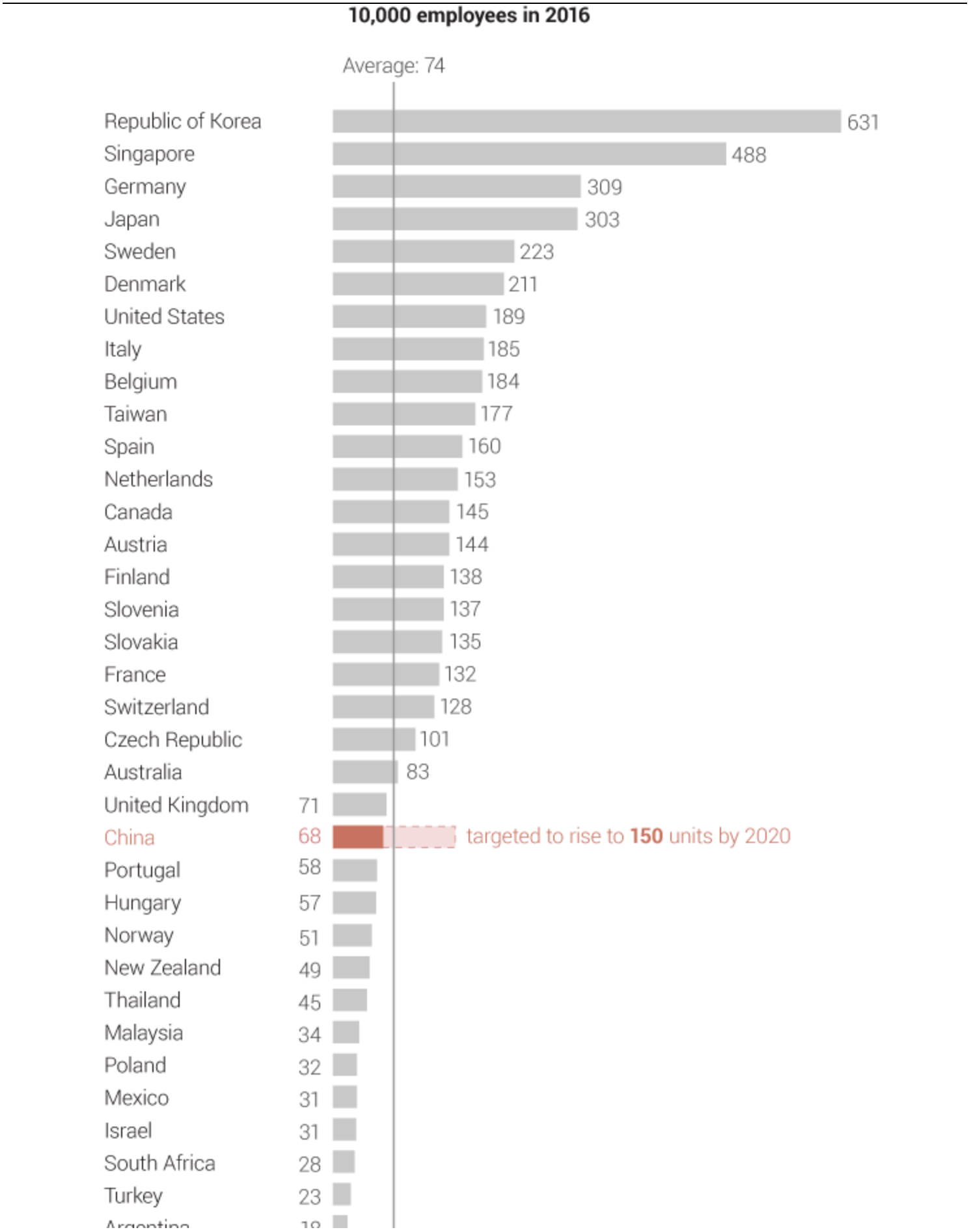
ROBOTICS SUPPLY

In 2016, 74 per cent of robot sales were represented by five markets, with China accounting for the lion's share at 30 per cent of the total. Beijing aims to boost technology production and sales by achieving automation and digitisation in the manufacturing sectors by producing 100,000 of its own industrial robots by 2020



INDUSTRIAL ROBOTS

China is banking on automation and digitisation to improve productivity and set it on a trajectory to become one of the world's 10 most automated nations. The country ranked well below the world average for industrial robot density in 2016, but Beijing aims to have 150 units per 10,000 employees by 2020


10,000 employees in 2016
Average: 74
Republic of Korea 631
Singapore 488
Germany 309
Japan 303
Sweden 223
Denmark 211
United States 189
Italy 185
Belgium 184
Taiwan 177
Spain 160
Netherlands 153
Canada 145
Austria 144
Finland 138
Slovenia 137
Slovakia 135
France 132
Switzerland 128
Czech Republic 101
Australia 83
United Kingdom 71
China 68
targeted to rise to 150 units by 2020
Portugal 58
Hungary 57
Norway 51
New Zealand 49
Thailand 45
Malaysia 34
Poland 32
Mexico 31
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South Africa 28
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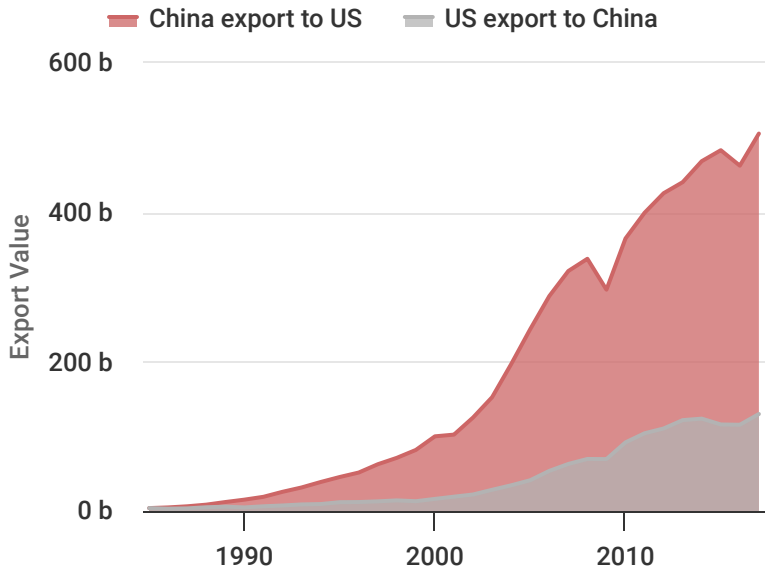
Challenges

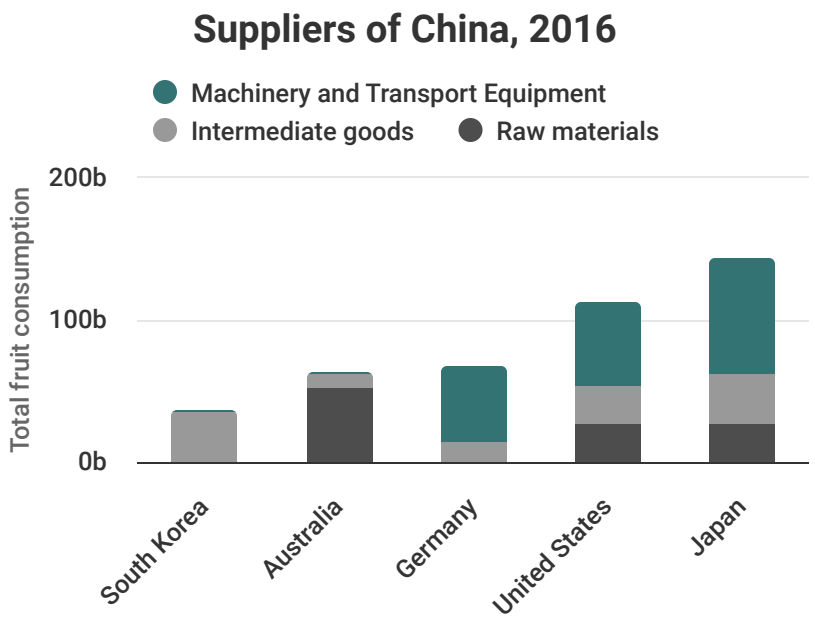
TRADE SURPLUS AND DEFICIT

China's exports of hi-tech goods increased steadily after reform policies began and by 2004 their value had already already exceeded US exports. The Trump administration argues the trade deficit between China and the US is a result of unfair competition. The 'Section 301 investigation' also accuses China of stealing intellectual property from American companies


China export to US
US export to China
600 b
400 b
200 b
0 b
Export Value
1990
2000
2010

HEAVY RELIANCE ON OTHER COUNTRIES

China currently lacks the ability to make many key electronic components and relies on other countries to supply many hi-tech parts. ‘Made in China 2025’ aims to have 70 per cent of essential spare parts manufactured domestically to resolve the issue



TRADE WAR

On July 6, 2018, the US started implementing 25 per cent

US products central to Beijing's Made in China 2025 initiative, particularly technological parts. The table below illustrates how China's prioritised sectors are being hit:

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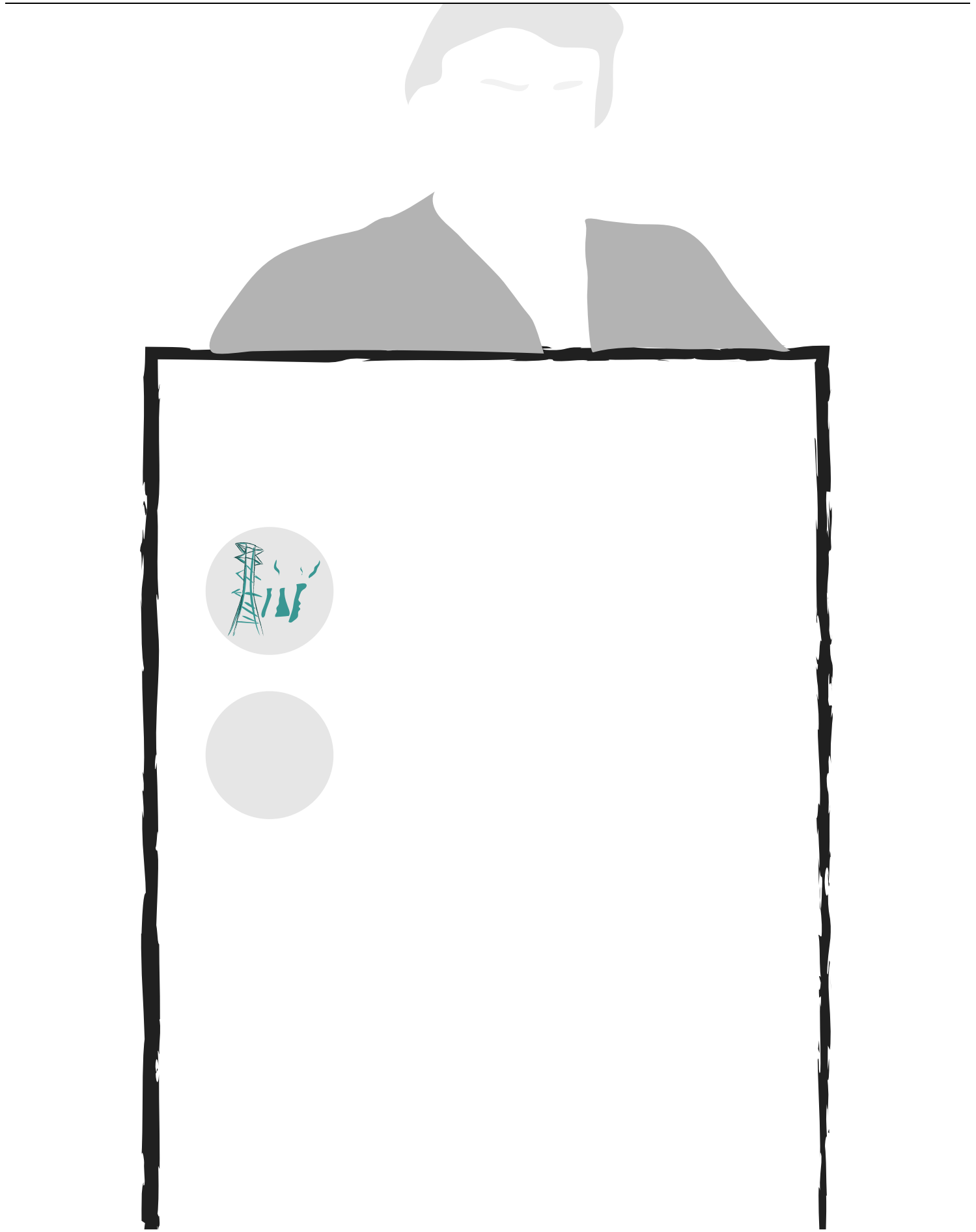

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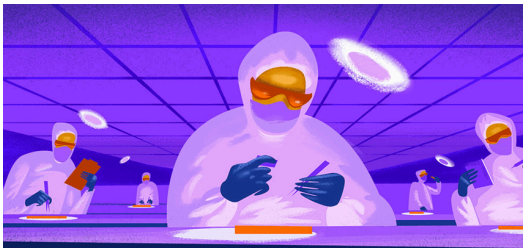

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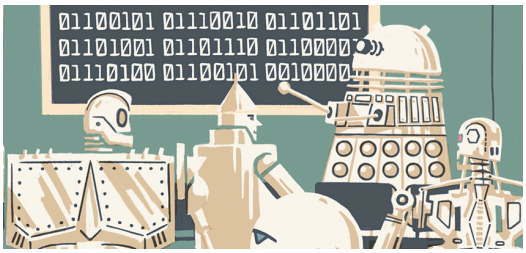

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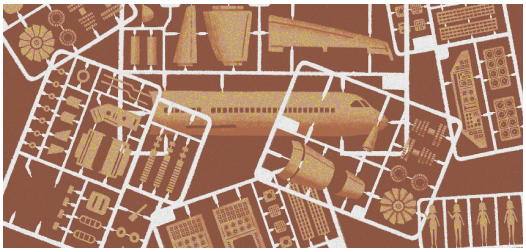

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By Dennis Wong

South China Morning Post special feature by:
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in collaboration with: *Adolfo Arranz, Marco Hernandez and Darren Long*

Sources

The State Council of the People's Republic of China, United States Census Bureau, Ministry of Human Resources and Social Security, The Observatory of Economic Complexity, N2YO, International Federation of Robotics, World Bank

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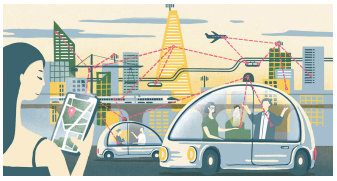

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EXHIBIT 32

COUNCIL on FOREIGN RELATIONS

Backgrounder

Is ‘Made in China 2025’ a Threat to Global Trade?

China’s industrial policy is aimed at rapidly expanding its high-tech sectors and developing its advanced manufacturing base, but President Trump and other leaders of industrial democracies see the plan as a threat.

WRITTEN BY
James McBride *and* Andrew Chatzky

UPDATED
Last updated May 13, 2019 8:00 am (EST)

The Chinese government has launched “Made in China 2025,” a state-led industrial policy tha seeks to make China dominant in global high-tech manufacturing. The program aims to use government subsidies, mobilize state-owned enterprises, and pursue intellectual property acquisition to catch up with—and then surpass—Western technological prowess in advanced industries.

For the United States and other major industrialized democracies, however, these tactics not only undermine Beijing’s stated adherence to international trade rules but also pose a securi risk. Washington argues that the policy relies on discriminatory treatment of foreign investment, forced technology transfers, intellectual property theft, and cyber espionage, practices that have encouraged President Donald J. Trump to levy tariffs on Chinese goods a block several Chinese-backed acquisitions of technology firms. Meanwhile, many other countries have tightened their oversight of foreign investment, intensifying debate over how best to respond to China’s behavior.

What is China 2025?

Released in 2015, Made in China 2025 is the government's ten year plan to update China's manufacturing base by rapidly developing ten high-tech industries. Chief among these are electric cars and other new energy vehicles, next-generation information technology (IT) and telecommunications, and advanced robotics and artificial intelligence.

Other major sectors include agricultural technology; aerospace engineering; new synthetic materials; advanced electrical equipment; emerging bio-medicine; high-end rail infrastructure and high-tech maritime engineering.

These sectors are central to the so-called fourth industrial revolution, which refers to the integration of big data, cloud computing, and other emerging technologies into global manufacturing supply chains. In this regard, Chinese policymakers drew inspiration from the German government's Industry 4.0 development plan.

Beijing's ultimate goal is to reduce China's dependence on foreign technology and promote Chinese high-tech manufacturers in the global marketplace. Semiconductors are an area of particular emphasis, given their centrality to nearly all electronic products. China accounts for about 60 percent of global demand for semiconductors but only produces some 13 percent of global supply. China 2025 sets specific targets: by 2025, China aims to achieve 70 percent self sufficiency in high-tech industries, and by 2049—the hundredth anniversary of the People's Republic of China—it seeks a dominant position in global markets.

Chinese officials, wary of international blowback, have increasingly framed the plan as aspirational and unofficial. They have begun to reduce their allusions to it as Western leaders have voiced concerns. In the opening session of the 2019 National People's Congress, Premier Keqiang did not mention China 2025 at all; it was the first time he left the program out of his annual report to the congress since it was first introduced.

How does it fit into China's economic model?

China 2025 reflects Beijing's longstanding development goals. Since the market reforms of leader Deng Xiaoping in the 1980s, the ruling Chinese Communist Party (CCP) has pursued a mixed economy that combines socialist planning with elements of private enterprise.

In recent decades, the CCP has taken steps to shift the economy away from resource extracti and low value–added, low wage manufacturing—largely mining, energy, and consumer good such as clothing and footwear, which make up almost half of the country's economy—to a hi tech, high-productivity economy. China 2025 is intended to push the economy through this difficult transition and over the so-called middle-income trap, in which growth plateaus as wages start to rise, that has bedeviled many other developing countries.

Thus, subsidies and other favoritism for local production and "indigenous" innovation has lo been official Chinese policy. In 2006, the National Medium and Long Term Plan [PDF] set ou the goal of making China a "world leader" in science and technology, though its targets were as specific as China 2025.

How does it intend to achieve its goals?

China 2025 accelerates preexisting efforts by devoting more resources and intensifying centralized policy planning to coordinate across government, private companies, and acaden The plan includes publicly stated policies, as well as more opaque actions, which some analy say are meant to shield China from accusations of violating its commitments to the World Tr Organization (WTO) and avoid retaliation. These tactics include:

Setting explicit targets. Through both public goal setting and semi-official, backchannel coordination, China's leadership encourages private and public firms to shape their decision-making around the plan's priorities.

Providing direct subsidies. The government will increase direct support for the China 2025 industries through state funding, low interest loans, tax breaks, and other subsidies. The exac amount is unclear, but some outside estimates [PDF] put the likely number in the hundreds billions of dollars.

Foreign investment and acquisitions. Chinese companies, both private and state-backed, have been encouraged to invest in foreign companies, notably semiconductor firms, to gain access advanced technology. The value of Chinese acquisitions in the United States peaked in 2016 over $45 billion.

$45 billion

Chinese acquisitions in the United States, 2016

Source: Rhodium Group.

Mobilizing state-backed companies. Much of this investment comes from SOEs, or companies funds backed by the Chinese government. The economic reforms of the 1990s reduced the ro of state firms in the economy, but they still account for a third of gross domestic product (GI and an estimated two-thirds of China’s outbound investment. Many of China’s global tech leaders, such as Huawei and ZTE, while privately run, are supported by the government.

Forced transfer agreements. Foreign companies complain that to invest or do business in Chin they must enter into joint ventures with Chinese firms under terms that require them to sha sensitive intellectual property and advanced technological know-how. As CFR Senior Fellow Brad W. Setser has explained, China has used its joint venture rules to acquire outside technologies ranging from high-speed rail to electric vehicle batteries. Some of these rules relating to automakers have since been relaxed.

What are the criticisms of China 2025?

Policymakers and security officials in the United States and other developed countries increasingly see China’s efforts to become a dominant player in advanced technology as a national security problem. The Pentagon warned in 2017 that state-led Chinese investment i U.S. firms working on facial-recognition software, 3-D printing, virtual reality systems, and autonomous vehicles is a threat because such products have “blurred the lines” between civil and military technologies. In April 2018, U.S. intelligence agencies said that Chinese recruitment of foreign scientists, its theft of U.S. intellectual property, and its targeted acquisitions of U.S. firms constituted an “unprecedented threat” to the U.S. industrial base.

More broadly, policymakers worry that China’s state-led model and its ambition to control entire supply chains—for instance, the cobalt industry, which powers most modern electroni —means that entire industries could come under control of a rival geopolitical power. A Jun

2018 White House report warned that [PDF] China’s economic moves threaten “not only the U.S. economy but also the global innovation system as a whole.”

In the economic realm, critics say that China is distorting global markets by prioritizing polit considerations over economic incentives. Its subsidies, they say, skew markets and lead to overproduction and the dumping of cheap products in the global market, as many countries allege continues to be the case with solar panels. In March 2018, a Trump administration investigation [PDF]—launched under Section 301 of the 1974 Trade Act—concluded that China’s actions were “unreasonable and discriminatory.” Trump has long criticized Chinese trade, investment, and currency policies for increasing the U.S. trade deficit, which he claims undercuts U.S. manufacturers.

Meanwhile, companies based in the United States, Europe, and elsewhere complain of an asymmetry in which China is free to invest in foreign countries, but foreign companies sellin and operating in China are highly constrained by investment requirements and other regulations.

How do China’s actions compare with economic policies elsewhere?

China’s leaders say that their commitment to a state-led industrial policy is necessary to incr incomes for their people and compete in the fast-changing global marketplace. They point o that China’s average per capita income is still far below that of the developed world, at arou $8,000 a year. Per capita income in the United States is $56,000.

They also argue that they are only imitating what other successful developed countries have done. The United States used tariffs and other government support to nurture native industr in the early days of its industrialization, while the rapid development of the so-called Asian tigers, such as South Korea in the twentieth century, featured extensive state support. Analys say China is also drawing inspiration from more recent industrial policies by countries such a Japan and Germany, which have sought to integrate new information technologies into their manufacturing sectors.

$8,000

China's annual per capita income, versus $56,000 in the United States

Source: Washington Post.

Many European and U.S. policymakers, however, say China is different. European businesses argue that [PDF] there are stark differences between China 2025 and Germany’s Industry 4.0 plan. For one, Germany’s state subsidies are much smaller, and they are almost entirely dedicated to basic research. Germany also lacks targets for replacing imports or quotas for indigenous production. What’s more, its economy is generally open to outside participation a competition. German officials, like many other Western policymakers, have complained that while their economy is open to Chinese investment, market access for their companies in Ch is severely limited.

What policy tools does the U.S. have to respond?

As the perceived threat from Chinese industrial policy has blurred the lines between trade policy and national security, the U.S. executive branch has increasingly taken advantage of powers delegated to it by Congress. The Trade Expansion Act of 1962, the Trade Act of 1974, other legislation has given the president the power to levy tariffs and other trade measures i determines that it is necessary for the country’s security. Washington has used these and oth tools to counter China’s economic policymaking.

CFIUS and other potential investment-review measures. The Committee on Foreign Investment the United States (CFIUS) is an inter-agency body that reviews foreign investments and acquisitions and can recommend that the president block deals if they threaten U.S. security interests. The number of transactions CFIUS has blocked has accelerated under both Barack Obama and Trump. Still, the Trump administration argues that the agency is understaffed ar lacks enough authority to respond to the scale of the threat from Chinese investments, especially since some firms purposely structure deals to hide the involvement of Chinese sta funds.

In June 2018, Trump floated using executive powers to ban tech-related acquisitions by firms with at least 25 percent Chinese ownership and impose new export controls on critical technologies. He has so far held off implementing these. Meanwhile, Congress passed legislat in 2018 that increased CFIUS's purview to a wider range of transactions.

Tariffs and other trade remedies. The White House's Section 301 investigation into China recommended protective tariffs in March 2018. The administration had already applied tarif on solar panels and steel and aluminum imports, a move it said was necessary in part due to Chinese overproduction. In July and August 2018, the United States applied 25 percent tariff $50 billion worth of Chinese goods, and in September it applied 10 percent tariffs on a furth $200 billion worth of goods. Washington raised that tariff to 25 percent in May 2019, after U. China trade talks faltered. Trump has also threatened to extend the 25 percent tariffs to all remaining imports of Chinese goods.

Other restrictions on Chinese firms. The U.S. government has targeted Chinese technology companies over national security concerns. A 2012 report by the House Intelligence Committ declared Huawei and ZTE threats to national security due to the potential for Beijing to use their networks for spying or sabotage, and the Commerce department restricted their ability sell their products, contract with government agencies, and otherwise operate in the United States.

World Trade Organization. Trump's actions have intensified debate over the role of the WTO. Trump administration believes that the WTO forum is insufficient for addressing China's abu because, they allege, China has been undermining the principles of open trade even while observing the letter of the law. Some experts say China's economy has evolved past what the architects of the WTO envisioned and thus WTO rules are too narrow to address Beijing's actions. Others say that given a concerted diplomatic effort, the WTO process could challeng and eventually reform China's economic model.

How have other countries responded?

Numerous other developed countries have pushed back against China's trade and investmen practices. Australia has been the second-largest recipient of investment from China since 200 after the United States. Australia's oversight of Chinese investment has intensified since 201

when Canberra rejected Chinese bids to buy Australian agribusiness and electricity grid operators.

Germany is another important case, as its high-tech manufacturing economy has made it China's top investment destination in Europe. Chinese involvement in German industrial gia including Daimler, which is developing new battery technologies, and Kuka, the country's largest robotics producer, has raised alarms and led Berlin to call for a European Union–wide investment review body. France, too, has increased restrictions on foreign investment to stop what it calls "looting" of sensitive technologies. However, many smaller European countries, such as Greece and Portugal, worry that restricting outside capital could hamper their econo growth.

At the EU level, leaders have long complained about Chinese subsidies that distort the globa economy, as well as restricted market access for European firms and the lack of protection fo their intellectual property. The EU has filed complaints against China at the WTO and impos anti-dumping measures on many products. Many of these issues are regularly aired during E China summits, the most recent of which, in July 2018, saw China promise improved market access and further talks for a comprehensive investment agreement.

Recommended Resources

In *Foreign Affairs*, Matthew P. Goodman and Ely Ratner argue for a better way to challenge China on trade.

CFR Senior Fellow Brad W. Setser breaks down the complaints against the Chinese model of development.

In this 2016 paper, Harvard Law School's Mark Wu analyzes how China is stressing the WTO-based international trade system [PDF].

The *Wall Street Journal*'s Bob Davis assesses the debate over whether allowing China into the WTO was a mistake.

The *Financial Times* investigates the pushback China is getting around the world over its efforts to leap ahead technologically.

EXHIBIT 33

Shanghai Ship and Ocean Engineering Equipment Industry ‘Twelfth Five-Year Plan’ Development Plan

The shipbuilding and marine engineering equipment industry is a modern comprehensive industry that provides technical equipment for water transportation, marine resource development and national defense construction. It is a strategic industry that combines military and civilian operations and is an important part of the advanced equipment manufacturing industry. During the "Eleventh Five-Year Plan" period, the country successively issued the "Medium and Long-term Development Plan for the Shipbuilding Industry (2006-2015)", "Shipbuilding Industry Adjustment and Revitalization Plan", "State Council 's Decision on Accelerating the Cultivation and Development of Strategic Emerging Industries" and other important documents, reflecting the country's high regard for the shipbuilding and ocean engineering equipment industry.

The "Twelfth Five-Year Plan" is a critical period for China to comprehensively build a shipbuilding power and accelerate the cultivation and development of the marine engineering equipment industry. Shanghai's shipbuilding and marine engineering equipment industry will be guided by "innovation-driven, transformational development" and closely focus on "shipbuilding power" This ambitious goal will accelerate the improvement of industrial competitiveness and industrial scale and achieve a new historic leap. Based on the country's strategic deployment and the objective situation of Shanghai's industrial development, this plan puts forward the development ideas, development goals, main tasks and key directions for the development of Shanghai's shipbuilding and offshore engineering equipment industry during the "Twelfth Five-Year Plan" period. The planning period is 2011-2015.

1. Review of the Development of the “Eleventh Five-Year Plan”

Shanghai is the birthplace of China's modern shipbuilding industry. After sixty years of development since the founding of the People's Republic of China, especially the rapid development of thirty years of reform and opening up, Shanghai has become one of the regions with the strongest comprehensive technical level and strength in China's shipbuilding and offshore engineering equipment industry. one. The "Eleventh Five-Year Plan" period was a five-year period of rapid development for Shanghai's shipbuilding and offshore engineering

equipment industry, with remarkable achievements in industrial scale, technological innovation, capacity building and other aspects. In 2009, Shanghai included marine engineering equipment as one of the nine key areas of high-tech industrialization, injecting strong support into the rapid development of the industry.

(1) Development results of the “Eleventh Five-Year Plan”

1. The total shipbuilding volume jumped significantly. During the "11th Five-Year Plan" period, the total shipbuilding volume completed in Shanghai reached 38 million deadweight, 3.2 times of that during the “Tenth Five-Year Plan” period, with an average annual growth of 45.2%. In 2010, the city's completed ships exceeded the 10 million’s mark for the first time, reaching 12.11 million deadweight tons. The completed volume of ships by Shanghai Waigaoqiao Shipbuilding Co., Ltd. in 2010 reached 7.06 million deadweight tons, setting new records for shipbuilding among Chinese shipyards.

Summary table of main indicators of Shanghai's shipbuilding industry during the "Eleventh Five-Year Plan" period

Year / Indicator	2006	2007	2008	2009	2010
Shipbuilding completion volume (10,000 deadweight tons)	516	522	694	857	1211
Export completion volume (10,000 deadweight tons)	506	443	606	774	1083
Number of new ship orders accepted (10,000 deadweight tons)	1831	826	874	288	1190
Ship orders on hand (10,000 deadweight tons)	2743	3668	3884	3360	3300

2. Economic indicators have grown steadily

During the "Eleventh Five-Year Plan" period, Shanghai's shipbuilding and offshore engineering equipment industry achieved a total industrial output value of 213.6 billion yuan, sales revenue of 210.6 billion yuan, and profit exceeding 18 billion yuan. Among them, sales revenue was 3.7 times that of the "Tenth Five-Year Plan" period. Shanghai Waigaoqiao

Shipbuilding Co., Ltd. set a new record of profit of more than 3 billion yuan in 2008, becoming the "number one shipyard" with the most profitability in China.

Summary table of main economic indicators of Shanghai shipbuilding industry during the "Eleventh Five-Year Plan" period

Year / Indicator	2006	2007	2008	2009	2010
Total industrial output value (100 million yuan)	260	325	484	481	586
Export delivery value (100 million yuan)	169	219	344	362	383
Sales revenue (100 million yuan)	258	333	471	455	589

3. Scientific and technological innovation is fruitful

In the field of ship type research and development, we have fully mastered the optimization design methods of the three mainstream ship types of bulk carriers, oil tankers, and container ships, and created several brand ship types such as "China Jiangnan type", "China Hudong type", and "China Waigaoqiao type" ; It has made breakthroughs in the design technology and key manufacturing technology of high-end ships such as large liquefied natural gas (LNG) ships, ultra-large container ships, and liquefied petroleum gas (LPG) ships, filling the gap for domestic shipyards in building large liquefied natural gas (LNG) ships. Blank; the performance of its independently developed 8,530- ton container ships, 300,000 -ton very large crude carriers (VLCC) and other mainstream ships has been well received by domestic and foreign users, and has won a large number of orders from the market.

In the field of offshore engineering equipment, it has the design and production capabilities for deepwater semi-submersible drilling platforms, 350 -foot jack-up drilling platforms, and 150,000-300,000 -ton offshore floating production and storage devices (FPSO) and other mainstream offshore oil and gas drilling equipment, successfully obtained market orders for 3,000-meter deepwater semi-submersible drilling platforms and successfully started construction; multi-cable physical exploration ships, large offshore floating cranes, and lifting pipe-laying ships Other marine engineering ships have gained market recognition and

successfully achieved industrialization.

4. Rapid progress in capacity building

During the "Eleventh Five-Year Plan" period, the first phase of the China Changxing Shipbuilding Base was successfully completed and quickly formed an annual production capacity of 4.5 million deadweight tons. The second phase of the Shanghai Waigaoqiao Shipbuilding Base and the first phase of the Lingang Marine Engineering Base were completed and put into operation., the first phase of the Chongming base project of Shanghai Shipyard and the port project were also successfully completed. In 2010, Changxing Island was recognized as a new industrialization demonstration base by the Ministry of Industry and Information Technology, and the second phase (first phase) of the Changxing Shipbuilding Base was also approved by the National Development and Reform Commission.

5. Significant improvement in supporting capabilities

During the "Eleventh Five-Year Plan" period, the shipbuilding supporting industry has achieved great development through independent research and development and the introduction of joint ventures. Hudong Heavy Machinery, CSSC Mitsui Machinery, Qiyao Wartsila, Shanghai Crankshaft Co., Ltd. and other marine diesel engine and key parts manufacturing companies have gathered and developed, basically forming a ship power system industry group, with technological innovation capabilities and production capacity nationwide. leading. Breakthroughs have been made in the research and development of key systems and supporting equipment for marine engineering equipment such as high-power thrusters, jack-up lifting devices, oil-gas-water treatment systems, integrated mud logging instruments, and platform blowout preventers, and industrialization has been achieved..

(2) Problems and current situations

Although Shanghai's shipbuilding and offshore engineering equipment industry has made great achievements during the "Eleventh Five-Year Plan" period, it must be clearly recognized that many contradictions and problems have also accumulated during the rapid development process. The main manifestations are: the number of shipbuilding completions has repeatedly hit new highs, but its share in the country has been declining year by year; it leads the country in the construction of high-end ships such as liquefied natural gas (LNG) ships, but it is in the field of luxury cruise ships, ocean drilling ships, high-end yachts, etc. There is still a blank in this aspect; there have been certain breakthroughs in the design and construction of mainstream offshore

engineering equipment such as drilling platforms and floating production and storage units (FPSO). There is still a considerable gap with advanced shipbuilding countries such as South Korea, Japan, Europe and the United States in other aspects, and the industrial scale has not yet been formed; the supporting industry categories are relatively limited, there are not many advantageous products, and the development is only in point form, and the industrial chain needs to be improved.

During the "Twelfth Five-Year Plan" period, Shanghai's shipbuilding and offshore engineering equipment industry will face both opportunities and challenges. The main opportunities are that the global economy will gradually recover during the adjustment, and the international ship market demand will show a trend from sluggish to slowly rising; the trend of high-end and large-scale ships is becoming increasingly obvious, and Shanghai has a first-mover advantage; with the development of offshore oil and gas The focus is gradually moving from shallow water to deep water, and there is huge room for development of the marine engineering equipment industry; the construction of Shanghai International Shipping Center and International Financial Center will actively promote the integration of shipbuilding industry capital and financial capital, and can provide a more solid financial guarantee for industrial development. The main challenge is that the international shipping market has overcapacity, and shipbuilding capacity is seriously oversupplied; new international maritime regulations in the name of "green shipbuilding" are being promulgated intensively, and technical barriers are getting higher and higher; the offshore engineering equipment industry is not very competitive and faces competition with advanced shipbuilding countries such as South Korea and Japan. Comprehensive competition; RMB appreciation pressure remains high, and labor and raw material costs continue to rise.

In sum, Shanghai’s shipbuilding industry may enter a period of adjustment after years of sustained growth in the early stages of the "Twelfth Five-Year Plan" and enter a critical stage of transformation and upgrading to high-end ships and offshore engineering equipment, facing new challenges for sustainable development. In the later period of the "Twelfth Five-Year Plan", with the improvement of the international economic situation and the recovery of the international shipping market, with the continuous breakthroughs of high-end ships and marine engineering equipment, and the gradual completion and commissioning of the second phase of the Changxing Project, Shanghai's shipbuilding industry will usher in a new round of development. We must

accurately grasp development trends, make full use of various opportunities to accelerate the pace of transformation and upgrading, and actively create a new situation in industrial development.

2. Development ideas and goals of the "Twelfth Five-Year Plan"

(1) The guiding ideology of the "Twelfth Five-Year Plan"

Deeply implement the Scientific Outlook on Development, adhere to the new industrialization path, firmly seize the strategic opportunity of building a comprehensive shipbuilding power and cultivating and developing strategic emerging industries of marine engineering equipment, with the core of improving industrial competitiveness, independent innovation and structural adjustment As a focus, we will build a modern shipbuilding industry system with leading technology, structural optimization, military-civilian integration, and green development, and build Shanghai into a leading base for ships and offshore engineering equipment with the strongest comprehensive strength in China and international influence.

(2) "Twelfth Five-Year Plan" Development Principles

——Change the mode and develop intensively. Shanghai's scarce land, coastline and other environmental resources can no longer support the development method of large-scale investment and construction of traditional shipyards. It is necessary to effectively promote the transformation of the investment-driven economic growth model to the innovation-driven economic growth model and promote the transformation of the extensive development model towards the intensive development model.

——Adjust the structure and develop high-end. With the direction of cultivating and developing strategic emerging industries of high-end ships and marine engineering equipment, vigorously cultivate original innovation capabilities, increase the digestion and absorption of introduced technologies, and enhance re-innovation and integrated innovation capabilities. Adjust and upgrade the product structure, enhance high-end product design capabilities, and increase the proportion of high-end product construction.

——Technological innovation and green development. Aiming at informatization of R&D and design, automation of production processes, and refinement of operation and management, we will comprehensively improve digital shipbuilding capabilities. Strengthen research on new ship technologies such as safety, energy conservation, and environmental protection, actively develop green and environmentally friendly brand ship models that meet new

international norms and standards, promote the application of high-efficiency, energy-saving new equipment, and environmentally friendly new materials, and enhance market leadership capabilities.

——Service industry, extended development. Focusing on industrial development goals, vigorously promote the development of producer services such as scientific research and development, consulting agencies, and engineering management, cultivate relevant service platforms and service chains, and promote the transformation of Shanghai's shipbuilding and offshore engineering equipment industry from production-oriented manufacturing to service-oriented manufacturing. Shift from the lower end of the value chain to the higher end.

——Military -civilian integration and coordinated development. Adhere to the strategic policy of integrating the military with the civilians and military-civilian integration, make full use of the resources of the whole society, establish and improve a common military-civilian technology research and development platform, promote the two-way docking of military-civilian dual-use technologies and the transformation of results, create a number of leading enterprises with military-civilian integration, and promote military-civilian integration The construction of a professional ship scientific research and production system will enhance the ability to dynamically protect the army.

(3) Development Goals of the “Twelfth Five-Year Plan”

——Technological strength is firmly at the forefront. Form an industrial R&D system with clear positioning, distinct layers and good operation, and its comprehensive scientific and technological strength ranks among the top in the country. Comprehensively master the independent design and construction technology of high-end ships with large market demand, and significantly improve the comprehensive competitiveness of mainstream ship types, forming more than 20 companies that meet the latest international specifications and requirements for a well-known brand ship model that leads the international market demand. Break through the technical bottleneck in the early design of mainstream marine engineering equipment, form independent design and construction capabilities for deepwater oil and gas drilling equipment, and create independent brands of mainstream marine engineering equipment of type 2 or above and marine engineering ships of type 8 or above.

——The total industrial volume increases steadily. In 2015, the total number of shipbuilding completed is 1,500 deadweight tons, the output of low-speed diesel engines is 4.5

million kilowatts and the output of medium-speed diesel engines is 600 units. Comprehensively promote the industrialization process of marine engineering equipment and supporting equipment, and reach an annual production capacity of 6 units (vessels) of mainstream marine engineering equipment in 2015. In 2015, Shanghai's shipbuilding and offshore engineering equipment industry plans to achieve a total economic output of 125 billion yuan among which the total economic volume of the shipbuilding and supporting industries is 105 billion yuan, and the marine engineering equipment is 20 billion yuan.

——Efficiency and performance are significantly improved. By 2015, a modern shipbuilding model for final assembly oriented toward intermediate products will be fully established, and digital shipbuilding capabilities integrating design, production, and management will be significantly improved. The typical ship construction cycle has reached the world's advanced level, the working hours of key enterprises per revised gross ton have reached 22 hours, and the labor productivity of all employees has increased by more than 10% annually. The primary utilization rate of steel is no less than 92%, and the energy consumption per 10,000 yuan of added value is less than 0.2 tons of standard coal.

3. Main development tasks of the "Twelfth Five-Year Plan"

(1) Vigorously promote high-end shipping products

Give full play to the concentrated advantages of Shanghai Ship Design Institute, comply with market demand, and vigorously promote the optimization and upgrading of bulk carriers, oil tankers, and container ships to meet green, environmental protection, and safety requirements, as well as ship types that meet new international shipbuilding norms and standards. Development and construction. Focus on optimizing the structure of ship products, continue to maintain the first-mover advantage of Shanghai shipbuilding industry in high-end ships such as LNG ships and ultra-large container ships, and effectively improve high-end products starting from R&D, design, production, modification, maintenance, service and other aspects. Proportion of the total number of ships. At the same time, we should focus on long-term development and choose products that are forward-looking, exploratory and have certain market potential, carry out preliminary research and conceptual design, and seize the commanding heights of future technology development and market competition.

Key product orientation:

1. Optimization of three mainstream ship types and development and construction of

green and environmentally friendly ships that meet new international shipbuilding norms and standards;

2. Development and construction of large-scale liquefied natural gas (LNG) ships, feeder LNG ships, container ships above 10,000 TEUs, liquefied petroleum gas (LPG) ships, large chemical tankers, and high-grade ro-ro passenger ships;

3. Development and construction of special ships such as polar ice-breaking scientific research ships, ocean drilling ships, and large dredging ships;

4. Preliminary research on luxury cruise ships, luxury yachts, new energy ships and other ships;

5. Repair and modification of ultra-large ships, high-tech ships, special ships and marine engineering equipment.

(2) Cultivate and expand the offshore engineering equipment industry

Facing the major demands for domestic and foreign marine resource development, with the core task of improving the R&D, manufacturing and market competitiveness of mainstream offshore oil and gas development equipment and offshore engineering ships, we will cultivate professional design capabilities and launch a batch of mainstream offshore engineering equipment and key supporting equipment. Core technology research and development and industrialization projects, mastering overall design technology and construction technology. Cultivate professional subcontractors with strong market competitiveness in the fields of engineering design, module manufacturing, supporting equipment and technology, and technical consulting. Through typical engineering general contracting projects, we can achieve breakthroughs in capabilities from subcontracting to general contracting, and cultivate and form more competitive subcontractors. Complete marine engineering equipment industry chain. Gradually improve the technological innovation system, improve project management levels, rapidly expand market share, and expand industrial scale.

Key product orientation:

1. Mainstream offshore engineering equipment such as jack-up offshore platforms, semi-submersible offshore platforms, drill ships, and floating production, storage and offloading units (FPSO);

2. Liquefied natural gas floating production, storage and offloading unit (LNG - FPSO), floating drilling production, storage and offloading unit (FDPSO), column platform (SPAR),

tension leg platform (TLP), etc. New marine engineering equipment;

3. Geophysical prospecting vessels, engineering survey vessels, hoisting and pipelaying vessels, semi-submersible transport vessels, large offshore floating cranes, wind power equipment installation vessels, multi-purpose work vessels, platform supply vessels and other offshore engineering vessels;

4. Drilling systems, oil and gas production systems, offshore platform power stations, offshore platform integrated control systems, self-elevating platform lifting systems, deep sea mooring systems, dynamic positioning systems, FPSO single point mooring systems, pipe laying / cable laying equipment, well logging /logging well/Cementing systems, underwater oil production systems, blowout preventers and other key marine engineering systems and special equipment.

(3) Make supporting industries bigger and stronger

Efforts will be made to change the imbalance in the development of ship assembly and supporting industries, and significantly improve ship supporting capabilities and levels. Accelerate the research and development and industrialization of independent brand marine diesel engines, promote marine power systems, power station systems, cabin equipment and other advantageous supporting products to enter the high-end product market and expand market share. Build an industrial base for supporting second-wheel marine diesel engines and improve the localized second-wheel supporting system. Important breakthroughs have been made in ship automation control and system integration. Increase investment and joint venture cooperation in supporting industries, expand core systems and supporting product series, and promote the development of land-based supporting equipment into the field of supporting marine engineering equipment.

Key product orientation:

1. Independent brand medium-speed diesel engines, intelligent diesel engines, LNG marine dual-fuel engines;

2. High-power marine crankshaft, high-pressure common rail fuel injection system, intelligent electric control systems, high-efficiency superchargers and other key components and systems of diesel engines;

3. Large propulsion devices, high-end marine generators, ship power stations, electric propulsion power systems and power transmission devices such as input devices;

4. Integrated cargo tank loading and unloading devices, remote control valves, sewage treatment devices, marine water desalination equipment, marine boilers and other cabin equipment;

5. A new generation of integrated ship bridge systems, marine navigation radar systems that comply with IMO specifications, new marine gyrocompasses and other communication, navigation and automation systems;

6. Large marine castings and forgings.

(4) Deepen research on basic common technologies

Integrate existing resources and rely on research institutions such as shipbuilding research institutes, relevant universities and national key laboratories, national engineering laboratories, and national engineering technology research centers to deepen basic commonalities such as structural design, fluid mechanics, safety assessment, and risk control. Theoretical research, strengthen research on common technologies in the fields of ships, marine engineering equipment, core systems and supporting equipment, develop common design software, carry out research on marine engineering equipment construction standard systems, master key technologies for high-end ship development, and make breakthroughs in key systems Overall design and integration technology, improve comprehensive integration capabilities, and narrow the gap with the world's advanced level.

Key research directions:

1. Research on ship design theory and methods, research on hull structure safety inspection and structural optimization;

2. Ship hydrodynamic performance prediction and optimization technology, research and development of hydrodynamic prediction technology related to ship shape optimization, application of CFD technology in ship hydrodynamics research;

3. Research on motion performance and load analysis and forecasting technology of deep-sea facilities, research on dynamic response and strength analysis technology of deep-sea facilities;

4. Research on safety assessment technology of floating structures under harsh sea conditions, marine engineering research on equipment risk control technology, etc.

(5) Promote the deep integration of "two informatizations"

Shanghai is one of the first batch of national-level experimental zones for the integration

of "two informatizations". The shipbuilding and marine engineering equipment industry is one of the ten key industries in Shanghai's three-year action plan for the integration of "two informatizations". It must rely on theoretical research and innovative practices of modern shipbuilding models. With the favorable conditions, relying on the National Engineering Laboratory of Digital Shipbuilding, we will comprehensively promote shipbuilding assembly, management refinement and information integration. Comprehensively carry out process reengineering of the shipbuilding production system, build a comprehensive and flat ship and offshore engineering operation, production technology and management business system, improve the planning system, establish a just-in-time, pull-type production planning model, and promote the standardization of coding systems and databases.

Key research directions:

1. Research on integrated coding standards for ship and marine engineering equipment design, production, and management, and research on integrated factory design based on three-dimensional modeling;

2. R&D and promotion of common software for shipbuilding system design and management;

3. Research on shipbuilding precision control technology, modular manufacturing technology, and rapid loading technology;

4. Research on advanced shipbuilding tooling with high efficiency and low consumption;

5. Research and development of hull structure welding robots and painting robots, etc.

(6) Vigorously develop the modern shipbuilding service industry

Promote the development and growth of specialized service enterprises such as ship design and software development, accelerate the development of modern service industries such as ship logistics, e-commerce, market and legal consulting, and engineering management, expand the industrial chain, and improve the industrial system. Encourage the development of ship financing leasing business, cultivate ship and marine engineering equipment industry funds, and promote the integration of industry and finance. Improve the market service level of ship supporting enterprises and accelerate the construction of global marketing service network for key supporting enterprises.

Key development orientation:

1. Professional services such as ship design and software development that adapt to

industrial development and market demand;

2. Modern service industries such as ship logistics, e-commerce, market and legal consulting, and project management;

3. Industrial financial services such as ship financing leasing services, ship and marine engineering equipment industry funds;

4. Construction of international marketing service network for ship supporting products, etc.

4. Development space layout during the “Twelfth Five-Year Plan”

On the basis of the comprehensive completion of the first phase project of Changxing Shipbuilding Base in the "11th Five-Year Plan", the second phase project of Changxing will be the most important task of optimizing the industrial layout of the Shanghai shipbuilding industry in the "12th Five-Year Plan". Shanghai will fully complete Changxing, Waigaoqiao and Yangtze Estuary ship and marine engineering equipment assembly industry base, supporting industry base, and modern ship repair and modification industry base are mainly located in four regions: Gaoqiao, Lingang, and Chongming (see attached picture). Build a national industrial demonstration base and a port-side ship supporting industry base on Changxing Island, strengthen international and domestic industry promotion and investment attraction, and accelerate the construction of marine engineering bases on Changxing Island by companies with clear intentions such as COSCO Shipping Group and Sinotrans & CSC Group The project progress will promote the early completion of high-quality offshore engineering projects, thereby optimizing the industrial layout and industrial structure.

Picture 1 Regional layout of Shanghai’s shipbuilding and offshore engineering equipment industry

(1) Industrial layout

1. Modern assembly and shipbuilding bases represented by Waigaoqiao Shipbuilding, Jiangnan Shipbuilding, Hudong-Zhonghua Shipbuilding, and Shanghai Shipyard;

2. Marine engineering equipment bases represented by Waigaoqiao Shipbuilding, Zhenhua Heavy Industry Group, Shanghai Shipyard, COSCO Shipping Changxing Offshore Base, and Sinotrans & CSC Changxing Offshore Base;

3. Modern ship and marine engineering equipment supporting bases represented by Lingang, Changxing, and Minhang areas;

4. Modern ship repair and modification bases represented by China Resources Dadong, China Shipping Industry, Shanghai COSCO Shipping, and Sinotrans & CSC Minnan Shipyard;

5. The production base of yachts, lifeboats, official boats and business boats represented by Fengxian area.

(2) Key investment projects

1. The second phase of the CSSC Changxing Shipbuilding Base will build two large shipyards, equipped with 1800t large gantry cranes, and build outfitting docks, material docks and other supporting facilities. The construction of the second phase of the Changxing project is of great significance for improving the development and construction capabilities of high-tech ships such as large-scale liquefied natural gas ships and 10,000-TEU container ships in Shanghai, and realizing industrial transformation and upgrading.

2. COSCO Shipyard will take advantage of the opportunity of corporate relocation to realize adjustment and upgrading, take advantage of Shanghai's location, talents, and comprehensive supporting facilities, and centrally settle COSCO Shipyard's offshore engineering R&D center and business headquarters on Changxing Island, and plan to build marine projects on the southeast side of Changxing Island Equipment manufacturing base.

3. The Changxing Offshore Engineering Supporting Base Project in Southern Fujian plans to build a floating dock, an offshore engineering production platform and a ship repair and modification berth on Changxing Island. After completion, international advanced technology and management models will be introduced to expand from traditional ship repair business to

offshore engineering supporting business.

4. Jinshan District will focus on introducing offshore oil equipment, heavy petrochemical equipment, oil drilling equipment production bases, technology research and development centers, national testing and inspection centers, etc. to enhance Shanghai's strength in the field of supporting marine engineering equipment.

5. The Waigaoqiao Shipbuilding and Marine Engineering Base will implement the second phase of construction in Lingang, planning to build a marine engineering assembly platform, a 600- ton gantry crane and other heavy-duty facilities to enhance its manufacturing capabilities for marine engineering equipment and meet the construction guidelines.

6. A marine diesel engine second-wheel supporting industry base will be built in Lingang. After completion, the marine diesel engine assembly industry will drive the simultaneous development of the second-wheel supporting industry, enhance the local production capacity of key components, and improve Shanghai's marine diesel engine production chain.

5. Development policies and measures during the "Twelfth Five-Year Plan"

(1) Increase scientific and technological innovation

Implement the country's strategic deployment on cultivating and developing strategic emerging industries, and formulate implementation opinions for the special development of high-end shipbuilding and marine engineering equipment industries as Shanghai's strategic emerging industries. Consolidate the dominant position of Shanghai's shipbuilding industry in R&D and design, and further strengthen policy-based financial support for technological innovation projects such as future green ships, major first-made marine engineering equipment, core supporting systems and others that are conducive to the high-end development of the industry. Increase support for the construction of industrial demonstration bases, ship export bases, national key laboratories and enterprise technology centers, and accelerate the formation of innovation capabilities.

(2) Promote the development of modern shipbuilding service industry

Vigorously promote the development of producer services in the field of ships and offshore engineering equipment, and strive to create a modern ship and offshore engineering equipment service industry that is consistent with Shanghai's status as an international shipping center. Encourage the development of modern service industries such as ship design, software

development, ship logistics, industrial intermediaries and legal consulting; encourage R&D units to cooperate with venture capital institutions to create venture capital funds; encourage industrial capital and finance integration, increase credit financing support; support qualified shipbuilding and ocean engineering companies to go public and issue bonds, and broaden financing channels.

(3) Promote exchanges and cooperation

Promote cooperation among shipbuilding and marine engineering equipment manufacturers, scientific research institutes and relevant universities in Shanghai to create a regional platform to promote industrial development. Encourage overall ship design units, final assembly companies, supporting units and major users to establish diversified strategic alliances; promote cooperation between key Shanghai offshore engineering equipment enterprises and internationally renowned oil companies and general engineering contractors, starting from subcontracting and gradually increase market visibility and general engineering contracting capabilities; encourage cooperation with well-known foreign professional design companies and intermediaries to improve early design capabilities and market response capabilities; encourage the introduction and absorption of international advanced technologies and concepts, and support the investment and development of advantageous international and domestic enterprises in Shanghai.

(4) Strengthen the construction of talent team

Using major national science and technology projects and major strategic emerging industry projects as carriers, we will increase efforts to cultivate leaders, actively promote the construction of innovative teams, and form an echelon of high-level scientific and technological talents and management talents; use the national new industrialization demonstration base as a carrier, build a shipbuilding industry skills training center to promote the cultivation of innovative and compound skilled talents. Encourage multi-level, multi-channel and multi-mode international scientific and technological exchanges and cooperation, and encourage the introduction of overseas general project contracting management talents, R&D team leaders and high-level compound talents.

(5) Ensure the healthy development of the industry

Implement various national industrial policies, promote the standardized development of Shanghai's shipbuilding and offshore engineering equipment industry, and improve the overall level of industry development. Carry out the publicity and implementation of industry standards

such as "Basic Requirements and Evaluation Methods for Production Conditions of Ship Manufacturing Enterprises", "Basic Requirements and Evaluation Methods for Design Conditions of Ship Design Units" and "Basic Requirements and Evaluation Methods for Production Conditions of Ship Repair Enterprises" to guide and ensure the healthy development of Shanghai’s shipbuilding and offshore engineering equipment industry.

上海市船舶与海洋工程装备产业“十二五”发展规划

船舶与海洋工程装备产业是为水上交通运输、海洋资源开发及国防建设提供技术装备的现代综合性产业，是军民结合的战略性产业，是先进装备制造业的重要组成部分。“十一五”期间，国家陆续发布了《船舶工业中长期发展规划（2006－2015)》、《船舶工业调整和振兴规划》、《国务院关于加快培育和发展战略性新兴产业的决定》等一系列重要文件，充分体现了国家对船舶与海洋工程装备产业的高度重视。

“十二五”是我国全面建设造船强国和加快培育发展海洋工程装备产业的关键时期，上海船舶与海洋工程装备产业将以“创新驱动、转型发展”为引领，紧紧围绕“造船强国”这一宏伟目标，加速提升产业竞争能力和产业规模，实现新的历史性跨越。本规划根据国家的战略部署和上海市产业发展的客观形势，提出“十二五”期间上海船舶与海洋工程装备产业发展的发展思路、发展目标、主要任务和重点导向等。规划期为 2011－2015 年。

一、“十一五”发展回顾

上海是我国现代船舶工业的诞生地，经过建国以来六十年的发展，特别是改革开放三十年的快速发展，上海已成为我国船舶与海洋工程装备产业综合技术水平和实力最强的地区之一。“十一五”时期是上海船舶与海洋工程装备产业高速发展的五年，产业规模、科技创新、能力建设等各方面都取得了显著成绩。2009 年上海又将海洋工程装备列入高新技术产业化九大重点领域之一，为产业快速发展注入了强大

的动力。

（一）“十一五”发展成效

1.造船总量大幅跃升

“十一五”期间，上海造船完工总量达到 3800 万载重吨，是“十五”期间的 3.2 倍，年均增长 45.2%，其中 2010 年全市造船完工首次突破千万大关，达到 1211 万载重吨。上海外高桥造船有限公司 2010 年造船完工量达 706 万载重吨，连续创造中国船厂造船完工新纪录。

“十一五”期间上海船舶产业主要指标汇总表

年份 指标	2006 年	2007 年	2008 年	2009 年	2010 年
造船完工量（万载重吨）	516	522	694	857	1211
出口完工量（万载重吨）	506	443	606	774	1083
新承接船舶订单量（万载重吨）	1831	826	874	288	1190
手持船舶订单量（万载重吨）	2743	3668	3884	3360	3300

2.经济指标稳步增长

“十一五”期间，上海船舶与海洋工程装备产业总计实现工业总产值 2136 亿元，实现销售收入 2106 亿元，实现利润超过 180 亿元。其中，销售收入是“十五”期间的 3.7 倍。上海外高桥造船有限公司 2008 年创造盈利超过 30 亿元的新纪录，成为国内盈利能力最强的“第一船厂”。

“十一五”期间上海船舶产业主要经济指标汇总表

年份 指标	2006 年	2007 年	2008 年	2009 年	2010 年
工业总产值（亿元）	260	325	484	481	586
出口交货值（亿元）	169	219	344	362	383
销售收入（亿元）	258	333	471	455	589

3.科技创新卓有成效

在船型研发领域，全面掌握了散货船、油船、集装箱船三大主流船型优化设计方法，打造了“中国江南型”、“中国沪东型”、“中国外高桥型”等若干品牌船型；突破了大型液化天然气（LNG）船、超大型集装箱船、液化石油气（LPG）船等高端船舶的设计技术和关键制造技术，填补了国内船厂建造大型液化天然气（LNG）船的空白；自主研发的8530箱集装箱船、30万吨超大型油船（VLCC）等主流船舶性能受到国内外用户好评，赢得市场大批订单。

在海洋工程装备领域，具备了深水半潜式钻井平台、350英尺自升式钻井平台、15—30万吨级海上浮式生产储油装置（FPSO）等主流海洋油气钻采装备的设计生产能力，成功获得了 3000 米深水半潜式钻井平台的市场订单并顺利开工建造；多缆物理探测船、海上大型浮吊、起重铺管船等海洋工程船舶获得市场认可并成功实现产业化。

4.能力建设突飞猛进

“十一五”期间，中船长兴造船基地一期工程顺利建成并迅速形成年产450万载重吨的生产能力，上海外高桥造船基地二期工程和临港海洋工程基地一期工程建成投产，上海船厂崇明基地一期工程和港池工程也顺利竣工。2010年，长兴岛被工业和信息化部认定为新型工业化产业示范基地，长兴造船基地二期工程（第一阶段）也得到了国家发展改革委核准。

5.配套能力显著提升

“十一五”期间，船舶配套产业通过自主研发、引进合资等方式得到了较大发展。沪东重机、中船三井造机、齐耀

瓦锡兰、上海曲轴公司等一批船用柴油机及关键零部件制造企业集聚发展，基本形成了船舶动力系统产业群，科技创新能力和生产能力全国领先。大功率推进器、自升式平台升降装置、油气水处理系统、综合录井仪、平台防喷器组等海洋工程装备关键系统和配套设备的研发取得突破并实现了产业化。

（二）面临的问题和形势

虽然“十一五”期间上海船舶与海洋工程装备产业取得了巨大成就，但必须清醒地认识到，在高速发展过程中也积累了不少矛盾和问题。主要表现在：造船完工量屡创新高，但在全国所占份额却逐年走低；在液化天然气（LNG）船等高端船舶的建造领域全国领先，但在豪华邮轮、大洋钻探船、高级游艇等方面尚属空白；在钻井平台、海上浮式生产储油装置（FPSO）等主流海洋工程装备的设计、建造领域有了一定突破，但在前期设计能力、工程总包能力、海洋工程配套能力等方面仍与韩、日、欧美等先进造船国家存在相当差距，仍未形成产业规模；配套产业门类较局限，优势产品不多，仅呈点状发展，有待完善产业链。

“十二五”期间，上海船舶与海洋工程装备产业面临的将是机遇和挑战并存的形势。机遇主要有，全球经济将在调整中逐步恢复，国际船舶市场需求将呈现从低迷到缓升的走势；船舶高端化、大型化趋势日益明显，上海具有先发优势；随着海洋油气开发重点从浅水逐渐走向深水，海洋工程装备产业发展空间巨大；上海国际航运中心和国际金融中心建设将积极推动船舶产业资本和金融资本的融合，可为产业发展提供更坚实的金融保障。挑战主要是，国际航运市场运力过

剩，造船产能严重供大于求；以“绿色造船”为名的国际海事新规范密集出台，技术壁垒越来越高；海洋工程装备产业竞争力不强，面临与韩国、日本等先进造船国家的全面竞争；人民币升值压力依然较大，劳动力及原材料成本持续上涨。

综上所述，上海船舶产业“十二五”前期可能进入多年持续增长后的调整时期，进入向高端船舶和海洋工程装备转型升级的关键阶段，持续发展面临新挑战。“十二五”后期，随着国际经济形势的好转和国际航运市场的复苏，随着高端船舶和海洋工程装备的不断突破，以及长兴二期工程的逐步建成投产，上海船舶产业将迎来新一轮发展。我们必须准确把握发展趋势，充分利用各种机遇加快转型升级步伐，积极开创产业发展新局面。

二、“十二五”发展思路和目标

（一）“十二五”指导思想

深入贯彻落实科学发展观，坚持走新型工业化道路，紧紧抓住全面建设造船强国和培育发展海洋工程装备战略性新兴产业这一战略机遇，以提升产业竞争力为核心，以自主创新和结构调整为着力点，打造技术领先、结构优化、军民融合、绿色发展的现代船舶工业体系，将上海建设成为国内综合实力最强并具有国际影响力的船舶及海洋工程装备龙头基地。

（二）“十二五”发展原则

——转变方式，集约发展。上海稀缺的土地、岸线等环境资源已无法支撑大规模投资建设传统船厂的发展方式，必须切实推动投资驱动型经济增长模式向创新驱动型经济增长模式的转变，推动外延式、粗放式的发展模式向内涵式、

集约型发展模式转变。

——调整结构，高端发展。以培育发展高端船舶和海洋工程装备战略性新兴产业为方向，大力培育原始创新能力，加大引进技术消化吸收力度，增强再创新和集成创新能力。调整升级产品结构，提升高端产品设计能力，提高高端产品建造比例。

——科技创新，绿色发展。以研发设计信息化、生产过程自动化、经营管理精细化为目标，全面提高数字化造船能力。加强安全、节能、环保等船舶新技术研究，积极研发满足国际新规范新标准的绿色环保型品牌船型，推广应用高效节能新装备、环境友好型新材料，提升市场引领能力。

——服务产业，延伸发展。围绕产业发展目标，大力推进科技研发、咨询中介、工程管理等生产性服务业发展，培育相关服务平台和服务链，促使上海船舶与海洋工程装备产业从生产型制造业向服务型制造业转变，从价值链的低端向高端转移。

——军民融合，协调发展。坚持寓军于民、军民融合的战略方针，充分利用全社会资源，建立和完善军民共性技术研发平台，促进军民两用技术双向对接和成果转化，打造一批军民结合型龙头企业，推动军民一体化的船舶科研生产体系建设，增强动态保军能力。

（三）“十二五”发展目标

——科技实力稳居前列。形成定位清晰、层次分明、运行良好的产业研发体系，科技综合实力居国内前列。全面掌握市场需求量大的高端船舶自主设计、建造技术，主流船型综合竞争力显著提升,形成20个以上满足最新国际规范要求、

引领国际市场需求的知名品牌船型。突破主流海洋工程装备前期设计技术瓶颈，形成深水油气钻采装备自主设计、建造能力，打造 2 型以上主流海洋工程装备和 8 型以上海洋工程船舶自主品牌。

——产业总量稳步提升。2015 年实现造船完工总量 1500 万载重吨，低速柴油机产量 450 万千瓦，中速柴油机产量 600 台。全面推进海洋工程装备及配套产业化进程，2015 年达到年产主流海洋工程装备 6 座（艘）的生产能力。2015 年，上海市船舶与海洋工程装备产业计划实现经济总量 1250 亿元，其中船舶及配套产业经济总量 1050 亿元，海洋工程装备及配套产业经济总量 200 亿元。

——效率效能显著提升。到 2015 年，全面建立以中间产品为导向的总装化现代造船模式，设计、生产、管理一体化数字造船能力明显提高。典型船舶建造周期达到世界先进水平，骨干企业每修正总吨工时达到 22 小时，全员劳动生产率年均提高 10%以上。钢材一次利用率不低于 92%，万元增加值能耗低于 0.2 吨标准煤。

三、“十二五”发展主要任务

（一）大力推进船舶产品高端化

充分发挥上海船舶设计院所集中的优势，顺应市场需求，大力推进散货船、油船、集装箱船适应绿色、环保、安全要求的优化升级，以及满足国际造船新规范、新标准的船型开发建造。着力优化船舶产品结构，继续保持上海船舶产业在 LNG 船、超大型集装箱船等高端船舶的先发优势，从研发、设计、生产、改装、维修、服务等各环节入手，切实提升高端产品在船舶总量中所占比例。同时着眼长远发展，选

择具有一定前瞻性、探索性、有一定市场潜力的产品，开展前期预研和概念设计，抢占未来技术开发和市场竞争的制高点。

重点产品导向：

1.三大主流船型优化及满足国际造船新规范、新标准的绿色环保型船舶开发建造；

2.大型液化天然气（LNG）船、支线 LNG 船、万箱以上级集装箱船、液化石油气（LPG）船、大型化学品船、高等级海峡客滚船等高端船舶开发建造；

3.极地破冰科学考察船、大洋钻探船、大型疏浚船等特种船舶开发建造；

4.豪华邮轮、豪华游艇、新能源船舶等船舶的前期预研；

5.超大型船舶、高技术船舶、特种船舶及海洋工程装备的修理与改装。

（二）培育壮大海洋工程装备产业

面向国内外海洋资源开发的重大需求，以提升主流海洋油气开发装备和海洋工程船舶的研发制造能级和市场竞争能力为核心任务，培育专业设计能力，启动一批主流海洋工程装备和关键配套设备的核心技术研发和产业化项目，掌握总体设计技术和建造技术。在工程设计、模块制造、配套设备工艺、技术咨询等领域培育具备较强市场竞争力的专业化分包商，通过典型的工程总承包项目实现从分包到总包的能力突破，培育形成较完整的海洋工程装备产业链。逐步完善技术创新体系，提高工程管理水平，快速扩大市场份额，壮大产业规模。

重点产品导向：

1.自升式海洋平台、半潜式海洋平台、钻井船、浮式生产储卸装置（FPSO）等主流海洋工程装备；

2.液化天然气浮式生产储卸装置（LNG-FPSO）、浮式钻井生产储卸装置（FDPSO）、立柱式平台（SPAR）、张力腿平台（TLP）等新型海洋工程装备；

3.物探船、工程勘察船、起重铺管船、半潜运输船、大型海上浮吊、风电设备安装船、多用途工作船、平台供应船等海洋工程船舶；

4.钻井系统、油气生产系统、海洋平台电站、海洋平台集成控制系统、自升式平台升降系统、深海锚泊系统、动力定位系统、FPSO 单点系泊系统、铺管/铺缆设备、测井/录井/固井系统、水下采油系统、防喷器等海洋工程关键系统和专用设备。

（三）做大做强配套产业

着力改变船舶总装和配套产业发展的不平衡状态，大幅提高船舶配套能力和水平。加快自主品牌船用柴油机研发和产业化，推动船用动力系统、电站系统、舱室设备等优势配套产品进入高端产品市场，扩大市场占有率。建设船用柴油机二轮配套产业基地，完善本土化二轮配套体系。在船舶自动化控制和系统集成等方面取得重要突破。加大配套产业招商引资和合资合作力度，拓展核心系统和配套产品系列，推进陆用配套设备向海洋工程装备配套领域的发展。

重点产品导向:

1.自主品牌中速柴油机、智能型柴油机、LNG 船用双燃料发动机；

2.大功率船用曲轴、高压共轨燃油喷射系统、智能化电

控系统、高效增压器等柴油机关键部件和系统；

3.大型推进装置、高端船用发电机、船舶电站、电力推进装置等电力系统和动力传动装置；

4.液货舱装卸集成装置、遥控阀门、污水处理装置、海水淡化装置、船用锅炉等舱室设备；

5.新一代综合船桥系统、符合 IMO 规范的船用导航雷达系统、新型船用陀螺罗经等通讯导航和自动化系统；

6.大型船用铸锻件。

（四）深化基础共性技术研究

整合现有资源，依托船舶科研院所、有关高校和国家重点实验室、国家工程实验室、国家工程技术研究中心等研究机构，深化结构设计、流体力学、安全评估、风险控制等基础共性理论研究，加强船舶、海洋工程装备、核心系统和配套设备等领域的共性技术研究，开发共性设计软件，开展海洋工程装备建造标准体系研究，掌握高端船舶开发关键技术，突破关键系统的总体设计和集成技术，提升综合集成能力，缩小与世界先进水平的差距。

重点研究导向：

1.船型设计理论和方法研究，船体结构安全检测及结构优化研究；

2.船舶水动力性能预报优化技术，与船型优化相关联的流体力学预报技术研发，CFD 技术在船舶流体力学研究中的应用；

3.深海设施运动性能及载荷分析预报技术研究，深海设施动力响应及强度分析技术研究；

4.浮式结构物恶劣海况下安全评估技术研究，海洋工程

装备风险控制技术研究等。

（五）推进“两化”深度融合

上海是首批国家级“两化”融合试验区，船舶与海洋工程装备产业是上海“两化”融合三年行动计划中十大重点推进产业之一，要依托现代造船模式理论研究及创新实践的有利条件，依托数字化造船国家工程实验室，全面推进造船总装化、管理精细化和信息集成化。全面开展造船生产体系流程再造，构建综合、扁平化的船舶与海洋工程经营生产技术管理业务体系，改进计划体系，建立准时化、拉动式生产计划模式，推进编码体系、数据库标准化建设。

重点研究导向:

1.船舶及海洋工程装备设计、生产、管理一体化编码标准研究，基于三维建模的厂所一体化设计研究；

2.造船系统设计、管理共性软件研发及推广；

3.造船精度控制技术、模块化制造技术、快速搭载技术研究；

4.高效率、低消耗的先进造船工装研究；

5.船体结构焊接机器人和涂装机器人技术研发等。

（六）大力发展现代船舶生产性服务业

推动船舶设计、软件开发等专业化服务企业发展壮大，加快发展船舶物流、电子商务、市场和法律咨询、工程管理等现代服务业，拓展产业链条，完善产业体系。鼓励开展船舶融资租赁业务，培育船舶与海洋工程装备产业基金，促进产融结合。提高船舶配套企业市场服务水平，加快骨干配套企业全球营销服务网络建设。

重点发展导向:

1. 适应产业发展和市场需求的船舶设计、软件开发等专业服务业；

2. 船舶物流、电子商务、市场和法律咨询、工程管理等现代服务业；

3. 船舶融资租赁服务业、船舶与海洋工程装备产业基金等产业金融服务业；

4. 船舶配套产品国际市场营销服务网络建设等。

四、“十二五”发展空间布局

在“十一五”中船长兴造船基地一期工程全面竣工的基础上，长兴二期工程将是“十二五”上海船舶产业优化产业布局最重要的任务，上海将全面建成以长兴、外高桥、临港、崇明等四地域为主的长江口船舶与海洋工程装备总装产业基地、配套产业基地、现代化修船改装产业基地等（见附图）。建设长兴岛国家级产业示范基地和临港船舶配套产业基地，加强国际国内产业推介和招商引资力度，加快推进中远船务集团和中外运长航集团等有明确意向的企业在长兴岛建设海洋工程基地的项目进展，促使优质海洋工程项目早日落地，从而优化产业布局和产业结构。

图 1　上海船舶与海洋工程装备产业区域布局示意

（一）产业布局

1.以外高桥造船、江南造船、沪东中华造船、上海船厂为代表的现代化总装造船基地；

2.以外高桥造船、振华重工集团、上海船厂、中远船务长兴海工基地、中外运长航长兴海工基地为代表的海洋工程装备制造基地；

3.以临港、长兴、闵行地区为代表的现代化船舶与海洋工程装备配套基地；

4.以华润大东、中海工业、上海中远船务、中外运长航闽南船厂为代表的现代化修船和改装基地；

5.以奉贤地区为代表的游艇、救生艇、公务艇、商务艇生产基地。

（二）重点投资项目

1.中船长兴造船基地二期工程（第一阶段）将建设2座大型造船坞，配置1800t大型龙门起重机，建设舾装码头、材料码头以及其他配套设施。长兴二期工程建设对于提高上海大型液化天然气船、万箱级集装箱船等高技术船舶开发建造能力，实现产业转型升级具有重要意义。

2.中远船务将结合企业搬迁契机实现调整升级，利用上海区位、人才、综合配套等优势，将中远船务海工研发中心、经营总部集中落户长兴岛，规划在长兴岛东南侧建设海洋工程装备制造基地。

3.闽南长兴海工配套基地项目拟在长兴岛建设浮船坞、海工生产平台和船舶修理改装泊位，建成后将引入国际先进技术和管理模式，从传统修船业务向海洋工程配套业务拓展。

4.金山区将重点引进海洋石油装备、重型石化设备、石油钻采设备生产基地以及技术研发中心、国家级检测检验中心等，增强上海在海洋工程装备配套领域的实力。

5.外高桥造船海洋工程基地将在临港实施第二阶段建设，规划建设海洋工程总装平台、600吨龙门吊等重型设施，提升海洋工程装备制造能力，达到建设纲领。

6.船用柴油机二轮配套产业基地将在临港新建，建成后将以船用柴油机总装产业带动二轮配套产业同步发展，提升关键零部件的本土化生产能力，完善上海船用柴油机生产链。

五、“十二五”发展政策措施

（一）加大科技创新力度

贯彻落实国家关于培育发展战略性新兴产业的战略部署，制定高端船舶与海洋工程装备产业作为上海市战略性新兴产业专项发展的实施意见。巩固上海船舶产业在研发设计方面的优势地位，对未来型绿色船舶、重大首制海洋工程装备、核心配套系统等有利于产业高端化发展的科技创新项目，进一步强化政策性资金支持。加大对产业示范基地、船舶出口基地、国家重点实验室以及企业技术中心建设的支持，加快形成创新能力。

（二）推进现代船舶生产性服务业发展

大力推进船舶与海洋工程装备领域生产性服务业发展，着力打造与上海国际航运中心地位相适应的现代船舶与海洋工程装备服务业。鼓励发展船舶设计、软件开发、船舶物流、产业中介和法律咨询等现代服务业；鼓励研发单位与风险投资机构合作，创建风险投资基金；鼓励产业资本与金融

资本融合，加大信贷融资支持力度；支持符合条件的船舶与海洋工程企业上市和发行债券，拓宽融资渠道。

（三）促进交流与合作

推动在沪船舶与海洋工程装备生产企业、科研院所和有关高校合作，打造推进产业发展的区域平台。鼓励船舶总体设计单位、总装企业、配套单位以及主要用户建立多元战略联盟；促进上海海洋工程装备骨干企业与国际知名石油公司和工程总承包商合作，从分包起步逐步提高市场知名度和工程总承包能力；鼓励与国外知名专业设计公司及中间商合作，提高前期设计能力和市场响应能力；鼓励引进吸收国际先进技术和理念，支持国际国内优势企业在沪投资和发展。

（四）加强人才队伍建设

以国家科技重大专项、战略性新兴产业重大项目等为载体，加大领军人物培育力度，积极推进创新团队建设，形成高层次科技人才和管理人才的梯队集聚；以国家新型工业化示范基地为载体，建设船舶行业技能培训中心，促进创新型、复合型技能人才的培养。鼓励多层次、多渠道、多方式的国际科技交流与合作，鼓励引进海外工程总承包管理人才、研发团队领军人才和高水平复合型人才。

（五）保障行业健康发展

贯彻落实国家各项产业政策，促进上海船舶与海洋工程装备行业规范发展，提高行业发展整体水平。开展《船舶生产企业生产条件基本要求及评价方法》、《船舶设计单位设计条件基本要求及评价方法》和《船舶修理企业生产条件基本要求及评价方法》等行业标准的宣贯和实施，引导和保障上海船舶与海洋工程装备行业健康发展。

EXHIBIT 34

THE 13TH FIVE-YEAR PLAN

FOR ECONOMIC AND SOCIAL DEVELOPMENT OF THE PEOPLE'S REPUBLIC OF CHINA

(2016–2020)

Central Compilation & Translation Press

THE 13TH FIVE-YEAR PLAN FOR ECONOMIC AND SOCIAL DEVELOPMENT OF THE PEOPLE'S REPUBLIC OF CHINA

2016–2020

Translated by

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Formulated on the basis of the Recommendations of the Central Committee of the Communist Party of China (CPC) for the 13th Five-Year Plan for Economic and Social Development of the People's Republic of China (2016–2020), the 13th Five-Year Plan sets forth China's strategic intentions and defines its major objectives, tasks, and measures for economic and social development. This plan is to serve as a guide to action for market entities, an important basis for government in performing its duties, and a common vision to be shared among the people of China.

PART I

GUIDING THINKING, MAJOR OBJECTIVES, AND DEVELOPMENT PHILOSOPHY

The period covered by the 13th Five-Year Plan will be decisive for finishing building a moderately prosperous society in all respects. We must implement the strategic plans and policies of the CPC Central Committee, achieve an accurate understanding of profound changes in domestic and international environments and circumstances faced by China in its development efforts, proactively adapt to, understand, and guide the new normal in economic development, and comprehensively advance innovative, coordinated, green, open, and shared development so as to ensure that a moderately prosperous society is established in all respects.

Chapter 1 The Development Environment

The period covered by the 12th Five-Year Plan (2011–2015) was an extraordinary time for China's development. In the face of a complex international environment and challenging domestic tasks related to carrying out reform, pursuing development, and ensuring stability, the CPC Central Committee and the State Council united with and led the people of China in exerting themselves and pushing forward with a pioneering

spirit. As a result, significant economic and social achievements were made, and the main tasks and targets set out in the 12th Five-Year Plan were fulfilled.

Responding proactively to the aftermath of the global financial crisis and other major risks and challenges, and working to adapt to the new normal in economic development, we continued to improve and develop new methods of macroeconomic regulation, and helped bring about an improved economic structure, a shift in the drivers of growth, and faster transformation of the growth model.

China's economy sustained rapid growth, enabling the country to comfortably maintain its position as the world's second-largest economy and increase its per capita gross domestic product (GDP) to 49,351 yuan (US$7,924) in 2015.

Major progress was achieved in economic structural adjustment. Agriculture grew steadily. The value-added of the tertiary industry accounted for a larger share of GDP than that of the secondary industry. Consumer spending continued to rise. Disparity between rural and urban areas and between regions has been narrowing. By 2015 permanent urban residents accounted for 56.1% of the total population. Infrastructure improved markedly in all respects. The development of high-tech industries and strategic emerging industries picked up speed. A number of world-class advances were achieved in science and technology.

The public service system has been basically established and coverage has continued to expand. Education levels rose remarkably. Public health saw a noticeable improvement. Job creation was sustained. The number of people affected by poverty was reduced by a significant margin. Standards of living and quality of life continued to improve.

Further progress has been made in ecological improvement. Functional zoning has been gradually refined, major pollutant emissions have been continuously reduced, and energy conservation and environmental protection have been significantly strengthened.

Great energy has been channeled into deepening every area of reform. The economic system has continued to improve, people's democracy has continued to expand, and China has embarked on a new leg of the journey toward more law-based governance.

Significant progress has been achieved in China's all-around diplomacy, and the country's international standing has seen a notable improvement. As China opens wider

to the rest of the world, it has become the world's largest trader in goods and a major outward investor. The RMB has been included in the IMF's Special Drawing Rights basket.

The Chinese Dream of the rejuvenation of the nation and the core socialist values have gained a firm place in people's hearts. China's soft power has continued to become stronger. Notable achievements have been made in military reform with Chinese characteristics, and new steps have been taken to strengthen and revitalize the armed forces. A new phase has begun in the all-around strengthening of Party self-governance, and significant headway has been made in improving Party conduct and building a clean government. New heights have been reached in China's economic strength, scientific and technological capabilities, defense capabilities, and international influence.

Of particular importance, since the 18th National Party Congress, the Central Committee headed by General Secretary Xi Jinping has remained firmly committed to upholding and developing socialism with Chinese characteristics, has been bold in putting ideas into practice and adept at making innovations, and has developed a deeper understanding of the laws related to Communist Party governance and the development of socialism and human society. In so doing, it has developed new concepts and strategies for the governance of China, which will serve as theoretical guidance and a guide to action as we deepen reform and opening up and accelerate socialist modernization under the new historical conditions.

Box 1
Fulfillment of the Main Target of the 12th Five-Year Plan

Indicator	Target		Fulfillment	
	2015	5-year average [5-year cumulative total]	2015	5-year average [5-year cumulative total]
● **Economic development**				
1. GDP (trillions of yuan)	n/a	7%	67.7	7.8%
2. Value-added of the service sector (% of GDP)	47	n/a	50.5	n/a
3. Permanent urban residents (%)	51.5	n/a	56.1	n/a
● **Science, technology, and education**				
4. Nine-year compulsory education	93	n/a	93	n/a

completion rate (%)				
5. Senior secondary education gross enrollment rate (%)	87	n/a	87	n/a
6. Research and development expenditure (% of GDP)	2.2	n/a	2.1	n/a
7. Patents per 10,000 people	3.3	n/a	6.3	n/a
● **Resources and the environment**				
8. Arable land (millions of hectares)	121.2	n/a	124.3	n/a
9. Water use reduction per unit of industrial value-added (%)	n/a	[30]	n/a	[35]
10. Agricultural irrigation efficiency	0.53	n/a	0.532	n/a
11. Non-fossil energy (% of primary energy consumption)	11.4	n/a	12	n/a
12. Energy consumption reduction per unit of GDP (%)	n/a	[16]	n/a	[18.2]
13. CO_2 emissions reduction per unit of GDP (%)	n/a	[17]	n/a	[20]
14. Aggregate major pollutant emissions reduction (%) Chemical oxygen demand Sulfur dioxide Ammonia nitrogen Nitrogen oxide	n/a	 [8] [8] [10] [10]	n/a	 [12.9] [18.0] [13.0] [18.6]
15. Forest growth Forest coverage (%) Forest growing stock	 21.66 14.3	n/a	 21.66 15.1	n/a

(billions of m^3)				
● **Living standards**				
16. Urban disposable income per capita (yuan)	n/a	>7%	n/a	7.7%
17. Rural net income per capita (yuan)	n/a	>7%	n/a	9.6%
18. Registered urban unemployment rate (%)	<5	n/a	4.05	n/a
19. New urban employment (millions of people)	n/a	[45]	n/a	[64.31]
20. Urban participants in the basic pension plan (millions of people)	357	n/a	377	n/a
21. Basic state health insurance coverage (%)	n/a	[3]	n/a	[>3]
22. Government-subsidized urban housing (millions of units)	n/a	[36]	n/a	[40.13]
23. Total population (billions of people)	<1.390	n/a	1.375	n/a
24. Average life expectancy (years)	74.5	n/a	76.34	n/a
Notes: 1. GDP and personal income growth are computed using comparable prices, while absolute figures are computed using current prices. 2. The 2015 figure for arable land has been updated according to data from the second national land survey. 3. Figures in square brackets are five-year cumulative totals.				

The period covered by the 13th Five-Year Plan will present even more complex domestic and international environments for China's development.

On the international front, peace and development remain the main themes of our times. Global multipolarization, economic globalization, cultural diversification, and the development of information societies are all deepening trends. The shocks of the

global financial crisis and its profound impact will continue to be felt for a considerable time to come, and the world economy is experiencing anemic growth and zigzag recovery in the midst of extensive adjustments. The growth prospects and macro policy orientations of the major economies are mixed, financial markets around the world are unstable, commodity prices are fluctuating significantly, global trade has been sluggish, trade protectionism is gaining ground, and emerging economies are confronted by much greater risks and difficulties. New revolutions are almost upon us in technology and industry, and major adjustments are taking place in the international energy landscape. The global governance system is undergoing far-reaching changes. Developing countries are continuing to gain collective strength, gradually evening out the global balance of power. International investment and trade rules are undergoing restructuring at a faster pace, and the multilateral trading system is facing the challenge of regional high-standard free trade regimes. Geopolitical competition is growing fiercer in some regions, traditional and non-traditional security threats have become intertwined, and international relations are more complicated than ever. With factors causing instability and uncertainty in China's external environment growing markedly, greater risks and challenges will be faced in our country's development.

On the domestic front, the fundamentals for long-term economic growth have not changed, and economic development prospects are as broad as ever. However, the need has become more pressing to improve the quality and efficiency of growth and transform and upgrade the economy. As the economy is experiencing a new normal of growth, there is a clearer trend toward a more advanced form of growth, improved divisions of labor, and a more rational structure. With the structure of consumption being more rapidly upgraded, broad market space, a strong material foundation, a complete industrial structure, an ample supply of funds, and abundant human capital, along with the cumulative effects of innovation that are beginning to show, our overall strengths are still notable. A new style of industrialization, information technology adoption, urbanization, and agricultural modernization are experiencing deeper development, new drivers of growth are in the making, and new areas, poles, and belts of growth are becoming stronger. All-around efforts to deepen reform and make progress in the law-based governance of the country are unleashing new dynamism and bringing new vitality.

At the same time, we must be soberly aware that China's development model is inefficient; uneven, uncoordinated, and unsustainable development continues to be a prominent problem; the change of pace in economic growth, structural adjustments, and the transformation of the drivers of growth present interwoven problems; and we face a

host of challenges, such as ensuring steady growth, carrying out structural adjustments, guarding against risks, and bringing benefit to the people. Weak effective demand exists alongside insufficient effective supply; structural problems are becoming more evident; traditional comparative strengths are growing less effective; the capacity for innovation is not strong enough; downward pressure on the economy is growing; imbalances between government revenue and expenditures have become more marked, and latent risks are mounting in the financial sector. The foundations of agriculture are still weak, overcapacity is a serious problem in certain sectors, commodity housing inventory is high, corporate profits are sliding, and debt continues to grow. Development is uneven between rural and urban areas and between regions, spatial development is inefficient, resource constraints grow increasingly tight, and the continuing trend toward further ecological and environmental degradation is yet to be fundamentally reversed. The provision of basic public services remains inadequate, income gaps are wide, population aging is accelerating, and the task of eradicating poverty is formidable. Major workplace accidents occur frequently, factors that affect social stability are growing, there is room for improvement in the overall caliber of the population and the level of civility in society, the level of rule of law has yet to be raised, and it is becoming tougher to ensure social harmony and stability.

All things considered, it becomes evident that China remains in an important period of strategic opportunity for achieving significant development, while it also faces grave challenges posed by multiple problems and increasing risks and dangers. In response, we will develop a proper understanding of the deep changes in the implications of and conditions presented by this period. We will become more mindful of the difficulties ahead, develop a stronger sense of responsibility, and prepare ourselves for worst-case scenarios. We will respect both objective laws and China's national context, and work proactively to adapt to, understand, and guide the new normal. We will follow the principles of socialist political economy with Chinese characteristics, release and develop productive forces, continue in the direction of reform to develop the socialist market economy, mobilize the initiative of all sides, develop a firmer sense of confidence, face difficulties head-on, and continue to focus our strength on running our own affairs well. We will strive to make breakthroughs in making structural improvements, bolstering the drivers of growth, tackling problems, and strengthening areas of weakness; transform the growth model; improve the quality and efficiency of development; take care to avoid falling into the middle income trap; and constantly open up new horizons for development.

Chapter 2 The Guiding Thinking

We will hold high the banner of socialism with Chinese characteristics; fully implement the guiding principles from the CPC's 18th National Congress, and from the third, fourth, and fifth plenary sessions of the 18th CPC Central Committee; follow the guidance of Marxism-Leninism, Mao Zedong Thought, Deng Xiaoping Theory, the Theory of Three Represents, and the Scientific Outlook on Development; and put into practice the guiding principles from General Secretary Xi Jinping's major addresses. We will remain dedicated to the strategy of finishing building a moderately prosperous society in all respects, deepening all areas of reform, fully advancing the law-based governance of China, and strengthening every element of Party self-governance; continue to give top priority to development; and embrace and put into effect the philosophy of innovative, coordinated, green, open, and shared development. We will make it our central task to improve the quality and efficiency of development and make supply-side structural reform the main thread of our work. We will expand effective supply and meet effective demand, and move faster to create systems, mechanisms, and growth models that can guide the new normal in economic development. We will maintain strategic focus, seek progress while working to keep performance stable, and coordinate efforts to achieve economic, political, cultural, social, and ecological progress and make headway in Party building so as to ensure the completion of the building of a moderately prosperous society in all respects within the set time frame, and to put in place firmer foundations for achieving the second of the Two Centenary Goals[1] and the Chinese Dream of rejuvenating the nation.

To that end, we must honor the following principles:

- *Uphold the principal position of the people*

The people are the basic force behind development, and realizing, safeguarding, and developing the fundamental interests of the largest possible majority of people is the fundamental purpose of development. We must remain dedicated to a people-centered notion of development, make improving wellbeing and promoting people's well-rounded development the starting point and ultimate goal of development, develop people's democracy, safeguard social equity and justice, protect people's rights

[1] To finish building a moderately prosperous society in all respects by the time the CPC celebrates its centenary in 2021 and to turn the People's Republic of China into a modern socialist country that is prosperous, strong, democratic, culturally advanced, and harmonious by the time it celebrates its centenary in 2049.

to equal participation and equal development, and give full rein to their enthusiasm, initiative, and creativity.

- *Remain committed to an appropriate development approach*

Development is of paramount importance but must be carried out in an appropriate way. China is still in the primary stage of socialism and will remain so for a long time to come; the basic national context and main social problems also remain unchanged. This must be kept in mind when planning for development. We need to continue to treat economic development as central, remain cognizant of the realities of China's situation, grasp any new characteristics of development, step up structural reform, and speed up transformation of the growth model to achieve higher quality, more efficient, more equitable, and more sustainable development.

- *Continue to deepen reform*

Reform is a powerful force for development. In line with the chief objectives of improving and developing socialism with Chinese characteristics and modernizing the country's governance system and capacity for governance, we need to improve the systems by which the market plays the decisive role in resource allocation and the government plays a more effective role. Placing particular emphasis on economic structural reform, we need to work more quickly to improve institutions and mechanisms in every area and remove all systemic barriers to effective development so as to provide sustained impetus for development.

- *Maintain commitment to the law-based governance of China*

The rule of law is a reliable guarantee for development. We need to maintain our resolve in continuing on the path toward socialist rule of law with Chinese characteristics; work faster to establish a Chinese-style socialist rule of law system; build a socialist rule of law country; make progress in ensuring that a well-conceived approach is applied to developing legislation, the law is strictly enforced, justice is administered impartially, and everyone abides by the law; and move more quickly to build a rule of law economy and a rule of law society, bringing economic and social development in line with the rule of law.

- *Keep in mind both the domestic and international situations*

All-around opening up is imperative to development. We need to carry out development with the door open. While focusing on domestic issues and making full use of domestic resource-related strengths and market and institutional advantages, we

should also keep in mind the connectivity between the domestic and the world economies and respond proactively to changes in the external environment so as to make better use of both domestic and international markets and resources, and ensure benefit and development for all.

- *Uphold leadership by the CPC*

The Party's leadership is the greatest strength of socialism with Chinese characteristics, and provides the fundamental political guarantee for sustained, healthy economic and social development. We need to implement the requirements related to comprehensively strengthening Party self-governance, continuously strengthen the Party's creativity, cohesiveness, and dynamism, and continuously improve its capacity for and performance in governance so as to ensure the best course of navigation for our country's development as it presses ahead through the waves.

Chapter 3 Major Objectives

In line with the new goals for finishing building a moderately prosperous society in all respects, the major objectives for economic and social development for the next five years are as follows:

- *Maintain a medium-high rate of growth*

While working to achieve more balanced, inclusive, and sustainable development, we need to ensure that China's 2010 GDP and per capita personal income double by 2020, that major economic indicators are balanced, and that the quality and efficiency of development is significantly improved. Production will move toward the medium-high end, significant progress will be made in modernizing agriculture, information technology will be further integrated into industrialization, advanced manufacturing and strategic emerging industries will develop more rapidly, new industries and new forms of business will keep growing, and the service sector will come to account for a greater proportion of GDP.

- *Achieve significant results in innovation-driven development*

We will pursue innovation-driven development, ensure that business startups and innovation flourish, and see that total factor productivity is markedly improved. Science and technology will become more deeply embedded in the economy, the

ingredients needed for innovation will be allocated to greater effect, major breakthroughs will be made in core technologies in key sectors, and China's capacity for innovation will see an all-around improvement. Fulfillment of these goals will help China become a talent-rich country of innovation.

- *Further coordinate development*

The contribution of consumption to economic growth will continue to grow, and investment efficiency and corporate performance will be significantly improved. The quality of urbanization will improve notably, and the proportion of those living in urban areas granted urban residency will increase more quickly. A new pattern of coordinated development among regions will begin to take shape, and the layout of development spaces will be improved. China will continue to be opened up more deeply and broadly to the outside world, and it will also continue to improve its ability to allocate resources globally. We will constantly refine our mix of imports and exports, and will maintain a basic balance in international payments.

- *Improve standards of living and quality of life*

Public service systems related to employment, education, culture, sports, social security, healthcare, and housing will be improved, with access to basic public services becoming increasingly equitable. Important progress will be made in modernizing education, and the average number of years of education completed by the working-age population will be significantly increased. The economy will operate near full employment, the income gap will be narrowed, and the proportion of middle-income earners will be increased. All rural residents falling below China's current poverty line will be able to lift themselves out of poverty, all poor counties will be able to rid themselves of poverty, and poverty alleviation will be achieved in all regions.

- *Improve the overall caliber of the population and the level of civility in society*

The Chinese Dream and the core socialist values will gain a firmer place in people's hearts. We will broadly advocate patriotism, collectivism, and socialism. People should work to improve themselves, cultivate a sense of virtue, act with honesty, and help each other out. We will work toward a significant improvement in the intellectual, moral, scientific, cultural, and health standards of our citizens. Awareness of the rule of law will continue to be strengthened throughout society. We will build up the basic framework of the public cultural service system, and see that the cultural sector becomes a pillar of the economy. We will continue to expand the influence of Chinese culture.

- *Achieve an overall improvement in the quality of the environment and ecosystems*

Our modes of production and ways of life will become more eco- friendly and low-carbon. We will extract and use energy and resources with much greater efficiency. Aggregate energy and water consumption, the total amount of land used for construction, and aggregate carbon emissions will be effectively controlled, and aggregate emissions of major pollutants will be significantly reduced. We will basically complete functional zoning and the building of protective barriers for eco-security.

- *Ensure all institutions become more mature and better established*

We will make major progress in modernizing China's governance system and capacity for governance, with frameworks for basic institutions being established in all areas. We will improve people's democracy, basically complete the establishment of a rule of law government, and achieve a marked improvement in the credibility of the judiciary. Human rights will be protected and property rights will be safeguarded. The new systems needed for an open economy will have basically taken shape. We will improve the Chinese-style modern military system and further institutionalize Party building.

Box 2
Main Economic and Social Development Indicators for the 13th Five-Year Plan Period

Indicator		**2015**	**2020**	**5-year average [5-year cumulative total]**	**Type of Indicator**
• **Economic development**					
1. GDP (trillions of yuan)		67.7	>92.7	>6.5%	Anticipatory
2. Overall labor productivity (10,000 yuan per employed person)		8.7	>12	>6.6%	
3. Urbanization	Permanent urban residents (%)	56.1	60	[3.9]	
	Registered urban residents (%)	39.9	45	[5.1]	
4. Value-added of the service sector (% of GDP)		50.5	56	[5.5]	
• **Innovation-driven development**					
5. Research and		2.1	2.5	[0.4]	Anticipatory

development expenditure (% of GDP)					
6. Patents per 10,000 people		6.3	12	[5.7]	
7. Contribution of scientific and technological advances to economic growth (%)		55.3	60	[4.7]	
8. Internet access	Households with fixed broadband (%)	40	70	[30]	
	Mobile broadband users (%)	57	85	[28]	
• **Wellbeing of the people**					
9. Growth in disposable income per capita (%)		n/a	n/a	>6.5	Anticipatory
10. Average length of education received by the working-age population (years)		10.23	10.8	[0.57]	Obligatory
11. New urban employment (millions of people)		n/a	n/a	[>50]	Anticipatory
12. Rural population lifted out of poverty (millions of people)		n/a	n/a	[55.75]	Obligatory
13. Basic old-age insurance coverage (%)		82	90	[8]	Anticipatory
14. Rebuilt housing in rundown urban areas (millions of units)		n/a	n/a	[20]	Obligatory
15. Average life expectancy (years)		n/a	n/a	[1]	Anticipatory
• **Resources and the environment**					
16. Arable land (millions of hectares)		124.3	124.3	[0]	Obligatory
17. Increase in land newly designated for construction (millions of hectares)		n/a	n/a	[<2.17]	
18. Water use reduction per 10,000 yuan of GDP (%)		n/a	n/a	[23]	
19. Energy consumption		n/a	n/a	[15]	

reduction per unit of GDP (%)					
20. Non-fossil energy (% of primary energy consumption)		12	15	[3]	
21. CO_2 emissions reduction per unit of GDP (%)		n/a	n/a	[18]	
22. Forest growth	Forest coverage (%)	21.66	23.04	[1.38]	
	Forest growing stock (billions of m^3)	15.1	16.5	[1.4]	
23. Air quality	Days of good or excellent air quality in cities at and above the prefectural level (% of the year)	76.7	>80	n/a	
	Reduction in $PM_{2.5}$ intensity in cities at and above the prefectural level missing the target (%)	n/a	n/a	[18]	
24. Surface water quality	Grade III or better (%)	66	>70	n/a	
	Worse than Grade V (%)	9.7	<5	n/a	
25. Aggregate major pollutant emissions reduction (%)	Chemical oxygen demand Ammonia nitrogen Sulfur dioxide Nitrogen oxide	n/a	n/a	[10] [10] [15] [15]	

Notes:
1. GDP and overall labor productivity are computed using comparable prices, while absolute figures are computed using 2015 constant prices.
2. Figures in square brackets are five-year cumulative totals.
3. Missing the target for $PM_{2.5}$ means the annual average figure exceeds 35μg per cubic meter.

Chapter 4 The Development Philosophy

In order to achieve the objectives for the 13th Five-Year Plan period, resolve difficulties encountered during development, and cultivate strengths for further development, we need to firmly establish and put into practice a new philosophy of innovative, coordinated, green, open, and shared development.

- *Innovation: the primary driving force for development*

Innovation must be placed at the heart of China's development and advanced in every field, from theory to institutions, science, technology, and culture. Innovation should permeate the work of the Party and the country and become an inherent part of society.

- *Coordination: an integral quality of sustained and healthy development*

While keeping firmly in mind the overall strategy for developing socialism with Chinese characteristics, we need to properly handle relationships between major areas of development, focusing on advancing coordinated development between rural and urban areas, between different regions, and between economic and social development, and advancing the synchronized development of a new style of industrialization, information technology adoption, urbanization, and agricultural modernization. While increasing China's hard power, we need also to improve its soft power, striving constantly to make development more comprehensive.

- *Green: both a necessary condition for ensuring lasting development and an important way in which people can work to pursue a better life*

We need to uphold the fundamental state policy of conserving resources and protecting the environment as we pursue sustainable development, and keep to a civilized development path that ensures increased levels of production, better living standards, and sound ecosystems. We will move faster to build a resource-conserving,

environmentally friendly society and bring about a new model of modernization whereby humankind develops in harmony with nature. We will move forward with building a Beautiful China and make new contributions toward ensuring global eco-security.

- *Opening up: vital for China's prosperity and development*

In adapting to China's ever-deepening integration into the world economy, we will pursue a mutually beneficial strategy of opening up, coordinate the role of domestic and foreign demand in stimulating growth, balance imports and exports, stress the importance of both bringing in and going global, and work simultaneously to attract foreign investment, technology, and talent. We will achieve a higher level of openness within our economy, participate actively in global economic governance and the global supply of public goods, seek a greater say in the institutions for global economic governance, and look to build more international communities of interests.

- *Sharing: the essence of Chinese-style socialism*

We must ensure that development is for the people, that it is reliant on the people, and that its fruits are shared by the people. We will improve our institutions to enable the people to have a greater sense of benefit as they contribute to development and share in its fruits, thus strengthening the impetus for development, increasing unity among the people, and helping them move steadily toward common prosperity.

The pursuit of innovative, coordinated, green, open, and shared development represents a profound change in China's development effort. This new development philosophy constitutes a joint body of parts internally linked together and an embodiment of our country's thinking, direction, and the focus of its efforts related to development during the 13th Five-Year Plan period and beyond; it must permeate all areas of economic and social development over the coming five years.

Chapter 5 The Main Thread of Development

To put the new development philosophy into practice and adapt to, understand, and guide the new normal in economic development, at the same time as working to achieve an appropriate expansion of aggregate demand, we must also strive to carry out supply-side structural reform so that our supply is able to satisfy the people's ever-

growing, constantly upgrading, and increasingly individualized material, cultural, ecological, and environmental needs. We must use reform to push forward with structural adjustment; intensify market-oriented reform in key sectors; make adjustments to distorted policies and institutions; improve the market environment and mechanisms to encourage fair competition and survival of the fittest; do everything possible to boost vitality at the micro level; improve factor allocation; move forward in industrial structural upgrading; expand effective supply and medium- and high-end supply; make the structure of supply more adaptive and flexible; and improve total factor productivity. Aiming at improving the quality and efficiency of the supply system, we must ensure that macro-level policy maintains economic stability, industrial policy is targeted, micro-level policy injects dynamism into the economy, reform policy delivers results, and social policy sees that basic needs are met; address overcapacity, reduce inventory, deleverage, lower costs, and bolster areas of weakness; accelerate the cultivation of new drivers of growth; transform and upgrade traditional comparative strengths; fortify the foundations of the real economy; and improve the overall level of productive forces.

PART II

INNOVATION-DRIVEN DEVELOPMENT

With innovation as the basis from which to pursue development, we will give a central role to innovation in science and technology and a supporting role to the development of talent, closely integrating scientific and technological innovation with business startups and innovation by the general public in order to achieve leading-edge development that relies more on innovation as its driver and offers greater incentives for first innovators.

Chapter 6 Ensure Innovation in Science and Technology Takes a Leading Role

We will see that scientific and technological innovation leads the way in all areas of innovation. We will strengthen basic research, bolster primary innovation, innovation based on the integration of existing technologies, and innovation based on import and

assimilation, and improve China's own capacity for innovation, so as to provide an inexhaustible driving force for economic and social development.

Section 1

Breakthroughs in Strategic and Frontier Fields

Our work will be strategy-driven and frontier-oriented, will support basic research and research on key general-purpose technologies which have a bearing on overall development, and will attach greater importance to primary and disruptive innovation. We will stay focused on our objectives, give high priority to key areas, expedite the implementation of existing national science and technology programs, and launch a number of new science and technology programs. We will move faster to make breakthroughs in core technologies in fields such as next generation information and communications, new energy, new materials, aeronautics and astronautics, biomedicine, and smart manufacturing. We will strengthen the development of strategic high technologies in deep sea, deep Earth, deep space, deep blue (i.e. information technology), and other fields. We will design programs aimed at finding systematic technological solutions to addressing bottlenecks in modern agriculture, urbanization, environmental governance, health care, elderly care, and public services. We will strengthen basic and frontier scientific research on the evolution of the universe, the structure of matter, the origin of life, the brain and cognition, and so on. We will actively propose and take the lead in organizing international Big Science programs and projects and establish cooperative platforms for international innovation.

Section 2

A Better System for Organizing Innovation

We will make clear the functions and roles of different types of entities involved in innovation and establish an innovation network that integrates the efforts of government, enterprises, universities, research institutes, and end-users. We will strengthen the position of enterprises as principal entities for innovation as well as the leading role of enterprises in innovation, encourage them to conduct basic and frontier

research, implement the 100 Most Innovative Enterprises initiative, develop innovative and internationally competitive enterprises, and support the growth of small and medium high-tech enterprises. We will integrate the development of science and education, encourage institutions of higher learning, vocational colleges, and research institutes to participate fully in the development of a national innovation system, and support high-quality universities and research institutes in building comprehensive, interdisciplinary research teams. When it comes to developing major key programs, we will leverage the strengths of the new system of nationwide support under the market economy. We will put into effect national technological innovation programs, establish industry associations for technological innovation, develop new types of market-oriented research institutes, and give impetus to collaborative innovation across fields and industries.

Section 3

Infrastructure for Innovation

With our sights set on the world's cutting edge of science and technology, we will be guided by China's national objectives and strategic needs in developing top-quality national laboratories. We will work faster to develop national science and technology infrastructure for research on energy, the life sciences, Earth system science and environmental science, materials science, particle physics and nuclear physics, space and astronomy, and engineering technology, and for research in certain interdisciplinary fields of study, and make use of existing advanced facilities to develop comprehensive national science centers. Enterprises, universities, and research institutes will be entrusted with building national technological innovation centers and we will support the development of corporate technology centers. We will give impetus to the open sharing of research infrastructure and innovation resources by institutions of higher learning and research institutes.

Section 4

Regional Innovation Centers

We will guide the flow and grouping together of innovative factors and create trans-regional innovation networks. We will use major cities with strong concentrations of institutions of higher learning and research institutes, national innovation demonstration areas, and national high- tech industry development parks to develop innovative provinces, cities, and regional innovation centers that can greatly facilitate the development of their surrounding areas. Systematic steps will be taken to carry out pilot reforms for comprehensive innovation. We will support Beijing and Shanghai in developing internationally influential centers of scientific and technological innovation.

Box 3
Programs for Sci-Tech Innovation 2030

S**cience and technology programs will be carried out related to:**

1. Aircraft engines and gas turbines;
2. Deep-sea stations;
3. Quantum communications and computing;
4. Brain science and brain-inspired research;
5. National cyberspace security;
6. Deep space explorations and in-orbit spacecraft servicing and maintenance systems.

Projects will be carried out related to:

1. Seed industry innovation;
2. Clean and efficient coal use;
3. Smart grids;
4. Integrated space-terrestrial information networks;
5. Big data;
6. Smart manufacturing and robotics;
7. Key new materials research, development, and application;
8. Environmental governance in the Beijing-Tianjin-Hebei region;
9. Health care.

Chapter 7 Encourage Public Startups and Innovations

We will integrate efforts to see that more people start businesses and make innovations in all areas of development and encourage different types of entities to develop new technologies, products, forms of business, and models, creating new drivers of development.

Section 1

Public Service Platforms

We will put into effect an action plan to see that more people start businesses and make innovations, encourage the development of low-cost, convenient, and open service platforms for the public as well as micro, small, and medium enterprises, and create a number of business startup and innovation demonstration centers and cities. We will channel greater energy into integrating information resources and make patent information resources and research centers openly accessible to businesses. We will encourage large enterprises to establish technology transfer and service platforms, providing technological support to those who are starting up in business. We will improve services for fostering business startups and develop open service providers combining business startup services with venture capital investment and online with offline services. We will make better use of government venture capital guide funds.

Section 2

Crowd Innovation, Sourcing, Support, and Funding

We will make use of the internet to help business startups and innovators become better connected to market resources and more responsive to public demand. We will advance crowd innovation based on specialized spaces and online platforms as well as within enterprises, and improve innovation resource sharing. We will promote research crowdsourcing, development crowdsourcing, and creativity crowdsourcing as well as the crowdsourcing of manufacturing operations and maintenance services, knowledge, content, and consumer services to give impetus to public participation in the division of labor in online production and distribution. We will promote the development of public crowd support, shared crowd support, and mutual crowd support. We will improve supervision and oversight systems to ensure the well-regulated development of rewards crowdfunding, equity crowdfunding, and online lending.

Chapter 8 Establish Innovation Promoting Institutions and Mechanisms

We will remove institutional barriers to innovation and the commercialization of the results of innovation, improve relevant policies, and develop systems and mechanisms that help to unleash creativity, ensure efficient application of the outcomes of innovation, and fully reward innovation.

Section 1

Reform of the Science and Technology Management System

In honoring the nature of scientific research, we will bring about a shift in the role of government away from research and development management toward the provision of innovation services. We will reform the management system for research expenditures, deepen reform of the management of central government funded science and technology programs, and improve the mechanisms for formulating and executing science and technology programs and projects. We will establish a unified science and technology management platform and improve mechanisms for managing science and technology reports, carrying out innovation surveys, and releasing and sharing resources. We will improve the consultation system for national decisions on science and technology and strengthen the say of entrepreneurs in the country's decision-making systems related to innovation. We will ensure that enterprises play the leading role in market-oriented science and technology programs. Greater autonomy will be given to institutions of higher learning and research institutes, performance evaluation mechanisms that take medium- and long-term objectives into consideration will be put into effect, and more importance will be attached to the quality, originality, and contribution of research. We will empower leaders of innovation by seeing that they have more human, financial, and material resources at their disposal and more power to make decisions related to technology roadmaps. We will support exploratory work and allow for innovation over which consensus has not yet formed. We will deepen reform related to intellectual property rights and strengthen their judicial protection.

Section 2

Mechanisms for Commercializing Science and Technology Advances and Sharing Profit

We will implement a plan to improve the commercialization of science and technology advances, fully delegate the rights to dispose, use, and profit from the results of innovation, ensure that researchers enjoy a greater share of the proceeds from the commercialization of their research achievements, and support them in working part-time or full-time toward the application of their scientific and technological results. We will establish financing models that cover the entire process of scientific and technological innovation from the experimental research stage to mid-stage trials and right through to production, and promote the assetization and industrial application of scientific and technological advances. We will adopt profit distribution policies oriented toward strengthening the value ascribed to knowledge, and we will strengthen stock-, stock option-, and dividend-based incentives for innovators.

Section 3

An Inclusive System of Policy Support for Innovation

We will work to create a competitive market environment that incentivizes innovation; straighten out institutions, regulations, and industry standards that hold back innovation; expedite legislation in areas where innovation is weak; and strengthen oversight over compliance with industrial technology policies and standards. Government science and technology investment will be increased, with the focus on supporting basic and frontier research, public benefit-related research, and research related to key general-purpose technologies. To encourage businesses to increase their investment in research and development, we will implement additional tax deductions for their expenditures on research and development, expand the coverage of policies for the accelerated depreciation of fixed assets, and increase initial government purchasing and commissioning of innovative products. We will strengthen financial support for innovation and channel great energy into developing venture capital. We will give full play to the role of entrepreneurs, allow for the challenge that innovation poses toward entrenched interests, and protect entrepreneurs' property rights and proceeds from innovation in accordance with the law.

Chapter 9 Prioritize Human Resource Development

We will treat talented people as the number one support for development, move faster to make innovations in the systems and policies for human resource development, create an internationally competitive personnel system, improve the caliber and structure of human resources, and work faster to make China one of the most talent competitive countries in the world.

Section 1

Toward a Vast Pool of Talent

We will carry out strategic adjustments to the structure of skilled personnel, orienting our efforts particularly toward cultivating highly educated, professionally competent, cutting-edge, and urgently needed talent, and launch major talent development initiatives to identify, foster, and bring together science strategists, leading talent in the field of science and technology, talent working in the social sciences, outstanding entrepreneurs, and highly skilled personnel. We will train Party and government workers who have political integrity, professional competence, good managerial skills, and the ability to adopt an international perspective. We need to be adept at discovering, supporting, and giving full rein to the potential of outstanding young talent. We will promote reform of the models for cultivating innovative students at institutions of higher learning and guide efforts to closely link the talent cultivation chain with industry chains and innovation chains.

Section 2

Optimized Allocation of Talent

We will establish sound mechanisms for the free movement of talent, improve horizontal and vertical social mobility, and encourage the orderly, free movement of talent between different kinds of organizations and between different regions. We will improve policies on wages, medical care, professional titles, old-age pensions, and other incentives to encourage the flow of talent toward community-level organizations, the

central and western regions, and border and remote areas facing hardships. We will advance talent exchanges and pairing talent support between the eastern coastal region on the one hand and the central and western regions and the northeast and other old industrial regions on the other, and continue the talent training initiative whereby cities in the east provide pairing support to cities in the west.

Section 3

A Favorable Environment for the Development of Talent

We will improve assessment, incentive, and service systems for skilled personnel, and foster a society in which all members are able to tap into their potential and talented young people are able to excel. We will use government investment to encourage efforts to develop and bring in new human resources. We will improve personnel assessment standards, making them performance and contribution oriented. We will work to ensure that outstanding individuals can participate in the division of profit on the basis of their knowledge, skills, management expertise, and other elements essential for innovation to take place and be rewarded according to their market value. We will strengthen both material and intellectual incentives for talented personnel and encourage in them a spirit of dedication. We will help to foster a society in which professionalism commands respect and foster a spirit of craftsmanship for the new era. We will adopt more proactive, more open, and more effective policies to bring in overseas talent, improve the permanent residence system for foreign nationals, and relax the criteria for highly skilled foreign nationals to gain permanent residency. We will move faster to provide more efficient and convenient entry, exit, and residence services for skilled foreign nationals coming to work in China. We will work to increase the number of international students in China, optimize the international student mix, and improve the mechanisms for supporting their training. We will cultivate outstanding talent and recommend them to international organizations, improve relevant supporting policies, and ensure that barriers are removed for them to return and take up positions in China.

Box 4 **Talent Initiatives**
1. Innovator training initiatives § Set up scientist studios for fields where China has competitive strengths, focusing particularly on supporting and training young and middle-aged leading scientific and technological innovators;

§ Build teams of innovators in key fields;
§ Make focused efforts to support innovators and entrepreneurs working in science and technology and establish centers for others to learn from them to foster innovative talent.

2. Young talent development initiatives

§ Train the very best young talent in key disciplines and support their research;
§ Establish national young talent training centers for outstanding college students at quality research universities and research institutes for basic disciplines where the strengths of the respective university or institute lie;
§ Select the best talent from new senior secondary school and college graduates every year to participate in advanced training at first-class universities outside China and keep track of their progress.

3. Quality improvement programs for business executives

§ Train entrepreneurs who have a perspective on global needs, think strategically, and are innovative;
§ Train 10,000 business executives in strategic planning, capital operations, quality control, human resources management, finance, accounting, and law.

4. The Talent 1,000 Initiative and the Talent 10,000 Initiative

§ Attract science strategists and leading talent working in science and technology from overseas who have the capacity to engage in primary innovation, make breakthroughs in key technologies, develop high-tech industries, and drive the development of emerging disciplines;
§ Bring in approximately 10,000 high-caliber talented individuals from overseas to
make innovations or start businesses;
§ Select from within China and offer support to approximately 10,000 urgently needed, highly talented individuals.

5. Knowledge refresher programs for professional and technical personnel

§ Train one million high-caliber, urgently needed, and key professional and technical personnel each year;
§ Establish national continuing education centers, drawing on existing education institutions at universities, research institutes, and large enterprises.

6. National initiatives for the training of highly skilled personnel

§ Build master studios and 1,200 training centers for highly skilled personnel around the country to train ten million highly skilled workers.

Chapter 10 Open Up New Space for Drivers of Development

To strengthen new drivers of growth, we will follow the lead of market demand, make innovations in supply, improve the quality and efficiency of supply, stimulate and unleash effective demand, and create a highly efficient cycle of positive interplay between consumption and investment and of coordinated progress in demand and supply upgrading.

Section 1

The Upgrade in the Structure of Consumption

To adapt to the more rapid upgrade in the structure of consumption, we will work to improve the environment in which the potential of consumption is unleashed, better satisfy and create consumer demand through improved and innovative supply, and constantly strengthen the fundamental role that consumption plays in fueling economic growth. We will channel great energy into expanding consumer spending by increasing consumer buying power, improving consumer expectations, and tapping rural potential for consumption. We will focus on expanding consumption of services to stimulate an upgrade in the structure of consumption, support new forms of consumption including information consumption, green consumption, fashion consumption, and quality consumption, and work steadily to promote spending on housing, automobiles, fitness, and elderly care. We will help develop new models of consumption, such as the integration of online and offline consumption. We will see that the quality of consumer goods is improved, strengthen the protection of consumer rights and interests, and give full play to the role of consumer associations in order to create convenient, worry-free environments for consumption. We will actively work to encourage those who are used to shopping overseas to buy domestic products. We will improve the distribution of duty-free shops across major tourist destination cities and develop international consumption centers.

Section 2

Expanded Effective Investment

We will expand effective investment in response to effective demand, optimize supply structures, increase the return on investment, and see that investment plays a key role in sustaining growth and making structural adjustments. We will see that the principal role of nongovernmental investment is given more effective impetus, help to create free, fair investment and business environments to encourage the private and corporate sectors to invest and stimulate private capital and unlock its potential. We will give full play to the leveraging role of government investment by increasing investment in public goods and services, investment in human capital, and investment in upgrading the supply structure, strengthening weak areas in the building of a moderately prosperous society, coordinating development between rural and urban areas and between different regions, and bolstering sustainable development. We will launch investment programs that are of overall, strategic, and fundamental importance.

Section 3

New Export Strengths

In light of changes in international demand, we will speed up the shift in the way we develop foreign trade, optimize the trade mix, and ensure exports better stimulate growth. We will move faster to make our export-intensive industries more internationally competitive in terms of their technology, standards, brand names, quality, and services; encourage the export of high-end equipment; and increase the use of high technology and the value-added of our exports. We will expand the export of services, improve after-sale maintenance and repair services, and coordinate the development of onshore and offshore outsourcing. We will increase support to the exports of micro, small, and medium enterprises.

PART III

NEW SYSTEMS FOR DEVELOPMENT

Giving play to the leading role of economic reform, we will achieve a proper balance in the relationship between government and market, make breakthroughs in the reform of key areas, and create new systems and mechanisms conducive to guiding the new normal in economic development.

Chapter 11 Uphold and Improve China's Basic Economic System

We will ensure that public ownership is dominant and that economic entities under diverse forms of ownership develop side by side. We will remain dedicated to strengthening and developing the public sector of the economy while also encouraging, supporting, and guiding the development of the non-public sector. We will exercise oversight over economic entities under all forms of ownership in accordance with the law.

Section 1

Reform of State-Owned Enterprises

We will remain firmly committed to ensuring that state-owned enterprises (SOEs) grow stronger, better, and bigger and work to see that a number of such enterprises develop their capacity for innovation and become internationally competitive, thereby injecting greater life into the state-owned sector, helping it exercise a greater level of influence and control over the economy, increasing its resilience against risk, and enabling it to contribute more effectively to accomplishing national strategic objectives. The main aims of commercial SOEs will be to vitalize the state-owned sector, improve the efficacy of state capital, and maintain or increase the value of state-owned assets. To achieve these aims, they should engage in lawful and autonomous production and business operations under the principle of the survival of the fittest. The main aims of public-benefit SOEs will be to ensure people's wellbeing, serve society, and provide public goods and services. To achieve these aims, they should give greater play to market forces, introduce market mechanisms, and improve their assessments of cost control, product and service quality, performance, and capacity. We will move faster to ensure that SOEs introduce corporate and shareholding systems and improve their

modern corporate structures and corporate governance. We will see that SOEs implement systems for employing management professionals and improve their differentiated salary systems and incentives for innovation. We will move more quickly to relieve SOEs of their traditional obligations to perform social functions and resolve other longstanding issues. We will also channel energy into reforming and developing state farms on reclaimed land.

Section 2

The Management System for State-Owned Assets

We will tighten oversight over state-owned assets, focusing particularly on state capital, increase returns on state capital, and guard against the loss of state-owned assets. We will establish state capital investment and management companies through reorganization, allocate and utilize state capital more efficiently, and create effective platforms for its flow, reorganization, and structural redistribution. We will improve mechanisms for ensuring the rational flow of state capital, make strategic adjustments to its distribution, and encourage more state capital investment in industries and sectors vital to national security and the economy. We will establish lists of the regulatory powers and obligations of state-asset investors, make steady progress in bringing state-owned productive assets under unified oversight and supervision, and establish a budgetary management system for state capital operations across multiple levels covering all SOEs. Audits of all SOE state capital and of the performance of the economic responsibilities of all SOE leaders will be conducted.

Section 3

A Mixed-Ownership Economy

We will support cross-ownership holdings and integration between state-owned, collective, non-public, and other types of capital. We will carry out reforms to diversify the shareholders of public sector enterprises. We will take steady steps in encouraging SOEs to develop mixed ownership and will begin the piloting and demonstration of reforms to introduce mixed ownership. We will involve non-state capital in the reform

of SOEs and encourage the development of mixed-ownership enterprises in which the non-public sector holds a controlling share. We will encourage diverse forms of state capital participation in non-state-owned enterprises.

Section 4

Support for the Non-Public Sector

We will better stimulate the dynamism and creativity of the non- public sector by ensuring it enjoys equal rights and opportunities and is subject to equal regulations. We will abolish all unreasonable regulations within the non-public sector, remove all hidden barriers to its development, and ensure that it has equal access to factors of production, participates in market competition on an equal footing, receives equal legal protection, and performs its social responsibilities alongside other sectors. We will encourage private enterprises to enter more sectors in accordance with the law.

Chapter 12 Establish a Modern Property Rights System

We will improve the modern system of property rights, ensuring clear ownership, well-defined rights and obligations, strict protection, and smooth transactions. We will increase the level of rule of law in the protection of property rights and protect the rights and interests of entities under all forms of ownership in accordance with the law. We will define the property rights of enterprises in accordance with the law and regulations, safeguard the right to profit from state capital investments as well as the decision-making rights of enterprises, and improve the property rights trading system for state-owned assets, ensuring that rules, processes, and outcomes are transparent. We will improve the functions of rural collective property rights and complete, in all rural areas nationwide, the determination, registration, and certification of contracted land rights, rural home land rights, rural housing property rights, and rights for collectively owned land designated for construction. We will improve methods for verifying membership of collective economic organizations and for realizing the ownership rights of the assets of collective entities, allowing the productive assets of collective economic organizations to be converted into shares and allotted to

individual members. We will ensure that transfers of rural property rights are carried out in accordance with regulations, and will improve decision-making procedures for the disposition of the assets of rural collective organizations. We will implement an integrated registration system for immovable property across the board. We will accelerate the establishment of a property rights system for natural resource assets, determine the holders of such rights, and make innovations in the ways in which such rights can be realized.

We will protect the rights and interests of owners of natural resource assets and ensure that returns generated from these assets are shared fairly. We will deepen reform of the mining rights system. We will establish sound systems and platforms for trading rights and interests related to ecological conservation and environmental protection. We will enforce a stringent regime for the protection of intellectual property rights, improve the system of ownership of intellectual property rights to better incentivize innovation, and develop a trading and service platform for intellectual property rights, so as to turn China into a country strong on intellectual property rights.

Chapter 13 Improve the Modern Market System

We will accelerate the development of a unified and open market system that ensures orderly competition, establish mechanisms for ensuring fair competition, overcome regional segmentation, break up industry monopolies, and remove market barriers in order to promote the free and orderly flow and equitable exchange of goods and factors of production.

Section 1

The Market for Factors of Production

We will work faster to establish a unified rural-urban market for land designated for construction purposes. On the basis that land is developed in accordance with state plans, used in compliance with the regulatory framework, and secured in accordance with the law, we will ensure that rural collectively owned land designated for business-related construction enters the market on an equal footing with and is subject to the

same rights and prices as similarly designated state-owned land. We will improve the system for requisitioning collectively owned land, narrow the scope of land requisition, establish standard requisition procedures, and improve mechanisms for safeguarding the rights and interests of those whose land is requisitioned. We will launch trials to make rural land for private housing eligible for use as collateral to secure financing, to allow for appropriate transfers of such land, and to allow such land to be given up voluntarily for compensation. We will improve systems for the market-based allocation of land designated for industrial purposes. We will coordinate human resource markets as a whole and implement an equal employment system. We will step up the development of technology exchange platforms, improve regulations concerning technology trading markets, and encourage the development of technology intermediary service organizations.

Section 2

Reform of Pricing Mechanisms

We will reduce government intervention in pricing, lift all price controls over goods and services in competitive industries, and lift price controls over competitive areas within the power, petroleum, natural gas, transportation, and telecommunications industries. We will improve medical service pricing. We will improve water pricing mechanisms. We will improve tiered pricing for household electricity consumption and introduce, across the board, tiered pricing for household water and natural gas consumption. We will refine the mechanisms for determining commodity price-linked subsidies. We will establish a sound mechanism for coordinating government investment and price adjustments for public utilities and public-benefit services. We will ensure that pricing complies with standardized procedures, that cost oversight and review are strengthened, and that costs are more transparent.

Section 3

Fair Competition

We will abolish all regulations and practices that impede the promotion of a unified market and fair competition. We will refine policies to promote competition, improve market competition regulations, and implement a review system for fair competition. We will relax restrictions on market access and improve mechanisms for exiting the market. We will improve the anti-monopoly and market regulatory law enforcement systems, ensuring they are unified and standardized, consist of well-defined powers and obligations, are fair and efficient, and are based on the rule of law. We will enforce strict compulsory standards for product quality, workplace safety, energy consumption, and environmental impact. We will establish sound codes of conduct and regulatory methods for market entities. We will improve public oversight mechanisms and further open up channels for submitting complaints and reporting bad practices. Oversight will be strengthened over internet transactions. We will crack down on the production and sale of counterfeit products.

Chapter 14 Deepen Reform of the Administrative System

We will accelerate the transformation of government functions, continue to streamline administration and delegate more powers, improve regulation, and provide better services, so as to refine government performance and stimulate market vitality and social creativity.

Section 1

Streamlined Administration and Increased Delegation of Powers

We will establish a sound management model based on catalogs of powers and obligations and a negative list, and delineate the boundaries between the powers and obligations of government, market, and society. We will deepen reform of the government review and approval system, reducing to the greatest possible extent government intervention in enterprises as well as the scope of the government pre-approval system. We will strengthen targeting and coordination in streamlining administration and delegating powers. We will deepen reform of the business system and work to provide quick and convenient services. We will deepen the reform of public

institutions that perform administrative functions by devoting great effort to separating government administration from the management of such institutions.

Section 2

Government Oversight

We will adapt our concept of oversight toward strengthening operational and post-operational business oversight. We will formulate sound and effective rules, procedures, and standards for market oversight, better define responsibilities related to oversight, and promote oversight modernization. We will innovate oversight mechanisms and methods, move forward with coordinated law enforcement and oversight using big data, and employ market, credit, and legal measures to coordinate oversight. We will introduce, across the board, oversight based on inspections of randomly selected entities by randomly selected inspectors and the public release of results. We will ensure that public oversight is strengthened.

Section 3

Improvement of Government Services

We will innovate the way government services are provided, ensuring that both government and public services are open, transparent, effective, convenient, fair, and easy-to-access. We will work faster to standardize government approval, and improve work processes and service standards for services provided directly to enterprises and the general public. We will strengthen coordination between government offices. We will popularize the use of the "Internet +" government services model and increase government transparency across the board.

Chapter 15 Accelerate Reform of the Fiscal and Tax Systems

We will deepen reforms to create sound and modern fiscal and tax systems, focusing on key issues including delineating the powers and spending obligations of the central and local governments, improving local taxation systems, strengthening local development capacity, and reducing burdens on enterprises.

Section 1

Reasonable and Orderly Division of Financial Resources

We will create a system in which the powers of governments are commensurate with their respective spending obligations, and make appropriate adjustments to strengthen the powers and increase the spending obligations of the central government. In view of the tax system reform as well as the nature of different types of taxes, we will further adjust the distribution of revenue between the central and local governments and improve methods of sharing VAT revenue. We will improve the system of transfer payments from the central to local governments, standardize the general transfer payment system, refine methods for allocating funds, and increase the transparency of transfer payments. We will improve the distribution of financial resources from the provincial level down.

Section 2

A Comprehensive, Well-Regulated, and Transparent Budget System

We will put in place a sound mechanism to ensure that the compilation, execution, and oversight of budgets complement as well as constitute a check on each other. We will improve the government budget system, increase the level of coordination between government-managed fund budgets, state capital operations budgets, and general public budgets, and refine the budget system for social security funds. We will implement a mechanism for balancing budgets across fiscal years and put in place medium-term fiscal planning to achieve greater coordination between budgets and plans for economic and social development. We will implement

performance-based budget management nationwide. We will establish a system for reporting government assets, deepen reform of the government debt management system, and put in place standardized mechanisms for managing government debt and providing early warning against risks. We will establish a system for comprehensive government financial reporting based on accrual accounting and a management system for the target balance of the treasury general account. We will extend the scope and increase the level of detail of budgets made publicly available.

Section 3

Tax and Fee Systems

Given the need to optimize the tax system, keep the tax incidence stable at the macro level, and ensure taxes are administered in accordance with the law, we must fully implement the principle of law-based taxation; establish a modern tax system which is composed of well-conceived tax categories, is better structured, legally sound, well-regulated, and fair, and which allows for efficient administration; and gradually increase the proportion of direct tax. We will complete across the board the reform to replace business tax with VAT and establish a standardized consumption-based VAT system. We will improve the excise tax system. We will impose ad valorem tax on resources and steadily extend the scope of resources covered by the tax. We will review and regulate relevant administrative charges and government- managed funds. We will introduce an environmental protection tax. We will improve local tax systems and move forward with legislation to introduce a real estate tax. We will improve the system of customs duties. We will move faster with reform related to non-tax revenue management to establish a system for non-tax revenue management that is sound, standardized, and transparent and has a legal basis. We will deepen reform of the system for the administration of national and local taxes, refine methods of tax administration, and improve the efficiency of tax administration. Electronic invoices will be introduced.

Section 4

Mechanisms for Sustainable Financial Development

We will optimize the government spending mix, revise unsustainable spending policies, adjust expenditures which are ineffectual or inefficient, and recover duplicate or misallocated expenditures. We will link the management of treasury funds with the allocation of transfer payment funds. With the aim of ensuring fiscal sustainability, we will develop new forms of government spending, guide the involvement of private capital in the provision of public goods, keep government spending at a reasonable level, and ensure government deficits and debt are kept within a manageable range.

Chapter 16 Accelerate Financial Reform

We will improve financial institutions and market systems, promote the healthy development of capital markets, improve monetary policy mechanisms, deepen reform of the financial regulatory system, and refine our modern financial systems, thereby improving the efficiency of the financial sector in serving the real economy as well as the financial sector 's ability to support the transformation of China's economy, and effectively guarding against and defusing financial risks.

Section 1

The System of Financial Institutions

We will improve the system of financial institutions, ensuring an appropriate division of roles and complementarity between commercial, development, policy-backed, and cooperative financing. We will foster a system of multilevel and differentiated banking institutions that offers extensive coverage, expand the amount of private capital entering the banking sector, and develop inclusive finance and a variety of forms of micro, small, and medium financial organizations. We will develop well-regulated internet-based financing. We will promote the prudent development of comprehensive operations by financial institutions. We will see that private financing becomes more transparent and regulate the development of microfinance and financing

guarantee institutions. We will ensure that the quality of the management and services of financial institutions is improved.

Section 2

The Financial Market System

We will develop open, transparent, and sound capital markets, and increase the proportion of direct financing to reduce leverage ratios. We will create the conditions for switching to a registration system for initial public offerings, develop a multilevel equity financing market, deepen reform of ChiNext and the New Third Board, ensure regional equity markets develop in line with regulations, and establish sound mechanisms for stocks to be delisted or transferred between market boards. We will improve the bond registration system and bond market infrastructure, and move faster to achieve connectivity between bond markets. We will develop financial services that meet the needs for innovation, encourage prudent bond product innovation, promote high-yield bonds and hybrid securities as methods of financing, and channel great energy into developing financial leasing services. We will improve mechanisms for determining interest rates and foreign exchange rates and make better use of the treasury yield curve as a benchmark for pricing. We will give impetus to the development of markets for interbank borrowing, repurchase agreements, negotiable instruments, foreign exchange, and gold. We will promote active and prudent innovation in the futures market and markets for other derivatives. We will move faster in developing the insurance and reinsurance markets and explore the possibility of establishing mechanisms for trading insurance assets. We will establish secure and efficient financial infrastructure and implement the national treasury project.

Section 3

Reform of the Framework for Financial Regulation

We will strengthen the system of macroprudential regulation for the financial sector, step up planning and coordination, reform and improve the financial regulatory framework to see that it is better adapted to developments in modern financial markets,

clarify regulatory functions and responsibilities for guarding against and treating risks, and establish a financial management system that coordinates monetary policy and prudential regulation. We will coordinate regulation of systemically important financial institutions, financial holding companies, and key financial infrastructure, integrate comprehensive financial sector statistics, and strengthen comprehensive and functional regulation. We will improve central and local financial management systems. We will improve regulatory rules to ensure they are suited to the Chinese context and in accord with international standards, and establish frameworks for functional regulation targeted at each type of investment and financing behavior and for conduct oversight that genuinely protects the legitimate rights and interests of financial consumers, so as to achieve oversight that covers every aspect of financial risks. We will improve the management system for state- owned financial capital. We will strengthen the management of foreign exchange reserves and optimize their use. We will make effective use of and develop tools for financial risk management, and improve mechanisms for monitoring, early warning, stress testing, risk assessment and management, and market stability, so as to prevent the occurrence of systemic and regional financial risks.

Box 5
Toward a Modern Financial System

1. Financial factor supply-side structural reform

§ Establish multilevel, diversified, complementary financial markets to meet the investment and financing needs of the real economy;

§ Promote the switch to mixed ownership in financial institutions and improve corporate governance;

§ Support the development of science and technology related finance, green finance, local small and medium financial institutions, inclusive rural finance, and finance related to poverty alleviation.

2. Improvement of financial regulatory mechanisms

§ Improve on the extent to which interest rates are determined by the market and put into use new monetary policy regulation tools;

§ Boost the role of credit policy in targeted structural adjustments;

§ Increase the flexibility of the RMB exchange rate and improve the RMB exchange rate index with respect to a reference basket of currencies;

§ Establish forward guidance mechanisms for the central bank;

§ Develop channels for RMB and foreign currency policy transmission.

3. Steady steps toward opening the financial sector to foreign competition

§ Establish cross-border exchanges for policy-backed and development financing;

§ Create national financial security review mechanisms and counter-financial sanction mechanisms, and improve systems to combat money laundering and

terrorism financing.

4. Establishment of the macroprudential regulatory framework for the financial sector

§ Establish countercyclical policy tools for guarding against systemic financial risks;

§ Establish a mechanism for consolidating statistics, risk monitoring and management, and emergency response and crisis rescue covering all financial institutions, financial holding companies, financial infrastructure, all types of investment and financing behavior, internet finance, and cross-border finance;

§ Create a big data credit information system and a multilayered payment system.

5. Rule of law in the financial sector

§ Improve systems that protect the rights and interests of financial consumers;

§ Put an end to implicit guaranties and inflexible yields, and deal with credit violators in accordance with the law;

§ Allow the deposit insurance system to play a better role and improve the market-based disposition and exit mechanisms for failing financial institutions;

§ Explore the possibility of a system for collective litigation, strengthen punishments for financial crimes, and crack down on illegal fundraising.

Chapter 17 Innovate and Improve Macroeconomic Regulation

We will improve the macroeconomic regulation system, develop new methods of macroeconomic regulation, and strengthen the coordination of macroeconomic policies. We will work harder to create jobs, keep prices stable, make structural adjustments, raise efficiency, guard against and control risk, protect the environment, and guide market behavior and public expectations, thereby fostering a stable macroeconomic environment for structural reform.

Section 1

Role of Plans and Strategies in Providing Guidance

We will exercise macroeconomic regulation based on long- and medium-term national development plans and objectives and total supply and demand. We will ensure that national development strategies and plans work to guide and constrain

behavior, and that all macroeconomic regulation policies are in line with and serve the needs of development. We will improve our system of policies, ensuring fiscal and monetary policies play a leading role while industrial, regional, investment, consumption, and pricing policies play a supplementary role. We will strengthen coordination between fiscal and monetary policies.

Section 2

Regulatory Methods and Diversification of Policy Tools

Our work to balance total supply and demand and make structural improvements will continue, and the fundamental focus and policy orientation of macroeconomic regulation will be to keep the economy performing within an appropriate range and to improve its quality and performance. On the basis of range-based regulation, we will place greater weight on targeted and well-timed regulation, taking well- targeted regulatory measures to carry out appropriately timed pre-emptive adjustment and fine-tuning. We will maintain policy stability, improve communication with the market, and see that policy predictability and transparency are increased. We will ensure that fiscal policies better support targeted regulation. We will improve the operational targets, regulatory framework, and transmission mechanisms of monetary policies, establish mechanisms for target interest rates and interest rate corridors, and shift our focus from quantitative to price-based monetary policies.

Section 3

Policy- and Decision-Making Mechanisms

We will strengthen economic monitoring, forecasting, and early warning mechanisms, and improve our ability to analyze and assess international and domestic situations. We will strengthen research on major issues, build up policy reserves, and improve our mechanisms for policy analysis, evaluation, and adjustment. We will establish a sound mechanism for coordinating major regulatory policies so that they work together effectively. We will establish a modern statistical survey system, promote innovation in the systems, mechanisms, and methods used for statistical surveys, and

encourage the application of internet, statistical cloud, and Big Data technologies to collect more timely, comprehensive, and accurate information on economic performance. We will accelerate work on legislation related to macroeconomic regulation.

Section 4

Investment and Financing Systems

We will establish a system of lists of powers and responsibilities for the management of enterprise investment projects and better ensure that enterprises have decision-making powers over their investments. We will further streamline investment approval procedures; reduce, combine, and regulate items required for development projects when applying for government approval; improve online platforms for reviewing, approving, and monitoring projects; and put in place a system to allow the different steps of the approval process for enterprise investment projects to be completed in tandem. We will further lift market access restrictions on sectors such as infrastructure and public utilities, and use public- private partnership models such as franchise operations and government procurement of services to encourage the involvement of nongovernmental capital through investment, construction, and operations in these sectors. We will improve the way government funds are invested and ensure that national industrial investment funds play a better role in encouraging other types of investment.

PART IV

AGRICULTURAL MODERNIZATION

Agriculture is the foundation on which we can finish building a moderately prosperous society in all respects and achieve modernization. The agricultural growth model must be transformed at a faster pace, industrial, production, and business operation systems that work for modern agriculture must be established, and the quality,

returns, and competitiveness of agriculture must be strengthened to allow China to embark on a path of agricultural modernization which ensures high yields and safe products, conserves resources, and is environmentally friendly.

Chapter 18 Strengthen Capacity for Ensuring Safety of Agricultural Products

We will make sure we achieve basic self-sufficiency in cereal grains and absolute food security, make agricultural structural adjustments and improvements, raise our production capacity for agricultural products while also improving quality and safety, and see that a better structured, more effective supply of agricultural products takes shape.

Section 1

Safeguards for Grain Production

We will continue to apply the strictest possible protection system for farmland and will designate permanent basic cropland throughout the country. We will put in place a food crop production strategy that is based on farmland management and the application of technology, and with the focus on major growing areas of grain crop and other staple agricultural products, we will make a large-scale push to see the building of farmland irrigation systems and water conservancy infrastructure, the restoration of rural land, the improvement of low- and medium-yield cropland, and the development of high-quality farmland. We will improve the system for ensuring that cultivated land taken over for nonagricultural use is replaced with land of an equivalent amount and quality, explore the possibility of formulating measures for national coordination in offsetting farmland that has been used for major construction projects, and ensure that the stripping and reuse of topsoil are practiced nationwide on all cultivated land put to nonagricultural use. We will establish grain crop production functional zones and protected areas for the production of major agricultural products to ensure that the acreage of land devoted to growing grain crops such as rice and wheat remains basically stable. We will improve the mechanism for subsidizing major grain crop production

areas. We will intensify efforts to realize green, high-yield, and efficient grain crop production.

Section 2

Agricultural Structural Adjustments

We will promote the coordination of food, cash, and fodder crop production, step up integrated development of the farming, forestry, livestock, and fishing industries, and integrate planting, breeding, and processing. We will actively guide adjustments to the production mix of agricultural products and support superior producing areas in developing production centers for cotton, oilseed, sugar crops, soybeans, forestry seedlings, and fruit. Taking into consideration the scale of planting and breeding operations and resource and environmental carrying capacities, we will promote models that swap food crop for fodder crop cultivation and integrate planting and breeding operations, and develop the farming area-based livestock industry. We will develop modern grass industries and herbivorous livestock industries region by region. We will ensure that livestock, poultry, and aquaculture farming are further standardized and brought up to scale. We will ensure that the dairy industry produces safe, quality products. We will improve the quality and cost-effectiveness of horticultural products. We will develop economic forests and under-forest economies that take advantage of local strengths. We will improve the geographical layout of the production of specialty agricultural products. We will accelerate the development of demonstration areas for modern agriculture.

Section 3

Integrated Development of Primary, Secondary, and Tertiary Industries in Rural Areas

We will promote the development of agricultural production and value chains, create different types of linkages between the interests of different entities, and foster entities that integrate primary, secondary, and tertiary industry operations as well as help develop new kinds of such operations in order to open up more channels through

which rural residents can increase their incomes and benefit more from the resultant value-added. We will promote the development of processing industries and services for agricultural production. We will see that agriculture takes on more functions, promote close cooperation between agriculture on the one hand and leisure, tourism, education, culture, and health on the other, and develop new forms of agricultural business such as agri-tourism, agricultural experiences, and creative agriculture. We will accelerate the development of modern urban agriculture. We will put rural resources and factors of production to better use so as to increase the property income of rural residents.

Section 4

Agricultural Product Quality and Safety

We will move faster to improve agricultural standards and ensure they are met in all agricultural production. We will strengthen quality and safety oversight over agricultural products and inputs, strengthen safety management at production sites, implement a certification system for product oversight both before products leave production sites and on entrance into markets, and establish interconnected, shared agricultural product quality and safety information platforms allowing for full traceability at every stage, thereby forming a stronger quality and safety oversight system that covers the entire journey of agricultural products from farm to table. We will strengthen work on addressing excess residues of pesticides and livestock medicines. We will enforce strict standards for the control of additives in edible agricultural products. We will move forward with the national initiative to develop counties with advanced capabilities for ensuring agricultural product quality and safety. We will strengthen our ability to prevent and control animal and plant diseases and increase oversight over the quality and safety of agricultural imports. We will develop brands of quality agricultural products and support brand marketing.

Section 5

Sustainable Agricultural Development

We will work hard to develop eco-friendly agriculture. We will carry out the initiative to achieve zero growth in the use of chemical fertilizers and pesticides and promote fertilizer use based on the results of soil tests as well as the targeted and effective use of pesticides nationwide. We will implement a demonstration project for circular agriculture through integrated planting and breeding, and promote the recovery of resources and safe disposal of waste materials from planting and breeding industries. We will take comprehensive measures to prevent and control agricultural pollution from non-point sources. We will protect and improve the quality of cultivated land, promote deep planting and plowing to improve cropland in major agricultural product production areas, and strengthen the protection of chernozem soil in northeast China. We will pilot crop rotation and fallow systems focusing on cones of depression, heavy metal contaminated areas, and areas suffering serious ecological degradation. Large-scale, high- efficiency, and water-saving irrigation will be introduced in all key irrigation areas. Dry farming will be encouraged in more areas. Special action plans for promoting water conservation will be implemented in the drainage basins of Yarkand, Hotan, and other rivers in southern Xinjiang and in seriously water-deprived areas such as the Hexi Corridor of Gansu and Baicheng in Jilin. We will strengthen development of the meteorological service system for agriculture. We will establish pilot demonstration zones for sustainable agricultural development.

Section 6

International Cooperation in Agriculture

We will improve mechanisms for regulating trade in agricultural products, optimize the mix of sources of imports, expand exports of competitive agricultural products while ensuring domestic supply, and appropriately increase imports of agricultural products that are in short supply at home. We will actively pursue agricultural cooperation and development overseas, establish large-scale offshore centers for farm product production, processing, storage, and transportation, and cultivate internationally competitive multinational agricultural companies. We will broaden the areas of international agricultural cooperation and support bilateral and multilateral cooperation in agricultural technology.

Chapter 19 Establish a Modern Agricultural Operations System

Guided by the need to develop different forms of appropriately scaled agricultural operations, we will create new methods for organizing agricultural operations and establish a modern system of agricultural operations that is based on rural household operations, held together by cooperation and association, and supported by society-wide services, thereby increasing the overall returns of agriculture.

Section 1

Appropriately Scaled Agricultural Operations

We will keep rural land contract relationships stable, improve the measures for separating land ownership rights, contract rights, and management rights, promote the orderly transfer of land management rights in accordance with the law, and develop appropriately scaled agricultural operations through means such as third party cultivation, joint cultivation of combined land, land trusteeship, and joint-stock cooperation.

Section 2

New Types of Agribusiness

We will make policies more conducive to the growth of new types of agribusiness, support the development of large family farming businesses and family farms, guide and promote the well-regulated development of farmers' cooperatives, support the growth of enterprises that are leaders in agricultural industrialization, cultivate a new type of professional farmer, and nurture competent modern agricultural operators. We will encourage and support industrial and commercial capital investment in modern agriculture and promote the development of agricultural-commercial alliances and other emerging business models.

Section 3

The System of Society-Wide Services for Agriculture

We will implement a program to support society-wide services for agriculture, and develop commercial service organizations. We will support the provision of public-benefit agricultural services by research institutions, industry associations, leading enterprises, and qualified commercial service organizations, and support different types of new agricultural service entities in offering professional services on a large scale. We will give impetus to trials for making innovations in society-wide services at every stage of the agricultural production process, and actively promote various forms of services such as cooperative, trusteeship-based, and order-based services. We will strengthen the development of distribution facilities and markets for agricultural products, work to improve rural logistics and comprehensive service networks, encourage the development of e-commerce in rural areas, and implement projects to encourage the development of precooling in specialty agricultural product producing areas and express delivery services in rural areas. We will deepen the comprehensive reform of supply and marketing cooperatives. We will make innovations in society- wide agricultural service mechanisms.

Chapter 20 Improve Technology and Equipment and Increase Information Technology Application in Agriculture

With the aim of raising agricultural productivity, we will improve systems for promoting innovation in and the application of modern agricultural science and technology, accelerate agricultural mechanization, strengthen the integration of information technology into agriculture, and develop intelligent agriculture.

Section 1

Agricultural Technology and Equipment

We will strengthen innovation in agricultural science and technology and accelerate work on developing bio-breeding, agricultural machinery and equipment, and eco-friendly methods for increasing production. We will promote the use of high-yield, high-quality crop breeds suited to mechanized agriculture as well as standardized and localized models of high-yield and high-performance cultivation, and we will improve the conditions for making innovations in major agricultural laboratories. We will develop the modern seed industry, tackle key scientific and technological issues to make progress in the development of superior seed varieties, implement a new action plan for upgrading crop varieties, develop national seed breeding and production centers, and help the growth of leading seed enterprises using integrated cultivation-breeding-promotion operations. We will promote complete mechanization of the production process of major crops as well as the integration of agricultural machinery and methods. We will improve and invigorate networks for the promotion of agricultural technology at the community level.

Section 2

Information Technology Adoption in Agriculture

We will promote the integration of information technology into agricultural production management, operations management, market distribution, and fields related to resources and the environment. We will help spread the Internet of Things into agriculture by carrying out an experimental project to promote its use in certain regions, thereby promoting the development of intelligent agriculture and precision agriculture. We will promote the use of big data in agriculture and strengthen the overall capabilities of agricultural information services. We will encourage internet enterprises to establish agricultural service platforms that bring together the processes of production and marketing, and accelerate the development of agriculture-related e-commerce.

Chapter 21 Improve Systems for Providing Support and Protection for Agriculture

With an emphasis on ensuring the supply of major agricultural products, promoting increases in rural incomes, and achieving sustainable agricultural development, we will improve policy support aimed at strengthening agriculture, benefiting farmers, and raising rural living standards and raise our level of support and protection for agriculture.

Section 1

Increased Investment in Agriculture

We will establish a mechanism for steadily increasing investment in agriculture and rural areas. In the area of agricultural investment, we will improve the government spending mix, create new ways of investing and operating government funds, promote the integration of investment projects, and improve the efficacy of subsidy policies. We will progressively increase the range and scale of green box subsidies while adjusting and improving amber box policies. The subsidies for food crop production, for promoting superior grain crop varieties, and for supporting the purchase of agricultural supplies will be combined into a single agricultural support and protection subsidy. We will improve subsidy policies for the purchase of agricultural machinery and tools, and give priority to grain crop producers, new types of agribusinesses, and major agricultural production areas in the allocation of these subsidies. We will establish a system of protection and compensation for arable land.

Section 2

Pricing, Purchasing, and Stockpiling Systems for Agricultural Products

We will ensure equal emphasis is placed on both carrying out market- oriented reforms and protecting the interests of farmers, and improve the system for regulating the market for agricultural products and the market system itself. We will continue to implement and improve the minimum purchase price policy for rice and wheat, and deepen reform of the program for guaranteeing base prices for cotton and soybeans. We will explore the possibility of trialing base price insurance for agricultural products. We will actively and prudently carry out reform of the price-setting mechanism and the

purchasing and stockpiling systems for corn, and establish a system for subsidizing corn producers. We will implement a project to ensure security of the purchase, stockpiling, and supply of grain crops, research and determine the optimum scale of reserves of grain crops and other important agricultural products, reform and improve the grain crop reserve management system as well as mechanisms for grain crop regulation and adjustment, and guide a diverse range of market entities—such as distribution and processing businesses—in participating in the purchase and stockpiling of agricultural products. We will move forward with the development of intelligent storage facilities for grain crops and work to conserve grain crops and reduce waste.

Section 3

Innovations in Rural Financial Services

We will ensure all types of financial institutions support agriculture, and develop inclusive financing in rural areas. We will improve systems for supporting agricultural development and for the construction of rural infrastructure using development and policy-backed financing. We will carry out reform of rural credit cooperatives and strengthen the service functions of provincial-level unions of such cooperatives. We will actively develop diverse forms of rural financial institutions such as village banks. We will steadily carry out trials to allow farmers' cooperatives to use internal funds to provide financial services to their members. We will establish a sound policy-backed credit guaranty system for agriculture. We will improve the agricultural insurance system, steadily increase trials of the "insurance +futures" model, expand the scope of insurance coverage, raise insurance benefits, and improve the risk-spreading mechanisms of agricultural insurance against the risks posed by major disasters.

Box 6
Agricultural Modernization Projects

1. High-quality farmland development

§ With the focus on major grain crop production areas, give top priority to the development of high-quality farmland which can help to ensure food security; implement farmland projects to improve soil and build irrigation and drainage facilities, roads for farm equipment, farmland shelterbelt networks, and electricity transmission and distribution facilities; and ensure the development of 53 million hectares of high-quality farmland, while aiming for the completion of 67 million hectares;

§ Assess, grade, and monitor the quality of arable land.

2. The modern seed industry

§ Develop a national system for the collection, storage, and research of germplasm resources;

§ Strengthen research and development of key technologies for crop heterosis exploitation, molecular design breeding, cell and chromosome engineering, high- efficiency seed production, and fine and deep processing of seeds;

§ Strengthen capacity for seed quality inspection;

§ Establish national seed production centers in Hainan, Gansu, Sichuan, and other provinces, and 100 regional superior seed production centers.

3. Water-efficient agriculture

§ Spread the application of water-efficient irrigation and promote water-efficient projects, crop breeds, agronomy, and management;

§ Accelerate the implementation of regional scaled high-efficiency water-saving irrigation projects, using water-conserving methods to increase crop production in the northeast, raise irrigation efficiency in the northwest, address groundwater overdraft in the north, and reduce waste water discharge in the south;

§ Increase the area of cropland making use of high-efficiency water-conserving irrigation by 6.7 million hectares, thereby raising the irrigation water utilization coefficient to 0.55 or above.

4. Agricultural mechanization

§ Make breakthroughs in mechanizing the transplanting of rice seedlings, the sowing and harvesting of canola seeds, and the harvesting of cotton and sugarcane;

§ Promote the use of high-horsepower and high-performance agricultural machinery and light, durable, and lower-power small and medium plowing, planting, and harvesting machines and crop protection machines;

§ Develop 500 counties able to demonstrate mechanization of the entire agricultural process;

§ See that mechanization of the plowing, planting, and harvesting of major farm crops reaches approximately 70%.

5. Intelligent agriculture

§ Introduce "Internet +" modern agriculture, facilitate the adoption of the Internet of Things in field planting, livestock and poultry production, and fishery operations, and support e-commerce, logistics, commercial, trade, and financial enterprises in participating in the development of e-commerce platforms for farmers, rural areas, and agriculture;

§ Establish monitoring, analysis, and early-warning systems based on agricultural information.

6. Agricultural product quality and safety

§ Make a serious push to reduce pesticide and chemical fertilizer use in the production of agricultural products;

§ Develop pollution-free agricultural products, green foodstuffs, organic agricultural products, and agricultural products using geographical indications;

§ Strengthen epidemic disease and pest monitoring and early-warning

systems and green prevention and control, establish an information traceability system for oversight over the quality and safety of agricultural products, and achieve interconnection and information sharing between all types of platforms for products tracing information;

§ Ensure that livestock antibiotics are properly used and that the indexes for pesticide and livestock medicine residues are basically in line with Codex Alimentarius standards.

7. Cultivation of new types of agribusiness

§ Develop demonstration family farms, demonstration agricultural cooperatives, agricultural industrialization demonstration centers, and demonstration service organizations;

§ Implement the modern agricultural talent development plan;

§ Cultivate leaders of new types of agribusiness, and train young managers capable of operating modern farms, people with practical skills for rural areas, and a new type of professional farmer.

8. Integrated development of the primary, secondary, and tertiary industries in rural areas

§ Implement the "100 counties, 1,000 townships, 10,000 villages " pilot demonstration project to promote the integrated development of the primary, secondary, and tertiary industries in rural areas;

§ Create a number of integrated development models and forms of business that can be replicated elsewhere;

§ Develop a number of rural enterprises that can take the lead in integrating the development of the primary, secondary and tertiary industries;

§ Cultivate a number of areas that can lead the way in integrated development.

PART V

AN OPTIMIZED MODERN INDUSTRIAL SYSTEM

With a focus on carrying out deep structural adjustment and revitalizing the real economy, we will move ahead with supply- side structural reforms, foster new industries while upgrading traditional ones, and move faster to put in place a new modern industrial system that has strong innovative capabilities, provides quality services, is based on close collaboration, and is environmentally friendly.

Chapter 22 Develop China into a Manufacturing Powerhouse

We will implement the Made in China 2025 action plan. With an emphasis on strengthening the innovative capacity and basic capabilities of manufacturing, we will work to deepen the integration of information technology and manufacturing technology and promote the development of high-end, smart, green, and service-orientated manufacturing so as to foster a new competitive edge in manufacturing.

Section 1

Stronger Industrial Foundations

We will strengthen the foundations of industry by working to break through bottlenecks in four areas: key basic materials, core basic spare parts and components, advanced fundamental techniques, and basic industrial technologies. We will guide cooperation between whole- equipment manufacturing enterprises on the one hand and enterprises, institutions of higher learning, and research institutes engaged in these four areas on the other. We will support collaborative innovation and joint research efforts by participants throughout the whole production chain in order to systematically solve key engineering and manufacturing problems relevant to the four areas. We will strengthen the development of standards, measurement, certification and accreditation, and inspection and testing systems related to fundamental industrial areas. We will build manufacturing innovation centers and support the development of industrial design centers. We will set up a national industrial design institute.

Section 2

New Manufacturing Development

We will implement the high-end equipment innovation and development project to significantly increase our design and systems integration capabilities. We will carry out a smart manufacturing initiative aimed at accelerating the development of technologies and equipment crucial for smart manufacturing and strengthening industrial foundations such as smart manufacturing standards, industrial electronic devices, and core support software. We will intensify facilities construction, technological verification, and the demonstration and promotion of the industrial internet, and make substantial breakthroughs in promoting Made in China + the internet. We will cultivate and promote new types of smart manufacturing and encourage a move toward flexible, intelligent, and lean modes of production. We will encourage the establishment of smart manufacturing alliances. We will create a green manufacturing system through green manufacturing projects and green product lifecycle management. To promote the transformation of manufacturing from production to both production and the provision of services, we will encourage manufacturing enterprises to extend their service chains and add value to their services. We will help manufacturing clusters transform and upgrade, establish demonstration centers for new industrialization, and cultivate advanced manufacturing centers.

Section 3

Transformation and Upgrading of Traditional Industries

We will transform and upgrade major manufacturing technologies and improve policies to support enterprises in emulating world-wide models in terms of techniques, processes, equipment, energy efficiency, and environmental protection, thereby helping key manufacturing sectors move into the medium-high end. We will improve the supply of consumer goods. We will encourage mergers and acquisitions of enterprises so as to put in place a highly concentrated, specialized, and cooperative industrial structure with a core of conglomerate companies. We will support the development of specialized small and medium enterprises.

Section 4

Quality and Brand Development

In order to make China a country strong on quality, we will work to see that enterprise quality management is strengthened, the quality of products is improved and brands are elevated, key generic technology problems affecting product quality improvement are addressed, legal protections for trademarks and brands are strengthened, and a number of competitive, well- known brands are created. We will establish a release and oversight system for the declaration of product and service standards by enterprises, and support enterprises in improving their online quality inspection and control capabilities as well as their product lifecycle quality tracking capabilities. We will improve quality assurance and regulation systems and strengthen national-level quality inspection and evaluation centers as well as public service platforms for quality inspection and testing certification. We will introduce a punitive compensation system for producers who fail to meet product quality standards.

Section 5

An Active and Prudent Approach to Overcapacity

We will strengthen policy guidance to ensure market clearing is achieved through the comprehensive use of market mechanisms, economic and legal measures, and if necessary, administrative measures. We will establish a mechanism to address overcapacity by ensuring compliance with standards for the production process, technology, energy consumption, environmental protection, quality, and safety, and will tighten industry regulations and market entry management in order to shut down outdated production facilities. We will set up a fund to provide rewards and subsidies for structural adjustments in industrial enterprises; move more quickly to address overcapacity in industries such as steel and coal through mergers, reorganizations, debt restructurings, bankruptcy liquidations, and better asset utilization; actively and prudently handle the winding up of enterprises in an organized way on the basis of classification; and ensure that employees laid off from such enterprises are properly resettled.

Section 6

Lower Business Costs in the Real Economy

We will cut business costs in the real economy. To lower government- imposed transaction costs, we will further streamline administration and delegate more powers, streamline and standardize intermediary services for government approval prior to applying for a business license, and overhaul and regulate charges for intermediary services. We will help businesses reduce labor costs by determining appropriate minimum wage levels, streamlining and consolidating the old-age insurance, medical insurance, unemployment insurance, workers' compensation, maternity insurance, and housing provident fund schemes, and reducing, as appropriate, the ratio of enterprise contributions to these schemes. We will reduce taxes and fees for enterprises by lowering the proportion of their VAT and turnover taxes, reviewing and standardizing enterprise support funds, and canceling unreasonable charges. To lower enterprise financial costs, we will maintain proper liquidity and interest rates, create new direct financing products suitable to the needs of enterprises, and establish a national financing guaranty fund. We will reduce the energy costs of enterprises by better linking domestic and international energy prices as well as domestic coal and electricity prices. We will reduce enterprise logistics costs by improving logistics organization and management and standardizing road tolls. We will encourage and guide enterprises in conducting innovative management, improving techniques and processes, and conserving energy and materials.

Box 7
High-End Equipment Innovation and Development

1. Aerospace equipment

§ Make breakthroughs in core aircraft engine and gas turbine technologies;

§ Accelerate the development of large aircraft;

§ Promote the industrialized development of trunk and feeder route aircraft, helicopters, general-purpose aircraft, and unmanned aerial vehicles;

§ Develop advanced airborne equipment and systems;

§ Strengthen supporting systems for civil aircraft;

§ Develop next generation and heavy-lift launch vehicles, new types of satellites, and other space platforms and payloads;

§ Make breakthroughs in core technologies for key aerospace components and put them into use.

2. Marine engineering equipment and high-tech vessels

§ Develop equipment and systems for deep-water exploration, ocean

drilling, seafloor resources exploration and development, and marine operations support;

§ Promote the development and engineering of deep-sea stations and large floating structures and launch projects in this regard;

§ Focus on breakthroughs in core technologies for cruise ships and other high- tech vessels, as well as for the integrated, intelligent, and modular design and manufacturing of key accessory equipment for such vessels.

3. Advanced rail transit equipment

§ Develop advanced and reliable rail transit products and light, modular, and serial rail products;

§ Develop next generation high-speed and heavy-load rail transit equipment and systems;

§ Become better able to provide users with lifecycle rail transit system solutions;

§ Set up a national high-speed train technological innovation center.

4. High-grade CNC machine tools

§ Develop fast, flexible, and high-precision CNC machine tools, basic manufacturing equipment, and integrated manufacturing systems;

§ Develop high-grade digitally controlled systems, bearings, gratings, sensors, and other major components as well as key application software, with a focus on improving reliability and retention of precision.

5. Robotics

§ Develop industrial, service, surgical, and military robots;

§ Promote independence in the design and production of high-precision retarders, high-speed high-performance controllers, high-performance servo motors and drives, and other key parts and components;

§ Facilitate the commercial application of artificial intelligence technologies in all sectors.

6. Modern agricultural machinery and equipment

§ Develop advanced agricultural machinery suitable for all cultivation conditions, with a focus on high horsepower tractors and compound operations machinery, large and efficient combine harvesters, precision seeders, and other food-crop equipment, as well as machinery for seeding, farmland management, and harvesting of cotton, sugar cane, and other cash crops.

7. High-performance medical equipment

§ Focus efforts on the research and development of diagnostic and treatment equipment such as nuclear medicine imaging equipment, superconducting magnetic resonance imaging systems, and non-invasive ventilators as well as in vitro diagnostic equipment such as fully automatic biochemistry analyzers and high-throughput genomic sequencers;

§ Develop and put into use medical accelerators and other treatment equipment as well as implantable and insertable medical devices, such as artificial heart valves and pacemakers, stents, and artificial joints;

§ Develop and put into use medical devices that utilize the distinctive strengths of traditional Chinese medicine.

8. A complete set of advanced chemical machinery

§ With the support of projects demonstrating upgrades to the modern coal-to- chemical industry, work toward the independent design and production of a complete set of advanced chemical machinery, focusing on coal classification, coal gasification, syngas purification, energy utilization, wastewater treatment, and other key areas;

§ Accelerate research and development on key equipment for the integration of the oil refining and chemical industries as well as for the intensive processing of downstream petrochemical products, and help enhance complimentary support capabilities.

Chapter 23 Develop Strategic Emerging Industries

By targeting cutting-edge technologies, adhering to industrial development trends, focusing on key areas, and optimizing the integration of policies, we will create space for the growth of emerging industries and see that they gain a competitive advantage in the future. We will work to ensure that the value- added of strategic emerging industries reaches 15% of China's GDP.

Section 1

Emerging Industries' Bigger Role in Bolstering the Economy

We will support the development of next generation information technology, new-energy vehicles, biotechnology, green and low-carbon technology, high-end equipment and materials, and digital creative industries. In fostering new areas of economic growth, we will spur innovation and industrial application in emerging, cutting-edge fields such as advanced semi-conductivity, robotics, additive manufacturing, intelligent systems, next generation aviation equipment, comprehensive service systems for space technologies, smart transportation, precision medicine, systems for high-efficiency energy storage and distributed energy, smart materials, efficient energy conservation, environmental protection, virtual reality, and interactive movies and television.

Section 2

Strategic Industries

In bringing about a future-oriented industry structure, we will foster strategic industries in the fields of aerospace, oceanography, information networks, the life sciences, and nuclear technology. In order to cultivate strengths for future development, we will develop new types of air and underwater vehicles, next generation operating platforms, and integrated aerospace observation systems, develop quantum communication and a safe and ubiquitous Internet of Things, and accelerate the development of synthetic biology and regenerative medical techniques as well as next generation nuclear power equipment, small nuclear power systems, and civil nuclear analytical and imaging techniques.

Section 3

A New Developmental Pattern for Emerging Industries

We will support the development of industrial innovation centers and new technology promotion centers as well as the efforts of cities rich in innovation resources to lead the innovation-driven development of emerging industries. We will help ensure rapid development of the production and innovation chains of emerging industries to accelerate industry clustering according to their specific characteristics. We will put in place a plan to build a global innovation-driven development network for emerging industries, encourage Chinese enterprises to allocate innovation resources globally, and support the establishment of overseas research and development centers.

Section 4

A Better Environment for Developing Emerging Industries

We will ensure that industrial policies guide development and promote competition, and will put in place market access requirements, regulatory rules, and standards systems conducive to the development of new technologies, new products, and new forms and models of businesses. We will encourage the procurement of innovative products and services both in major infrastructure projects and in projects concerning people's wellbeing. We will set up a national strategic industry development fund and ensure that the National Venture Capital Guide Fund for Emerging Industries fully plays its role, giving primary support to innovative enterprises in emerging industries that are still in an early stage of development.

Box 8
Development of Strategic Emerging Industries

1. Innovation in next generation information technology industries

§ Cultivate integrated circuit industrial systems;

§ Foster artificial intelligence, intelligent hardware, new display technologies, smart mobile terminals, 5G mobile communications, advanced sensors, and wearable devices into becoming new areas of growth.

2. Development of the biotech industry

§ Move faster to facilitate the wide application of genomics and other biotechnologies;

§ Create demonstrations of network-based biotech applications;

§ Stimulate the large-scale development of personalized medical treatment, new drugs, bio-breeding, and other next generation biotech products and services;

§ Promote the creation of basic platforms such as gene and cell banks.

3. Intelligent perception of spatial information

§ Accelerate the construction of national civil space infrastructure, primarily revolving around multimode remote sensing, broadband mobile communications, and the BeiDou Navigation Satellite System;

§ Provide systemic technological support and greater capacity for industrial applications within the fields of global telecommunications, disaster prevention and mitigation, natural resource surveys and regulation, urban management, meteorological and environmental monitoring, positioning services, and others;

§ Accelerate commercial applications of the BeiDou Navigation Satellite System and remote sensing satellites.

4. Energy storage and distributed energy

§ Make breakthroughs in and promote the industrial application of key technologies such as next generation photovoltaics, high-efficiency, high-wattage wind power generation, biomass energy, hydrogen power and fuel cells, smart grids, and new types of energy storage devices;

§ Facilitate the comprehensive utilization of distributed new energy

technologies;

§ Promote the large-scale development of related techniques and equipment.

5. Advanced materials

§ Develop smart materials such as shape-memory alloys and self-healing materials, functional nanomaterials such as grapheme and metamaterials, next generation semiconductor materials such as indium phosphide and silicon carbide, new types of structural materials such as high-performance carbon fibers, vanadium titanium alloy, and high-temperature alloys, and also degradable materials and new biosynthetic materials.

6. New-energy vehicles

§ Promote the use of new-energy vehicles;

§ Encourage the use of new-energy vehicles for urban public transport and taxi services;

§ Develop all-electric vehicles and hybrid electric vehicles with a focus on making advancements in key technological areas such as battery energy density and battery temperature adaptability;

§ Facilitate the development of a network of charging facilities and services that are compatible with each other and come under unified standards;

§ Improve policies to provide continuous support in this regard;

§ Ensure the cumulative total production and sales figures for new-energy vehicles in China reach five million;

§ Strengthen efforts to recover and dispose of used batteries from new-energy vehicles.

Chapter 24 Increase Quality and Efficiency within the Service Sector

We will accelerate the development of modern services, further open them to foreign competition, and improve their development environment, so as to help producer services move both toward specialization and higher up the value chain, and help consumer services become more refined and increase in quality.

Section 1

Specialization in Producer Services

With the aim of upgrading industries and increasing efficiency, we will promote the development of industrial design and innovation, engineering and commercial

consulting, legal and accounting services, modern insurance, credit ratings, after-sales services, inspection and testing certification, human resource services, and other industries. We will deepen reform of the commodity distribution system, thereby making commodity distribution more IT-based, procedure-based, and intensive and helping traditional commercial industries move more quickly toward utilizing modern distribution methods. We will strengthen the construction of logistics infrastructure, and develop third party, green, and cold chain logistics as well as rural and urban delivery services. We will promote innovation in high-tech services. We will guide producers in moving faster to see that services are separated from production and outsourced. We will bring China's producer service standards more in line with international standards so as to increase their international competitiveness.

Section 2

Better Consumer Services

We will accelerate the development of service sectors such as education and training, health and elderly care, culture and entertainment, and sports and fitness. We will develop the tourism industry by improving its quality and efficiency, accelerating the work to make Hainan an international hotspot for tourism, and supporting the development of ecotourism, cultural tourism, leisure tourism, and mountain tourism. We will promote the development of domestic services, working to ensure they become more specialized, scaled-up, and online-based. We will encourage integration in the consumer service sector and the growth of customized services to meet personalized demands. We will support service sector workers in taking part in occupational training and skill appraisal examinations in order to increase their levels of professionalization and specialization. We will put in place an action plan to ensure quality consumer services, spread the use of identifiers of quality service commitments along with systems for their management, and foster well-known service brands.

Section 3

Better Institutions and Policies for Service Sector Development

We will ensure that nongovernmental capital has greater market access, accelerate the opening of competitive operations in industries such as power, civil aviation, railway, petroleum, natural gas, postal services, and urban utilities, further open the banking, education, medical service, culture, internet, commerce, and logistics sectors, and carry out comprehensive trials to further open up the service sector. We will eliminate all types of discriminatory regulations and improve policies to ensure that all types of nongovernmental capital are able to participate on an equal footing in the development of sectors such as medical services, education, childcare and early childhood education, elderly care, and sports. We will expand the scope of government service procurement and promote competition-based procurement of third party services.

PART VI

THE CYBER ECONOMY

We will ensure a thorough understanding of developmental trends in information technology, implement the national cyber development strategy, accelerate the development of digital technology, deepen the integration of information technology into economic and social development, and accelerate the expansion of the information economy.

Chapter 25 Build Ubiquitous, Efficient Information Networks

We will accelerate the construction of high-speed, mobile, secure, and ubiquitous next generation information infrastructure and spread the use of information network technology in order to bring about a cyberspace where all things are interconnected, humans and machines engage in interaction, and terrestrial and space-based facilities are integrated.

Section 1

New Generation High-Speed Fiber-Optic Networks

We will establish backbone networks for modern communications and strengthen capabilities with respect to high-speed transmission, flexible scheduling, and intelligent adapters. We will move faster in deploying fiber optic broadband access: for urban areas, we will ensure optical network coverage, provide gigabit and higher network access services, and see that home broadband subscribers in large and medium cities have flexibility in choosing services in excess of 100 Mbps, while for rural areas, we will work to make sure that 98% of administrative villages are linked up to fiber-optic networks, 100 Mbps or higher access service capabilities are available in areas where conditions permit, and more than half of rural home broadband subscribers have flexibility in choosing services in excess of 50 Mbps. We will establish open international communications facilities, refine the distribution of international communication networks, and improve cross-border land and submarine cable infrastructure. We will develop an online Silk Road with the Arab countries and others and accelerate the development of the China-ASEAN Information Harbor.

Section 2

An Advanced and Ubiquitous Wireless Broadband Network

We will intensify efforts to spread the availability of high-speed wireless broadband. We will accelerate the development of 4G networks, see that such networks achieve full and robust coverage of towns, townships, and densely populated administrative villages, and expand the availability of free high- speed wireless local area network connectivity in popular public spaces in urban areas. We will accelerate the extension of internet networks to remote mountainous areas, pastoral areas, and island reefs. We will improve the allocation of the country's spectrum resources, strengthen management over the radio-frequency spectrum, and safeguard security and order with respect to radio waves. We will make appropriate plans for utilizing satellite frequencies and orbital resources. We will accelerate the development of the internet in

space and work to achieve interconnectivity between terrestrial and space-based facilities.

Section 3

New Information Network Technology

We will drive forward research in key technologies for 5G mobile networks and ultra-wideband applications, and develop commercial applications of 5G technology. We will adopt a forward-thinking approach in planning for the next generation internet and move to upgrade to IPv6 across the board. We will formulate plans for future cyber frameworks, cyber technology systems, and cybersecurity systems. We will focus on making breakthroughs in key big data and cloud computing technologies, independently controllable operating systems, high-end industrial software and large management software, and artificial intelligence technologies for emerging areas.

Section 4

Broadband Internet Speed and Rates

We will open up competitive areas in basic telecommunication fields to private capital so that infrastructure can be jointly developed and shared among diverse forms of market entities and services are better able to compete with each other. We will step up efforts to offer telecommunications, radio and television, and internet services over a single broadband connection. We will strengthen universal service responsibilities and improve mechanisms toward this end. We will boost broadband speeds, lower rates for internet service, simplify the structure of charges for telecommunications services, and make telecommunications services more cost-effective. We will improve the internet architecture, access technologies, and billing standards. We will strengthen oversight over internet pricing practices.

Chapter 26 Develop Modern Internet Industries

We will implement the "Internet +" action plan to promote deeper and more extensive applications of the internet and help transform modes of production and methods of organization, with the aim of bringing about a new pattern of industrial development that is internet-based, intelligent, service-oriented, and coordinated.

Section 1

Foundation for the Application of the Internet

We will promote the development of cloud computing and the Internet of Things. We will encourage leading internet enterprises to make available the resources of their platforms, strengthen the development of industry cloud service platforms, and support the shifting of industry information systems to cloud-based platforms. We will move ahead with the planned distribution of Internet of Things sensory equipment and promote the development of open-loop applications of the Internet of Things. We will promote the research, development, and application of key technologies for cyber-physical systems. We will establish standards for the "Internet +" action plan, accelerate the formulation and dissemination of fundamental generic standards and key technical standards for both the internet and areas integrated with the internet, and work to strengthen China's say in the formulation of international standards.

Section 2

Integration of the Internet into Multiple Fields

We will organize the implementation of the "Internet +" initiative, accelerate efforts to promote innovations in internet-based business models, service models, management models, supply chains, and logistics chains, cultivate the "Internet +" ecosystem, and ensure the formation of a new pattern of internet-based collaboration and division of work. We will guide large internet enterprises in making innovation resources available to small and micro businesses and entrepreneurial teams, and encourage the establishment of internet-based open innovation alliances. We will

promote new forms of business based on "Internet +," encourage the establishment of platforms for releasing and sharing resources, explore the creation of national experimental demonstration zones for an information economy, and develop the sharing economy. We will promote the rapid development of emerging forms of businesses such as online medical services and online education as well as those that integrate their offline and online presences. We will relax restrictions on market access for convergent products and services.

Chapter 27 Implement the National Big Data Strategy

We will make big data a fundamental strategic resource and fully implement a plan for its development, accelerating the opening, sharing, development, and application of data resources so as to help transform and upgrade industries and bring about innovations in social governance.

Section 1

Opening and Sharing of Government Data

We will promote the efficient collection and integration of big data in all key areas and deepen correlation analysis and integrated utilization of government and social data so as to increase the precision and effectiveness of macroeconomic regulation, market supervision, social governance, and public services. We will accelerate efforts to facilitate inter-departmental sharing and use of data resources through unified platforms for sharing and exchanging government data. We will ensure that government information systems and public data are interconnected, open, and shared by moving faster to establish an open national platform for government data. We will create a government data release and sharing catalogue and publically release data resources in accordance with the law. We will conduct overall planning for the development of infrastructure such as national big data platforms and data centers. We will conduct research on the formulation of data sharing and protection laws and regulations and introduce regulations for the management of government information resources.

Section 2

Sound Development of Big Data Industries

We will work to see the innovative application of big data in all industries, explore new forms and models of collaborative development between big data industries and traditional industries, and move faster to improve big data industrial chains. We will accelerate efforts to tackle key technological issues in fields such as massive data collection, storage, redaction, analysis, visualization, and privacy protection. We will promote the development of big data hardware and software products. We will improve public service support systems and ecosystems for big data industries and strengthen relevant standards and quality requirements.

Chapter 28 Strengthen Information Security

We will work to see that cybersecurity is developed in tandem with information technology, systems safeguarding national cybersecurity are improved, the protection of important information systems and data resources is strengthened, and network governance capacity improves in order to ensure national information security.

Section 1

Better Protection of Data Resources

We will establish a big data security management system that uses categorization and multilevel management in order to safeguard the security, effectiveness, and reliability of data use. We will implement the big data security project, strengthen security over the collection, storage, usage, and release of data resources, strengthen security evaluations and protection for all types of public data resources in areas such as information release and sharing, and establish a mechanism for the assetization and

authorized use of internet enterprises' data resources. We will strengthen personal data protection and crack down on the unlawful release or sale of such information.

Section 2

Well-Conceived Cyberspace Governance

We will improve cyberspace governance to create a safe and civil online environment. We will establish a system of basic safeguards for cyberspace governance, refine internet security laws and regulations, and improve the effective registration of personal internet information and internet real-name authentication. We will establish a review system and a standards system for network security, strengthen detailed cyberspace management, clear out illegal and bad information, and ensure that online crime is punished in accordance with the law. We will improve response mechanisms for online and informational security emergencies. We will give impetus to the establishment of multilateral, democratic, and transparent international internet governance systems, and take an active part in international cooperation on the formulation of international rules relating to cyberspace security, the fight against online crime, and internet security technology and standards.

Section 3

Full Protection of Important Information Systems

We will establish a system for protecting key information infrastructure and improve the design, development, and operational oversight mechanisms of important information systems affecting national security. We will focus our resources on making breakthroughs in key technologies for information management, information protection, security reviews, and foundational support in order to raise China's information security capacity. We will strengthen the development of threat perception capabilities and continuous defense capabilities for core technological equipment in key information infrastructure. We will improve hierarchical protection systems for important information systems. We will improve security mechanisms managed both horizontally

and vertically for key industries, regions, and information systems. We will actively develop the information security industry.

Box 9
Information Technology Projects

1. The National Broadband Agenda

§ Establish a high-speed, high-capacity optical telecommunications system;

§ Implement projects to extend broadband connectivity to rural villages and improve basic network infrastructure in small and medium cities in the central and western regions;

§ Expand international internet bandwidth capacity;

§ Plan for the development of 4G and subsequent evolutionary technologies;

§ Extend full 4G coverage to regions where it is needed.

2. Promoting application of the Internet of Things

§ Develop infrastructure and service platforms for uses of the Internet of Things;

§ Promote the development of demonstration projects of major applications of the Internet of Things;

§ Make extensive innovations in integrated applications and models of Internet of Things technology;

§ Enrich services through the application of the Internet of Things.

3. Cloud computing innovation and development

§ Support the development of public cloud service platforms;

§ Plan for the establishment of cloud computing and big data centers;

§ Improve the ability to provide cloud computing solutions;

§ Promote cloud application services in manufacturing, banking, people's wellbeing, logistics, medical services, and other key industries;

§ Continuously improve cloud computing ecosystems.

4. "Internet +"

§ Promote "Internet +" in starting up businesses, innovation, collaborative manufacturing, smart energy, inclusive finance, public-interest services, high-efficiency logistics, e-commerce, convenient transportation, ecological conservation, artificial intelligence, e-taxation, convenient judicial services, education, training, scientific popularization, geographical information, credit, and cultural tourism;

§ Continuously expand areas which take advantage of the internet.

5. Big data applications

§ Establish a unified open platform for big data;

§ Progressively release public datasets;

§ Encourage enterprises and the general public to analyze and utilize data;

§ Promote the innovative use of big data in fields such as government governance, public services, industrial development, and technological research and development;

§ Promote the development of comprehensive big data experimental zones

in Guizhou and other areas.

6. A more IT-based government

§ Accelerate the development and utilization of a national unified e-government network;

§ Improve platforms for approval oversight, credit information, public resources trading, information on the reporting of price violations, and others;

§ Accelerate the development and utilization of a national database for basic information resources.

7. E-commerce

§ Support the development of e-commerce infrastructure;

§ Promote the innovation and adoption of e-commerce in key areas;

§ Promote the development of comprehensive experimental zones for cross-border e-commerce in Hangzhou and other areas so as to build international e-commerce thoroughfares.

8. Cybersecurity

§ Implement the national information security project;

§ Become better able to ensure security for key information infrastructure, important information systems, and classified information systems, and use them to better support industrial development;

§ Implement national science and technology projects for ensuring cyberspace security;

§ Make breakthroughs in key technologies such as core chips, basic software, key components, and major machinery systems;

§ Establish a national system for cyberspace security and security technology.

PART VII

MODERN INFRASTRUCTURE NETWORKS

We will expand the space for infrastructure construction and move faster to improve modern infrastructure networks, making them safer and more efficient as well as smart, eco- friendly, and interconnected, thereby ensuring they better play their role in supporting and leading economic and social development.

Chapter 29 Develop Better Modern Comprehensive Transportation Systems

With the aim of developing smart, integrated, and eco -friendly transportation networks, we will work to build a comprehensive transportation system that connects domestic and international transportation routes, extensively covers both urban and rural areas across regions, incorporates hubs with optimized functions, and provides integrated, efficient services.

Section 1

Interconnected Domestic and International Transportation Networks

We will establish comprehensive transportation thoroughfares running from east to west and from north to south that ensure unobstructed and interconnected domestic and international transportation. We will step up construction on routes to and from Xinjiang and Tibet, and develop international transportation corridors starting from the northwestern, southwestern, and northeastern regions as well as transportation corridors along the Maritime Silk Road. To develop high-quality express transportation networks, we will step up work to put in place a network of high-speed railways, improve the network of national expressways, build local expressways as appropriate, and strengthen the ability of hub airports and main and regional airports to fulfill their respective functions. To develop better, more extensive basic transportation networks, we will accelerate railway construction in the central and western regions; move forward with upgrading and renovating ordinary national and provincial highways as well as places where they are bottlenecked; ensure greater levels of expertise are used in the development of coastal and inland water transportation facilities; step up construction of rural roads and general purpose airports; and work to ensure regional interconnection of oil and gas pipelines. We will also ensure better postal network services and strengthen the building of infrastructure for express delivery services.

Section 2

Modern and Efficient Urban and Intercity Transportation

In urbanized areas, we will actively develop intercity and municipal (suburban) rail services and encourage the use of existing tracks to operate intercity rail services so as to form core networks of rail transit lines, running at different levels, which ensure efficient connections between small, medium, and large cities as well as towns. We will give priority to the development of public transportation, speed up the development of urban rail transit, bus rapid transit, and other forms of mass public transportation, and will encourage people to use eco-friendly transportation to get around. We will give impetus to the development of online vehicle booking and other forms of customized transportation services. We will strengthen rapid transit between city centers and outbound main roads and ensure faster and smoother traffic flow into and out of cities. We will step up efforts to develop urban parking facilities and terminals for postal and express delivery networks.

Section 3

Integrated Multimodal Transportation Hubs

To achieve an optimal spatial distribution of hubs, we will develop comprehensive international transportation hubs in Beijing, Shanghai, Guangzhou, and other cities; improve the standards of national, regional, and local comprehensive transportation hubs; channel greater energy into building major hubs in the central and western regions; move forward with efforts to turn major ports of entry in border areas into transportation hubs; and see that these transportation hubs play a better role in facilitating domestic and international transportation. We will improve the role of hubs as providers of comprehensive services, optimize transfer facilities and distribution and transportation networks, and work to ensure zero-distance passenger transfers and seamlessly integrated freight transportation, so as to achieve highly efficient coordination between different modes of transportation, make full use of integrated transportation, and increase the overall efficiency of transportation and logistics.

Section 4

Low-Carbon, Smart, and Safe Transportation Services

We will make headway in the low-carbon development of transportation by seeing that resources are used intensively and economically and by promoting the application of standard modern transportation equipment and energy-efficient, environmentally friendly means of transport. We will accelerate the development of smart transportation; make wider use of advanced information technology and intelligent technology and equipment in transportation services; improve multimodal transport systems, intelligent management systems, and public information systems; and accelerate the development of multimodal transportation, so as to improve the quality and increase the profits of transportation services. We will tighten safety management over transportation and postal services and increase our capacity to ensure safety, respond to emergencies, and carry out emergency rescue. We will press ahead with reform in the taxi industry, promote market-based reform in the railway sector, and speed up reform of the airspace management system.

Box 10
Transportation Projects

1. High-speed rail

§ Speed up the improvement of high-speed rail networks:

§ Complete the Harbin-Beijing-Hong Kong (Macao), Lianyungang-Ürümqi, Shanghai-Kunming, and Guangzhou-Kunming lines;

§ Build the Beijing-Hong Kong (Taipei), Hohhot-Nanning, Beijing-Kunming, Baotou-Yinchuan-Haikou, Qingdao-Yinchuan, Lanzhou (Xining)-Guangzhou, Beijing-Lanzhou, and Chongqing-Xiamen lines;

§ Extend regional lines connecting high-speed railways.

§ The length of high-speed rail lines open to traffic will reach 30,000 kilometers, connecting more than 80% of all large cities.

2. Expressways

§ Speed up the construction of the national expressway network, which consists of 7 radial expressways from Beijing, 11 north-south expressways, and 18 east-west expressways, as well as regional ring roads, parallel highways, and connecting roads;

§ Increase the density and improve the service of expressway networks in the Yangtze Economic Belt and the Beijing-Tianjin-Hebei region; increase capacity around heavily congested sections of expressways;

§ The length of newly-built and upgraded expressways open to traffic will reach around 30,000 kilometers.

3. Coastal, Yangtze, border, and Belt and Road thoroughfares

§ Basically complete construction on a coastal high-speed railway from Dandong to Fangchenggang, a coastal expressway, and a high-speed railway along the Yangtze River from Shanghai to Chengdu;

§ Speed up the construction of highways along our borders;

§ Build railways along our borders such as the Hotan-Ruoqiang Railway, the Luoguhe-Laoheishan Railway along the border in the Northeast, and the Chengdu-Lhasa Railway;

§ Press ahead with construction of transborder thoroughfares between China and neighboring countries and thoroughfares along the Belt and Road routes;

§ Build logistics platforms for international freight trains in Ürümqi, Lanzhou, and other major hub cities along the Belt and Road routes;

§ Construct the Shenzhen-Zhongshan Bridge.

4. Civil airports

§ Build international hub airports:

§ Complete the construction of the new airport in Beijing;

§ Construct clusters of world-class airports in the Beijing-Tianjin-Hebei region, the Yangtze River Delta, and the Pearl River Delta;

§ Speed up the construction of international aviation hubs in Harbin, Shenzhen, Kunming, Chengdu, Chongqing, Xi'an, Ürümqi, and other cities;

§ Strengthen the functions of regional hub airports.

§ Implement projects to rebuild, relocate, or expand some of the busiest main airports, while also building regional airports and general purpose airports;

§ Build cargo airports including that in Zhengzhou;

§ The number of civil airports will be increased by at least 50.

5. Harbor and shipping facilities

§ Improve and upgrade clusters of ports in the Bohai Sea rim, the Yangtze River Delta, and the Pearl River Delta;

§ Speed up the construction of high-grade inland waterways on the Yangtze, Pearl-Xi, Huai, and Min rivers;

§ Make a major push to move forward with the construction of international shipping centers in Shanghai, Tianjin, Dalian, Xiamen, and other harbor cities;

§ Adopt an orderly approach in moving forward with the construction of specialized berths for containers, crude oil, and liquefied natural gas in coastal harbors;

§ Take steady steps to build international cruise terminals such as that on Phoenix Island, Hainan;

§ Increase the level of intelligent systems used in harbors.

6. City-cluster transportation

§ Within each city cluster develop a metropolitan area commuting transport model which ensures a commute of one to two hours between central cities and between central cities and nodal cities and a one hour commute between central cities and major towns;

§ Basically complete the construction of intercity rail networks for the

Beijing- Tianjin-Hebei, Yangtze Delta, Pearl River Delta, middle-reach Yangtze, Central Plain, Chengdu-Chongqing region, and Shandong Peninsular city clusters; put in place the framework of intercity rail networks for other city clusters;

§ Carry out demonstration projects for municipal (suburban) rail lines.

7. Urban transportation

§ Improve urban rail transit networks in megacities and supercities and move faster to establish rail transit networks in cities with populations of over 3 million; improve urban public transportation systems; and build high-density parking facilities;

§ Open approximately 3,000 kilometers of new urban rail transit lines to traffic;

§ Ensure smooth traffic flow on urban roads and at busy entrances and exits of outbound highways; and in cities, where conditions permit, plan and construct ring roads.

8. Rural transportation

§ Continue to build rural roads:

§ Move forward with rural road interconnection in areas where conditions allow;

§ Upgrade county and township roads, build safety protection facilities on rural roads, and renovate dilapidated bridges;

§ Intensify efforts to maintain rural roads;

§ Ensure all administrative villages are linked to paved roads and shuttle bus services where conditions permit.

§ Improve the infrastructure for postal and express delivery services in rural areas and in the western region of the country, and ensure every village has access to postal services.

9. Transportation hubs

§ Giving priority to the development of high-speed railways, intercity rail transit, and airports, build a number of open, integrated multimodal passenger transportation hubs, give impetus to the development of same-platform and multilevel-platform passenger transfers, and step up efforts to develop rapid transit between major passenger transportation hubs in cities, so as to reduce the distance and time of passenger transfers;

§ Build a number of multimodal freight transportation hubs to improve the efficiency of transloading;

§ Encourage development of city complexes built around transportation hubs.

10. Intelligent transportation

§ Promote the internet-based operation of transportation infrastructure and means of transportation and the digitalization of operation information, accelerate development of the Internet of Vehicles and the Internet of Vessels, improve early warning systems for failures and systems for operational maintenance and intelligent scheduling, press ahead with vehicle automation, the digitalization of facilities, and the increasing use of smart operations;

§ Move ahead with establishing one-stop ticketing services for railway, air, and road passenger transportation, and build public information service platforms for multimodal transportation as well as big data centers for transportation.

Chapter 30 Build a Modern Energy System

We will make a strong push to advance the energy revolution, giving impetus to a transformation in the way energy is produced and used, improving the energy supply mix, and elevating the efficiency of energy utilization. We will build a modern energy system that is clean, low-carbon, safe, and efficient, and will safeguard the country's energy security.

Section 1

The Energy Mix

We will coordinate the development of hydropower with ecological conservation while giving priority to the latter; and with a focus on building main hydropower plants in key water basins, we will work systematically to develop hydropower resources in the southwest. We will continue to give impetus to the development of wind and photovoltaic power and provide strong support for solar thermal energy. Focusing particularly on the building of a coastal nuclear power plant belt, we will ensure adequate safety measures are taken in developing demonstration initiatives and projects in nuclear power generation. We will accelerate the development of biomass and geothermal energy and actively exploit tidal power in coastal areas. We will improve supportive policies for power generation from wind, solar, and biomass energy. We will optimize the development of national comprehensive energy centers and step up efforts to ensure the cleaner and more efficient use of coal. We will restrict coal resource development in the east of the country, limit it in the central and northeastern regions, and optimize it in the west; make progress in achieving more eco-friendly exploitation and transformations of large coal production centers; and encourage the application of new technologies in the development of coal based power generation. We will strengthen onshore and offshore oil and gas exploration and exploitation, take well-ordered measures to relax control over mining rights, and actively exploit natural gas,

coal seam gas, and shale oil and gas. We will move forward with the transformation and upgrading of the oil refining industry, implement an action plan for improving the quality of refined petroleum products, and develop new clean oils such as biofuels.

Section 2

Modern Energy Storage and Transportation Networks

We will coordinate the development of multiple forms of transportation for coal, electricity, oil, and gas; step up efforts to build energy storage and peak shaving facilities; and move faster to develop safe and reliable modern energy storage and transportation networks which enable integrated energy development and free-flowing domestic and international energy transportation. We will strengthen efforts to build trans-regional core energy transportation networks; complete construction on the Inner Mongolia-Jiangxi north-to-south coal line; and optimize the construction of main power grids and trans-regional power transmission routes. We will accelerate the construction of strategic land corridors for importing oil and gas. We will make progress in building oil and gas storage facilities and strengthen capacity for oil and gas storage and peak shaving.

Section 3

Smart Energy Systems

We will accelerate smart development across the entire energy sector and all areas of its operation in order to make energy development more sustainable and adaptable. We will adapt to the development of distributed energy and the diversified demands of users, improve demand-side management of electric power, speed up the development of smart power grids, and make power grids and the power generation and demand sides more mutually responsive. We will promote significant integration of new technologies between the energy sector and other sectors such as information technology; coordinate the development of energy infrastructure and communications, transportation, and other infrastructure; and build an energy internet that enables the

coordinated development, integration, and complementarity of power generation, transmission, loading, and storage.

Box 11
Energy Development Projects

1. High-efficiency smart power systems

§ Speed up the development of quality peak shaving power sources such as pumped-storage hydroelectric plants, main hydropower plants, and natural gas peaking power plants;

§ Give impetus to the development of storage power plant and efficient power plant demonstration projects;

§ Strengthen integration and complementarity between different power sources and storage facilities;

§ Make power systems more adaptive and efficient.

2. Clean and efficient coal utilization

§ Implement the upgrading action plan for energy conservation and emissions reductions in coal based power generation:

§ Carry out nationwide upgrades of coal-fired power units to achieve ultra-low emissions and energy efficiency;

§ Ensure average coal consumption per kilowatt-hour is kept below 310 grams in existing power plants and below 300 grams in new power plants.

§ Encourage the use of backpressure thermal power units for heating and develop combined multi-source heating, cooling, and power systems;

§ Increase the proportion of coal used for power generation.

3. Renewable energy

§ Begin construction on 60 gigawatts of regular hydropower capacity, giving priority to hydropower development in the southwest;

§ Coordinate the development of end-use markets and power transmission routes; take ordered steps to optimize the development of wind energy and photovoltaic energy in the northern, northeastern, and northwestern regions and in coastal areas;

§ Accelerate the development of dispersed wind power and distributed photovoltaic power in the central, eastern, and southern regions;

§ Carry out solar thermal energy demonstration projects;

§ Build the national new energy integrated demonstration zone in Ningxia, and actively move forward with the development of demonstration zones for renewable energy such as those in Qinghai and Zhangjiakou.

4. Nuclear power

§ Complete the Sanmen and Haiyang AP1000 projects;

§ Develop demonstration projects for Hualong-1 nuclear technology in Fuqing, Fujian and in Fangchenggang, Guangxi;

§ Begin construction on the CAP1400 demonstration project in Rongcheng, Shandong;

§ Begin construction on a number of coastal nuclear power plants and

accelerate construction on the third phase of the Tianwan nuclear power plant;

§ Actively carry out preliminary work for inland nuclear power plant projects;

§ Move more quickly to conduct feasibility studies and drive forward the development of large commercial reprocessing plants;

§ Installed capacity of nuclear power plants in operation will reach 58 gigawatts, with over 30 gigawatts of nuclear-generation capacity under construction;

§ Strengthen the development of systems for ensuring nuclear fuel.

5. Unconventional oil and gas

§ Build coal seam gas industrial bases in:

§ the Qinshui Basin;

§ the eastern Ordos Basin;

§ Bishuixing, Guizhou.

§ Accelerate the exploration and exploitation of shale gas in:

§ the Changning-Weiyuan region, Sichuan;

§ Fuling, Chongqing;

§ Zhaotong, Yunnan;

§ Yan'an, Shaanxi;

§ the Zunyi-Tongren region, Guizhou.

§ Give impetus to tight oil, oil sands, and deep-water oil prospecting and exploitation and to the comprehensive development and utilization of oil shale;

§ Move forward with the prospecting and commercial pilot production of natural gas hydrate resources.

6. Energy transmission routes

§ Build electricity transmission routes for hydropower bases and large coal-fired power bases and, while building the 12 power transmission routes included in the action plan for air pollution prevention and control, focus on constructing power transmission routes from the southwestern, northwestern, northern, and northeastern regions;

§ Step up work on the development of strategic land corridors for importing oil and gas and related trunk pipeline networks in the northwestern, northeastern, and southwestern regions;

§ Improve the backbone pipeline networks for natural gas transmission, including the west-to-east gas transmission project, the Shaanxi-Beijing gas pipeline, and the project to transport natural gas from Sichuan to the central and eastern regions.

7. Energy storage facilities

§ Complete the second phase of the state petroleum reserves project and start preliminary work for the follow-up project;

§ Strengthen work on building reserves for refined oil products;

§ Build natural gas reserves, increasing the scale of gas storage and emergency response capacity for gas peak shaving;

§ Build coal storage and transportation facilities in areas where coal is in short supply and in coal distribution centers, and improve the emergency coal reserve system;

§ Increase the scale of natural uranium reserves.

8. Key energy technology and equipment

§ Accelerate research and development and the application of technologies for:

unmanned coal mining;
the prevention and control of deep mine accidents;
unconventional oil and gas prospecting and exploitation;
deep water and deep conventional oil and gas exploitation;
low- and medium-temperature pyrolysis and quality-specific conversion of low-rank coal;

700℃ ultra-supercritical coal-fired power generation;

4th generation nuclear energy;
offshore wind energy;
solar thermal power generation;
large-scale energy storage;
geothermal energy utilization;
smart grids.

§ Improve capacity to manufacture equipment including:
3rd generation nuclear power reactors;
gigawatt hydropower units;
energy-efficient boilers and electric motors.

§ Make breakthroughs in the manufacturing of and applied technologies for key components and materials such as high-power electric and electronic equipment and high-temperature superconductors.

Chapter 31 Strengthen Water Security

We will move faster to improve water conservancy infrastructure networks and work to ensure the carefully-planned development, rational allocation, economical use, and efficient utilization of water resources so as to strengthen the country's capacity to ensure water security.

Section 1

Water Resource Allocation

We will conduct feasibility studies and take steady steps to move forward with a number of major water diversion projects, key projects connecting river and lake systems, and key water source projects; coordinate and strengthen efforts to build small and medium water conservancy facilities; and move more quickly to construct safe and reliable regional water supply networks linking different water sources to ensure supply in both urban and rural areas. We will implement region-specific counter- drought water source projects and step up efforts to develop emergency and backup water sources for cities. We will exploit and utilize surface water and different kinds of unconventional water sources in a carefully- planned way and impose rigid controls on groundwater mining. We will take systematic measures to improve river basin environments, ensure adequate water to preserve river ecosystems, and improve capacity for water conservation and storage. We will implement well-planned steps to develop and harness the water of cross-border river basins, and deepen cross-border water cooperation with neighboring countries. We will carry out weather modification activities.

Section 2

Comprehensive Flood Control and Mitigation Systems

We will strengthen the development of key projects to manage rivers and lakes and continue to reinforce the levees of major rivers and lakes, improve waterway management, carry out water control projects, and build flood detention basins. We will move more quickly in our work on harnessing small and medium rivers, flash flood prevention and disaster management, and the reinforcement of dilapidated reservoirs and sluices; and work to ensure that key seawalls reach set standards. We will strengthen meteorological and hydrological monitoring, rainfall forecasting, hydrological regime predictions, and flood risk management, improving our ability to prevent and mitigate damage caused by flooding.

Box 12 **Water Security Projects**
1. Large-scale irrigation zones § Complete the building of auxiliary facilities and the upgrading of water-saving systems in all 434 large irrigation areas;

§ Carry out large irrigation projects, including:
the Nierji water conservancy project on the Nen River;
the Songyuan irrigation project in Jilin;
Xiangjiaba Dam in Sichuan;
Centianhe Reservoir in Hunan;
the Liaofang water control project in Jiangxi;
the Hongling irrigation project in Hainan;
the irrigation of large areas on both the southern and northern banks of Xiaolangdi Reservoir in Henan.

§ The total area of irrigated farmland will reach more than 66.67 million hectares.

2. Water diversion

§ Carry out major projects, including:
the Songhua River to central Jilin diversion project and the linking of rivers and lakes in western Jilin;
the project to divert water from the Yellow River to Baiyangdian Lake in Hebei;
the project to divert water from the Yangtze River to Lake Chao and the Huai River;
the Han River to the Wei River, Shaanxi diversion project;
the Jiayan, Guizhou water control project;
the Yao River to central Gansu (phase II) diversion project;
the Jinsha River to central Yunnan diversion project;
the project to divert water from Datong River to the Huang River in Qinghai;
the project to divert water from Chuoer River to the Xiliao River in Inner Mongolia;
the allocation of water resources to Pingtan and the Min River Delta in Fujian;
the allocation of water resources in northern Hubei.

§ Press ahead with the follow-up projects for the eastern and central routes of the South-to-North Water Diversion Project.

3. Major water sources

§ Construct large reservoirs, including:
Lalho in Tibet;
Zhuxi in Zhejiang;
Huokou in Fujian;
Fendou in Heilongjiang;
Mangshan in Hunan;
Agang in Yunnan.

§ Start construction on major water source projects, including:
Jiangxiang in Anhui;
Lijiayan in Sichuan;
Huangjiawan in Guizhou.

§ Carry out counter-drought emergency water source projects;
§ Intensify efforts to develop medium reservoirs and other key regional water sources.

4. Projects to manage rivers and lakes

§ Construct water control projects for river basins, including:
the Datengxia project on the Xi River;
the Chushandian project on the Huai River;
the Artashi project in Xinjiang.

§ Basically complete work on harnessing 244 major rivers covering over 3,000 square kilometers of drainage areas, including projects to:
strengthen flood prevention along the primary channels of the Heilong, Songhua, and Nen rivers;
control the flow regime of the middle and lower reaches of the Yangtze;
build levees on the lower reaches and improve the waterways along the middle and upper reaches of the Yellow River;
carry out a new round of major water conservancy projects to harness the Huai River and manage Lake Tai;
ensure the security of flood detention basins;
move more quickly to harness small and medium rivers such as the Yarkant River.

§ Conduct preliminary work on the:
Guxian water conservancy project on the Yellow River;
Poyang Lake water conservancy project;
Heishanxia hydropower plant on the Yellow River.

PART VIII

NEW URBANIZATION

In committed pursuit of people-centered urbanization based on city clusters, supported by the comprehensive carrying capacity of cities, and safeguarded by institutional innovations, we will step up the pace of new urbanization, make further progress in building a new socialist countryside, strive to bridge the gap between urban and rural development, and facilitate urban and rural integration.

Chapter 32 Promote Urban Residency for People with Rural Household Registration Living in Urban Areas

We will coordinate the reform of the household registration system and efforts to ensure more equitable access to basic public services, and improve incentives for granting urban residency to permanent residents from rural areas, giving impetus to more people to settle in urban areas.

Section 1

Household Registration Reform

We will make progress in efforts to see that people who have moved from rural to urban areas and are able to find stable employment and settle into urban life can move their families with them and obtain urban residency, and that they enjoy the same rights and share the same responsibilities as other urban residents. In granting urban residency to people from rural areas, we will prioritize rural students moving up to the next level of education in an urban area, armed forces personnel settling in an urban area, people who have lived in an urban area for at least five years and have moved their families with them, and new generation migrant workers. Cities at the provincial capital level and below should lift all restrictions on granting residency to college and university graduates, skilled workers, vocational school graduates, and those who have returned from studying abroad. We will promote the practice of linking professional and technical titles and skill levels with the granting of residency in large cities. Large and medium cities must not adopt means to restrict access to permanent residence such as requirements related to the purchase of housing, investment, tax payment, or point accumulation systems. Megacities and supercities should implement differentiated policies for granting permanent residency using stable legitimate employment, housing (including rented housing), number of years of participation in urban social insurance schemes, and number of years of continuous residence as the main criteria for eligibility. We will ensure that local governments assume greater responsibility for moving

forward with the granting of urban residency to more people who have moved from rural to urban areas.

Section 2

The Residence Card System

We will fully implement the provisional regulations on residence cards and see that the residence card system covers all permanent urban residents without urban residence registration. We will ensure the entitlement of residence card holders to compulsory education and employment, health, and other basic public services specified by the state in the cities where they are resident. We will encourage all levels of local governments to continually expand the scope of services for residence card holders, improve service standards, and narrow the gap between card holders and registered urban residents.

Section 3

Mechanisms to Promote Urban Residency

We will improve the mechanism linking the transfer payments a local government receives to the number of former rural residents granted urban residency in its jurisdiction, establish the mechanism linking increases in the amount of land designated for urban development in a locality to the number of former rural residents granted urban residency there, and put in place a mechanism linking the subsidies for infrastructure development a city receives from government development funds to the number of former rural residents to whom it grants urban residency. We will ensure that the rights of people from rural areas who hold permanent urban residency are protected in relation to the rural land they have contracted, the land on which their rural housing is built, and their share in proceeds from rural collective undertakings, and we will support and guide their voluntary transfer of such rights in return for compensation in accordance with the law. We will intensify efforts to move forward with comprehensive new urbanization trials.

Chapter 33 Improve the Distribution and Layout of Urban Areas

We will work faster in pursuit of an urbanization strategy which stresses reasonable distribution and coordinated development of cities of all sizes and small towns and which combines two horizontal axes—land bridges and the Yangtze River—and three vertical axes—China's coastline, the Beijing- Harbin and Beijing-Guangzhou railways, and the Baotou-Kunming Railway.

Section 1

City Cluster Development

We will give a boost to city clusters in the eastern region; build world- class city clusters in the Beijing-Tianjin-Hebei region, the Yangtze River Delta, and the Pearl River Delta; and make the city clusters on the Shandong Peninsula and the west side of the Taiwan Straits more open and competitive. We will cultivate city clusters in the central and western regions; develop the city clusters in the northeast and the Central Plains region, around the middle reaches of the Yangtze River, and in the Chengdu-Chongqing region and the Guanzhong Plains region; and plan and guide the development of city clusters in Beibu Bay, central Shanxi, the Hohhot-Baotou-Ordos-Yulin region, central Guizhou, central Yunnan, the Lanzhou-Xining region, the area around the Ningxia section of the Yellow River, and the northern foothills of the Tianshan Mountains, creating more growth poles to support regional development. We will promote the development of the urban agglomerations centered around Lhasa and Kashi. We will establish sound mechanisms for coordinating the development of city clusters and promote coordination in industrial division of labor, infrastructure, ecological conservation, and environmental improvement between cities in different regions in order to achieve the integration and efficient development of city clusters.

Section 2

Central Cities Leading the Development of Surrounding Areas

We will develop a number of central cities and ensure they better serve their respective regions. Megacities and supercities should move faster to become more international, relieve their central areas as appropriate of functions nonessential to their roles, strengthen commuting efficiency and integrated development with neighboring towns and cities, and promote the establishment of metropolitan areas. Large and medium cities should accelerate industrial transformation and upgrading, expand industrial and service chains oriented toward the interior, and create growth nodes for driving the development of their regions. We will define well-conceived growth boundaries for central areas of cities and promote a shift in city development from relying mainly on outward expansion to focusing on the improvement of quality.

Section 3

Small and Medium Cities, and Distinctive Towns

We will accelerate the development of small and medium cities, with efforts aimed at improving quality and increasing quantity. We will guide the distribution of industrial projects in these cities and in county towns, improve municipal infrastructure and public service facilities, and promote the allocation of quality education, medical care, and other resources for public services to small and medium cities and small towns. We will work more quickly to expand the functions of larger towns with populations of 100,000 or over, conferring on them part of the administrative authority enjoyed at the county level, and specify the standards for establishing cities and districts so that counties and large towns that meet criteria can be turned into cities. In line with local conditions, we will develop attractive small towns that are distinctive in character and integrate industrial and urban development. We will improve the functions of border ports.

Chapter 34 Develop Harmonious and Pleasant Cities

We will transform the way cities develop, improve urban governance capacity, redouble efforts to prevent and control urban maladies, continuously improve the

quality of the environment, living standards, and the competitiveness of our cities, and work to create cities that are harmonious and pleasant to live in, that are full of vitality, and that have their own unique character.

Section 1

A New Style of City

We will build green cities by adjusting the scale of cities in accordance with their resource and environmental carrying capacities, using eco-friendly planning, design, and construction standards, and carrying out initiatives to build ecological corridors and restore ecosystems. We will build smart cities as we strengthen modern information infrastructure and promote the development of big data and the Internet of Things. We will build innovative cities by making full use of the concentrations of creative resources found in cities to develop business parks and cradles of innovation. We will build cities of culture through efforts to make cities more open and inclusive, strengthen the protection of cultural and natural heritage, and keep historical heritage alive. We will strengthen the development, use, and regulation of urban spaces and build high-density and public transit-oriented compact cities with integrated functions.

Section 2

Urban Infrastructure

We will create modern, safe, and efficient urban infrastructure systems with rational layouts, complete sets of facilities, and a full range of functions. We will accelerate the upgrading and building of urban water supply facilities. We will work faster to upgrade and build new municipal pipelines and other underground infrastructure. We will step up efforts to improve urban roads, car parking and traffic safety facilities, and urban transport facilities for pedestrians and cyclists. We will move forward with building accessible facilities in all cities. We will ensure strict compliance with regulations requiring that kindergartens and schools be developed to accompany the building of new residential areas and strict compliance with standards requiring that newly built residential communities come with parking spaces and charging facilities.

We will strengthen the development of facilities for preventing flooding and waterlogging and managing water flow as well as the development of parks, green spaces, and other such facilities for supporting urban ecosystems, support the development of sponge cities, and improve urban public facilities. We will work to disaster proof urban buildings and infrastructure.

Section 3

Rundown Areas and Dilapidated Housing

We will basically complete the rebuilding of rundown urban areas and the renovation of dilapidated urban housing. We will better integrate the rebuilding of rundown urban areas with urban renewal and industrial transformation and upgrading, speed up work to rebuild concentrated and contiguous rundown areas and urban "villages," move forward step by step with the comprehensive improvement of old residential communities and the renovation of dilapidated housing and dormitory-style housing, and extend the policy on rebuilding rundown areas to cover all key towns around the country. We will improve supporting infrastructure and strengthen project quality oversight.

Section 4

Urban Governance

We will develop new forms of urban governance, reform urban management and law enforcement systems, and promote refined, life- cycle, and cooperative management. We will make innovations in the concepts and methods used in urban planning; properly define the scale, growth boundaries, development intensity, and protected space of cities; and strengthen planning and regulation to achieve multi-layered urban spaces, coordination among different spatial layers, a coherent overall style and look, and cultural continuity. We will promote well-conceived design for all cities and make headway in organic urban renewal, and encourage the regeneration and transformation of cities. We will develop practical, economical, green, and visually pleasing buildings, improve the level of technique, safety standards, and construction

project quality in building, and promote the use of prefabricated modules and steel understructures.

Chapter 35 Improve the Housing Supply System

We will establish a housing supply system whereby government plays the main role in providing basic housing while the market plays the main role in meeting the multi-layered demand for housing, and we will improve housing supply and demand structures, steadily improve the quality of people's housing, and better ensure housing for everyone.

Section 1

Buying and Renting

We will deepen reform of the housing system with the aim of meeting the housing needs of new urban residents and establishing a housing system that promotes both buying and renting. We will support residents who are not in a position to buy, particularly those without registered urban residency, in renting housing, and provide eligible families with monetary rental assistance. We will extend public rental housing policies to cover non-registered urban residents and develop these policies to enable assistance through the provision of monetary subsidies. We will improve the government employee housing policy.

Section 2

The Real Estate Market

We will improve the housing supply structure, promote balance between market supply and demand, and ensure that the real estate market operates smoothly. In areas where demand for housing far outstrips supply, we will increase as appropriate the

amount of land available for residential development. In areas with relatively large inventories of commodity housing, we will steadily relieve housing inventory, expand effective demand for housing, and increase the proportion of direct monetary housing subsidies provided during the rebuilding of rundown areas. We will actively develop the rental market, encourage both natural person investors and different types of institutional investors to purchase commodity housing stock, expand rental market supply, and encourage the development of enterprises specializing mainly in rentals. We will promote mergers and acquisitions in the real estate industry, increase the concentration of the industry, and pilot the use of trust funds for real estate investment. We will develop new forms of business such as tourist real estate, senior citizen real estate, and cultural real estate. We will accelerate the modernization of the housing industry and improve the overall quality of housing.

Section 3

Housing Support

We will bring residence card holders within the scope of urban government-subsidized housing policies. We will coordinate planning for developing government-subsidized housing, rebuilding rundown areas, and developing supporting facilities, ensure the quality of construction, and make everyday living and getting around more convenient for residents. We will improve supporting policies related to investment, credit, land, and taxes and fees. We will use multiple channels to increase the supply of public rental housing. We will both ensure adequate housing and provide monetary subsidies, and gradually grant more rental subsidies. We will improve the mechanisms for investing in and operating government-subsidized housing and for handling eligibility-related procedures.

Chapter 36 Promote Coordinated Urban and Rural Development

We will promote coordination between the development of new urbanization and the building of a new countryside, improve the ability of county economies to support and lead economic development in their surrounding areas, promote the

balanced allocation of public resources between urban and rural areas, expand the space for rural development, and bring about a pattern of common development between urban and rural areas.

Section 1

Distinctive County Economies

We will cultivate and develop specialized county economies that are full of vitality and characteristic of their local areas, and strengthen the ability of counties to take on functions formerly performed by cities and lead rural development. Based on competitive resources, we will promote the development of intensive agro-processing, the rural service industry, and labor-intensive industries, actively explore new models for rural areas to take over industries formerly located in urban areas, and integrate rural areas into regional industry chains and production networks. We will guide the concentration of rural secondary and tertiary industries in county towns, key towns and townships, and industrial parks. We will increase the decision-making power of counties over development and improve the basic assurances for adequate county-level financial resources.

Section 2

Beautiful and Pleasant Rural Areas

We will promote rural reform and institutional innovation, strengthen the service functions of collective economic organizations, and stimulate the vitality of rural development. We will improve rural working conditions and living standards throughout the country. We will draw up research- based plans for the spatial distribution of village and town development, farmland protection, village locations, and ecological conservation schemes. We will accelerate the transformation of rural broadband, roads, and dilapidated housing, as well as drinking water, lighting, environmental sanitation, and fire-fighting facilities. We will start a new round of initiatives to transform and upgrade rural grids, ensuring that a 99.8% power supply reliability rate is achieved. We will implement a project to consolidate and advance

efforts to ensure the safety of drinking water in rural areas. We will improve conditions in rural schools and see that teachers enjoy better working conditions and higher living standards, and we will strengthen community-level medical and healthcare institutions and step up efforts to develop the workforce of rural doctors. We will establish sound care and service systems for women, children, and elderly people left behind in rural areas. We will strengthen social governance in rural areas, improve the rural crime prevention and control system, and intensify efforts to ensure safety in rural areas. We will strengthen rural cultural development, devote energy to initiatives to foster exemplary households and families, and cultivate healthy rural practices, fine family practices, and a new rural culture of virtue. We will undertake specific initiatives to combat undesirable rural practices and deal with prominent rural problems such as illegitimate religious activities. We will develop exemplary environmentally friendly towns and villages, take comprehensive measures to improve rural living environments, redouble efforts to protect traditional villages, houses, and towns and villages with unique ethnic features, ensure rural civility is passed on to new generations, and build a charming, unspoiled, and harmonious countryside that is a beautiful and pleasant place to live.

Section 3

Balanced Public Resource Allocation

We will make coordinated plans for developing urban and rural infrastructure networks, improve long-term investment mechanisms for rural infrastructure, and promote the integration of urban and rural infrastructure related to the water supply, power supply, roads, gas supply, and telecommunications as well as the unified distribution and development of urban and rural facilities for ecological conservation and environmental protection. We will give particular attention to the development of social programs in rural areas and those cities and towns that have welcomed more former rural residents, promote the extension of urban public services to rural areas, and ensure that both urban and rural areas gradually come to adopt the same basic public service systems and standards.

Box 13 **New Urbanization Projects**
1. Urbanization focusing on three tasks

§ Make progress in granting urban residency to approximately 100 million former rural residents and other permanent urban residents without urban household registration;

§ Accelerate the rebuilding of urban "villages" and rundown urban areas with a combined population of approximately 100 million;

§ Guide the process of urbanization for around 100 million people in the central and western regions as they move to city clusters, small and medium cities, county seats, and key towns near their places of origin.

2. Emerging small and medium cities

§ Using the size of the permanent population, population density, and the size of the economy as criteria for eligibility, move faster to expand the overall functions of eligible county seats and large towns, with the aim of developing a host of emerging small and medium cities that have a complete range of functions and are distinctive in character.

3. Distinctive small towns

§ Promote the development of small towns that possess unique resources, geographical advantages, or cultural heritage;

§ Help these towns to increase their functions and expand their powers, and provide them with greater financial and other support to enable them to use their distinctive features to develop industries in areas such as leisure and tourism, commerce and logistics, information technology, smart manufacturing, science and technology, education, and folk culture.

4. Smart cities

§ Make full use of modern information technology and big data to develop a number of exemplary new-style smart cities, focusing on developing smart infrastructure, convenient public services, and refined social governance.

5. Green and forest cities

Build a number of exemplary green cities, eco-friendly garden cities, and forest cities by

§ Promoting the construction of eco-friendly buildings;

§ Making green transport universal;

§ Spreading the use of supply systems for new energy such as distributed energy resources and shallow geothermal energy;

§ Working faster to achieve the electrification of public transport;

§ Encouraging eco-friendly lifestyles;

§ Implementing urban landscaping projects;

§ Increasing urban forest and green coverage.

6. Sponge cities

§ Support the development of sponge-like buildings, residential areas, roads, squares, parks, and green spaces by improving drainage and rainwater control and regulation facilities in urban areas and taking measures to enable rainwater to be absorbed, retained, stored, purified, used, or drained.

7. Underground utility tunnels

§ Move forward with the development of both trunk and feeder utility tunnels in

coordination with upgrading work in old cities and the development of underground spaces, focusing particularly on newly developed areas of cities, different types of development parks, and contiguous development areas;

§ Upgrade urban underground pipeline networks for water supply, wastewater treatment, rainwater disposition, and gas and heating supply, and implement undergrounding initiatives for urban power lines and telecommunication network lines.

8. A pleasant countryside

§ Move ahead with ensuring that new types of rural communities have access to centralized water supplies and that 80% of rural areas have access to tap water;

§ Develop renewable energy suited to local circumstances and develop clean energy demonstration towns and villages;

§ Make progress in the renovation of rural dilapidated housing, coordinate earthquake-resistant renovation efforts for rural housing, and basically complete renovation work on existing dilapidated houses;

§ Undertake a complete overhaul of rural lavatories taking local conditions into account;

§ Implement the household refuse treatment project, make comprehensive improvements to the environment in 130,000 administrative villages, implement showcase projects for agricultural waste recycling, develop sewage and refuse collection and treatment facilities, progressively promote the treatment of household wastewater, and ensure that the household refuse of 90% of administrative villages is treated;

§ Improve river embankments.

PART IX

DEVELOPMENT COORDINATED BETWEEN REGIONS

Based on the master strategy for regional development and using, as guidance, the Belt and Road Initiative, the integration of Beijing, Tianjin, and Hebei, and the Yangtze Economic Belt, we will promote the formation of north-south and east-west intersecting economic belts primarily along the coastline, the Yangtze River, and major transportation routes as well as a pattern of coordinated development between regions that ensures the mobile and well-ordered flow of factors of production, effective functional zoning, equitable access to basic public services, and development that is within the carrying capacity of the environment and natural resources.

Chapter 37 Implement the Master Strategy for Regional Development

We will implement the master strategy for regional development so as to develop the western region, revitalize northeast China, fuel the rise of the central region, and support the eastern region as it leads the country. We will also make innovations to policies and improve mechanisms for regional development, promote coordinated, collaborative, and common development between regions, and strive to narrow the gaps in regional development.

Section 1

Development of the Western Region

We will give high priority to implementing the strategy for the large- scale development of the western region and ensure that the Belt and Road Initiative is able to better drive development in this region. We will accelerate the development of interregional and international corridors as well as regional hubs, improve infrastructure, and work to achieve significant improvements of transportation in border and remote areas with poor external connectivity. We will develop industries that take advantage of local strengths such as those related to the processing of green agricultural products, culture, and tourism. We will establish a number of national industrial transfer demonstration zones and develop industry clusters. Relying on areas of robust resource and environmental carrying capacity, we will increase the proportion of resources subject to local processing and conversion. We will strengthen the effective development and efficient use of water resources. We will intensify ecological conservation and environmental protection and improve the capabilities of eco-security barriers. We will improve long-term stable channels for funding, and continue to increase transfer payments and government investment. We will accelerate efforts to make access to basic public services more equitable. We will increase the openness of gateway cities and improve the performance of the open economy.

Section 2

The Northeast and Other Old Industrial Regions

We will accelerate market-oriented reforms of systems and mechanisms, promote structural adjustment, and increase support aimed at improving the developmental vitality, internal impetuses, and overall competitiveness of the northeast and other old industrial regions. We will accelerate the development of a service-oriented government, improve the business environment, and expedite development of the private sector. We will make innovation a powerful force for development in the northeast by developing and encouraging business startups and innovation, supporting the development of technology and industry innovation centers, and bringing together skilled personnel and other factors necessary for innovation. We will accelerate the development of modern large-scale agriculture, ensure that the quality and performance of traditionally competitive industries improve, develop industrial transformation and upgrading demonstration zones, and promote the development of advanced equipment manufacturing centers and strategic centers for major technology and equipment. We will support the transformation and development of resource-dependent cities and organize and implement a number of citizen wellbeing projects such as upgrading old urban areas and improving conditions in areas plagued by land subsidence. We will accelerate the development of high-speed railway networks and power delivery tunnels. We will deepen state asset and SOE reforms, and accelerate efforts to complete the reform of collectively owned businesses operated by SOEs. We will support the establishment of platforms for cooperation with Russia, Japan, and the Republic of Korea.

Section 3

Rise of the Central Region

We will formulate and implement a plan for promoting the rise of the central region in this new period, improve policy support, promote the integration of urbanization with industrial support and population agglomeration, and form important strategic support zones. We will support the central region in accelerating the development of a modern multi- dimensional transport system and a modern logistics system that connects north and south China and east and west China, and cultivate and

develop growth poles of city clusters and metropolitan areas along the Yangtze River and major transportation routes. We will ensure the orderly relocation of industries to the central region, accelerate the development of modern agriculture and advanced manufacturing, support the transformation and development of the energy industry, set up a number of centers for emerging strategic and high-tech industries, and develop a number of industrial clusters. We will strengthen the protection and improvement of water environments and promote the development of the Poyang and Dongting lake ecological economic zones as well as the Han and Huai river ecological economic belts. We will accelerate the development of the Zhengzhou Airport Economic Zone. We will support the development of an open, inland economy.

Section 4

Support for the Eastern Region

We will support the eastern region in better supporting and guiding development in other parts of the country, and work to see it better facilitate the development of surrounding areas. We will accelerate the shift toward innovation-driven development and work to make this region an internationally influential center of innovation. We will step up efforts to promote industrial upgrading, guide the development of emerging industries and modern service sectors, and create world-class manufacturing centers. We will accelerate the establishment of fully open economic systems and participate in international cooperation and competition on a higher level. We will ensure that the eastern region leads the country in terms of equitable access to public services, social civility, and ecological and environmental quality. We will promote the cooperative and coordinated development of areas surrounding the Bohai Sea. We will support the Pearl River Delta as it leads opening up, innovation, transformation, and upgrading, and accelerate the development of science and technology centers and industrial innovation centers in Shenzhen. We will deepen cooperation in the greater Pearl River Delta region and promote accelerated development of the Pearl River-Xi River economic belt.

Section 5

Mechanisms for Coordinated Development between Regions

We will make innovations in mechanisms for regional cooperation and strengthen coordination and cooperation between regions and within river basins. We will improve the system and measures for providing assistance through pairing programs, and establish mutual assistance mechanisms for the benefit and development of all parties through the building of platforms for cooperation such as "enclave economies" and joint development zones. We will establish sound mechanisms to balance inter-regional interests such as compensation mechanisms for ecological conservation and resource development. We will encourage innovation in the systems, mechanisms, and operational models of new national zones, national comprehensive experimental reform zones, key development and opening up experimental zones, and other platforms.

Chapter 38 Promote the Integration of Beijing, Tianjin, and Hebei

We will pursue a model of regional integration for Beijing, Tianjin, and Hebei that is mutually beneficial and draws on complementary strengths, adjust and improve the region's economic and spatial structures, explore new models for the optimal development of densely populated areas with intensive economic activity, and develop a world-class city cluster with Beijing, China's capital, at its core, leading the development of the region surrounding the Bohai Sea as well as further inland in north China.

Section 1

Relieving Beijing of Its Nonessential Functions

We will actively and prudently relieve Beijing of functions nonessential to its role as China's capital and work to lower the population density of its main districts. We will focus on the relocation of energy-intensive and high- water-consuming enterprises, regional logistics centers and special markets, a portion of education, medical, and training institutions, and a portion of administrative and public service institutions and enterprise headquarters, as well as others. We will ensure sound development of a sub-

administrative center for the Beijing municipal government. We will plan and develop relocation areas and micro centers for functions nonessential to Beijing's role as China's capital.

Section 2

The Spatial Layout and Functions

The spatial layout for the Beijing-Tianjin-Hebei region will be developed around the idea of creating "a single core, twin engines, three industrial belts, four functional zones, and multiple nodes." This will involve developing Beijing as the core, strengthening integration and cooperation between Beijing and Tianjin as the region's two leading economic engines, developing the three industrial belts of the Beijing-Tianjin, Beijing-Baoding-Shijiazhuang, and Beijing-Tangshan-Qinhuangdao regions, designating and ensuring the geographical boundaries and developmental focuses of the region's four functional zones, and developing the carrying capacity, service capabilities, and manufacturing of a number of intraregional local urban centers. We will improve the industrial layout and promote the development of the Beijing- Tianjin-Hebei region as a collaborative innovation community. Beijing will focus on developing its knowledge economy, service economy, and green economy, and accelerate structural development of high-tech, superior, and cutting-edge industries. Tianjin will optimize and develop advanced manufacturing, emerging strategic industries, and the modern service sector, and develop a national advanced manufacturing research and development center as well as a financial innovation and operation demonstration zone. Hebei Province will take on functions transferred from Beijing and work on the application of scientific and technological advances from Beijing and Tianjin, and it will focus on the development of major national modern commercial logistics centers, new-type industrialization centers, and experimental zones for industrial transformation and upgrading.

Section 3

An Integrated Modern Transport Network

We will develop efficient, dense rail transit networks, strengthen the development of main railway lines, accelerate the development of intercity and intracity (suburban) railways while gradually forming them into networks, make maximal use of existing intercity and intracity (suburban) railcar capacity, and ensure passenger train services cover all cities at or above the prefectural level. We will improve the network of expressways and upgrade main national and provincial highways. We will establish port clusters based on coordination and division of work, improve port transport and distribution systems, and establish a new model of coordinated oversight over maritime affairs. We will develop world-class aviation hubs and establish cooperative mechanisms for air transport.

Section 4

Environmental Capacity and Ecological Space

We will establish a regional monitoring network, early-warning system, and coordinated response mechanisms for ecosystems and the environment, and reduce total pollutant emissions in the Beijing-Tianjin- Hebei region. We will better coordinate efforts to prevent and control air pollution, implement gasification projects in key areas of heavy air pollution, and ensure that the concentration of fine particulate matter is reduced by at least 25%. We will strengthen the protection of drinking water sources and joint pollution control efforts around rivers, lakes, and coastlines. We will set a red line for the protection of ecosystems, implement management by region, and establish ecological corridors around the Yongding River and elsewhere. We will redouble afforestry efforts in the Beijing-Tianjin-Baoding region and wetlands restoration efforts around lakes such as Baiyangdian and Hengshui, and ensure joint efforts are made to develop the Bashang Plateau Ecological Protection Zone and the Yanshan-Taihangshan Ecological Conservation Zone.

Section 5

The Common Development and Sharing of Public Services

We will establish a regional information sharing and service platform for human resources and better coordinate policies on inter-regional labor, employment, and skilled personnel. We will improve the distribution of education resources, encourage institutions of higher learning to jointly develop disciplines and share resources, and promote the coordinated development of vocational education. We will establish sound regional systems for referring patients, in both directions, between major hospitals and community health service facilities and for promoting universal recognition of medical examination results, and support the participation of nongovernmental capital in the operation of public hospitals. We will ensure that documents related to the old age insurance scheme are mutually recognized throughout Beijing, Tianjin, and Hebei Province, and we will promote the coordinated development of social insurance.

Chapter 39 Develop the Yangtze Economic Belt

In continuing to give strategic priority to the ecology as well as green development, we will give primary emphasis to the restoration of ecosystems and the environment around the Yangtze River, promote coordinated development along its upper, middle, and lower reaches as well as interaction and cooperation between the Yangtze River areas in the eastern, central, and western regions, and build these areas into a region that is a national leader in ecological progress, is driven by innovation, and enjoys coordinated development.

Section 1

The Yangtze River Ecological Corridor

We will promote the protection of water resources and the control of water pollution within the entire Yangtze watershed, and ensure that the main river channel of the Yangtze maintains a water quality rating of Grade III or better. We will ensure that basically all urban household wastewater and refuse along the main channels and tributaries of the Yangtze are collected and treated. We will properly handle the relations between rivers and lakes, improve their flow management and storage capabilities, and strengthen the protection of their ecosystems. We will conduct overall

planning for the industrial layout along the Yangtze as well as ports, crossings, and water intakes and outlets along its shorelines. We will ensure unified scheduling of reservoir clusters in the upper and middle reaches of the Yangtze. We will strengthen the treatment of phosphate pollution and phosphorus chemical industry pollution in the Yangtze valley. We will implement major ecological restoration projects such as the Yangtze River forest shelterbelt, and improve water source and soil conservation. We will strengthen prevention and control of geological disasters in the Yangtze River valley. We will step up efforts to protect and restore key ecological areas in this valley. We will establish a Yangtze River wetlands conservation fund. We will create new trans-regional ecological protection mechanisms as well as new joint environmental governance mechanisms, and put in place mechanisms for promoting and providing compensation for ecological conservation. We will develop the Three Gorges eco-economy cooperation zone.

Section 2

A Robust, Multidimensional Transport Corridor

Taking advantage of the Yangtze River golden watercourse, we will ensure the coordinated development of multiple transport methods. We will build a 12.5-meter-deep water shipping channel from Nanjing on downstream, renovate the shipping channel from Yichang to Anqing, and promote new channel development for the Three Gorges water transport hub in order to improve the Three Gorges comprehensive transport system. We will improve the distribution of ports, accelerate the development of the Wuhan and Chongqing shipping centers in the middle and upper reaches of the Yangtze as well as the regional shipping and logistics center in Nanjing, strengthen the development of collection, distribution, and transportation systems, develop combined river-ocean shipping and water-rail shipping, and develop a combined river-ocean shipping service center at Zhoushan. We will promote the standardization of ships that operate on the Yangtze and improve intelligent security safeguard systems. We will accelerate the development of high-speed railways and high-grade highways. We will strengthen the role played by aviation hubs and improve the distribution of regional airports. We will build main oil and gas pipelines along the Yangtze and improve pipeline connectivity.

Section 3

Distribution of Urban Areas and Industries along the Yangtze River

We will work to bring about a networked and clustered geospatial layout driven by principal cities, and supported by small and medium cities, by improving the roles of the Yangtze River Delta, the middle reaches of the Yangtze, and the Chengdu-Chongqing region, ensuring Shanghai plays a leading role as an international financial, trading, shipping, and economic center, and seeing that Chongqing plays an important role as a strategic pivot and connection point in the region. Taking into consideration resource and environmental carrying capacities, we will guide industries in relocating in an orderly way to form an appropriate layout, create competitive industrial clusters that take advantage of local strengths, cultivate and build up emerging strategic industries, and develop concentrated, competitive, eco-friendly, and low-carbon modern industrial corridors. We will accelerate the development of the golden international tourism belt. We will develop agricultural regions that capitalize on local strengths.

Chapter 40 Support the Development of Special Regions

We will increase support or old revolutionary areas, are as with concentrations of ethnic minorities, border areas, and poor areas, implement the talent support plan for border areas, remote areas, poor areas, areas with concentrations of ethnic minorities close to the border, and old revolutionary areas, and work to quicken the pace of economic development in these areas to considerably raise the living standards of the people.

Section 1

Old Revolutionary Areas

We will improve policy support for revitalizing and developing old revolutionary areas, channeling great effort into the revitalization and development of former key revolutionary areas which are now in poverty such as the former Soviet

areas of the CPC Central Committee in Jiangxi, Fujian, and Guangdong, the Shaanxi-Gansu-Ningxia Border Region, the Dabie Mountains region, the Zuo and You rivers region, and the Sichuan- Shaanxi region as well as providing support for stepping up development in underdeveloped former revolutionary areas, such as the Yimeng Mountains region, the Hunan-Hubei-Jiangxi Border Region, the Taihang Mountains region, and the Haifeng and Lufeng regions. We will accelerate the construction of infrastructure such as transport, water, energy, and telecommunications, ensure significant improvements in the level of basic public services, and work harder to improve and protect the ecology. We will foster agriculture, forestry, and other industries that take advantage of local strengths and can greatly help increase incomes, develop tourism related to the early history of the CPC, and actively and systematically promote the development of energy and resources. We will accelerate the transfer of the workforce in old revolutionary areas to nonagricultural jobs.

Section 2

Areas with Concentrations of Ethnic Minorities

We will attach greater strategic importance to accelerating the development of ethnic minorities and the areas where they reside, ensuring that such areas see an increase in government investment and financial support, an improvement in infrastructure, and a strengthening of basic public service capabilities. We will support these areas in developing distinctive regional economies as well as industries that take advantage of local strengths. We will strengthen support and assistance across provinces and regions through pairing programs. We will increase support for Tibet and the Tibetan ethnic areas in the provinces of Sichuan, Yunnan, Gansu, and Qinghai. We will support the accelerated development of Hotan Prefecture, Aksu Prefecture, Kashi Prefecture, and Kizilsu Kirgiz Autonomous Prefecture in southern Xinjiang. We will promote the development of ethnic minority undertakings, support the development of ethnic minorities with smaller populations and the production of special products needed by ethnic minorities, and help protect and pass on the traditions and culture of ethnic minorities. We will expand efforts to create ethnic unity and progress demonstration areas and promote communication, exchange, and blending between ethnic groups.

Section 3

Border Areas

We will develop cities and key development and opening up experimental zones in border areas. We will strengthen infrastructure connectivity and accelerate the development of key international thoroughfares. We will ensure that Xinjiang becomes an important window for opening up westward, that Tibet becomes a major channel for opening up into South Asia, that Yunnan becomes a center of outward development toward South and Southeast Asia, and that Guangxi becomes an international thoroughfare for ASEAN. We will support Heilongjiang, Jilin, Liaoning, and Inner Mongolia in becoming important windows for opening up northward and central hubs for cooperation with Northeast Asia. We will accelerate the development of leading zones in the Changchun-Jilin-Tumenjiang region for development and opening up toward Northeast Asia. We will channel great efforts into border area initiatives to promote development and improve people's lives, and we will also increase the level of support for people in border areas.

Section 4

Poor Areas

We will increase policy support for the development of alternative industries in areas affected by mineral resource depletion, industrial decline, severe ecological degradation, or other difficulties, and promote transformation and innovation in resource-dependent areas in order to help them develop multiple sources of support, build up a variety of industries, and achieve diversified development. We will promote the upgrading and transformation of all old industrial bases, independent industrial and mining areas, and areas affected by mining-induced subsidence. We will support the accelerated transformation of old industrial cities affected by industrial decline and improve mechanisms for eliminating overcapacity in regions with a concentration of over-capacitated industries. We will redouble efforts to restore and improve areas devastated by ecological degradation and relocate people for ecological reasons in an orderly way. We will accelerate the reform of state forestry farms and forest regions, and basically accomplish the tasks of relocating forestry workers from deep in the mountains

or remote mountainous regions within state forest regions as well as abolishing or merging state forestry farms.

Box 14
Special Region Development Projects

1. Revitalize old revolutionary areas

§ Plan and carry out a number of infrastructure projects such as railways, expressways, regional airports, water control projects, and energy and information infrastructure;

§ Implement eco-projects such as natural forest protection, overall management of rocky desertification, and the turning of marginal farmland for conversion into forests and grasslands;

§ Support the development of clean energy such as wind power and hydropower;

§ Develop high-quality tourist routes to sites related to the early history of the CPC.

2. Achieve moderate prosperity in areas with concentrations of ethnic minorities

§ Promote targeted poverty alleviation by ethnic group and by village for ethnic groups with smaller populations;

§ Adopt local or near-local poverty alleviation measures for towns and townships on the border where residents guard land borders and it is inappropriate to relocate them through development programs;

§ Implement projects to protect and develop the distinctive villages and towns of ethnic minorities and focus on developing distinctive and traditional ethnic minority villages and towns;

§ Support the protection and development of the traditional handicrafts of ethnic minorities.

3. Develop and open up border areas

§ Implement projects to transform and upgrade transport infrastructure in border areas;

§ Carry out projects to revitalize border areas through industrial development and develop cross-border tourism cooperation areas and border tourism experimental areas;

§ Implement projects to improve the standards of living for the residents of border areas, putting in place dynamic subsidy mechanisms.

4. Transform resource-depleted areas

§ Support resource-depleted cities in focusing on developing alternative industries to provide reemployment opportunities for miners as well as for residents returning after the completion of housing-rebuilding projects in urban rundown areas;

§ Make greater efforts to transform and relocate independent industrial and mining areas;

§ Support the transformation and upgrading of infrastructure, public service facilities, and alternative industrial platforms in mining areas;

§ Implement relocation projects in a portion of remote, resource-depleted, or uninhabitable independent industrial and mining areas;
§ Basically complete transformation and relocation projects in about 100 such areas.

5. Revitalize areas of industrial decline

§ Develop demonstration zones and demonstration industrial parks for manufacturing transformation and upgrading in old industrial cities where conditions permit;
§ Implement relocation and transformation projects in all old urban industrial areas;
§ Carry out overall planning for relocating and transforming enterprises as well as fostering emerging industries;
§ Support efforts to treat industry-polluted land and industrial wasteland;
§ Step up efforts to protect and utilize China's industrial heritage;
§ Basically complete relocation and transformation projects in more than 100 old urban industrial areas.

6. Transform areas devastated by ecological degradation

§ Accelerate efforts to solve longstanding problems related to the improvement of the geological environments of key mines;
§ Complete geological environment restoration for 500,000 hectares of land in mining areas that have been historically problematic;
§ Support comprehensive improvement efforts in key areas affected by land subsidence due to coal mining;
§ Conduct the orderly resettlement of residents in such areas for safety reasons;
§ Move ahead with land reclamation, environmental improvement, and ecological restoration;
§ Complete the comprehensive improvement of 300,000 hectares of coal mining areas affected by land subsidence.

Chapter 41 Widen Space for the Blue Economy

We will pursue coordinated land and marine development, develop the marine economy, effectively develop marine resources, protect marine ecosystems and habitats, and safeguard China's maritime rights and interests, building China into a strong maritime country.

Section 1

Strengthening the Marine Economy

We will improve the marine industry structure, develop high seas fishing, promote the scaled-up use of desalinated sea water, support the development of industries such as marine biological medicine and marine equipment manufacturing, and accelerate the development of marine service industries. We will develop marine science and technology, focusing on achieving breakthroughs in advanced marine technology which allows deep- sea operations and is eco-friendly and secure. We will move ahead with development of smart marine projects. We will make innovations in market- based allocation methods for ocean and island resources. We will develop national marine economic development experimental zones in Shandong, Zhejiang, Guangdong, Fujian, and Tianjin, support Hainan in using South China Sea resources to develop a distinctive marine economy, and develop Qingdao's Blue Silicon Valley as well as other marine economic development demonstration zones.

Section 2

Strengthening Protection of Marine Resources and Environments

We will deepen comprehensive management of marine ecosystems, promote the development of marine functional areas, improve the spatial layout of offshore areas, and ensure that development intensity is appropriate. We will strictly control the scale of land reclamation from the sea, strengthen the protection and restoration of coastal zones, and ensure that the natural shoreline does not fall below 35%. We will also strictly control the intensity of fishing and enforce a fishing prohibition period. We will strengthen the prospecting and development of marine resources and expand scientific expeditions to marine polar regions. We will ensure that pollutants originating from land can be discharged into the sea only if they meet standards, control the total amount of pollutants discharged, and establish an early warning mechanism for the carrying capacity of marine resources and its environment. We will enforce marine ecological red lines, implement a project to restore wetlands by developing mangrove forests in the south and Chinese tamarisk forests in the north, carry out projects to develop islands and reefs in an ecologically sustainable way, and strengthen the protection of rare marine species. We will strengthen research on marine climate change, increase marine

disaster monitoring, risk evaluation, and disaster prevention and mitigation capabilities, strengthen strategic preparedness for conducting maritime disaster relief, and improve response capabilities in regards to environmental emergencies occurring at sea. We will put in place a maritime supervision system and conventionalize maritime supervision.

Section 3

Safeguarding Maritime Rights and Interests

We will effectively safeguard China's territorial sovereignty and maritime rights and interests. We will strengthen the capabilities of maritime law enforcement organizations, deepen historical and legal research on maritime issues, coordinate the use of different measures to safeguard and expand China's maritime rights and interests, see that maritime torts are properly handled, and ensure navigational freedom and maritime safety within waters under China's jurisdiction. We will take an active part in the establishment and protection of the international and regional maritime order, improve dialogue and cooperation mechanisms with neighboring countries regarding maritime issues, and promote pragmatic maritime cooperation. We will further improve mechanisms for coordinating marine affairs, strengthen the top-level design of maritime strategies, and formulate a basic maritime law.

Box 15
Maritime Projects

1. Blue Bay environmental improvement

§ Carry out water pollution governance and comprehensive environmental improvement efforts in Jiaozhou, Liaodong, Bohai, Hangzhou, Xiamen, Beibu, and other bays;

§ Increase artificial sand shorelines and restore natural shorelines and original coastal landscapes;

§ Provide compensation for environmental improvement and develop artificial wetlands in land reclamation areas in Liaodong, Bohai, and other bays.

2. Marine exploration

§ Achieve breakthroughs in key technological developments of the Dragon Palace-I deep-sea experimental platform and construct deep-sea mobile and bottom-supported experimental platforms;

§ Research and develop a system for integrated deep-sea environmental monitoring and activity exploration;

§ Develop a shared platform for deep-sea equipment applications.

3. Polar exploration

§ Establish a new shore-based Arctic observation station through cooperation;

§ Establish a new Antarctic research station;

§ Build new advanced icebreakers;

§ Improve Antarctic aviation capabilities;

§ Complete the basic framework for a land-sea-air observation platform in the polar regions;

§ Research and develop exploration technology and equipment suitable to the polar environments;

§ Establish a service platform for the provision and application of information regarding the polar environments and potential polar resources.

4. The multi-dimensional global ocean observation network

§ Make overall planning for the layout of the national ocean observation (monitoring) network;

§ Move ahead with the development of real-time online monitoring systems and overseas observation (monitoring) stations for the marine environment;

§ Work toward establishing a multidimensional global ocean observation (monitoring) system;

§ Strengthen observation and research of marine ecosystems, ocean currents, and maritime meteorology.

PART X

ECOSYSTEMS AND THE ENVIRONMENT

To improve the quality of the environment and resolve serious ecological and environmental problems, we will step up ecosystem and environmental protection efforts, ensure that resources are used more efficiently and that more quality ecological goods are available to the public, and simultaneously help the people become prosperous, help the country grow stronger, and build a Beautiful China.

Chapter 42 Accelerate the Development of Functional Zones

We will work to see that functional zoning plays a stronger role as a fundamental system for the development and protection of China's territorial space, speed up efforts to improve policies on functional zones, and ensure all regions develop in accordance with their functions.

Section 1

Basic Completion of Functional Zoning

To use nature in a restrained and orderly way, we will adjust and improve the spatial structure, working toward: strategic urbanization based on the two east-west and three north-south economic belts;[2] strategic agricultural development based on the 23 agricultural production belts within the seven agricultural production zones;[3] strategic ecological security based on the two ecological shields and three ecological belts;[4] sustainable development of maritime space.

We will ensure an appropriate intensity of development of China's territorial space and increase ecological space. We will work to move leading development regions toward the higher end of production and greater efficiency, improve the structure of spatial development, cut annually the amount of land designated for construction purposes, and bring about more efficient land use. We will encourage key development regions to increase industrial clustering and population density, and foster a number of growth poles that stimulate coordinated development between regions. We will set red lines for the protection of agricultural and ecological space, expand key ecosystem service zones, and strengthen protection of no-development regions.

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[2] The New Eurasian Continental Bridge and Yangtze River east-west economic belts and the east coast, Harbin-Beijing-Guangzhou, and Baotou-Kunming north-south economic belts.

[3] The northeast plains, the Yellow-Huai-Hai river plain, the Yangtze River basin, the Fen-Wei river plain, the Hetao irrigation area, southern China, and the Gansu-Xinjiang region.

[4] The Qinghai-Tibet Plateau and Loess Plateau-Sichuan-Yunnan ecological shields, and the northeast China forest belt, the northern China desertification-prevention belt, and the southern China mountainous belt.

Section 2

Policies on Functional Zones

Based on the requirements for each functional zone, we will improve differentiated policies related to finance, industry, investment, population flow, land, resource development, and environmental protection while also implementing differentiated performance evaluation methods. We will put into effect industry negative lists in key ecosystem service areas. We will increase transfer payments to major agricultural production areas and key ecosystem service areas, and establish sound mechanisms for trans-regional and intra-watershed compensation for ecological conservation efforts. We will set up national ecological conservation pilot zones that are unified and well-regulated. We will establish a national park system and form national parks through the integration of existing areas.

Section 3

Spatial Governance Systems

We will establish, on the municipal and county scale, spatial governance systems that consist of spatial planning, territorial space regulation, and differentiated performance evaluations. We will establish a national spatial planning system to coordinate all spatial plans on the basis of functional zoning, and we will encourage local governments to integrate their urban plans into a single master plan. We will improve the territorial space development permit system. We will establish monitoring and early- warning mechanisms for environmental and resource carrying capacity and take restrictive measures in regions which have reached or are approaching the warning lines. We will survey, evaluate, and monitor land, minerals, and other resources. We will increase surveying, mapping, and geoinformation service capabilities, carry out regular geographical monitoring, and promote the development of global geoinformation resources.

Chapter 43 Promote Economical and Intensive Resource Use

We will stay aware of the need for the economical, efficient, and circular use of resources, bring about a fundamental change in the way resources are utilized, and strengthen conservation management throughout the entire process of resource use, thus significantly raising resource utilization efficiency.

Section 1

Energy Conservation

We will move ahead with the revolution in energy consumption. We will promote society-wide energy conservation, make comprehensive efforts to promote energy conservation in industry, construction, transportation, public institutions, and other areas, and launch projects to upgrade boilers, furnaces, lighting products, and electric motors and recover waste heat for household heating. We will develop and spur the adoption of energy- conserving technologies and products and demonstrate the application of major energy-conserving technologies. We will launch the "100, 1,000, 10,000" energy conservation initiative to put the top 100 energy consuming enterprises in China under national regulation, the top 1,000 energy consuming enterprises under the regulation of their respective provincial- level governments, and other high energy consuming enterprises under the regulation of lower-level governments; encourage enterprises to take voluntary measures to reduce energy consumption; facilitate the development of energy management systems, energy measurement systems, and online energy consumption monitoring systems; and carry out energy reviews and efficiency evaluations. We will work to raise building energy efficiency and initiate eco-friendliness across the entire construction chain. We will promote energy-conserving, low-carbon electric power dispatching. We will move forward with comprehensive cascade utilization of energy. We will ensure China's total energy consumption stays below five billion metric tons of standard coal.

Section 2

Toward a Water-Conserving Society

We will put into effect the strictest possible water resources management system and get everyone to conserve water. We will plan industrial production and urban development based on water resources and impose stricter control over industrial development and water quotas in regions affected by water scarcity. We will move more quickly toward water conservancy in agriculture, industry, and cities, make steady progress in the comprehensive price reform of water for agricultural purposes, and carry out demonstrations of comprehensive improvements in water-saving equipment and technologies. We will tighten oversight over major water consumers, and encourage the reuse of water as well as the differentiated use of water according to its quality. We will establish a water efficiency labeling system and promote the adoption of water-saving technologies and products. We will accelerate the utilization of alternative water resources and implement projects to make better use of rainwater, floodwater, and reclaimed water. We will ensure that China's total water usage stays below 670 billion cubic meters.

Section 3

Economical and Intensive Land Use

We will strictly control the amount of additional land designated for construction projects and bring under effective control the disorderly expansion of new cities, new districts, and development areas. We will redevelop urban land that is being used inefficiently, develop and utilize hilly slope land, promote the multipurpose development of land designated for construction and its aboveground and belowground vertical overall development, and facilitate the reutilization of idle resources such as vacant buildings and factories. We will strictly control the amount of rural land designated for collective construction projects, explore the establishment of a rural land purchase and reserve system, and put idle rural land designated for construction to better use. We will carry out inspections and evaluations concerning the economical and intensive use of land designated for construction. We will work to lower the area of land used for construction per unit of GDP by 20%.

Section 4

Mineral Resource Conservation and Management

We will tighten planning and management of mineral resources; put in place strict systems which ensure their regional management, control total exploitation, and require mining authorization; and we will better coordinate multiple mining activities. We will support technological and process upgrading in mining enterprises, guide the merging and reorganization of small mines, and shut down mining activities that use outdated techniques or are environmentally undesirable. We will promote the development of demonstration zones for green mining and the green mining industry, launch demonstration projects for the economical and multipurpose utilization of mineral resources as well as projects to preserve and build reserves of mineral resources, and work to increase the rates of exploitation of mineral resources, ore dressing recovery rates, and multipurpose utilization rates of mineral resources. We will improve mechanisms to keep the prices of superior minerals stable through limiting production. We will establish a national royalty system for mineral resources and improve mineral resource tax and fee systems. We will carry out the mineral exploration initiative.

Section 5

The Circular Economy

We will implement a plan for guiding circular development, encourage the circular use of resources between production and society, and accelerate efforts to recycle resources from refuse. We will make coordinated plans for industrial layouts based on material flow and industrial linkage, encourage industrial parks to adopt a more circular operational flow, establish hybrid industry-agriculture circular economy demonstration zones, and promote the coupled growth of enterprises, industrial parks, and industries. We will facilitate the recovery and utilization of mineral resources from urban waste, ensure that resources from industrial solid waste and other types of mass refuse are recycled and reused, accelerate the establishment of systems for the recycling or safe disposal of urban kitchen waste, construction refuse, and textile waste, and develop remanufacturing in line with standards. We will put into effect an extended producer responsibility system. We will improve recycling networks for renewable

resources and strengthen coordination between the recycling of sorted household waste and the recycling of renewable resources.

Section 6

Frugal Lifestyles

We will advocate reasonable consumption while opposing waste and extravagance. We will work to see that economy is practiced throughout all stages—from production to distribution, storage, and consumption. We will exercise effective control over the abuse of public funds, take action against over-packaging, food waste, and overconsumption, and work to see that frugality becomes a social norm. We will promote green transport services such as bicycling and public transport. We will restrict the use of single-use disposable products.

Section 7

Mechanisms for Efficient Use of Resources

We will impose binding limits on the total consumption and the intensity of consumption of energy and water resources as well as on the amount of land designated for construction purposes. To this end, we will strengthen responsibility for meeting targets, ensure that the market plays a better role, and improve standards, performance assessments, and oversight. We will establish a sound initial allocation system for the right to use energy, the right to use water, and the right to emit carbon, develop markets for the trading of these rights, and create new mechanisms in this area for compensated use, budgetary management, investment, and financing. We will improve standards for conserving energy, water, land, materials, and minerals, raise building energy efficiency standards, and ensure that energy conservation standards cover all key industries and equipment. We will strengthen energy conservation evaluation and inspection. We will establish sound mechanisms through which the central government can assess and reward the energy conservation and environmental protection efforts of local governments, and broaden the scope of comprehensive demonstrations of financial policies designed to promote energy conservation and emissions reduction. We will

establish a unified and standardized platform for the sale of state-owned natural resource assets. We will organize initiatives to see that pioneering efforts in energy and water efficiency lead conservation efforts.

Box 16
Economical, Intensive, and Circular Resource Use Initiatives

1. Society-wide energy conservation efforts

§ Encourage the use of energy-efficient products and services in enterprises and households;

§ Implement a plan for catching up with and exceeding international energy efficiency standards with a focus on six major energy-intensive industries – the electric power, iron and steel, building materials, chemical, petroleum and petrochemical, and nonferrous metals industries;

§ Support the demonstration of comprehensive energy efficiency improvement efforts by 500 major energy consumers;

§ Organize the implementation of projects, such as those to improve energy systems, upgrade the energy-efficient electric motor system, demonstrate the industrial application of energy-saving technologies, reduce coal consumption and replace it with alternative energy sources, and promote eco-lighting.

2. Society-wide water conservation efforts

§ Demonstrate the building of a water-conserving society;

§ Adopt a district metering area (DMA) approach and upgrade water pipes to reduce leakage in 100 cities;

§ Encourage the use of recycled water and advanced wastewater treatment and recycling;

§ Promote the upgrading of water-saving equipment in industrial parks and in five major water-consuming industries – the thermal power, textile, papermaking, petrochemical, and chemical industries;

§ Implement 100 demonstrations and trials for water-conservation performance-based contracting;

§ Promote the use of water-saving appliances and encourage households to replace appliances that do not meet water-saving standards;

§ Launch demonstration projects for the desalinization of seawater to meet the demand for water on islands;

§ Strengthen monitoring over the use of water by major water consumers.

3. Economical and intensive use of land designated for construction purposes

§ Improve inspection and evaluation techniques concerning the economical and intensive use of land designated for construction purposes;

§ Establish a national database of such evaluations for land designated for construction purposes in cities, development zones, institutions of higher learning, towns, and villages;

§ Promote the application of land-saving techniques and modes of development.

4. Demonstration zones for green mining and the green mining industry

§ Step up development of green mining;

§ Encourage innovation in mining techniques, in modes of management, and in the mining industry;

§ Guide the transformation and upgrading of traditional mining industries;

§ Choose 50 key mining areas in regions with rich mineral resources and a strong capacity for management and innovation to develop demonstration zones of the green mining industry.

5. Circular development

§ Work to see that 75% of national industrial parks and 50% of provincial-level industrial parks are upgraded to promote circular operations;

§ Build 50 industrial centers that comprehensively utilize industrial waste;

§ Arrange for the construction of resource recycling demonstration centers in 100 cities at or above the prefectural level;

§ Establish platforms for online recycling of urban waste, resource management in industrial parks, and waste trading.

Chapter 44 Step Up Comprehensive Environmental Governance

We will think and work more creatively when it comes to environmental governance, implement the strictest possible environmental protection system, strengthen the responsibility of polluters, and create a system of environmental co-governance involving the government, enterprises, and the general public, so as to bring about an overall improvement in the quality of the environment.

Section 1

Pollution Prevention and Control Action Plan

We will formulate a plan for ensuring air quality standards in cities are met, strictly enforce obligatory targets, see that cities at and above the prefectural level achieve a 25% reduction in the number of days of heavy air pollution, and channel greater effort into reducing fine particulate matter emissions in key regions. We will establish a monitoring system to ensure that environmental protection standards for vehicles, watercraft, and fuel oil are achieved. We will work to increase the proportion of natural gas users in cities. We will strengthen monitoring of windblown dust from

unpaved roads and construction sites and prohibit open straw burning. We will comprehensively strengthen environmental governance efforts in key river basins and sea areas, ensure strict protection of healthy water bodies and sources of drinking water, and strengthen comprehensive governance of and efforts to improve bodies of water that are of a relatively poor quality. We will regulate water functional areas by zone type, working to ensure that over 80% of the major rivers and lakes designated as water functional areas meet water quality standards. We will carry out groundwater pollution surveys and put in place comprehensive prevention and treatment measures. We will prevent and treat soil contamination according to pollution type and grade, give high priority to protecting the quality of soil environments on agricultural lands, and strengthen monitoring and regulation over the soil environments on land designated for construction purposes.

Section 2

Emissions Standards Compliance and Aggregate Emissions Reduction

We will ensure that all industrial polluters meet emissions standards. We will improve emissions standards, strengthen supervisory monitoring of industrial pollution sources, publish a blacklist of enterprises that fail to meet emissions standards, and require such enterprises to make corrections within a stipulated time frame. All heavily polluting enterprises located within urban districts will be either relocated, upgraded, or, in accordance with the law, shut down. We will conduct the second national survey of pollution sources. We will reform the total emissions control system for major pollutants so that more pollutants are covered. We will control total emissions of volatile organic compounds in chief regions and industries to bring about a nationwide drop in total emissions of over 10%. We will promote the use of alternative clean energy in urban "villages" and urban- rural fringes, and replace small and medium coal-fired facilities. Aggregate emissions of total nitrogen will be controlled in all cities at and above prefectural level that are situated along the coastline or along rivers that flow into eutrophicated lakes. Chief industries will be transformed to achieve clean production.

Section 3

Environmental Risk Prevention and Control

We will ensure integrated environmental risk management. We will strengthen the prevention and treatment of pollution caused by hazardous waste and conduct an initiative to deal with hazardous waste. We will step up the prevention and treatment of heavy metal pollution in chief regions and chief industries such as the nonferrous metal industry. We will increase assessment capabilities regarding the environmental and health risks posed by toxic and hazardous chemical substances. We will improve nuclear safety, strengthen the prevention and control of radioactive pollution, and improve monitoring systems and capabilities with respect to nuclear and radiation safety.

Section 4

Environmental Infrastructure Development

We will accelerate the development of urban refuse treatment facilities, improve refuse collection and transportation systems, increase the waste incineration rate, and ensure proper treatment of landfill leachate. We will accelerate the construction and upgrading of urban sewage treatment facilities and sewer networks, promote the recycling and safe disposal of sludge, and ensure that household wastewater and refuse treatment facilities cover all urban areas, operate reliably, and are in line with standards; and we will raise the percentage of sewage receiving centralized treatment to 95% in cities and 85% in county towns. We will establish a national unified real-time online environmental monitoring system and promote the development of big data for environmental protection.

Section 5

Reform of Fundamental Environmental Governance Systems

We will ensure that local governments fulfill their environmental responsibilities, make environmental protection inspection visits, and establish a responsibility system and performance assessment mechanisms for meeting environmental protection targets. We will put into effect a system that places the monitoring, supervision, and law

enforcement activities of environmental bodies below the provincial level under the supervision of environmental protection bodies at the next level up, explore the establishment of trans-regional environmental protection bodies, and encourage coordinated pollution prevention and control efforts in entire river basins and between regions as well as coordinated urban- rural environmental governance. We will institute integrated control and unified monitoring of multiple pollutants, establish a business emissions permit system that covers all fixed pollution sources, and put the regulation of the discharge of all pollutants under an emissions permit. We will establish sound systems for the compensated use and trading of emissions rights. We will ensure the strict and trans-regional joint enforcement of environmental protection legislation, and strengthen oversight over law enforcement and investigations into accountability. We will compile a record of the environmental credibility of enterprises and a blacklist of those that illegally emit pollutants, require greater self-monitoring by enterprises over their emissions of pollutants and strengthen the public disclosure of environmental information, improve the channels for public participation in pollution control efforts, and improve the environmental public-interest litigation system. We will conduct auditing over the performance of outgoing officials in fulfilling their environmental protection responsibilities.

Box 17
Environmental Governance and Protection Initiatives

1. Emissions standards compliance for all sources of industrial pollution

§ Transform enterprises in the steel, cement, plate glass, papermaking, printing and dyeing, nitrogenous fertilizer, and sugar refining industries that cannot consistently meet emissions standards;

§ Put a stop to all projects that cause heavy pollution in violation of state industrial policies;

§ Ensure the upgrading of the sewage treatment facilities of industrial parks within a specified time frame;

§ Work to basically eliminate coal-fired steam boilers with a capacity of ten tons or lower in all cities at or above the prefectural level across the country;

§ Ensure that boilers with a capacity of 35 tons or greater are equipped with desulfurization, denitration, and dust purification technologies, that steel industry sintering machines are equipped with desulfurization technology, and that the cement industry adopts denitration technology;

§ Put an end to production methods of PVC that use a high mercury catalyst for acetylene.

2. Atmospheric environmental governance

§ Control the aggregate coal consumption of all regions, with the focus on the Beijing-Tianjin-Hebei region and adjacent areas, the Yangtze River delta, the Pearl River delta, and northeast China;

§ Promote the use of natural gas in place of coal in major cities, increasing natural gas consumption by 45 billion cubic meters and eliminating 189,000 tons of coal-fired boiler capacity;
§ Work to reduce volatile organic compound emissions by petrochemical and chemical enterprises and refueling stations;
§ Step up the removal of old or high-emissions vehicles from the roads;
§ Implement national-VI emission standards and corresponding national fuel product standards;
§ Ensure vapor recovery and treatment is carried out for oil tank trucks and oil depots.

3. Water environmental governance

§ Ensure the strict protection of river sources and 378 rivers, lakes, and reservoirs with a water quality rating of Grade III or better;
§ Implement improvement projects for sewage outfalls into major rivers, lakes, and reservoirs;
§ Ensure water quality standards are met at major sources of drinking water;
§ Comprehensively treat water pollution in lakes, such as Tai, Dongting, Dianchi, Chao, Poyang, Baiyangdian, Ulansuhai, Hulun, and Ebi, as well as endogenous pollution on the middle and lower reaches of the Yangtze and in the Pearl River delta;
§ Promote comprehensive environmental governance efforts within the river basins of the Yangtze, Yellow, Peal, Songhua, Huai, Hai, and Liao rivers;
§ Ensure that basically every body of water meets at least the Grade V water standards;
§ Intensify efforts to improve black, malodorous bodies of water, and ensure that such bodies of water make up no more than 10% of the total in the urban districts of cities at or above the prefectural level;
§ Carry out groundwater restoration trials in areas such as Beijing, Tianjin, Hebei, and Shanxi;
§ Ensure the treatment of pollution in major estuaries and bays.

4. Soil environmental governance

§ Conduct soil contamination surveys using a greater sampling density;
§ Conduct soil pollution treatment trials on 100 plots of agricultural land and 100 plots of land for construction purposes;
§ Establish six demonstration zones for the prevention and treatment of soil contamination;
§ Ensure that soil pollution treatment efforts on lands formerly occupied by chemical enterprises which had been relocated for safety or environmental reasons are conducted smoothly;
§ Conduct treatment and restoration efforts on 666,667 hectares of contaminated cultivated land as well as risk control on 2.67 million hectares of contaminated cultivated land;
§ Comprehensively deal with heavy metal contaminated areas, with the focus on the Xiang River basin.

5. Prevention and control of hazardous waste pollution

§ Conduct a nationwide survey of hazardous waste;

§ Strengthen comprehensive control and treatment of waste containing chromium, lead, mercury, cadmium, arsenic, or other heavy metals, as well as the control and treatment of fly ash produced from the incineration of household waste, antibiotic residues, and persistent toxic waste;

§ Build hazardous waste disposal facilities.

6. Strengthening nuclear and radiation safety capabilities

§ Build research and development centers for nuclear and radiation safety monitoring technologies;

§ Speed up efforts to decommission old nuclear facilities and dispose of old radioactive waste;

§ Establish five locations for the disposal of low and medium-level radioactive waste and one underground laboratory for the disposal of high-level radioactive waste;

§ Establish a real-time monitoring system for high-risk sources of radiation;

§ Ensure the safe collection and storage of all old radioactive sources;

§ Strengthen the training of nuclear accident emergency response and assistance teams.

Chapter 45 Intensify Ecological Conservation and Restoration

Affording high priority to environmental protection and letting nature restore itself, we will ensure the protection and restoration of ecosystems, build ecosystem service corridors and biodiversity protection networks, and work to make natural ecosystems more stable and better able to provide services, thereby building robust ecological security barriers.

Section 1

Improving Ecosystem Functions

We will make major afforestation efforts, strengthen key forestry projects, improve the virgin forest protection system, and put a stop to commercial logging in all virgin forests, so as to protect and foster forest ecosystems. We will ensure that state forests and forestry farms lead the country's afforestation efforts, and will create new

property rights models to encourage nongovernmental investment in afforestation. We will prohibit the transplantation of large naturally grown trees into cities. We will turn more marginal farmland into forest or grassland, protect and improve grassland ecosystems, prohibit grazing in some areas while putting in place grazing suspension periods or rotational grazing systems in others, return some grazing lands back to natural grassland, better treat and control grassland degradation, desertification, and salinization, and ensure that the grassland vegetation coverage reaches 56%. We will protect and restore desert ecosystems, speed up efforts to improve the environmental governance of areas at the source of dust storms, and contain the expansion of desertification. We will work to maintain the groundwater levels of major rivers, lakes, wetlands, and estuaries, protect and restore wetland, lake, and river ecosystems, and establish a wetland protection system.

Section 2

Ecological Restoration in Key Regions

We will comprehensively treat desertification, rock desertification, and soil erosion in accordance with the principles of source protection, ecosystem restoration, and integrated action. We will continue implementing the second phase of the project to deal with the sources of dust storms affecting Beijing and Tianjin. We will strengthen the protection of the ecosystems at river sources and water source conservation areas for the Yangtze, Yellow, and Lancang rivers, along with others. We will strengthen protection of the ecosystems of the Three Gorges Reservoir region, the water sources of the South-to-North Water Diversion Project as well as of the ecological corridors along the project, and others. We will develop the eco-economic belt along the Yellow River. We will support the development of the Gansu ecological security demonstration zone. We will carry out demonstrations of the recovery and restoration of typically damaged ecosystems. We will improve the national groundwater monitoring system and make comprehensive efforts to address over-extraction of groundwater. We will establish a system for closing off desertified land for protection. We will take gradual steps to relocate people from the core areas and buffer zones of nature reserves.

Section 3

The Provision of Ecological Goods

We will work to provide more diversified ecological goods, improve the spatial distribution of ecological services, and become better able to provide public ecological services. We will strengthen protection of scenic areas, forest parks, wetland parks, and desert parks, improve roads and other infrastructure in forest areas, and promote the appropriately scaled development of goods and services for leisure activities, tourism, and health activities. We will accelerate the development of urban-rural ecological infrastructure such as greenways and country parks, and promote the development of forest towns and cities. We will launch high-quality eco- tourism routes and open up more ecological spaces.

Section 4

Biodiversity Protection

We will implement biodiversity protection projects. We will strengthen the development and management of nature reserves and step up the protection of typical ecosystems, species, genes, and landscape diversity. We will conduct biodiversity background surveys and evaluations and improve biodiversity observation systems. We will ensure the proper planning and development of facilities and parks for the biological resources protection and promote the development of gene banks and artificial breeding centers for wild fauna and flora species. We will take strict measures to prevent and control exotic species invasion, and we will guard against the loss of genetic resources. We will strengthen regulation over the import and export of wild fauna and flora and crack down on the illegal trading of ivory and other wildlife products.

Box 18 **Mountain, Water, Forest, and Farmland Ecological Projects**
1. Protection and restoration of national ecological security barriers § Promote ecological restoration and environmental governance in key regions crucial to national ecological security, such as the Qinghai-Tibet Plateau, the Loess Plateau, the Yunnan-Guizhou Plateau, the Qinling-Daba Mountains, the Qilian Mountains, the Greater and Lesser Hinggan Mountains, the Changbai Mountains, the Nanling mountainous area, the Beijing-Tianjin-Hebei water source conservation area,

the Inner Mongolian Plateau, the Hexi Corridor, the Tarim River basin, and the karst areas in Yunnan, Guangxi, and Guizhou.

2. Afforestation efforts

§ Implement large-scale tree planting projects;

§ Carry out the afforestation of contiguous areas;

§ Strengthen the development of shelterbelt networks in northwest, north, and northeast China, coastal areas, and the Yangtze and Pearl river basins;

§ Accelerate the development of national reserve forest and timber forest centers;

§ Promote the restoration of degraded shelterbelts;

§ Build large green ecological protection spaces as well as green corridors to connect ecological spaces, thereby forming networks of trees and forests throughout the country.

3. Comprehensive land consolidation

§ Launch comprehensive environmental improvement efforts in key river basins, on islands, and along coastlines;

§ Strengthen geological environmental governance and ecological restoration in regions of intensive mineral resource mining;

§ Promote the reclamation of damaged land and deserted industrial and mining land;

§ Carry out the restoration of deserted mining land as well as mountains and hills damaged by natural disasters or large construction projects;

§ Undertake comprehensive environmental improvement along the Beijing-Hangzhou Grand Canal as well as along older Yellow River waterways dating back to the Ming and Qing dynasties;

§ Promote comprehensive land development, protection, and improvement in border areas.

4. Virgin forest protection

§ Protect virgin forests;

§ Bring areas planted with immature forests, sparse forests, and shrubbery forests that can be cultivated into virgin forests under the same protection as virgin forests;

§ Restore forest vegetation through afforestation projects in forest areas that are unable to restore themselves.

5. A new round of efforts to turn marginal farmland and grazing land into forest or grassland

§ Turn farmland that occupies slopes of 25 degrees or steeper, is affected by serious desertification, or occupies slopes of 15 to 25 degrees in areas of key water sources into forest or grassland;

§ Steadily return more grazing land to grassland;

§ Make sound plans for the construction of grassland fencing and the reseeding of degraded grasslands;

§ Help restore the ecology and biodiversity of natural grasslands;

§ Take steps to treat poisonous or harmful grasses, barren patches of grassland, and cultivated grassland in the margins between agricultural land and grazing land.

6. Prevention and control of sandstorms and integrated management of soil erosion

§ Take integrated steps to prevent and control soil erosion in the northern desertification-prevention belt, the Loess Plateau area, the chernozem soil region in the northeast, the karst areas in the southwest, and other regions where it presents a problem;

§ Intensify efforts to improve terraced farmland, treat gully erosion, and ensure that small watersheds are ecologically clean;

§ Treat soil erosion on an additional 270,000 square kilometers of land.

7. Protection and restoration of wetlands

§ Strengthen protection of natural wetlands on the middle and upper reaches of the Yangtze, along the Yellow River, and in the Caohai Lake area in Guizhou;

§ Take integrated steps to improve the environment of wetlands with degraded ecological functions and low levels of biodiversity;

§ Carry out demonstrations of sustainable wetland utilization;

§ Work to ensure that the total area of wetlands stays above 53.33 million hectares nationwide.

8. Rescue of endangered wild species of fauna and flora

§ Protect and improve the habitats of pandas, crested ibises, tigers, leopards, Asian elephants, and other rare and endangered animal species;

§ Establish rescue and breeding centers and gene banks;

§ Carry out wildlife rescue, rehabilitation, and release;

§ Strengthen efforts to rescue and restore the habitats of rare and endangered plants such as orchids as well as wild plant species with extremely small populations.

Chapter 46 Respond to Global Climate Change

While working hard to both adapt to and slow down climate change, we will take active steps to control carbon emissions, fulfill our commitments for emissions reduction, increase our capability to adapt to climate change, and fully participate in global climate governance, thus making a contribution to the response to global climate change.

Section 1

Greenhouse Gas Emissions Control

We will bring carbon emissions in power, steel, building materials, chemical, and other major carbon-emitting industries under effective control, and promote low-carbon development in industry, energy, construction, transport, and other key sectors. We will support leading development regions in becoming the first to reach their carbon dioxide emissions peak. We will push forward pilot programs for low-carbon development and demonstrate the establishment of near-zero carbon emissions zones. We will control the emissions of non-CO2 greenhouse gases. We will promote the establishment of a national carbon emissions trading scheme, and implement systems for carbon emissions reporting, inspection, verification, and quota management for major carbon-emitters. We will improve statistical accounting, performance evaluation, and accountability systems as well as carbon emission standards. We will step up efforts to expand the use of low- carbon technologies and products.

Section 2

Adaptation to Climate Change

We will take climate change into full consideration in economic and social development efforts such as rural-urban development planning, infrastructure development, and productive force distribution. We will formulate and adjust technical standards in this regard at an appropriate time and put into effect an action plan for adapting to climate change. We will strengthen systemic observation and research on climate change, improve systems for forecasting and giving early warnings, and become better able to respond to extreme weather conditions and climatic events.

Section 3

International Cooperation

On the basis of equity and in accordance with the common but differentiated responsibilities and respective capabilities of all countries, we will actively take on international obligations in line with our national context, stage of development, and

actual capabilities, and ensure that China makes a contribution toward producing a stronger response to climate change. We will take an active part in negotiations on global climate change and work toward a fair and equitable system of global climate governance based on mutually beneficial cooperation. We will help deepen bilateral and multilateral dialogue, exchange, and practical cooperation on climate change. We will ensure the South-South Cooperation Fund on Climate Change fully plays its role and support other developing countries in improving their capacity to deal with climate change.

Chapter 47 Improve Mechanisms for Ensuring Ecological Security

We will build up institutions for ecological progress, establish sound systems for ecological risk prevention and control, and improve capabilities to respond to ecological and environmental emergencies in order to keep China ecologically secure.

Section 1

Ecological and Environmental Protection Systems

We will regulate the use of ecological spaces, define and strictly observe ecological redlines, and ensure that the functions of ecosystem service zones are not degraded, that their total area is not cut, and that they are not used for other purposes. We will establish a system for managing the total area of forests, grasslands, and wetlands. We will accelerate the establishment of diverse compensation mechanisms for ecological restoration and conservation efforts, and improve the mechanism linking fund allocation to ecological protection performance. We will establish an eco-tax system that covers certain areas including mining, resource consumption, pollutant discharge, and the import and export of resource products. We will research the establishment of an ecological value evaluation system, explore the creation of balance sheets for natural resources, and establish accounts for natural resource accounting in physical terms. We will audit outgoing officials' management of natural resource assets. We will establish sound systems for assessing and affording compensation for ecological and

environmental damage and put into effect a lifelong accountability system for such damage.

Section 2

Ecological and Environmental Risk Monitoring, Early-Warning, and Emergency Response

We will establish a sound national dynamic monitoring and early- warning system for ecological security and conduct regular comprehensive surveys and assessments of ecological risks. We will improve the coordination network for national, provincial, municipal, and county responses to ecological and environmental emergencies, and refine information reporting and release mechanisms for such emergencies. We will become stricter in relation to compensation for environmental damage and require industries that pose a high risk to the environment to carry liability insurance for environmental pollution.

Chapter 48 Develop Green and Environmentally Friendly Industries

We will support the development of green services providers, expand the use of energy efficient and environmentally friendly products, support innovations in technology, equipment, and service models, and improve related policies and mechanisms, so as to facilitate the development of energy efficient and environmentally friendly industries.

Section 1

Environmentally Friendly Goods and Services

We will improve the environmental credentials management system for enterprises and encourage the development of professional services for energy

conservation and environmental protection in areas such as technical consultation, systems design, equipment manufacturing, project construction, and operations management. We will promote energy performance contracting, water-saving management contracting, and third party governance of environmental pollution. We will encourage nongovernmental investment in environmental protection infrastructure construction and carry out trials for putting the comprehensive environmental governance of small towns and industrial parks under trusteeship. We will promote the development of large energy conservation and environmental protection enterprises that are able to compete internationally, and encourage advanced, practical energy-conserving and environmental protection technologies and products to reach out to the world. We will advance systems for green labeling, green certification, and green government procurement in a coordinated way. We will establish a green finance system, develop green credit and bonds, and launch green development funds. We will improve grid policies for electricity generated from coal gangue, leftover heat and pressure, waste incineration, and methane. We will accelerate the formation of industrial systems for the green supply chain.

Section 2

Environmental Protection Technology and Equipment

We will strengthen China's capabilities with respect to energy-saving and environmentally friendly engineering, technology, and equipment manufacturing, and research, develop, demonstrate, and disseminate a number of advanced, environmentally friendly technologies and equipment. We will accelerate research and development on and the industrial application of new technologies and equipment, such as those for low- grade waste heat power generation, small gas turbines, fine particulate matter control, vehicle exhaust emissions purification, landfill leachate treatment, sludge recycling, coordinated multi-pollutant treatment, and soil remediation. We will promote the use of mature and applicable technologies, such as those for integrated high-efficiency flue gas dust removal and waste heat recovery, high-efficiency heat pumps, semi-conductor illumination, and waste recycling.

PART XI

ALL-AROUND OPENING UP

With the Belt and Road Initiative paving the way, we will give greater meaning to the notion of opening up, increase our level of openness, and coordinate efforts to strengthen strategic mutual trust, investment and trade cooperation, and cultural exchanges. We will channel energy into realizing mutually beneficial cooperation based on deeper integration and bringing about a new stage in China's opening up.

Chapter 49 Improve the Strategy for Opening Up

We will comprehensively advance bidirectional opening up, facilitate the orderly flow of domestic and international factors of production, the efficient allocation of domestic and international resources, and the deep integration of Chinese and foreign markets, and work faster in cultivating new international competitive edges.

Section 1

Regional Opening Up

We will strengthen the development of ports of entry and infrastructure in both inland and border regions and create cross-border multimodal transport corridors. We will develop outward-oriented industrial clusters and create centers of opening up with specialized areas of focus. We will accelerate the integration and upgrading of special customs control areas and improve the development of both border and cross-border economic cooperation zones. We will increase the level of international cooperation in economic and technological development zones. We will develop strategic support belts for inland opening up, relying on principal cities and city clusters in China's interior. We will support coastal areas in fully participating in global economic cooperation and competition, give expression to the role of the Bohai Sea Rim, the Yangtze River Delta, and the Pearl River Delta as portals of China's opening up, and support these regions in taking the lead in embracing high-standard international rules for investment and trade

so as to cultivate internationally competitive economic zones. We will support the development of Ningxia and other inland open economic pilot zones as well as the development of the China-Singapore (Chongqing) Demonstration Initiative on Strategic Connectivity. We will advance the building of industrial parks for bilateral international cooperation. We will explore the establishment of a free trade port in Zhoushan.

Section 2

International Cooperation on Production Capacity and Equipment Manufacturing

We will encourage more of China's equipment, technology, standards, and services to go global by engaging in international cooperation on production capacity and equipment manufacturing through overseas investment, project contracting, technology cooperation, equipment exporting, and other means, with a focus on industries such as steel, nonferrous metals, building materials, railways, electric power, chemical engineering, textiles, automobiles, communications, engineering machinery, aviation and aerospace, shipbuilding, and ocean engineering. We will set up a repository for production capacity cooperation projects and promote major demonstration projects. We will guide enterprises in participating in international markets in ways that utilize their group advantage, and develop industrial clusters overseas suitable to local conditions. We will move faster in expanding bilateral and multilateral cooperation mechanisms on production capacity and actively work with developed countries to jointly explore third party markets. We will put in place mechanisms to facilitate overall coordination and communication that involve the participation of enterprises, financial institutions, local governments, chambers of commerce, and industry associations. We will improve services such as taxation, finance, insurance, investment and financing platforms, and risk assessment to support efforts in this regard.

Section 3

Upgrading of Foreign Trade

We will implement a strategy of importing and exporting to our best advantage, promote a transformation in foreign trade toward better quality exports that command higher prices, optimize the mix of imports and exports, and work faster to build China into a trader of quality. We will promote the integrated development of trade in goods and trade in services, greatly promote trade in producer services, and see to it that the volume of trade in services accounts for at least 16% of total foreign trade. We will consolidate and improve on our traditional export strengths and encourage more innovation in the development of processing trade. We will improve the structure of foreign trade by promoting diversification in export markets and increasing the proportion of emerging markets while maintaining the share of traditional ones. We will encourage the development of new types of trade and work to develop export credit insurance. We will actively work to increase imports and improve the import structure by importing a greater amount of advanced technology, advanced equipment, and high-quality consumer goods. We will actively respond to foreign technical barriers to trade, improve early warnings of possible trade friction, and defuse trade tensions and disputes.

Section 4

Foreign Capital and Outbound Investment

We will open more sectors to foreign investment, relax restrictions on market access, work proactively and effectively to bring in foreign capital and advanced technology, and increase the overall efficacy of foreign capital utilization. We will remove restrictions on market access for foreign capital in service sectors such as child care, architectural design, accounting, and auditing, and expand access to markets in the banking, insurance, securities, elderly care, and other sectors. We will encourage more foreign capital investment in sectors such as advanced manufacturing, new technology, energy conservation and environmental protection, and modern service industries as well as in the central, western, and northeastern regions, and will support the establishment of research and development centers with foreign capital. We will encourage Chinese financial institutions and enterprises to obtain financing in foreign markets. We will support enterprises in increasing overseas investment and becoming more deeply integrated into global production, value, and logistics chains. We will establish overseas production centers and cooperation zones for major commodities and actively build financial and information service platforms for outbound investment.

Chapter 50 Improve the New System of Opening Up

We will work to create a business environment that is more internationalized, convenient, and based on the rule of law, and to improve our institutions and mechanisms so as to make them more conducive to mutually beneficial cooperation and more compatible with international trade and investment rules.

Section 1

Robust Business Environment

We will work to build a market that operates on the basis of fair competition, a government that operates cleanly and efficiently, policies and legislation that are marked by fairness and transparency, and a cultural environment that is open and inclusive. We will unify laws and regulations for domestic and foreign capital, introduce basic laws on foreign capital, and protect the legitimate rights and interests of foreign companies. We will improve work in developing pilot free trade zones, encourage exploration and experimentation in service sector opening up, financial sector opening up and innovation, investment and trade facilitation, and operational and post-operational oversight over businesses, and apply successful experiences to other areas. We will put into force a regulatory system across the board for foreign capital based on pre-establishment national treatment with a negative list approach. We will improve the national security review system for foreign investment. We will develop new ways to exercise oversight over and provide services for foreign capital. We will establish systems to facilitate new forms of trade, such as cross-border e-commerce, comprehensively implement the Single Window System, one-stop service, and the integration of regional customs clearance procedures, and fully promote the sharing and joint utilization of government information as well as joint efforts to prevent and control risks at ports of entry. We will improve systems for promoting trade in services and give play to the roles of chambers of commerce, industrial associations, and trade and investment promotion agencies. We will strengthen the protection of intellectual property rights as well as the enforcement of antitrust laws, and deepen international cooperation on law enforcement in this regard.

Section 2

The Regulation System for Chinese Overseas Investment

We will improve outbound foreign investment planning as well as planning systems for such investment in key areas, regions, and countries. We will facilitate outbound investment by improving the regulation system which is based primarily on registration and requires approvals in only a small number of cases and by refining policies for outbound investment promotion and better service provision. We will promote outbound investment by individuals and improve the accredited domestic individual investors system. We will establish an auditing system for overseas investment by SOEs or using state capital, and improve performance assessment and accountability systems for such overseas operations.

Section 3

Bidirectional Opening Up in the Financial Sector

We will take systematic steps to realize RMB capital account convertibility, making the RMB more convertible and freely usable, so as to steadily promote RMB internationalization and see RMB capital go global. We will steadily work to establish a foreign exchange regulation system based on a negative list approach. We will relax restrictions on remittances and exchange for the purpose of investing overseas and improve the management of foreign currency exchange for businesses and individuals. We will relax restrictions on the overseas capital operations of Chinese multinational companies and gradually increase the amount that domestic companies may lend to their overseas operations. We will support the insurance sector in going global and expand the scope of overseas insurance fund investments. We will unify foreign debt management for Chinese and foreign companies and financial institutions, steadily promote regulatory reforms so that enterprises only have to register their foreign debt, and improve the framework for unified management of both RMB and foreign currency-denominated foreign debt as well as for prudential management of capital flows. We will strengthen monitoring over the balance of payments. We will promote the

bidirectional opening up of capital markets, open stock and bond markets wider to foreign capital, and ease restrictions on domestic institutions in respect to international bond issuance as well as on overseas institutions in respect to issuing, investing in, and trading RMB- denominated bonds. We will help raise the level of internationalization of Chinese financial institutions by encouraging them to increase their number of overseas offices and improve their global service networks; at the same time, we will also further open up the domestic financial market to foreign institutions.

Section 4

Services for Opening Up

We will work with more countries to sign high-standard bilateral investment agreements, judicial assistance agreements, and taxation agreements, and strive to realize mutual visa exemptions or simplified visa procedures with more countries. We will build an efficient and effective system for safeguarding China's overseas interests so as to protect the legitimate rights and interests of Chinese nationals and legal persons abroad. We will improve comprehensive management mechanisms for combating smuggling; improve regulatory measures for countering money laundering, terrorism financing, and tax evasion; and strengthen our risk management systems and mechanisms. We will improve China's capacity for ensuring the safety of Chinese people overseas, improve the consular protection system, and work to provide convenient services for Chinese nationals overseas such as risk warning, investment promotion, and rights and interests safeguards. We will strengthen foreign-related legal services and put in place an assistance mechanism for the cross-border protection of intellectual property rights.

Chapter 51 Move Forward with the Belt and Road Initiative

We will uphold amity, sincerity, mutual benefit, and inclusiveness as well as the principle of joint discussion, common development, and shared growth as we look to undertake practical and mutually-beneficial cooperation in multiple sectors with countries and regions involved in the Belt and Road Initiative, with the aim of

developing a new picture of all-around opening up in which China is opened to the world through eastward and westward links and across land and sea.

Section 1

Cooperation Mechanisms

We will improve the bilateral and multilateral cooperation mechanisms of the Belt and Road Initiative focusing on policy communication, infrastructure connectivity, trade facilitation, capital flow, and people-to- people exchanges. We will increase cohesion between the development plans and technological standards of China and those of other countries along the routes of the Belt and Road Initiative, make further efforts to facilitate transport among countries along the routes, and simplify customs clearance procedures along the routes. We will establish a diversified, project- based financing model that includes the participation of enterprises and institutions with enterprises as the main actors and that is led by investment funds of various types. We will strengthen cooperation with international organizations including international financial organizations and institutions, work actively to promote the development of the Asian Infrastructure Investment Bank and the New Development Bank, put the Silk Road Fund to effective use, and attract international capital for the creation of a financial cooperation platform that is open, pluralistic, and mutually beneficial. We will give full play to the role of overseas Chinese, returned overseas Chinese, and the relatives of overseas Chinese who live in China in fostering bridges of communication and bonds of friendship.

Section 2

Economic Corridors

We will actively advance the development of international economic cooperation corridors, such as the China-Mongolia-Russia corridor, the China-Central Asia-West Asia corridor, the China-Indochina Peninsula corridor, the new Eurasian Continental Bridge, the China-Pakistan corridor, and the Bangladesh-China-India-Myanmar corridor. We will increase infrastructure connectivity with neighboring countries and work with

them to build infrastructure networks that connect sub-regions within Asia as well as Asia, Europe, and Africa. We will strengthen international cooperation on energy and resources and production chains, and increase local processing and conversion. We will support the development of international container shipping services and postal train routes such as those between China and Europe. We will build an international logistics park for the Shanghai Cooperation Organization and a China-Kazakhstan logistics cooperation center. We will actively advance the construction of strategic maritime hubs along the 21st Century Maritime Silk Road, participate in the building and operation of major ports along the road, and promote the joint development of industrial clusters around these ports to ensure that maritime trade routes are clear and free-flowing. We will advance the development of multi- modal transportation that integrates expressways, railways, waterways, and airways, build international logistics thoroughfares, and strengthen infrastructure development along major routes and at major ports of entry. We will work to develop Xinjiang as the core region for the Silk Road Economic Belt and Fujian as the core region for the 21st Century Maritime Silk Road. We will work to develop the Maritime Silk Road Index into an influential international shipping indicator.

Section 3

Open and Inclusive Cultural Exchanges

We will work to ensure the success of the International Summit for the Belt and Road Initiative and give expression to the role of the Silk Road (Dunhuang) International Culture Expo. We will conduct extensive international cooperation in the areas of education, science, technology, culture, sports, tourism, environmental protection, health care, and traditional Chinese medicine. We will create mechanisms for official and nongovernmental cultural exchanges that involve the participation of multiple parties; hold events such as culture years, art festivals, film festivals, and expos with other countries; encourage diverse kinds of folk culture exchanges; and give full expression to the positive role of folk cultures such as Mazu culture. We will coordinate China's efforts with other countries to develop unique tourism products and increase the convenience of tourism. We will strengthen international exchanges and cooperation on health care and epidemic prevention and enhance our capacity to jointly handle public health emergencies with other countries. We will promote the establishment of think tank associations.

Chapter 52 Participate in Global Economic Governance

We will help reform and improve the international economic governance system, actively guide the international economic agenda, safeguard and consolidate the multilateral trade system, work to see the international economic order develop in a way that facilitates equality, fairness, mutual benefit, and cooperation, and work with other countries to deal with global challenges.

Section 1

Principal Position of the Multilateral Trade System

Upholding the principle of mutual benefit, we will help promote the liberalization and facilitation of international trade and investment, and take a firm stance against all forms of trade protectionism. We will safeguard the status of the World Trade Organization as the main channel in international trade and investment, work for progress in multilateral trade negotiations, promote the balanced, mutually beneficial, and inclusive development of the multilateral trade system, and contribute to the development of international economic and trade rules that are just, reasonable, and transparent.

Section 2

Regional and Bilateral Free Trade Systems

We will speed up efforts to implement the free trade area strategy, gradually establishing a network of high-standard free trade areas. We will actively engage in negotiations with countries and regions along the routes of the Belt and Road Initiative on the building of free trade areas; accelerate negotiations on regional comprehensive economic partnership agreements, the China-Gulf Cooperation Council Free Trade Area, and the China-Japan- RoK Free Trade Area; and work to achieve progress in developing

free trade relations with Israel, Canada, the Eurasian Economic Union, and the European Union as well as in building the Free Trade Area of the Asia- Pacific. We will ensure full implementation of our free trade agreements with the Republic of Korea and with Australia as well as the Protocol to Amend the Framework Agreement on Comprehensive Economic Cooperation between China and ASEAN. We will continue to pursue progress in negotiations on investment agreements between China and the United States and between China and the European Union.

Section 3

The International Economic Governance System

We will actively participate in cooperation on global economic governance mechanisms, support the major platforms for global governance and those for regional cooperation in better playing their respective roles, and help make the global governance system more equal and sounder. We will support developing countries in participating in global economic governance on an equal footing and promote reform of the international monetary system and international financial regulation. We will strengthen international coordination of macroeconomic policies and promote global economic equilibrium, financial security, and stable economic growth. We will take an active role in formulating international rules in areas such as the internet, the deep sea, the polar regions, and aerospace. We will also take an active role in establishing international standards. We will work to ensure a successful G20 Summit in Hangzhou.

Chapter 53 Assume International Responsibilities and Obligations

We will increase the amount of foreign aid provided by China and improve the ways in which it is offered. We will offer more advice and training to other developing countries free of charge in areas such as human resources, development planning, and economic policy; expand foreign cooperation and aid in the areas of science, technology, education, medical care, disaster prevention and mitigation, environmental governance, the protection of wild fauna and flora, and poverty alleviation; and step up the

provision of humanitarian aid. We will actively implement the 2030 Agenda for Sustainable Development. We will help establish diversified systems for development financing. We will help safeguard international public security, combat terrorism in all its forms and manifestations, and actively support and participate in the peacekeeping operations of the United Nations. We will strengthen international cooperation on nonproliferation, participate in efforts to keep hotspots and sensitive areas under control, and work with other countries to maintain safety in international corridors. We will work to enhance multilateral and bilateral coordination, participate in international cyberspace governance, and help safeguard global cybersecurity. We will help promote international cooperation against corruption.

PART XII

DEEPER COOPERATION BETWEEN THE MAINLAND, HONG KONG, MACAO, AND TAIWAN

We will support Hong Kong and Macao in consolidating their traditional strengths while cultivating new ones, and expand the peaceful growth of relations between the two sides of the Taiwan Straits, to achieve economic complementarity, mutual economic benefits, and common growth.

Chapter 54 Support Long-Term Prosperity, Stability, and Development in Hong Kong and Macao

We will implement, both to the letter and in spirit, the principles of "one country, two systems," the people of Hong Kong governing Hong Kong, the people of Macao governing Macao, and both regions enjoying a high degree of autonomy, and stay true to the Constitution of China and the basic laws of these two regions. We will give expression to the distinctive strengths of Hong Kong and Macao, elevate their positions and roles in China's economic development and opening up, and support them in

developing their economies, improving living standards, advancing democracy, and promoting harmony.

Section 1

Toward a More Economically Competitive Hong Kong and Macao

We will support Hong Kong in strengthening and improving its status as an international financial, shipping, and trade center, and in strengthening its position as a global offshore RMB business hub and its function as an international asset management center. We will work to see Hong Kong moves its finance, trade, logistics, and professional services toward the high- end and high value-added level. We will support Hong Kong in pursuing innovation, science, and technology and cultivating emerging industries. We will support Hong Kong in becoming a center for international legal and dispute resolution services in the Asia-Pacific. We will support Macao in becoming a major destination for international leisure and tourism and a service platform for trade and cooperation between China and Portuguese- speaking countries, actively developing its industries in areas such as conventions and exhibitions, trade, and commerce, and promoting an appropriate level of diversity in its economy in order to achieve sustainable economic development.

Section 2

Deeper Cooperation between the Mainland and Hong Kong and Macao

We will support Hong Kong and Macao in participating in the country's bidirectional opening up and the Belt and Road Initiative, and encourage mainland, Hong Kong, and Macao enterprises to go global by capitalizing on their respective strengths and multiple forms of partnership with each other. We will open the mainland up more widely to Hong Kong and Macao and work to improve the Closer Economic Partnership Arrangement between the mainland and the two regions. We will deepen financial cooperation and accelerate market connectivity between the mainland and Hong Kong. We will deepen mainland exchange and cooperation with Hong Kong and Macao in relation to social development, living standards, culture, education,

environmental protection, and other areas, support cooperation in relation to innovation, science, and technology, and encourage micro, small, and medium businesses as well as young people from Hong Kong and Macao to start businesses on the mainland. We will support joint efforts by Guangdong, Hong Kong, and Macao to build a quality living area in the Greater Pearl River Delta region and accelerate the development of Qianhai, Nansha, and Hengqin as platforms for cooperation between Guangdong, Hong Kong, and Macao. We will encourage Hong Kong and Macao to play an important role in promoting cooperation in the Greater Pearl River Delta region, and advance the development of the Guangdong-Hong Kong-Macao Greater Bay Area and major trans-provincial cooperation platforms.

Chapter 55 Promote Peaceful Cross-Straits Relations and China's Reunification

We will uphold the 1992 Consensus and the One China policy, and firmly oppose the independence of Taiwan. On the basis of these principles, we will help deepen mutually beneficial economic cooperation between the two sides of the Taiwan Straits, expand areas of cooperation between and increase people's wellbeing on both sides, and strengthen and promote peaceful relations between the two sides.

Section 1

Cross-Straits Economic Integration

We will help strengthen communication on macro-level policies between the two sides, expand economic cooperation, and deepen common interests. We will work to see that industries on the two sides achieve a better complementarity of strengths and a deeper integration of development, and encourage mainland and Taiwan companies to increase reciprocal holdings as well as to work together in making innovations, building brand names, and expanding markets. We will work toward deeper cross-Straits financial cooperation and support multilevel cooperation between mainland and Taiwan capital markets. We will help expand and upgrade cross-Straits trade and investment. We will open the mainland more widely to Taiwan's service industries and work for greater cooperation in areas such as agriculture, fishery, small and medium enterprises,

and e-commerce. We will further develop the Western Taiwan Straits Economic Zone and the China (Fujian) Pilot Free Trade Zone, establish platforms for cooperation with Taiwan such as the Taiwan Investment Zone, the Pingtan Comprehensive Experimental Area, Fuzhou New Area, and Kunshan Experimental Mainland-Taiwan Industrial Cooperation Area, and expand efforts to build Xiamen into a hub for cooperation with Taiwan. We will encourage regions which host concentrations of Taiwan-invested companies such as the Yangtze River Delta, the Pearl River Delta, and the Bohai Sea Rim to give expression to their strengths, support transformation and upgrading in these companies, and guide them in gradually moving their operations toward the central and western regions.

Section 2

Cross-Straits Cultural and Social Exchanges

We will encourage individuals from the two sides to interact with each other more frequently, improve treatment policies and measures for our Taiwan compatriots, and make it more convenient for people from Taiwan to work, study, and live on the mainland. We will help strengthen cultural exchanges and cooperation between the two sides of the Straits, work together with Taiwan in promoting Chinese culture, and enhance our common cultural and national identity. We will help deepen educational exchanges and cooperation, work to increase the number of mutually recognized university credentials and degrees, and advance the development of the Experimental District for Fujian-Taiwan Vocational Educational Exchanges and Cooperation. We will encourage joint efforts between the two sides of the Straits in conducting science, technology, and research and development projects, and deepen cross-Straits academic exchanges. We will help strengthen community-level and youth exchanges between both sides so as to benefit ordinary people, the youth, and small and medium enterprises in Taiwan.

PART XIII

THE FIGHT AGAINST POVERTY

Based on our political and institutional strengths, we will implement the fundamental strategy of targeted poverty reduction, develop new mechanisms and models for poverty alleviation, adopt unconventional measures, and step up our efforts to ensure success in the battle against poverty.

Chapter 56 Take Targeted Poverty Reduction Measures

In keeping with the need to ensure that poverty reduction efforts are well-defined in terms of targeting population, designing projects, using funds, implementing measures, appointing village personnel, and achieving outcomes, we will work to see that assistance programs become more effective so that people living in poverty in rural areas have adequate food and clothing and are able to access compulsory education, basic medical care, and safe housing.

Section 1

New Development-Based Poverty Reduction Methods

We will adopt categorized, targeted poverty alleviation measures that are focused on addressing the causes of poverty and providing the support needed to ensure its alleviation. We will support approximately 50 million people, who have registered as being economically disadvantaged, in lifting themselves out of poverty by ensuring that they can, among other things, develop businesses based on local strengths, find alternative employment, relocate, claim subsidies for ecosystem conservation, and gain access to educational and training programs, medical insurance, and assistance for medical treatment. We will ensure that other poor populations—those who have partially or completely lost the capacity to work—have their basic living needs met through social security policies. We will explore a system for supporting those living in poverty by helping them realize returns on asset investments, ensuring they gain a greater share of returns through land trusts, through the transfer of poverty alleviation funds into shares of equivalent value in rural cooperatives and enterprises, and through

the granting of shares in rural cooperatives and enterprises in exchange for the contribution of land-use rights.

Section 2

Targeted Poverty Reduction Mechanisms

We will identify and register those living in poverty throughout the country. We will strengthen dynamic statistical monitoring of these populations, establish records for targeted poverty reduction efforts, and strengthen regular review and dynamic management to ensure records are updated regularly. We will put in place a household assessment mechanism for poverty alleviation, and formulate strict, well-defined, and transparent standards, procedures, and review measures to allow for the withdrawal of counties that have eradicated poverty from assistance programs. We will establish mechanisms for public oversight over poverty reduction performance, conduct public satisfaction surveys on poverty reduction efforts in poor areas, and put in place mechanisms for tracking and auditing how poverty reduction policies are implemented and for third party poverty reduction performance evaluation.

Chapter 57 Support Accelerated Development of Poor Areas

In the battle against poverty, we will focus our efforts on old revolutionary bases, areas with concentrations of ethnic minorities, border areas, and contiguous poor areas; continue to increase investment in poverty reduction in contiguous areas with acute difficulties; strengthen the ability of poor areas to tap into their development potential; and ensure that the per capita disposable income of farmers in these areas increases faster than the national average and that indicators for the main types of basic public services there approach national averages.

Section 1

Infrastructure Construction

We will work according to local conditions in poor areas in addressing issues such as roads, water, power, and internet access. We will construct transportation corridors, creating links within poor areas and connecting them with other areas. We will build 152,000 kilometers of asphalt or concrete roads in incorporated villages. We will improve water conservancy facilities in poor areas, ensure that all people living in poverty have access to safe drinking water, and support hydropower development in poor rural areas. We will step up work on upgrading power grids in poor rural areas. We will work to ensure that broadband internet networks cover over 90% of poor villages. We will increase investment in programs designed to replace direct relief with work, and support the construction of small and medium public benefit infrastructure in poor areas. We will continue to work at the village level to eradicate poverty, and speed up efforts to improve production and living conditions in poor villages.

Section 2

Improved Public Services

Giving high priority to registered poor households, we will complete all work on renovating dilapidated housing so as to guarantee safe housing for these households. We will improve basic public services in poor areas, improving the quality of education and medical services. We will carry out a number of cultural projects to benefit people and help reduce poverty, and work to see that county-level public cultural and sports facilities in poor areas meet national standards.

Chapter 58 Improve Poverty Reduction Systems

We will improve policy support for poverty reduction, build sound mechanisms, and develop new models as well as corresponding evaluation systems, so that there is strong support in place to sustain the fight against poverty.

Section 1

Better Policies

We will work to increase the amount that governments at central and provincial levels spend on poverty reduction, ensure complementarity between policy-backed financing, development financing, commercial financing, and cooperative financing, bring together all available resources for poverty reduction, and open up new sources of funding. We will give preference to meeting land-use needs related to development-based poverty reduction, setting annual quotas for increases in land designated for construction in poor counties. We will step up support for land regulation in poor areas, allowing poor counties to use their quotas for land designated for urban and rural construction purposes anywhere within the scope of their respective provincial jurisdictions. In poor areas where collective land is used for developing hydropower or extracting mineral resources, we will carry out trials to compensate local residents by offering collective equity stakes. We will improve the benefit-sharing mechanisms for resource development, so as to enable poor areas to acquire a greater share in the benefits therein. We will increase efforts to reduce poverty through science and technology. We will provide talent support for poor areas and assist in the training of local personnel.

Section 2

Greater Participation

We will improve the mechanisms for poverty reduction collaboration between the eastern and western regions and the mechanisms for Party and government offices, the military, people's organizations, and SOEs to help lift designated poor areas out of poverty. We will encourage and support the participation of private enterprises, social organizations, and individuals in development-based poverty reduction, and guide social actors to shift the focus of their poverty reduction efforts to villages or households so as to effectively combine social resources with targeted government measures. We will develop new models of participation, support the establishment of industry investment funds and public interest trust funds, encourage volunteers to take part in poverty reduction efforts, and ensure that social workers are serving poor areas. We will work hard to see that brands well- known for poverty reduction are created.

Section 3

The Responsibility System for Poverty Alleviation

We will further improve mechanisms by which the central government undertakes overall planning, governments of provinces, autonomous regions, and municipalities directly under the central government take overall responsibility, and municipal (prefectural) and county governments ensure implementation. We will strengthen poverty-alleviation performance evaluation for officials, fully implementing the measures for performance evaluation of development-based poverty reduction efforts, and giving high priority in government performance assessments in poor counties to measuring the effectiveness of poverty alleviation. We will establish a system for overseeing poverty reduction efforts, and strengthen corresponding accountability.

Box 19
Poverty Alleviation Programs

1. Locally viable industries

§ Focus on supporting poor villages and households in developing planting and husbandry industries and industries related to traditional crafts;

§ Implement the "one village one leading industry" program to promote the development of industry in poor villages;

§ Put into action the "Internet +" industry-based poverty reduction initiative;

§ Promote the development of e-business-based, solar power-based, and rural tourism-based poverty alleviation, to help more than 30 million people lift themselves out of poverty.

2. Export of labor services

§ Strengthen implementation of the vocational training plan and the education and training program for poor households, ensuring that members of a poor household who are fit to work acquire at least one work skill;

§ Implement initiatives to match labor with market demand;

§ Provide better guidance and other employment services;

§ Guide young and middle-aged members of the workforce in poor areas in seeking employment in other areas by matching labor supply and demand between these areas, thereby helping ten million people lift themselves out of poverty by finding alternative employment.

3. Relocations from inhospitable areas

§ Relocate approximately ten million people living in poverty in inhospitable areas;

§ Provide these people with new housing as well as the necessary

supporting infrastructure and basic public service facilities;

§ Create more jobs for these people through the development of small towns and industrial parks;

§ Work to help relocated people improve their self-development capacity;

§ Ensure adequate employment opportunities and stable poverty reduction.

4. Transportation development

§ Build or upgrade one million kilometers of rural roads including roads for facilitating the development of tourism, resources, and industrial parks in poor areas;

§ Carry out 100 key transportation projects to connect poor areas with the national trunk highway network.

5. Ecological conservation

§ In assisting those people living in poverty in ecologically sensitive or vulnerable areas (including river basins), focus on increasing subsidies for ecological conservation and implementing ecological protection and restoration projects in order to create more jobs and raise incomes.

6. Education

§ Improve the basic conditions of badly built and poorly operated schools providing compulsory education in poor areas throughout the country;

§ Strengthen training for teachers working in rural areas;

§ Ensure effective implementation of the nutrition improvement project for students receiving compulsory education in rural areas;

§ Step up aid and financial support for students from poor families receiving pre-school education, special needs education, and senior secondary and higher education;

§ Continue to implement the initiative to provide targeted training for people living in poverty in rural areas, ensuring that all high school graduates from poor families who have failed to receive higher education have access to vocational education.

7. Health care and social security

§ Provide medical assistance for those who have been driven into poverty by medical expenses;

§ Ensure notable progress is made in improving medical services in poor areas;

§ Move forward with pairing programs linking poor counties with health care institutions at and above Grade II nationwide;

§ Ensure that households unable to escape poverty through industry-based support or employment assistance schemes have their basic needs met through social security programs, and that all eligible households living in poverty are supported through subsistence allowances.

8. Financing

§ Issue policy-based financial bonds and special bonds to ensure funding for development-based poverty reduction efforts;

§ Introduce poverty reduction related relending to guide financial

institutions to give weight to supporting poor areas in developing locally viable industries and supporting people affected by poverty in seeking employment or starting their own businesses;

§ Grant microcredit to those who have been registered as being economically disadvantaged, with no requirement for collateral or guarantee and with government-subsidized interest payments;

§ Build sound insurance service networks;

§ Improve financing assurance and risk compensation mechanisms.

PART XIV

BETTER EDUCATION AND HEALTH FOR ALL CITIZENS

With special emphasis on strengthening people's capacity for self-development, we will raise levels of education, health, and medical services throughout society and ensure that the people know more about science and culture and are in better health, so as to move faster to build China into a country rich in human capital.

Chapter 59 Modernize Education

We will implement the Party's policy on education in all areas, continue to prioritize the development of education, and make faster progress in improving the modern education system in order to raise the overall quality of education, promote fairness in education, and promote the moral, intellectual, physical, and artistic development of people so that they will build up and take up the baton of socialism.

Section 1

Balanced Development of Basic Public Education

We will establish a unified urban and rural funding mechanism for compulsory education which places emphasis on rural areas, and increase funding for public education in the central and western regions, remote or poor areas, and areas with concentrations of ethnic minorities. We will take appropriate measures to ensure that state-run schools that provide compulsory education comply with educational standards, improve conditions in boarding schools as well as badly built and poorly operated schools, improve the regional layout of education institutions and services, work to eliminate extremely large class sizes in urban schools, achieve a basic balance between schools in the same county in the allocation of educational resources, and raise the completion rate of compulsory education to 95%. We will strengthen the ranks of teachers with emphasis on those teachers in rural schools, implement a support plan for rural teachers, and address structural, school level-specific, and regional teacher shortages through methods such as the provision of government-purchased teaching positions. We will improve the teaching environment in rural schools. We will help make rural preschool education more accessible by encouraging the development of rural kindergartens open to all children, carry out the three-year preschool education plan, and work to see the gross enrollment ratio for children receiving three-year preschool education rise to 85%. We will work to make senior secondary school education more universal and give high priority to waiving fees for senior secondary school students registered as economically disadvantaged students, with the aim of seeing the gross enrollment ratio rise to over 90%. We will increase the availability and quality of special needs education for groups with disabilities, and increase support given to such education. We will actively promote the development of education for ethnic minority students, appropriately move ahead with bilingual education, and strengthen bilingual teacher training.

Section 2

Integration of Industry and Vocational Education

We will improve the modern vocational education system and strengthen infrastructure in vocational education. If conditions are suitable, colleges providing undergraduate education will be encouraged to become applied institutions. We will give impetus to training models for applied expertise or technical skills which allow for the involvement of industry and vocational education as well as cooperation between schools and enterprises, and promote two-way exchanges between faculty members

from vocational schools and technical staff members from enterprises. We will prompt the development of production-oriented majors, class content, and teaching methods. We will promote mutual recognition and vertical mobility between vocational education and regular education. We will phase in, based on classification, the waiving of tuition and miscellaneous fees at schools providing secondary vocational education and put into effect a national program to offer basic vocational training packages.

Section 3

University Capacity to Produce Innovators

We will develop the modern university system and refine the internal governance structures of universities. We will cultivate a first-class teaching staff and update teaching content with new theories, knowledge, and techniques. We will improve the system for ensuring the quality of higher education. We will manage higher education based on classification and carry out the comprehensive reform of institutions of higher learning to ensure that they optimize the arrangement of their disciplines and majors, reform their training mechanisms, implement an educational system using different methods to cultivate academic talent and applied talent whilst combining general knowledge and major-specific knowledge, strengthen instruction through practice, and nurture the capacity of students for creativity, innovation, and starting businesses. We will invigorate higher education in the central and western regions and see that more students from these regions and rural areas are able to enter key institutions of higher learning. We will ensure that all universities improve their capacity for innovation, and will adopt a coordinated approach to developing world-class universities and disciplines.

Section 4

Toward a Learning Society

We will emphasize the development of continuing education and build a system for lifelong learning and training available to all members of society. We will encourage the open sharing of all types of learning resources, ensure the success of open

universities, develop online and distance learning, and integrate all kinds of digital learning resources to make them available to the general public. We will establish a system for personal learning accounts and credits, make it easier for people to pursue continuing education and lifelong learning, formulate a national qualifications framework, and promote credit transfers and recognition of the learning outcomes of non-degree education and vocational skill grades. We will develop senior citizen education.

Section 5

Education Reform and Development

We will deepen education reform to increase students' sense of social responsibility, their awareness of rule of law, their spirit of innovation, and their ability to put ideas into practice; to strengthen education in sports, physical health, mental health, the arts, and aesthetics; and to cultivate students' interest in innovation and their scientific literacy. We will deepen reform of the examination and enrollment systems as well as instructional reform. We will administer the Academic Proficiency Test and the Comprehensive Student Assessment to junior and senior secondary school students. We will launch a nationwide reform of the professional title system for primary and secondary school teachers and improve teacher salaries and benefits. We will promote close integration of modern information technology with education and teaching. We will guarantee certain levels of spending on education in accordance with the law. We will operate on the principle of separation between the management, running, and assessment of schools, expand the decision-making powers of schools, improve inspection of and oversight over education, and strengthen social oversight over education. We will put in place a system of policies for management according to institution type and for the provision of differentiated support, and encourage nongovernmental actors and investors to provide a diverse range of education services. We will improve the financial support system and ensure that all students from financially disadvantaged families are covered.

Box 20 **Education Modernization Projects**
1. Standards for schools providing compulsory education § Implement an action plan to accelerate the development of education in the central and western regions;

§ Gradually ensure that state-run compulsory education schools that cannot yet meet required standards work to bring their buildings, premises, and staffing up to standard.

2. Senior secondary education access plan

§ Increase senior secondary education resources in poor areas in the central and western regions, particularly in contiguous poor areas;

§ See that basically all junior secondary school graduates in poor parts of these regions who did not enroll in regular senior secondary education enter into secondary vocational schooling.

3. Development of kindergartens open to all children

§ Strengthen the development of such kindergartens, focusing particularly on making sure children of kindergarten age in rural parts of the central and western regions as well as children born in urban areas after the introduction of the two- child policy have access to kindergarten education.

4. Integration of education into industry

§ Support 100 higher vocational institutions and 1,000 secondary vocational schools in strengthening cooperation with enterprises to develop vocational education internship and training facilities;

§ Support colleges providing undergraduate education in improving their basic conditions including facilities for teaching, conducting experiments, and training;

§ Establish a number of high-quality applied undergraduate colleges;

§ Support the development of clusters of emerging disciplines and majors to serve modern industry through cooperation between universities and enterprises.

5. Development of world-class universities and disciplines

§ Give high priority to supporting the development of a number of world-class universities and disciplines, and ensuring that some disciplines reach the highest ranks worldwide;

§ Continue the initiative to improve universities' capacity for innovation.

6. Development of continuing education

§ Support higher learning institutions and vocational institutions in providing continuing education and training for migrant workers in cities, modern professional farmers, modern industrial workers, and demobilized service personnel;

§ Establish personal learning accounts and an academic credit certification platform.

7. Teacher development

§ Support the development of teacher training and launch a program to cultivate high-caliber teachers;

§ Add to bilingual teacher numbers in areas with concentrations of ethnic minorities and to secondary vocational teacher numbers in poor areas;

§ Recruit teachers for the special rural teacher program every year to gradually bring their number to 100,000;

§ Build accommodations for teachers in rural areas;

§ Implement the head teacher plan in primary and secondary schools in the

central and western regions and a plan to attract excellent teachers to universities in these regions;

§ Strengthen efforts to train special needs teachers.

8. Information technology in education

§ Move faster in implementing the project to ensure that broadband internet is accessible to each school, quality digital educational resources are accessible to each classroom, and an online learning space is accessible to each student and to put in place platforms for educational resources and management;

§ Continue support for IT infrastructure construction in rural primary and secondary schools;

§ Establish a national quality learning resource platform through government service procurement;

§ Develop modern remote and online learning with a focus on vocational education and applied higher education.

9. International exchanges and cooperation in education

§ Promote educational activities related to the Belt and Road Initiative;

§ Implement the study abroad action plan;

§ Continue to ensure Confucius Institutes are run successfully.

Chapter 60 Promote a Healthy China

We will deepen reform of the healthcare system. With an emphasis on prevention, we will establish a sound basic healthcare system, see that all members of society have access to basic healthcare services, and get everyone exercising to see that they become more healthy.

Section 1

Healthcare Reform

We will coordinate medical services, medical insurance, and pharmaceutical reforms, promote the separation of medical care from pharmacy operations, and establish a sound basic healthcare system covering all citizens. We will execute comprehensive reform of all public hospitals to see that they are there to serve the public without having to make a profit, their operational costs are lowered, and markups on pharmaceuticals are gradually eliminated. We will carry out pricing reform for medical

services and improve public hospital compensation mechanisms. We will establish modern hospital management systems, see that public hospitals act as independent legal persons, and establish staffing and remuneration systems suited to the particular characteristics of the healthcare industry. We will improve the system of essential medicines, deepen reform of logistics systems for pharmaceuticals and consumables, and improve medicine supply mechanisms. We will encourage the research and development of new medicines, and give precedence to newly developed medicines available on the market and medicines that have passed evaluations for consistency in adding to the catalogue of medicines covered by healthcare insurance. We will encourage nongovernmental actors to provide healthcare services and see that nonprofit private hospitals enjoy treatment equal to that of public hospitals. We will strengthen oversight over the healthcare industry across the board, improve the quality of health care, and ensure that health care is safe. We will create a better work environment for medical practitioners, and improve mechanisms for mediating disputes between them and patients to facilitate more amicable relations.

Section 2

The Medical Insurance System for All Citizens

We will improve the mechanisms to ensure stable and sustainable funding for medical insurance and to adjust reimbursement rates for medical expenses, and will improve payment policies for medical insurance premiums. We will fully implement the major disease insurance scheme for rural and non-working urban residents, and improve the assistance systems for major or serious diseases and for emergency disease treatment. We will work to lower the treatment costs of major and chronic diseases. We will reform medical insurance management and payment methods and keep medical expenses at a reasonable level, ensuring a sustainable balance of medical insurance funds. We will improve the personal account side of the basic medical insurance scheme and bring outpatient expenditures under unified management. We will work to keep the medical insurance participation rate for rural and non-working urban residents above 95%. We will accelerate efforts to enable medical bills incurred in any locality to be settled through basic medical insurance accounts and see that a retiree living in a different province from that in which premium payments were made can settle inpatient expenditures where they were incurred. We will integrate the medical insurance policies for rural and non-working urban residents along with the management of insurance. We

will encourage commercial insurance agencies to participate in providing medical insurance. We will merge maternity insurance into the basic medical insurance scheme. We will encourage the development of supplemental medical insurance and commercial health insurance. We will explore the establishment of insurance schemes for long-term care and begin launching trials in this regard. We will improve the medical malpractice insurance system.

Section 3

Major Disease Prevention and Treatment and Basic Public Healthcare Services

We will improve both basic and major national public healthcare service programs and provide better quality services in a more efficient and equitable way. We will strengthen capacity for providing public healthcare services at the community level. We will strengthen capabilities development in areas in need of attention such as maternal and infant healthcare, public healthcare, tumor and mental illness prevention and treatment, and pediatrics. We will implement a comprehensive strategy for the effective prevention and control of chronic diseases such as cardiovascular, brain, and vascular diseases as well as diabetes, malignant tumors, respiratory disease, and mental illness. We will strengthen the prevention and control of major communicable diseases by working to lower prevalence of hepatitis B among the general population, keep HIV prevalence low, reduce the incidence rate of tuberculosis to 58 cases per 100,000 people, basically eradicate schistosomiasis, and eliminate malaria and leprosy. We will ensure that work on the prevention and control of major localized diseases is carried out to proper effect. We will strengthen quarantine capabilities at ports of entry to keep out major communicable diseases. We will conduct surveys on and ensure the prevention and control of occupational diseases. We will provide greater free supplies of special medicines for the prevention and treatment of HIV/AIDS and other diseases. We will strengthen efforts to provide health education for everyone so as to spread health-related awareness and knowledge. We will make a major push to prohibit smoking in public places. We will step up patriotic health campaigns and efforts to improve the level of urban health. We will strengthen efforts to work out a national nutrition plan and the provision of psychological health services.

Section 4

Maternal and Infant Healthcare and Childbirth Services

We will implement an assistance program for hospital childbirths and provide pregnant and postnatal women with free, basic healthcare services throughout every stage of childbirth. We will strengthen the comprehensive prevention and treatment of birth defects and establish a system for providing free services covering all citizens for the prevention and treatment of birth defects during pre-pregnancy, prenatal, and neonatal stages. We will comprehensively improve capacity for providing maternal and infant healthcare services, step up efforts to prevent and control major diseases affecting women and children, increase screening rates and early diagnosis and treatment rates for common gynecological diseases, and strengthen childhood disease prevention and treatment and childhood injury prevention. We will fully implement the project to improve child nutrition and increase newborn screening in poor areas. The infant mortality rate will be reduced to 7.5 per 1,000, the under-five mortality rate to 9.5 per 1,000, and the maternal mortality rate to 18 per 100,000.

Section 5

The Medical Service System

We will optimize the structure of our medical institution systems, promoting integration of functions and innovations in services. We will strengthen divisions of labor and coordination between specialized public health institutions, community-level medical and healthcare institutions, and hospitals by improving the medical service system to better ensure cooperation, coordination, and complementarity between institutions at different levels. We will improve the community-level medical service model, make headway in improving the capacity of general practitioners (family practitioners), advance the use of electronic health records, and put into effect a healthcare model based on households directly contracting with family practitioners for service. We will fully establish a tiered medical diagnosis and treatment system. With an emphasis on raising the capacity of community-level medical services, we will improve service networks, operational mechanisms, and incentive mechanisms and implement differentiated medical insurance payout and pricing systems. We will develop a more

logical system for obtaining medical care and see that a system is basically put in place whereby a patient's initial diagnosis takes place at a community-level institution, referrals are made between medical institutions, medical institutions at different levels cooperate with each other, and different approaches are adopted in the treatment of acute and chronic diseases. We will strengthen the ranks of healthcare workers by implementing a program to ensure that we have the medical personnel needed to cater to the healthcare needs of all members of society, putting in place a plan to train and make use of general practitioners and pediatricians, and improving standardized resident physician training programs. We will encourage more medical resources to flow to the central and western regions, community-level institutions, and rural areas by improving working environments and salaries for those in the medical profession. We will improve the system for allowing doctors to work at more than one medical institution. We will put clinical pathways into full practice. We will raise the capacity for health information services and big data applications, develop telemedicine, and promote smarter health care. We will see that the number of active physicians (physician assistants) reaches 2.5 per 1,000 people.

Section 6

Traditional Chinese Medicine

We will improve the traditional Chinese medicine (TCM) healthcare service system by developing new TCM service models and raising capacity for providing community-level services. We will strengthen TCM clinical research centers and research institutions. We will develop TCM health services. We will conduct surveys of TCM resources, strengthen their protection, and create a database and knowledgebase of ancient writings on TCM. We will work more quickly to develop TCM standards to help boost the TCM industry. We will establish seed and seedling development centers for medicinal materials commonly used in TCM as well as those from specific areas or those that are endangered, and promote the green development of the medicinal herb growing industry. We will support the development of ethnic minority traditional medicine. We will promote the adoption of technologies suitable for use in TCM and help TCM services to go global.

Section 7

Getting Everybody Exercising

We will implement a fitness strategy to get the nation moving. We will develop the physical activity field by strengthening venues and facilities for popular fitness activities and ensuring that public sports facilities are open either free of charge or at low cost to the public. We will promote sports among young people, help them cultivate their sporting abilities and an interest in sports, popularize soccer, basketball, volleyball, and winter sports, and improve monitoring of the health of young people. We will develop popular fitness and recreational activities, encourage the implementation of work-break fitness programs, and help guide people toward exercising in a scientific way. We will promote the comprehensive and coordinated development of recreational and competitive sports. We will encourage nongovernmental initiatives to develop the sports industry. We will ensure preparations go smoothly in the lead-up to the 2022 Beijing Winter Olympic Games.

Section 8

Food and Medicine Safety

We will implement the food safety strategy. We will improve food safety laws and regulations, raise food safety standards, focus greater effort on addressing food safety problems at the source, require all food enterprises to assume responsibility for food safety, exercise grid-based oversight, increase the frequency of inspections and the coverage of sample- based monitoring, and achieve product traceability throughout the whole production chain. We will develop model food safety cities. We will deepen reform of the evaluation and approval system for pharmaceuticals and medical appliances and explore reform of evaluation institutions based on an independent corporate governance model. We will promote management of pharmaceutical enterprises by level and by type. We will accelerate improvements to the food regulatory system and build a sound governance system for food and medicine safety that is thorough, efficient, and based on co-governance by social actors. We will step up food and medicine safety governance in rural areas and improve oversight over online

sales of food and medicine. We will conduct tighter oversight over imported food and medicine.

Box 21
Action Plan for a Healthy China

1. Disease prevention and treatment and basic public healthcare services

§ Gradually increase the range of free basic public healthcare services available to all citizens;

§ Increase capacity to prevent and treat severe, difficult, and complicated diseases including cardiovascular, brain, and vascular diseases, cancer, and chronic respiratory diseases;

§ Reduce the rate of mortality due to major chronic diseases by 10%;

§ Strengthen capabilities regarding emergency medical assistance, disease prevention and control, mental health care, blood donation centers, and health oversight;

§ Support development in both key and weak areas including pediatrics, tumor, cardiovascular, brain, and vascular diseases, diabetes, mental illnesses, communicable diseases, and occupational diseases.

2. Promote maternal and infant health

§ Provide free maternal and child health information handbooks;

§ Make free pre-pregnancy health exams available to all women to help ensure the birth of healthy babies;

§ Give free vaccines to children within the scope of the national immunization plan;

§ Provide free maternal and infant care services;

§ Expand the scope of cervical and breast cancer screenings;

§ Strengthen our capacity for treating emergencies and serious conditions in prenatal and postnatal women and newborns;

§ Implement a program to ensure maternal and infant healthcare and family planning services;

§ Increase the number of hospital beds for childbirths by 89,000 and the number of obstetricians and midwives by 140,000.

3. Birth defect prevention and treatment

§ Include screening for 20 complications including Down syndrome, deafness, and thalassemia as well as congenital heart disease in the plan for the comprehensive prevention and control of birth defects;

§ Strive to see that conditions within the scope of this plan are detected and treated so as to effectively reduce the incidence of birth defects.

4. Strengthen the provision of community-level medical services

§ Focusing on poor areas in the central and western regions, ensure each county prioritizes the operation of one or two county-level public hospitals (including county-level TCM hospitals), and that the proportion of community-level medical institutions meeting standards reaches over 95%;

§ Ensure that community-level medical services can be reached from anywhere within 30 minutes;
§ Strengthen and standardize training for 500,000 resident doctors, and ensure the number of general practitioners rises to two for every 10,000 people.

5. Pass on and innovate traditional Chinese medicine (TCM)

§ Improve the infrastructure of TCM hospitals;
§ Support the development of major disciplines and fields of TCM;
§ Strengthen the cultivation of TCM practitioners;
§ Put into effect an action plan to promote the standardization of traditional Chinese medicines and the traditional medicines of ethnic minorities.

6. Smarter healthcare

§ Put into place "Internet +" healthcare services across the board;
§ Develop regional population health information platforms;
§ Expand the use of electronic health records;
§ Promote the application of big data in health care;
§ Establish a number of regional health information demonstration centers for clinical medicine.

7. Popular fitness

§ Step up physical fitness testing;
§ Promote fitness guidance services;
§ Promote the construction of fitness facilities to see that such facilities can be reached within 15 minutes from anywhere in urban communities;
§ Work to see that community sports services are available to all permanent residents of towns and townships and that sports and fitness facility projects are available to all rural residents;
§ Strengthen the construction of public sports facilities including soccer fields and fitness centers as well as the training of reserve athletes.

8. Food and medicine safety

§ Comprehensively raise capacity for food and medicine governance by improving technical support systems for inspections and testing as well as IT-based oversight systems, building a contingent of professional food and medicine inspectors, and ensuring that the equipment of oversight bodies at all levels is up to standard.

PART XV

SUPPORT FOR PUBLIC WELLBEING

On the basis that everyone participates, works hard, and shares in the benefits, we will ensure that basic needs are met, focus on key areas, improve systems, and guide

expectations. At the same time, we will emphasize equal opportunities, guarantee basic living standards, constantly work to improve public wellbeing, and ensure that all our people can enjoy moderate prosperity together.

Chapter 61 Provide More Public Services

Public services should be inclusive, equitable, and sustainable and should guarantee the basic needs of the people. With a focus on solving the most practical problems that are of greatest concern to and most directly affect the people, we will increase government responsibility for providing public services, see that all sectors become more involved in public service provision, and ensure that public services are accessible to a greater number of people.

Section 1

Equitable Access to Basic Public Services

With a focus on seeing standards are met, ensuring equitable access, and establishing a strong legal framework, we will accelerate efforts to improve national systems and institutions for providing basic public services. We will put in place a national catalogue of basic public services, carry out dynamic adjustments to services and service standards, and promote cohesion between service programs and standards for urban and rural areas and for different regions. We will reasonably increase the administrative authority and spending responsibilities for basic public services of the central and provincial-level governments. We will improve networks of services at the community level, strengthen resource integration, improve management efficiency, and promote transparency in service projects, procedures, reviews, and oversight.

Section 2

Diversified Public Service Needs

We will open the market, improve regulation, and work to increase the supply of non-basic public services and products. We will actively promote faster development of non-basic public services in areas such as health care, elderly care, culture, and sports, enrich service products, improve the quality of services, and provide personalized service solutions. We will actively apply new technologies, develop new forms of business, and promote integration between online and offline services, enabling people to enjoy efficient, convenient, and high-quality services.

Section 3

Innovative Public Service Provision

We will promote diversification in the methods of service provision. The government will no longer directly operate public services that can be provided through service procurement. For public services that can be provided through public-private partnerships, extensive efforts will be made to attract nongovernmental investment. We will complete and release a catalogue for the procurement of public services, and introduce competitive mechanisms through means such as franchising, designated commissioning, strategic cooperation, and competitive evaluation. We will develop new systems and mechanisms for public institutions engaged in public-interest services and help to see them improve their corporate governance, and we will promote the transformation of public institutions engaged in production and business operations into enterprises.

Box 22
Catalogue for Basic Public Services

1. Public education

§ Free compulsory education;
§ Nutritional improvement programs for rural students receiving compulsory education;
§ Living allowances for boarding students;
§ Subsidies for public-interest preschool education;
§ National financial assistance for secondary vocational education;
§ Tuition fee waivers for secondary vocational education;
§ Financial assistance for ordinary senior secondary school students;
§ Tuition fee waivers for senior secondary school students from poor families;
§ Personal learning accounts and credit accumulation programs.

2. Employment

§ Basic public employment services;
§ Services for business startups;
§ Employment assistance;
§ Internship services;
§ Joint recruitment services in large and medium cities;
§ Vocational skills training and skills evaluation;
§ Training for migrant workers;
§ 12333 telephone consultation service;
§ Labor relations coordination;
§ Employment dispute mediation and arbitration.

3. Social insurance

§ Basic old-age insurance for workers;
§ Basic old-age insurance for non-working residents;
§ Basic medical insurance for workers;
§ Basic medical insurance for non-working residents;
§ Unemployment insurance;
§ Workers' compensation;
§ Maternity insurance.

4. Heath care and family planning

§ Heath record systems for residents;
§ Health education;
§ Disease prevention and immunization;
§ Services to handle contagious diseases and public health emergencies;
§ Child health management;
§ Pre- and post-natal maternal health management;
§ Senior health management;
§ Health management for people with disabilities and community rehabilitation programs;
§ Chronic disease management;
§ Management for patients with serious mental disabilities;
§ Sanitation supervision and collaborative management;
§ Health management for tuberculosis patients;
§ Health management through traditional Chinese medicine;
§ Follow-up management for HIV/AIDS patients;
§ Community HIV intervention among high-risk groups;
§ Free pre-pregnancy health examinations;
§ Disease emergency aid services;
§ The system of essential medicines;
§ Guidance and consultation services regarding family planning methods;
§ Awards and assistance to a portion of families in rural areas following family planning policy;
§ Special assistance to families following family planning policy;

§ Safeguards for drug safety.

5. Social services

§ Subsistence allowances;
§ Basic assistance to persons living in extreme poverty;
§ Medical assistance;
§ Temporary assistance;
§ Assistance to disaster victims;
§ Elderly assistance;
§ Welfare allowances for the elderly;
§ Differentiated assistance programs for children living in difficulties;
§ Care and protection services for children left behind in rural areas;
§ Social protection for minors;
§ Basic funeral services;
§ Benefits for entitled groups;
§ Job provision for demobilized military personnel;
§ Centralized services to provide care to key entitled groups.

6. Housing support

§ Public rental housing;
§ Rebuilding of run-down urban areas;
§ Renovation of dilapidated rural housing;
§ Rural earthquake-resistant housing renovation;
§ Permanent housing for nomadic groups.

7. Culture and sports

§ Free access to public cultural facilities;
§ Public-interest mobile cultural services;
§ Access to radio and television programming;
§ Digital movie projection in rural areas;
§ Access to books and newspapers;
§ Emergency broadcasting services;
§ Ethnic minority cultural services;
§ Digital cultural services;
§ Access to cultural heritage sites;
§ Open public stadiums and gymnasiums;
§ National fitness activities.

8. Basic public services for people with disabilities

§ Living allowances for persons with disabilities who are in need;
§ Nursing care subsidies for persons with severe disabilities;
§ Subsistence assistance for unemployed persons with severe disabilities;
§ Subsidies for basic assistive devices for persons with disabilities living in poverty;
§ Subsidies for accessibility renovations for poor families of persons with disabilities;
§ Insurance benefits and assistance for individual insurance contributions to

basic social insurance;
§ Basic housing support;
§ Care services, rehabilitation services, education, vocational training and employment services, and culture and sports for persons with disabilities;
§ Support for barrier-free environments.

Chapter 62 Give High Priority to Employment

We will implement a more proactive employment policy, create more job opportunities, work to solve problems of structural unemployment, and encourage business startups that create employment, so as to ensure relatively full and high quality employment.

Section 1

Higher-Quality Employment

We will give greater prominence to the realization of full employment and set this as a priority goal for economic and social development. We will ensure policies are targeted, increase labor force participation, and achieve stability and expansion in urban employment. We will implement initiatives for promoting the employment of college graduates and for guiding them in starting their own businesses, build platforms for innovation and business startups, and improve policy incentives to encourage college graduates to start up their own businesses and work at the community level. We will support surplus rural labor in seeking nonagricultural work and migrant workers in returning to their hometowns to startup businesses. We will support flexible employment and new forms of employment to make it easier for people to seek employment on their own. We will see that demobilized military personnel are settled into new jobs. We will strengthen employment assistance, conduct real-name dynamic management over people facing difficulty in obtaining employment and offer assistance based on the type of situation, and ensure that "zero employment" families get the necessary help. We will provide more support for reemployment. We will keep improving working conditions, regulate labor employment systems, and ensure that paid vacation systems are implemented. We will prohibit all forms of employment discrimination. We will standardize services offered by employment agencies. We will

improve coordination mechanisms for labor relations, strengthen labor protection inspection and dispute mediation and arbitration, protect the legitimate rights and interests of employees, protect the rights and interests of workers engaged in informal employment, and comprehensively address the problem of wage arrears for migrant workers, thereby facilitating harmonious labor relations.

Section 2

Public Services for Employment and Business Startups

We will improve service systems for employment and business startups, and put in place a system for life-long vocational skills training. We will implement an initiative to provide free vocational training to children from poor families, junior and senior secondary school graduates who have not moved on to the next level of education, migrant workers, the unemployed, workers reemployed in other fields, former military personnel, and persons with disabilities. We will improve policies for evaluating professional titles and certifying technical skill grades for highly-skilled personnel. We will improve the statistics system for measuring employment and unemployment, improve unemployment monitoring and early warning mechanisms, release data on surveyed unemployment rates in urban areas, and strengthen monitoring of and responses to large-scale unemployment in particular regions and sectors. We will further promote the use of information technology in the provision of public services for employment and business startups, and promote openness and sharing of all types of employment information.

Box 23
Action Plan for Promoting Employment

1. Initiatives to improve worker competence

§ Foster the development of highly skilled personnel;
§ Improve the skills of new members of the workforce;
§ Conduct training for already employed workers;
§ Encourage enterprises to implement new apprenticeship systems;
§ Develop the skills of workers in urgently needed areas within strategic emerging industries.

2. Promotion of the employment and entrepreneurial activities of college graduates

§ Improve the real name database of college graduates who have not yet found employment, and provide employment information, vocational guidance, employment internships, and other employment services for college graduates;

§ Make education on starting new businesses more widespread and strengthen entrepreneurship training;
§ Implement a plan for college graduates to gain experience through community- level work.

3. Migrant worker vocational skills training

§ Through targeted training programs and training for specific job and business demands, provide employment skills training for rural junior and senior secondary school graduates who have not moved on to the next level of education as well as other new generation migrant worker groups;
§ Provide entrepreneurship training for migrant workers who wish to start their own businesses;
§ Work to see that the number of training opportunities enjoyed by migrant workers reaches 40 million.

4. Vocational training for groups with special employment needs

§ Strengthen vocational skills training and entrepreneurship training for children of families with financial difficulties, older unemployed persons, workers reemployed in other fields, former military personnel, and workers with disabilities;
§ Provide training subsidies in accordance with regulations;
§ Offer living allowances to people from rural families with financial difficulties and from urban families receiving subsistence allowances who are engaged in apprenticeships.

5. Public services for employment and business startups

§ Improve public service facilities for employment and business startups;
§ Support the establishment of demonstration areas for business startup that have been established by people returning to their hometowns;
§ Establish regional public training centers;
§ Ensure service facilities for employment and business startups are established in all counties;
§ Accelerate data sharing among different departments;
§ Improve the basic public service system for personnel files on the floating population.

Chapter 63 Bridge the Income Gap

We must strike the right balance between fairness and efficiency, ensure that personal income grows in step with economic growth and that wages increase in step with increases in labor productivity, and continuously work to grow personal incomes. We will improve primary income distribution, intensify efforts to regulate income redistribution, adjust and optimize the pattern of national income distribution, and work to bridge income gaps throughout the whole of society.

Section 1

Primary Distribution Systems

We will improve the mechanisms allowing the market to evaluate factor contribution and base distribution on contribution. We will establish sound mechanisms for determining wage levels, ensuring regular pay increases, and guaranteeing payment; implement a system for collective wage bargaining within companies; and improve the mechanism for increasing minimum wages. We will improve salary systems for highly skilled personnel and increase the wages of technical workers. We will make pay systems for government offices and public institutions better adapted to the specific characteristics of these organizations. We will strengthen differentiated regulation over salary distribution in SOEs. We will give emphasis to the incentive role of income distribution policies and expand channels through which knowledge, technology, and management factors can take part in income distribution. Personal property income will be increased through a variety of means.

Section 2

Redistribution Regulating Mechanisms

We will implement policies aimed at bridging income gaps, work to secure a significant increase in the earnings of low-income earners, and increase the proportion of middle-income earners. We will accelerate the establishment of a personal income tax system based on both adjusted gross income and specific types of income. We will bring certain luxury consumer items and high-expenditure activities under the scope of excise tax. We will improve tax policies which encourage giving back to society and helping to alleviate poverty. We will improve dynamic social security mechanisms aimed specifically at groups in difficult circumstances to ensure their basic needs are met. We will increase budgetary allocations for improving people's wellbeing, ensure that more of the earnings from the transfer of public resources go toward improving wellbeing, and gradually raise the proportion of revenue from state capital that is turned over to public finance.

Section 3

Standardization of Income Distribution

We will protect legitimate income and regulate invisible income. We will prevent the use of non-market means to earn income, such as the abuse of power and administrative monopolies, and clamp down on all methods for illegal gains. We will strictly regulate non-salary income and non-monetary benefits. We will fully put in place non-cash payment systems, establish a sound system of information on the income and property of natural persons, and improve income statistics, surveying, and monitoring systems.

Chapter 64 Carry Out Social Security Reform

We will continue to strive toward achieving complete coverage and ensure that benefit levels are appropriate, rights and obligations are clearly delineated, and the system operates in an efficient manner. We will steadily raise the level and quality of the overall management of social security accounts and work to make the social security system more equitable and sustainable.

Section 1

Social Insurance

We will ensure that the social safety net covers essentially all people entitled by law. We will ensure actuarial balance of the social security system, improve funding mechanisms, and clearly define the social security responsibilities of government, enterprises, and individuals. We will reduce insurance premiums as appropriate. We will improve the basic old-age insurance system for urban workers which is based on social pooling and individual accounts, and we will establish a multilevel old-age insurance system that includes annuities for employees of enterprises and public

institutions as well as commercial old-age insurance in order to continuously expand the coverage of this system. We will bring the social pooling account of workers' basic old-age insurance under national unified management. We will improve the individual account system for workers' old-age insurance as well as incentive and restraint mechanisms related to individual insurance contributions, and establish a mechanism for making appropriate adjustments to basic pensions. We will launch pension schemes that allow for deferred payment of individual income tax. We will make better use of the role of unemployment insurance and workers' compensation, increase the flexibility with which their premiums are determined, and improve and adjust the scope of their applicability. We will establish a mechanism to allow social security accounts to be transferred with greater ease. We will appropriate a portion of state capital to replenish social security funds, expand channels for the investment of social insurance funds, and strengthen risk management in order to ensure increasing rates of returns on investments. We will work to see a significant increase in the participation of groups such as those with flexible employment and migrant workers in insurance schemes. We will strengthen the development of public service facilities and information platforms for social insurance. We will implement an initiative to promote the use of social security cards and work to see the proportion of card holders reach 90% of total social insurance participants.

Section 2

Social Assistance

We will coordinate the development of social assistance systems in urban and rural areas, improve the subsistence allowance program, strengthen policy integration, promote program integration, and ensure that the basic needs of groups with difficulties are met. We will strengthen cohesion between social assistance systems and other social security systems as well as between special assistance programs and subsistence allowance programs. We will build an integrated structure for social assistance-related work, enrich social assistance services, raise standards of assistance as appropriate, and ensure that issues related to any of the diverse range of social assistance services can be dealt with at one place through the concerted efforts of relevant departments. We will establish a sound mechanism for verifying the financial situation of families receiving social assistance, and work to ensure that wherever possible, entitled families are listed for the receipt of assistance while families that do not qualify for entitlement are

removed from the list. We will launch comprehensive trials of providing assistance to those experiencing exceptional difficulties, and we will improve community-level service facilities for offering assistance to beggars and the homeless.

Section 3

Social Welfare and Charity

We will improve the social welfare system with a focus on care and assistance for the elderly, persons with disabilities, minors, and those in financial difficulty. We will establish policies to support at-home elderly care and promote family-based elderly and child care. We will ensure work related to the welfare and protection of children in need is carried out well. We will improve the child adoption system. We will strengthen resettlement work for entitled groups. We will develop basic public-interest funeral services, and support the development of public funeral parlors, public- interest facilities for storing ashes, and cemeteries. We will accelerate the reform of public welfare institutions, improve welfare facilities, optimize welfare distribution, and promote welfare resource sharing. We will give strong support to the development of professional social work and charity. We will improve mechanisms for regular social donations. We will mobilize nongovernmental actors to provide social relief, mutual aid, and volunteer services.

Chapter 65 Respond to Population Aging

We will respond to population aging, strengthen top-level design, and establish a system for addressing population aging that is underpinned by population strategy, family planning policy, employment systems, elderly care services, the social security system, health programs, training systems, environmental support, and social participation.

Section 1

Balanced Population Development

We will uphold the basic state policy on family planning and allow all couples to have two children. We will reform and improve the management of family planning services and improve birth registration service systems. We will provide better public services related to reproductive health and maternal, newborn, and child health as well as to childcare and early childhood education. We will make sure that relevant economic and social policies are effectively adapted to the policy of allowing all couples to have two children. We will improve the systems of awards, assistance, and special help to rural households who have followed the family planning policy, and give more care and help to households who have lost their only child. We will ensure that services are available throughout the entire process of having and raising children. We will ensure importance is given to family development. We will adopt a comprehensive approach to addressing the problem of the skewed birth gender ratio. The national population will be around 1.42 billion.

We will improve the strategy on population development and establish sound mechanisms for integrated decision-making on population and development. We will take a comprehensive approach to addressing the decline of the working population and implement policies to gradually increase the retirement age. We will strengthen human resource development among older people and work to raise the employability of older members of the workforce. We will launch population impact assessments for major economic and social policies and improve dynamic population monitoring mechanisms.

Section 2

Better Elderly Care Services

We will establish a multilevel elderly care service system based on at- home care, supported by communities, and supplemented by elderly care institutions. We will make coordinated plans for building public-interest elderly service facilities and support the building of nursing homes and community day-care centers for disabled elderly persons. We will establish systems for providing subsidies for very elderly persons and senior citizens suffering from loss of physical and/or mental capacity, who are experiencing financial difficulties. We will strengthen research on aging science. We will put in place initiatives for training elderly care personnel and strengthen the contingent

of elderly care professionals and management personnel. We will promote integration between health care and elderly care services. We will improve welfare and charity systems to better meet the demands of population aging. We will help foster a comfortable living environment for the elderly. We will open up the entire elderly services market, and through means such as service procurement and equity cooperation, we will support all types of market participants in providing more elderly care products and services. We will strengthen protection of the rights and interests of the elderly and promote the social customs of respecting, caring for, and helping the elderly.

Chapter 66 Safeguard the Basic Rights and Interests of Women, Minors, and Persons with Disabilities

We will uphold the fundamental state policy of gender equality and continue to put children first. We will earnestly protect the rights and interests of women, minors, and persons with disabilities, and ensure that they can fairly participate in and share more of the results of development.

Section 1

All-Around Women's Development

We will implement the Plan for Women's Development in China (2011–2020). We will ensure that women enjoy equal rights and opportunities with respect to education, employment, marital property, and participation in social affairs; we will guarantee the land-related rights of women in rural areas, and increase the level of women's participation in policy making and management. We will strengthen work such as poverty alleviation, labor protection, health care, maternity care, social welfare, and legal aid for women. We will crack down on criminal activities such as the trafficking of women and children and violence against women. We will work to eliminate discrimination and bias against women and improve the environment for women's development.

Section 2

Healthy Development of Minors

We will implement a plan on children's development. We will strengthen legal safeguards and social responsibility over the rights to subsistence, development, protection, and participation of minors. We will improve the guardianship system for minors, build a social network for the care of minors, and improve community protection and service systems for minors. We will eliminate child labor. We will draw up and implement a plan for youth development and foster a sound environment for the growth and development of young people. We will promote coordination and interaction between school education, family education, and social education and help young people to be studious, virtuous, upright, and able to tell right from wrong so as to inspire energy and creativity in them. We will strengthen all- round efforts to ensure order and safety in schools and their surrounding areas and crack down on illegal criminal activities that endanger the physical and mental health of minors. We will improve psychological counseling for minors. We will take effective measures to prevent juvenile delinquency. We will encourage young people to participate more in volunteer services and public-interest activities.

Section 3

Services for People with Disabilities

We will support the development of programs for persons with disabilities, establish and improve basic welfare systems for them, and see that their basic needs are met. We will improve the reimbursement system for the medical expenses of persons with severe disabilities. We will give high priority to persons with disabilities in the provision of basic housing. We will improve policies for supporting the employment and business startup activities of persons with disabilities, and improve the system for public organizations to offer them employment. We will improve rehabilitation and care facilities for persons with disabilities and encourage nongovernmental entities to provide services for them. We will improve the construction and maintenance of accessibility facilities for persons with disabilities. We will implement key rehabilitation programs such as rehabilitation programs for children six years of age or younger who

have disabilities and provision programs for basic assistive devices for persons with disabilities living in poverty. We will establish rehabilitation universities to cultivate rehabilitation health professionals.

Box 24
Social Care Action Plan

1. Children's healthy development

§ Provide care, psychological counseling, and other services for children in need;

§ Provide special care for left-behind children in rural areas;

§ Improve facilities for child welfare and the protection of minors;

§ Work to see Home for Children centers cover at least 90% of urban and rural communities;

§ Help the children of poor rural families to receive preschool education.

2. Young people's development

§ Expand sports activities for young people and ensure that at least 95% of our youth can meet physical standards;

§ Strengthen the development of youth centers and other organizations serving the needs of youth development;

§ Strengthen the prevention and treatment of tuberculosis and HIV/AIDS in schools.

3. Help and support for persons with disabilities

§ Fully implement the program for providing living allowances for persons with disabilities who are in need and the program for granting nursing care subsidies to persons with severe disabilities;

§ Ensure localities where conditions permit offer subsidies for the allocation of basic assistive devices for people with disabilities living in poverty and for accessibility renovations for poor households which have one or more family members with disabilities;

§ Support day-care institutions and professional care service institutions in providing nursing services for persons with disabilities;

§ Implement key rehabilitation programs and offer basic rehabilitation services to people with disabilities living in poverty and to persons with severe disabilities.

4. Respect and care for the elderly

§ Improve elderly care facilities by building nursing homes for the elderly, helping provide combined medical and care services, developing better community day-care centers, and providing rehabilitation equipment;

§ Develop community information platforms for at-home elderly care services, promote the construction of smart elderly care communities, promote the embedding of long-term care systems into communities, and move forward on seeing

that elderly care services cover all elderly people who live at home;
§ Launch trials of renovations of facilities aimed at better meeting the needs of the elderly;
§ Implement programs for mutual assistance and care among the elderly.

PART XVI

SOCIALIST CULTURAL AND ETHICAL PROGRESS

Remaining committed to the goal of developing an advanced socialist culture, maintaining a people-centered work ethic, and putting social benefits first while also stressing economic benefits, we will accelerate reform and development in the cultural sector, promote coordinated material and cultural-ethical progress, and develop a strong socialist culture in China.

Chapter 67 Strengthen Civic Development

Guided by core socialist values, we will strengthen work to improve ethical and moral standards and promote integrity throughout society, advocate traditional Chinese virtues alongside modern virtues, and promote the spirit of science and humanity to advance civic development and civility throughout society.

Section 1

Core Socialist Values

We will use the Chinese Dream and core socialist values to build consensus, bring together different forces, and strengthen national identity, rule of law awareness, moral consciousness, a sense of social responsibility, and ecological awareness nationwide. We will incorporate the core socialist values into all areas of economic and social development and all aspects of social life by strengthening education about ideals

and convictions and working harder to study and publicize the theories of socialism with Chinese characteristics. Through education, guidance, publicity, culture, practice, and institutions, we will work to see that our people internalize and firmly believe in the core socialist values and purposefully make them the basis for their actions, enhancing confidence in the path, theories, and system of socialism with Chinese characteristics throughout society. We will strengthen communication and cultural work at the community level. We will advance civic morality and foster a sense of moral judgment and moral responsibility.

Section 2

Philosophy and the Social Sciences

We will work for innovation in philosophy and the social sciences and develop the systems for promoting such innovation. We will strengthen platforms for theoretical work as well as the development of academic disciplines, and make further progress in implementing the Marxist Theory Research and Development Project. We will step up efforts to research and explain new concepts, ideas, and strategies for the governance of the country. We will develop the discipline of Chinese socialist political economy. We will prioritize efforts to build 50 to 100 top national think tanks.

Section 3

Cultural Heritage

We will establish systems for carrying on the fine cultural traditions of China and ensure that traditional culture is creatively adapted and developed. We will carry out extensive activities to popularize fine traditional culture and see its incorporation into national education, and we will see that the revolutionary culture established since the May 4th Movement is carried on. We will channel great energy into advocating and standardizing the usage of the standard Chinese language. We will strengthen the protection and utilization of sites and items of cultural significance, putting an end to destructive development and improper business operations. We will step up the protection and carrying on of intangible cultural heritage, revitalize traditional

craftsmanship, and promote and develop traditional Chinese opera. We will develop ethnic and folk culture and support folk culture organizations.

Section 4

Popular Initiatives to Promote Cultural and Ethical Progress

We will launch extensive popular initiatives to increase civility in cities, villages, organizations, households, and schools and promote the spirit of Lei Feng through volunteer service activities. We will give impetus to the educative, cultural, and improving roles of important traditional festivals, major ceremonial events, and public service advertisements. We will popularize scientific knowledge and encourage everyone to get reading, with the aim of increasing the proportion of citizens with scientific literacy to over 10%. We will work to see more public-interest performances being held and more fine arts activities being made available to the general public. We will foster a positive ethical culture at home, in the countryside, at school, and in business to bring about an atmosphere of modern ethical and social progress.

Chapter 68 Provide More Cultural Products and Services

We will strengthen the development of both cultural initiatives and the culture industry by implementing projects to develop culture and help people emerge as eminent cultural figures so as to give an extra touch of color and vitality to people's cultural lives.

Section 1

Socialist Literature and Art

We will support the creation of outstanding cultural works so that a greater number of masterly works will be produced to articulate contemporary Chinese values,

the spirit of Chinese culture, and the aesthetic tastes of the Chinese people. We will make more effective use of government investment and all types of funds, encourage innovative content and forms, support the development of theater troupes, and strengthen the development of performance and rehearsal venues. We will develop literature and art theory and critique as well as support the development of artists and writers that demonstrate moral and political integrity and strong artistic talent.

Section 2

The Modern Public Cultural Service System

We will move forward with setting standards for basic public cultural services and ensuring equitable access. We will improve networks of public cultural facilities and strengthen capabilities to provide public cultural services at the community level. We will increase support for cultural development in old revolutionary bases, areas with concentrations of ethnic minorities, border areas, and poor areas. We will accelerate the digitization of cultural practices and texts. We will work to see cultural products and public-interest services better fit the cultural needs of the general public. We will encourage nongovernmental actors to participate in the provision of public cultural services. We will continue making efforts to see public cultural facilities are open to the public free of charge. We will promote the flourishing of literature, art, the press, publishing, radio, television, film, and sports. We will better protect the cultural rights and interests of the elderly, minors, migrant workers, people with disabilities, and other groups.

Section 3

Modern Cultural Industries

We will accelerate the development of emerging industries such as online audio and video, mobile multimedia, digital publishing, animation, comics, and games, in addition to transforming and upgrading traditional industries such as publishing, film and television production, and arts and crafts. We will advance the development of new forms of business in the cultural sector, develop creative and cultural industries, and

integrate the development of cultural industries and the science, technology, information, tourism, sports, and financial industries. We will encourage mergers and restructuring of cultural enterprises and support the development of micro, small, and medium cultural businesses. We will step up the pace of nationwide cable TV network integration as well as the application of smart technologies. We will expand and guide cultural consumption.

Section 4

Modern Media Systems

We will strengthen the development of the mainstream media to improve its guidance on public communication and strengthen its credibility, influence, and communicative effectiveness. Based on advanced technology and content enrichment, we will work for in-depth integration between traditional and emerging media in terms of content, channels, platforms, operations, and management while also establishing a new-style media communications system based on cooperation between content creators, media platforms, and end-user hardware providers, so as to create new forms of mainstream media and new mediums for communication. We will optimize the structure of the media and regulate communication.

Section 5

Cyber Culture

We will work to see that online content is improved, enrich cyber culture, encourage the creation of excellent original works and develop online literature and art and a positive cyber culture. We will create new methods of online communication to better fit the nature of online media and improve analysis and guidance capabilities with respect to online public opinion. We will differentiate management based on the type of online operator and ensure online operators strengthen their sense of social responsibility. We will promote the civilized running of websites and civilized surfing, promote proper online behavior among young people, advocate online public-benefit activities, and clean up the online environment.

Section 6

Structural Reform of the Cultural Sector

We will improve the cultural management system which, under the leadership of Party committees, is comprised of regulation by the government, industry self-governance, public oversight, and the law-based operation of cultural enterprises and public institutions. We will deepen reform of public-interest cultural institutions. We will encourage cultural enterprises to build a modern corporate system appropriate for the sector. We will improve systems for managing state-owned assets in the cultural sector. We will lower the threshold for nongovernmental investors to participate in the cultural industry and encourage the development of non- public cultural enterprises. We will conduct trials of special right shares in news, publishing, and media enterprises. We will improve the modern cultural market system and implement and improve economic policies in the cultural sector. We will expand efforts to combat pornography and illegal publications, strengthen market oversight, and become better able to carry out coordinated law enforcement.

Chapter 69 Further Open Up the Cultural Sector

In helping Chinese culture reach out to the world, we will carry out more cultural exchanges, create new ways of communicating with international audiences, of conducting international cultural exchanges, and of carrying out cultural trade with foreign partners, and on the basis of exchanges and mutual learning, share the unique appeal of Chinese culture.

Section 1

Opportunities for Cultural Exchanges and Cooperation

We will promote both governmental and nongovernmental exchanges to increase mutual cultural trust as well as cultural exchanges. We will encourage international exchanges in Chinese studies. We will improve the operating mechanisms used by overseas Chinese cultural centers. We will support overseas Chinese in engaging in China-foreign cultural exchanges. We will strive to explore the international cultural market, encouraging cultural enterprises to engage in overseas investment and cooperation and exporting cultural products and services. We will work to adopt outstanding foreign cultural achievements and advanced managerial concepts in the cultural sector, and encourage overseas-invested enterprises to conduct science and technology research and development as well as service outsourcing in the cultural sector in China. We will ensure national cultural safety.

Section 2

Ability to Communicate with International Audiences

We will expand our networks for overseas communication and use a greater variety of channels and methods for such communication. We will establish flagship media, move forward with cooperative communication, strengthen efforts on joint ventures and cooperation with large international media groups, and ensure information networks and facilities work to facilitate cultural communication. We will develop a system of discourse based on Chinese cultural characteristics that fits with both international practice as well as the unique characteristics of individual countries, and work to increase the accessibility of China's cultural communication through the use of more vibrant and diverse methods of expression.

Box 25 **Cultural Projects**
1. Civic morality
§ Launch initiatives to select and commend, publicize and emulate moral role models;
§ Launch initiatives to promote integrity throughout society;
§ Carry out nationwide initiatives to promote morality and frugality;
§ Revise and improve systems of social standards such as citizens' codes of conduct and student regulations.
2. Great cultural works
§ Provide greater support for the creation of original outstanding cultural

works by organizing the implementation of the Award for Cultural Works on Five Areas, the National Stage Art Works Creation Program, the National Publishing Project, the National Film and Television Creation Program, the China Program for the Creation of Contemporary Literary and Artistic Works, the Outstanding Screenplay Support Project, and the National Project for Developing and Collecting Fine Art.

3. Public cultural facilities

§ Improve the conditions of prefecture- and county-level public cultural centers,
libraries, and museums;

§ Improve the functions of multipurpose cultural centers in villages and ensure they are used more efficiently;

§ See that all counties in poor areas are equipped with vehicle-based mobile cultural centers;

§ Increase the pace of efforts to extend radio and television services to all households;

§ Increase coverage of digital wireless access to national radio and television programming;

§ Give high priority to increasing radio and television coverage in border areas and areas with concentrations of ethnic minorities and to strengthening relevant dubbing capabilities;

§ Improve the emergency broadcasting system;

§ Launch the Dongfeng program to develop news and publishing in ethnic minority areas as well as programs to produce ethnic minority films;

§ Move forward with the development of major national-level cultural facilities including the National Art Museum of China, the China National Arts and Crafts Museum, the Forbidden City Museum improvement project, and the National Documents Strategic Repository;

§ Improve archive facilities.

4. Traditional culture and natural heritage

§ Strengthen the protection and utilization of heritage resources such as major national cultural and natural heritage sites; major nationally protected cultural and historical sites; famous historical and cultural cities, towns and villages; and national-level intangible cultural heritage;

§ Build national cultural parks and improve facilities for their protection and utilization;

§ Carry out the national memory project;

§ Move forward with the development of the Qufu Traditional Cultural Heritage Preservation and Development Exemplary Area in Shandong, as well as the Chinese Culture Inheritance and Innovation Zone in Gansu;

§ Strengthen archaeological work;

§ Advance the protection of important cultural remains through projects such as the Erlitou Xia Dynasty Ruins Museum and the Jingdezhen Imperial Kiln Heritage Site.

5. Traditional Chinese opera and craftsmanship

§ Conduct a survey on the varieties of traditional Chinese opera;

§ Subsidize efforts to digitize and record traditional opera;

§ Support opportunities for masters of Peking opera, Kunqu opera, and other local operas to pass on their knowledge and skills;

§ Build regional performance art centers;

§ Strengthen the cultivation of professional artists of traditional opera;

§ Formulate and implement a revitalization plan for traditional craftsmanship;

§ Support traditional craftsmanship projects;

§ Encourage the creation of ethnic brand names.

6. Classical Chinese literature

§ Protect ancient classical Chinese texts;

§ Basically complete the nationwide survey of ancient classical texts;

§ Encourage efforts to preserve the original form of or repair ancient classical texts;

§ Publish 300 kinds of important texts through national projects;

§ Establish a national database for ancient texts;

§ Support efforts to reorganize and repair classical religious books, such as the Continued Taoist Canon and Tripitaka;

§ Increase support for the compilation of historical works and chorography;

§ Protect Chinese documents originating from the Republic of China era (1912– 1949);

§ Systematically organize and publish major classical texts and documents written since the beginning of recent modern times.

7. Communication capabilities

§ Strengthen key news and media outlets;

§ Create a convergence platform that integrates traditional and new media;

§ See the content of major websites is enriched;

§ Develop new media for communicating government affairs;

§ Accelerate efforts to digitize cultural resources;

§ Promote online availability of Chinese culture;

§ Coordinate resources for communication with international audiences to expand high-end, localized, and border coverage;

§ Support the cultivation of those talented in telling stories of China.

8. A nation of readers

§ Hold a series of activities around the theme of “Reading in China”;

§ While making full use of existing facilities, coordinate the building of community reading centers, rural digital libraries, public digital reading terminals, and other such facilities;

§ Provide books, newspapers, and periodicals for children;

§ Provide books for city residents;

§ Support the publication of literature in braille;

§	Support the development of brick-and-mortar book stores.

PART XVII

BETTER AND MORE INNOVATIVE SOCIAL GOVERNANCE

We will strengthen efforts to develop the basic institutions for social governance, see that everyone contributes to and benefits from social governance, and work to increase social governance capabilities and effectiveness in order to promote social vitality, stability, and harmony.

Chapter 70 Improve the Social Governance System

We will improve the social governance system to help see that Party committees play a leadership role, government plays a guiding role, social organizations play a cooperative role, the general public participates, and the rule of law acts as a guarantee, thereby achieving positive interaction between governmental governance and social regulation and resident self-governance.

Section 1

Government Governance

We will develop a new concept of government governance, strengthening rule of law awareness and service mentality, and ensuring that service is implicit in management and that services facilitate management. We will work to improve methods of government governance, make full use of modern science and technology to improve social governance methods, work to make social governance more refined, and step up efforts to address problems at the source, exercise dynamic management, respond to

emergencies, and address root causes as well as symptoms. We will improve the system for the release of government information. We will ensure that local governments improve their ability to provide services. We will establish a national database of basic population information and strengthen institutional development with respect to population management, real- name registration, credit rating systems, and crisis early warning and intervention. We will work to improve appraisal and accountability mechanisms for government social governance.

Section 2

Community Services

We will work to improve the community governance system in both urban and rural areas, delineate according to law the powers and responsibilities of community-level governments and community organizations, and establish mechanisms for coordinated action between communities, social organizations, and social workers. We will improve management platforms for integrated community services in both urban and rural areas, promote interconnectedness between public services, convenience services, and volunteer services, and work to provide one-stop services. We will make sure that integrated community service facilities are established in all urban communities and will make progress in developing such facilities in rural areas. We will work to improve the professional competence of community workers. We will work to see the proportion of registered volunteers reach 13% of residents.

Section 3

Role of Social Organizations

We will improve social organization management and establish a modern social organization system in which the functions of government are clearly separated from those of social organizations, powers and responsibilities are clearly defined, and self-governance is exercised on the basis of law. We will reform the registration system, operating a system of registration by type. We will support the development of social organizations belonging to the following categories: industry associations and chambers

of commerce, science and technology institutions, charities and public- interest organizations, and community service organizations. We will move faster to uncouple industry associations and chambers of commerce from government bodies, and work to improve corporate governance. We will encourage public institutions that meet certain conditions to become social organizations, and help to see that social organizations take over functions transferred from the government. We will strengthen comprehensive oversight, redouble our efforts to promote integrity, and see that self- regulation, external-regulation, and industry-wide regulation play a better role.

Section 4

Social Self-Regulation

We will encourage the public to draw on social ethics, professional ethics, family virtues, personal morality, and other moral and ethical codes to improve themselves and practice self-discipline, to willingly perform their legal obligations, social responsibilities, and family duties, and to conscientiously observe and safeguard social order. We will strengthen the development of social norms such as industry standards, social organization charters, citizens' codes of conduct, and community conventions, and give full impetus to the positive role that social norms play in coordinating social relations and governing social behavior.

Section 5

Public Participation

We will, in accordance with the law, safeguard residents' rights to be informed, to participate, to make decisions, and to conduct oversight, and improve institutional channels for public participation in governance. For major decisions related to key public interests, we will broadly solicit comments and suggestions from the public through residents meetings, discussions and deliberations, and democratic hearings. We will strengthen public oversight and evaluation by improving democratic evaluations and the transparency of village and community affairs.

Section 6

Mechanisms for Safeguarding Rights and Interests and Resolving Disputes

We will improve mechanisms for interest expression and coordination and guide people in exercising their rights, expressing their concerns, and resolving disputes in accordance with the law. We will refine legally stipulated mechanisms for pursuing claims such as administrative review, arbitration, and litigation, and ensure that deputies to people's congresses, members of Chinese People's Political Consultative Conference committees, people's organizations, and social organizations perform the function of expressing the concerns of the people. We will ensure that all complaints filed by letter or in person are addressed in a transparent manner, hold officials responsible for promptly resolving disputes where they have taken place, and improve the system for concluding, in accordance with the law, litigation-related complaints filed by letter or in person. We will ensure that potential risks which major policy decisions may pose to social stability are fully assessed and work to improve the cohesion and complementarity between dispute resolution mechanisms such as mediation, arbitration, administrative adjudication, administrative review, and litigation. We will improve interest protection mechanisms to ensure that the rights and interests of the public are handled fairly and safeguarded effectively. We will also work to provide better psychological services and strengthen counseling and treatment for groups with special needs.

Chapter 71 Improve the Social Credibility System

With the aim of increasing integrity in all areas of society, we will work faster to develop credibility systems relating to key areas such as government administrative integrity, commercial and business integrity, social integrity, and judicial credibility, promote credit information sharing, and improve incentive and penalty mechanisms.

Section 1

Credit Information Management

We will implement a unified system of credit rating codes nationwide. We will formulate national standards for collecting and managing credit information. We will ensure, in accordance with the law, that management over the collection, sharing, usage, and release of credit information is based on the type of information, and strengthen the protection of credit information involving personal privacy or business secrets. We will move faster to see the development of legislation regarding credit.

Section 2

Contribution to and Sharing of Credit Information

We will put in place a system for the release and recording of credit- related information and move faster to improve credit reporting for all types of market entities and members of society. We will strengthen the integration of departmental, industrial, and local credit information, establish a mechanism for collecting enterprise credit information, improve the national platform for sharing credit information, and develop a national system for releasing enterprise credit information. We will promote society-wide release and sharing of credit information resources in accordance with the law.

Section 3

Mechanisms to Incentivize Good Faith and Penalize Lack of Credibility

We will establish a mechanism for encouraging and rewarding those who act in good faith. In the course of market regulation and public service provision, we will implement incentivizing policies such as increasing the convenience of services for those who maintain good credit. We will improve joint response and joint penalty mechanisms involving multiple departments, regions, and industries, strengthen the law-based release and oversight of enterprise credit, and establish in every industry a blacklist of enterprises which lack credibility and a mechanism for having them exit the market.

Section 4

Credit Services Market

We will establish a multilevel system of credit service organizations which allows complementarity between public and social credit service institutions as well as between basic and value-added credit information services. We will promote the development, innovation, and broad application of credit service products. We will support credit investigation and credit rating agencies to develop in line with standards, and help improve their service quality and international competitiveness. We will improve regulation over credit investigation and markets for credit services.

Chapter 72 Improve Public Security Systems

We will keep firmly in mind the need to pursue safe development, give primacy to the interests of the people, strengthen awareness of security throughout society, improve public security systems, and put in place a comprehensive multidimensional public security net to ensure that people can live and work in peace and contentment, that social stability and order prevail, and that the country achieves lasting peace on our way toward building a Peaceful China.

Section 1

Workplace Safety

We will establish a comprehensive governance system for workplace safety featuring complete coverage in term s of responsibility, all- encompassing management, and oversight over the entire production process, and we will create a permanent workplace safety mechanism. We will improve and implement responsibility and assessment mechanisms as well as management systems for workplace safety, ensuring that both Party committees and governments assume responsibility, officials perform

their duties while also taking responsibility for workplace safety, and those who fail to uphold safety standards are held accountable, and we will ensure enterprises assume responsibility for workplace safety. We will work more quickly to formulate and revise workplace safety laws, regulations, and standards. We will reform the safety evaluation system; improve multi-party mechanisms for risk control, safety hazard identification and correction, and early warning and emergency response; step up regulation and law enforcement efforts over workplace safety and occupational health; and work to curb the frequent occurrence of major and serious workplace accidents. We will strengthen systems for identifying, preventing, and dealing with safety hazards, promote the use of information technology in workplace safety regulation, increase emergency rescue capabilities, and build capacity in respect to workplace safety inspection and oversight. We will implement initiatives to relocate hazardous chemical plants and warehouses to ensure safe and eco-friendly production and storage of chemicals. We will strengthen basic capabilities for workplace safety such as networks for preventing and managing traffic accidents and step up efforts to monitor and protect the safety of important infrastructure such as telecommunications, power grids, roads, bridges, water supply facilities, and pipelines for oil and gas transmission. We will work to make society as a whole more safety conscious. We will work to curb the occurrence of major and serious accidents in the workplace in order to cut the mortality rate for fatal workplace accidents per unit of GDP by 30%.

Section 2

Disaster Prevention, Mitigation, and Response

In line with the understanding that prevention should play the predominant role and disaster prevention, mitigation, and relief efforts should be integrated, we will work to strengthen comprehensive prevention capabilities with respect to floods, droughts, and earthquakes as well as other meteorological, geological, and marine disasters. We will refine disaster prevention, mitigation, and response systems, improving disaster investigation, assessment, monitoring, early warning, prevention, and emergency response systems. We will construct more emergency shelters in urban areas. We will improve the system for stockpiling relief supplies and improve ability to use resources in a more coordinated way. We will accelerate the establishment of a catastrophe insurance system. We will formulate policies on compensation for nongovernmental emergency relief services, compensation for requisitioned materials and equipment, and

personal safety insurance and aid or compensation in the event of injury or loss of life for relief workers. We will carry out extensive drills as well as publicity and educational campaigns for disaster prevention and mitigation.

Section 3

Innovations in Crime Prevention and Control Systems

We will work to improve the institutions and mechanisms for the comprehensive maintenance of law and order, accelerate the establishment of a multidimensional IT-based system for crime prevention and control, and put in place platforms for integrated, community-level management and services. We will step up efforts to apply information technology in community-level police work, achieve concrete results in the field, ensure procedure-based law enforcement, and strengthen the professional organization of the police force. We will build crime prevention and control networks based on public efforts as well as cooperation between the public and police, and accelerate the development of online systems for comprehensive crime prevention and control. We will initiate joint law and order efforts and problem identification and resolution in key locations, sectors, and regions. We will strengthen basic capabilities for cracking down on crime, fighting against drugs, and preventing and handling cults.

Section 4

Emergency Response Systems

We will complete the building of an emergency response system that corresponds with public security risks, covers the entire process of emergency management, and involves public participation. We will strengthen the development of basic emergency response capabilities, improve risk management systems for major sources of hazards and key infrastructure, strengthen capabilities with respect to sending out emergency early warnings and responding to emergencies, and improve community- level emergency management. We will strengthen counter-terrorism capabilities in large and medium cities. We will strengthen core capabilities with respect to hazardous chemical disposal, marine oil spills, marine rescue and recovery, nuclear

accident response, and emergency medical relief, and strengthen coordination on ensuring emergency resources. We will establish a compensation system for emergency requisition and expropriation, improve the management of emergency volunteers, and work to improve people's ability to help themselves and others during emergencies. We will strengthen China's capabilities to respond to overseas emergencies that affect its interests.

Chapter 73 Develop the National Security System

We will fully put into effect the integrative national security concept, implement a national security strategy, and keep working to improve our ability to ensure national security, so as to effectively safeguard Chinese national security.

Section 1

Systems and Mechanisms for Safeguarding National Security

We will formulate and implement national security policies in key areas including the political, territorial, economic, social, resource-, and internet- related fields, define medium-term and long-term security objectives, policies, and measures for these areas, and work to strengthen our ability to respond to all kinds of risks and challenges. We will strengthen the development of national security science, technology, and equipment, establish a sound national security monitoring and early-warning system, tighten integration between monitoring and early-warning systems in different areas to increase efficiency, and improve security information gathering, analysis, and processing capabilities. We will establish a warning system for external risks based on risk classification and level. We will strengthen monitoring and assessment over major security risks and formulate a national emergency plan for handling major risks to national security. We will improve national security review systems and mechanisms. We will conduct security risk assessments in major areas and for reform measures, projects, programs, and policies. We will put in place a coordination mechanism for safeguarding national security in key areas to better organize and coordinate national security efforts.

Section 2

Security of China's Political Power and Sovereignty

We will establish a sound trans-departmental, trans-regional joint work mechanism to resolutely prevent and take severe action in accordance with the law against infiltration, subversion, and sabotage by hostile forces, violent terrorist activities, ethnic separatist activities, and religious extremist activities. We will strengthen the development of professional counter-terrorism forces. We will increase international cooperation on combating terrorism. We will strengthen anti-espionage work. We will step up our struggle against hostile forces concerning cyberspace sovereignty, strengthen guidance on online public discourse, and work to prevent hostile and terrorist forces from carrying out infiltration and sabotage activities in cyberspace. We will strengthen the use of technology in border protection. We will work hard to ensure ideological work is carried out properly in order to safeguard China's ideological security.

Section 3

Economic Security Risks

Upholding the principle that we must be aware of our bottom line and put prevention first, we will safeguard national economic security in areas such as strategic resources, key industries, finance and banking, and cross-border capital flow. We will strengthen dynamic monitoring and analysis of key economic indicators and formulate an emergency plan for responding to risks in major economic sectors. We will coordinate responses to fiscal and financial risks that arise as we work to address overcapacity, reduce commodity housing stock, and carry out debt deleveraging, thus working proactively to diffuse risks both in a controlled manner and at a controlled pace. We will strengthen regulation over and response to both unusual fluctuations and risk transference in the financial market and risks that come with new forms of financial business. We will improve the unified management of government debt and work to see local government financing platforms become more market-based so as to effectively

defuse the risks posed by local government debt. We will ensure that there are more options for dealing with non-performing assets in the banking sector, improve tools and emergency plans for managing liquidity risks, and crack down hard on illegal fundraising. We will be on the alert for enterprise debt risks. We will strengthen our ability to prevent and control risks in areas such as energy, mineral resources, water resources, grain, ecological conservation, environmental protection, workplace safety, and the internet. We will improve the country's reserves of strategic goods and create a national strategic resource and energy reserve system based on a combination of reserve goods, production capacity, and production locations.

Section 4

Rule of Law in National Security

We will implement the National Security Law and formulate relevant implementation regulations. We will promote legislative work in areas involving national security such as national economic security, nonproliferation, national intelligence, cybersecurity, export control, foreign agent registration, and security reviews for businesses involving foreign capital; speed up efforts to improve the system of laws relating to national security; and make full use of legal means in safeguarding national security.

PART XVIII

SOCIALIST DEMOCRACY AND RULE OF LAW

We will ensure the unity of leadership by the Party, the position of the people as masters of the country, and law-based governance, accelerate efforts to build a socialist rule of law country, and advance socialist political progress.

Chapter 74 Develop Socialist Democracy

We will continue our commitment to and improve the system of people's congresses, the system of multiparty cooperation and political consultation under the leadership of the CPC, the system of ethnic autonomous regions, and the system of community-level self-governance, so as to expand the systematic political participation of our citizens and give full expression to the strengths of China's socialist political system. We will strengthen consultative democracy by establishing a well-structured and procedurally sound system of consultative democracy, continuing to improve consultation between political parties, and expanding consultation channels for organs of state power, CPPCC committees, political parties, community-level organizations, and social organizations. We will improve systems for community-level democracy, further open democratic channels, and refine mechanisms for elections, deliberations, public access to information, performance reporting, and holding officials to account at the community level. We will carry out diverse forms of community-level democratic consultation and work toward the institutionalization of community-level consultation.

Chapter 75 Build a Rule of Law China

We will ensure that the country is governed, governance is exercised, and administration is conducted in accordance with the law, and that our country, government, and society are all based on the rule of law, developing a rule of law system of socialism with Chinese characteristics and the rule of law in socialist China.

Section 1

The Constitution-Centered Socialist Legal System of China

We will safeguard the sanctity and authority of the Constitution and improve our systems for enforcing the Constitution and providing oversight over its enforcement. In improving the legislative system, we will strengthen the Party's leadership over legislative work, improve the systems and mechanisms under which legislative work is led by people's congresses that have legislative power, improve the government legislative system, and clearly define the boundaries of legislative power. We will work

hard to legislate more effectively and democratically; ensure that people's congresses better organize and coordinate legislative work; refine mechanisms for drafting, debating, coordinating, and deliberating on legislation; and improve channels and methods through which legislative bodies lead legislation while other sectors of society also participate in a systematic way. We will work faster to see that a complete system of laws and regulations takes shape by speeding up legislation in key areas, working at once to enact, revise, abolish, and interpret laws, and improving laws for the socialist market economy and social governance.

Section 2

Rule of Law Government

We will implement, both to the letter and in spirit, the Plan for Building Rule of Law Government (2015–2020) released by the CPC Central Committee and the State Council, thoroughly advance law-based administration, and ensure that power is defined, exercised, held in check, and overseen in accordance with the law and that all government activities are in line with the rule of law. We will see that government functions are fully carried out in accordance with the law, improve legislation on administrative organization and procedures, and define governmental institutions, functions, powers, procedures, and responsibilities by law. We will refine procedures for making government decisions and improve law- based decision-making mechanisms. We will deepen the structural reform of administrative law enforcement, advance coordinated law enforcement, and better coordinate administrative law enforcement with the administration of criminal justice. We will ensure that law is enforced in a strict, procedure- based, impartial, and civil manner, and narrow the scope of discretionary powers to the greatest extent possible. We will improve law enforcement assessment and evaluation systems. We will improve the auditing system and make sure that auditing-based oversight is exercised independently in accordance with the law.

Section 3

Judicial Justice

We will deepen judicial structural reform, provide better judicial protection of rights, and ensure stronger judicial oversight over authority, so as to build a more just, efficient, and authoritative socialist judiciary. We will improve the mechanism under which judicial power and responsibilities are divided among judicial bodies that both complement and place a check on each other, and refine the trial instance system, the judicial organization system, and the case jurisdiction system. We will explore the establishment of people's courts and procuratorates with jurisdictions over multiple administrative divisions. We will strengthen occupational safeguards for judicial officers and improve systems for ensuring the law-based, independent, and impartial exercise of judicial and procuratorial powers. We will take comprehensive measures to ensure transparency in court proceedings and in procuratorial, police, and prison affairs, and strengthen judicial protection of human rights. We will tighten oversight over judicial activities and ensure that judicial bodies build more robust mechanisms for internal oversight and power constraints. We will work to see that judicial bodies improve case handling accountability systems, ensuring that those in charge of a case take due responsibility. We will improve facilities development in respect to prisons, mandatory drug treatment, community corrections, resettlement assistance for released inmates, forensic examinations, and other areas and programs.

Section 4

Rule of Law Society

We will advance law-based governance at all levels and in all fields and increase the level of rule of law in social governance. We will strengthen efforts to foster a rule of law culture, advocate socialist rule of law, and strengthen the awareness of all members of society, especially public sector workers, of the need to respect, study, abide by, and apply the law, so that the rule of law permeates and takes root throughout the whole of society. We will intensify efforts to spread legal knowledge in accordance with the seventh five-year plan for increasing public knowledge of the law, incorporate education on the rule of law in the national education system, and improve the recording of citizens' and organizations' credit in terms of legal compliance. We will ensure legal service systems are improved by strengthening the training of lawyers and other legal professionals as well as legal service personnel, promoting the development of public legal service systems covering all citizens, and improving the legal aid and judicial assistance systems.

Chapter 76 Strengthen Party Conduct, Government Integrity, and the Fight against Corruption

The effort to strengthen Party conduct, government integrity, and the fight against corruption must be forever ongoing; we cannot afford to ease up or come to a halt. We will ensure that the Party exercises strict self-governance in all respects; that Party officials adhere to the Three Stricts and Three Honests[5] and stay true to Party rules and discipline; that Party committees are held responsible for improving Party conduct and government integrity and commissions for discipline inspection carry out their oversight responsibilities; and that accountability measures are strengthened. We will implement the CPC Central Committee's eight-point decision on improving Party and government conduct, remain steadfast in the fight against formalism, bureaucratism, hedonism, and extravagance, and establish a sound, permanent mechanism for improving Party and government conduct. We will take resolute measures to punish and rectify improper conduct and corruption that harm people's interests, fight every phenomenon of corruption, and punish every corrupt official. We will also consolidate achievements made in anti-corruption campaigns, and establish effective mechanisms that deter, stop, and discourage officials from becoming corrupt. By working hard to ensure that our officials are honest, our government is clean, and political integrity is upheld, we will bring about a more favorable political environment for economic and social development.

In order to eradicate hotbeds of corruption and ensure the people oversee the exercise of power and that power is exercised in the open, we will work to confine the exercise of power within an institutional cage, reinforce constraints and oversight over the exercise of power, and use institutional means to provide a check on power, to administer affairs, and to manage personnel. We will clearly define the responsibilities and powers of officials, establish well-designed procedures and systems for accountability, and strengthen audits on the economic responsibilities of officials. We will improve checks on government powers and strengthen supervision and auditing-based oversight of departments with administrative powers.

[5] To be strict with oneself in practicing self-cultivation, using power, and exercising self-discipline; and to be honest in one's thinking, one's work, and one's behavior.

PART XIX

COORDINATED ECONOMIC AND DEFENSE DEVELOPMENT

We will stress both development and national security, strive to build both a prosperous country and a strong military, and move forward with the integrated military-civilian development strategy to bring about deep and highly efficient integration of the development of the military and civilian sectors across multiple fields and for all factors, and to achieve comprehensive progress in the modernization of defense and the armed forces.

Chapter 77 Pursue Comprehensive Development of Defense and the Armed Forces

In moving toward the Party's goal of building strong armed forces under the new conditions, we will implement the strategy for the military under the new conditions and the reform strategy for strengthening the armed forces, and ensure that the military becomes more revolutionary, modern, and well-structured in every respect. We will strengthen Party building as well as political development in the armed forces, put into practice the guiding principles from the military's meeting on political work held in Gutian, Fujian, and train a new generation of revolutionary officers and soldiers who are dedicated, competent, courageous, and have a strong moral character. We will step up efforts to govern the armed forces in accordance with the law and strict discipline, and accelerate legislative work related to the military, so as to put in place a system of military laws and regulations that are compatible with current circumstances and tasks and with the new leadership and command systems. We will strengthen combat preparedness in all areas for all situations, ensure that military endeavors are guided by the needs of combat situations, improve the strategic arrangement of the military, and ensure active management and planning in major security fields. We will develop new combat capabilities, strengthen the development of defense-related science and technology, equipment, and modern logistics, carry out combat training, and strengthen network information system-based joint combat capabilities of the military.

We will basically complete the reform objectives for defense and the armed forces, basically accomplish military mechanization, and make major strides in the adoption of information technology in the military, thereby building Chinese-style modern armed forces that are capable of successfully engaging in information technology-based warfare and effectively accomplishing their missions. We will strengthen international military-related exchange and cooperation and take an active role in international peacekeeping missions.

Chapter 78 Integrate Military and Civilian Development

We will ensure that economic development meets the needs of defense and that civilian needs are given due consideration in national defense development. We will improve systems and mechanisms for integrating military and civilian development as well as the systems concerning organizational management, work, and policy. We will establish a national leading body for integrating military and civilian development and similar bodies for provinces, autonomous regions, and municipalities directly under the central government. We will advance legislation related to the integration of military and civilian development. We will ensure a better allocation and appropriate sharing of resources between the military and localities so that both peacetime and wartime needs can be met; encourage flow of factors such as technology, personnel, capital, and information between the economic and defense sectors; and strengthen coordinated development between the military and localities in the areas of infrastructure, industries, science, technology, education, and public services. We will explore the establishment of a mechanism for funding integrated military-civilian development projects. We will deepen institutional reform of defense-related science and technology industries, put in place an initiative to strengthen the foundations of these industries, and establish mechanisms for achieving collaborative innovation in defense-related science and technology. We will reform systems and mechanisms concerning defense-related research, production, and weapons and equipment procurement, move faster in opening military industries to competition and promoting the application of defense-related scientific and technological advances, and guide private businesses with a competitive advantage in entering the fields of research and development, production, and maintenance of military products. We will accelerate the development of standards that apply to both the military and civilian sectors. We will implement integrated military-civilian development projects, including ocean, space, and cyberspace projects and

measures, the development of innovation demonstration zones for military-civilian integration, and the strengthening of coordination between the military and civilian sectors in the sharing of advanced technologies, industries, products, and infrastructure. We will strengthen infrastructure for border and coastal defense.

We will deepen defense mobilization reform and improve defense mobilization institutions and mechanisms. We will work to use patriotism as a pivot for teaching people about defense so as to help raise awareness of the need for strong defense. We will strengthen our reserve forces, give high priority to the mobilization of forces for maritime operations, and improve capabilities for organization and mobilization, rapid response, and logistics to strengthen the capacity of the armed forces to win wars and serve the country's interests. We will improve the modern Armed Police Force. We will strengthen the development and maintenance of civil air defense works. We will improve the organization of and leadership over management and support work for decommissioned military personnel by improving service systems, policies, and institutions. We will consolidate unity between the government and the armed forces and between the people and the armed forces. We will ensure that the Party, the government, the military, the police, and the people work together to strengthen border security. In order to improve our overall border control capabilities and ensure security and stability in border areas, we will use political and diplomatic means to ensure peace along our borders, bolster development and living standards in border areas, strengthen border security through military development, and adopt science and technology in the field of border control. We will work to ensure that the Xinjiang Production and Construction Corps strengthens its overall capabilities and self-development capacity, increases the pace of its development southward and better fulfills its role of maintaining stability and defending our borders.

PART XX

IMPLEMENTATION

In order to guarantee effective implementation of the 13th Five-Year Plan, we will, under the leadership of the CPC, ensure that governments at all levels better perform their duties and to the greatest possible extent stimulate the vitality and

creativity of different types of participants, so that the entire Party and the people of China work together in finishing the building of a moderately prosperous society in all respects.

Chapter 79 Make Use of the Party's Role as the Core Leadership

We will see that the Party exercises overall leadership and coordinates all aspects of work and that Party committees and leading Party members' groups at all levels serve as the core leadership and exercise more effective leadership so as to provide a firm guarantee for the realization of this plan. We will uphold the principle of the Party exercising proper self- supervision and practicing strict self-governance, apply a spirit of reform and innovation in fully moving ahead with the new major Party building project, maintain and develop the advanced nature and purity of the Party, improve its governance capacity, and ensure that the Party always remains the strong core of leadership for socialism with Chinese characteristics. We will strengthen the development of leading bodies and officials and improve performance assessment systems and reward and punishment mechanisms in order to mobilize the enthusiasm, initiative, and creativity of officials at all levels for their work. We will strengthen as a whole the functions of primary-level Party organizations, and give play to the leading role of these organizations and the exemplary role of Party members in order to lead the general public more effectively in building a moderately prosperous society in all respects.

We will attach importance to giving impetus to the role of trade unions, the organizations of the Chinese Communist Youth League, women's federations, and other people's organizations, consolidate and develop the broadest possible patriotic united front, fully implement the Party's policies on intellectuals, ethnic groups, religion, and work related to overseas Chinese, give full play to the roles of other political parties, chambers of commerce, and public figures without party affiliation, work to achieve the greatest possible popular consensus and combination of energies throughout society, promote reform and development, and safeguard social harmony and stability.

Chapter 80 Ensure that Everyone Works Together on Implementation

We will clearly define government responsibilities, ensure policies are well formulated and public resources are well allocated, and mobilize the energies of the whole society, so that everyone works together to promote the successful implementation of this plan.

Section 1

Coordinated Management of Planning

We will strengthen overall management and coordination, creating a development planning system headed by the plan for economic and social development, and supported by subject-specific, regional, local, and annual plans. Relevant departments under the State Council shall organize the formulation of a set of national subject-specific plans—particularly key subject-specific plans—which set out in detail the implementation of the main tasks and targets of this plan. Local governments should, in their development plans, ensure that their development strategies, main targets, key tasks, and major projects are in coordination with those defined in the national plans and implement the unified arrangements provided for in these plans. We will work faster to see the promulgation of the Law on Development Plans.

Section 2

Mechanisms for Implementation

All local governments and government departments must work hard to organize, coordinate, and guide the implementation of this plan. We will carry out dynamic monitoring and evaluation of the implementation of this plan, use the results produced as an important basis for improving government work and measuring performance, and report the implementation of this plan to the Standing Committee of the National People's Congress in accordance with the law and willingly accept its oversight. Responsibility and requirements regarding progress must be made clear in order to ensure that the obligatory targets, projects, initiatives, policies, and reform measures specified in this plan are all carried out as scheduled. Approval procedures related to the projects and initiatives included in this plan will be streamlined and priority will be

given to them in site selection, land availability, and funding arrangements. We will ensure that auditing offices play a role in overseeing implementation. We will follow closely any changes and risks involved, remain aware of the bottom line, and prepare ourselves to respond to difficulties and complexities. When it is necessary to adjust this plan, any proposed adjustments shall be put forward by the State Council and reported to the NPC Standing Committee for approval.

Section 3

Financial Support

We will strengthen coordination between budgeting and the implementation of this plan, and having clearly defined the spending responsibilities of each level of government, we will ensure that budgeting at each level supports implementation. Medium-term fiscal plans and annual budgets should, based on both the tasks and targets defined in this plan and a government's own financial strength, contain well-designed spending scales and structures. We will work faster on government investment legislation.

Section 4

Mobilization of Enthusiasm

The anticipatory targets and the tasks for industrial development and structural adjustment defined in this plan will be left mainly to market participants. We will work to inspire within every Chinese person a sense of contribution to the implementation of this plan and to their country's development, stimulate the initiative, enthusiasm, and creativity of governments at all levels and of all sectors of society, respect the initiative of community-level organizations, and bring together the strength and wisdom of the people so that everyone contributes dynamically to the implementation of this plan and shares in the results thereof.

The prospects for fulfilling the development goals for the period covered by the 13th Five-Year Plan are promising, yet many formidable tasks lie ahead. The Party and

the Chinese people should rally more closely around the CPC Central Committee headed by General Secretary Xi Jinping, hold high the great banner of socialism with Chinese characteristics, remain committed to progressing along the path of Chinese socialism, emancipate their minds, seek truth from facts, keep in step with the times, carry out reform, make innovations, and be of one heart and one mind in working to bring a successful conclusion to this decisive stage in finishing building a moderately prosperous society in all respects.

中华人民共和国中央人民政府
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中华人民共和国国民经济和社会发展第十三个五年规划纲要

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中华人民共和国国民经济和社会发展第十三个五年规划纲要

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中华人民共和国国民经济和社会发展第十三个五年（2016－2020年）规划纲要，根据《中共中央关于制定国民经济和社会发展第十三个五年规划的建议》编

制，主要阐明国家战略意图，明确经济社会发展宏伟目标、主要任务和重大举措，是市场主体的行为导向，是政府履行职责的重要依据，是全国各族人民的共同愿景。

第一篇　指导思想、主要目标和发展理念

“十三五”时期是全面建成小康社会决胜阶段。必须认真贯彻党中央战略决策和部署，准确把握国内外发展环境和条件的深刻变化，积极适应把握引领经济发展新常态，全面推进创新发展、协调发展、绿色发展、开放发展、共享发展，确保全面建成小康社会。

第一章　发展环境

“十二五”时期是我国发展很不平凡的五年。面对错综复杂的国际环境和艰巨繁重的国内改革发展稳定任务，党中央、国务院团结带领全国各族人民顽强拼搏、开拓创新，经济社会发展取得显著成就，胜利完成“十二五”规划确定的主要目标和任务。

积极应对国际金融危机持续影响等一系列重大风险挑战，适应经济发展新常态，不断创新和完善宏观调控，推动形成经济结构优化、发展动力转换、发展方式转变加快的良好态势。经济保持持续较快发展，经济总量稳居世界第二位，人均国内生产总值增至49351元（折合7924美元）。经济结构调整取得重大进展，农业稳定增长，第三产业增加值占国内生产总值比重超过第二产业，居民消费率不断提高，城乡区域差距趋于缩小，常住人口城镇化率达到56.1%，基础设施水平全面跃升，高技术产业、战略性新兴产业加快发展，一批重大科技成果达到世界先进水平。公共服务体系基本建立、覆盖面持续扩大，教育水平明显提升，全民健康状况明显改善，新增就业持续增加，贫困人口大幅减少，人民生活水平和质量

进一步提高。生态文明建设取得新进展，主体功能区制度逐步健全，主要污染物排放持续减少，节能环保水平明显提升。全面深化改革有力推进，经济体制继续完善，人民民主不断扩大，依法治国开启新征程。全方位外交取得重大进展，国际地位显著提高，对外开放不断深入，成为全球第一货物贸易大国和主要对外投资大国，人民币纳入国际货币基金组织特别提款权货币篮子。中华民族伟大复兴的中国梦和社会主义核心价值观深入人心，国家文化软实力不断增强。中国特色军事变革成就显著，强军兴军迈出新步伐。全面从严治党开创新局面，党风廉政建设成效显著。我国经济实力、科技实力、国防实力、国际影响力又上了一个大台阶。

尤为重要的是，党的十八大以来，以习近平同志为总书记的党中央毫不动摇坚持和发展中国特色社会主义，勇于实践、善于创新，深化对共产党执政规律、社会主义建设规律、人类社会发展规律的认识，形成一系列治国理政新理念新思想新战略，为在新的历史条件下深化改革开放、加快推进社会主义现代化提供了科学理论指导和行动指南。

专栏 1 “十二五”规划主要指标实现情况

指标	规划目标		实现情况	
	2015 年	年均增速[累计]	2015 年	年均增速[累计]
➢ 经济发展				
（1）国内生产总值（GDP）（万亿元）	-	7%	67.7	7.8%
（2）服务业增加值比重（%）	47	-	50.5	-
（3）常住人口城镇化率（%）	51.5	-	56.1	-
➢ 科技教育				
（4）九年义务教育巩固率（%）	93	-	93	-
（5）高中阶段教育毛入学率（%）	87	-	87	-
（6）研究与试验发展经费支出占 GDP 比重（%）	2.2	-	2.1	-
（7）每万人口发明专利拥有量（件）	3.3	-	6.3	-
➢ 资源环境				
（8）耕地保有量（亿亩）	18.18	-	18.65	-
（9）单位工业增加值用水量降低（%）	-	[30]	-	[35]
（10）农业灌溉用水有效利用系数	0.53	-	0.532	-
（11）非化石能源占一次能源消费比重（%）	11.4	-	12	-

（12）单位 GDP 能源消耗降低（%）	-	[16]	-	[18.2]
（13）单位 GDP 二氧化碳排放降低（%）	-	[17]	-	[20]
（14）主要污染物排放总量减少（%） 化学需氧量 二氧化硫 氨氮 氮氧化物	-	 [8] [8] [10] [10]	-	 [12.9] [18.0] [13.0] [18.6]
（15）森林增长 森林覆盖率（%） 森林蓄积量（亿立方米）	21.66 143	-	21.66 151	-
➢ 人民生活				
（16）城镇居民人均可支配收入（元）	-	>7%	-	7.7%
（17）农村居民人均纯收入（元）	-	>7%	-	9.6%
（18）城镇登记失业率（%）	<5	-	4.05	-
（19）城镇新增就业人数（万人）	-	[4500]	-	[6431]
（20）城镇参加基本养老保险人数（亿人）	3.57	-	3.77	-
（21）城乡三项基本医疗保险参保率（%）	-	[3]	-	[>3]
（22）城镇保障性安居工程建设（万套）	-	[3600]	-	[4013]
（23）全国总人口（亿人）	<13.90	-	13.75	-
（24）人均预期寿命（岁）	74.5	-	76.34	-

注：①GDP、居民收入增速按可比价计算，绝对数按当年价计算。②2015 年耕地保有量根据第二次全国土地调查数据更新。③[ ]内为 5 年累计数。

“十三五”时期，国内外发展环境更加错综复杂。从国际看，和平与发展的时代主题没有变，世界多极化、经济全球化、文化多样化、社会信息化深入发展。国际金融危机冲击和深层次影响在相当长时期依然存在，世界经济在深度调整中曲折复苏、增长乏力。主要经济体走势和宏观政策取向分化，金融市场动荡不稳，大宗商品价格大幅波动，全球贸易持续低迷，贸易保护主义强化，新兴经济体困难和风险明显加大。新一轮科技革命和产业变革蓄势待发，国际能源格局发生重大调整。全球治理体系深刻变革，发展中国家群体力量继续增强，国际力量对比逐步趋向平衡，国际投资贸易规则体系加快重构，多边贸易体制受到区域性高标准自由贸易体制挑战。局部地区地缘博弈更加激烈，传统安全威胁和非传统安全威胁交织，国际关系复杂程度前所未有。外部环境不稳定不确定因素明显增多，我国发展面临的风险挑战加大。

从国内看，经济长期向好的基本面没有改变，发展前景依然广阔，但提质增效、转型升级的要求更加紧迫。经济发展进入新常态，向形态更高级、分工更优化、结构更合理阶段演化的趋势更加明显。消费升级加快，市场空间广阔，物质基础雄厚，产业体系完备，资金供给充裕，人力资本丰富，创新累积效应正在显现，综合优势依然显著。新型工业化、信息化、城镇化、农业现代化深入发展，新的增长动力正在孕育形成，新的增长点、增长极、增长带不断成长壮大。全面深化改革和全面推进依法治国正释放新的动力、激发新的活力。同时，必须清醒认识到，发展方式粗放，不平衡、不协调、不可持续问题仍然突出，经济增速换挡、结构调整阵痛、动能转换困难相互交织，面临稳增长、调结构、防风险、惠民生等多重挑战。有效需求乏力和有效供给不足并存，结构性矛盾更加凸显，传统比较优势减弱，创新能力不强，经济下行压力加大，财政收支矛盾更加突出，金融风险隐患增大。农业基础依然薄弱，部分行业产能过剩严重，商品房库存过高，企业效益下滑，债务水平持续上升。城乡区域发展不平衡，空间开发粗放低效，资源约束趋紧，生态环境恶化趋势尚未得到根本扭转。基本公共服务供给仍然不足，收入差距较大，人口老龄化加快，消除贫困任务艰巨。重大安全事故频发，影响社会稳定因素增多，国民文明素质和社会文明程度有待提高，法治建设有待加强，维护社会和谐稳定难度加大。

综合判断，我国发展仍处于可以大有作为的重要战略机遇期，也面临诸多矛盾叠加、风险隐患增多的严峻挑战。必须准确把握战略机遇期内涵和条件的深刻变化，增强忧患意识、责任意识，强化底线思维，尊重规律与国情，积极适应把握引领新常态，坚持中国特色社会主义政治经济学的重要原则，坚持解放和发展社会生产力、坚持社会主义市场经济改革方向、坚持调动各方面积极性，坚定信心，迎难而上，继续集中力量办好自己的事情，着力在优化结构、增强动力、化解矛盾、补齐短板上取得突破，切实转变发展方式，提高发展质量和效益，努力跨越“中等收入陷阱”，不断开拓发展新境界。

第二章　指导思想

高举中国特色社会主义伟大旗帜，全面贯彻党的十八大和十八届三中、四中、五中全会精神，以马克思列宁主义、毛泽东思想、邓小平理论、“三个代表”重要思想、科学发展观为指导，深入贯彻习近平总书记系列重要讲话精神，坚持全面建成小康社会、全面深化改革、全面依法治国、全面从严治党的战略布局，坚持发展是第一要务，牢固树立和贯彻落实创新、协调、绿色、开放、共享的发展理念，以提高发展质量和效益为中心，以供给侧结构性改革为主线，扩大有效供给，满足有效需求，加快形成引领经济发展新常态的体制机制和发展方式，保持战略定力，坚持稳中求进，统筹推进经济建设、政治建设、文化建设、社会建设、生态文明建设和党的建设，确保如期全面建成小康社会，为实现第二个百年奋斗目标、实现中华民族伟大复兴的中国梦奠定更加坚实的基础。

必须遵循以下原则：

——坚持人民主体地位。人民是推动发展的根本力量，实现好、维护好、发展好最广大人民根本利益是发展的根本目的。必须坚持以人民为中心的发展思想，把增进人民福祉、促进人的全面发展作为发展的出发点和落脚点，发展人民民主，维护社会公平正义，保障人民平等参与、平等发展权利，充分调动人民积极性、主动性、创造性。

——坚持科学发展。发展是硬道理，发展必须是科学发展。我国仍处于并将长期处于社会主义初级阶段，基本国情和社会主要矛盾没有变，这是谋划发展的基本依据。必须坚持以经济建设为中心，从实际出发，把握发展新特征，加大结构性改革力度，加快转变经济发展方式，实现更高质量、更有效率、更加公平、更可持续的发展。

——坚持深化改革。改革是发展的强大动力。必须按照完善和发展中国特色社会主义制度、推进国家治理体系和治理能力现代化的总目标，健全使市场在资源配置中起决定性作用和更好发挥政府作用的制度体系，以经济体制改革为重点，加快完善各方面体制机制，破除一切不利于科学发展的体制机制障碍，为发展提供持续动力。

——坚持依法治国。法治是发展的可靠保障。必须坚定不移走中国特色社会主义法治道路，加快建设中国特色社会主义法治体系，建设社会主义法治国家，推进科学立法、严格执法、公正司法、全民守法，加快建设法治经济和法治社会，把经济社会发展纳入法治轨道。

——坚持统筹国内国际两个大局。全方位对外开放是发展的必然要求。必须坚持打开国门搞建设，既立足国内，充分运用我国资源、市场、制度等优势，又重视国内国际经济联动效应，积极应对外部环境变化，更好利用两个市场、两种资源，推动互利共赢、共同发展。

——坚持党的领导。党的领导是中国特色社会主义制度的最大优势，是实现经济社会持续健康发展的根本政治保证。必须贯彻全面从严治党要求，不断增强党的创造力、凝聚力、战斗力，不断提高党的执政能力和执政水平，确保我国发展航船沿着正确航道破浪前进。

第三章　主要目标

按照全面建成小康社会新的目标要求，今后五年经济社会发展的主要目标是：

——经济保持中高速增长。在提高发展平衡性、包容性、可持续性基础上，到2020年国内生产总值和城乡居民人均收入比2010年翻一番，主要经济指标平衡

协调，发展质量和效益明显提高。产业迈向中高端水平，农业现代化进展明显，工业化和信息化融合发展水平进一步提高，先进制造业和战略性新兴产业加快发展，新产业新业态不断成长，服务业比重进一步提高。

——创新驱动发展成效显著。创新驱动发展战略深入实施，创业创新蓬勃发展，全要素生产率明显提高。科技与经济深度融合，创新要素配置更加高效，重点领域和关键环节核心技术取得重大突破，自主创新能力全面增强，迈进创新型国家和人才强国行列。

——发展协调性明显增强。消费对经济增长贡献继续加大，投资效率和企业效率明显上升。城镇化质量明显改善，户籍人口城镇化率加快提高。区域协调发展新格局基本形成，发展空间布局得到优化。对外开放深度广度不断提高，全球配置资源能力进一步增强，进出口结构不断优化，国际收支基本平衡。

——人民生活水平和质量普遍提高。就业、教育、文化体育、社保、医疗、住房等公共服务体系更加健全，基本公共服务均等化水平稳步提高。教育现代化取得重要进展，劳动年龄人口受教育年限明显增加。就业比较充分，收入差距缩小，中等收入人口比重上升。我国现行标准下农村贫困人口实现脱贫，贫困县全部摘帽，解决区域性整体贫困。

——国民素质和社会文明程度显著提高。中国梦和社会主义核心价值观更加深入人心，爱国主义、集体主义、社会主义思想广泛弘扬，向上向善、诚信互助的社会风尚更加浓厚，国民思想道德素质、科学文化素质、健康素质明显提高，全社会法治意识不断增强。公共文化服务体系基本建成，文化产业成为国民经济支柱性产业。中华文化影响持续扩大。

——生态环境质量总体改善。生产方式和生活方式绿色、低碳水平上升。能源资源开发利用效率大幅提高，能源和水资源消耗、建设用地、碳排放总量得到有效控制，主要污染物排放总量大幅减少。主体功能区布局和生态安全屏障基本形成。

——各方面制度更加成熟更加定型。国家治理体系和治理能力现代化取得重大进展，各领域基础性制度体系基本形成。人民民主更加健全，法治政府基本建成，司法公信力明显提高。人权得到切实保障，产权得到有效保护。开放型经济新体制基本形成。中国特色现代军事体系更加完善。党的建设制度化水平显著提高。

专栏 2 “十三五”时期经济社会发展主要指标

指标		2015 年	2020 年	年均增速[累计]	属性
➢ 经济发展					
（1）国内生产总值（GDP）（万亿元）		67.7	>92.7	>6.5%	预期性
（2）全员劳动生产率（万元/人）		8.7	>12	>6.6%	预期性
（3）城镇化率	常住人口城镇化率（%）	56.1	60	[3.9]	预期性
	户籍人口城镇化率（%）	39.9	45	[5.1]	
（4）服务业增加值比重（%）		50.5	56	[5.5]	预期性
➢ 创新驱动					
（5）研究与试验发展经费投入强度（%）		2.1	2.5	[0.4]	预期性
（6）每万人口发明专利拥有量（件）		6.3	12	[5.7]	预期性
（7）科技进步贡献率（%）		55.3	60	[4.7]	预期性
（8）互联网普及率	固定宽带家庭普及率（%）	40	70	[30]	预期性
	移动宽带用户普及率（%）	57	85	[28]	
➢ 民生福祉					
（9）居民人均可支配收入增长（%）		-	-	>6.5	预期性
（10）劳动年龄人口平均受教育年限（年）		10.23	10.8	[0.57]	约束性
（11）城镇新增就业人数（万人）		-	-	[>5000]	预期性
（12）农村贫困人口脱贫（万人）		-	-	[5575]	约束性
（13）基本养老保险参保率（%）		82	90	[8]	预期性
（14）城镇棚户区住房改造（万套）		-	-	[2000]	约束性
（15）人均预期寿命（岁）		-	-	[1]	预期性
➢ 资源环境					
（16）耕地保有量（亿亩）		18.65	18.65	[0]	约束性
（17）新增建设用地规模（万亩）		-	-	[<3256]	约束性
（18）万元 GDP 用水量下降（%）		-	-	[23]	约束性
（19）单位 GDP 能源消耗降低（%）		-	-	[15]	约束性
（20）非化石能源占一次能源消费比重（%）		12	15	[3]	约束性

（21）单位 GDP 二氧化碳排放降低（%）		-	-	[18]	约束性
（22）森林发展	森林覆盖率（%）	21.66	23.04	[1.38]	约束性
	森林蓄积量（亿立方米）	151	165	[14]	
（23）空气质量	地级及以上城市空气质量优良天数比率（%）	76.7	>80	-	约束性
	细颗粒物（$PM_{2.5}$）未达标地级及以上城市浓度下降（%）	-	-	[18]	
（24）地表水质量	达到或好于Ⅲ类水体比例（%）	66	>70	-	约束性
	劣Ⅴ类水体比例（%）	9.7	<5	-	
（25）主要污染物排放总量减少（%）	化学需氧量 氨氮 二氧化硫 氮氧化物	-	-	[10] [10] [15] [15]	约束性
注：①GDP、全员劳动生产率增速按可比价计算，绝对数按 2015 年不变价计算。②[ ]内为 5 年累计数。③$PM_{2.5}$未达标指年均值超过 35 微克/立方米。					

第四章　发展理念

实现发展目标，破解发展难题，厚植发展优势，必须牢固树立和贯彻落实创新、协调、绿色、开放、共享的新发展理念。

创新是引领发展的第一动力。必须把创新摆在国家发展全局的核心位置，不断推进理论创新、制度创新、科技创新、文化创新等各方面创新，让创新贯穿党和国家一切工作，让创新在全社会蔚然成风。

协调是持续健康发展的内在要求。必须牢牢把握中国特色社会主义事业总体布局，正确处理发展中的重大关系，重点促进城乡区域协调发展，促进经济社会协调发展，促进新型工业化、信息化、城镇化、农业现代化同步发展，在增强国家硬实力的同时注重提升国家软实力，不断增强发展整体性。

绿色是永续发展的必要条件和人民对美好生活追求的重要体现。必须坚持节约资源和保护环境的基本国策，坚持可持续发展，坚定走生产发展、生活富裕、生态良好的文明发展道路，加快建设资源节约型、环境友好型社会，形成人与自然和谐发展现代化建设新格局，推进美丽中国建设，为全球生态安全作出新贡献。

开放是国家繁荣发展的必由之路。必须顺应我国经济深度融入世界经济的趋势，奉行互利共赢的开放战略，坚持内外需协调、进出口平衡、引进来和走出去并重、引资和引技引智并举，发展更高层次的开放型经济，积极参与全球经济治理和公共产品供给，提高我国在全球经济治理中的制度性话语权，构建广泛的利益共同体。

共享是中国特色社会主义的本质要求。必须坚持发展为了人民、发展依靠人民、发展成果由人民共享，作出更有效的制度安排，使全体人民在共建共享发展中有更多获得感，增强发展动力，增进人民团结，朝着共同富裕方向稳步前进。

坚持创新发展、协调发展、绿色发展、开放发展、共享发展，是关系我国发展全局的一场深刻变革。创新、协调、绿色、开放、共享的新发展理念是具有内在联系的集合体，是“十三五”乃至更长时期我国发展思路、发展方向、发展着力点的集中体现，必须贯穿于“十三五”经济社会发展的各领域各环节。

第五章　发展主线

贯彻落实新发展理念、适应把握引领经济发展新常态，必须在适度扩大总需求的同时，着力推进供给侧结构性改革，使供给能力满足广大人民日益增长、不断升级和个性化的物质文化和生态环境需要。必须用改革的办法推进结构调整，加大重点领域关键环节市场化改革力度，调整各类扭曲的政策和制度安排，完善公平竞争、优胜劣汰的市场环境和机制，最大限度激发微观活力，优化要素配置，推动产业结构升级，扩大有效和中高端供给，增强供给结构适应性和灵活性，提高全要素生产率。必须以提高供给体系的质量和效率为目标，实施宏观政策要稳、产业政策要准、微观政策要活、改革政策要实、社会政策要托底的政策支柱，去产能、去库存、去杠杆、降成本、补短板，加快培育新的发展动能，改造提升传统比较优势，夯实实体经济根基，推动社会生产力水平整体改善。

第二篇　实施创新驱动发展战略

把发展基点放在创新上，以科技创新为核心，以人才发展为支撑，推动科技创新与大众创业万众创新有机结合，塑造更多依靠创新驱动、更多发挥先发优势的引领型发展。

第六章　强化科技创新引领作用

发挥科技创新在全面创新中的引领作用，加强基础研究，强化原始创新、集成创新和引进消化吸收再创新，着力增强自主创新能力，为经济社会发展提供持久动力。

第一节　推动战略前沿领域创新突破

坚持战略和前沿导向，集中支持事关发展全局的基础研究和共性关键技术研究，更加重视原始创新和颠覆性技术创新。聚焦目标、突出重点，加快实施已有国家重大科技专项，部署启动一批新的重大科技项目。加快突破新一代信息通信、新能源、新材料、航空航天、生物医药、智能制造等领域核心技术。加强深海、深地、深空、深蓝等领域的战略高技术部署。围绕现代农业、城镇化、环境治理、健康养老、公共服务等领域的瓶颈制约，制定系统性技术解决方案。强化宇宙演化、物质结构、生命起源、脑与认知等基础前沿科学研究。积极提出并牵头组织国际大科学计划和大科学工程，建设若干国际创新合作平台。

第二节　优化创新组织体系

明确各类创新主体功能定位，构建政产学研用一体的创新网络。强化企业创新主体地位和主导作用，鼓励企业开展基础性前沿性创新研究，深入实施创新企业百强工程，形成一批有国际竞争力的创新型领军企业，支持科技型中小企业发

展。推进科教融合发展，促进高等学校、职业院校和科研院所全面参与国家创新体系建设，支持一批高水平大学和科研院所组建跨学科、综合交叉的科研团队。在重大关键项目上发挥市场经济条件下新型举国体制优势。实施国家技术创新工程，构建产业技术创新联盟，发展市场导向的新型研发机构，推动跨领域跨行业协同创新。

第三节　提升创新基础能力

瞄准国际科技前沿，以国家目标和战略需求为导向，布局一批高水平国家实验室。加快能源、生命、地球系统与环境、材料、粒子物理和核物理、空间和天文、工程技术等科学领域和部分多学科交叉领域国家重大科技基础设施建设，依托现有先进设施组建综合性国家科学中心。依托企业、高校、科研院所建设一批国家技术创新中心，支持企业技术中心建设。推动高校、科研院所开放科研基础设施和创新资源。

第四节　打造区域创新高地

引导创新要素聚集流动，构建跨区域创新网络。充分发挥高校和科研院所密集的中心城市、国家自主创新示范区、国家高新技术产业开发区作用，形成一批带动力强的创新型省份、城市和区域创新中心。系统推进全面创新改革试验。支持北京、上海建设具有全球影响力的科技创新中心。

专栏3　科技创新2030—重大项目
重大科技项目：①航空发动机及燃气轮机；②深海空间站；③量子通信与量子计算机；④脑科学与类脑研究；⑤国家网络空间安全；⑥深空探测及空间飞行器在轨服务与维护系统。
重大工程：①种业自主创新；②煤炭清洁高效利用；③智能电网；④天地一体化信息网络；⑤大数据；⑥智能制造和机器人；⑦重点新材料研发及应用；⑧京津冀环境综合治理；⑨健康保障。

第七章　深入推进大众创业万众创新

把大众创业万众创新融入发展各领域各环节，鼓励各类主体开发新技术、新产品、新业态、新模式，打造发展新引擎。

第一节　建设创业创新公共服务平台

实施“双创”行动计划，鼓励发展面向大众、服务中小微企业的低成本、便利化、开放式服务平台，打造一批“双创”示范基地和城市。加强信息资源整合，向企业开放专利信息资源和科研基地。鼓励大型企业建立技术转移和服务平台，向创业者提供技术支撑服务。完善创业培育服务，打造创业服务与创业投资结合、线上与线下结合的开放式服务载体。更好发挥政府创业投资引导基金作用。

第二节　全面推进众创众包众扶众筹

依托互联网拓宽市场资源、社会需求与创业创新对接通道。推进专业空间、网络平台和企业内部众创，加强创新资源共享。推广研发创意、制造运维、知识内容和生活服务众包，推动大众参与线上生产流通分工。发展公众众扶、分享众扶和互助众扶。完善监管制度，规范发展实物众筹、股权众筹和网络借贷。

第八章　构建激励创新的体制机制

破除束缚创新和成果转化的制度障碍，优化创新政策供给，形成创新活力竞相迸发、创新成果高效转化、创新价值充分体现的体制机制。

第一节　深化科技管理体制改革

尊重科学研究规律，推动政府职能从研发管理向创新服务转变。改革科研经费管理制度，深化中央财政科技计划管理改革，完善计划项目生成机制和实施机制。建立统一的科技管理平台，健全科技报告、创新调查、资源开放共享机制。完善国家科技决策咨询制度，增强企业家在国家创新决策体系中的话语权。市场导向的科技项目主要由企业牵头。扩大高校和科研院所自主权，实行中长期目标导向的考核评价机制，更加注重研究质量、原创价值和实际贡献。赋予创新领军人才更大人财物支配权、技术路线决策权。支持自主探索，包容非共识创新。深化知识产权领域改革，强化知识产权司法保护。

第二节　完善科技成果转化和收益分配机制

实施科技成果转化行动，全面下放创新成果处置权、使用权和收益权，提高科研人员成果转化收益分享比例，支持科研人员兼职和离岗转化科技成果。建立从实验研究、中试到生产的全过程科技创新融资模式，促进科技成果资本化产业化。实行以增加知识价值为导向的分配政策，加强对创新人才的股权、期权、分红激励。

第三节　构建普惠性创新支持政策体系

营造激励创新的市场竞争环境，清理妨碍创新的制度规定和行业标准，加快创新薄弱环节和领域立法，强化产业技术政策和标准的执行监管。增加财政科技投入，重点支持基础前沿、社会公益和共性关键技术研究。落实企业研发费用加计扣除和扩大固定资产加速折旧实施范围政策，强化对创新产品的首购、订购支持，激励企业增加研发投入。强化金融支持，大力发展风险投资。更好发挥企业家作用，包容创新对传统利益格局的挑战，依法保护企业家财产权和创新收益。

第九章　实施人才优先发展战略

把人才作为支撑发展的第一资源，加快推进人才发展体制和政策创新，构建有国际竞争力的人才制度优势，提高人才质量，优化人才结构，加快建设人才强国。

第一节　建设规模宏大的人才队伍

推动人才结构战略性调整，突出“高精尖缺”导向，实施重大人才工程，着力发现、培养、集聚战略科学家、科技领军人才、社科人才、企业家人才和高技能人才队伍。培养一批讲政治、懂专业、善管理、有国际视野的党政人才。善于发现、重点支持、放手使用青年优秀人才。改革院校创新型人才培养模式，引导推动人才培养链与产业链、创新链有机衔接。

第二节　促进人才优化配置

建立健全人才流动机制，提高社会横向和纵向流动性，促进人才在不同性质单位和不同地域间有序自由流动。完善工资、医疗待遇、职称评定、养老保障等激励政策，激励人才向基层一线、中西部、艰苦边远地区流动。开展东部沿海地区与中西部地区、东北等老工业基地人才交流和对口支援，继续实施东部城市对口支持西部地区人才培训工程。

第三节　营造良好的人才发展环境

完善人才评价激励机制和服务保障体系，营造有利于人人皆可成才和青年人才脱颖而出的社会环境。发挥政府投入引导作用，鼓励人才资源开发和人才引进。完善业绩和贡献导向的人才评价标准。保障人才以知识、技能、管理等创新要素参与利益分配，以市场价值回报人才价值，强化对人才的物质和精神激励，鼓励人才弘扬奉献精神。营造崇尚专业的社会氛围，大力弘扬新时期工匠精神。实施更积极、更开放、更有效的人才引进政策，完善外国人永久居留制度，放宽

技术技能型人才取得永久居留权的条件。加快完善高效便捷的海外人才来华工作、出入境、居留管理服务。扩大来华留学规模，优化留学生结构，完善培养支持机制。培养推荐优秀人才到国际组织任职，完善配套政策，畅通回国任职通道。

专栏 4　重大人才工程

（一）创新人才推进计划

在优势科研领域设立一批科学家工作室，重点支持和培养一批中青年科技创新领军人才；建设一批重点领域创新团队；重点扶持一批科技创新创业人才，建设一批创新人才培养示范基地。

（二）青年英才开发计划

在重点学科领域培养扶持一批青年拔尖人才；在高水平研究型大学和科研院所优势基础学科建设一批国家青年英才培养基地，选拔一批拔尖大学生进行培养；每年从应届高中、大学毕业生中筛选优秀人才到国外一流大学深造，进行定向跟踪培养。

（三）企业经营管理人才素质提升工程

培养一批具有世界眼光、战略思维、创新精神的企业家；培养 1 万名精通战略规划、资本运作、质量管理、人力资源管理、财会法律等专业知识的企业经营管理人才。

（四）“千人计划”“万人计划”提升工程

引进能够从事原始创新、突破关键技术、发展高新产业、带动新兴学科的战略科学家和科技领军人才。引进 1 万名左右海外高层次人才回国（来华）创新创业，遴选支持 1 万名左右急需紧缺的国内高层次人才。

（五）专业技术人才知识更新工程

每年培训百万名高层次、急需紧缺和骨干专业技术人才。依托高等学校、科研院所和大型企业现有施教机构，建设一批国家级继续教育基地。

（六）国家高技能人才振兴计划

在全国建成一批技能大师工作室、1200 个高技能人才培训基地，培养 1000 万名高技能人才。

第十章　拓展发展动力新空间

坚持需求引领、供给创新，提高供给质量和效率，激活和释放有效需求，形成消费与投资良性互动、需求升级与供给升级协调共进的高效循环，增强发展新动能。

第一节　促进消费升级

适应消费加快升级，以消费环境改善释放消费潜力，以供给改善和创新更好满足、创造消费需求，不断增强消费拉动经济的基础作用。增强消费能力，改善大众消费预期，挖掘农村消费潜力，着力扩大居民消费。以扩大服务消费为重点带动消费结构升级，支持信息、绿色、时尚、品质等新型消费，稳步促进住房、汽车和健康养老等大宗消费。推动线上线下融合等消费新模式发展。实施消费品质量提升工程，强化消费者权益保护，充分发挥消费者协会作用，营造放心便利的消费环境。积极引导海外消费回流。以重要旅游目的地城市为依托，优化免税店布局，培育发展国际消费中心。

第二节　扩大有效投资

围绕有效需求扩大有效投资，优化供给结构，提高投资效率，发挥投资对稳增长、调结构的关键作用。更好发挥社会投资主力军作用，营造宽松公平的投资经营环境，鼓励民间资本和企业投资，激发民间资本活力和潜能。充分发挥政府投资的杠杆撬动作用，加大对公共产品和公共服务的投资力度，加大人力资本投资，增加有利于供给结构升级、弥补小康短板、城乡区域协调、增强发展后劲的投资，启动实施一批全局性、战略性、基础性重大投资工程。

第三节　培育出口新优势

适应国际市场需求变化，加快转变外贸发展方式，优化贸易结构，发挥出口对增长的促进作用。加快培育以技术、标准、品牌、质量、服务为核心的对外经济新优势，推动高端装备出口，提高出口产品科技含量和附加值。扩大服务出口，健全售后保养维修等服务体系，促进在岸、离岸服务外包协调发展。加大对中小微企业出口支持力度。

第三篇　构建发展新体制

发挥经济体制改革牵引作用，正确处理政府和市场关系，在重点领域和关键环节改革上取得突破性进展，形成有利于引领经济发展新常态的体制机制。

第十一章　坚持和完善基本经济制度

坚持公有制为主体、多种所有制经济共同发展。毫不动摇巩固和发展公有制经济，毫不动摇鼓励、支持、引导非公有制经济发展。依法监管各种所有制经济。

第一节　大力推进国有企业改革

坚定不移把国有企业做强做优做大，培育一批具有自主创新能力和国际竞争力的国有骨干企业，增强国有经济活力、控制力、影响力、抗风险能力，更好服务于国家战略目标。商业类国有企业以增强国有经济活力、放大国有资本功能、实现国有资产保值增值为主要目标，依法独立自主开展生产经营活动，实现优胜劣汰、有序进退。公益类国有企业以保障民生、服务社会、提供公共产品和服务为主要目标，引入市场机制，加强成本控制、产品服务质量、运营效率和保障能力考核。加快国有企业公司制股份制改革，完善现代企业制度、公司法人治理结

构。建立国有企业职业经理人制度，完善差异化薪酬制度和创新激励。加快剥离企业办社会职能和解决历史遗留问题。着力推进农垦改革发展。

第二节　完善各类国有资产管理体制

以管资本为主加强国有资产监管，提高资本回报，防止国有资产流失。改组组建国有资本投资、运营公司，提高国有资本配置和运行效率，形成国有资本流动重组、布局调整的有效平台。健全国有资本合理流动机制，推进国有资本布局战略性调整，引导国有资本更多投向关系国家安全、国民经济命脉的重要行业和关键领域。建立国有资产出资人监管权力清单和责任清单，稳步推进经营性国有资产集中统一监管，建立覆盖全部国有企业、分级管理的国有资本经营预算管理制度。对国有企业国有资本和企业领导人员履行经济责任情况实行审计全覆盖。

第三节　积极稳妥发展混合所有制经济

支持国有资本、集体资本、非公有资本等交叉持股、相互融合。推进公有制经济之间股权多元化改革。稳妥推动国有企业发展混合所有制经济，开展混合所有制改革试点示范。引入非国有资本参与国有企业改革，鼓励发展非公有资本控股的混合所有制企业。鼓励国有资本以多种方式入股非国有企业。

第四节　支持非公有制经济发展

坚持权利平等、机会平等、规则平等，更好激发非公有制经济活力和创造力。废除对非公有制经济各种形式的不合理规定，消除各种隐性壁垒，保证依法平等使用生产要素、公平参与市场竞争、同等受到法律保护、共同履行社会责任。鼓励民营企业依法进入更多领域。

第十二章　建立现代产权制度

健全归属清晰、权责明确、保护严格、流转顺畅的现代产权制度。推进产权保护法治化，依法保护各种所有制经济权益。依法合规界定企业财产权归属，保障国有资本收益权和企业自主经营权，健全规则、过程、结果公开的国有资产产权交易制度。完善农村集体产权权能，全面完成农村承包经营地、宅基地、农房、集体建设用地确权登记颁证。完善集体经济组织成员认定办法和集体经济资产所有权实现形式，将经营性资产折股量化到本集体经济组织成员。规范农村产权流转交易，完善农村集体资产处置决策程序。全面落实不动产统一登记制度。加快构建自然资源资产产权制度，确定产权主体，创新产权实现形式。保护自然资源资产所有者权益，公平分享自然资源资产收益。深化矿业权制度改革。建立健全生态环境性权益交易制度和平台。实施严格的知识产权保护制度，完善有利于激励创新的知识产权归属制度，建设知识产权运营交易和服务平台，建设知识产权强国。

第十三章　健全现代市场体系

加快形成统一开放、竞争有序的市场体系，建立公平竞争保障机制，打破地域分割和行业垄断，着力清除市场壁垒，促进商品和要素自由有序流动、平等交换。

第一节　健全要素市场体系

加快建立城乡统一的建设用地市场，在符合规划、用途管制和依法取得前提下，推进农村集体经营性建设用地与国有建设用地同等入市、同权同价。健全集体土地征收制度，缩小征地范围，规范征收程序，完善被征地农民权益保障机制。开展宅基地融资抵押、适度流转、自愿有偿退出试点。完善工业用地市场化配置制度。统筹人力资源市场，实行平等就业制度。加强各类技术交易平台建设，健全技术市场交易规则，鼓励技术中介服务机构发展。

第二节　推进价格形成机制改革

减少政府对价格形成的干预，全面放开竞争性领域商品和服务价格，放开电力、石油、天然气、交通运输、电信等领域竞争性环节价格。理顺医疗服务价格。完善水价形成机制。完善居民阶梯电价，全面推行居民阶梯水价、气价。健全物价补贴联动机制。建立健全公用事业和公益性服务政府投入与价格调整相协调机制。规范定价程序，加强成本监审，推进成本公开。

第三节　维护公平竞争

清理废除妨碍统一市场和公平竞争的各种规定和做法。健全竞争政策，完善市场竞争规则，实施公平竞争审查制度。放宽市场准入，健全市场退出机制。健全统一规范、权责明确、公正高效、法治保障的市场监管和反垄断执法体系。严格产品质量、安全生产、能源消耗、环境损害的强制性标准，建立健全市场主体行为规则和监管办法。健全社会化监管机制，畅通投诉举报渠道。强化互联网交易监管。严厉打击制假售假行为。

第十四章　深化行政管理体制改革

加快政府职能转变，持续推进简政放权、放管结合、优化服务，提高行政效能，激发市场活力和社会创造力。

第一节　深入推进简政放权

建立健全权力清单、责任清单、负面清单管理模式，划定政府与市场、社会的权责边界。深化行政审批制度改革，最大限度减少政府对企业经营的干预，最大限度缩减政府审批范围。增强简政放权的针对性、协同性。深化商事制度改革，提供便捷便利服务。深化承担行政职能事业单位改革，大力推进政事分开。

第二节　提高政府监管效能

转变监管理念，加强事中事后监管。制定科学有效的市场监管规则、流程和标准，健全监管责任制，推进监管现代化。创新监管机制和监管方式，推进综合执法和大数据监管，运用市场、信用、法治等手段协同监管。全面实行随机抽取检查对象、随机抽取执法人员、检查结果公开。强化社会监督。

第三节　优化政府服务

创新政府服务方式，提供公开透明、高效便捷、公平可及的政务服务和公共服务。加快推进行政审批标准化建设，优化直接面向企业和群众服务项目的办事流程和服务标准。加强部门间业务协同。推广“互联网+政务服务”，全面推进政务公开。

第十五章　加快财税体制改革

围绕解决中央地方事权和支出责任划分、完善地方税体系、增强地方发展能力、减轻企业负担等关键性问题，深化财税体制改革，建立健全现代财税制度。

第一节　确立合理有序的财力格局

建立事权和支出责任相适应的制度，适度加强中央事权和支出责任。结合税制改革，考虑税种属性，进一步理顺中央和地方收入划分，完善增值税划分办法。完善中央对地方转移支付制度，规范一般性转移支付制度，完善资金分配办法，提高财政转移支付透明度。健全省以下财力分配机制。

第二节　建立全面规范公开透明的预算制度

建立健全预算编制、执行、监督相互制约、相互协调机制。完善政府预算体系，加大政府性基金预算、国有资本经营预算与一般公共预算的统筹力度，完善社会保险基金预算编制制度。实施跨年度预算平衡机制和中期财政规划管理，加强与经济社会发展规划计划的衔接。全面推进预算绩效管理。建立政府资产报告制度，深化政府债务管理制度改革，建立规范的政府债务管理及风险预警机制。建立权责发生制政府综合财务报告制度和财政库底目标余额管理制度。扩大预算公开范围，细化公开内容。

第三节　改革和完善税费制度

按照优化税制结构、稳定宏观税负、推进依法治税的要求全面落实税收法定原则，建立税种科学、结构优化、法律健全、规范公平、征管高效的现代税收制度，逐步提高直接税比重。全面完成营业税改增值税改革，建立规范的消费型增值税制度。完善消费税制度。实施资源税从价计征改革，逐步扩大征税范围。清理规范相关行政事业性收费和政府性基金。开征环境保护税。完善地方税体系，推进房地产税立法。完善关税制度。加快推进非税收入管理改革，建立科学规范、依法有据、公开透明的非税收入管理制度。深化国税、地税征管体制改革，完善税收征管方式，提高税收征管效能。推行电子发票。

第四节　完善财政可持续发展机制

优化财政支出结构，修正不可持续的支出政策，调整无效和低效支出，腾退重复和错位支出。建立库款管理与转移支付资金调度挂钩机制。创新财政支出方式，引导社会资本参与公共产品提供，使财政支出保持在合理水平，将财政赤字和政府债务控制在可承受范围内，确保财政的可持续性。

第十六章　加快金融体制改革

完善金融机构和市场体系，促进资本市场健康发展，健全货币政策机制，深化金融监管体制改革，健全现代金融体系，提高金融服务实体经济效率和支持经济转型的能力，有效防范和化解金融风险。

第一节　丰富金融机构体系

健全商业性金融、开发性金融、政策性金融、合作性金融分工合理、相互补充的金融机构体系。构建多层次、广覆盖、有差异的银行机构体系，扩大民间资本进入银行业，发展普惠金融和多业态中小微金融组织。规范发展互联网金融。稳妥推进金融机构开展综合经营。推动民间融资阳光化，规范小额贷款、融资担保机构等发展。提高金融机构管理水平和服务质量。

第二节　健全金融市场体系

积极培育公开透明、健康发展的资本市场，提高直接融资比重，降低杠杆率。创造条件实施股票发行注册制，发展多层次股权融资市场，深化创业板、新三板改革，规范发展区域性股权市场，建立健全转板机制和退出机制。完善债券发行注册制和债券市场基础设施，加快债券市场互联互通。开发符合创新需求的金融服务，稳妥推进债券产品创新，推进高收益债券及股债相结合的融资方式，大力发展融资租赁服务。健全利率、汇率市场决定机制，更好发挥国债收益率曲线定价基准作用。推动同业拆借、回购、票据、外汇、黄金等市场发展。积极稳妥推进期货等衍生品市场创新。加快发展保险再保险市场，探索建立保险资产交易机制。建立安全高效的金融基础设施，实施国家金库工程。

第三节　改革金融监管框架

加强金融宏观审慎管理制度建设，加强统筹协调，改革并完善适应现代金融市场发展的金融监管框架，明确监管职责和风险防范处置责任，构建货币政策与

审慎管理相协调的金融管理体制。统筹监管系统重要性金融机构、金融控股公司和重要金融基础设施，统筹金融业综合统计，强化综合监管和功能监管。完善中央与地方金融管理体制。健全符合我国国情和国际标准的监管规则，建立针对各类投融资行为的功能监管和切实保护金融消费者合法权益的行为监管框架，实现金融风险监管全覆盖。完善国有金融资本管理制度。加强外汇储备经营管理，优化外汇储备运用。有效运用和发展金融风险管理工具，健全监测预警、压力测试、评估处置和市场稳定机制，防止发生系统性、区域性金融风险。

专栏5　现代金融体系建设

（一）金融要素供给侧结构性改革

建设满足实体经济投融资需要的多层次、多元化、互补型金融市场。促进金融机构混合所有制改革，完善法人治理。支持科技金融、绿色金融、地区性中小金融、普惠型农村金融和特惠型扶贫金融发展。

（二）完善金融调控机制

完善利率市场化，创新货币政策调控工具。强化信贷政策定向结构性调整功能。增强人民币汇率弹性，完善参考一篮子货币的人民币指数。建立中央银行前瞻性指引机制。疏通本外币政策传导渠道。

（三）实施金融稳健对外开放

构建政策性金融、开发性金融跨境交易平台。建立国家金融安全审查和反金融制裁机制，完善反洗钱、反恐怖融资系统。

（四）建立金融宏观审慎管理框架

创设防范系统性金融风险的逆周期政策工具。建立覆盖所有金融机构、金融控股公司、金融基础设施、各类投融资行为、互联网金融和跨境金融交易的综合统计、风险监测与管理体系、应急响应与危机救助机制。构建大数据征信体系和多层次支付体系。

（五）加强金融法治建设

健全金融消费者权益保护制度。打破隐性担保和刚性兑付，依法处置信用违约。发挥存款保险制度作用，完善问题金融机构市场化处置和退出机制。探索建立集体诉讼制度，强化金融犯罪处罚，严厉打击非法集资。

第十七章　创新和完善宏观调控

健全宏观调控体系，创新宏观调控方式，增强宏观政策协同性，更加注重扩大就业、稳定物价、调整结构、提高效益、防控风险、保护环境，更加注重引导市场行为和社会预期，为结构性改革营造稳定的宏观经济环境。

第一节　强化规划战略导向作用

依据国家中长期发展规划目标和总供求格局实施宏观调控。发挥国家发展战略和规划的引导约束作用，各类宏观调控政策要服从服务于发展全局需要。完善以财政政策、货币政策为主，产业政策、区域政策、投资政策、消费政策、价格政策协调配合的政策体系，增强财政货币政策协调性。

第二节　改进调控方式和丰富政策工具

坚持总量平衡、优化结构，把保持经济运行在合理区间、提高质量效益作为宏观调控的基本要求和政策取向，在区间调控的基础上加强定向调控、相机调控，采取精准调控措施，适时预调微调。稳定政策基调，改善与市场的沟通，增强可预期性和透明度。更好发挥财政政策对定向调控的支持作用。完善货币政策操作目标、调控框架和传导机制，构建目标利率和利率走廊机制，推动货币政策由数量型为主向价格型为主转变。

第三节　完善政策制定和决策机制

加强经济监测预测预警，提高国际国内形势分析研判水平。强化重大问题研究和政策储备，完善政策分析评估及调整机制。建立健全重大调控政策统筹协调机制，有效形成调控合力。建立现代统计调查体系，推进统计调查制度、机制、

方法创新，注重运用互联网、统计云、大数据技术，提高经济运行信息及时性、全面性和准确性。加快推进宏观调控立法工作。

第四节　深化投融资体制改革

建立企业投资项目管理权力清单、责任清单制度，更好落实企业投资自主权。进一步精简投资审批，减少、整合和规范报建审批事项，完善在线审批监管平台，建立企业投资项目并联核准制度。进一步放宽基础设施、公用事业等领域的市场准入限制，采取特许经营、政府购买服务等政府和社会合作模式，鼓励社会资本参与投资建设运营。完善财政资金投资模式，更好发挥产业投资引导基金撬动作用。

第四篇　推进农业现代化

农业是全面建成小康社会和实现现代化的基础，必须加快转变农业发展方式，着力构建现代农业产业体系、生产体系、经营体系，提高农业质量效益和竞争力，走产出高效、产品安全、资源节约、环境友好的农业现代化道路。

第十八章　增强农产品安全保障能力

确保谷物基本自给、口粮绝对安全，调整优化农业结构，提高农产品综合生产能力和质量安全水平，形成结构更加合理、保障更加有力的农产品有效供给。

第一节　提高粮食生产能力保障水平

坚持最严格的耕地保护制度，全面划定永久基本农田。实施藏粮于地、藏粮于技战略，以粮食等大宗农产品主产区为重点，大规模推进农田水利、土地整治、中低产田改造和高标准农田建设。完善耕地占补平衡制度，研究探索重大建

设项目国家统筹补充耕地办法，全面推进建设占用耕地耕作层剥离再利用。建立粮食生产功能区和重要农产品生产保护区，确保稻谷、小麦等口粮种植面积基本稳定。健全粮食主产区利益补偿机制。深入推进粮食绿色高产高效创建。

第二节　加快推进农业结构调整

推动粮经饲统筹、农林牧渔结合、种养加一体发展。积极引导调整农业种植结构，支持优势产区加强棉花、油料、糖料、大豆、林果等生产基地建设。统筹考虑种养规模和资源环境承载力，推广粮改饲和种养结合模式，发展农区畜牧业。分区域推进现代草业和草食畜牧业发展。提高畜禽、水产标准化规模化养殖水平。促进奶业优质安全发展。实施园艺产品提质增效工程。发展特色经济林和林下经济。优化特色农产品生产布局。加快现代农业示范区建设。

第三节　推进农村一二三产业融合发展

推进农业产业链和价值链建设，建立多形式利益联结机制，培育融合主体、创新融合方式，拓宽农民增收渠道，更多分享增值收益。积极发展农产品加工业和农业生产性服务业。拓展农业多种功能，推进农业与旅游休闲、教育文化、健康养生等深度融合，发展观光农业、体验农业、创意农业等新业态。加快发展都市现代农业。激活农村要素资源，增加农民财产性收入。

第四节　确保农产品质量安全

加快完善农业标准，全面推行农业标准化生产。加强农产品质量安全和农业投入品监管，强化产地安全管理，实行产地准出和市场准入制度，建立全程可追溯、互联共享的农产品质量安全信息平台，健全从农田到餐桌的农产品质量安全全过程监管体系。强化农药和兽药残留超标治理。严格食用农产品添加剂控制标

准。开展国家农产品质量安全县创建行动。加强动植物疫病防控能力建设，强化进口农产品质量安全监管。创建优质农产品品牌，支持品牌化营销。

第五节　促进农业可持续发展

大力发展生态友好型农业。实施化肥农药使用量零增长行动，全面推广测土配方施肥、农药精准高效施用。实施种养结合循环农业示范工程，推动种养业废弃物资源化利用、无害化处理。开展农业面源污染综合防治。开展耕地质量保护与提升行动，推进农产品主产区深耕深松整地，加强东北黑土地保护。重点在地下水漏斗区、重金属污染区、生态严重退化地区，探索实行耕地轮作休耕制度试点。在重点灌区全面开展规模化高效节水灌溉行动。推广旱作农业。在南疆叶尔羌河、和田河等流域，以及甘肃河西走廊、吉林白城等严重缺水区域，实施专项节水行动计划。加强气象为农服务体系建设。创建农业可持续发展试验示范区。

第六节　开展农业国际合作

健全农产品贸易调控机制，优化进口来源地布局，在确保供给安全条件下，扩大优势农产品出口，适度增加国内紧缺农产品进口。积极开展境外农业合作开发，建立规模化海外生产加工储运基地，培育有国际竞争力的农业跨国公司。拓展农业国际合作领域，支持开展多双边农业技术合作。

第十九章　构建现代农业经营体系

以发展多种形式适度规模经营为引领，创新农业经营组织方式，构建以农户家庭经营为基础、合作与联合为纽带、社会化服务为支撑的现代农业经营体系，提高农业综合效益。

第一节　发展适度规模经营

稳定农村土地承包关系，完善土地所有权、承包权、经营权分置办法，依法推进土地经营权有序流转，通过代耕代种、联耕联种、土地托管、股份合作等方式，推动实现多种形式的农业适度规模经营。

第二节　培育新型农业经营主体

健全有利于新型农业经营主体成长的政策体系，扶持发展种养大户和家庭农场，引导和促进农民合作社规范发展，培育壮大农业产业化龙头企业，大力培养新型职业农民，打造高素质现代农业生产经营者队伍。鼓励和支持工商资本投资现代农业，促进农商联盟等新型经营模式发展。

第三节　健全农业社会化服务体系

实施农业社会化服务支撑工程，培育壮大经营性服务组织。支持科研机构、行业协会、龙头企业和具有资质的经营性服务组织从事农业公益性服务，支持多种类型的新型农业服务主体开展专业化、规模化服务。推进农业生产全程社会化服务创新试点，积极推广合作式、托管式、订单式等服务形式。加强农产品流通设施和市场建设，完善农村配送和综合服务网络，鼓励发展农村电商，实施特色农产品产区预冷工程和“快递下乡”工程。深化供销合作社综合改革。创新农业社会化服务机制。

第二十章　提高农业技术装备和信息化水平

健全现代农业科技创新推广体系，加快推进农业机械化，加强农业与信息技术融合，发展智慧农业，提高农业生产力水平。

第一节　提升农业技术装备水平

加强农业科技自主创新，加快生物育种、农机装备、绿色增产等技术攻关，推广高产优质适宜机械化品种和区域性标准化高产高效栽培模式，改善农业重点实验室创新条件。发展现代种业，开展良种重大科技攻关，实施新一轮品种更新换代行动计划，建设国家级育制种基地，培育壮大育繁推一体化的种业龙头企业。推进主要作物生产全程机械化，促进农机农艺融合。健全和激活基层农业技术推广网络。

第二节　推进农业信息化建设

推动信息技术与农业生产管理、经营管理、市场流通、资源环境等融合。实施农业物联网区域试验工程，推进农业物联网应用，提高农业智能化和精准化水平。推进农业大数据应用，增强农业综合信息服务能力。鼓励互联网企业建立产销衔接的农业服务平台，加快发展涉农电子商务。

第二十一章　完善农业支持保护制度

以保障主要农产品供给、促进农民增收、实现农业可持续发展为重点，完善强农惠农富农政策，提高农业支持保护效能。

第一节　持续增加农业投入

建立农业农村投入稳定增长机制。优化财政支农支出结构，创新涉农资金投入方式和运行机制，推进整合统筹，提高农业补贴政策效能。逐步扩大“绿箱”补贴规模和范围，调整改进“黄箱”政策。将农业“三项补贴”合并为农业支持保护补贴，完善农机具购置补贴政策，向种粮农民、新型经营主体、主产区倾斜。建立耕地保护补偿制度。

第二节　完善农产品价格和收储制度

坚持市场化改革取向和保护农民利益并重，完善农产品市场调控制度和市场体系。继续实施并完善稻谷、小麦最低收购价政策。深化棉花、大豆目标价格改革。探索开展农产品目标价格保险试点。积极稳妥推进玉米价格形成机制和收储制度改革，建立玉米生产者补贴制度。实施粮食收储供应安全保障工程，科学确定粮食等重要农产品储备规模，改革完善粮食储备管理体制和吞吐调节机制，引导流通、加工企业等多元化市场主体参与农产品收储。推进智慧粮库建设和节粮减损。

第三节　创新农村金融服务

发挥各类金融机构支农作用，发展农村普惠金融。完善开发性金融、政策性金融支持农业发展和农村基础设施建设的制度。推进农村信用社改革，增强省级联社服务功能。积极发展村镇银行等多形式农村金融机构。稳妥开展农民合作社内部资金互助试点。建立健全农业政策性信贷担保体系。完善农业保险制度，稳步扩大“保险+期货”试点，扩大保险覆盖面，提高保障水平，完善农业保险大灾风险分散机制。

专栏 6　农业现代化重大工程

（一）高标准农田建设

以粮食主产区为重点，优先建设确保口粮安全的高标准农田，开展农田灌排设施、机耕道路、农田林网、输配电设施和土壤改良等田间工程建设，确保建成高标准农田 8 亿亩、力争 10 亿亩。实施耕地质量等级评定与监测工程。

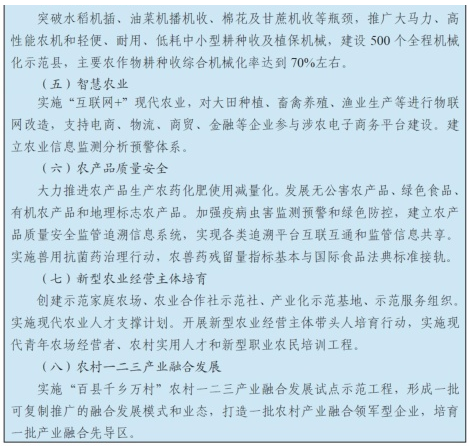
（二）现代种业

建设国家种质资源收集保存和研究体系。重点加强杂种优势利用、分子设计育种、细胞工程与染色体工程、高效制繁种、种子精深加工等关键技术研发。加强种子质量检测等能力建设。建设海南、甘肃、四川等国家级育制种基地和 100 个区域性良种繁育基地。

（三）节水农业

推广节水灌溉技术，推进工程节水、品种节水、农艺节水、管理节水。加快实施东北节水增粮、西北节水增效、华北节水压采、南方节水减排等区域规模化高效节水灌溉工程。新增高效节水灌溉面积 1 亿亩，农田灌溉水有效利用系数提高到 0.55 以上。

（四）农业机械化



突破水稻机插、油菜机播机收、棉花及甘蔗机收等瓶颈，推广大马力、高性能农机和轻便、耐用、低耗中小型耕种收及植保机械，建设500个全程机械化示范县，主要农作物耕种收综合机械化率达到70%左右。

（五）智慧农业

实施“互联网+”现代农业，对大田种植、畜禽养殖、渔业生产等进行物联网改造，支持电商、物流、商贸、金融等企业参与涉农电子商务平台建设。建立农业信息监测分析预警体系。

（六）农产品质量安全

大力推进农产品生产农药化肥使用减量化。发展无公害农产品、绿色食品、有机农产品和地理标志农产品。加强疫病虫害监测预警和绿色防控，建立农产品质量安全监管追溯信息系统，实现各类追溯平台互联互通和监管信息共享。实施兽用抗菌药治理行动，农兽药残留量指标基本与国际食品法典标准接轨。

（七）新型农业经营主体培育

创建示范家庭农场、农业合作社示范社、产业化示范基地、示范服务组织。实施现代农业人才支撑计划。开展新型农业经营主体带头人培育行动，实施现代青年农场经营者、农村实用人才和新型职业农民培训工程。

（八）农村一二三产业融合发展

实施“百县千乡万村”农村一二三产业融合发展试点示范工程，形成一批可复制推广的融合发展模式和业态，打造一批农村产业融合领军型企业，培育一批产业融合先导区。

第五篇　优化现代产业体系

围绕结构深度调整、振兴实体经济，推进供给侧结构性改革，培育壮大新兴产业，改造提升传统产业，加快构建创新能力强、品质服务优、协作紧密、环境友好的现代产业新体系。

第二十二章　实施制造强国战略

深入实施《中国制造2025》，以提高制造业创新能力和基础能力为重点，推进信息技术与制造技术深度融合，促进制造业朝高端、智能、绿色、服务方向发展，培育制造业竞争新优势。

第一节　全面提升工业基础能力

实施工业强基工程，重点突破关键基础材料、核心基础零部件（元器件）、先进基础工艺、产业技术基础等“四基”瓶颈。引导整机企业与“四基”企业、高校、科研院所产需对接。支持全产业链协同创新和联合攻关，系统解决“四基”工程化和产业化关键问题。强化基础领域标准、计量、认证认可、检验检测体系建设。实施制造业创新中心建设工程，支持工业设计中心建设。设立国家工业设计研究院。

第二节　加快发展新型制造业

实施高端装备创新发展工程，明显提升自主设计水平和系统集成能力。实施智能制造工程，加快发展智能制造关键技术装备，强化智能制造标准、工业电子设备、核心支撑软件等基础。加强工业互联网设施建设、技术验证和示范推广，推动“中国制造+互联网”取得实质性突破。培育推广新型智能制造模式，推动生产方式向柔性、智能、精细化转变。鼓励建立智能制造产业联盟。实施绿色制造工程，推进产品全生命周期绿色管理，构建绿色制造体系。推动制造业由生产型向生产服务型转变，引导制造企业延伸服务链条、促进服务增值。推进制造业集聚区改造提升，建设一批新型工业化产业示范基地，培育若干先进制造业中心。

第三节　推动传统产业改造升级

实施制造业重大技术改造升级工程，完善政策体系，支持企业瞄准国际同行业标杆全面提高产品技术、工艺装备、能效环保等水平，实现重点领域向中高端的群体性突破。开展改善消费品供给专项行动。鼓励企业并购，形成以大企业集团为核心，集中度高、分工细化、协作高效的产业组织形态。支持专业化中小企业发展。

第四节　加强质量品牌建设

实施质量强国战略，全面强化企业质量管理，开展质量品牌提升行动，解决一批影响产品质量提升的关键共性技术问题，加强商标品牌法律保护，打造一批有竞争力的知名品牌。建立企业产品和服务标准自我声明公开和监督制度，支持企业提高质量在线检测控制和产品全生命周期质量追溯能力。完善质量监管体系，加强国家级检测与评定中心、检验检测认证公共服务平台建设。建立商品质量惩罚性赔偿制度。

第五节　积极稳妥化解产能过剩

综合运用市场机制、经济手段、法治办法和必要的行政手段，加大政策引导力度，实现市场出清。建立以工艺、技术、能耗、环保、质量、安全等为约束条件的推进机制，强化行业规范和准入管理，坚决淘汰落后产能。设立工业企业结构调整专项奖补资金，通过兼并重组、债务重组、破产清算、盘活资产，加快钢铁、煤炭等行业过剩产能退出，分类有序、积极稳妥处置退出企业，妥善做好人员安置等工作。

第六节　降低实体经济企业成本

开展降低实体经济企业成本行动。进一步简政放权，精简规范行政审批前置中介服务，清理规范中介服务收费，降低制度性交易成本。合理确定最低工资标准，精简归并“五险一金”，适当降低缴费比例，降低企业人工成本。降低增值税税负和流转税比重，清理规范涉企基金，清理不合理涉企收费，降低企业税费负担。保持合理流动性和利率水平，创新符合企业需要的直接融资产品，设立国家融资担保基金，降低企业财务成本。完善国际国内能源价格联动和煤电价格联动机制，降低企业能源成本。提高物流组织管理水平，规范公路收费行为，降低企业物流成本。鼓励和引导企业创新管理、改进工艺、节能节材。

专栏 7　高端装备创新发展工程

（一）航空航天装备

突破航空发动机和燃气轮机核心技术，加快大型飞机研制，推进干支线飞机、直升机、通用飞机和无人机产业化。开发先进机载设备及系统，提高民用飞机配套能力。发展新一代和重型运载火箭、新型卫星等空间平台与有效载荷，实现宇航关键元器件核心技术突破应用。

（二）海洋工程装备及高技术船舶

发展深海探测、大洋钻探、海底资源开发利用、海上作业保障等装备和系统。推动深海空间站、大型浮式结构物开发和工程化。重点突破邮轮等高技术船舶及重点配套设备集成化，智能化、模块化设计制造核心技术。

（三）先进轨道交通装备

研制先进可靠的轨道交通产品和轻量化、模块化、谱系化产品。研发新一代高速、重载轨道交通装备系统，增强向用户提供系统全寿命周期整体解决方案的能力。建设高速列车国家技术创新中心。

（四）高档数控机床

研制精密、高速、柔性数控机床与基础制造装备及集成制造系统。以提升可靠性、精度保持性为重点，开发高档数控系统、轴承、光栅、传感器等主要功能部件及关键应用软件。

（五）机器人装备

大力发展工业机器人、服务机器人、手术机器人和军用机器人，推动高精密减速器、高速高性能控制器、高性能伺服电机及驱动器等关键零部件自主化，推动人工智能技术在各领域商用。

（六）现代农机装备

开发适应各种耕作条件的先进农机产品，重点发展大马力拖拉机及复式作业机具、大型高效谷物联合收获机、精密播种机等粮食作物装备，棉花、甘蔗等经济作物播种、田间管理和收获机械。

（七）高性能医疗器械

重点研制核医学影像设备、超导磁共振成像系统、无创呼吸机等诊疗设备及全自动生化分析仪、高通量基因测序仪等体外诊断设备。开发应用医用加速器等治疗设备及心脏瓣膜和起搏器、介入支架、人工关节等植介入产品。开发应用具有中医药特色优势的医疗器械。

（八）先进化工成套装备

依托现代煤化工升级示范工程，聚焦煤炭分级、煤炭气化、净化合成、能量利用和废水处理等关键领域，推动成套技术装备自主化。加快研制炼油化工一体化及下游石化产品深加工关键设备，提高装置配套能力。

第二十三章　支持战略性新兴产业发展

瞄准技术前沿，把握产业变革方向，围绕重点领域，优化政策组合，拓展新兴产业增长空间，抢占未来竞争制高点，使战略性新兴产业增加值占国内生产总值比重达到15%。

第一节　提升新兴产业支撑作用

支持新一代信息技术、新能源汽车、生物技术、绿色低碳、高端装备与材料、数字创意等领域的产业发展壮大。大力推进先进半导体、机器人、增材制造、智能系统、新一代航空装备、空间技术综合服务系统、智能交通、精准医疗、高效储能与分布式能源系统、智能材料、高效节能环保、虚拟现实与互动影视等新兴前沿领域创新和产业化，形成一批新增长点。

第二节　培育发展战略性产业

加强前瞻布局，在空天海洋、信息网络、生命科学、核技术等领域，培育一批战略性产业。大力发展新型飞行器及航行器、新一代作业平台和空天一体化观测系统，着力构建量子通信和泛在安全物联网，加快发展合成生物和再生医学技术，加速开发新一代核电装备和小型核动力系统、民用核分析与成像，打造未来发展新优势。

第三节　构建新兴产业发展新格局

支持产业创新中心、新技术推广应用中心建设，支持创新资源密集度高的城市发展成为新兴产业创新发展策源地。推动新兴产业链创新链快速发展，加速形成特色新兴产业集群。实施新兴产业全球创新发展网络计划，鼓励企业全球配置创新资源，支持建立一批海外研发中心。

第四节　完善新兴产业发展环境

发挥产业政策导向和促进竞争功能，构建有利于新技术、新产品、新业态、新模式发展的准入条件、监管规则和标准体系。鼓励民生和基础设施重大工程采用创新产品和服务。设立国家战略性产业发展基金，充分发挥新兴产业创业投资引导基金作用，重点支持新兴产业领域初创期创新型企业。

专栏 8　战略性新兴产业发展行动

（一）新一代信息技术产业创新

培育集成电路产业体系，培育人工智能、智能硬件、新型显示、移动智能终端、第五代移动通信（5G）、先进传感器和可穿戴设备等成为新增长点。

（二）生物产业倍增

加速推动基因组学等生物技术大规模应用，建设网络化应用示范体系，推进个性化医疗、新型药物、生物育种等新一代生物技术产品和服务的规模化发展。推进基因库、细胞库等基础平台建设。

（三）空间信息智能感知

加快构建以多模遥感、宽带移动通信、全球北斗导航卫星为核心的国家民用空间基础设施，形成服务于全球通信、减灾防灾、资源调查监管、城市管理、气象与环境监测、位置服务等领域系统性技术支撑和产业化应用能力。加速北斗、遥感卫星商业化应用。

（四）储能与分布式能源

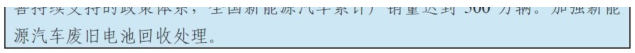
实现新一代光伏、大功率高效风电、生物质能、氢能与燃料电池、智能电网、新型储能装置等核心关键技术突破和产业化，发展分布式新能源技术综合应用体，促进相关技术装备规模化发展。

（五）高端材料

大力发展形状记忆合金、自修复材料等智能材料，石墨烯、超材料等纳米功能材料，磷化铟、碳化硅等下一代半导体材料，高性能碳纤维、钒钛、高温合金等新型结构材料，可降解材料和生物合成新材料等。

（六）新能源汽车

实施新能源汽车推广计划，鼓励城市公交和出租汽车使用新能源汽车。大力发展纯电动汽车和插电式混合动力汽车，重点突破动力电池能量密度、高低温适应性等关键技术，建设标准统一、兼容互通的充电基础设施服务网络，完善持续支持的政策体系。全国新能源汽车累计产销量达到 500 万辆，加强新能



第二十四章　加快推动服务业优质高效发展

开展加快发展现代服务业行动，扩大服务业对外开放，优化服务业发展环境，推动生产性服务业向专业化和价值链高端延伸、生活性服务业向精细和高品质转变。

第一节　促进生产性服务业专业化

以产业升级和提高效率为导向，发展工业设计和创意、工程咨询、商务咨询、法律会计、现代保险、信用评级、售后服务、检验检测认证、人力资源服务等产业。深化流通体制改革，促进流通信息化、标准化、集约化，推动传统商业加速向现代流通转型升级。加强物流基础设施建设，大力发展第三方物流和绿色物流、冷链物流、城乡配送。实施高技术服务业创新工程。引导生产企业加快服务环节专业化分离和外包。建立与国际接轨的生产性服务业标准体系，提高国际化水平。

第二节　提高生活性服务业品质

加快教育培训、健康养老、文化娱乐、体育健身等领域发展。大力发展旅游业，深入实施旅游业提质增效工程，加快海南国际旅游岛建设，支持发展生态旅游、文化旅游、休闲旅游、山地旅游等。积极发展家庭服务业，促进专业化、规模化和网络化发展。推动生活性服务业融合发展，鼓励发展针对个性化需求的定制服务。支持从业人员参加职业培训和技能鉴定考核，推进从业者职业化、专业化。实施生活性服务业放心行动计划，推广优质服务承诺标识与管理制度，培育知名服务品牌。

第三节　完善服务业发展体制和政策

面向社会资本扩大市场准入，加快开放电力、民航、铁路、石油、天然气、邮政、市政公用等行业的竞争性业务，扩大金融、教育、医疗、文化、互联网、商贸物流等领域开放，开展服务业扩大开放综合试点。清理各类歧视性规定，完善各类社会资本公平参与医疗、教育、托幼、养老、体育等领域发展的政策。扩大政府购买服务范围，推动竞争性购买第三方服务。

第六篇　拓展网络经济空间

牢牢把握信息技术变革趋势，实施网络强国战略，加快建设数字中国，推动信息技术与经济社会发展深度融合，加快推动信息经济发展壮大。

第二十五章　构建泛在高效的信息网络

加快构建高速、移动、安全、泛在的新一代信息基础设施，推进信息网络技术广泛运用，形成万物互联、人机交互、天地一体的网络空间。

第一节　完善新一代高速光纤网络

构建现代化通信骨干网络，提升高速传送、灵活调度和智能适配能力。推进宽带接入光纤化进程，城镇地区实现光网覆盖，提供1000兆比特每秒以上接入服务能力，大中城市家庭用户带宽实现100兆比特以上灵活选择；98%的行政村实现光纤通达，有条件地区提供100兆比特每秒以上接入服务能力，半数以上农村家庭用户带宽实现50兆比特以上灵活选择。建立畅通的国际通信设施，优化国际通信网络布局，完善跨境陆海缆基础设施。建设中国－阿拉伯国家等网上丝绸之路，加快建设中国－东盟信息港。

第二节　构建先进泛在的无线宽带网

深入普及高速无线宽带。加快第四代移动通信（4G）网络建设，实现乡镇及人口密集的行政村全面深度覆盖，在城镇热点公共区域推广免费高速无线局域网（WLAN）接入。加快边远山区、牧区及岛礁等网络覆盖。优化国家频谱资源配置，加强无线电频谱管理，维护安全有序的电波秩序。合理规划利用卫星频率和轨道资源。加快空间互联网部署，实现空间与地面设施互联互通。

第三节　加快信息网络新技术开发应用

积极推进第五代移动通信（5G）和超宽带关键技术研究，启动5G商用。超前布局下一代互联网，全面向互联网协议第6版（IPv6）演进升级。布局未来网络架构、技术体系和安全保障体系。重点突破大数据和云计算关键技术、自主可控操作系统、高端工业和大型管理软件、新兴领域人工智能技术。

第四节　推进宽带网络提速降费

开放民间资本进入基础电信领域竞争性业务，形成基础设施共建共享、业务服务相互竞争的市场格局。深入推进“三网融合”。强化普遍服务责任，完善普遍服务机制。开展网络提速降费行动，简化电信资费结构，提高电信业务性价比。完善优化互联网架构及接入技术、计费标准。加强网络资费行为监管。

第二十六章　发展现代互联网产业体系

实施“互联网+”行动计划，促进互联网深度广泛应用，带动生产模式和组织方式变革，形成网络化、智能化、服务化、协同化的产业发展新形态。

第一节　夯实互联网应用基础

积极推进云计算和物联网发展。鼓励互联网骨干企业开放平台资源，加强行业云服务平台建设，支持行业信息系统向云平台迁移。推进物联网感知设施规划布局，发展物联网开环应用。推进信息物理系统关键技术研发和应用。建立“互联网+”标准体系，加快互联网及其融合应用的基础共性标准和关键技术标准研制推广，增强国际标准制定中的话语权。

第二节　加快多领域互联网融合发展

组织实施“互联网+”重大工程，加快推进基于互联网的商业模式、服务模式、管理模式及供应链、物流链等各类创新，培育“互联网+”生态体系，形成网络化协同分工新格局。引导大型互联网企业向小微企业和创业团队开放创新资源，鼓励建立基于互联网的开放式创新联盟。促进“互联网+”新业态创新，鼓励搭建资源开放共享平台，探索建立国家信息经济试点示范区，积极发展分享经济。推动互联网医疗、互联网教育、线上线下结合等新兴业态快速发展。放宽融合性产品和服务的市场准入限制。

第二十七章　实施国家大数据战略

把大数据作为基础性战略资源，全面实施促进大数据发展行动，加快推动数据资源共享开放和开发应用，助力产业转型升级和社会治理创新。

第一节　加快政府数据开放共享

全面推进重点领域大数据高效采集、有效整合，深化政府数据和社会数据关联分析、融合利用，提高宏观调控、市场监管、社会治理和公共服务精准性和有效性。依托政府数据统一共享交换平台，加快推进跨部门数据资源共享共用。加快建设国家政府数据统一开放平台，推动政府信息系统和公共数据互联开放共享。制定政府数据共享开放目录，依法推进数据资源向社会开放。统筹布局建设

国家大数据平台、数据中心等基础设施。研究制定数据开放、保护等法律法规，制定政府信息资源管理办法。

第二节　促进大数据产业健康发展

深化大数据在各行业的创新应用，探索与传统产业协同发展新业态新模式，加快完善大数据产业链。加快海量数据采集、存储、清洗、分析发掘、可视化、安全与隐私保护等领域关键技术攻关。促进大数据软硬件产品发展。完善大数据产业公共服务支撑体系和生态体系，加强标准体系和质量技术基础建设。

第二十八章　强化信息安全保障

统筹网络安全和信息化发展，完善国家网络安全保障体系，强化重要信息系统和数据资源保护，提高网络治理能力，保障国家信息安全。

第一节　加强数据资源安全保护

建立大数据安全管理制度，实行数据资源分类分级管理，保障安全高效可信应用。实施大数据安全保障工程，加强数据资源在采集、存储、应用和开放等环节的安全保护，加强各类公共数据资源在公开共享等环节的安全评估与保护，建立互联网企业数据资源资产化和利用授信机制。加强个人数据保护，严厉打击非法泄露和出卖个人数据行为。

第二节　科学实施网络空间治理

完善网络空间治理，营造安全文明的网络环境。建立网络空间治理基础保障体系，完善网络安全法律法规，完善网络信息有效登记和网络实名认证。建立网络安全审查制度和标准体系，加强精细化网络空间管理，清理违法和不良信息，

依法惩治网络违法犯罪行为。健全网络与信息突发安全事件应急机制。推动建立多边、民主、透明的国际互联网治理体系，积极参与国际网络空间安全规则制定、打击网络犯罪、网络安全技术和标准等领域的国际合作。

第三节　全面保障重要信息系统安全

建立关键信息基础设施保护制度，完善涉及国家安全重要信息系统的设计、建设和运行监督机制。集中力量突破信息管理、信息保护、安全审查和基础支撑关键技术，提高自主保障能力。加强关键信息基础设施核心技术装备威胁感知和持续防御能力建设。完善重要信息系统等级保护制度。健全重点行业、重点地区、重要信息系统条块融合的联动安全保障机制。积极发展信息安全产业。

专栏 9　信息化重大工程

（一）宽带中国

建设高速大容量光通信传输系统，实施宽带乡村和中西部地区中小城市基础网络完善工程，扩容互联网国际出入口带宽。部署第四代移动通信（4G）及后续演进技术，在有需求的区域实现全面深度覆盖。

（二）物联网应用推广

建设物联网应用基础设施和服务平台，推进物联网重大应用示范工程建设。广泛开展物联网技术集成应用和模式创新，丰富物联网应用服务。

（三）云计算创新发展

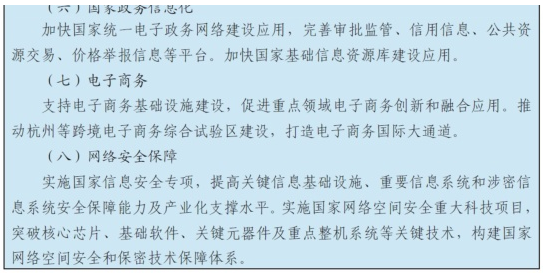
支持公共云服务平台建设，布局云计算和大数据中心，提升云计算解决方案提供能力。推动制造、金融、民生、物流、医疗等重点行业云应用服务，不断完善云计算生态体系。

（四）“互联网+”行动

推动“互联网+”创业创新、协同制造、智慧能源、普惠金融、益民服务、高效物流、电子商务、便捷交通、绿色生态、人工智能以及电子税务、便民司法、教育培训、科普、地理信息、信用、文化旅游等行动，不断拓展融合领域。

（五）大数据应用

建设统一开放平台，逐步实现公共数据集开放，鼓励企业和公众发掘利用。推动政府治理、公共服务、产业发展、技术研发等领域大数据创新应用。推进贵州等大数据综合试验区建设。


（六）国家政务信息化

加快国家统一电子政务网络建设应用，完善审批监管、信用信息、公共资源交易、价格举报信息等平台。加快国家基础信息资源库建设应用。

（七）电子商务

支持电子商务基础设施建设，促进重点领域电子商务创新和融合应用。推动杭州等跨境电子商务综合试验区建设，打造电子商务国际大通道。

（八）网络安全保障

实施国家信息安全专项，提高关键信息基础设施、重要信息系统和涉密信息系统安全保障能力及产业化支撑水平。实施国家网络空间安全重大科技项目，突破核心芯片、基础软件、关键元器件及重点整机系统等关键技术，构建国家网络空间安全和保密技术保障体系。

第七篇　构筑现代基础设施网络

拓展基础设施建设空间，加快完善安全高效、智能绿色、互联互通的现代基础设施网络，更好发挥对经济社会发展的支撑引领作用。

第二十九章　完善现代综合交通运输体系

坚持网络化布局、智能化管理、一体化服务、绿色化发展，建设国内国际通道联通、区域城乡覆盖广泛、枢纽节点功能完善、运输服务一体高效的综合交通运输体系。

第一节　构建内通外联的运输通道网络

构建横贯东西、纵贯南北、内畅外通的综合运输大通道，加强进出疆、出入藏通道建设，构建西北、西南、东北对外交通走廊和海上丝绸之路走廊。打造高品质的快速网络，加快推进高速铁路成网，完善国家高速公路网络，适度建设地方高速公路，增强枢纽机场和干支线机场功能。完善广覆盖的基础网络，加快中西部铁路建设，推进普通国省道提质改造和瓶颈路段建设，提升沿海和内河水运

设施专业化水平，加强农村公路、通用机场建设，推进油气管道区域互联。提升邮政网络服务水平，加强快递基础设施建设。

第二节　建设现代高效的城际城市交通

在城镇化地区大力发展城际铁路、市域（郊）铁路，鼓励利用既有铁路开行城际列车，形成多层次轨道交通骨干网络，高效衔接大中小城市和城镇。实行公共交通优先，加快发展城市轨道交通、快速公交等大容量公共交通，鼓励绿色出行。促进网络预约等定制交通发展。强化中心城区与对外干线公路快速联系，畅通城市内外交通。加强城市停车设施建设。加强邮政、快递网络终端建设。

第三节　打造一体衔接的综合交通枢纽

优化枢纽空间布局，建设北京、上海、广州等国际性综合交通枢纽，提升全国性、区域性和地区性综合交通枢纽水平，加强中西部重要枢纽建设，推进沿边重要口岸枢纽建设，提升枢纽内外辐射能力。完善枢纽综合服务功能，优化中转设施和集疏运网络，强化客运零距离换乘和货运无缝化衔接，实现不同运输方式协调高效，发挥综合优势，提升交通物流整体效率。

第四节　推动运输服务低碳智能安全发展

推进交通运输低碳发展，集约节约利用资源，加强标准化、现代化运输装备和节能环保运输工具推广应用。加快智能交通发展，推广先进信息技术和智能技术装备应用，加强联程联运系统、智能管理系统、公共信息系统建设，加快发展多式联运，提高交通运输服务质量和效益。强化交通运输、邮政安全管理，提升安全保障、应急处置和救援能力。推进出租汽车行业改革、铁路市场化改革，加快推进空域管理体制改革。

专栏 10　交通建设重点工程

（一）高速铁路

加快完善高速铁路网，贯通哈尔滨至北京至香港（澳门）、连云港至乌鲁木齐、上海至昆明、广州至昆明高速铁路通道，建设北京至香港（台北）、呼和浩特至南宁、北京至昆明、包头银川至海口、青岛至银川、兰州（西宁）至广州、北京至兰州、重庆至厦门等高速铁路通道，拓展区域连接线。高速铁路营业里程达到 3 万公里，覆盖 80%以上的大城市。

（二）高速公路

加快推进由 7 条首都放射线、11 条北南纵线、18 条东西横线，以及地区环线、并行线、联络线等组成的国家高速公路网建设。提高长江经济带、京津冀地区高速公路网络密度和服务水平，推进高速公路繁忙拥堵路段扩容改造。新建改建高速公路通车里程约 3 万公里。

（三）“四沿”通道

基本贯通沿海高速铁路、沿海高速公路和沿江高速铁路，加快建设沿边公路，建设和田至若羌铁路、东北沿边铁路和川藏铁路等沿边铁路。推进与周边国家跨境通道和“一带一路”沿线通道建设，建设乌鲁木齐、兰州重要节点城市铁路国际班列物流平台。建设深中通道。

（四）民用机场

打造国际枢纽机场，建成北京新机场，建设京津冀、长三角、珠三角世界级机场群，加快建设哈尔滨、深圳、昆明、成都、重庆、西安、乌鲁木齐等国际航空枢纽，强化区域性枢纽机场功能。实施部分繁忙干线机场新建、迁建和扩能改造工程，建设支线机场和通用机场。建设郑州等以货运功能为主的机场。新增民用运输机场 50 个以上。

（五）港航设施

优化提升环渤海、长三角、珠三角港口群，加快长江、珠江—西江、淮河、闽江等内河高等级航道建设，大力推进上海、天津、大连、厦门等国际航运中心建设，有序推进沿海港口集装箱、原油、液化天然气等专业化泊位建设，稳步推进海南凤凰岛等国际邮轮码头建设，提高港口智能化水平。

（六）城市群交通

建设城市群中心城市间、中心城市与周边节点城市间1—2小时交通圈，打造城市群中心城市与周边重要城镇间1小时通勤都市圈。基本建成京津冀、长三角、珠三角、长江中游、中原、成渝、山东半岛城市群城际铁路网，建设其他城市群城际铁路网主骨架。实施市域（郊）铁路示范工程。

（七）城市交通

完善优化超大、特大城市轨道交通网络，加快300万以上人口城市轨道交通成网，优化城市公共交通系统，建设集约化停车设施。新增城市轨道交通运营里程约3000公里。畅通城市道路与对外公路繁忙出入口，具备条件的城市规划建设绕城公路。

（八）农村交通

继续加强农村公路建设，有条件的地区推进联网，加强县乡道提级改造、农村公路安全防护设施建设和危桥改造，加大农村公路养护力度，实现具备条件的建制村通硬化路和班车。完善农村和西部地区邮政、快递基础设施，实现村村直接通邮。

（九）交通枢纽

以高速铁路、城际铁路和机场等为重点，打造一批开放式、立体化综合客运枢纽，推进同台换乘、立体换乘，加强城市内重要客运枢纽间的快速通道建设，减少换乘距离和时间。建设一批多式联运货运枢纽，提升换装效率。鼓励依托交通枢纽建设城市综合体，推进整体开发。

（十）智能交通

推进交通基础设施、运输工具、运行信息等互联网化，加快构建车联网、船联网，完善故障预警、运行维护和智能调度系统，推动驾驶自动化、设施数字化和运行智慧化。推动铁路、民航、道路客运“一站式”票务服务系统建设，建设综合运输公共信息服务平台和交通大数据中心。

图1 中长期高速铁路网规划示意图（2030年）

图2 民用运输机场规划布局示意图（2030年）

第三十章　建设现代能源体系

深入推进能源革命，着力推动能源生产利用方式变革，优化能源供给结构，提高能源利用效率，建设清洁低碳、安全高效的现代能源体系，维护国家能源安全。

第一节　推动能源结构优化升级

统筹水电开发与生态保护，坚持生态优先，以重要流域龙头水电站建设为重点，科学开发西南水电资源。继续推进风电、光伏发电发展，积极支持光热发电。以沿海核电带为重点，安全建设自主核电示范工程和项目。加快发展生物质能、地热能，积极开发沿海潮汐能资源。完善风能、太阳能、生物质能发电扶持政策。优化建设国家综合能源基地，大力推进煤炭清洁高效利用。限制东部、控制中部和东北、优化西部地区煤炭资源开发，推进大型煤炭基地绿色化开采和改造，鼓励采用新技术发展煤电。加强陆上和海上油气勘探开发，有序开放矿业权，积极开发天然气、煤层气、页岩油（气）。推进炼油产业转型升级，开展成品油质量升级行动计划，拓展生物燃料等新的清洁油品来源。

第二节　构建现代能源储运网络

统筹推进煤电油气多种能源输送方式发展，加强能源储备和调峰设施建设，加快构建多能互补、外通内畅、安全可靠的现代能源储运网络。加强跨区域骨干能源输送网络建设，建成蒙西－华中北煤南运战略通道，优化建设电网主网架和跨区域输电通道。加快建设陆路进口油气战略通道。推进油气储备设施建设，提高油气储备和调峰能力。

第三节　积极构建智慧能源系统

加快推进能源全领域、全环节智慧化发展，提高可持续自适应能力。适应分布式能源发展、用户多元化需求，优化电力需求侧管理，加快智能电网建设，提高电网与发电侧、需求侧交互响应能力。推进能源与信息等领域新技术深度融合，统筹能源与通信、交通等基础设施网络建设，建设“源－网－荷－储”协调发展、集成互补的能源互联网。

专栏 11　能源发展重大工程

（一）高效智能电力系统

加快建设抽水蓄能电站、龙头水电站、天然气调峰电站等优质调峰电源，推动储能电站、能效电厂示范工程建设，加强多种电源和储能设施集成互补，提高电力系统的调节能力及运行效率。

（二）煤炭清洁高效利用

实施煤电节能减排升级与改造行动计划，对燃煤机组全面实施超低排放和节能改造，使所有现役电厂每千瓦时平均煤耗低于 310 克、新建电厂平均煤耗低于 300 克。鼓励用背压式热电机组解决供暖，发展热电冷多联供。提高煤炭用于发电消费比重。

（三）可再生能源

以西南水电开发为重点，开工建设常规水电 6000 万千瓦。统筹受端市场和输电通道，有序优化建设“三北”、沿海风电和光伏项目。加快发展中东部及南方地区分散式风电、分布式光伏发电。实施光热发电示范工程。建设宁夏国家新能源综合示范区，积极推进青海、张家口等可再生能源示范区建设。

（四）核电

建成三门、海阳 AP1000 项目。建设福建福清、广西防城港“华龙一号”示范工程。开工建设山东荣成 CAP1400 示范工程。开工建设一批沿海新的核电项目，加快建设田湾核电三期工程。积极开展内陆核电项目前期工作。加快论证并推动大型商用后处理厂建设。核电运行装机容量达到 5800 万千瓦，在建达

到3000万千瓦以上。加强核燃料保障体系建设。

（五）非常规油气

建设沁水盆地、鄂尔多斯盆地东缘和贵州毕水兴等煤层气产业化基地。加快四川长宁—威远、重庆涪陵、云南昭通、陕西延安、贵州遵义—铜仁等页岩气勘查开发。推动致密油、油砂、深海石油勘探开发和油页岩综合开发利用。推进天然气水合物资源勘查与商业化试采。

（六）能源输送通道

建设水电基地和大型煤电基地外送电通道，在大气污染防治行动12条输电通道基础上，重点新建西南、西北、华北、东北等电力外送通道。加强西北、东北和西南陆路进口油气战略通道和配套干线管网建设。完善以西气东输、陕京线和川气东送为主的天然气骨干管网。

（七）能源储备设施

建成国家石油储备二期工程，启动后续项目前期工作。加强成品油储备库建设。建设天然气储气库，提高储气规模和调峰应急能力。在缺煤地区和煤炭集散地建设中转储运设施，完善煤炭应急储备体系。扩大天然铀储备规模。

（八）能源关键技术装备

加快推进煤炭无人开采、深井灾害防治、非常规油气勘探开发、深海和深层常规油气开发、低阶煤中低温热解分质转化、700℃超超临界燃煤发电、第四代核电、海上风电、光热发电、大规模储能、地热能利用、智能电网等技术研发应用。提升第三代核电、百万千瓦级水电机组、高效锅炉和高效电机等装备制造能力。突破大功率电力电子器材、高温超导材料等关键元器件和材料的制造及应用技术。

第三十一章　强化水安全保障

加快完善水利基础设施网络，推进水资源科学开发、合理调配、节约使用、高效利用，全面提升水安全保障能力。

第一节　优化水资源配置格局

科学论证、稳步推进一批重大引调水工程、河湖水系连通骨干工程和重点水源等工程建设，统筹加强中小型水利设施建设，加快构筑多水源互联互调、安全可靠的城乡区域用水保障网。因地制宜实施抗旱水源工程，加强城市应急和备用水源建设。科学开发利用地表水及各类非常规水源，严格控制地下水开采。推进江河流域系统整治，维持基本生态用水需求，增强保水储水能力。科学实施跨界河流开发治理，深化与周边国家跨界水合作。科学开展人工影响天气活动。

第二节　完善综合防洪减灾体系

加强江河湖泊治理骨干工程建设，继续推进大江大河大湖堤防加固、河道治理、控制性枢纽和蓄滞洪区建设。加快中小河流治理、山洪灾害防治、病险水库水闸除险加固，推进重点海堤达标建设。加强气象水文监测和雨情水情预报，强化洪水风险管理，提高防洪减灾水平。

专栏 12　水安全保障工程

（一）大型灌区

完成 434 处大型灌区续建配套和节水改造任务。建设嫩江尼尔基、吉林松原、四川向家坝、湖南涔天河、江西廖坊、海南红岭、河南小浪底南北岸等大型灌区工程。农田有效灌溉面积达到 10 亿亩以上。

（二）引调水

建设吉林中部引松供水和西部河湖联通、引黄入冀补淀、引江济淮、陕西引汉济渭、贵州夹岩、甘肃引洮二期、云南滇中引水、青海引大济湟、内蒙古引绰济辽、福建平潭及闽江口水资源配置、湖北鄂北水资源配置等重大引调水工程。推进南水北调东中线后续工程建设。

（三）重点水源

建设西藏拉洛、浙江朱溪、福建霍口、黑龙江奋斗、湖南莽山、云南阿岗等

大型水库。推进安徽江巷、四川李家岩、贵州黄家湾等一批重点水源工程开工建设。实施抗旱应急水源工程。加强中型水库等区域骨干水源建设。

（四）江河湖泊治理

建设西江大藤峡、淮河出山店、新疆阿尔塔什等流域控制性枢纽工程。加强黑龙江、松花江、嫩江干流防洪，长江中下游河势控制，黄河下游堤防建设和上中游河道治理，新一轮治淮和治太骨干水利工程，蓄滞洪区安全建设等，加快叶尔羌河等中小河流治理，基本完成流域面积3000平方公里及以上的244条重要河流治理。做好黄河古贤水利枢纽、鄱阳湖水利枢纽、黄河黑山峡河段开发工程前期工作。

第八篇　推进新型城镇化

坚持以人的城镇化为核心、以城市群为主体形态、以城市综合承载能力为支撑、以体制机制创新为保障，加快新型城镇化步伐，提高社会主义新农村建设水平，努力缩小城乡发展差距，推进城乡发展一体化。

第三十二章　加快农业转移人口市民化

统筹推进户籍制度改革和基本公共服务均等化，健全常住人口市民化激励机制，推动更多人口融入城镇。

第一节　深化户籍制度改革

推进有能力在城镇稳定就业和生活的农业转移人口举家进城落户，并与城镇居民享有同等权利和义务。优先解决农村学生升学和参军进入城镇的人口、在城镇就业居住5年以上、举家迁徙的农业转移人口、新生代农民工落户问题。省会及以下城市要全面放开对高校毕业生、技术工人、职业院校毕业生、留学归国人员的落户限制。推广专业技术职称、技能等级等同大城市落户挂钩做法。大中城市

不得采取购买房屋、投资纳税、积分制等方式设置落户限制。超大城市和特大城市要以具有合法稳定就业和合法稳定住所（含租赁）、参加城镇社会保险年限、连续居住年限等为主要条件，实行差异化的落户政策。强化地方政府推动农业转移人口市民化主体责任。

第二节　实施居住证制度

全面实施居住证暂行条例，推进居住证制度覆盖全部未落户城镇常住人口。保障居住证持有人在居住地享有义务教育、公共就业服务、公共卫生服务等国家规定的基本公共服务。鼓励各级政府不断扩大对居住证持有人的公共服务范围并提高服务标准，缩小与户籍人口的差距。

第三节　健全促进农业转移人口市民化的机制

健全财政转移支付同农业转移人口市民化挂钩机制，建立城镇建设用地增加规模同吸纳农业转移人口落户数量挂钩机制，建立财政性建设资金对城市基础设施补贴数额与城市吸纳农业转移人口落户数量挂钩机制。维护进城落户农民土地承包权、宅基地使用权、集体收益分配权，并支持引导依法自愿有偿转让。深入推进新型城镇化综合试点。

第三十三章　优化城镇化布局和形态

加快构建以陆桥通道、沿长江通道为横轴，以沿海、京哈京广、包昆通道为纵轴，大中小城市和小城镇合理分布、协调发展的“两横三纵”城市化战略格局。

第一节　加快城市群建设发展

优化提升东部地区城市群，建设京津冀、长三角、珠三角世界级城市群，提升山东半岛、海峡西岸城市群开放竞争水平。培育中西部地区城市群，发展壮大东北地区、中原地区、长江中游、成渝地区、关中平原城市群，规划引导北部湾、山西中部、呼包鄂榆、黔中、滇中、兰州－西宁、宁夏沿黄、天山北坡城市群发展，形成更多支撑区域发展的增长极。促进以拉萨为中心、以喀什为中心的城市圈发展。建立健全城市群发展协调机制，推动跨区域城市间产业分工、基础设施、生态保护、环境治理等协调联动，实现城市群一体化高效发展。

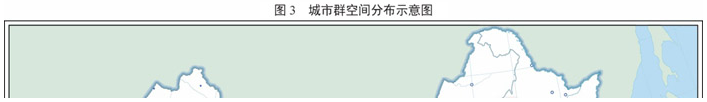
第二节　增强中心城市辐射带动功能

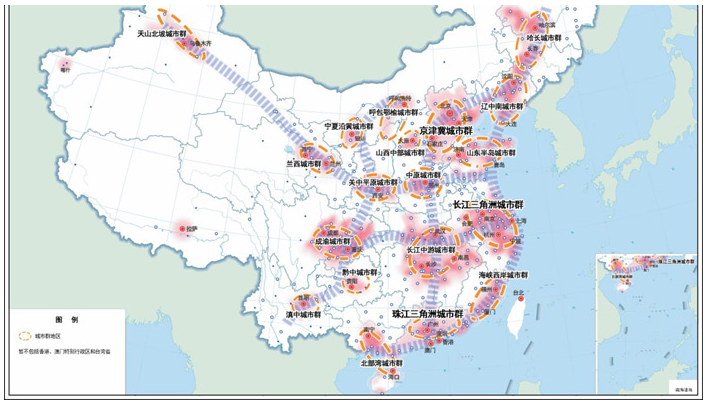
发展一批中心城市，强化区域服务功能。超大城市和特大城市要加快提高国际化水平，适当疏解中心城区非核心功能，强化与周边城镇高效通勤和一体发展，促进形成都市圈。大中城市要加快产业转型升级，延伸面向腹地的产业和服务链，形成带动区域发展的增长节点。科学划定中心城区开发边界，推动城市发展由外延扩张式向内涵提升式转变。

第三节　加快发展中小城市和特色镇

以提升质量、增加数量为方向，加快发展中小城市。引导产业项目在中小城市和县城布局，完善市政基础设施和公共服务设施，推动优质教育、医疗等公共服务资源向中小城市和小城镇配置。加快拓展特大镇功能，赋予镇区人口10万以上的特大镇部分县级管理权限，完善设市设区标准，符合条件的县和特大镇可有序改市。因地制宜发展特色鲜明、产城融合、充满魅力的小城镇。提升边境口岸城镇功能。

图 3　城市群空间分布示意图





第三十四章　建设和谐宜居城市

转变城市发展方式，提高城市治理能力，加大“城市病”防治力度，不断提升城市环境质量、居民生活质量和城市竞争力，努力打造和谐宜居、富有活力、各具特色的城市。

第一节　加快新型城市建设

根据资源环境承载力调节城市规模，实行绿色规划、设计、施工标准，实施生态廊道建设和生态系统修复工程，建设绿色城市。加强现代信息基础设施建设，推进大数据和物联网发展，建设智慧城市。发挥城市创新资源密集优势，打造创业乐园和创新摇篮，建设创新城市。提高城市开放度和包容性，加强文化和自然遗产保护，延续历史文脉，建设人文城市。加强城市空间开发利用管制，建设密度较高、功能融合、公交导向的紧凑城市。

第二节　加强城市基础设施建设

构建布局合理、设施配套、功能完备、安全高效的现代城市基础设施体系。加快城市供水设施改造与建设。加强市政管网等地下基础设施改造与建设。加强城市道路、停车场、交通安全等设施建设，加强城市步行和自行车交通设施建设。全面推进无障碍设施建设。严格执行城市新建居民区配套建设幼儿园、学校的规定。严格执行新建小区停车位、充电桩等配建标准。加强城市防洪防涝与调蓄、公园绿地等生态设施建设，支持海绵城市发展，完善城市公共服务设施。提高城市建筑和基础设施抗灾能力。

第三节　加快城镇棚户区和危房改造

基本完成城镇棚户区和危房改造任务。将棚户区改造与城市更新、产业转型升级更好结合起来，加快推进集中成片棚户区和城中村改造，有序推进旧住宅小区综合整治、危旧住房和非成套住房改造，棚户区改造政策覆盖全国重点镇。完善配套基础设施，加强工程质量监管。

第四节　提升城市治理水平

创新城市治理方式，改革城市管理和执法体制，推进城市精细化、全周期、合作性管理。创新城市规划理念和方法，合理确定城市规模、开发边界、开发强度和保护性空间，加强对城市空间立体性、平面协调性、风貌整体性、文脉延续性的规划管控。全面推行城市科学设计，推进城市有机更新，提倡城市修补改造。发展适用、经济、绿色、美观建筑，提高建筑技术水平、安全标准和工程质量，推广装配式建筑和钢结构建筑。

第三十五章　健全住房供应体系

构建以政府为主提供基本保障、以市场为主满足多层次需求的住房供应体系，优化住房供需结构，稳步提高居民住房水平，更好保障住有所居。

第一节　完善购租并举的住房制度

以解决城镇新居民住房需求为主要出发点，以建立购租并举的住房制度为主要方向，深化住房制度改革。对无力购买住房的居民特别是非户籍人口，支持其租房居住，对其中符合条件的困难家庭给予货币化租金补助。把公租房扩大到非户籍人口，实现公租房货币化。研究完善公务人员住房政策。

第二节　促进房地产市场健康发展

优化住房供给结构，促进市场供需平衡，保持房地产市场平稳运行。在住房供求关系紧张地区适度增加用地规模。在商品房库存较大地区，稳步化解房地产库存，扩大住房有效需求，提高棚户区改造货币化安置比例。积极发展住房租赁市场，鼓励自然人和各类机构投资者购买库存商品房，扩大租赁市场房源，鼓励发展以住房租赁为主营业务的专业化企业。促进房地产业兼并重组，提高产业集中度，开展房地产投资信托基金试点。发展旅游地产、养老地产、文化地产等新业态。加快推进住宅产业现代化，提升住宅综合品质。

第三节　提高住房保障水平

将居住证持有人纳入城镇住房保障范围。统筹规划保障性住房、棚户区改造和配套设施建设，确保建筑质量，方便住户日常生活和出行。完善投资、信贷、土地、税费等支持政策。多渠道筹集公共租赁房房源。实行实物保障与货币补贴并举，逐步加大租赁补贴发放力度。健全保障性住房投资运营和准入退出管理机制。

第三十六章　推动城乡协调发展

推动新型城镇化和新农村建设协调发展，提升县域经济支撑辐射能力，促进公共资源在城乡间均衡配置，拓展农村广阔发展空间，形成城乡共同发展新格局。

第一节　发展特色县域经济

培育发展充满活力、特色化、专业化的县域经济，提升承接城市功能转移和辐射带动乡村发展能力。依托优势资源，促进农产品精深加工、农村服务业及劳动密集型产业发展，积极探索承接产业转移新模式，融入区域性产业链和生产网络。引导农村二三产业向县城、重点乡镇及产业园区集中。扩大县域发展自主权，提高县级基本财力保障水平。

第二节　加快建设美丽宜居乡村

推进农村改革和制度创新，增强集体经济组织服务功能，激发农村发展活力。全面改善农村生产生活条件。科学规划村镇建设、农田保护、村落分布、生态涵养等空间布局。加快农村宽带、公路、危房、饮水、照明、环卫、消防等设施改造。开展新一轮农网改造升级，农网供电可靠率达到99.8%。实施农村饮水安全巩固提升工程。改善农村办学条件和教师工作生活条件，加强基层医疗卫生机构和乡村医生队伍建设。建立健全农村留守儿童和妇女、老人关爱服务体系。加强和改善农村社会治理，完善农村治安防控体系，深入推进平安乡村建设。加强农村文化建设，深入开展“星级文明户”、“五好文明家庭”等创建活动，培育文明乡风、优良家风、新乡贤文化。开展农村不良风气专项治理，整治农村非法宗教活动等突出问题。开展生态文明示范村镇建设行动和农村人居环境综合整治

行动，加大传统村落和民居、民族特色村镇保护力度，传承乡村文明，建设田园牧歌、秀山丽水、和谐幸福的美丽宜居乡村。

第三节　促进城乡公共资源均衡配置

统筹规划城乡基础设施网络，健全农村基础设施投入长效机制，促进水电路气信等基础设施城乡联网、生态环保设施城乡统一布局建设。把社会事业发展重点放在农村和接纳农业转移人口较多的城镇，推动城镇公共服务向农村延伸，逐步实现城乡基本公共服务制度并轨、标准统一。

专栏 13　新型城镇化建设重大工程

（一）“三个 1 亿人”城镇化

推进 1 亿左右农业转移人口和其他常住人口在城镇落户。加快推进约 1 亿人居住的棚户区和城中村改造。依托中西部地区城市群，以中小城市为重点，以县城和重点镇为支撑，引导约 1 亿人在中西部地区就近城镇化。

（二）新生中小城市

以镇区常住人口规模、人口密度和经济规模等为基准，加快一批符合条件的县城和特大镇综合功能提升，培育形成一批功能完善、特色鲜明的新生中小城市。

（三）特色小城镇

发展具有特色资源、区位优势和文化底蕴的小城镇，通过扩权增能、加大投入和扶持力度，培育成为休闲旅游、商贸物流、信息产业、智能制造、科技教育、民俗文化传承等专业特色镇。

（四）智慧城市

以基础设施智能化、公共服务便利化、社会治理精细化为重点，充分运用现代信息技术和大数据，建设一批新型示范性智慧城市。

（五）绿色、森林城市

推广绿色建筑，普及绿色交通，推广分布式能源、浅层地热能等新型能源供应体系，加快推进公共交通电动化，开展绿色新生活行动，实施城市园林绿

化工程，提高城市绿地和森林面积，建成一批示范性绿色城市、生态园林城市、森林城市。

（六）海绵城市

采取渗、滞、蓄、净、用、排等措施，完善城市排水防涝与调蓄设施，支持海绵型建筑与小区、道路与广场、公园和绿地等建设。

（七）地下管廊（网）

以城市新区、各类园区、成片开发区域为重点，结合旧城更新和地下空间开发等，推进干线、支线综合管廊建设。实施城市供水、污水、雨水、燃气、供热等地下管网建设改造和城市电网、通信网络等架空线入地工程。

（八）美丽乡村

推进新型农村社区集中供水，农村自来水普及率达到 80%。因地制宜发展可再生能源，建设清洁能源示范村镇。推进农村危房改造，统筹开展农房抗震改造，基本完成存量危房改造任务。因地制宜开展农村厕所革命。实施农村生活垃圾治理专项行动，推进 13 万个行政村环境综合整治，实施农业废弃物资源化利用示范工程，建设污水垃圾收集处理设施，梯次推进农村生活污水治理，实现 90%的行政村生活垃圾得到治理。推进农村河塘整治。

第九篇　推动区域协调发展

以区域发展总体战略为基础，以“一带一路”建设、京津冀协同发展、长江经济带发展为引领，形成沿海沿江沿线经济带为主的纵向横向经济轴带，塑造要素有序自由流动、主体功能约束有效、基本公共服务均等、资源环境可承载的区域协调发展新格局。

第三十七章　深入实施区域发展总体战略

深入实施西部开发、东北振兴、中部崛起和东部率先的区域发展总体战略，创新区域发展政策，完善区域发展机制，促进区域协调、协同、共同发展，努力

缩小区域发展差距。

第一节　深入推进西部大开发

把深入实施西部大开发战略放在优先位置，更好发挥“一带一路”建设对西部大开发的带动作用。加快内外联通通道和区域性枢纽建设，进一步提高基础设施水平，明显改善落后边远地区对外通行条件。大力发展绿色农产品加工、文化旅游等特色优势产业。设立一批国家级产业转移示范区，发展产业集群。依托资源环境承载力较强地区，提高资源就地加工转化比重。加强水资源科学开发和高效利用。强化生态环境保护，提升生态安全屏障功能。健全长期稳定资金渠道，继续加大转移支付和政府投资力度。加快基本公共服务均等化。加大门户城市开放力度，提升开放型经济水平。

第二节　大力推动东北地区等老工业基地振兴

加快市场取向的体制机制改革，积极推动结构调整，加大支持力度，提升东北地区等老工业基地发展活力、内生动力和整体竞争力。加快服务型政府建设，改善营商环境，加快发展民营经济。大力开展和积极鼓励创业创新，支持建设技术和产业创新中心，吸引人才等各类创新要素集聚，使创新真正成为东北地区发展的强大动力。加快发展现代化大农业，促进传统优势产业提质增效，建设产业转型升级示范区，推进先进装备制造业基地和重大技术装备战略基地建设。支持资源型城市转型发展，组织实施好老旧城区改造、沉陷区治理等重大民生工程。加快建设快速铁路网和电力外送通道。深入推进国资国企改革，加快解决厂办大集体等问题。支持建设面向俄日韩等国家的合作平台。

第三节　促进中部地区崛起

制定实施新时期促进中部地区崛起规划，完善支持政策体系，推动城镇化与产业支撑、人口集聚有机结合，形成重要战略支撑区。支持中部地区加快建设贯通南北、连接东西的现代立体交通体系和现代物流体系，培育壮大沿江沿线城市群和都市圈增长极。有序承接产业转移，加快发展现代农业和先进制造业，支持能源产业转型发展，建设一批战略性新兴产业和高技术产业基地，培育一批产业集群。加强水环境保护和治理，推进鄱阳湖、洞庭湖生态经济区和汉江、淮河生态经济带建设。加快郑州航空港经济综合实验区建设。支持发展内陆开放型经济。

第四节　支持东部地区率先发展

支持东部地区更好发挥对全国发展的支撑引领作用，增强辐射带动能力。加快实现创新驱动发展转型，打造具有国际影响力的创新高地。加快推动产业升级，引领新兴产业和现代服务业发展，打造全球先进制造业基地。加快建立全方位开放型经济体系，更高层次参与国际合作与竞争。在公共服务均等化、社会文明程度提高、生态环境质量改善等方面走在前列。推进环渤海地区合作协调发展。支持珠三角地区建设开放创新转型升级新高地，加快深圳科技、产业创新中心建设。深化泛珠三角区域合作，促进珠江－西江经济带加快发展。

第五节　健全区域协调发展机制

创新区域合作机制，加强区域间、全流域的协调协作。完善对口支援制度和措施，通过发展“飞地经济”、共建园区等合作平台，建立互利共赢、共同发展的互助机制。建立健全生态保护补偿、资源开发补偿等区际利益平衡机制。鼓励国家级新区、国家级综合配套改革试验区、重点开发开放试验区等平台体制机制和运营模式创新。

第三十八章　推动京津冀协同发展

坚持优势互补、互利共赢、区域一体，调整优化经济结构和空间结构，探索人口经济密集地区优化开发新模式，建设以首都为核心的世界级城市群，辐射带动环渤海地区和北方腹地发展。

第一节　有序疏解北京非首都功能

积极稳妥推进北京非首都功能疏解，降低主城区人口密度。重点疏解高耗能高耗水企业、区域性物流基地和专业市场、部分教育医疗和培训机构、部分行政事业性服务机构和企业总部等。高水平建设北京市行政副中心。规划建设集中承载地和“微中心”。

第二节　优化空间格局和功能定位

构建“一核双城三轴四区多节点”的空间格局。优化产业布局，推进建设京津冀协同创新共同体。北京重点发展知识经济、服务经济、绿色经济，加快构建高精尖产业结构。天津优化发展先进制造业、战略性新兴产业和现代服务业，建设全国先进制造研发基地和金融创新运营示范区。河北积极承接北京非首都功能转移和京津科技成果转化，重点建设全国现代商贸物流重要基地、新型工业化基地和产业转型升级试验区。

第三节　构建一体化现代交通网络

建设高效密集轨道交通网，强化干线铁路建设，加快建设城际铁路、市域（郊）铁路并逐步成网，充分利用现有能力开行城际、市域（郊）列车，客运专线覆盖所有地级及以上城市。完善高速公路网络，提升国省干线技术等级。构建

分工协作的港口群，完善港口集疏运体系，建立海事统筹监管新模式。打造国际一流航空枢纽，构建航空运输协作机制。

第四节　扩大环境容量和生态空间

构建区域生态环境监测网络、预警体系和协调联动机制，削减区域污染物排放总量。加强大气污染联防联控，实施大气污染防治重点地区气化工程，细颗粒物浓度下降25%以上。加强饮用水源地保护，联合开展河流、湖泊、海域污染治理。划定生态保护红线，实施分区管理，建设永定河等生态廊道。加大京津保地区营造林和白洋淀、衡水湖等湖泊湿地恢复力度，共建坝上高原生态防护区、燕山－太行山生态涵养区。

第五节　推动公共服务共建共享

建设区域人力资源信息共享与服务平台，衔接区域间劳动用工和人才政策。优化教育资源布局，鼓励高等学校学科共建、资源共享，推动职业教育统筹发展。建立健全区域内双向转诊和检查结果互认制度，支持开展合作办医试点。实现养老保险关系在三省市间的顺利衔接，推动社会保险协同发展。

第三十九章　推进长江经济带发展

坚持生态优先、绿色发展的战略定位，把修复长江生态环境放在首要位置，推动长江上中下游协同发展、东中西部互动合作，建设成为我国生态文明建设的先行示范带、创新驱动带、协调发展带。

第一节　建设沿江绿色生态廊道

推进全流域水资源保护和水污染治理，长江干流水质达到或好于Ⅲ类水平。基本实现干支流沿线城镇污水垃圾全收集全处理。妥善处理好江河湖泊关系，提升调蓄能力，加强生态保护。统筹规划沿江工业与港口岸线、过江通道岸线、取排水口岸线。推进长江上中游水库群联合调度。加强流域磷矿及磷化工污染治理。实施长江防护林体系建设等重大生态修复工程，增强水源涵养、水土保持等生态功能。加强长江流域地质灾害预防和治理。加强流域重点生态功能区保护和修复。设立长江湿地保护基金。创新跨区域生态保护与环境治理联动机制，建立生态保护和补偿机制。建设三峡生态经济合作区。

第二节　构建高质量综合立体交通走廊

依托长江黄金水道，统筹发展多种交通方式。建设南京以下12.5米深水航道，开展宜昌至安庆航道整治，推进三峡枢纽水运新通道建设，完善三峡综合交通运输体系。优化港口布局，加快建设武汉、重庆长江中上游航运中心和南京区域性航运物流中心，加强集疏运体系建设，大力发展江海联运、水铁联运，建设舟山江海联运服务中心。推进长江船型标准化，健全智能安全保障系统。加快高速铁路和高等级公路建设。强化航空枢纽功能，完善支线机场布局。建设沿江油气主干管道，推动管道互联互通。

第三节　优化沿江城镇和产业布局

提升长三角、长江中游、成渝三大城市群功能，发挥上海“四个中心”引领作用，发挥重庆战略支点和联接点的重要作用，构建中心城市带动、中小城市支撑的网络化、组团式格局。根据资源环境承载力，引导产业合理布局和有序转移，打造特色优势产业集群，培育壮大战略性新兴产业，建设集聚度高、竞争力强、绿色低碳的现代产业走廊。加快建设国际黄金旅游带。培育特色农业区。

第四十章　扶持特殊类型地区发展

加大对革命老区、民族地区、边疆地区和困难地区的支持力度，实施边远贫困地区、边疆民族地区和革命老区人才支持计划，推动经济加快发展、人民生活明显改善。

第一节　支持革命老区开发建设

完善革命老区振兴发展支持政策，大力推动赣闽粤原中央苏区、陕甘宁、大别山、左右江、川陕等重点贫困革命老区振兴发展，积极支持沂蒙、湘鄂赣、太行、海陆丰等欠发达革命老区加快发展。加快交通、水利、能源、通信等基础设施建设，大幅提升基本公共服务水平，加大生态建设和保护力度。着力培育特色农林业等对群众增收带动性强的优势产业，大力发展红色旅游，积极有序推进能源资源开发。加快推进革命老区劳动力转移就业。

第二节　推动民族地区健康发展

把加快少数民族和民族地区发展摆到更加突出的战略位置，加大财政投入和金融支持，改善基础设施条件，提高基本公共服务能力。支持民族地区发展优势产业和特色经济。加强跨省区对口支援和对口帮扶工作。加大对西藏和四省藏区支持力度。支持新疆南疆四地州加快发展。促进少数民族事业发展，大力扶持人口较少民族发展，支持民族特需商品生产发展，保护和传承少数民族传统文化。深入开展民族团结进步示范区创建活动，促进各民族交往交流交融。

第三节　推进边疆地区开发开放

推进边境城市和重点开发开放试验区等建设。加强基础设施互联互通，加快建设对外骨干通道。推进新疆建成向西开放的重要窗口、西藏建成面向南亚开放

的重要通道、云南建成面向南亚东南亚的辐射中心、广西建成面向东盟的国际大通道。支持黑龙江、吉林、辽宁、内蒙古建成向北开放的重要窗口和东北亚区域合作的中心枢纽。加快建设面向东北亚的长吉图开发开放先导区。大力推进兴边富民行动，加大边民扶持力度。

第四节　促进困难地区转型发展

加强政策支持，促进资源枯竭、产业衰退、生态严重退化等困难地区发展接续替代产业，促进资源型地区转型创新，形成多点支撑、多业并举、多元发展新格局。全面推进老工业区、独立工矿区、采煤沉陷区改造转型。支持产业衰退的老工业城市加快转型，健全过剩产能行业集中地区过剩产能退出机制。加大生态严重退化地区修复治理力度，有序推进生态移民。加快国有林场和林区改革，基本完成重点国有林区深山远山林业职工搬迁和国有林场撤并整合任务。

专栏 14　特殊类型地区发展重大工程

（一）革命老区振兴发展行动

规划建设一批铁路、高速公路、支线机场、水利枢纽、能源、信息基础设施工程，大力实施天然林保护、石漠化综合治理、退耕还林还草等生态工程，支持风电、水电等清洁能源开发，建设一批红色旅游精品线路。

（二）民族地区奔小康行动

推进人口较少民族整族整村精准脱贫。对陆地边境抵边一线乡镇因守土戍边不宜易地扶贫搬迁的边民，采取就近就地脱贫措施。实施少数民族特色村镇保护与发展工程，重点建设一批少数民族特色村寨和民族风情小镇。支持少数民族传统手工艺品保护与发展。

（三）沿边地区开发开放行动

实施沿边地区交通基础设施改造提升工程；实施产业兴边工程，建设跨境旅游合作区和边境旅游试验区；实施民生安边工程，实行动态边民补助机制。

（四）资源枯竭地区转型

支持资源枯竭城市重点发展一批接续替代产业，吸纳失业矿工、棚户区改造回迁居民再就业。加大力度实施独立工矿区改造搬迁工程，支持矿区基础设施、公共服务设施和接续替代产业平台改造和建设，对地处偏远、资源枯竭、不适人居的部分独立工矿区实施搬迁安置，基本完成 100 个左右独立工矿区改造搬迁任务。

（五）产业衰退地区振兴发展

在具备条件的老工业城市建设一批产业转型升级示范区和示范园区。全面开展城区老工业区搬迁改造工程，统筹推进企业搬迁改造和新兴产业培育，支持工业污染土地和废弃地治理，加强工业遗产保护再利用，基本完成 100 个以上城区老工业区搬迁改造任务。

（六）生态严重退化地区转型发展

加快解决历史遗留的重点矿山地质环境治理问题，完成 750 万亩历史遗留矿山地质环境恢复治理任务。支持重点采煤沉陷区综合治理，有序实施居民避险安置，推进土地复垦、环境整治和生态修复，完成 450 万亩采煤沉陷区综合治理任务。

第四十一章　拓展蓝色经济空间

坚持陆海统筹，发展海洋经济，科学开发海洋资源，保护海洋生态环境，维护海洋权益，建设海洋强国。

第一节　壮大海洋经济

优化海洋产业结构，发展远洋渔业，推动海水淡化规模化应用，扶持海洋生物医药、海洋装备制造等产业发展，加快发展海洋服务业。发展海洋科学技术，重点在深水、绿色、安全的海洋高技术领域取得突破。推进智慧海洋工程建设。创新海域海岛资源市场化配置方式。深入推进山东、浙江、广东、福建、天津等

全国海洋经济发展试点区建设，支持海南利用南海资源优势发展特色海洋经济，建设青岛蓝谷等海洋经济发展示范区。

第二节　加强海洋资源环境保护

深入实施以海洋生态系统为基础的综合管理，推进海洋主体功能区建设，优化近岸海域空间布局，科学控制开发强度。严格控制围填海规模，加强海岸带保护与修复，自然岸线保有率不低于35%。严格控制捕捞强度，实施休渔制度。加强海洋资源勘探与开发，深入开展极地大洋科学考察。实施陆源污染物达标排海和排污总量控制制度，建立海洋资源环境承载力预警机制。建立海洋生态红线制度，实施“南红北柳”湿地修复工程和“生态岛礁”工程，加强海洋珍稀物种保护。加强海洋气候变化研究，提高海洋灾害监测、风险评估和防灾减灾能力，加强海上救灾战略预置，提升海上突发环境事故应急能力。实施海洋督察制度，开展常态化海洋督察。

第三节　维护海洋权益

有效维护领土主权和海洋权益。加强海上执法机构能力建设，深化涉海问题历史和法理研究，统筹运用各种手段维护和拓展国家海洋权益，妥善应对海上侵权行为，维护好我管辖海域的海上航行自由和海洋通道安全。积极参与国际和地区海洋秩序的建立和维护，完善与周边国家涉海对话合作机制，推进海上务实合作。进一步完善涉海事务协调机制，加强海洋战略顶层设计，制定海洋基本法。

专栏15　海洋重大工程

（一）蓝色海湾整治

在胶州湾、辽东湾、渤海湾、杭州湾、厦门湾、北部湾等开展水质污染治理和环境综合整治，增加人造沙质岸线，恢复自然岸线、海岸原生风貌景观，在辽东湾、渤海湾等围填海区域开展补偿性环境整治和人工湿地建设。

（二）蛟龙探海

突破“龙宫一号”深海实验平台建造关键技术，建造深海移动式和坐底式实验平台。研发集深海环境监测和活动探测于一体的深海探测系统。推进深海装备应用共享平台建设。

（三）雪龙探极

在北极合作新建岸基观测站，在南极新建科考站，新建先进破冰船，提升南极航空能力，初步构建极地区域的陆—海—空观测平台。研发适用于极地环境的探测技术及装备，建立极地环境与资源潜力信息和业务化应用服务平台。

（四）全球海洋立体观测网

统筹规划国家海洋观（监）测网布局，推进国家海洋环境实时在线监控系统和海外观（监）测站点建设，逐步形成全球海洋立体观（监）测系统，加强对海洋生态、洋流、海洋气象等观测研究。

第十篇　加快改善生态环境

以提高环境质量为核心，以解决生态环境领域突出问题为重点，加大生态环境保护力度，提高资源利用效率，为人民提供更多优质生态产品，协同推进人民富裕、国家富强、中国美丽。

第四十二章　加快建设主体功能区

强化主体功能区作为国土空间开发保护基础制度的作用，加快完善主体功能区政策体系，推动各地区依据主体功能定位发展。

第一节　推动主体功能区布局基本形成

有度有序利用自然，调整优化空间结构，推动形成以“两横三纵”为主体的城市化战略格局、以“七区二十三带”为主体的农业战略格局、以“两屏三带”为主体的生态安全战略格局，以及可持续的海洋空间开发格局。合理控制国土空间开发强度，增加生态空间。推动优化开发区域产业结构向高端高效发展，优化空间开发结构，逐年减少建设用地增量，提高土地利用效率。推动重点开发区域集聚产业和人口，培育若干带动区域协同发展的增长极。划定农业空间和生态空间保护红线，拓展重点生态功能区覆盖范围，加大禁止开发区域保护力度。

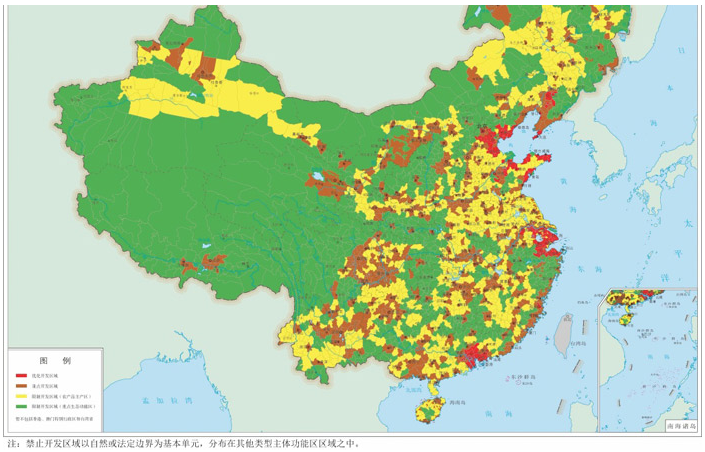
第二节　健全主体功能区配套政策体系

根据不同主体功能区定位要求，健全差别化的财政、产业、投资、人口流动、土地、资源开发、环境保护等政策，实行分类考核的绩效评价办法。重点生态功能区实行产业准入负面清单。加大对农产品主产区和重点生态功能区的转移支付力度，建立健全区域流域横向生态补偿机制。设立统一规范的国家生态文明试验区。建立国家公园体制，整合设立一批国家公园。

第三节　建立空间治理体系

以市县级行政区为单元，建立由空间规划、用途管制、差异化绩效考核等构成的空间治理体系。建立国家空间规划体系，以主体功能区规划为基础统筹各类空间性规划，推进“多规合一”。完善国土空间开发许可制度。建立资源环境承载能力监测预警机制，对接近或达到警戒线的地区实行限制性措施。实施土地、矿产等国土资源调查评价和监测工程。提升测绘地理信息服务保障能力，开展地理国情常态化监测，推进全球地理信息资源开发。

图4　全国主体功能区示意图



注：禁止开发区域以自然或法定边界为基本单元，分布在其他类型主体功能区区域之中。

第四十三章　推进资源节约集约利用

树立节约集约循环利用的资源观，推动资源利用方式根本转变，加强全过程节约管理，大幅提高资源利用综合效益。

第一节　全面推动能源节约

推进能源消费革命。实施全民节能行动计划，全面推进工业、建筑、交通运输、公共机构等领域节能，实施锅炉（窑炉）、照明、电机系统升级改造及余热暖民等重点工程。大力开发、推广节能技术和产品，开展重大技术示范。实施重点用能单位“百千万”行动和节能自愿活动，推动能源管理体系、计量体系和能耗在线监测系统建设，开展能源评审和绩效评价。实施建筑能效提升和绿色建筑

全产业链发展计划。推行节能低碳电力调度。推进能源综合梯级利用。能源消费总量控制在50亿吨标准煤以内。

第二节　全面推进节水型社会建设

落实最严格的水资源管理制度，实施全民节水行动计划。坚持以水定产、以水定城，对水资源短缺地区实行更严格的产业准入、取用水定额控制。加快农业、工业、城镇节水改造，扎实推进农业综合水价改革，开展节水综合改造示范。加强重点用水单位监管，鼓励一水多用、优水优用、分质利用。建立水效标识制度，推广节水技术和产品。加快非常规水资源利用，实施雨洪资源利用、再生水利用等工程。用水总量控制在6700亿立方米以内。

第三节　强化土地节约集约利用

严控新增建设用地，有效管控新城新区和开发区无序扩张。有序推进城镇低效用地再开发和低丘缓坡土地开发利用，推进建设用地多功能开发、地上地下立体综合开发利用，促进空置楼宇、厂房等存量资源再利用。严控农村集体建设用地规模，探索建立收储制度，盘活农村闲置建设用地。开展建设用地节约集约利用调查评价。单位国内生产总值建设用地使用面积下降20%。

第四节　加强矿产资源节约和管理

强化矿产资源规划管控，严格分区管理、总量控制和开采准入制度，加强复合矿区开发的统筹协调。支持矿山企业技术和工艺改造，引导小型矿山兼并重组，关闭技术落后、破坏环境的矿山。大力推进绿色矿山和绿色矿业发展示范区建设，实施矿产资源节约与综合利用示范工程、矿产资源保护和储备工程，提高矿产资源开采率、选矿回收率和综合利用率。完善优势矿产限产保值机制。建立矿产资源国家权益金制度，健全矿产资源税费制度。开展找矿突破行动。

第五节　大力发展循环经济

实施循环发展引领计划，推进生产和生活系统循环链接，加快废弃物资源化利用。按照物质流和关联度统筹产业布局，推进园区循环化改造，建设工农复合型循环经济示范区，促进企业间、园区内、产业间耦合共生。推进城市矿山开发利用，做好工业固废等大宗废弃物资源化利用，加快建设城市餐厨废弃物、建筑垃圾和废旧纺织品等资源化利用和无害化处理系统，规范发展再制造。实行生产者责任延伸制度。健全再生资源回收利用网络，加强生活垃圾分类回收与再生资源回收的衔接。

第六节　倡导勤俭节约的生活方式

倡导合理消费，力戒奢侈消费，制止奢靡之风。在生产、流通、仓储、消费各环节落实全面节约要求。管住公款消费，深入开展反过度包装、反食品浪费、反过度消费行动，推动形成勤俭节约的社会风尚。推广城市自行车和公共交通等绿色出行服务系统。限制一次性用品使用。

第七节　建立健全资源高效利用机制

实施能源和水资源消耗、建设用地等总量和强度双控行动，强化目标责任，完善市场调节、标准控制和考核监管。建立健全用能权、用水权、碳排放权初始分配制度，创新有偿使用、预算管理、投融资机制，培育和发展交易市场。健全节能、节水、节地、节材、节矿标准体系，提高建筑节能标准，实现重点行业、设备节能标准全覆盖。强化节能评估审查和节能监察。建立健全中央对地方节能环保考核和奖励机制，进一步扩大节能减排财政政策综合示范。建立统一规范的国有自然资源资产出让平台。组织实施能效、水效领跑者引领行动。

专栏 16　资源节约集约循环利用重大工程

（一）全民节能行动

推进节能产品和服务进企业、进家庭。以六大高耗能行业为重点实施工业能效赶超计划，支持500家重点用能单位开展能效综合提升示范。组织能量系统优化、电机系统节能改造、节能技术产业化示范、煤炭消费减量替代、绿色照明等重点工程。

（二）全民节水行动

开展节水型社会综合示范。在100个城市开展分区计量、漏损节水改造。鼓励中水替代、废水深度处理和回用，推进五大高耗水行业和园区节水改造。实施100个合同节水管理示范试点。推广节水器具，鼓励居民更换不符合节水标准用水器具。实施海岛海水淡化示范工程。实施重点用水单位监控工程。

（三）建设用地节约集约利用

健全调查评价技术体系，建立涵盖城市、开发区、高校、村镇的建设用地节约集约利用评价国家级数据库，推广应用节地技术和节地模式。

（四）绿色矿山与绿色矿业发展示范区建设

加快推进绿色矿山建设，着力推进技术、产业和管理模式创新，引领传统矿业转型升级。在资源富集、管理创新能力强的地区，选择50个重点地区开展绿色矿业发展示范区建设。

（五）循环发展引领

推动75%的国家级园区和50%的省级园区开展循环化改造。建设50个工业废弃物综合利用产业基地。在100个地级及以上城市布局资源循环利用示范基地。建设城市废弃物在线回收、园区资源管理、废弃物交易等平台。

第四十四章　加大环境综合治理力度

创新环境治理理念和方式，实行最严格的环境保护制度，强化排污者主体责任，形成政府、企业、公众共治的环境治理体系，实现环境质量总体改善。

第一节　深入实施污染防治行动计划

制定城市空气质量达标计划，严格落实约束性指标，地级及以上城市重污染天数减少25%，加大重点地区细颗粒物污染治理力度。构建机动车船和燃料油环保达标监管体系。提高城市燃气化率。强化道路、施工等扬尘监管，禁止秸秆露天焚烧。加强重点流域、海域综合治理，严格保护良好水体和饮用水水源，加强水质较差湖泊综合治理与改善。推进水功能区分区管理，主要江河湖泊水功能区水质达标率达到80%以上。开展地下水污染调查和综合防治。实施土壤污染分类分级防治，优先保护农用地土壤环境质量安全，切实加强建设用地土壤环境监管。

第二节　大力推进污染物达标排放和总量减排

实施工业污染源全面达标排放计划。完善污染物排放标准体系，加强工业污染源监督性监测，公布未达标企业名单，实施限期整改。城市建成区内污染严重企业实施有序搬迁改造或依法关闭。开展全国第二次污染源普查。改革主要污染物总量控制制度，扩大污染物总量控制范围。在重点区域、重点行业推进挥发性有机物排放总量控制，全国排放总量下降10%以上。对中小型燃煤设施、城中村和城乡结合区域等实施清洁能源替代工程。沿海和汇入富营养化湖库的河流沿线所有地级及以上城市实施总氮排放总量控制。实施重点行业清洁生产改造。

第三节　严密防控环境风险

实施环境风险全过程管理。加强危险废物污染防治，开展危险废物专项整治。加大重点区域、有色等重点行业重金属污染防治力度。加强有毒有害化学物质环境和健康风险评估能力建设。推进核设施安全改进和放射性污染防治，强化核与辐射安全监管体系和能力建设。

第四节　加强环境基础设施建设

加快城镇垃圾处理设施建设，完善收运系统，提高垃圾焚烧处理率，做好垃圾渗滤液处理处置；加快城镇污水处理设施和管网建设改造，推进污泥无害化处理和资源化利用，实现城镇生活污水、垃圾处理设施全覆盖和稳定达标运行，城市、县城污水集中处理率分别达到95%和85%。建立全国统一、全面覆盖的实时在线环境监测监控系统，推进环境保护大数据建设。

第五节　改革环境治理基础制度

切实落实地方政府环境责任，开展环保督察巡视，建立环境质量目标责任制和评价考核机制。实行省以下环保机构监测监察执法垂直管理制度，探索建立跨地区环保机构，推行全流域、跨区域联防联控和城乡协同治理模式。推进多污染物综合防治和统一监管，建立覆盖所有固定污染源的企业排放许可制，实行排污许可“一证式”管理。建立健全排污权有偿使用和交易制度。严格环保执法，开展跨区域联合执法，强化执法监督和责任追究。建立企业环境信用记录和违法排污黑名单制度，强化企业污染物排放自行监测和环境信息公开，畅通公众参与渠道，完善环境公益诉讼制度。实行领导干部环境保护责任离任审计。

专栏 17　环境治理保护重点工程

（一）工业污染源全面达标排放

对钢铁、水泥、平板玻璃、造纸、印染、氮肥、制糖等行业不能稳定达标的企业进行改造。取缔不符合国家产业政策污染严重的项目。限期改造工业园区污水处理设施。全国地级及以上城市建成区基本淘汰 10 蒸吨以下燃煤锅炉，完成 35 蒸吨及以上燃煤锅炉脱硫脱硝除尘改造、钢铁行业烧结机脱硫改造、水泥行业脱硝改造。淘汰高汞催化剂乙炔法生产聚氯乙烯工艺。

（二）大气环境治理

以京津冀及周边地区、长三角、珠三角、东北地区为重点，控制区域煤炭消费总量，推进重点城市“煤改气”工程，新增用气 450 亿立方米，替代燃煤锅炉 18.9 万蒸吨。开展石化及化工企业、加油站挥发性有机物综合整治，加快

淘汰黄标车和老旧车辆，实施国Ⅵ排放标准和相应油品标准。推进油罐车、储油库油气回收治理。

（三）水环境治理

对江河源头及378个水质达到或优于Ⅲ类的江河湖库实施严格保护。实施重要江河湖库入河排污口整治工程，完成重要饮用水源地达标建设。实施太湖、洞庭湖、滇池、巢湖、鄱阳湖、白洋淀、乌梁素海、呼伦湖、艾比湖等重点湖泊水污染综合治理和长江中下游、珠三角等河湖内源治理，推进长江、黄河、珠江、松花江、淮河、海河、辽河等七大重点流域综合治理，基本消除劣Ⅴ类水体。加大黑臭水体整治力度，地级及以上城市建成区黑臭水体控制在10%以内。开展京津冀晋等区域地下水修复试点。整治主要河口海湾污染。

（四）土壤环境治理

开展土壤污染加密调查。完成100个农用地和100个建设用地污染治理试点。建设6个土壤污染防治先行示范区。做好化工企业安全环保搬迁后的土壤污染治理工作。开展1000万亩受污染耕地治理修复和4000万亩受污染耕地风险管控。深入推进以湘江流域为重点的重金属污染综合治理。

（五）危险废物污染防治

开展全国危险废物普查，加强含铬、铅、汞、镉、砷等重金属废物以及生活垃圾焚烧飞灰、抗生素菌渣、高毒持久性废物等的综合整治。建设危险废物处置设施。

（六）核与辐射安全保障能力提升

建成核与辐射安全监管技术研发基地，加快建设早期核设施退役及历史遗留放射性废物处理处置工程，建设5座中低放射性废物处置场和1个高放射性废物处理地下实验室，建设高风险放射源实时监控系统，废旧放射源100%安全收贮。加强国家核事故应急救援队伍建设。

第四十五章　加强生态保护修复

坚持保护优先、自然恢复为主，推进自然生态系统保护与修复，构建生态廊道和生物多样性保护网络，全面提升各类自然生态系统稳定性和生态服务功能，筑牢生态安全屏障。

第一节　全面提升生态系统功能

开展大规模国土绿化行动，加强林业重点工程建设，完善天然林保护制度，全面停止天然林商业性采伐，保护培育森林生态系统。发挥国有林区林场在绿化国土中的带动作用。创新产权模式，引导社会资金投入植树造林。严禁移植天然大树进城。扩大退耕还林还草，保护治理草原生态系统，推进禁牧休牧轮牧和天然草原退牧还草，加强“三化”草原治理，草原植被综合盖度达到56%。保护修复荒漠生态系统，加快风沙源区治理，遏制沙化扩展。保障重要河湖湿地及河口生态水位，保护修复湿地与河湖生态系统，建立湿地保护制度。

第二节　推进重点区域生态修复

坚持源头保护、系统恢复、综合施策，推进荒漠化、石漠化、水土流失综合治理。继续实施京津风沙源治理二期工程。强化三江源等江河源头和水源涵养区生态保护。加大南水北调水源地及沿线生态走廊、三峡库区等区域生态保护力度，推进沿黄生态经济带建设。支持甘肃生态安全屏障综合示范区建设。开展典型受损生态系统恢复和修复示范。完善国家地下水监测系统，开展地下水超采区综合治理。建立沙化土地封禁保护制度。有步骤对居住在自然保护区核心区与缓冲区的居民实施生态移民。

第三节　扩大生态产品供给

丰富生态产品，优化生态服务空间配置，提升生态公共服务供给能力。加大风景名胜区、森林公园、湿地公园、沙漠公园等保护力度，加强林区道路等基础

设施建设，适度开发公众休闲、旅游观光、生态康养服务和产品。加快城乡绿道、郊野公园等城乡生态基础设施建设，发展森林城市，建设森林小镇。打造生态体验精品线路，拓展绿色宜人的生态空间。

第四节　维护生物多样性

实施生物多样性保护重大工程。强化自然保护区建设和管理，加大典型生态系统、物种、基因和景观多样性保护力度。开展生物多样性本底调查与评估，完善观测体系。科学规划和建设生物资源保护库圃，建设野生动植物人工种群保育基地和基因库。严防并治理外来物种入侵和遗传资源丧失。强化野生动植物进出口管理，严厉打击象牙等野生动植物制品非法交易。

专栏 18　山水林田湖生态工程

（一）国家生态安全屏障保护修复

推进青藏高原、黄土高原、云贵高原、秦巴山脉、祁连山脉、大小兴安岭和长白山、南岭山地地区、京津冀水源涵养区、内蒙古高原、河西走廊、塔里木河流域、滇桂黔喀斯特地区等关系国家生态安全核心地区生态修复治理。

（二）国土绿化行动

开展大规模植树增绿活动，集中连片建设森林，加强“三北”、沿海、长江和珠江流域等防护林体系建设，加快国家储备林及用材林基地建设，推进退化防护林修复，建设大尺度绿色生态保护空间和连接各生态空间的绿色廊道，形成国土绿化网络。

（三）国土综合整治

开展重点流域、海岸带和海岛综合整治，加强矿产资源开发集中地区地质环境治理和生态修复。推进损毁土地、工矿废弃地复垦，修复受自然灾害、大型建设项目破坏的山体、矿山废弃地。加大京杭大运河、黄河明清故道沿线综合治理。推进边疆地区国土综合开发、防护和整治。

（四）天然林资源保护

将天然林和可以培育成为天然林的未成林封育地、疏林地、灌木林地等全部划入天然林保护范围，对难以自然更新的林地通过人工造林恢复森林植被。

（五）新一轮退耕退牧还林还草

实施具备条件的25度以上坡耕地、严重沙化耕地和重要水源地15—25度坡耕地退耕还林还草。稳定扩大退牧还草范围，合理布局草原围栏和退化草原补播改良，恢复天然草原生态和生物多样性。开展毒害草、黑土滩和农牧交错带已垦草原治理。

（六）防沙治沙和水土流失综合治理

实施北方防沙带、黄土高原区、东北黑土区、西南岩溶区等重点区域水土流失综合防治，加强坡耕地综合治理、侵蚀沟整治和生态清洁小流域建设。新增水土流失治理面积27万平方公里。

（七）湿地保护与恢复

加强长江中上游、黄河沿线及贵州草海等自然湿地保护，对功能降低、生物多样性减少的湿地进行综合治理，开展湿地可持续利用示范。全国湿地面积不低于8亿亩。

（八）濒危野生动植物抢救性保护

保护改善大熊猫、朱鹮、虎、豹、亚洲象等珍稀濒危野生动物栖息地，建设救护繁育中心和基因库，开展拯救繁育和野化放归。加强兰科植物等珍稀濒危植物及极小种群野生植物生境恢复和人工拯救。

第四十六章　积极应对全球气候变化

坚持减缓与适应并重，主动控制碳排放，落实减排承诺，增强适应气候变化能力，深度参与全球气候治理，为应对全球气候变化作出贡献。

第一节　有效控制温室气体排放

有效控制电力、钢铁、建材、化工等重点行业碳排放，推进工业、能源、建筑、交通等重点领域低碳发展。支持优化开发区域率先实现碳排放达到峰值。深化各类低碳试点，实施近零碳排放区示范工程。控制非二氧化碳温室气体排放。推动建设全国统一的碳排放交易市场，实行重点单位碳排放报告、核查、核证和配额管理制度。健全统计核算、评价考核和责任追究制度，完善碳排放标准体系。加大低碳技术和产品推广应用力度。

第二节　主动适应气候变化

在城乡规划、基础设施建设、生产力布局等经济社会活动中充分考虑气候变化因素，适时制定和调整相关技术规范标准，实施适应气候变化行动计划。加强气候变化系统观测和科学研究，健全预测预警体系，提高应对极端天气和气候事件能力。

第三节　广泛开展国际合作

坚持共同但有区别的责任原则、公平原则、各自能力原则，积极承担与我国基本国情、发展阶段和实际能力相符的国际义务，落实强化应对气候变化行动的国家自主贡献。积极参与应对全球气候变化谈判，推动建立公平合理、合作共赢的全球气候治理体系。深化气候变化多双边对话交流与务实合作。充分发挥气候变化南南合作基金作用，支持其他发展中国家加强应对气候变化能力。

第四十七章　健全生态安全保障机制

加强生态文明制度建设，建立健全生态风险防控体系，提升突发生态环境事件应对能力，保障国家生态安全。

第一节　完善生态环境保护制度

落实生态空间用途管制，划定并严守生态保护红线，确保生态功能不降低、面积不减少、性质不改变。建立森林、草原、湿地总量管理制度。加快建立多元化生态补偿机制，完善财政支持与生态保护成效挂钩机制。建立覆盖资源开采、消耗、污染排放及资源性产品进出口等环节的绿色税收体系。研究建立生态价值评估制度，探索编制自然资源资产负债表，建立实物量核算账户。实行领导干部自然资源资产离任审计。建立健全生态环境损害评估和赔偿制度，落实损害责任终身追究制度。

第二节　加强生态环境风险监测预警和应急响应

建立健全国家生态安全动态监测预警体系，定期对生态风险开展全面调查评估。健全国家、省、市、县四级联动的生态环境事件应急网络，完善突发生态环境事件信息报告和公开机制。严格环境损害赔偿，在高风险行业推行环境污染强制责任保险。

第四十八章　发展绿色环保产业

培育服务主体，推广节能环保产品，支持技术装备和服务模式创新，完善政策机制，促进节能环保产业发展壮大。

第一节　扩大环保产品和服务供给

完善企业资质管理制度，鼓励发展节能环保技术咨询、系统设计、设备制造、工程施工、运营管理等专业化服务。推行合同能源管理、合同节水管理和环境污染第三方治理。鼓励社会资本进入环境基础设施领域，开展小城镇、园区环境综合治理托管服务试点。发展一批具有国际竞争力的大型节能环保企业，推动先进适用节能环保技术产品走出去。统筹推行绿色标识、认证和政府绿色采购制

度。建立绿色金融体系，发展绿色信贷、绿色债券，设立绿色发展基金。完善煤矸石、余热余压、垃圾和沼气等发电上网政策。加快构建绿色供应链产业体系。

第二节　发展环保技术装备

增强节能环保工程技术和设备制造能力，研发、示范、推广一批节能环保先进技术装备。加快低品位余热发电、小型燃气轮机、细颗粒物治理、汽车尾气净化、垃圾渗滤液处理、污泥资源化、多污染协同处理、土壤修复治理等新型技术装备研发和产业化。推广高效烟气除尘和余热回收一体化、高效热泵、半导体照明、废弃物循环利用等成熟适用技术。

第十一篇　构建全方位开放新格局

以“一带一路”建设为统领，丰富对外开放内涵，提高对外开放水平，协同推进战略互信、投资经贸合作、人文交流，努力形成深度融合的互利合作格局，开创对外开放新局面。

第四十九章　完善对外开放战略布局

全面推进双向开放，促进国内国际要素有序流动、资源高效配置、市场深度融合，加快培育国际竞争新优势。

第一节　完善对外开放区域布局

加强内陆沿边地区口岸和基础设施建设，开辟跨境多式联运交通走廊。发展外向型产业集群，形成各有侧重的对外开放基地。加快海关特殊监管区域整合优化升级，提高边境经济合作区、跨境经济合作区发展水平。提升经济技术开发区的对外合作水平。以内陆中心城市和城市群为依托，建设内陆开放战略支撑带。

支持沿海地区全面参与全球经济合作和竞争，发挥环渤海、长三角、珠三角地区的对外开放门户作用，率先对接国际高标准投资和贸易规则体系，培育具有全球竞争力的经济区。支持宁夏等内陆开放型经济试验区建设。支持中新（重庆）战略性互联互通示范项目。推进双边国际合作产业园建设。探索建立舟山自由贸易港区。

第二节　深入推进国际产能和装备制造合作

以钢铁、有色、建材、铁路、电力、化工、轻纺、汽车、通信、工程机械、航空航天、船舶和海洋工程等行业为重点，采用境外投资、工程承包、技术合作、装备出口等方式，开展国际产能和装备制造合作，推动装备、技术、标准、服务走出去。建立产能合作项目库，推动重大示范项目建设。引导企业集群式走出去，因地制宜建设境外产业集聚区。加快拓展多双边产能合作机制，积极与发达国家合作共同开拓第三方市场。建立企业、金融机构、地方政府、商协会等共同参与的统筹协调和对接机制。完善财税、金融、保险、投融资平台、风险评估等服务支撑体系。

第三节　加快对外贸易优化升级

实施优进优出战略，推动外贸向优质优价、优进优出转变，加快建设贸易强国。促进货物贸易和服务贸易融合发展，大力发展生产性服务贸易，服务贸易占对外贸易比重达到16%以上。巩固提升传统出口优势，促进加工贸易创新发展。优化对外贸易布局，推动出口市场多元化，提高新兴市场比重，巩固传统市场份额。鼓励发展新型贸易方式。发展出口信用保险。积极扩大进口，优化进口结构，更多进口先进技术装备和优质消费品。积极应对国外技术性贸易措施，强化贸易摩擦预警，化解贸易摩擦和争端。

第四节　提升利用外资和对外投资水平

扩大开放领域，放宽准入限制，积极有效引进境外资金和先进技术，提升利用外资综合质量。放开育幼、建筑设计、会计审计等服务领域外资准入限制，扩大银行、保险、证券、养老等市场准入。鼓励外资更多投向先进制造、高新技术、节能环保、现代服务业等领域和中西部及东北地区，支持设立研发中心。鼓励金融机构和企业在境外融资。支持企业扩大对外投资，深度融入全球产业链、价值链、物流链。建设一批大宗商品境外生产基地及合作园区。积极搭建对外投资金融和信息服务平台。

第五十章　健全对外开放新体制

完善法治化、国际化、便利化的营商环境，健全有利于合作共赢、同国际投资贸易规则相适应的体制机制。

第一节　营造优良营商环境

营造公平竞争的市场环境、高效廉洁的政务环境、公正透明的法律政策环境和开放包容的人文环境。统一内外资法律法规，制定外资基础性法律，保护外资企业合法权益。提高自由贸易试验区建设质量，深化在服务业开放、金融开放和创新、投资贸易便利化、事中事后监管等方面的先行先试，在更大范围推广复制成功经验。对外资全面实行准入前国民待遇加负面清单管理制度。完善外商投资国家安全审查制度。创新外资监管服务方式。建立便利跨境电子商务等新型贸易方式的体制，全面推进国际贸易单一窗口、一站式作业、一体化通关和政府信息共享共用、口岸风险联防联控。健全服务贸易促进体系，发挥贸易投资促进机构、行业协会商会等的作用。加强知识产权保护和反垄断执法，深化执法国际合作。

第二节　完善境外投资管理体制

完善境外投资发展规划和重点领域、区域、国别规划体系。健全备案为主、核准为辅的对外投资管理体制，健全对外投资促进政策和服务体系，提高便利化水平。推动个人境外投资，健全合格境内个人投资者制度。建立国有资本、国有企业境外投资审计制度，健全境外经营业绩考核和责任追究制度。

第三节　扩大金融业双向开放

有序实现人民币资本项目可兑换，提高可兑换、可自由使用程度，稳步推进人民币国际化，推进人民币资本走出去。逐步建立外汇管理负面清单制度。放宽境外投资汇兑限制，改进企业和个人外汇管理。放宽跨国公司资金境外运作限制，逐步提高境外放款比例。支持保险业走出去，拓展保险资金境外投资范围。统一内外资企业及金融机构外债管理，稳步推进企业外债登记制管理改革，健全本外币全口径外债和资本流动审慎管理框架体系。加强国际收支监测。推进资本市场双向开放，提高股票、债券市场对外开放程度，放宽境内机构境外发行债券，以及境外机构境内发行、投资和交易人民币债券。提高金融机构国际化水平，加强海外网点布局，完善全球服务网络，提高国内金融市场对境外机构开放水平。

第四节　强化对外开放服务保障

推动同更多国家签署高标准双边投资协定、司法协助协定、税收协定，争取同更多国家互免或简化签证手续。构建高效有力的海外利益保护体系，维护我国公民和法人海外合法权益。健全反走私综合治理机制，完善反洗钱、反恐怖融资、反逃税监管措施，完善风险防范体制机制。提高海外安全保障能力和水平，

完善领事保护制度，提供风险预警、投资促进、权益保障等便利服务。强化涉外法律服务，建立知识产权跨境维权援助机制。

第五十一章　推进“一带一路”建设

秉持亲诚惠容，坚持共商共建共享原则，开展与有关国家和地区多领域互利共赢的务实合作，打造陆海内外联动、东西双向开放的全面开放新格局。

第一节　健全“一带一路”合作机制

围绕政策沟通、设施联通、贸易畅通、资金融通、民心相通，健全“一带一路”双边和多边合作机制。推动与沿线国家发展规划、技术标准体系对接，推进沿线国家间的运输便利化安排，开展沿线大通关合作。建立以企业为主体、以项目为基础、各类基金引导、企业和机构参与的多元化融资模式。加强同国际组织和金融组织机构合作，积极推进亚洲基础设施投资银行、金砖国家新开发银行建设，发挥丝路基金作用，吸引国际资金共建开放多元共赢的金融合作平台。充分发挥广大海外侨胞和归侨侨眷的桥梁纽带作用。

第二节　畅通“一带一路”经济走廊

推动中蒙俄、中国－中亚－西亚、中国－中南半岛、新亚欧大陆桥、中巴、孟中印缅等国际经济合作走廊建设，推进与周边国家基础设施互联互通，共同构建连接亚洲各次区域以及亚欧非之间的基础设施网络。加强能源资源和产业链合作，提高就地加工转化率。支持中欧等国际集装箱运输和邮政班列发展。建设上合组织国际物流园和中哈物流合作基地。积极推进“21世纪海上丝绸之路”战略支点建设，参与沿线重要港口建设与经营，推动共建临港产业集聚区，畅通海上贸易通道。推进公铁水及航空多式联运，构建国际物流大通道，加强重要通道、

口岸基础设施建设。建设新疆丝绸之路经济带核心区、福建“21世纪海上丝绸之路”核心区。打造具有国际航运影响力的海上丝绸之路指数。

第三节　共创开放包容的人文交流新局面

办好“一带一路”国际高峰论坛，发挥丝绸之路（敦煌）国际文化博览会等作用。广泛开展教育、科技、文化、体育、旅游、环保、卫生及中医药等领域合作。构建官民并举、多方参与的人文交流机制，互办文化年、艺术节、电影节、博览会等活动，鼓励丰富多样的民间文化交流，发挥妈祖文化等民间文化的积极作用。联合开发特色旅游产品，提高旅游便利化。加强卫生防疫领域交流合作，提高合作处理突发公共卫生事件能力。推动建立智库联盟。

第五十二章　积极参与全球经济治理

推动国际经济治理体系改革完善，积极引导全球经济议程，维护和加强多边贸易体制，促进国际经济秩序朝着平等公正、合作共赢的方向发展，共同应对全球性挑战。

第一节　维护多边贸易体制主渠道地位

坚持互利共赢原则，促进全球贸易投资的自由化和便利化，坚定反对各种形式的贸易保护主义。维护世界贸易组织在全球贸易投资中的主渠道地位，推动多边贸易谈判进程，促进多边贸易体制均衡、共赢、包容发展，形成公正、合理、透明的国际经贸规则体系。

第二节　强化区域和双边自由贸易体制建设

加快实施自由贸易区战略，逐步构筑高标准自由贸易区网络。积极同“一带一路”沿线国家和地区商建自由贸易区，加快区域全面经济伙伴关系协定、中国－海合会、中日韩自贸区等谈判，推动与以色列、加拿大、欧亚经济联盟和欧盟等建立自贸关系以及亚太自贸区相关工作。全面落实中韩、中澳等自由贸易协定和中国－东盟自贸区升级议定书。继续推进中美、中欧投资协定谈判。

第三节　推动完善国际经济治理体系

积极参与全球经济治理机制合作，支持主要全球治理平台和区域合作平台更好发挥作用，推动全球治理体制更加公平合理。支持发展中国家平等参与全球经济治理，促进国际货币体系和国际金融监管改革。加强宏观经济政策国际协调，促进全球经济平衡、金融安全、稳定增长。积极参与网络、深海、极地、空天等领域国际规则制定。积极参与国际标准制定。办好二十国集团杭州峰会。

第五十三章　积极承担国际责任和义务

扩大对外援助规模，完善对外援助方式，为发展中国家提供更多免费的人力资源、发展规划、经济政策等方面咨询培训，扩大科技教育、医疗卫生、防灾减灾、环境治理、野生动植物保护、减贫等领域对外合作和援助，加大人道主义援助力度。积极落实2030年可持续发展议程。推动形成多元化开发性融资格局。维护国际公共安全，反对一切形式的恐怖主义，积极支持并参与联合国维和行动，加强防扩散国际合作，参与管控热点敏感问题，共同维护国际通道安全。加强多边和双边协调，参与国际网络空间治理，维护全球网络安全。推动反腐败国际合作。

第十二篇　深化内地和港澳、大陆和台湾地区合作发展

支持港澳巩固传统优势、培育发展新优势，拓宽两岸关系和平发展道路，更好实现经济互补互利、共同发展。

第五十四章　支持香港澳门长期繁荣稳定发展

全面准确贯彻“一国两制”、“港人治港”、“澳人治澳”、高度自治的方针，严格依照宪法和基本法办事，发挥港澳独特优势，提升港澳在国家经济发展和对外开放中的地位和功能，支持港澳发展经济、改善民生、推进民主、促进和谐。

第一节　支持港澳提升经济竞争力

支持香港巩固和提升国际金融、航运、贸易三大中心地位，强化全球离岸人民币业务枢纽地位和国际资产管理中心功能，推动融资、商贸、物流、专业服务等向高端高增值方向发展。支持香港发展创新及科技事业，培育新兴产业。支持香港建设亚太区国际法律及解决争议服务中心。支持澳门建设世界旅游休闲中心、中国与葡语国家商贸合作服务平台，积极发展会展商贸等产业，促进经济适度多元可持续发展。

第二节　深化内地与港澳合作

支持港澳参与国家双向开放、“一带一路”建设，鼓励内地与港澳企业发挥各自优势，通过多种方式合作走出去。加大内地对港澳开放力度，推动内地与港澳关于建立更紧密经贸关系安排升级。深化内地与香港金融合作，加快两地市场互联互通。加深内地同港澳在社会、民生、文化、教育、环保等领域交流合作，支持内地与港澳开展创新及科技合作，支持港澳中小微企业和青年人在内地发展创业。支持共建大珠三角优质生活圈，加快前海、南沙、横琴等粤港澳合作平台

建设。支持港澳在泛珠三角区域合作中发挥重要作用，推动粤港澳大湾区和跨省区重大合作平台建设。

第五十五章　推进两岸关系和平发展和祖国统一进程

坚持“九二共识”和一个中国原则，坚决反对“台独”。在坚持原则立场基础上，以互利共赢方式深化两岸经济合作，扩大两岸合作领域，增进两岸同胞福祉，巩固和推进两岸关系和平发展。

第一节　促进两岸经济融合发展

加强两岸宏观政策交流，拓展经济合作空间和共同利益。推动两岸产业优势互补、融合发展，鼓励两岸企业相互持股、合作创新、共创品牌、共拓市场。深化两岸金融合作，支持两岸资本市场开展多层次合作。推动两岸贸易投资扩大规模、提升层次。扩大对台湾服务业开放，加强两岸在农渔业、中小企业、电子商务等领域合作。推进海峡西岸经济区、中国（福建）自由贸易试验区建设，打造台商投资区、平潭综合实验区、福州新区、昆山深化两岸产业合作试验区等对台合作平台，深化厦门对台合作支点建设。鼓励长三角、珠三角、环渤海等台资企业聚集区发挥优势，支持台资企业转型升级，引导向中西部地区梯度转移。

第二节　加强两岸人文社会交流

扩大两岸人员往来，完善台湾同胞待遇政策措施，为台湾居民在大陆工作、学习、生活提供更多便利。加强两岸文化交流合作，共同弘扬中华文化，增进两岸同胞文化、民族认同。深化两岸教育交流合作，扩大两岸高校学历互认范围，推进闽台职业教育交流合作试验区建设。鼓励两岸联合开展科技研发合作，深化两岸学术交流。加强两岸基层和青少年交流，让更多台湾普通民众、青少年和中小企业在交流合作中受益。

第十三篇　全力实施脱贫攻坚

充分发挥政治优势和制度优势，贯彻精准扶贫、精准脱贫基本方略，创新扶贫工作机制和模式，采取超常规措施，加大扶贫攻坚力度，坚决打赢脱贫攻坚战。

第五十六章　推进精准扶贫精准脱贫

按照扶贫对象精准、项目安排精准、资金使用精准、措施到户精准、因村派人精准、脱贫成效精准的要求，切实提高扶贫实效，稳定实现农村贫困人口不愁吃、不愁穿，义务教育、基本医疗和住房安全有保障。

第一节　创新扶贫开发方式

根据致贫原因和脱贫需求，对贫困人口实行分类精准扶持。通过发展特色产业、转移就业、易地扶贫搬迁、生态保护扶贫、教育培训、开展医疗保险和医疗救助等措施，实现约5000万建档立卡贫困人口脱贫；通过实行社保政策兜底，实现其余完全或部分丧失劳动能力的贫困人口脱贫。探索资产收益扶持制度，通过土地托管、扶持资金折股量化、农村土地经营权入股等方式，让贫困人口分享更多资产收益。

第二节　健全精准扶贫工作机制

全面做好精准识别、建档立卡工作。加强贫困人口动态统计监测，建立精准扶贫台账，加强定期核查和有进有出动态管理。建立贫困户脱贫认定机制，制定严格规范透明的贫困县退出标准、程序、核查办法。建立扶贫工作绩效社会监督机制，开展贫困地区群众扶贫满意度调查，建立扶贫政策落实情况跟踪审计和扶贫成效第三方评估机制。

第五十七章　支持贫困地区加快发展

把革命老区、民族地区、边疆地区、集中连片贫困地区作为脱贫攻坚重点，持续加大对集中连片特殊困难地区的扶贫投入力度，增强造血能力，实现贫困地区农民人均可支配收入增长幅度高于全国平均水平，基本公共服务主要领域指标接近全国平均水平。

第一节　加强贫困地区基础设施建设

因地制宜解决贫困地区通路、通水、通电、通网络等问题。构建贫困地区外通内联的交通运输通道。建设15.2万公里通建制村沥青（水泥）路。加强贫困地区水利建设，全面解决贫困人口饮水安全问题，大力扶持贫困地区农村水电开发。加大贫困地区农网改造力度。宽带网络覆盖90%以上的贫困村。加大以工代赈投入力度，支持贫困地区中小型公益性基础设施建设。继续实施整村推进，加快改善贫困村生产生活条件。

第二节　提高贫困地区公共服务水平

把建档立卡贫困户放在优先位置，全面完成危房改造，切实保障贫困户住房安全。改善贫困地区基本公共服务，提高教育质量和医疗服务水平。集中实施一批文化惠民扶贫项目，推动贫困地区县级公共文化体育设施达到国家标准。

第五十八章　完善脱贫攻坚支撑体系

完善扶贫脱贫扶持政策，健全扶贫工作机制，创新各类扶贫模式及其考评体系，为脱贫攻坚提供强有力支撑。

第一节　强化政策保障

加大中央和省级财政扶贫投入，发挥政策性金融、开发性金融、商业性金融和合作性金融的互补作用，整合各类扶贫资源，拓宽资金来源渠道。优先保证扶贫开发用地需要，专项安排贫困县年度新增建设用地计划指标。加大贫困地区土地整治支持力度，允许贫困县将城乡建设用地增减挂钩指标在省域范围内使用。对在贫困地区开发水电、矿产资源占用集体土地的，试行给原住居民集体股权方式进行补偿。完善资源开发收益分享机制，使贫困地区更多分享开发收益。加大科技扶贫力度。实施贫困地区人才支持计划和本土人才培养计划。

第二节　健全广泛参与机制

健全东西扶贫协作和党政机关、部队、人民团体、国有企业定点扶贫机制。鼓励支持民营企业、社会组织、个人参与扶贫开发，引导社会扶贫重心下移，实现社会帮扶资源和精准扶贫有效对接。创新参与模式，鼓励设立产业投资基金和公益信托基金，实施扶贫志愿者行动计划和社会工作专业人才服务贫困地区计划。着力打造扶贫公益品牌。

第三节　落实脱贫工作责任制

进一步完善中央统筹、省（自治区、直辖市）负总责、市（地）县抓落实的工作机制。强化脱贫工作责任考核，全面落实扶贫开发工作成效考核办法，对贫困县重点考核脱贫成效。建立扶贫工作督查制度，强化责任追究。

专栏 19　脱贫攻坚重点工程

（一）特色产业扶贫

重点支持贫困村、贫困户发展种养业和传统手工业，实施贫困村“一村一品”产业推动行动和“互联网+”产业扶贫，实施电商扶贫、光伏扶贫、乡村旅游扶贫工程，实现 3000 万以上贫困人口脱贫。

（二）劳务输出扶贫

加大职业技能提升计划和贫困户教育培训工程实施力度，确保贫困家庭劳动力至少掌握一门致富技能。实施劳务对接工程，加强就业指导与服务，通过与区外劳务需求对接引导青壮年劳动力输出，实现1000万人转移就业脱贫。

（三）易地扶贫搬迁

对“一方水土养不活一方人”地区约1000万贫困人口实施易地搬迁，支持新建住房及配套基础设施、公共服务设施，依托小城镇、工业园区提供更多就业机会，提高贫困人口自我发展能力，实现有业可就、稳定脱贫。

（四）交通扶贫

实施“双百”工程，改造建设百万公里农村公路，加强贫困地区旅游路、资源路、产业园区路建设；推动国家干线交通网连接贫困地区的百个重大交通项目建设。

（五）生态保护扶贫

针对生态敏感和脆弱地区（流域）的贫困人口，重点采取加大生态补偿力度、实施生态保护修复工程等措施，提高收入水平，创造更多就业岗位。

（六）教育扶贫

全面改善贫困地区义务教育薄弱学校基本办学条件，加强乡村教师培训，实施好农村义务教育学生营养改善计划，加大对贫困家庭子女学前教育、特殊教育、高中阶段教育、高等教育资助救助力度。继续实施“雨露计划”，让未能升学的贫困家庭初高中毕业生都能接受职业教育。

（七）健康扶贫与社保兜底脱贫

对因病致贫人口提供医疗救助保障，明显改善贫困地区医疗服务能力，推进全国二级以上医疗卫生机构加强对贫困县的对口帮扶。对无法依靠产业扶持和就业帮助脱贫的家庭实行政策性保障兜底，将所有符合条件的贫困家庭纳入低保范围，做到应保尽保。

（八）金融扶贫

发行政策性金融债券和专项债券筹集资金，支持扶贫开发。设立扶贫再贷款，引导金融机构重点支持贫困地区发展特色产业和贫困人口就业创业。面向建档立卡贫困户，发展财政贴息、免抵押免担保的扶贫小额信贷。健全保险服务网络，完善融资担保和风险补偿机制。

第十四篇　提升全民教育和健康水平

把提升人的发展能力放在突出重要位置，全面提高教育、医疗卫生水平，着力增强人民科学文化和健康素质，加快建设人力资本强国。

第五十九章　推进教育现代化

全面贯彻党的教育方针，坚持教育优先发展，加快完善现代教育体系，全面提高教育质量，促进教育公平，培养德智体美全面发展的社会主义建设者和接班人。

第一节　加快基本公共教育均衡发展

建立城乡统一、重在农村的义务教育经费保障机制，加大公共教育投入向中西部和民族边远贫困地区的倾斜力度。科学推进城乡义务教育公办学校标准化建设，改善薄弱学校和寄宿制学校办学条件，优化教育布局，努力消除城镇学校“大班额”，基本实现县域校际资源均衡配置，义务教育巩固率提高到95%。加强教师队伍特别是乡村教师队伍建设，落实乡村教师支持计划，通过政府购买岗位等方式，解决结构性、阶段性、区域性教师短缺问题。改善乡村教学环境。鼓励普惠性幼儿园发展，加强农村普惠性学前教育，实施学前教育三年行动计划，学前三年毛入园率提高到85%。普及高中阶段教育，率先从建档立卡的家庭经济困难学生实施普通高中免除学杂费，高中阶段教育毛入学率达到90%以上。提升残疾人群特殊教育普及水平、条件保障和教育质量。积极推进民族教育发展，科学稳妥推行双语教育，加大双语教师培训力度。

第二节　推进职业教育产教融合

完善现代职业教育体系，加强职业教育基础能力建设。推动具备条件的普通本科高校向应用型转变。推行产教融合、校企合作的应用型人才和技术技能人才培养模式，促进职业学校教师和企业技术人才双向交流。推动专业设置、课程内容、教学方式与生产实践对接。促进职业教育与普通教育双向互认、纵向流动。逐步分类推进中等职业教育免除学杂费，实行国家基本职业培训包制度。

第三节　提升大学创新人才培养能力

推进现代大学制度建设，完善学校内部治理结构。建设一流师资队伍，用新理论、新知识、新技术更新教学内容。完善高等教育质量保障体系。推进高等教育分类管理和高等学校综合改革，优化学科专业布局，改革人才培养机制，实行学术人才和应用人才分类、通识教育和专业教育相结合的培养制度，强化实践教学，着力培养学生创意创新创业能力。深入实施中西部高等教育振兴计划，扩大重点高校对中西部和农村地区招生规模。全面提高高校创新能力，统筹推进世界一流大学和一流学科建设。

第四节　加快学习型社会建设

大力发展继续教育，构建惠及全民的终身教育培训体系。推动各类学习资源开放共享，办好开放大学，发展在线教育和远程教育，整合各类数字教育资源向全社会提供服务。建立个人学习账号和学分累计制度，畅通继续教育、终身学习通道，制定国家资历框架，推进非学历教育学习成果、职业技能等级学分转换互认。发展老年教育。

第五节　增强教育改革发展活力

深化教育改革，增强学生社会责任感、法治意识、创新精神、实践能力，全面加强体育卫生、心理健康、艺术审美教育，培养创新兴趣和科学素养。深化考

试招生制度和教育教学改革。推行初高中学业水平考试和综合素质评价。全面推开中小学教师职称制度改革，改善教师待遇。推动现代信息技术与教育教学深度融合。依法保障教育投入。实行管办评分离，扩大学校办学自主权，完善教育督导，加强社会监督。建立分类管理、差异化扶持的政策体系，鼓励社会力量和民间资本提供多样化教育服务。完善资助体系，实现家庭经济困难学生资助全覆盖。

专栏 20　教育现代化重大工程

（一）义务教育学校标准化

实施加快中西部教育发展行动计划，逐步实现未达标城乡义务教育公办学校的师资标准化配置和校舍、场地标准化。

（二）高中阶段教育普及攻坚计划

增加中西部贫困地区尤其是集中连片特殊困难地区高中阶段教育资源，使中西部贫困地区未升入普通高中的初中毕业生基本进入中等职业学校就读。

（三）普惠性幼儿园建设

加强普惠性幼儿园建设，重点保障中西部农村适龄儿童和实施全面两孩政策城镇新增适龄儿童入园需求。

（四）产教融合发展

支持百所高职院校和千所中职学校加强校企合作，共建职业教育实习实训设施；支持本科高校改善教学实验实训设施等基本办学条件；建设一批高水平应用型本科高校。支持校企合作方式建设服务现代产业的新兴学科专业集群。

（五）世界一流大学和一流学科建设

重点支持若干所高校和一批学科进入世界一流行列，若干学科进入世界一流学科前列。继续推进高等学校创新能力提升计划。

（六）发展继续教育

支持高等学校和职业院校为进城定居农民工、现代职业农民、现代产业工人和退役军人提供继续教育培训。建立个人学习账号和学分认证平台。

（七）教师队伍建设

支持师范教育发展，实施高素质教育人才培养工程。补充民族地区双语教师和贫困地区中职教师。每年安排农村教师“特岗计划”，逐步扩大到10万人。建设乡村教师周转宿舍。实施中西部中小学首席教师岗位计划和高校高水平教师引进计划。加大特教教师培养力度。

（八）教育信息化

加快实施“三通两平台”建设工程，继续支持农村中小学信息化基础设施建设。通过购买服务建设国家级优质教育资源平台。以职业教育和应用型高等教育为重点，发展现代远程教育和在线教育。

（九）教育国际交流合作

推进共建“一带一路”教育行动。实施留学行动计划。继续办好孔子学院。

第六十章　推进健康中国建设

深化医药卫生体制改革，坚持预防为主的方针，建立健全基本医疗卫生制度，实现人人享有基本医疗卫生服务，推广全民健身，提高人民健康水平。

第一节　全面深化医药卫生体制改革

实行医疗、医保、医药联动，推进医药分开，建立健全覆盖城乡居民的基本医疗卫生制度。全面推进公立医院综合改革，坚持公益属性，破除逐利机制，降低运行成本，逐步取消药品加成，推进医疗服务价格改革，完善公立医院补偿机制。建立现代医院管理制度，落实公立医院独立法人地位，建立符合医疗卫生行业特点的人事薪酬制度。完善基本药物制度，深化药品、耗材流通体制改革，健全药品供应保障机制。鼓励研究和创制新药，将已上市创新药和通过一致性评价的药品优先列入医保目录。鼓励社会力量兴办健康服务业，推进非营利性民营医院和公立医院同等待遇。强化全行业监管，提高医疗服务质量，保障医疗安全。优化从医环境，完善纠纷调解机制，构建和谐医患关系。

第二节　健全全民医疗保障体系

健全医疗保险稳定可持续筹资和报销比例调整机制，完善医保缴费参保政策。全面实施城乡居民大病保险制度，健全重特大疾病救助和疾病应急救助制度。降低大病慢性病医疗费用。改革医保管理和支付方式，合理控制医疗费用，实现医保基金可持续平衡。改进个人账户，开展门诊费用统筹。城乡医保参保率稳定在95%以上。加快推进基本医保异地就医结算，实现跨省异地安置退休人员住院医疗费用直接结算。整合城乡居民医保政策和经办管理。鼓励商业保险机构参与医保经办。将生育保险和基本医疗保险合并实施。鼓励发展补充医疗保险和商业健康保险。探索建立长期护理保险制度，开展长期护理保险试点。完善医疗责任险制度。

第三节　加强重大疾病防治和基本公共卫生服务

完善国家基本公共卫生服务项目和重大公共卫生服务项目，提高服务质量效率和均等化水平。提升基层公共卫生服务能力。加强妇幼健康、公共卫生、肿瘤、精神疾病防控、儿科等薄弱环节能力建设。实施慢性病综合防控战略，有效防控心脑血管疾病、糖尿病、恶性肿瘤、呼吸系统疾病等慢性病和精神疾病。加强重大传染病防控，降低全人群乙肝病毒感染率，艾滋病疫情控制在低流行水平，肺结核发病率降至58/10万，基本消除血吸虫病危害，消除疟疾、麻风病危害。做好重点地方病防控工作。加强口岸卫生检疫能力建设，严防外来重大传染病传入。开展职业病危害普查和防控。增加艾滋病防治等特殊药物免费供给。加强全民健康教育，提升健康素养。大力推进公共场所禁烟。深入开展爱国卫生运动和健康城市建设。加强国民营养计划和心理健康服务。

第四节　加强妇幼卫生保健及生育服务

全面推行住院分娩补助制度，向孕产妇免费提供生育全过程的基本医疗保健服务。加强出生缺陷综合防治，建立覆盖城乡居民，涵盖孕前、孕期、新生儿各阶段的出生缺陷防治免费服务制度。全面提高妇幼保健服务能力，加大妇女儿童重点疾病防治力度，提高妇女常见病筛查率和早诊早治率，加强儿童疾病防治和预防伤害。全面实施贫困地区儿童营养改善和新生儿疾病筛查项目。婴儿死亡率、5岁以下儿童死亡率、孕产妇死亡率分别降为7.5‰、9.5‰、18/10万。

第五节　完善医疗服务体系

优化医疗机构布局，推动功能整合和服务模式创新。加强专业公共卫生机构、基层医疗卫生机构和医院之间的分工协作，健全上下联动、衔接互补的医疗服务体系，完善基层医疗服务模式，推进全科医生（家庭医生）能力提高及电子健康档案等工作，实施家庭签约医生模式。全面建立分级诊疗制度，以提高基层医疗服务能力为重点，完善服务网络、运行机制和激励机制，实行差别化的医保支付和价格政策，形成科学合理就医秩序，基本实现基层首诊、双向转诊、上下联动、急慢分治。加强医疗卫生队伍建设，实施全民健康卫生人才保障工程和全科医生、儿科医生培养使用计划，健全住院医师规范化培训制度。通过改善从业环境和薪酬待遇，促进医疗资源向中西部地区倾斜、向基层和农村流动。完善医师多点执业制度。全面实施临床路径。提升健康信息服务和大数据应用能力，发展远程医疗和智慧医疗。每千人口执业（助理）医师数达到2.5名。

第六节　促进中医药传承与发展

健全中医医疗保健服务体系，创新中医药服务模式，提升基层服务能力。加强中医临床研究基地和科研机构建设。发展中医药健康服务。开展中药资源普查，加强中药资源保护，建立中医古籍数据库和知识库。加快中药标准化建设，提升中药产业水平。建立大宗、道地和濒危药材种苗繁育基地，促进中药材种植

业绿色发展。支持民族医药发展。推广中医药适宜技术，推动中医药服务走出去。

第七节　广泛开展全民健身运动

实施全民健身战略。发展体育事业，加强群众健身活动场地和设施建设，推行公共体育设施免费或低收费开放。实施青少年体育活动促进计划，培育青少年体育爱好和运动技能，推广普及足球、篮球、排球、冰雪等运动，完善青少年体质健康监测体系。发展群众健身休闲项目，鼓励实行工间健身制度，实行科学健身指导。促进群众体育与竞技体育全面协调发展。鼓励社会力量发展体育产业。做好北京2022年冬季奥运会筹办工作。

第八节　保障食品药品安全

实施食品安全战略。完善食品安全法规制度，提高食品安全标准，强化源头治理，全面落实企业主体责任，实施网格化监管，提高监督检查频次和抽检监测覆盖面，实行全产业链可追溯管理。开展国家食品安全城市创建行动。深化药品医疗器械审评审批制度改革，探索按照独立法人治理模式改革审评机构。推行药品经营企业分级分类管理。加快完善食品监管制度，健全严密高效、社会共治的食品药品安全治理体系。加大农村食品药品安全治理力度，完善对网络销售食品药品的监管。加强食品药品进口监管。

专栏 21　健康中国行动计划

（一）疾病防治和基本公共卫生服务

逐步扩大向全体城乡居民免费提供基本公共卫生服务的范围，提高心脑血管疾病、癌症、慢性呼吸系统疾病等重病、疑难杂症防治能力，重大慢性病过早死亡率降低 10%。加强卫生应急、疾病预防控制、精神卫生、血站、卫生监督能力建设，支持儿科、肿瘤、心脑血管、糖尿病、精神病、传染病、职业病

等重点薄弱领域建设。

（二）妇幼健康保障

免费建立母婴健康手册，全面实施免费孕前优生健康检查，免费为儿童接种国家免疫规划疫苗，免费提供孕产期保健和儿童保健服务。扩大妇女“两癌”检查项目覆盖范围。强化孕产妇和新生儿危急重症救治能力建设，实施妇幼健康和计划生育服务保障工程，新增产床 8.9 万张，力争增加产科医生和助产士 14 万名。

（三）出生缺陷防治

将唐氏综合症、耳聋、地中海贫血等 20 种疾病及先天性心脏病检测列入出生缺陷综合防控方案，力争覆盖范围内可知、可干预，有效降低出生缺陷发生率。

（四）基层医疗卫生服务能力提升

以中西部贫困地区为重点，每县重点办好 1—2 所县级公立医院（含县中医院），基层医疗卫生机构标准化达标率达到 95%以上；打造 30 分钟基层医疗服务圈；加强并规范化培养住院医师 50 万人，每万人口全科医生数达到 2 名。

（五）中医药传承与创新

改善中医医院基础设施条件。支持中医重点学科和重点专科（专病）建设，加强中医药人才培养。实施中药民族药标准化行动计划。

（六）智慧医疗

全面实施“互联网+”健康医疗益民服务，建设区域人口健康信息平台，推行电子健康档案。推进健康医疗大数据应用，建设一批区域临床医学健康数据示范中心。

（七）全民健身

加强体质测试与健身指导服务，推动城市社区 15 分钟健身圈建设，实现公共体育服务乡镇常住人口全覆盖和农民体育健身工程全覆盖。加强足球场地、健身活动中心等公共体育服务设施建设和后备人才培养。

（八）食药安全

健全检验检测等技术支撑体系和信息化监管系统，建立食品药品职业化检

查员队伍，实现各级监管队伍装备配备标准化，全面提升治理能力。

第十五篇　提高民生保障水平

按照人人参与、人人尽力、人人享有的要求，坚守底线、突出重点、完善制度、引导预期，注重机会公平，保障基本民生，不断提高人民生活水平，实现全体人民共同迈入全面小康社会。

第六十一章　增加公共服务供给

坚持普惠性、保基本、均等化、可持续方向，从解决人民最关心最直接最现实的利益问题入手，增强政府职责，提高公共服务共建能力和共享水平。

第一节　促进基本公共服务均等化

围绕标准化、均等化、法制化，加快健全国家基本公共服务制度，完善基本公共服务体系。建立国家基本公共服务清单，动态调整服务项目和标准，促进城乡区域间服务项目和标准有机衔接。合理增加中央和省级政府基本公共服务事权和支出责任。健全基层服务网络，加强资源整合，提高管理效率，推动服务项目、服务流程、审核监管公开透明。

第二节　满足多样化公共服务需求

开放市场并完善监管，努力增加非基本公共服务和产品供给。积极推动医疗、养老、文化、体育等领域非基本公共服务加快发展，丰富服务产品，提高服务质量，提供个性化服务方案。积极应用新技术、发展新业态，促进线上线下服务衔接，让人民群众享受高效便捷优质服务。

第三节　创新公共服务提供方式

推动供给方式多元化，能由政府购买服务提供的，政府不再直接承办；能由政府和社会资本合作提供的，广泛吸引社会资本参与。制定发布购买公共服务目录，推行特许经营、定向委托、战略合作、竞争性评审等方式，引入竞争机制。创新从事公益服务事业单位体制机制，健全法人治理结构，推动从事生产经营活动事业单位转制为企业。

专栏 22　基本公共服务项目清单

（一）公共教育

免费义务教育、农村义务教育学生营养改善、寄宿生生活补助、普惠性学前教育资助、中职国家助学金、中职免学费、普通高中助学金、家庭经济困难普通高中学生免学费、个人学习账号和学分累计等。

（二）劳动就业

基本公共就业服务、创业服务、就业援助、就业见习服务、大中城市联合招聘服务、职业技能培训和技能鉴定、农民工培训、12333 电话咨询服务、劳动关系协调、劳动人事争议调解仲裁等。

（三）社会保险

职工基本养老保险、居民基本养老保险、职工基本医保、居民基本医保、失业保险、工伤保险、生育保险服务等。

（四）卫生计生

居民健康档案、健康教育、预防接种、传染病及突发公共卫生事件处理、儿童健康管理、孕产妇健康管理、老年人健康管理、残疾人健康管理和社区康复、慢性病管理、严重精神障碍患者管理、卫生监督协管、结核病患者健康管理服务、中医药健康管理、艾滋病病毒感染者和病人随访管理、社区艾滋病高危行为人群干预、免费孕前优生健康检查、疾病应急救助、基本药物制度、计划生育技术指导咨询、农村部分计划生育家庭奖励扶助、计划生育家庭特别扶助、药品安全保障等。

（五）社会服务

（五）社会服务

最低生活保障、特困人员供养、医疗救助、临时救助、受灾人员救助、养老救助、老年人福利补贴、困境儿童分类保障、留守儿童关爱保护服务、未成年人社会保护、基本殡葬服务、优待抚恤、退役军人安置、重点优抚对象集中供养等。

（六）住房保障

公共租赁住房、棚户区改造、农村危房改造、农房抗震改造、游牧民定居等。

（七）文化体育

公共文化设施免费开放、公益性流动文化服务、收听广播、观看电视、农村数字电影放映、读书看报、应急广播、少数民族文化服务、数字文化服务、参观文化遗产、公共体育场馆开放、全民健身服务等。

（八）残疾人基本公共服务

困难残疾人生活补贴和重度残疾人护理补贴、重度无业残疾人最低生活保障、贫困残疾人基本型辅助器具补贴、贫困残疾人家庭无障碍改造补贴、基本社会保险个人缴费资助和保险待遇、基本住房保障、残疾人托养服务、残疾人康复、残疾人教育、残疾人职业培训和就业服务、残疾人文化体育、无障碍环境支持等。

第六十二章　实施就业优先战略

实施更加积极的就业政策，创造更多就业岗位，着力解决结构性就业矛盾，鼓励以创业带就业，实现比较充分和高质量就业。

第一节　推动实现更高质量的就业

把促进充分就业作为经济社会发展优先目标、放在更加突出位置，坚持分类施策，提高劳动参与率，稳定并扩大城镇就业规模。落实高校毕业生就业促进和

创业引领计划，搭建创新创业平台，健全高校毕业生自主创业、到基层就业的激励政策。促进农村富余劳动力转移就业和外出务工人员返乡创业。加强对灵活就业、新就业形态的扶持，促进劳动者自主就业。做好退役军人就业安置工作。加强就业援助，对就业困难人员实行实名制动态管理和分类帮扶，做好“零就业”家庭帮扶工作。加大再就业支持力度。不断改善劳动条件，规范劳动用工制度，落实职工带薪年休假制度。严禁各种形式的就业歧视。规范就业中介服务。健全劳动关系协调机制，加强劳动保障监察和争议调解仲裁，维护职工合法权益，保障非正规就业劳动者权益，全面治理拖欠农民工工资问题，建立和谐劳动关系。

第二节　提高公共就业创业服务能力

完善就业创业服务体系，推行终身职业技能培训制度。开展贫困家庭子女、未升学初高中毕业生、农民工、失业人员和转岗职工、退役军人和残疾人免费接受职业培训行动。完善高技能人才职称评定、技术等级认定等政策。完善就业失业统计指标体系，健全失业监测预警机制，发布城镇调查失业率数据，强化对部分地区、行业规模性失业的监测和应对。提高公共就业创业服务信息化水平，推进各类就业信息共享开放。

专栏 23　促进就业行动计划

（一）劳动者素质提升行动

实施高技能人才工程和新成长劳动力技能提升、在岗职工技能提升、企业新型学徒制培训、战略性新兴产业紧缺劳动力技能提升等计划。

（二）高校毕业生就业促进和创业引领

健全未就业毕业生实名制数据库，为高校毕业生提供就业信息、职业指导和就业见习等就业服务。普及创业教育，加强创业培训。实施高校毕业生基层培养计划。

（三）农民工职业技能培训

（三）农民工职业技能培训

通过订单、定向和定岗式培训，对农村未升学初高中毕业生等新生代农民工开展就业技能培训，为有创业意愿的农民工提供创业培训，累计开展农民工培训4000万人次。

（四）特殊就业人群职业培训

加大贫困家庭子女、大龄失业人员、转岗职工、退役军人和残疾人等劳动者职业技能和创业培训力度，按规定提供培训补贴，对农村贫困家庭学员和城市居民最低生活保障家庭学员给予生活补贴。

（五）公共就业创业服务体系建设

加强公共就业创业服务设施建设，支持设立返乡创业示范基地，建设区域性公共实训基地，实现县级就业创业服务设施全覆盖，加快部门间数据共享。健全流动人员人事档案基本公共服务体系。

第六十三章　缩小收入差距

正确处理公平和效率关系，坚持居民收入增长和经济增长同步、劳动报酬提高和劳动生产率提高同步，持续增加城乡居民收入，规范初次分配，加大再分配调节力度，调整优化国民收入分配格局，努力缩小全社会收入差距。

第一节　完善初次分配制度

完善市场评价要素贡献并按贡献分配的机制。健全科学的工资水平决定机制、正常增长机制、支付保障机制，推行企业工资集体协商制度，完善最低工资增长机制。健全高技能人才薪酬体系，提高技术工人待遇。完善适应机关事业单位特点的工资制度。加强对国有企业薪酬分配的分类监管。注重发挥收入分配政策激励作用，扩展知识、技术和管理要素参与分配途径。多渠道增加城乡居民财产性收入。

第二节　健全再分配调节机制

实行有利于缩小收入差距的政策，明显增加低收入劳动者收入，扩大中等收入者比重。加快建立综合和分类相结合的个人所得税制度。将一些高档消费品和高消费行为纳入消费税征收范围。完善鼓励回馈社会、扶贫济困的税收政策。健全针对困难群体的动态社会保障兜底机制。增加财政民生支出，公共资源出让收益更多用于民生保障，逐步提高国有资本收益上缴公共财政比例。

第三节　规范收入分配秩序

保护合法收入，规范隐性收入，遏制以权力、行政垄断等非市场因素获取收入，取缔非法收入。严格规范工资外收入和非货币性福利。全面推行非现金结算，建立健全自然人收入和财产信息系统，完善收入统计调查和监测体系。

第六十四章　改革完善社会保障制度

坚持全民覆盖、保障适度、权责清晰、运行高效，稳步提高社会保障统筹层次和水平，建立健全更加公平、更可持续的社会保障制度。

第一节　完善社会保险体系

实施全民参保计划，基本实现法定人员全覆盖。坚持精算平衡，完善筹资机制，分清政府、企业、个人等的责任。适当降低社会保险费率。完善统账结合的城镇职工基本养老保险制度，构建包括职业年金、企业年金和商业保险的多层次养老保险体系，持续扩大覆盖面。实现职工基础养老金全国统筹。完善职工养老保险个人账户制度，健全参保缴费激励约束机制，建立基本养老金合理调整机制。推出税收递延型养老保险。更好发挥失业、工伤保险作用，增强费率确定的灵活性，优化调整适用范围。建立更加便捷的社会保险转移接续机制。划转部分

国有资本充实社保基金，拓宽社会保险基金投资渠道，加强风险管理，提高投资回报率。大幅提升灵活就业人员、农民工等群体参加社会保险比例。加强公共服务设施和信息化平台建设，实施社会保障卡工程，持卡人口覆盖率达到90%。

第二节　健全社会救助体系

统筹推进城乡社会救助体系建设，完善最低生活保障制度，强化政策衔接，推进制度整合，确保困难群众基本生活。加强社会救助制度与其他社会保障制度、专项救助与低保救助统筹衔接。构建综合救助工作格局，丰富救助服务内容，合理提高救助标准，实现社会救助“一门受理、协同办理”。建立健全社会救助家庭经济状况核对机制，努力做到应救尽救、应退尽退。开展“救急难”综合试点，加强基层流浪乞讨救助服务设施建设。

第三节　支持社会福利和慈善事业发展

健全以扶老、助残、爱幼、济困为重点的社会福利制度。建立家庭养老支持政策，提增家庭养老扶幼功能。做好困境儿童福利保障工作。完善儿童收养制度。加强优抚安置工作。发展公益性基本殡葬服务，支持公共殡仪馆、公益性骨灰安放（葬）设施和墓地建设。加快公办福利机构改革，加强福利设施建设，优化布局和资源共享。大力支持专业社会工作和慈善事业发展，健全经常性社会捐助机制。广泛动员社会力量开展社会救济和社会互助、志愿服务活动。

第六十五章　积极应对人口老龄化

开展应对人口老龄化行动，加强顶层设计，构建以人口战略、生育政策、就业制度、养老服务、社保体系、健康保障、人才培养、环境支持、社会参与等为支撑的人口老龄化应对体系。

第一节　促进人口均衡发展

坚持计划生育的基本国策，全面实施一对夫妇可生育两个孩子政策。改革完善计划生育服务管理，完善生育登记服务制度。提高生殖健康、妇幼保健、托幼等公共服务水平。做好相关经济社会政策与全面两孩政策的有效衔接。完善农村计划生育家庭奖励扶助和特别扶助制度，加强对失独家庭的关爱和帮助。做好优生优育的全程服务。注重家庭发展。综合治理出生人口性别比偏高问题。全国总人口14.2亿人左右。

完善人口发展战略，建立健全人口与发展综合决策机制。综合应对劳动年龄人口下降，实施渐进式延迟退休年龄政策，加强老年人力资源开发，增强大龄劳动力就业能力。开展重大经济社会政策人口影响评估，健全人口动态监测机制。

第二节　健全养老服务体系

建立以居家为基础、社区为依托、机构为补充的多层次养老服务体系。统筹规划建设公益性养老服务设施，支持面向失能老年人的老年养护院、社区日间照料中心等设施建设。全面建立针对经济困难高龄、失能老年人的补贴制度。加强老龄科学研究。实施养老护理人员培训计划，加强专业化养老服务护理人员和管理人才队伍建设。推动医疗卫生和养老服务相结合。完善与老龄化相适应的福利慈善体系。推进老年宜居环境建设。全面放开养老服务市场，通过购买服务、股权合作等方式支持各类市场主体增加养老服务和产品供给。加强老年人权益保护，弘扬敬老、养老、助老社会风尚。

第六十六章　保障妇女未成年人和残疾人基本权益

坚持男女平等基本国策和儿童优先，切实加强妇女、未成年人、残疾人等社会群体权益保护，公平参与并更多分享发展成果。

第一节　促进妇女全面发展

实施妇女发展纲要。保障妇女平等获得就学、就业、婚姻财产和参与社会事务等权利和机会，保障农村妇女土地权益，提高妇女参与决策管理水平。加强妇女扶贫减贫、劳动保护、卫生保健、生育关怀、社会福利、法律援助等工作。严厉打击拐卖妇女儿童、暴力侵害妇女等违法犯罪行为。消除对妇女的歧视和偏见，改善妇女发展环境。

第二节　关爱未成年人健康成长

实施儿童发展纲要。强化对未成年人生存权、发展权、受保护权、参与权的依法保障和社会责任。完善未成年人监护制度，构建未成年人关爱社会网络，健全社区未成年人保护与服务体系。消除童工现象。制定实施青年发展规划，营造良好成长成才环境，促进学校教育、家庭教育、社会教育协调互动，培养青少年勤学、修德、明辨、笃实的良好品质，激发青少年活力和创造力。加强学校及周边社会治安综合治理，严厉打击危害未成年人身心健康的违法犯罪行为。加强未成年人心理健康引导。有效预防未成年人犯罪。鼓励青少年更多参与志愿服务和社会公益活动。

第三节　提升残疾人服务保障水平

支持残疾人事业发展，建立健全残疾人基本福利制度，实现残疾人基本民生兜底保障。完善重度残疾人医疗报销制度。优先保障残疾人基本住房。完善残疾人就业创业扶持政策，健全公共机构为残疾人提供就业岗位制度。加强残疾人康复和托养设施建设，鼓励社会力量提供服务。加强残疾人无障碍设施建设和维护。实施0—6岁残疾儿童康复、贫困残疾人基本型辅助器具适配等重点康复工程。建设康复大学，培养康复专业技术人才。

专栏 24　社会关爱行动计划

（一）关爱儿童健康发展

为困境儿童提供生活照料、心理辅导等服务。提供农村留守儿童特殊关爱，加强儿童福利、未成年人保护等设施建设，“儿童之家”覆盖 90%以上的城乡社区。帮助农村贫困家庭幼儿接受学前教育。

（二）青少年发展

深入开展青少年群众体育活动，青年体质达标率达到 95%以上；加强服务青年发展的阵地建设。加强学校结核病、艾滋病防治。

（三）扶残助残

全面实施困难残疾人生活补贴和重度残疾人护理补贴；有条件的地方对贫困残疾人基本型辅助器具配置和贫困残疾人家庭实施无障碍改造给予补贴；支持日间照料机构和专业托养服务机构为残疾人提供护理照料；实施重点康复项目，为贫困残疾人、重度残疾人提供基本康复服务。

（四）敬老养老

加强老年养护院、医养结合、社区日间照料中心等养老服务设施建设和康复辅具配备。建设社区居家养老服务信息平台，推进养老智慧社区建设，推进长期照护体系嵌入社区，推动养老服务覆盖所有居家老年人。开展适老化设施改造试点。实施老龄互助关爱工程。

第十六篇　加强社会主义精神文明建设

坚持社会主义先进文化前进方向，坚持以人民为中心的工作导向，坚持把社会效益放在首位、社会效益和经济效益相统一，加快文化改革发展，推动物质文明和精神文明协调发展，建设社会主义文化强国。

第六十七章　提升国民文明素质

以社会主义核心价值观为引领，加强思想道德建设和社会诚信建设，弘扬中华传统美德和时代新风，倡导科学精神和人文精神，全面提高国民素质和社会文明程度。

第一节　培育和践行社会主义核心价值观

用中国梦和社会主义核心价值观凝聚共识、汇聚力量，增强国家意识、法治意识、道德意识、社会责任意识、生态文明意识。加强理想信念教育，深化中国特色社会主义理论体系的学习研究宣传，把社会主义核心价值观贯穿融入经济社会发展各领域和社会生活各方面。通过教育引导、舆论宣传、文化熏陶、行为实践、制度保障，使社会主义核心价值观内化为人们的坚定信念，外化为人们的自觉行动，增强全社会的道路自信、理论自信、制度自信。加强和改进基层宣传思想文化工作。推进公民道德建设，培育正确的道德判断和道德责任。

第二节　推进哲学社会科学创新

实施哲学社会科学创新工程，构建哲学社会科学创新体系。加强思想理论工作平台和学科建设，深入实施马克思主义理论研究和建设工程。深化治国理政新理念新思想新战略的研究阐释。发展中国特色社会主义政治经济学。重点建设50－100家国家高端智库。

第三节　传承发展优秀传统文化

构建中华优秀传统文化传承体系，实现传统文化创造性转化和创新性发展。广泛开展优秀传统文化普及活动并纳入国民教育，继承五四运动以来的革命文化传统。大力推行和规范使用国家语言文字。加强文物保护利用，杜绝破坏性开发和不当经营。加强非物质文化遗产保护与传承，振兴传统工艺，传承发展传统戏曲。发展民族民间文化，扶持民间文化社团组织发展。

第四节　深化群众性精神文明创建活动

广泛开展文明城市、文明村镇、文明单位、文明家庭、文明校园等群众性精神文明创建活动，深化学雷锋志愿服务活动。发挥重要传统节日、重大礼仪活动、公益广告的思想熏陶和文化教育功能。普及科学知识，推动全民阅读，公民具备科学素质的比例超过10%。深入开展惠民演出、艺术普及等活动。培育良好家风、乡风、校风、行风，营造现代文明风尚。

第六十八章　丰富文化产品和服务

推进文化事业和文化产业双轮驱动，实施重大文化工程和文化名家工程，为全体人民提供昂扬向上、多姿多彩、怡养情怀的精神食粮。

第一节　繁荣发展社会主义文艺

扶持优秀文化作品创作生产，推出更多传播当代中国价值观念、体现中华文化精神、反映中国人审美追求的精品力作。更好发挥政府投入和各类基金作用，鼓励内容和形式创新，支持文艺院团发展，加强排演场所建设。加强文艺理论和评论工作。建设德艺双馨的文艺队伍。

第二节　构建现代公共文化服务体系

推进基本公共文化服务标准化、均等化。完善公共文化设施网络，加强基层文化服务能力建设。加大对老少边穷地区文化建设帮扶力度。加快公共数字文化建设。加强文化产品、惠民服务与群众文化需求对接。鼓励社会力量参与公共文化服务。继续推进公共文化设施免费开放。繁荣发展文学艺术、新闻出版、广播影视和体育事业。加强老年人、未成年人、农民工、残疾人等群体的文化权益保障。

第三节　加快发展现代文化产业

加快发展网络视听、移动多媒体、数字出版、动漫游戏等新兴产业，推动出版发行、影视制作、工艺美术等传统产业转型升级。推进文化业态创新，大力发展创意文化产业，促进文化与科技、信息、旅游、体育、金融等产业融合发展。推动文化企业兼并重组，扶持中小微文化企业发展。加快全国有线电视网络整合和智能化建设。扩大和引导文化消费。

第四节　建设现代传媒体系

加强主流媒体建设，提高舆论引导水平，增强传播力公信力影响力。以先进技术为支撑、内容建设为根本，推动传统媒体和新兴媒体在内容、渠道、平台、经营、管理等方面深度融合，建设“内容+平台+终端”的新型传播体系，打造一批新型主流媒体和传播载体。优化媒体结构，规范传播秩序。

第五节　加强网络文化建设

实施网络内容建设工程，丰富网络文化内涵，鼓励推出优秀网络原创作品，大力发展网络文艺，发展积极向上的网络文化。创新符合网络传播规律的网上宣传方式，提升网络舆情分析和引导能力。加强互联网分类管理，强化运营主体的社会责任。推进文明办网、文明上网，引导广大青年争当“中国好网民”，倡导网络公益活动，净化网络环境。

第六节　深化文化体制改革

健全党委领导、政府管理、行业自律、社会监督、企事业单位依法运营的文化管理体制。深化公益性文化单位改革。推动文化企业建立有文化特色的现代企业制度。健全国有文化资产管理体制。降低社会资本进入门槛，鼓励非公有制文

化企业发展。开展新闻出版传媒企业特殊管理股试点。健全现代文化市场体系，落实完善文化经济政策。深入开展“扫黄打非”，加强市场监管，提升综合执法能力。

第六十九章　提高文化开放水平

加大中外人文交流力度，创新对外传播、文化交流、文化贸易方式，在交流互鉴中展示中华文化独特魅力，推动中华文化走向世界。

第一节　拓展文化交流与合作空间

推动政府合作和民间交流互促共进，增进文化互信和人文交流。推进国际汉学交流。完善海外中国文化中心建设运营机制。支持海外侨胞开展中外人文交流。鼓励文化企业对外投资合作，推进文化产品和服务出口，努力开拓国际文化市场。积极吸收借鉴国外优秀文化成果、先进文化经营管理理念，鼓励外资企业在华进行文化科技研发和服务外包。维护国家文化安全。

第二节　加强国际传播能力建设

拓展海外传播网络，丰富传播渠道和手段。打造旗舰媒体，推进合作传播，加强与国际大型传媒集团的合资合作，发挥各类信息网络设施的文化传播作用。打造符合国际惯例和国别特征、具有我国文化特色的话语体系，运用生动多样的表达方式，增强文化传播亲和力。

专栏 25　文化重大工程
（一）公民道德建设 扎实开展道德模范评选表彰和宣传学习，实施诚信社会、诚信中国建设行动，开展节俭养德全民行动，修订完善乡规民约、学生守则等社会规范。 （二）文化精品创作

组织实施精神文明建设“五个一”工程、国家舞台艺术精品创作工程、国家重大出版工程、国家影视精品工程、中国当代文学艺术创作工程、优秀剧本扶持工程、国家美术发展和收藏工程等，加大对原创精品扶持力度。

（三）公共文化设施建设

改善市县公共文化馆、图书馆、博物馆设施条件。提高村级综合文化中心功能和使用效率。贫困地区县县配有流动文化车。加快推进广播电视户户通，加强中央广播电视节目无线数字化覆盖，重点加强边疆少数民族地区广播电视覆盖和译制能力建设，完善应急广播体系。实施少数民族新闻出版东风工程、少数民族电影工程。推进国家美术馆、中国工艺美术馆、“平安故宫”及国家文献战略储备库等国家级重大文化设施建设。完善档案馆库设施。

（四）传统文化和自然遗产保护传承

加强国家重大文化和自然遗产地、全国重点文物保护单位、中国历史文化名城名镇名村、国家级非物质文化遗产等遗产资源的保护利用，建设国家文化公园，完善相关保护利用设施。实施国家记忆工程。推进山东曲阜优秀传统文化传承发展示范区、甘肃华夏文明传承创新区建设。加强考古工作，推进二里头夏朝遗址博物馆、景德镇御窑厂遗址等重要文化遗产保护项目。

（五）传统戏曲传承和传统工艺振兴

开展戏曲剧种普查，资助数字化影像化保存，扶持京剧、昆曲、地方戏等开展“名家传戏”，建设区域性演艺中心，加强戏曲专业人才培养。制定实施中国传统工艺振兴计划，扶持传统工艺项目，推动形成一批具有民族特色的知名品牌。

（六）中华典籍整理

实施中华古籍保护计划。基本完成古籍普查工作，推动古籍原生性和再生性保护，推出 300 种国家重点古籍整理出版项目，建设国家古籍资源数据库。支持《中华续道藏》、《大藏经》等宗教典籍整理抢修。加强修史修志。实施民国时期文献保护计划。系统整理出版近代以来重要典籍文献。

（七）传播能力建设

加强重点新闻媒体建设，打造融媒体运行平台。加强重要网站内容建设，发展政务新媒体。加快文化资源数字化建设，推动中华优秀文化网上传播。统

筹对外传播资源，扩大高端覆盖、本土化覆盖、口岸覆盖。建设讲好中国故事队伍。

（八）全民阅读

举办“书香中国”系列活动，在充分利用现有设施基础上，统筹建设社区阅读中心、数字农家书屋、公共数字阅读终端等设施，实施儿童阅读书报发放计划、市民阅读发放计划、盲文出版工程，支持实体书店发展。

第十七篇　加强和创新社会治理

加强社会治理基础制度建设，构建全民共建共享的社会治理格局，提高社会治理能力和水平，实现社会充满活力、安定和谐。

第七十章　完善社会治理体系

完善党委领导、政府主导、社会协同、公众参与、法治保障的社会治理体制，实现政府治理和社会调节、居民自治良性互动。

第一节　提升政府治理能力和水平

创新政府治理理念，强化法治意识和服务意识，寓管理于服务，以服务促管理。改进政府治理方式，充分运用现代科技改进社会治理手段，推进社会治理精细化，加强源头治理、动态管理、应急处置和标本兼治。健全政府信息发布制度。加强基层政府服务能力建设。建立国家人口基础信息库，加强人口管理、实名登记、信用体系、危机预警干预等制度建设。完善政府社会治理考核问责机制。

第二节　增强社区服务功能

完善城乡社区治理体制，依法厘清基层政府和社区组织权责边界，建立社区、社会组织、社会工作者联动机制。健全城乡社区综合服务管理平台，促进公共服务、便民利民服务、志愿服务有机衔接，实现一站式服务。实现城市社区综合服务设施全覆盖，推进农村社区综合服务设施建设。提升社区工作者队伍职业素质。注册志愿者人数占居民人口比例达到13%。

第三节　发挥社会组织作用

健全社会组织管理制度，形成政社分开、权责明确、依法自治的现代社会组织体制。推动登记制度改革，实行分类登记制度。支持行业协会商会类、科技类、公益慈善类、社区服务类社会组织发展。加快行业协会商会与行政机关脱钩，健全法人治理结构。推进有条件的事业单位转为社会组织，推动社会组织承接政府转移职能。加强综合监督和诚信建设，更好发挥自律、他律、互律作用。

第四节　增强社会自我调节功能

引导公众用社会公德、职业道德、家庭美德、个人品德等道德规范修身律己，自觉履行法定义务、社会责任和家庭责任，自觉遵守和维护社会秩序。加强行业规范、社会组织章程、村规民约、社区公约等社会规范建设，充分发挥社会规范在协调社会关系、约束社会行为等方面的积极作用。

第五节　完善公众参与机制

依法保障居民知情权、参与权、决策权和监督权，完善公众参与治理的制度化渠道。对关系公众切身利益的重大决策，以居民会议、议事协商、民主听证等形式，广泛征求公众意见建议。完善村务公开、居务公开、民主评议等途径，加强公众监督评估。

第六节　健全权益保障和矛盾化解机制

健全利益表达、协调机制，引导群众依法行使权利、表达诉求、解决纠纷。完善行政复议、仲裁、诉讼等法定诉求表达机制，发挥人大代表、政协委员、人民团体、社会组织等的诉求表达功能。全面推行阳光信访，落实及时就地化解责任，完善涉法涉诉信访依法终结制度。落实重大决策社会稳定风险评估制度，完善调解、仲裁、行政裁决、行政复议、诉讼等有机衔接、相互协调的多元化纠纷解决机制。健全利益保护机制，保障群众权利得到公平对待、有效维护。健全社会心理服务体系，加强对特殊人群的心理疏导和矫治。

第七十一章　完善社会信用体系

加快推进政务诚信、商务诚信、社会诚信和司法公信等重点领域信用建设，推进信用信息共享，健全激励惩戒机制，提高全社会诚信水平。

第一节　健全信用信息管理制度

全面实施统一社会信用代码制度。制定全国统一的信用信息采集和管理标准。依法推进信用信息在采集、共享、使用、公开等环节的分类管理，加强涉及个人隐私和商业秘密的信用信息保护。加快推动信用立法。

第二节　强化信用信息共建共享

建立信息披露和诚信档案制度，加快完善各类市场主体和社会成员信用记录。加强部门、行业和地方信用信息整合，建立企业信用信息归集机制，完善全国信用信息共享平台，建设国家企业信用信息公示系统。依法推进全社会信用信息资源开放共享。

第三节　健全守信激励和失信惩戒机制

建立守信奖励激励机制。在市场监管和公共服务过程中，对诚实守信者实行提供便利化服务等激励政策。健全多部门、跨地区、跨行业联动响应和联合惩戒机制，强化企业信用依法公示和监管，建立各行业失信黑名单制度和市场退出机制。

第四节　培育规范信用服务市场

建立公共和社会信用服务机构互为补充、信用信息基础服务和增值服务相辅相成的多层次信用服务组织体系。推动信用服务产品开发创新和广泛运用。支持征信、信用评级机构规范发展，提高服务质量和国际竞争力。健全征信和信用服务市场监管体系。

第七十二章　健全公共安全体系

牢固树立安全发展观念，坚持人民利益至上，加强全民安全意识教育，健全公共安全体系，为人民安居乐业、社会安定有序、国家长治久安编织全方位、立体化的公共安全网，建设平安中国。

第一节　全面提高安全生产水平

建立责任全覆盖、管理全方位、监管全过程的安全生产综合治理体系，构建安全生产长效机制。完善和落实安全生产责任、考核机制和管理制度，实行党政同责、一岗双责、失职追责，严格落实企业主体责任。加快安全生产法律法规和标准的制定修订。改革安全评审制度，健全多方参与、风险管控、隐患排查化解和预警应急机制，强化安全生产和职业健康监管执法，遏制重特大安全事故频发势头。加强隐患排查治理和预防控制体系、安全生产监管信息化和应急救援、监

察监管能力等建设。实施危险化学品和化工企业生产、仓储安全环保搬迁工程。加强交通安全防控网络等安全生产基础能力建设，强化电信、电网、路桥、供水、油气等重要基础设施安全监控保卫。实施全民安全素质提升工程。有效遏制重特大安全事故，单位国内生产总值生产安全事故死亡率下降30%。

第二节　提升防灾减灾救灾能力

坚持以防为主、防抗救相结合，全面提高抵御气象、水旱、地震、地质、海洋等自然灾害综合防范能力。健全防灾减灾救灾体制，完善灾害调查评价、监测预警、防治应急体系。建立城市避难场所。健全救灾物资储备体系，提高资源统筹利用水平。加快建立巨灾保险制度。制定应急救援社会化有偿服务、物资装备征用补偿、救援人员人身安全保险和伤亡抚恤等政策。广泛开展防灾减灾宣传教育和演练。

第三节　创新社会治安防控体系

完善社会治安综合治理体制机制，以信息化为支撑加快建设社会治安立体防控体系，建设基础综合服务管理平台。大力推进基础信息化、警务实战化、执法规范化、队伍正规化建设。构建群防群治、联防联治的社会治安防控网，加快推进网上综合防控体系建设。实施社会治安重点部位、重点领域、重点地区联动管控和排查整治。加强打击违法犯罪、禁毒、防范处理邪教等基础能力建设。

第四节　强化突发事件应急体系建设

建成与公共安全风险相匹配、覆盖应急管理全过程和全社会共同参与的突发事件应急体系。加强应急基础能力建设，健全完善重大危险源、重要基础设施的风险管控体系，增强突发事件预警发布和应急响应能力，提升基层应急管理水平。加强大中城市反恐应变能力建设。强化危险化学品处置、海上溢油、水上搜

救打捞、核事故应急、紧急医疗救援等领域核心能力，加强应急资源协同保障能力建设。建立应急征收征用补偿制度，完善应急志愿者管理，实施公众自救互救能力提升工程。提高境外涉我突发事件应对能力。

第七十三章　建立国家安全体系

深入贯彻总体国家安全观，实施国家安全战略，不断提高国家安全能力，切实保障国家安全。

第一节　健全国家安全保障体制机制

制定实施政治、国土、经济、社会、资源、网络等重点领域国家安全政策，明确中长期重点领域安全目标和政策措施，提高应对各种风险挑战的能力。加强国家安全科技和装备建设，建立健全国家安全监测预警体系，强化不同领域监测预警系统的高效整合，提升安全信息搜集分析和处理能力。建立外部风险冲击分类分等级预警制度。加强重大安全风险监测评估，制定国家安全重大风险事件应急处置预案。健全国家安全审查制度和机制。对重要领域、重大改革、重大工程、重大项目、重大政策等进行安全风险评估。建立重点领域维护国家安全工作协调机制，加强国家安全工作组织协调。

第二节　保障国家政权主权安全

建立健全跨部门跨地区联合工作机制，依法严密防范和严厉打击敌对势力渗透颠覆破坏活动、暴力恐怖活动、民族分裂活动、宗教极端活动。加强反恐怖专业力量建设。加强反恐国际合作。加强反间谍工作。加强网上主权空间对敌斗争和网络舆情管控，遏制敌对势力和恐怖势力利用网络空间进行渗透破坏活动。加强边境技防体系建设。高度重视做好意识形态领域工作，切实维护意识形态安全。

第三节　防范化解经济安全风险

坚持底线思维、预防为主，维护战略性资源、关键产业、财政金融、资本跨境流动等领域国家经济安全。加强重要经济指标的动态监测和研判，制定重要经济领域风险应对预案。统筹应对去过剩产能、去商品房库存和去债务杠杆过程中的财政金融风险，以可控方式和节奏主动释放风险。加强对金融市场异常波动、风险传递和金融新业态风险的监管应对。完善全口径政府债务管理，推动地方政府融资平台市场化转型，有效化解地方政府债务风险。拓宽银行业不良资产处置渠道，完善流动性风险管理工具和应急预案，严厉打击非法集资。防范企业债务风险。提高能源、矿产资源、水资源、粮食、生态环保、安全生产、网络等方面风险防控能力。健全国家战略物资储备，构建产品产能产地储备相结合的国家战略资源能源储备体系。

第四节　加强国家安全法治建设

贯彻落实国家安全法，出台相关实施细则。推进国家经济安全、防扩散、国家情报、网络安全、出口管制、外国代理人登记、外资安全审查等涉及国家安全的立法工作，加快健全国家安全法律制度体系，充分运用法律手段维护国家安全。

第十八篇　加强社会主义民主法治建设

坚持中国共产党领导、人民当家作主、依法治国有机统一，加快建设社会主义法治国家，发展社会主义政治文明。

第七十四章　发展社会主义民主政治

坚持和完善人民代表大会制度、中国共产党领导的多党合作和政治协商制度、民族区域自治制度以及基层群众自治制度，扩大公民有序政治参与，充分发挥我国社会主义政治制度优越性。加强协商民主制度建设，构建程序合理、环节完整的协商民主体系，进一步加强政党协商，拓宽国家政权机关、政协组织、党派团体、基层组织、社会组织的协商渠道。完善基层民主制度，畅通民主渠道，健全基层选举、议事、公开、述职、问责等机制。开展形式多样的基层民主协商，推进基层协商制度化。

第七十五章　全面推进法治中国建设

坚持依法治国、依法执政、依法行政共同推进，坚持法治国家、法治政府、法治社会一体建设，建设中国特色社会主义法治体系，建设社会主义法治国家。

第一节　完善以宪法为核心的中国特色社会主义法律体系

维护宪法尊严、权威，健全宪法实施和监督制度。完善立法体制，加强党对立法工作的领导，健全有立法权的人大主导立法工作的体制机制，加强和改进政府立法制度建设，明确立法权力边界。深入推进科学立法、民主立法，加强人大对立法工作的组织协调，健全立法起草、论证、协调、审议机制，健全立法机关主导、社会各方有序参与立法的途径和方式。加快重点领域立法，坚持立改废释并举，完善社会主义市场经济和社会治理法律制度，加快形成完备的法律规范体系。

第二节　加快建设法治政府

全面实施法治政府建设实施纲要，深入推进依法行政，依法设定权力、行使权力、制约权力、监督权力，实现政府活动全面纳入法治轨道。依法全面履行政府职能，完善行政组织和行政程序法律制度，推进机构、职能、权限、程序、责

任法定化。完善重大行政决策程序制度，健全依法决策机制。深化行政执法体制改革，推行综合执法，健全行政执法和刑事司法衔接机制。坚持严格规范公正文明执法，最大限度地缩小自由裁量权。健全执法考核评价体系。完善审计制度，保障依法独立行使审计监督权。

第三节　促进司法公正

深化司法体制改革，完善对权利的司法保障、对权力的司法监督，建设公正高效权威的社会主义司法制度。健全司法权力分工负责、互相配合、互相制约机制，完善审级制度、司法组织体系和案件管辖制度。探索设立跨行政区划的人民法院和人民检察院。强化司法人员职业保障，完善确保依法独立公正行使审判权和检察权的制度。全面推进审判公开、检务公开、警务公开、狱务公开，加强人权司法保障。加强对司法活动的监督，健全司法机关内部监督制约机制。完善司法机关办案责任制，落实谁办案谁负责。加强监狱、强制戒毒、社区矫正、安置帮教、司法鉴定等设施建设。

第四节　全面推进法治社会建设

推进多层次多领域依法治理，提高社会治理法治化水平。加强法治文化建设，弘扬社会主义法治精神，增强全社会特别是公职人员尊法学法守法用法观念，在全社会形成良好法治氛围和法治习惯。深入开展“七五”普法，把法治教育纳入国民教育体系，健全公民和组织守法信用记录。完善法律服务体系，加强律师等法律人才和法律服务队伍建设，推进覆盖城乡居民的公共法律服务体系建设，完善法律援助制度，健全司法救助体系。

第七十六章　加强党风廉政建设和反腐败斗争

党风廉政建设和反腐败斗争永远在路上，反腐不能停步、不能放松。坚持全面从严治党，落实“三严三实”要求，严明党的纪律和规矩，落实党风廉政建设主体责任和监督责任，强化责任追究。贯彻中央八项规定精神，坚持不懈纠正“四风”，健全改进作风长效机制。坚决整治和纠正侵害群众利益的不正之风和腐败问题，坚持有腐必反、有贪必肃，巩固反腐败成果，构建不敢腐、不能腐、不想腐的有效机制，努力实现干部清正、政府清廉、政治清明，为经济社会发展营造良好政治生态。

把权力关进制度的笼子，强化权力运行制约和监督，坚持用制度管权管事管人，铲除权力腐败的温床，让人民监督权力，保证权力在阳光下运行。规范领导干部职责权限，建立科学的问责程序和制度，强化领导干部经济责任审计。健全政府内部权力制约机制，加强对权力部门的监察和审计监督。

第十九篇　统筹经济建设和国防建设

坚持发展和安全兼顾、富国和强军统一，实施军民融合发展战略，形成全要素、多领域、高效益的军民深度融合发展格局，全面推进国防和军队现代化。

第七十七章　全面推进国防和军队建设

以党在新形势下的强军目标为引领，贯彻新形势下军事战略方针和改革强军战略，全面推进军队革命化、现代化、正规化建设。加强军队党的建设和思想政治建设，深入贯彻落实古田全军政治工作会议精神，培育“四有”新一代革命军人。深入推进依法治军、从严治军，加快军事立法工作，构建与形势任务和新领导指挥体制相适应的军事法规体系。加强各方向各领域军事斗争准备，发挥军事需求牵引作用，优化军事战略布局，积极经略重大安全领域，加强新型作战力量建设，加强国防科技、装备和现代后勤发展建设，扎实开展实战化军事训练，着

力提高基于网络信息体系的联合作战能力。基本完成国防和军队改革目标任务，基本实现机械化，信息化取得重大进展，构建能够打赢信息化战争、有效履行使命任务的中国特色现代军事力量体系。加强国际军事交流与合作，积极参加国际维和行动。

第七十八章　推进军民深度融合发展

在经济建设中贯彻国防需求，在国防建设中合理兼顾民用需要。完善军民融合发展体制机制，健全军民融合发展的组织管理、工作运行和政策制度体系。建立国家和各省（自治区、直辖市）军民融合领导机构。推进军民融合发展立法。坚持军地资源优化配置、合理共享、平战结合，促进经济领域和国防领域技术、人才、资金、信息等要素交流，加强军地在基础设施、产业、科技、教育和社会服务等领域的统筹发展。探索建立军民融合项目资金保障机制。深化国防科技工业体制改革，建立国防科技协同创新机制，实施国防科技工业强基工程。改革国防科研生产和武器装备采购体制机制，加快军工体系开放竞争和科技成果转化，引导优势民营企业进入军品科研生产和维修领域。加快军民通用标准化体系建设。实施军民融合发展工程，在海洋、太空、网络空间等领域推出一批重大项目和举措，打造一批军民融合创新示范区，增强先进技术、产业产品、基础设施等军民共用的协调性。加强国防边海防基础设施建设。

深化国防动员领域改革，健全完善国防动员体制机制。加强以爱国主义为核心的全民国防教育，强化全民国防观念。加强后备力量建设，突出海上动员力量建设，增强基于打赢战争和服务国家大局需要的组织动员、快速反应、支援保障能力。加强现代化武装警察部队建设。加强人民防空工程建设和维护管理。加强对退役军人管理保障工作的组织领导，健全服务保障体系和相关政策制度。密切军政军民团结。党政军警民合力强边固防，大力推进政治安边、富民兴边、军事强边、外交睦边、科技控边，提高边境综合管控能力，维护边境地区安全稳定。

增强新疆生产建设兵团综合实力和自我发展能力，加快向南发展，充分发挥维稳戍边功能。

第二十篇　强化规划实施保障

保障“十三五”规划有效实施，要在中国共产党的领导下，更好履行各级政府职责，最大程度地激发各类主体的活力和创造力，形成全党全国各族人民全面建成小康社会的强大合力。

第七十九章　发挥党的领导核心作用

坚持党总揽全局、协调各方，发挥各级党委（党组）领导核心作用，提高领导能力和水平，为实现“十三五”规划提供坚强保证。坚持党要管党、从严治党，以改革创新精神全面推进党的建设新的伟大工程，保持和发展党的先进性、纯洁性，提高党的执政能力，确保党始终成为中国特色社会主义事业的坚强领导核心。加强领导班子和干部队伍建设，完善政绩考核评价体系和奖惩机制，调动各级干部干事创业积极性、主动性、创造性。强化基层党组织整体功能，发挥战斗堡垒作用和党员先锋模范作用，更好带领群众全面建成小康社会。

注重发挥工会、共青团、妇联等群团组织的作用，巩固和发展最广泛的爱国统一战线，全面落实党的知识分子、民族、宗教、侨务等政策，充分发挥民主党派、工商联和无党派人士作用，最大限度凝聚全社会共识和力量，推进改革发展，维护社会和谐稳定。

第八十章　形成规划实施合力

明确政府主体责任，科学制定政策和配置公共资源，广泛动员全社会力量，共同推动规划顺利实施。

第一节　加强规划协调管理

加强统筹管理和衔接协调，形成以国民经济和社会发展总体规划为统领，专项规划、区域规划、地方规划、年度计划等为支撑的发展规划体系。国务院有关部门要组织编制一批国家级专项规划特别是重点专项规划，细化落实本规划提出的主要目标任务。地方规划要做好发展战略、主要目标、重点任务、重大工程项目与国家规划的衔接，切实贯彻落实国家规划的统一部署。加快出台发展规划法。

第二节　完善规划实施机制

各地区、各部门要加强对本规划实施的组织、协调和督导。开展规划实施情况动态监测和评估工作，把监测评估结果作为改进政府工作和绩效考核的重要依据，并依法向全国人民代表大会常务委员会报告规划实施情况，自觉接受人大监督。本规划确定的约束性指标以及重大工程、重大项目、重大政策和重要改革任务，要明确责任主体、实施进度要求，确保如期完成。对纳入本规划的重大工程项目，要简化审批核准程序，优先保障规划选址、土地供应和融资安排。发挥审计机关对推进规划实施的审计监督作用。密切关注形势变化和风险演化，坚持守住底线，做好应对困难复杂局面准备。需要对本规划进行调整时，由国务院提出调整方案，报全国人民代表大会常务委员会批准。

第三节　强化财力保障

加强财政预算与规划实施的衔接协调，在明晰各级政府支出责任的基础上，强化各级财政对规划实施的保障作用。中期财政规划和年度预算要结合本规划提出的目标任务和财力可能，合理安排支出规模和结构。加快政府投资立法。

第四节　充分调动全社会积极性

本规划提出的预期性指标和产业发展、结构调整等任务，主要依靠市场主体的自主行为实现。要激发全国各族人民参与规划实施、建设祖国的主人翁意识，充分发挥各级政府、社会各界的积极性、主动性和创造性，尊重基层首创精神，汇聚人民群众的力量和智慧，形成全体人民群策群力、共建共享的生动局面。

实现“十三五”时期发展目标，前景光明，任务繁重。全党全国各族人民要更加紧密地团结在以习近平同志为总书记的党中央周围，高举中国特色社会主义伟大旗帜，坚定不移走中国特色社会主义道路，解放思想、实事求是，与时俱进、改革创新，万众一心、艰苦奋斗，共同夺取全面建成小康社会决胜阶段的伟大胜利！

EXHIBIT 35

Translation	

The following document, issued by China's State Council in November 2016, describes in great detail the PRC government's five-year (2016-2020) industrial development strategy for emerging technology. It defines a vast array of new technologies as "strategic" and in many cases sets quantifiable goalposts for the growth of certain high-tech industries. An appendix identifies the specific Chinese ministries responsible for carrying out this plan for each type of emerging technology.

Title
Circular of the State Council on Issuing the National 13th Five-Year Plan for the Development of Strategic Emerging Industries
国务院关于印发"十三五"国家战略性新兴产业发展规划的通知

Author
PRC State Council (国务院)

Source
Official website of the Central People's Government of the People's Republic of China (中华人民共和国中央人民政府), 29 November 2016

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US $1 ≈ 7 Chinese Yuan Renminbi (RMB), as of December 9, 2019.

Translation Date	**Translator**	**Editor**
December 9, 2019	Etcetera Language Group, Inc.	Ben Murphy, CSET Translation Lead

To the people's governments of all provinces, autonomous regions, and municipalities, ministries and commissions of the State Council, and their respective agencies:

The National 13th Five-Year Plan for the Development of Strategic Emerging Industries is hereby printed and distributed. Please implement it meticulously.

State Council
November 29, 2016

(This circular is released publicly)

13th National Five-Year Plan for the Development of Strategic Emerging Industries

Strategic emerging industries represent a new round of scientific and technological change and the direction of industrial transformation. They are key areas for the cultivation of new kinetic energy and are critical to gaining new competitive advantages in the future. During the 13th Five-Year Plan period, strategic emerging industries must be placed in a more prominent

position in economic and social development, and a new modern industrial system must be rigorously built to promote sustained and healthy economic and social development. This plan has been prepared in accordance with the relevant arrangements for the overall 13th Five-Year Plan, and the planning period is 2016-2020.

1. Accelerate the expansion of strategic emerging industries and create a new engine for economic and social development

(1) Current status and overall situation:

During the 12th Five-Year Plan period, the country witnessed the rapid development of strategic emerging industries such as energy conservation and environmental protection, next-generation information technology, biology, high-end equipment manufacturing, new energy, new materials, and new energy vehicles. In 2015, the added value of strategic emerging industries accounted for about 8% of GDP, and industrial innovation and profitability improved significantly. The competitiveness of a group of enterprises in the fields of information technology, biology, and new energy has placed them at the forefront of the international market. Breakthroughs have been achieved in the international development of high-speed rail, communications, aerospace equipment, and nuclear power equipment. A number of emerging industrial clusters with an output value of more than 100 billion yuan have strongly supported the transformation and upgrading of regional economies. Widespread entrepreneurship and innovation have flourished, and strategic emerging industries have been widely integrated into society, accelerating the transformation and upgrading of traditional industries. A large number of new technologies, new products, new formats, and new models have emerged, creating a large number of jobs and becoming a major support in stabilizing growth, promoting reform, implementing structural changes, and supporting the people's livelihoods.

The next five to ten years will be a crucial period for the launch of a new round of global technological change and industrial transformation. The information revolution continues to evolve rapidly. The Internet of Things, cloud computing, big data, artificial intelligence, and other technologies cover a broad spectrum of fields, and the prosperity of the information economy has become an important symbol of national strength. Major breakthroughs have been made in technologies such as additive manufacturing (3D printing), robotics and smart manufacturing, metamaterials and nanomaterials, promoting the differentiation and transformation of traditional industrial systems and reshaping the international division of labor in manufacturing. Genomics and its associated technologies are developing rapidly. New models, such as precision medicine, biosynthesis, and industrialized breeding are accelerating and expanding. The new biotech economy is expected to lead to new horizons for human production and life. Responding to global climate change to promote the tide of green and low-carbon development, the scale of application of cleaner production technology continues to expand, and the new energy revolution is changing the existing international resource and energy layout. Digital technology has become deeply integrated with cultural creativity and design services. The digital creative industry has gradually become an intellectually intensive industry that promotes the effective supply of quality products and services. The creative economy is emerging as a new development model. Innovation-driven emerging industries have gradually become the main driving force for global economic recovery and growth,

triggering an international division of labor and restructuring of international trade, and the development of the global innovation economy has entered a new era.

The 13th Five-Year Plan period is a decisive stage for China to form a well-off society in an all-round way (全面建成小康社会), and it is also a promising strategic opportunity for strategic emerging industries. The systems and mechanisms required to drive innovation in China have become more perfect, the allocation of talent, technology, capital, and other factors continues to be optimized, the upgrading of emerging consumption is accelerating, investment demand for emerging industries is strong, the internationalization of some fields is accelerating, the industrial system is gradually becoming more complete, and the market space is increasingly broad. However, it can also be seen that the overall level of innovation in China's strategic emerging industries is still not high. Some areas of core technology are still subject to human constraints. Some reform measures and policy measures have yet to be implemented. The innovation of new industry supervision methods and the construction of the legal system are relatively lagging and still fail to meet the requirements for economic development. New and old kinetic energy must accelerate this transformation and accelerate the upgrading of industrial structure. It is of urgent importance that overall planning and policy support be strengthened to create a comprehensive environment that is conducive to the vigorous development of emerging industries, innovative ideas on development, an enhancement in the quality of development, and the acceleration of development and growth. The promotion of emerging pillar industries and the promotion of strategic emerging industries have become a powerful driving force for economic and social development.

(2) Guiding ideology:

Fully implement the spirit of the 18th Party Congress and the 3rd, 4th, 5th, and 6th plenums of the 18th CPC Central Committee. Thoroughly study and implement the spirit of General Secretary Xi Jinping's series of important speeches. Conscientiously implement the decisions and arrangements of the Party Central Committee and the State Council, in accordance with the requirements of the "Five-in-One" [economic, political, cultural, social, and ecological civilization development] overall arrangements (“五位一体”总体布局) and the "Four Comprehensivelys" [comprehensively form a well-off society, comprehensively deepen reform, comprehensively govern the country according to law, comprehensively govern the party strictly] strategic arrangement (“四个全面”战略布局). Actively adapt to change to grasp and lead the new normal of economic development, firmly establish and implement the development concepts of innovation, coordination, greenness, openness, and sharing, and firmly grasp the new round of global technological revolution and major opportunities for industrial transformation. Foster a new development momentum and promote structural reforms on the supply side. Build a modern industrial system and enhance innovation capabilities. Deepen international cooperation and further develop and grow a new generation of information technology, high-end equipment, new materials, biology, and new energy vehicles. Promote the vigorous development of new technologies, new products, new formats, and new models in a wider field in strategic emerging industries such as new energy, energy conservation and environmental protection, and digital creativity. Build a manufacturing superpower (制造强国), develop modern service industries, and provide strong support for building a well-off society in an all-round way.

(3) Main principles:

Promote supply innovation. Innovation is at the heart of the development of strategic emerging industries. Deepen the implementation of the innovation-driven development strategy, rigorously promote widespread entrepreneurship and innovation, highlight the main position of enterprises in development, comprehensively improve the supply level of technology, talent, and capital, and create an environment in which the elements of innovation are interactively integrated. Focus on achieving breakthroughs in core key technologies, further enhance our capacity for independent innovation, and comprehensively enhance the added value and international competitiveness of products and services. Promote streamlined governance and delegation of power (简政放权), integrate management, optimize service reform, break past the constraints of traditional management systems on the development of emerging industries, reduce enterprise costs, stimulate the vitality of enterprises, and accelerate the growth of emerging enterprises.

Continue to lead demand. Market demand is a key factor driving the growth of strategic emerging industries. Strengthen demand-side policy guidance, accelerate the application and demonstration of new products and services, convert potential demand into actual supply, and promote industrial upgrades through consumption upgrades. Create a fair competitive market environment and stimulate market vitality.

Continue to consolidate industries. Intensive agglomeration serves as a basic model for the development of strategic emerging industries. Take technological innovation as a starting point to accelerate development strategies for strategic emerging industry growth and enhance the sustainable development capabilities and international competitiveness of industrial clusters. Use coordinated development of the supply chain and the innovation chain as a means of cultivating new formats and new models, develop distinctive industrial clusters, and promote regional economic transformations to form a new pattern of innovative economic agglomeration and development.

Continue to prosper through talent. Talent is the primary source of development and growth of strategic emerging industries. Accelerate the development of talent growth policies and institutional innovations and ensure that talented people are enumerated based on their knowledge, skills, management, and other innovative factors. Value talented people for their market value and fully stimulate the innovation and vitality of entrepreneurship. Intensify efforts to cultivate and attract all kinds of talented people and promote a spirit of craftsmanship and entrepreneurship.

Continue to promote open integration. Open integration is an objective requirement for accelerating the development of strategic emerging industries. Build an international innovation and collaboration platform with a more open and inclusive approach. Make efficient use of global innovation resources and rigorously promote the international application of technologies and standards that China is strong in (我国优势技术和标准). Accelerate the global allocation of supply chains, innovation chains, and value chains. Comprehensively enhance the development capabilities of strategic emerging industries.

(4) Development goals:

By 2020, the development of strategic emerging industries must achieve the following goals:

The scale of the industry must continue to grow and become a new driving force for economic and social development. The added value of strategic emerging industries must account for 15% of GDP, forming the five new pillar industries of information technology, high-end manufacturing, biotech industry, green and low-carbon industry, and digital and creative industry, each with output values of over 10 trillion yuan. Form new growth points in a wide range of fields for large-scale cross-border integration with average annual job growth of over one million new jobs.

Innovation capabilities and competitiveness must be significantly improved, forming a new high ground for global industrial development. A number of key core technologies must come to the fore, the annual growth rate for invention patents must reach over 15%, and a number of major industrial technology innovation platforms must be built. Industry innovation capabilities must rank first globally, forming first-mover advantages in several major sectors. Product quality must also improve significantly. The accessibility of new products and services in the fields of energy conservation, environmental protection, new energy, and biology must increase significantly. Intellectual property protection must be more stringent, and policies and regulations that encourage innovation must be more robust.

The industrial structure must be further optimized to form a new industrial system. Continue to develop a number of industry leaders with strong originality, international influence, and brand reputation and rigorously and courageously develop new small and medium-sized enterprises. Significantly increase the proportion of high-end manufacturing and knowledge-intensive service industries and support these industries as they move towards the mid to-high-end level. Form a number of strategic emerging industry development strategies and technological innovation centers with global influence and create over 100 emerging industrial clusters with distinctive characteristics and strong innovation capabilities.

By 2030, the development of strategic emerging industries must become a leading force for the sustained and healthy development of China's economy. China must become an important manufacturing center and innovation center for strategic emerging industries in the world, and a group of innovative leading enterprises with global influence and leading positions must be formed.

(5) Overall arrangements:

Focus on innovation, growth and leadership, closely integrating the implementation of the "Made in China 2025" strategy, adhering to the path of innovation-driven development, promoting a number of emerging areas to grow and become pillar industries, and continuing to lead industries in high-end development and high-quality economic and social development. Based on development needs and industrial bases, greatly increase the technological content of industries, accelerate the development and expansion of the five major sectors of the network economy, high-end manufacturing, biotech industry, green and low-carbon industry, and the digital and creative industries, and realize a leap forward to the innovation economy. Focus on the new trends and directions of the new round of global scientific and technological revolution and industrial transformation, set aside a number of strategic industries in the fields of

aerospace and maritime, information networking, biotechnology, and nuclear technology to create new advantages for future development. Following the basic practices of development of strategic emerging industries, highlight the advantages and characteristics of industries and creating a number of strategic emerging industry development sources, agglomeration areas, and distinctive industrial clusters to form new patterns of regional growth. Grasp the strategic opportunity to promote the construction of the "Belt and Road" [the Silk Road Economic Belt and the 21st Century Maritime Silk Road], use global innovation resources with a more open outlook, and enhance the internationalization of strategic emerging industries. Accelerate the reform of key areas and key links, continuously improve policies and measures conducive to the convergence of technology, capital, and talent, create a fair competitive market environment, comprehensively create an ecological environment that adapts to new technologies and new formats, and accelerate the formation of a new drive for economic and social development.

2. Promote the development of the information technology industry and expand the new space of the network economy

Implement the strategy of strengthening the country with the internet, accelerate the construction of a "Digital China," and promote the integration of technologies such as the Internet of Things, cloud computing, and artificial intelligence into all industries. Build a next-generation secure, controllable information technology industry system that incorporates the Internet of Everything and interconnects innovation with smart synergies. By 2020, strive to achieve systematic breakthroughs in next-generation information technology industry weak links with a total output value of more than 12 trillion yuan.

(1) Build an infrastructure for the country to become an internet superpower (网络强国). Deepen the "Broadband China" strategy and accelerate the construction of a new generation of information infrastructure that is fast, mobile, secure, and ubiquitous.

Rigorously promote the construction of high-speed fiber optic networks. Pilot the scaled application of new smart network technologies and promote the upgrade of the national backbone network with high speeds, flexible scheduling, and smart adaptation. Fully realize the leap forward to an all-optical network, accelerate the coverage of optical networks in urban areas, provide access services of 1,000 megabits per second (1000 Mbps) or faster, and offer flexible choices for home users in large and medium-sized cities to achieve bandwidths above 100 Mbps. Promote rural fiber-optic broadband coverage through multi-party collaborations so that over 98% of administrative villages (行政村) achieve fiber access. Where conditions permit, provide access services of more than 100 Mbps in certain areas and help more than half of rural households achieve flexible bandwidths above 50 Mbps. Promote the development of network convergence (三网融合) infrastructure. Advance the upgrade and application of Internet Protocol version 6 (IPv6) and push backbone enterprises to add new network addresses without relying on private addresses.

Accelerate the construction of next-generation wireless broadband networks. Accelerate the construction of the fourth-generation mobile communication (4G) network to achieve deep coverage and wide-area continuous coverage of urban and population-dense administrative villages. Promote free high-speed wireless LANs in hot spot areas. Rigorously promote the joint research and development, testing, and pre-commercial pilot of the fifth-generation mobile communication (5G) network. Optimize the allocation of national spectrum resources, improve

the efficiency of spectrum utilization, and ensure the supply of frequency resources. Rationally plan the use of satellite frequency and orbit resources, accelerate the deployment of satellite Internet, develop new communication satellites and application terminals, explore the construction of a space-earth integrated network (天地一体化信息网络), and study new ways of high-altitude coverage such as stratospheric communication.

Accelerate the construction of next-generation broadcast television networks. Promote smart synergistic coverage of cable, wireless, and satellite broadcast television networks and build a space ground integration network with integrated communications, broadband interaction, smart synergies, and controllable broadcast television convergence transmission coverage. Accelerate nationwide cable television network infrastructure construction and the bidirectional, intelligentized (智能化) upgrade and transformation of national cable television networks. Promote the research and development and industrialization of the next generation of terrestrial digital radio and television broadcasting transmission technology, strengthen the integration and innovation of terrestrial broadcast radio and television with the internet, and create a new format for mobile, interactive, and convenient terrestrial wireless broadcast radio and television.

Box 1: Broadband Rural Demonstration Project
Conduct pilot work on universal telecommunications services, promote network convergence, accelerate the construction of optical cables and satellite communications for administrative villages, and implement fiber-optic home-based networks and fourth-generation mobile communication (4G) networks to extend coverage to natural villages (自然村) and households on demand, using satellites and mobile communications. Technological innovations in fields such as communications will strengthen coverage to islands, remote areas, and mountainous regions, accelerate the popularization of e-commerce, distance education, telemedicine, smart agriculture, e-government, and other information applications, and support poverty alleviation.

Coordinate the development of application infrastructures. Make full use of existing facilities, plan the layout of large-scale and super-large data centers in suitable regions across the country, and promote the construction of green data centers in an orderly fashion. Promote Internet of Things intensive deployment based on existing communication networks. Continue to strengthen emergency communications capacity building.

Strengthen international collaboration. Strengthen international information network infrastructure interconnection and cooperation. Strengthen the construction of overseas submarine cables, land cables, service nodes, data centers, satellite communications, and the like and optimize the layout of international communication networks. Accelerate the construction of the China-Arab States Online Silk Road and the China-ASEAN Information Harbor.

(2) Promote the "Internet Plus" initiative. Promote the integration of next-generation information technology with all economic and social fields and foster an "Internet Plus" ecosystem.

Deepen the integrated application of the Internet in the production realm. Deepen the development of manufacturing and Internet convergence, promote "Made in China Plus

Internet" to achieve substantive breakthroughs, develop information technology services for manufacturing, build new foundations for manufacturing of core industrial hardware and software, industrial clouds, and intelligent service platforms, and rigorously promote smart manufacturing, new formats and new models such as networked collaboration, personalized customization, and service extension. Accelerate the development of the industrial Internet, build an industrial Internet system architecture, and carry out industrial Internet innovation application demonstrations. Promote the deep integration of the mobile internet, cloud computing, Internet of Things, and other technologies with agriculture, energy, finance, commerce, logistics, and express delivery. Support industry-oriented software development and system integration for network collaboration and promote the transformation of manufacturing to production services and production to extend the service industry to the high end of the value chain.

Expand "Internet Plus" applications in the lifestyle and public services fields. Accelerate the innovation of industry management systems and promote intelligentization of services such as healthcare, education, social security (社保), employment, transportation, and tourism. Expand the application of new smart cities, promote the innovation of Internet-based public service models, promote the construction of public platforms for cloud-based information services, and enhance the supply of public goods. Accelerate the implementation of "Internet Plus Government Services" and gradually realize the "one-number, one-window, one-network" system for government service applications, acceptance, and processing.

Promote innovation in the new business of "Internet Plus." Encourage the use of information network technology to promote the transformation of production, management, and marketing models, reshape the industrial chain, supply chain, and value chain, and accelerate the formation of new production and circulation exchange models. Promote the sharing of economic development through institutional innovation, establish a regulatory approach to adapt to the development of the sharing economy, promote the standardized development of shared platform enterprises in the fields of transportation, tourism, pensions, human resources, and daily necessities, and create a cultural atmosphere for the sharing economy.

Box 2: "Internet Plus" Project
Deeply promote "Internet Plus" in the 11 key initiatives of entrepreneurial innovation, collaborative manufacturing, modern agriculture, smart energy, inclusive finance, people-first services, efficient logistics, e-commerce, convenient transportation, green ecology, and artificial intelligence. Establish an internet services platform to support cross-domain integration and innovation. Promote cloud-based business models and business model innovation and promote the establishment of public cloud and industry cloud platforms. Strengthen research on the Internet of Things network architecture and organize demonstrations of major Internet of Things applications. Accelerate the commercial deployment of the next-generation internet and build a trial and error and management service platform for internet technology. Create a national information economy demonstration zone.

(3) Implement the national big data strategy. Implement the outline for the big data development initiative, comprehensively promote the efficient collection, effective integration, open sharing, and application expansion of big data in key areas, improve supervision and

management systems, strengthen security guarantees, and promote the innovation and development of related industries.

Accelerate the open sharing of data resources. Coordinate the layout and construction of the national public platform for big data, formulate and introduce open data sharing management methods, promote the establishment of data resource lists and open catalogs, and encourage the public to add value, public welfare, and innovative development to open data. Strengthen the construction of basic systems for big data, strengthen supervision on usage, establish and improve data resource trading and pricing mechanisms, and protect rights and interests related to data resources.

Develop new big data applications and formats. Accelerate the application of government big data, establish a national system for overall controls and social governance, and improve government governance capabilities. Develop the application of big data in industry, agriculture, and rural areas, entrepreneurial innovation, and job promotions, promote innovation in the data service industry, and promote the development of new formats and new models, such as big data mining, big data chemistry, big data materials, and big data pharmaceuticals. Strengthen the research and development of key technologies such as mass data storage, data cleaning, data analysis and mining, and data visualization and form a group of internationally competitive big data processing, analysis, and visualization software and hardware products, cultivate big data related industries, improve the supply chain, and promote related industrial agglomeration development. Promote the construction of a comprehensive database for big data.

Strengthen the security of big data and network information. Establish a big data security management system, formulate big data security management methods and related standards and regulations, and establish a cross-border mobile security safeguard for data. Strengthen key technologies such as data security and privacy protection to form a safe and reliable big data technology system. Establish and improve the network security review system. Use safe and reliable products and services to improve the safety and reliability of key infrastructure equipment. Establish a critical information infrastructure protection system to study key information systems and infrastructure network security solutions.

Box 3: Big Data Development Project
Integrate existing resources and build a government data-sharing exchange platform and open data platform. Improve the big data sharing and circulation system, the big data standards system, and the big data security system. Promote making government datasets on credit, transportation, medical care, education, the environment, security monitoring, and so forth available to the public. Support the research, development, and industrialization of key big data technologies, carry out big data demonstration applications in key areas, implement special projects for national information security, and promote the healthy and rapid development of industries related to big data.

(4) Strengthen the core industries of information technology. In line with networkization (网络化), intelligentization, integration, and other development trends, strive to cultivate a core ecosystem for application traction and open compatibility, comprehensively sort out and accelerate the development and industrialization of new technologies in key areas of

information technology, and promote breakthroughs in the transformation and upgrading of the electronic information industry.

Improve core infrastructure hardware supply capabilities. Enhance the level of key chip design and develop chips for new applications. Accelerate the industrialization of 16/14 nanometer production and the construction of memory production lines, improve the technical level and industrial concentration of the packaging and testing industry, and step up chip-adjacent fields in the late Moore's Law era (后摩尔定律时代). Realize breakthroughs in and the scaled application of active matrix organic light-emitting diode (AMOLED), ultra-high definition (4K/8K) quantum dot liquid crystal displays, flexible displays, and other technologies. Promote research, development, and industrialization of key technologies in smart sensors, power electronics (电力电子), printed electronics (印刷电子), semiconductor lighting, and inertial navigation and enhance the supply of new chip components, optical communication devices, and dedicated electronic materials.

Box 4: Integrated Circuit Development Project
Launch planning for a significant productivity layout for integrated circuits and implement a number of highly practical projects to promote rapid industrial growth. Accelerate the construction of advanced manufacturing processes, memories, and specialty processes and improve the design and development capabilities and application levels of key products such as safe and reliable CPUs, digital-analog/analog-to-digital conversion chips, and digital signal processing chips. Promote the rapid development of packaging, testing, key equipment, and materials industries. Support a boost in the level of service offered by original equipment manufacturers and third-party IP core enterprises, support collaborative innovation between design and manufacturing enterprises, and promote key industries to increase industrial concentration. Promote collaborative innovation in the semiconductor display supply chain.

Rigorously develop basic software and high-end information technology services. Establish a safe and reliable basic software product system for key industry needs and support the development of open source communities. Strengthen the development and application of operating systems in the fields of cloud computing, Internet of Things, industrial internet, and intelligent hardware. Accelerate the development of database systems for big data applications and middleware for industry application needs. Support the development of general-purpose software such as office software for network collaboration optimization. Strengthen the service capacity building of information technology core software and hardware systems, encourage domestic enterprises to develop high-end comprehensive system integration, standardize service delivery, and ensure service quality. Encourage the exploration of new cutting-edge technology-driven service formats and encourage key enterprises to accelerate program development and applications in industry solutions in emerging fields. Rigorously develop high-end software outsourcing based on new generation information technology.

Accelerate the development of high-end complete machine products (高端整机产品). Promote the research, development, and industrialization of information technology products such as green computing, trusted computing, and data and network security. Accelerate the innovation and application of high-performance secure servers, storage devices and industrial control products, new smartphones, next-generation network devices and data center equipment, advanced smart televisions and smart home systems, and information security

products. Develop professional terminals, equipment, and integrated innovation systems for industries such as finance, transportation, and healthcare. Rigorously improve product quality and cultivate a number of brands with international influence.

(5) Develop artificial intelligence. Cultivate an artificial intelligence industry ecosystem, promote the use and application of artificial intelligence in key economic and social fields, and build a leading international technology system.

Accelerate the construction of a support system for artificial intelligence. Promote basic theoretical and technical research such as brain-inspired (类脑) research, accelerate the research, development, and industrialization of application technologies, such as computer vision and hearing, biometrics (生物特征识别), new human-computer interaction, and intelligent decision control, and support basic hardware and software development in the field of artificial intelligence. Accelerate the construction of artificial intelligence mass training resources and basic resource service public platforms such as video, map, and industry application data applications, and build a new type of computing cluster that supports large-scale deep learning. Encourage leading companies or institutions to provide artificial intelligence research and development tools as well as innovative services such as inspection and assessments, entrepreneurial consulting, and talent development.

Promote the application of artificial intelligence technology in various fields. Pilot demonstrations in key areas such as manufacturing, education, environmental protection, transportation, commerce, healthcare, cybersecurity, and social governance to promote the scaled application of artificial intelligence. Develop diversified, personalized, and customized intelligent hardware and intelligent systems, focusing on the development and industrialization of smart homes, smart cars, smart agriculture, smart security, smart health, intelligent robots, and smart wearable devices. Encourage all industries to strengthen integration with artificial intelligence and gradually realize intelligent upgrades (智能化升级). Use artificial intelligence to innovate city management and build new smart cities. Promote the application of professional service robots and home service robots to foster new high-end service industries.

Box 5: Artificial Intelligence Innovation Project
Promote basic theoretical research and core technology development, realize the industrialization of human neuron-inspired computing chips (类人神经计算芯片), intelligent robots, and intelligent application systems, and embed new artificial intelligence technologies in various fields. Construct a public service platform for artificial intelligence and a backbone enterprise R&D service platform that are open to the public. Establish and improve a service system to support entrepreneurship and innovation in artificial intelligence.

(6) Perfect approaches to the management of the network economy.

Deepen telecommunication system reform. Comprehensively promote network convergence, further liberalize (放开) business competition in the basic telecommunications field, relax market access restrictions on converged products and services, and promote pilot projects in mixed ownership (混合所有制) of state-owned telecom enterprises. Break down industry barriers, promote the full interoperability (对接) of technology, standards, and

supervision in various industries and fields, and allow all types of entities to participate in market competition on an equal footing.

Strengthen the enactment of relevant legislation. In response to the new characteristics of the internet and the integration and development of various industries, adjust current regulations and policies that do not stack up to development requirements. Implement regulations on strengthening network information protection and information disclosure and accelerate the development of laws and regulations on network security and e-commerce.

3. Promote breakthrough developments in high-end equipment and new materials industries to lead to a new leap forward (新跨越) in Chinese manufacturing

In line with the development trends of the manufacturing industry towards intelligentization, environmental consciousness, a service mentality, and internationalization, accelerate breakthroughs in key technologies and core components around the implementation of the "Made in China 2025" strategy. Promote engineering applications and the industrialization of major equipment and systems and promote supply chain coordination. Develop and shape a new image for Chinese manufacturing and promote an overall improvement in the level of manufacturing. Strive to achieve a production value of more than 12 trillion yuan in the high-end equipment and new materials industries by 2020.

(1) Build a high-end smart manufacturing brand. Strive to improve the performance and quality of smart manufacturing core equipment and components, build an smart manufacturing system, strengthen basic support, actively carry out demonstration applications, form a number of internationally renowned brands, and promote a new level of smart manufacturing equipment.

Rigorously develop smart manufacturing systems. Accelerate the deep integration of new generation information technology and manufacturing technology, carry out a top-level design of cyber-physical systems (CPS) that integrates computing, communications, and control, explore and build the entire production process and lifecycle of products, establish smart manufacturing systems with deep learning awareness, intelligent optimized autonomous decision-making (智慧优化自决策), and precise and controlled execution. Promote robotic automated production lines, digital workshops, and smart factories with independent intellectual property rights. Provide overall solutions for key industries and promote the intelligent transformation of traditional manufacturing industries. Construct a test and verification platform and improve the system of smart manufacturing standards.

Promote a new level of smart manufacturing with key technologies and equipment. Build breakthrough technologies for industrial robot industry systems and core components, such as high-precision reducers, high-performance controllers, and precision measurement devices, with a focus on developing high-precision, high-reliability mid- to high-end industrial robots. Accelerate the research, development, and industrialization of high-end CNC lathes and computer-aided design and manufacturing centers and achieve breakthroughs in main functional components and key application software, such as multi-axis, multi-channel, high-precision high-end CNC systems and servo motors. Develop and promote applications with precision, high speeds, high efficiency, flexibility, and high-end CNC lathes, basic manufacturing equipment, and integrated manufacturing systems for functions such as network

communication. Achieve breakthroughs in smart sensing and control equipment, intelligent detection and assembly equipment, smart logistics and warehousing equipment, and intelligent agricultural machinery and equipment and improve quality and reliability by researching, developing, and promoting new equipment.

Create an additive manufacturing supply chain. Achieve breakthroughs in titanium alloy, high-strength alloy steel, high-temperature alloy, high temperature resistant high-strength engineering plastics, and other special materials for additive manufacturing. Build a technology research and development platform for additive manufacturing technology to elevate the level of technology. Develop and promote mainstream additive manufacturing process equipment driven by lasers, electron beams, ion beams, and other energy sources. Accelerate the development of high-power fiber lasers, scanning galvanometers, dynamic focusing mirrors, and high-performance electron guns and other supporting core components and embedded software systems, enhance the collaborative innovation of software and hardware, and establish additive manufacturing standards. In the fields of aerospace, medical equipment, transportation equipment, cultural creativity, and personalized manufacturing, rigorously promote the application of additive manufacturing technology and accelerate the development of additive manufacturing services.

Box 6: Smart Factory Application Demonstration Project for Key Areas
In the discrete manufacturing fields of machinery, aviation, aerospace, automotive, maritime, light industry, textiles, and electronic information, carry out integrated innovation and application demonstrations of intelligent workshops/factories and promote digital design, intelligent equipment upgrades, process optimization, and lean production with pilot applications in visual management, quality controls, traceability, and intelligent logistics to promote intelligentized integration of business processes. In petrochemical, steel, non-ferrous metals, building materials, textiles, food, medicine, and other process manufacturing fields, carry out integrated innovation and application demonstrations in smart factories. Improve the level of intelligence of enterprises in resource allocation, process optimization, process control, supply chain management, quality control and traceability, energy conservation and emission reduction, and safe production.

(2) Implement new breakthroughs in the aviation industry. Strengthen independent innovation, promote the industrialization and serialization of civil aviation products, strengthen the construction of industrial supporting facilities and safe operation support capabilities, improve product safety, environmental protection, economy and comfort, and comprehensively build aeroengines, complete aircraft, and an aviation industry system with industrial support and safe operation. Deliver civil large passenger aircraft and new regional aircraft by 2020. Make major breakthroughs in the development of aero-engines and basically establish systems for industrial support and demonstrations.

Accelerate the independent development of aero-engines. Rely on the major projects of aero-engines and gas turbines to achieve breakthroughs in key technologies of large-ducted turbofan engines and support the development of domestic regional aircraft. Develop a 1000-kilowatt turboshaft engine and a 5000-kilowatt turboprop engine to meet the power requirements of domestic serialized helicopters and medium-sized transport aircraft. Develop

piston engines that use fuel oils and turbine engines that use aviation biofuels to promote the market application of small engines.

Promote the industrialization of civil aircraft. Accelerate the implementation of major projects for large aircraft, complete the development of large passenger aircraft, launch the development of wide-body passenger aircraft, and achieve breakthroughs in core technology. Accelerate the development and serialized retrofitting of new regional aircraft, carry out demonstrations and design optimization of new aircraft models at home and abroad, and improve the adaptability and competitiveness of aircraft routes. Rigorously develop high-demand civilian helicopters, multi-purpose aircraft, special aircraft, and industrial-grade drones.

Improve the construction of industrial supporting systems. Improve the independent manufacturing level of aviation materials and basic components and master the core technologies of processing and manufacturing of aluminum-lithium alloys and composite materials. Rigorously develop aviation equipment and systems with high reliability, long service lives, strong environmental adaptability, standardization, and low costs to achieve airworthy deliveries. Accelerate the construction of major infrastructure for aviation scientific research and testing, increase the input of measurement and verification conditions such as structural strength, flight control, electromagnetic compatibility, and environmental testing, and strengthen the construction of test flight conditions. Achieve breakthroughs in a number of key airworthiness technologies, strengthen airworthiness certification conditions and capacity building, accelerate the improvement of airworthiness certification policies for various aviation products, such as transport aircraft, and build a sound organization, sufficient human resources, sound regulatory systems, advanced hardware facilities, and an airworthiness certification system with strong international cooperation capabilities. Accelerate the construction of a number of specialized digital demonstration factories to significantly improve the quality stability and production efficiency of aviation products. Actively promote the establishment of an international risk sharing partnership and build a fully functional aviation industry support system.

Develop new services for aviation operations. Implement various policies and measures to promote the development of the general aviation industry, rigorously cultivate the general aviation market, and promote the coordinated development of general aviation manufacturing and operation services. Rigorously develop aviation leasing. Use internet technology to establish an advanced system for aviation operations and promote service model innovations. Strengthen flight training and foster aviation culture. Develop integrated, universal, and intelligent communication, navigation, and control systems and develop technical systems and equipment for comprehensive risk management and multi-class airspace integration to form a support system for safe operations.

Box 7: Next-Generation Civil Aircraft Innovation Project
Provide support to major key projects and scientific research on civil aircraft. Achieve breakthroughs in a core set of technologies, systems, components, and materials and improve system integration capabilities. Emphasize the development of a series of large single-channel narrow-body, dual-channel wide-body aircraft and serialize new turboprop/turbofan regional aircraft and advanced general aviation aircraft. Emphasize demonstrations and marketing for new civil aircraft and establish market-competitive product support and

customer service systems. Complete C919 and MA700 airworthy deliveries to clients and achieve ARJ21 mass production and deliveries. Complete development and reach market applications for a group of key general-purpose aircraft.

(3) Make the satellites and applications industry bigger and stronger. Build a national civilian space infrastructure that is open, safe, reliable, and has long-term stability. Accelerate the integration of satellite applications and infrastructure. By 2020, fundamentally establish the national civilian space infrastructure. Meet the main business needs of various domestic fields and basically achieve independent safeguards of spatial information applications and form a relatively complete satellite and applications supply chain.

Accelerate the construction of satellite and applications infrastructure. Construct a remote sensing satellite system consisting of constellations and thematic satellites to form global data acquisition capabilities with high-medium-low resolution and reasonable multi-layer observations of air and space. Strengthen ground system construction and integrate high-precision, all-element, systematic Earth observation information to build Big Earth Data. Create a domestic platform for high-resolution commercial remote sensing satellite operation services. Develop three satellite systems for fixed communication broadcasting, mobile communication broadcasting, and data relay to form a satellite communication broadcasting system covering major regions of the world. Implement the Second-generation Satellite Navigation System National Science and Technology Major Project, accelerate the construction of satellite navigation space and ground systems, build the Beidou global satellite navigation system, and form high-precision global service capabilities. Promote the construction of remote sensing satellites with the public-private partnership (PPP) model.

Improve satellite performance and technology. Master satellite application platform technology with long service lives, high stability, high positioning accuracy, large load capacity and strong agility, and make breakthroughs in payload technologies such as high resolution, high precision, high reliability, and comprehensive detection. Give priority to the development of remote sensing satellite data processing technology and business application technology. Improve the technical performance of broadband communication satellites and mobile multimedia broadcast satellites. Strengthen satellite platform-type spectrum construction and promote the development of small and medium-sized microsatellites in an orderly manner.

Advance comprehensive satellite applications. Coordinate military and civilian space infrastructure, improve satellite data sharing mechanisms, strengthen satellite popularization, regionalization, and international applications, accelerate the application of satellite remote sensing, communications, and navigation integration, and utilize new technologies, such as the Internet of Things and the mobile internet to achieve Satellite Plus innovations. For disaster prevention and mitigation, emergency response, maritime operations, and other fields, carry out demonstrations of common comprehensive satellite applications. For governance administrative and social service needs, carry out demonstrations of integrated satellite applications in modern agriculture, new urbanization, smart cities, smart oceans, and remote areas. Focusing on the overall strategy of national and regional development, promote the in-depth development of Internet Plus Spatial Information Applications and create a new supply chain and business model for spatial information consumption. Promote commercial satellite

development and satellite commercialization. Actively deploy in overseas markets and establish a Belt and Road spatial information corridor.

Box 8: Spatial Information Intelligent Sensing Project
Accelerate the construction of national space infrastructure with remote sensing, communication, and navigation satellites at its core, strengthen interdisciplinary resource sharing and comprehensive information service capacity building. Actively promote the comprehensive application of spatial information and dynamically monitor and predict applications for resources, environmental protection, early warning, disaster prevention and mitigation, and emergency command. Provide timely and accurate spatial information services, strengthen the ability to provide comprehensive information services to the world, and rigorously expand the international market.

(4) Strengthen the leading position of rail transit equipment. Promote the intelligent, green, streamlined, serialized, standardized, and platformized (平台化) development of the rail transit equipment industry. Accelerate the application of new technologies, processes, and materials and develop advanced and reliable product series. Improve associated technical standards and construct a modern and innovative system for the rail transit equipment industry. Create a full supply chain layout covering regional railways, intercity railways, suburban railways, and urban rail transit.

Create an internationally competitive rail transit equipment supply chain. It will form a series of new high-speed electric multiple units (EMUs), energy-saving permanent magnet motor-driven high-speed trains, 30-ton axle heavy-duty electric locomotives and vehicles, and large-scale route maintenance machinery. Promote the research, development, and industrialization of new trains such as the 500 kph wheel-rail test train and the 600 kph mag-lev system and build a complete supply chain. Strengthen the comprehensive capacity building of product quality inspections, testing, and certification. Accelerate the pace of “going global” (“走出去”) and enhance international competitiveness.

Promote the research, development, and industrialization of new urban rail transit equipment. For the complex urban traffic needs of large cities, promote 120-160 kph urban (suburban) railway equipment that seamlessly connects to urban rail transit and a straddle monorail that adapts to different technical routes. Research, develop, and apply an automatic rail rapid transit system, construct a technology platform for the design, manufacture, verification, and testing of medium and low-speed 200 kph mag-lev systems. Establish and improve the product certification system, enact new technical standards and specifications for urban rail transit vehicles, and take the lead in international technical standards.

Achieve breakthroughs in key industrial components and green intelligent integration technologies. Further research and develop key systems and components, including train traction brake systems, train network control systems, communication signaling systems, electric drive systems, intelligent systems, coupler buffer systems, energy storage and conservation systems, high-speed wheelsets, high-performance railroad trucks (转向架), gearboxes, bearings, and lightweight car bodies. Strengthen the research, development, and industrialization of permanent magnet motor drives, fully automatic operations, and wireless integrated bearers based on fourth-generation mobile communications. Optimize and improve

high-speed railway train control systems and intercity railway train control technology standards.

(5) Enhance the international competitiveness of marine engineering equipment. Promote the development and diversification of offshore engineering equipment to deep sea and polar sea areas, upgrade main equipment structures, achieve breakthroughs in new key equipment, upgrade design capabilities and supporting systems, and form a complete industrial system covering scientific research and development, final assembly construction, equipment supply, and technical services.

Focus on the development of main marine engineering equipment. Accelerate the research and development of main offshore engineering equipment such as geophysical exploration vessels, deep-water semi-submersible platforms, drilling vessels, floating production storage and unloading devices, marine survey vessels, semi-submersible transport vessels, lifting and laying vessels, and multi-purpose marine engineering vessels. Build a service system and achieve world-leading design and construction capabilities.

Accelerate the development of new marine engineering equipment. Achieve breakthroughs in the research and development of design and construction technology for floating drilling production storage and unloading devices, floating LNG storage and regasification equipment, deep draft column platforms, tension leg platforms, polar drilling platforms, and offshore test sites. Establish large-scale production and manufacturing systems and achieve product performance and reliability that meets advanced international standards.

Strengthen the research, development, and industrialization of key supporting systems and equipment. Improve the design and manufacturing of key supporting equipment, such as lifting and locking systems, deep-water mooring systems, dynamic positioning systems, automatic control systems, underwater drilling systems, and flexible riser deep sea observation systems by combining production with study and research. Rigorously develop high-performance engines for marine engineering and enhance professional support capabilities.

Box 9: Marine Engineering Equipment Innovative Development Project
Promote the research and development of new equipment, such as large floating structures, deep-sea equipment, such as ultra-deep-water drilling platforms for depths of over 3,600 meters, and marine polar survey and observation equipment. Realize the engineering and industrialization of scientific research results and promote the coordinated development of final assembly and supporting industries. Improve marine engineering equipment standards.

(6) Improve the basic support capacity of new materials. Comply with the trend towards high performance, multi-functionality, and green development for new materials and promote the sustainable development of new special resources. Strengthen the distribution of cutting-edge materials based on strategic emerging industries and major engineering construction needs and optimize the atmosphere for the industrialization and application of new materials. Strengthen the establishment of new material standards and improve new materials applications to advance the integration of new materials into the high-end manufacturing supply chain. By 2020, strive to make certain that new material varieties enter

the global supply chain and that the self-sufficiency rate for major key materials reaches over 70% to initially realize the strategic transformation of China from a materials power (材料大国) to a materials superpower (材料强国).

Improve quality and efficiency to promote the new materials industry. For the development needs of aerospace, rail transit, electricity and electronics, and new energy vehicles, expand the scale of application of high-strength light alloys, high-performance fibers, special alloys, advanced inorganic non-metallic materials, high-quality special steels, new display materials, automotive battery (电力电池) materials, and green printing materials to gradually enter the global high-end manufacturing procurement system. Promote the advantages of new materials enterprises to "go global." Strengthen supply chain cooperation with well-known high-end manufacturing enterprises at home and abroad and carry out all-round cooperation in research and development design, production trade, and standard setting. Raise the added value of new materials, create new material brands, and enhance international competitiveness. Establish an evaluation system for new material technology maturity and study the establishment of the first batch of new materials application insurance compensation mechanism. Establish a new material performance test evaluation center. Refine and improve the statistical classification of new material products.

Construct new material standards based on applications. Focusing on the needs of next-generation information technology, high-end equipment manufacturing, energy conservation and environmental protection, strengthen the convergence of new materials product standards and downstream industry design specifications, accelerate the formulation of key new material standards, promote the revision of old standards, and strengthen the promotion and application of existing standards. Strengthen advanced research into new material standards and lay out a number of core standards in advance. Accelerate the internationalization of the new materials standards system and promote the internationalization of domestic standards.

Promote the sustainable development of new special resources. Promote the high-quality utilization of rare earth, tungsten-molybdenum, vanadium-titanium, lithium, graphite, and other special resources and strengthen the development of special processes and technologies. Promote the balanced use of the associated mineral resources and support the establishment of specialized resources, new materials recycling bases, and mineral functional material manufacturing bases. In new resources mining, smelting and separation, and in deep processing of special resources, promote the application of intelligent and green production equipment and processes. Develop new materials such as medical tissue engineering materials and biological environmental materials from marine sources.

Lay a prospective layout for the development of new cutting-edge materials. Achieve breakthroughs in application technology for graphene industrialization and expand the application range of nanomaterials in optoelectronics, new energy, and biomedicine. Develop smart materials, biomimetic materials, metamaterials, low-cost additive manufacturing materials, and new superconducting materials. Expand the research and development of materials needed for extreme environments such as air and sea, deep sea and deep underground, and form a series of highly influential innovations.

Box 10: New Materials Upgrade and Synergistic Applications Project
Strengthen the connection between new green building materials standards and public energy-efficiency building standards. Accelerate the development of standards for gear steel for rail transportation equipment, carbon/carbon-composite structural materials, high-temperature alloys, special glass, wide-bandgap semiconductors, electronic information chemicals, optical functional films, and artificial crystal materials for the aerospace industry. Improve the functional standards of functional membrane materials and marine anti-corrosion materials for energy conservation and environmental protection. Provide a standard layout for additive manufacturing materials, rare earth functional materials, and graphene materials and enhance the quality of new materials products. Strengthen the upstream and downstream cooperation in the new materials industry and carry out pilot demonstrations of synergistic applications in the fields of aviation aluminum, carbon fiber composite materials and nuclear power steel to build a synergistic applications platform.

4. Accelerate the pace of innovation and development of the biotech industry and foster new biotech economic drivers

Seize the deep development of the life sciences, the new application of new biotechnology and the new trends of integration and innovation, taking the rapid development of genetic technology as an opportunity. Promote the development of medical care with precision medicine and personalized medicine and accelerate the upgrading of agricultural breeding for efficient and precise breeding. Expand into new areas of marine life resources and promote biotechnology and products that can replace a broad range of applications. Promote the large-scale application of bioenergy with new development models and cultivate new formats of high-quality specialized biological services. Accelerate the development of the biotech economy into an important new post-information economy. Provide new support for the construction of a healthy and beautiful China. By 2020, bring the scale of the biotech industry up to 8-10 trillion yuan and form a group of new internationally competitive biotechnology enterprises and biotech economy clusters.

(1) Build a new biopharmaceutical system. Accelerate the development of innovative drugs and biological products that are in major clinical demand. Accelerate the promotion of green and intelligent pharmaceutical production technologies, strengthen scientific and efficient supervision, provide policy support, promote the international development of the industry, and accelerate the establishment of China as a biopharmaceutical power.

Promote leapfrog development in the biopharmaceutical industry. Accelerate the research and development of technologies such as gene sequencing, cell-scale culture, targeted and long-acting drug release, and green intelligent production to support the high-end development of the industry. Develop new antibodies and vaccines, gene therapy, cell therapy, and other biological products and preparations, promote the development of chemical drugs and the development of high-end preparations, and accelerate the development of distinctive innovative Chinese medicines. Achieve original innovations in major disease prevention and treatment drugs. Support the large-scale development of biosimilar drugs and carry out research, development, and production for large-scale patent-expired drugs. Accelerate the upgrading of pharmaceutical equipment, improve the level of pharmaceutical automation, digitization, and intelligence, and further promote the standardization of Chinese medicine products. Promote the integration of industry standards with the international standards. Accelerate the pace of internationalization. Develop innovative marine-sourced drugs, develop

modern marine-sourced Chinese medicine products catered towards minority ethnic groups, promote the industrialization of reagent raw materials and intermediates, and form a group of marine biopharmaceutical industry clusters.

Box 11: New Drug Creation and Industrialization Project
Focus on the establishment of a sustainable biopharmaceutical industry for emerging drugs such as antibody drugs, recombinant protein drugs, and new vaccines in particular and promote the development, industrialization, and quality upgrade of new drugs that are clinically scarce such as those for major diseases, multiple diseases, rare diseases, and childhood diseases. Integrate various elements to form a group of advanced product standards and internationally advanced industrial technology systems. Enhance the supporting capabilities of key raw materials and equipment to support the continuous innovation and development of biotechnology drugs.

Create new approaches to the regulation of biopharmaceuticals. Establish a more scientific and efficient method for drug review and approval, accelerate the pilot of the drug listing permit holder system, accelerate consistency evaluations for the quality and efficacy of generic drugs, and explore the pilot of the clinical laboratory research and approval system for new medical technologies. Improve drug procurement mechanisms and comprehensively promote the reform of institutional mechanisms in the fields of pharmaceutical prices and industry regulation.

(2) Enhance the development level of biomedical engineering. Deepen the integration of biomedical engineering technology with information technology and accelerate industry regulation reform. Actively develop new medical devices, build new models of medical treatment, such as mobile medicine and telemedicine, and promote the development of the intelligent medical industry. Promote the application of high-performance medical devices, advance the development of new instruments and reagents adapted to the development of new technologies in life sciences, and improve the overall competitiveness of China's biomedical engineering industry.

Develop new intelligentized mobile medical equipment. Develop intelligent medical equipment and its software and supporting reagents and a comprehensive telemedicine service platform and terminal equipment. Develop mobile medical services and formulate relevant data standards. Promote interconnection and initially establish a modern intelligent medical service system that deeply integrates information technology and biotechnology.

Develop high-performance medical equipment and core components. Develop high-quality medical imaging equipment, advanced radiotherapy equipment, high-throughput low-cost genetic sequencers, genetic editing equipment, rehabilitation medical equipment, and other medical equipment and significantly improve the stability and reliability of medical equipment. Use new technologies such as additive manufacturing to accelerate the innovation and industrialization of tissue and organ repair and replacement materials and medical device implants. Accelerate the development of new products such as in-vitro diagnostic equipment, devices, and reagents. Promote the development of new technologies such as high-specificity molecular diagnostics and biochips and support rapid and accurate diagnostic in-vitro screening for such ailments as tumors, genetic diseases, and rare diseases.

Box 12: Beneficial Biotechnology Project
Promote the construction of a network of genetic technology application demonstration centers and carry out application demonstrations such as birth defect genetic screening, early tumor screening, and medication guidance. Develop and apply new biotherapeutic technologies to promote the standardization and regulation of new individualized biotherapeutics. Develop intelligent and high-performance medical equipment, support enterprises, medical institutions, research institutions, and other jointly built third-party imaging centers and conduct collaborative diagnosis and treatment with pilot the establishment of resident health imaging files. Carry out regional and comprehensive application demonstrations to achieve regional biologically based plastic products and packaging materials that can replace more than 50% of traditional petrochemical plastic products. Construct a demonstration project for a biomass-based gas supply and heat supply around towns or enterprises and explore market-oriented development models that can deliver synergistic success.

(3) Accelerate the industrialization of biotech agriculture. With the goals of high efficiency, product safety, resource conservation, and environmental friendliness, create new varieties of biotech agriculture, develop new animal and plant nutrition and green plant protection products, build a new modern agricultural system, and form a group of internationally competitive biological breeding enterprises. Provide new ways and new support for accelerating the transformation of agricultural development.

Construct an atmosphere of independent innovation in the biological seed industry. Carry out key core technology innovations and breeding applications such as gene editing, molecular design, and cell mutagenesis and develop and promote a number of new varieties of agricultural animals and plants that are high-quality, high-yield, nutritious, safe, resource-efficient, and standardized for production. Actively promote biotechnology to cultivate new varieties of industrialization and form a batch of enterprise-based biological breeding innovation platforms to build modern biological species enterprises with core competitiveness and to promote integration. Accelerate the industrialization and marketization of new agricultural and plant varieties. Develop new technologies for animal and plant quarantine and strengthen the construction of quarantine platforms for the introduction of high-quality animal and plant resources from foreign countries.

Develop a number of new agricultural biological agents and major products. Rigorously develop new technologies and products for the prevention and control of animal and plant pests and diseases, establish a green pesticide and veterinary drug creation technology system based on pest and genomic information, and create a number of new animal vaccines, biological veterinary drugs, new plant pesticides, and other major products to achieve scaled production and applications and to promote the green transformation of agricultural production. Create new green biological feed and high-efficiency biofertilizers that replace antibiotics. Tap deeply into marine biological resources, develop green, safe, and efficient new marine biological functional products, and open up new means of comprehensive utilization. Promote key technological innovations and precision nutrition foods such as food synthesis biotechnology, food biotech efficient transformation technology, and intestinal microbial metagenomics.

(4) Promote the scaled application of biotech manufacturing. Accelerate the development of new technologies such as microbial genome engineering, enzyme molecular machines, and cell factories to enhance the economics of industrial biotechnology products. Promote the

penetration of biotech manufacturing technologies into chemical, materials, and energy fields and promote the progressive replacement of traditional chemical processing with clean bioprocessing methods to gradually replace fossil resources with renewable resources.

Continuously improve the economics and scale of biotech manufacturing. Develop new biotech tool creation and application technology systems to realize the biological production and application of basic chemical products such as organic acids, chemical alcohols, olefins, alkanes, and organic amines. Promote the establishment of a supply chain and the concentration and scaled development of biologically based materials such as biologically based polyesters, biologically based polyurethanes, biological nylons, biological rubbers, and microbial polysaccharides. Enhance independent innovations and the development of bulk fermentation products such as amino acids and vitamins.

Establish an ecologically secure, green, low-carbon, and recycling system for biological processing. Develop high-efficiency industrial biocatalytic conversion technology systems to improve the application of green biotechnology. Establish biocatalytic synthesis routes such as steroidal drugs, chiral compounds, and rare sugar alcohols to achieve green and large-scale production of pharmaceutical and chemical intermediates. Promote green biotech processing to fully introduce and demonstrate applications in the agriculture, chemicals, food, medicine, textiles, metallurgy, and energy fields to significantly reduce energy consumption and pollutant emissions.

(5) Cultivate new forms of biological services. Promote the development of biotechnology service innovations for a specialized division of labor. Build a new technology specialization service model and continuously create new biotech economy growth points.

Enhance the professional service capabilities of biotechnology for consumers. Develop specialized medical institutions and cultivate new types of technical diagnosis and treatment services such as liquid biopsy and genetic diagnosis that meet regulatory requirements. Develop health management services such as health checkups and consultations and mobile healthcare. Promote the establishment of biotech big data, and medical and health big data sharing platforms. Pilot the establishment of resident health imaging files, encourage the construction of a smart diagnosis and treatment ecosystem that combines online and offline functionality, and promote the professional development of services such as medical inspection and imaging diagnosis.

Box 13: Biotech Industry Innovation Development Platform Building Project
Relying on and integrating with existing resources, build a number of innovative basic platforms to support the construction of gene banks, stem cell banks, Chinese medicine standards libraries, high-level biosafety laboratories, and protein component libraries. Accelerate the construction of a number of transformative applications platforms and promote the construction of carriers such as antibody screening platforms, medical imaging information libraries, and crop molecular breeding platforms. Actively develop a number of testing services platforms, promote the construction of generic drug consistency evaluation technology platforms, biopharmaceutical quality and safety testing technology innovation platforms, agricultural product safety and quality testing platforms, and biomass energy testing and monitoring and public service platforms, and improve relevant standards.

Improve the level of industry support for biotechnology services. Develop drug research, development, and production services in line with international standards and encourage pharmaceutical companies to strengthen cooperation with contracted research and development and entrusted manufacturing enterprises. Promote the transformation of emerging technologies such as genetic testing and diagnostics in various fields and support bioinformatics service agencies to improve their technology. Provide public services such as testing, evaluation, and certification for biological products such as pharmaceuticals, medical devices, the seed industry, and biotech energy products, accelerate the time-to-market, and improve product quality. Encourage biotechnology to expand with applications in areas such as water pollution control, air pollution control, toxic and hazardous substance degradation, and waste recycling and actively guide biotech environmental technology companies to cross-regional and cross-industry alliances or mergers to grow bigger and stronger. Construct a biotechnology specialization entrepreneurship and innovation platform, reduce the cost of innovation and entrepreneurship in biotech industry, and support all citizens who wish to set up virtual R&D enterprises to unleash the potential for innovation.

(6) Create models for the development of bioenergy. Focus on the development of a new generation of biomass liquids and gas fuels, develop high-performance biomass energy conversion system solutions, expand the market for biotech energy applications, and strive to achieve comprehensive scaled applications in the fields of power generation, gas supply, heat supply, and fuel oil to bring bioenergy utilization technology and core equipment technology to a globally advanced level and form a more mature commercial market.

Promote clean applications for biomass energy. Focus on promoting the development of key technologies and equipment for high-service-life, low-power biomass fuel molding equipment, biomass heating boilers, and distributed biomass cogeneration and promote biomass-forming fuels to replace coal-fired central heating and biomass heat and power production. In accordance with local conditions and the principles of production and consumption, demonstrate the construction of centralized large-scale biogas application projects and achieve breakthroughs in critical technical bottlenecks such as large-scale biomass centralized gas supply processing and high-efficiency biogas anaerobic fermentation. Explore the establishment of diverse, synergistic, and win-win market-oriented development models, encourage the comprehensive utilization of multiple products, and provide clean and high-quality energy for production and life.

Promote the industrialization of advanced biotech liquid fuels. Focus on breaking through the bottleneck of high-efficiency and low-cost biomass liquid fuel raw material processing and preparation technology and build a 10,000-ton biomass preparation liquid fuel and multi-product co-production comprehensive utilization demonstration project. Improve the raw material supply system and develop biodiesels in an orderly fashion. Promote the research, development, and industrialization of cutting-edge technologies such as algal biofuel and aviation biofuel.

5. Promote the rapid growth of new energy vehicles, new energies, energy conservation, and environmental protection industries and build a new model for sustainable development.

Seize the development trend of global energy reform and meet the demands of China's industrial green transformation and development. Focus on ecological progress and address climate change. Focus on green low-carbon technology innovations and applications to guide green consumption, promote green products, and significantly increase the proportion of new energy vehicles and new energy applications. Comprehensively promote the construction of an efficient, energy-saving, advanced environmental protection and resource recycling industrial system and promote green low-carbon industries such as new energy vehicles, new energy, energy conservation, and environmental protection so that they become pillar industries of the Chinese economy with an output of over 10 trillion yuan by 2020.

(1) Achieve the scaled application of new energy vehicles. Strengthen technological innovation, improve the supply chain, optimize the supporting environment, implement and improve supporting policies, improve the industrialization of pure electric vehicles and plug-in hybrid vehicles, and promote the industrialization of fuel cell vehicles. Achieve production and sales of over 2 million vehicles per year by 2020 with cumulative production and sales of over 5 million. Ensure that the overall level of technology keeps pace with the international market and form a group of internationally competitive new energy vehicle and key component enterprises.

Improve the overall quality and performance of electric vehicles. Accelerate innovations and applications in electric vehicle system integration technology, focusing on vehicle safety, reliability research, and streamlined design. Improve the technical level, supporting capacity, and vehicle performance of key components. Accelerate the formulation and application of safety standards for electric vehicles. Accelerate the application of electric vehicle intelligent technology innovations and develop intelligent autonomous vehicles. Carry out the research and development of energy storage application technology for electric vehicle power systems, implement joint applications for distributed new energy and electric vehicles, and promote the integration of electric vehicles and smart grids, new energy, energy storage, and intelligent driving. Establish a joint innovation platform for electric vehicles and strategic alliances for cross-industry and cross-domain technological innovation to promote collaborative innovation in key technologies for electric vehicles. Improve production approval policies for electric vehicles and study and implement the new energy vehicle credits management system. Strive to achieve market competitiveness in electric vehicle commercialization by 2020.

Build a globally competitive automotive battery supply chain. Rigorously promote the development of automotive battery technology, focus on achieving breakthroughs in battery grouping and system integration technology, and advance the development of next-generation automotive batteries and new system automotive batteries to achieve breakthrough development in battery material technology. Accelerate innovations in high-performance, high-reliability automotive battery production, control, and testing equipment and enhance automotive battery engineering and industrialization capabilities. Cultivate and develop a group of leading automotive battery companies and key materials enterprises with continuous innovation capabilities. Promote the use of automotive battery ladders and establish a automotive battery recycling system that connects upstream and downstream enterprises. Match international automotive battery technology by 2020 and reach a global production capacity.

Box 14: New Energy Vehicle Automotive Battery Upgrade Project
Improve automotive battery research and development, accelerate the construction of automotive battery innovation centers, and achieve breakthroughs in technical bottlenecks for lithium ion batteries such as guaranteeing high safety, long service lives, and high energy density. Build a number of technological innovation centers for key battery materials and key production equipment, achieve breakthroughs in high-capacity positive and negative materials, high-safety diaphragms, and functional electrolyte technologies. Increase production, control, and testing equipment innovation and promote greater engineering capabilities along the entire supply chain. Carry out research and development in new technologies for fuel cells, all-solid lithium-ion batteries, metal-air batteries, and lithium-sulfur batteries.

Systematically promote the development and industrialization of fuel cell vehicles. Strengthen research on fuel cell base materials and process mechanisms to promote the development of high-performance, low-cost fuel cell materials and key system components. Accelerate improvements in the reliability and engineering of fuel cell stack systems and improve relevant technical standards. Promote the development of on-board hydrogen storage systems and hydrogen preparation, storage, and transportation technologies and promote the construction of hydrogen refueling stations. Achieve the mass production and scaled demonstration of fuel cell vehicles by 2020.

Accelerate the construction of a standardized and convenient infrastructure system. In accordance with the principle of "taking actions to suit local conditions and modestly advancing development" ("因地适宜、适度超前"), prioritize the construction of a public service area charging infrastructure in urban development and actively promote the construction of charging stations in residential areas and company parking spaces. Improve charging facilities standards and promote the interconnection and intercommunication of charging infrastructure. Accelerate the development of new charging and replacement technologies and equipment for high power density, high conversion efficiency, high applicability, wireless charging, and mobile charging. Strengthen testing and certification, security protection, power grid two-way interaction, and other key technologies. Rigorously promote the Internet Plus Charging Infrastructure to improve the level of intelligent charging services. Encourage charging service companies to introduce innovative business models and enhance their ability to sustain development. Establish a charging infrastructure system to meet the needs of electric vehicles by 2020.

(2) Promote the development of new energy industries. Accelerate the development of advanced nuclear power, high-efficiency optoelectronic lighting and heating, large-scale wind power, high-efficiency energy storage, and distributed energy, accelerate improvement in the economics of new energy products, and accelerate the construction of electric power system mechanisms, new power grids, and innovation support systems that adapt to new energy high-proportional development. Promote multi-energy complementarity and collaborative optimization to lead the energy production and consumption revolution. Bring nuclear power, wind power, solar energy, and biomass energy up to over 8% of total energy consumption with an industrial output value of over 1.5 trillion yuan to build a world-leading new energy industry.

Promote the safe and efficient development of nuclear power. Adopt the highest international safety standards, adhere to cooperation and innovation, focus on the development of large-scale advanced pressurized water reactors, high-temperature gas-cooled

reactors, fast reactors, and post-processing technology and equipment, upgrade key components, and support the construction of demonstration projects. Improve nuclear waste recycling and safe disposal capabilities. Integrate industry resources, form system service capabilities, and promote nuclear power to accelerate the “going global” initiative. Achieve a nuclear power installed capacity of 58 million kilowatts and an under-construction scale of 30 million kilowatts by 2020 to form internationally advanced nuclear power industry chain development capabilities that integrate technology development, design, equipment manufacturing, and operation services.

Promote high quality and efficient development and utilization of wind power. Rigorously develop smart grid technology and develop and explore system peak regulation capabilities to greatly improve the capacity for wind power consumption. Accelerate the development of high-tower long blades, intelligent blades, and special technologies used in decentralized and offshore wind power. Focus on the development of wind turbines with a capacity of more than 5 MW, the intelligent development and operation of wind farms, offshore wind farm construction, wind and heat utilization, and other key technologies and equipment. Establish a public service platform for wind power technology testing and industrial monitoring. Achieve an installed capacity for wind power of over 210 million kilowatts and achieve a fundamental price parity between wind power and the coal-fired power grid by 2020 with technological innovation at an internationally advanced level for wind power equipment.

Promote the diversification and development of solar energy. Achieve breakthroughs in the bottlenecks of advanced crystalline silicon cells and key equipment technologies, improve the efficiency of thin-film solar cells, and strengthen the development of new high-efficiency and low-cost solar cell technologies such as perovskite, dye sensitization, and organics. Rigorously develop solar integrated application technology, promote efficient and low-cost solar energy utilization of new technologies and industrialization of new materials, and build a public service platform for solar photovoltaic thermal product testing and industrial monitoring to greatly improve the ability of innovation and development. Coordinate power markets and external transmission channels and promote the development of photovoltaic thermal power generation in western China in an orderly manner. Accelerate the development of distributed photovoltaics in central and eastern China and promote the comprehensive development and utilization of various forms of solar energy. Accelerate the implementation of the photovoltaic leader program, form the integration and supporting capacity for the system of solar thermal power stations, promote the application of advanced solar energy technology products and the rapid decline of power generation costs, and lead the development of the global solar energy industry. Achieve an installed capacity for solar power of over 110 million kilowatts and strive to achieve user-side power grid parity by 2020. Specifically, achieve an installed scale for distributed photovoltaic power generation, photovoltaic power plants, and solar thermal power generation of 60 million kilowatts, 45 million kilowatts, and 5 million kilowatts, respectively.

Actively promote the comprehensive utilization of various forms of new energy. Achieve breakthroughs in the bottlenecks of wind-power hybrid power, advanced fuel cells, high-efficiency energy storage, and ocean energy generation. Accelerate the development of biomass gas supply and heating, biomass and coal-fired coupled power generation, geothermal heating, air source heating, biotech liquid fuel, and ocean energy heating and cooling. Carry out multi-industry applications and regional demonstrations for biogas and promote the

industrialization of new energy multi-product, multi-generation, multi-supply technology. Accelerate the development of distributed energy integration for energy storage and microgrid applications and rigorously promote the construction of multi-energy complementary integration optimization demonstration projects. Establish a feasible system of technological innovation, infrastructure, operations, and policy support for the comprehensive development and utilization of new energy.

Rigorously develop "Internet Plus" smart energy. Accelerate the development of key technologies such as distributed energy, energy storage, and intelligent microgrids. Build an intelligent power operation monitoring and management technology platform to establish coordinated "source-grid-load-storage-use" (“源—网—荷—储—用”) system development around renewable energy into an integrated energy internet. Develop energy production big data forecasting, scheduling, operations, and maintenance technologies. Establish a public service network for monitoring, managing, and dispatching information on energy production operations and promote information docking and production and consumption intelligence in the upstream and downstream energy supply chain. Promote the development of green energy networks that integrate hardware such as energy storage facilities, the Internet of Things, smart power facilities, and derivative services such as carbon trading and Internet finance. Promote the development of intelligent energy use at the user end, the energy sharing economy, and free energy trading. Cultivate new businesses and new business models based on smart energy and build a new energy consumption ecology and industrial system.

Accelerate the formation of an institutional environment that adapts to new energy high-proportional development. Focusing on the goal of significantly increasing the proportion of renewable energy and abandoning wind and solar rejection rates, improve dispatching mechanisms and operation and management models to establish a grid operation management system that adapts to the large-scale development of new energy and power. Improve national standards and clean energy pricing mechanisms for new energy sources such as wind power, solar energy, and biomass energy and establish a new energy priority consumption mechanism. Establish a dynamic adjustment mechanism and supporting management system for renewable energy power generation subsidy policies. Incorporate distributed new energy into power and heating planning and the national new distribution network transformation plan. Promote the coordinated development of “source-grid-use” (“源—网—用”) and achieve distributed new energy direct supply and barrier-free access.

Box 15: New Energy High-Proportional Development Project

To achieve flexible and friendly integration of new energy sources and full energy consumption, accelerate safe and efficient transmission networks, reliable and flexible active distribution networks, and a variety of distributed power sources to provide access to interactive microgrid construction. Demonstrate the application of intelligent large-scale energy storage systems and flexible DC transmission projects and establish an intelligent interactive supply and demand power system that meets the demand for diversified load access, such as distributed power, electric vehicles, and energy storage. Build a new power grid system that is adapted to new energy high-proportional development.

Select suitable areas for the comprehensive development of new energy sources, such as distributed optoelectronics, decentralized wind power, biomass energy supply, geothermal energy, and ocean energy. Integrate large-capacity energy storage applications with micro-grid technology to build a comprehensive utilization system for distributed energy and lead the way for energy supply changes.

(3) Rigorously promote the development of high-efficiency and energy-saving industries. Adapt to the requirements of building a resource-saving and environment-friendly society, establish the concept of energy conservation, comprehensively promote energy conservation, improve energy-efficient equipment technology and product applications, promote energy-saving technology system integration and demonstrations, and support the energy conservation service industry so that it may grow bigger and stronger and promote the rapid development of high-efficiency and energy-saving industries. Strive to reach a scaled output value for high-efficiency and energy-saving industries of 3 trillion yuan by 2020.

Rigorously improve the level of technology and applications for high-efficiency and energy-saving equipment. Encourage the development of high-efficiency and energy-saving equipment (products) and key components, increase demonstration and promotion efforts, and accelerate the reduction of overall costs. Revise and enforce mandatory performance and energy consumption limit standards and accelerate the transformation and application of energy-saving scientific and technological achievements. Publish catalogs of energy-saving products and technologies, improve government procurement policies for energy-saving products, and promote a market share for energy-saving products. Improve energy efficiency labeling and the energy-saving product certification system, implement a system of energy-efficiency leaders in the industrial, construction, transportation, and consumer goods fields, and encourage energy-efficient enterprises and product manufacturers to improve energy efficiency by leaps and bounds.

Rigorously promote the integration and demonstration of energy-saving technology systems. Pilot energy-saving technology system integration in key areas such as demonstration parks and key industries and integrate residual heat, pressure, and gas resources for high energy-consuming enterprises. Encourage the use of residual heat for heating and generate electricity through the use of residual energy and low-temperature residual heat. Encourage the use of intelligent energy metering and remote diagnostic equipment in key energy-consuming companies and for energy-consuming equipment as well as the use of information network technology to enhance automatic system monitoring and intelligent analysis capabilities to promote comprehensive energy efficiency. Deeply advance process industry system optimization technology, promote the construction of energy management centers in industrial enterprises, encourage companies to use solar collectors in low-temperature heating stages, and achieve overall production process and energy supply optimization. Promote the industrialization of near-zero consumption of fossil energy building technology and rigorously popularize the application of energy-saving doors and windows, green energy-saving building materials, and other products. Encourage the integration of wind power, solar power, and enterprise energy supply systems to promote localized renewable energy consumption.

Expand and strengthen the energy-saving service industry. Support the rapid development of contract energy management, franchising, and other business models, promote energy-saving service business model innovation, and promote overall energy-saving service solutions. Support energy-saving service companies as they strive to achieve scaled operations, branding, and network operations through mergers, alliances, and restructuring. Set up a green

financing platform to promote the issuance of green bonds to support the financing of energy-saving service companies. Formulate relevant standards and improve the standardization of energy conservation services. Formulate management measures for energy conservation service organizations and establish and improve third-party evaluation mechanisms for energy conservation. Build a contract performance registration and services platform for energy-saving service providers, key energy-consuming companies, and third-party evaluation agencies to create an honest and trustworthy market environment.

Box 16: Energy-Saving Technology and Equipment Development Project
Organize the implementation of key, common energy-saving technology to improve engineering and energy-saving equipment manufacturing projects. Encourage the development of a batch of energy efficient equipment (products) and key components, such as high-performance building insulation materials, photovoltaic curtain walls for photovoltaic integrated construction, compact household air source heat pump devices, high-power semiconductor lighting chips and devices, advanced high-efficiency gas turbine power generation equipment, technology and equipment for the clean and efficient use of coal, shallow geothermal energy utilization devices, and regenerative high temperature air combustion devices. Implement comprehensive energy efficiency and environmental protection upgrades for coal-fired boilers and heating pipe networks with energy efficiency improvements for motor drive systems. Promote major key energy-saving technologies and product scale application demonstrations, such as energy-saving and ultra-low emission conversions for coal-fired power plants, motor system energy savings, energy system optimization, and residual heat and residual pressure utilization. Organize the implementation of urban, business park, and enterprise-level energy-saving demonstration projects and promote the demonstration and application of high-efficiency and energy-saving technologies.

(4) Accelerate the development of advanced environmental protection industries. Rigorously promote the implementation of action plans for water, air, and soil pollution prevention and control and publicize the overall linkage between regional and watershed pollution prevention and control. Deeply promote the reduction of major pollutants in land and sea planning, advance the development of the environmental protection equipment industry, and press for improvements in major pollutant monitoring and control technology and equipment. Strengthen the promotion and application of advanced and applicable environmental protection technology equipment and integration innovations. Actively promote the application of advanced environmentally friendly products and promote the development of the environmental services industry to comprehensively improve the development level of the environmental protection industry. Strive to achieve a scaled output value for the advanced environmental protection industry of over 2 trillion yuan.

Improve pollution prevention technology and equipment capabilities. Emphasizing the prevention and control of water, air, and soil pollution, focus on a number of key treatment technologies for pollution such as industrial wastewater, smog, soil pesticide residues, and water and soil heavy metal pollution and accelerate the formation of production capabilities for complete equipment sets, core components, and supporting materials. Construct a number of major environmental protection technology and equipment industrialization demonstration bases with advanced technology, complete facilities, and standardized development. Form a sound industry development pattern with backbone enterprises at its core and with small and medium-sized enterprises specializing to achieve rapid growth. Support the research and development of hazardous waste prevention technologies and improve the level of treatment

and disposal of hazardous waste. Support the optimization and integration of environmental industry resources and actively expand the international market.

Strengthen the promotion and application of advanced and applicable environmental protection technology equipment and integration innovations. Routinely update the *Catalog of Major Environmental Protection Technology and Equipment Promoted by the State* (《国家鼓励发展的大环保技术装备目录》), strengthen the connection between supply and demand, and strengthen the application of advanced and applicable environmental protection equipment in key fields such as metallurgy, chemicals, building materials, and food. Accelerate the deep integration of the environmental protection industry with next-generation information technology and advanced manufacturing technology. Strengthen advanced environmental protection equipment manufacturing capabilities and improve the level of comprehensive integration. Support the establishment of an environmental technology innovation alliance combining production, scholarship, and research and accelerate the research and application of technology integration innovations.

Actively promote the application of advanced environmentally friendly products. Rigorously promote the use of ion exchange resins, biological filter materials and fillers, high-efficiency activated carbon, recirculating cooling water treatment chemicals, bactericides and algaecides, water treatment disinfectants, solid waste treatment curing agents and stabilizers, and other environmentally friendly materials and chemicals. Expand the scope of government environmentally friendly product procurement and continuously increase the proportion of products procured. Implement an environmentally friendly product leader system, improve environmentally friendly product standards, actively promote the application of advanced environmentally friendly products, and organize the implementation of advanced environmentally friendly equipment technology advancement and model innovation demonstration projects.

Enhance comprehensive environmental service capabilities. Based on big data on pollutants in various industries, promote the establishment of an environmental equipment and service demand information platform, a technology innovation transformation trading platform, and an environmental protection equipment bidding information platform to improve the level of informatization of environmental protection services. Promote the application of satellite and Internet of Things technologies in environmental monitoring, construct a basic data and monitoring and disposal information platform for pollution discharge and environmental quality, and improve the level of environmental supervision and intelligence to deeply promote pilot work in the environmental service industry. Develop environmental restoration services, promote contracted environmental services, and advance the promotion and application of overall environmental protection solutions. Carry out third-party environmental pollution control and entrusted comprehensive environmental management services pilot projects and deeply explore third-party environmental control models in key areas such as the treatment of urban sewage waste and the centralized treatment of pollution in industrial parks. Promote the creation of green product demonstration enterprises and support enterprises that implement green design.

Box 17: Green Low-Carbon Technology Comprehensive Innovation Demonstration Project

Connect green low-carbon pilot demonstration projects, and where conditions allow, build new energy, new energy vehicles, and smart transportation systems, low-carbon communities, carbon-capture and carbon-rich agriculture, green smart factors, and other integrated applications and facilities around the comprehensive application of green low-carbon technology and brought together through the internet. Be the first to implement relevant reform measures to promote green low-carbon technologies, next-generation information technology and urbanization, integration and innovation in production and life, and extensive international cooperation to create comprehensive application demonstration areas for related technologies.

(5) Deeply promote the recycling of resources. Establish the concepts of saving, intensively using, and recycling resources, rigorously promote the comprehensive utilization of co-contained ore and tailings, the development of "urban mining," the recycling of agricultural and forestry waste, and the recycling of new varieties of waste. Develop the remanufacturing industry, improve resource recycling infrastructure, enhance the level of policy support, and promote the development of the resource recycling industry. Strive to replace 1.3 billion tons of primary resources and reach an output value for the resource recycling industry of 3 trillion yuan by 2020.

Rigorously promote the comprehensive utilization of bulk solid waste and tailings. Promote the comprehensive utilization of industrial waste such as metallurgical slag, chemical slag, red mud, and phosphogypsum, support a batch of advanced applicable technologies and equipment, and strengthen the recycling of strategic rare metals in industrial solid waste. Research and develop deep processing and comprehensive utilization technology for tailings to promote the recovery of associated valuable tailings elements and the development of high-tech tailings products and improve the comprehensive and economic utilization of tailings. Research and develop key technologies and equipment for complex polymetallic tailings dressing and smelting and the clean and harmless comprehensive utilization of key technologies. Research and develop single-equipment processing capabilities of up to one to five million tons per year for high-efficiency and concentrated tailings filling, preparation, transportation, and loading technology. Develop low-grade titanium slag optimization and upgrading technology to improve comprehensive utilization for vanadium-titanium magnetite resources.

Promote the development of "urban mining" and the use of low-value waste. Improve the level of technology and equipment for dismantling and utilization of waste electrical and electronic products and scrapped vehicles to promote the large-scale development of agglomeration of waste non-ferrous metals and waste plastics. Accelerate the construction of resource-based and harmless treatment systems for urban kitchen waste, construction waste, and waste textiles and synergistically play the role of various solid waste treatment facilities to create urban low-value waste cooperative treatment bases. Implement relevant preferential policies for land, financing, and taxation. Improve the recycling and utilization infrastructure for renewable resources and support existing renewable resource recycling and distribution center upgrades.

Strengthen the recycling of agricultural and forestry waste. Basically realize the utilization of agricultural and forestry waste such as livestock and poultry manure, residual film, crop residue, and forestry harvesting residues, materials residues and processing residues. Promote

straw decomposition and field return technology and support the industrialization of new technologies such as straw substitute wood, fiber raw materials, clean pulping, biomass energy, and commercial organic fertilizer. Encourage the use of livestock and poultry manure, straw and other agricultural and forestry wastes, and implement rural household biogas and centralized biogas projects in accordance with local conditions. Promote the application of standard mulch and provide guidance of the recycling of used mulch and the use of degradable mulch. Encourage the use of forestry waste in the establishment of biomass cogeneration projects for heating, electricity, oil, and medicine. Actively develop ultra-low emission incineration technology for agricultural and forestry waste.

Actively carry out the recycling of new varieties of waste. Carry out demonstrations of new varieties of waste recycling systems and promote the recycling of waste materials such as waste solar cells, waste power storage batteries, waste carbon fiber materials, and waste energy-saving lamps. Promote the efficient enrichment and clean recycling of rare metals and the utilization of electric vehicle automotive battery cascades. Support the development and application of carbon capture, utilization, and storage technologies and develop the carbon cycle industry.

Rigorously promote the comprehensive utilization of seawater resources. Accelerate the research, development, and industrialization of seawater desalination and usage technology to improve the reliability, advancement, and supporting capabilities of core materials and key equipment. Promote the construction of seawater desalination equipment manufacturing bases for concentrated development. Carry out demonstration projects for the utilization of seawater resources and promote the general contracting and services of large-scale desalination projects. Carry out pilot demonstrations of seawater desalination, encourage the production of seawater desalinated bottled water, and promote the desalination of seawater into the municipal water supply pipelines according to law. Promote the large-scale application of seawater cooling technology in coastal water-intensive industries. Accelerate the extraction of potassium, bromine, magnesium, and other products from seawater to achieve high-value utilization.

Develop a remanufacturing industry. Strengthen technical research and equipment research and development for non-destructive testing of mechanical products, green and efficient cleaning, and automated surface and volume repair to accelerate industrial applications. Organize the implementation of remanufacturing technology process application demonstrations and promote the remanufacturing of nano-brush plating technology equipment, arc spraying, and other mature surface engineering equipment demonstration applications. Carry out remanufacturing of high-value parts such as engines and shield machines. Establish remanufacturing traceability for old parts and product tracking information systems to promote the development of remanufacturing industry standards.

Improve the resource recycling industry system. Promote the application of Internet of Things electronic supervision technology in the fields of hazardous waste and electronic waste utilization and disposal and support renewable resources enterprises to establish a recycling network for online and offline integration. Coordinate the domestic and international use of renewable resources and strengthen the connection between domestic waste separation and recycling and reuse of renewable resources. Establish resources to recycle third-party service

systems, encourage the adoption of contract management methods, and provide total solutions for waste management, recycling, reprocessing, and reuse. Fully implement the producer accountability extension system to encourage the use of recycled products and raw materials. Establish and improve standards for solid waste, hazardous waste, recycled products, and pollutant control.

Box 18: Resource Recycling Alternative System Demonstration Project
Implement circular development to promote the recycling and utilization of new types of waste materials such as solar photovoltaic cells, waste electronic products, multi-component separation and extraction, and electric vehicle power storage batteries and waste liquid crystals to demonstrate an "Internet Plus" based waste recycling system. Advance the coordinated disposal of low-value waste in cities and the comprehensive utilization of bulk solid waste to accelerate development. Establish an old parts recycling system with a system for after-sales maintenance at its core and promote the application of remanufactured products in trade logistics, financial insurance, maintenance, and sales as well as in coal, petroleum, and mining companies. Encourage specialized remanufacturing service companies to provide total solutions and special services.

6. Promote the vigorous development of the digital creative industry and drive new consumption.

Promote the development of industries such as culture, creative, and innovative design with digital technology and advanced concepts and promote the deep integration of culture with science and technology as well as mutual interaction with other related industries. Form a development pattern for the digital creative industry with leading culture, advanced technology, and a complete supply chain with an output value for related industries of up to 8 trillion yuan by 2020.

(1) Create innovative digital culture and creative technology and equipment. Adapt to immersive experiences, intelligent interaction, and other trends, strengthen collaborative innovation of content and technology equipment, keep up with global trends in the field of content production technology, establish international leading advantages in the field of consumer service equipment, and encourage the in-depth application of the latest innovations in related fields.

Improve the level of creative production technology and equipment. Increase the research and development of basic technologies such as space and emotional perception and accelerate the innovation and development of core technologies such as virtual reality, augmented reality, holographic imaging, naked-eye 3D graphics displays (naked eye 3D), interactive entertainment engine development, digital processing of cultural resources, and interactive film and television. Strengthen the application of big data, Internet of Things, artificial intelligence, and other technologies in the field of digital cultural creative creation and production, and promote the close connection between the innovation chain and the supply chain. Encourage enterprises to use digital creation, network collaboration, and other means to improve production efficiency.

Enhance the level of technology and equipment for communication services. Research and develop supporting equipment and platforms such as Super Sensitive Movie Theaters (超感影院), Mixed Reality Entertainment (混合现实娱乐), and Radio, Film, and Television Fusion Media Broadcasting with independent intellectual property rights and explore new areas of

consumption. Rigorously develop digital art presentation technology, enhance the digitalization, intelligentization, and networkization applications of art exhibitions and support the industrialization and application of cultural relic protection equipment. Study and formulate key standards for digital cultural and creative technology and equipment, promote the internationalization of independent standards, and improve the quality management system for digital cultural and creative technology, equipment, and related services.

Box 19: Digital Culture and Creative Technology and Equipment Innovation Enhancement Project
Integrate production, scholarship, and research around enterprises and build a digital cultural and creative industry innovation platform. Strengthen basic technology research and development, rigorously develop new software and hardware products such as virtual reality, augmented reality, and interactive film and television, and promote related content development. Improve the digital cultural and creative industry technology and service standards system, promote the widespread application of standards for mobile phones (mobile terminals), animation, film, and television, and establish standards for digital protection and inheritance of cultural relics, smart museums, and ultra-high-definition content production and transmission. Improve services for digital creative entrepreneurship and innovation.

(2) Enrich the content and forms of digital culture and creativity. Excavate outstanding cultural resources, inspire cultural creativity, adapt to the characteristics of internet communication, and create high-quality, diverse, and personalized digital creative content products through new methods such as grassroots creativity and creative collaborations.

Promote the creative transformation of outstanding cultural resources. Encourage the digital transformation and development of cultural resources such as artwork, cultural relics, and intangible cultural heritage. Relying on distinctive local cultures, create digital creative content products with distinctive regional characteristics and national characteristics. Strengthen the connection between modern design and traditional craftsmanship and promote integration and innovation. Improve the level of digitization and intelligentization of libraries, art galleries, cultural centers, and experience halls, strengthen the construction of smart museums and smart cultural heritage sites and create new interactive experience applications.

Encourage the creation of contemporary digital creative content. Strengthen the development of high-tech support for cultural product creation, improve the level of originality in digital creative content products, accelerate the digitalization of publishing, film and television production, performing arts and entertainment, art, cultural exhibitions, and improve cultural taste and market value of animation games, digital music, online literature, online video, and online performances. Encourage creative development models that link multiple industries, improve the degree of integration and conversion efficiency between different forms of content, and strive to form digital creative brands with global influence to support Chinese culture as it "goes global."

Box 20: Digital Content Innovation Development Project
Relying on advanced digital technology, promote the implementation of culture and creative product support programs and the "Internet Plus" Chinese Civilization Action Plan, support the promotion of a number of digital cultural heritage products, create a number of outstanding digital culture and creative products, build a digital culture resource platform, and realize the intelligent retrieval, development,

utilization and popularization of cultural and creative resources, expand communication channels, and guide the formation of the supply chain.

(3) Enhance the level of innovative design. Explore endogenous forces driving the development of the innovative design industry and promote design innovation as core competence in the fields of manufacturing, service industry, and urban and rural construction.

Strengthen the leading role of industrial design. Actively develop third-party design services to support the transformation of design results. Encourage enterprises to increase industrial design investment, promote industrial design and corporate strategy, and brand deep integration, and promote the application of innovative design in product design, system design, process design, business modeling, and service design. Support enterprises in upgrading traditional process equipment through innovative design and promote the continuous upgrading of process equipment from single machines to interconnection and mechanization to automation. Lead innovation in the commerce and trade circulation industry with creativity and design, strengthen advertising services and improve the brand value system. Formulate and promote industry standards to promote industrial transformation and upgrading. Support the construction of a public service platform for industrial design. Use industrial design to shift Made in China to Created in China and from Chinese Speed to Chinese Quality.

Enhance the level of living environment design. Innovate in urban planning and design, promote the integration of surveying and mapping geographic information technology and urban planning, and use big data, virtual reality, and other technologies to establish a planning information platform covering regions, urban and rural areas, and above-ground and underground areas and guide innovative urban planning. Strengthen urban design from a multi-faceted perspective such as at the macro-, meso- and micro-level, and create a distinctive landscape. Encourage architectural design creation, improve the bidding system and expert evaluation system, expand the scope of architects' practice services, guide architects to participate in project planning, architectural design, and project management, and form a policy environment that encourages architects to create. Increase the training of architects and cultivate a team of architects with both international vision and cultural confidence. Advocate for new landscape design and improve the living environment. Further improve the level of decorative design.

Box 21: Innovative Design Development Project

Formulate and implement an outline of action for manufacturing innovation design, build a number of state-level industrial design centers, and build a number of industrial design clusters with international influence. Design big data platforms and knowledge bases in areas such as additive manufacturing to promote data sharing and supply and demand linkage. Promote the transformation of innovative design results through the development of venture capital, government procurement services, and crowdfunding pilots.

(4) Promote the integration and development of related industries. Promote the application of digital culture and creativity and innovative design in various fields, foster more new products, new services, and new forms of multi-directional interaction, and form a borderless penetration pattern for the creative economy.

Accelerate the integration and development of key areas. Promote the application of digital creativity in e-commerce and social networks and develop new marketing models such as virtual reality shopping, social e-commerce, and the “fan economy” (“粉丝经济”). Promote the application of digital creativity in the field of education, enhance the creative level of learning content, strengthen the development of digital cultural education products and the in-depth use of public information resources, and promote the creativization (创意化) of educational services. Enhance the cultural connotation and digital level of tourism product development and tourism service design and promote the innovation and development of new modes such as virtual tourism displays. Explore the development potential of creative “agriculture, farmers, and rural areas” (“三农”), improve the creativity level of leisure agriculture, promote the development of geotagged agricultural products and rural culture, and promote rural tourism development and new rural construction with creative homestays. Promote digital creativity in the medical, exhibition, geographic information, public management, and other fields. Build a digital creative related project resource pool and linkage service platform and use various forms of online and offline promotion methods to conduct extensive exhibition activities and encourage industry associations and research institutions to actively carry out cross-domain exchanges and cooperation.

Promote the construction of a digital creative ecosystem. Establish a digital creative intellectual property protection system that covers laws, regulations, administrative means, and technical standards, increase efforts to crack down on piracy and infringement in the digital creative field, and protect the legitimate rights and interests of right holders. Actively research and solve the risk problems in the promotion and application of virtual reality and online gaming and effectively protect the physiological and mental health of users. Improve the management of digital creative industry-related regulations, further relax access conditions, simplify the approval process, strengthen post-incident supervision, and promote integrated development.

7. Prepare the groundwork for strategic industries and cultivate new advantages for future development.

With a global vision and forward-looking frontier technology research and development, continue to promote new industries, focus on breakthroughs in core areas such as aerospace, information networks, life sciences, and nuclear technology, with a high degree of focus on disruptive technologies and business model innovation, in a number of strategic areas of competition. Form unique advantages, grasp the initiative of future industrial development, provide strategic reserves, and expand strategic space for sustainable economic and social development.

(1) Air and sea field:

Significantly enhance space entry capabilities. Achieve breakthroughs in key technologies, such as large thrust engines, large-diameter rocket body designs, and manufacturing and advanced controls and exhibit heavy-duty launch vehicles to ensure the implementation of major space missions in the future. Develop fast, inexpensive, reusable, small-load, and space-to-earth transportation systems. Advance deployment of spacecraft autonomous navigation and flight technology with high spatial positioning accuracy.

Accelerate the development of new spacecraft. Strengthen the research and development of key technologies such as ultra-high resolution, ultra-high-precision space-time reference, ultra-high-speed safety communication, high-performance on-board processing, high-power power supply, and new materials and develop new application satellites. Establish an advanced manned space science experiment platform and life support system. Develop spacecraft lightweight and miniaturization technology to promote the orderly development of applied micro-, nano-, and picosatellite specifications. Deploy and launch new test satellites. Accelerate the development of new spacecraft for future missions such as near-earth spacecraft and reusable spacecraft.

Accelerate key technological breakthroughs and major product developments in the aviation industry. Carry out advanced research into key technologies for new engines such as hydrogen fuel, all-electric, and combined power to enhance the future development capability of the aviation industry. Accelerate the development of strategic aviation equipment such as multi-purpose drones and new aircraft types. Formulate a forward-looking layout for supersonic business machines, new concepts, and new configurations for overall pneumatic technology, advanced high-reliability electromechanical technology, new generation avionics systems, new aviation materials, and new composite processing technologies.

Develop a new generation of deep sea and offshore polar technical equipment and systems. Establish deep sea area research bases, develop marine remote sensing and navigation, underwater acoustic detection, deep sea sensors, unmanned and manned deep dives, deep sea space stations, deep sea observation systems, “air-sea-seabed” (“空—海—底”) integrated communication positioning, new ocean observation satellites, and other key technologies and equipment. Rigorously develop resources and equipment for the development and utilization of deep-sea oil and gas mineral resources, renewable energy, and biological resources, research and develop large-scale floating structures at sea, support the research and development and industrial application of key technologies for the utilization of marine resources, and foster new growth points in the marine economy. Rigorously develop polar resources development and utilization equipment and systems and develop polar robots, nuclear-powered icebreakers, and other equipment.

(2) Information network field:

Build a new system for future networks. Focus on improving the scalability, security, manageability, mobility, and content distribution capabilities of the current network architecture, systematically research new network architectures, technical systems, and security assurance systems, conduct experimental network construction, and research and build a new network of ubiquitous convergence, green bandwidths, and intelligent security.

Strengthen key technologies and product development. For the needs of the Internet of Everything, develop an Internet of Things search engine, e-class high-performance computing, edge-oriented computing, and other technologies and products. Carry out the research and development of cutting-edge technologies in the fields of deep learning, cognitive computing, virtual reality, and natural human-computer interaction to enhance the intelligence and personalization of information services. Prepare for the development of technologies such as

terahertz communication and visible light communication to continue to promote the application of key quantum technology.

Promote the revolutionary upgrading of electronic devices. Strengthen research and development on cutting-edge technologies and devices in the field of low-power, high-performance new silicon-based devices, silicon-based optoelectronics, hybrid optoelectronics, and microwave optoelectronics to form a number of special key manufacturing devices and improve the support capabilities of optical network communication components. Coordinate the development of key technologies for quantum chips, quantum programming, quantum software, and related materials and device preparation and promote the physical realization of quantum computers and the application of quantum simulations. Strengthen the research and development of new-theory (新原理) components such as neuromorphic chips, superconducting chips, graphene storage, non-volatile storage, and memristors and promote the development and application of microelectronics technology in the late Moore's Law era to realize a leap forward in industry development.

(3) Biotechnology field:

Construct a new medical model based on stem cell and regeneration technology. Accelerate the development of somatic cell reprogramming science and technology and develop functional cells to acquire new technologies. Improve technology platforms and bases for in vitro and in vivo production of cells, tissues, and organs. Standardize the system of laws, regulations, and standards for stem cell and regeneration, improve the evaluation and transformation mechanisms for intellectual property, and continue to deepen the clinical application of stem cell and regeneration technology. Develop tumor immunotherapy technology.

Promote the development and application of gene editing technology. Establish a gene editing technology system with independent intellectual property rights and develop new gene therapy technologies for major genetic diseases, infectious diseases, and malignant tumors. Establish relevant animal resource platforms and clinical research and transformation application bases to promote clinical transformation and industrialization development based on genetic editing research.

Strengthen the development and application of synthetic biotechnology. Achieve breakthroughs in the key technologies of genomic chemical synthesis, biological system design and reconstruction, and artificial biological regulation and promote the clinical application and industrialization of artificial biology and artificial biological devices. Promote disruptive technological innovation in the fields of biological breeding, ecological protection, and energy production and build a new model of basic raw material supply, material conversion synthesis, and people's livelihood services to foster a synthetic biotech industry supply chain.

(4) Nuclear technology field:

Accelerate the development of a new generation of nuclear energy equipment systems. Accelerate the development of new nuclear energy system testing and verification and experimental reactor construction such as lead-cooled fast reactors and bismuth-based molten salt reactors. Support the research and development of small and micro-nuclear power reactors and key equipment development and carry out experimental reactor construction and

demonstration applications in key areas. Actively participate in the International Thermonuclear Experimental Reactor megaproject, continuously improve the national major scientific and technological infrastructure such as the full superconducting tokamak nuclear fusion experimental device, and carry out experimental reactor conceptual design and research and development into key technologies and important components.

Develop non-power nuclear technology. Support the development of new ion sources such as ions and neutrons, research and develop high-resolution radiation detectors and multi-dimensional dynamic imaging devices, develop precision treatment equipment, medical radioisotopes, neutron detection, radiation modification, and other new technologies and products, and continue to promote the application of nuclear technology in the fields of industry, agriculture, medical health, environmental protection, resource exploration, and public safety.

8. Promote the cluster development of strategic emerging industries and build a new pattern of coordinated development

Based on the overall strategies of regional development, focus on promoting the construction of the Belt and Road, the coordinated development of the Beijing-Tianjin-Hebei metropolitan region, and the development of the Yangtze River Economic Belt. According to the industrial bases and characteristic advantages of each area, adhere to local conditions, industry layouts, and timeliness in policy implementation to accelerate the formation of strategic emerging industries with the part and whole integration, complementary advantages, differential development, and coordinated sharing.

(1) Create strategic emerging industry sources. Support innovative resource-rich central cities in forming strategic emerging industry sources that diffuse knowledge and technology. Give full play to the advantages of intensive scientific research talent, complete disciplines, and frequent international exchanges in source cities, support the construction of a number of world-class universities and research institutions, strengthen basic research in key areas, rigorously promote the development of emerging disciplines and interdisciplinary fields, and support the construction of new interdisciplinary research centers. Promote the development of original, subversive, and supportive technologies in the fields of information, life sciences, medical care, and energy, promote the integration of production, education, and research, and form "sources of radiation" (“辐射源”) that lead the development of strategic emerging industries. Take the opportunity of promoting comprehensive innovation and reform experiments to accelerate reform and address problems. Improve research project fund management to transform scientific and technological achievements, minimize institutional barriers that are not conducive to the development of innovative talent, and explore the establishment of institutional mechanisms to adapt to the cross-border movement of innovative elements. Give play to the role of cities in reform and innovation demonstrations and promote a number of major reforms with strength, distinction, and influence throughout the country. Rigorously promote the development of new formats for science and technology intermediaries, support overseas talent, scientific research personnel, university teachers, and students to innovate in policy source cities, support overseas famous universities, scientific research institutions, and enterprises to build industrial innovation platforms and incubators in source cities, and create strategic emerging industry entrepreneurship and innovation bases.

Encourage source cities to carry out the construction of “strong intellectual property cities” (“知识产权强市”), strengthen the protection of intellectual property rights, strengthen the use and management of intellectual property rights, accelerate the development of intellectual property services, make better use of global innovations, and accelerate the spread of scientific and technological achievements across the country.

(2) Strengthen a number of world-class development clusters for strategic emerging industries. Relying on the construction of urban agglomerations and focusing on the comprehensive innovation reform pilot zones, develop knowledge-intensive strategic emerging industry clusters, create roughly ten landmark industrial clusters with global influence, and lead the development of strategic emerging industries in China. Promote the formation of strategic emerging industries, systematic and institutional innovation zones, supply chain and innovation chain integration zones, and international cooperation zones. Build a world-class strategic emerging industrial city cluster in the eastern region, focus on the coordinated development of the Beijing-Tianjin-Hebei metropolitan region, strengthen connections between economic and scientific talent in Beijing, Tianjin, and Hebei, and form a development community for strategic emerging industries that will lead the development of the Bohai Sea region and the hinterland of North China. Give play to the leading role of the Yangtze River Delta urban agglomeration in the Yangtze River Economic Belt and use the metropolitan areas of Shanghai, Nanjing, Hangzhou, Hefei, Suzhou, and Wuxi as hubs to construct an industrial development pattern of part and whole integration and chain group integration. Focusing on Guangzhou and Shenzhen, comprehensively enhance the international competitiveness of the strategic emerging industries of the Pearl River Delta urban agglomeration, extend the layout of the supply chain and service chain, and promote the transformation and development of the regional economy. Promote the development of biomedicine, high-end equipment manufacturing, next-generation information technology, new materials and other industries and the marine economy in the Shandong Peninsula urban agglomeration. Focus on key cities such as Fuzhou and Xiamen to promote the development of industries such as biology, oceans, and integrated circuits on the West Side of the Taiwan Strait. Relying on the industrial bases of the central and western regions, vigorously promote the development of strategic emerging industries in key areas such as the Chengdu-Chongqing area, Wuhan metropolitan area, Changsha-Zhuzhou-Xiangtan urban agglomeration, Zhongyuan urban agglomeration, and Guanzhong Plain urban agglomeration. Actively create conditions to undertake industrial transfer in the eastern region. Support cities such as Kunming and Guiyang in developing industries with comparative advantage and promote the coordinated development of industries in the middle and lower reaches of the Yangtze River Economic Belt. Link to the construction of the Silk Road Economic Built and promote the development of distinctive industries in the northwest, such as the North Slope of the Tianshan Mountains and the Lanzhou-Xining urban agglomerations. Promote the development of robotics and intelligent equipment, optoelectronics, biomedicine, medical equipment, information services, and other industries in Northeast China, with Shenyang, Dalian, Harbin, and Changchun as hubs to support the urban agglomerations of Northeast China in building a leading domestic strategic industrial cluster and driving regional economic transformation and upgrading.

(3) Cultivate clusters of strategic emerging industries. Give full play to the role of existing industrial clusters, inspire market vitality through systematic and institutional innovations,

promote industrial agglomeration by means of marketization, improve support policies and increase support, and cultivate over a hundred advantageous industrial clusters and distinctive supply chains and small, medium, and large-sized enterprises. Improve the government's approaches to guiding industrial agglomeration, attract investment, and introduce intelligence and technology to create a new economy based on talent and technology investment. Fully integrate and utilize global innovation resources and market resources from "welcoming in" (“引进来”) to "welcoming in" and "going out." Dynamically shift from industrial chain development to industrial chain and innovation chain development. Focus on key industry sectors, rely on scientific research institutions and enterprise research and development foundations, and enhance industrial innovation capabilities. Shift away from the separation of industry and city to city and industry integration. Promote the relative concentration of research institutions, innovative talents, and enterprises and advance positive interaction between different innovators. Avoid excessive intervention in market behavior and prevent redundant office park construction. Encourage strategic emerging industries to gather around key functional platforms such as national new districts.

9. Promote the open development of strategic emerging industries and expand new pathways to collaboration

Implement the national open development strategy, build a new mechanism for international cooperation in strategic emerging industries, build a global innovation and development network, promote the global layout of the supply chain, and expand new paths of development.

(1) Actively introduce global resources. Seize Belt and Road construction opportunities, advance international capacity collaborations, build an open innovation system, encourage technology introduction and collaborative research and development, and promote technology introduction, absorption, and re-innovation (再创新). Actively guide the direction of foreign investment, encourage foreign investors to invest in strategic emerging industries, and promote the establishment of research and development centers in China by multinational corporations and internationally renowned research institutions. Enhance the introduction of high-end overseas talent and smoothly absorb healthy channels for attracting overseas high-end talent, and make it more convenient for overseas talent to work and start businesses in China.

(2) Create a new platform for international cooperation. Actively establish international collaboration mechanisms and promote the signing and implementation of intergovernmental cooperation agreements on emerging industries and innovation. Promote bilateral mutual recognition personnel qualifications and product standards, certification, and accreditation results and participate in international multilateral cooperation and mutual recognition mechanisms. Establish bilateral international cooperation parks for distinctive industries and guide leading enterprises to build offshore cooperation parks overseas, focusing on developed countries and countries along the Belt and Road. Create new cooperation methods and enhance the level of open cooperation in key areas. Strengthen the construction of public service systems for the transformation and incubation of international scientific and technological achievements and personnel training.

(3) Build a global innovation and development network. Establish and improve coordinated promotion and service mechanisms for international innovation and development, strengthen

the service capabilities of foreign institutions, and use the G20 and Summer Davos platforms to carry out new economic exchanges, give full play to the role of relevant industry associations and chambers of commerce, and build a platform for international economic and technological exchanges and cooperation. Guide social capital to set up a number of cross-border mergers and acquisitions and investment funds in strategic emerging industries, support a number of cities that link international cooperation to strategic emerging industries, build a number of international cooperation innovation centers, develop a number of high-level international intermediary service organizations, establish a number of overseas research and development centers, build a global research and development system, and form an efficient and collaborative international cooperation network between governments, enterprises, investment institutions, scientific research institutions, legal institutions, and intermediaries. Support enterprises and scientific research institutions in participating in international science and technology collaboration projects, international science programs, and big science projects and undertake and organize major international scientific and technological cooperation projects. Encourage enterprises to actively participate in the development of international technical standards.

(4) Deeply integrate into the global supply chain. Promote the global supply chain layouts and identify different promotion methods and implementation paths for key countries and regions in key areas such as high-end equipment, next-generation information technology, and new energy and advance the optimization and integration of supply chain resources. Support enterprises, industry associations, chambers of commerce, and local governments and departments in carrying out out innovative international capacity collaborations in strategic emerging industries and promote domestic enterprises and Chinese-foreign enterprises in jointly developing international markets, support the “going global” of the supply chain to feed high-quality assets, technology, and management experience from "going global" back to China and form comprehensive competitive advantages. Promote the overseas expansion of leading enterprises in high-end equipment and next-generation information technology and carry out higher-level cooperation with multinational enterprises to achieve complementary advantages and win-win development.

10. Improve mechanisms, policies, and systems to create a new development ecosystem

Accelerate the implementation of the innovation-driven development strategy, deepen the transformation of government functions, continue to deepen reforms in key areas and key links, and strengthen institutional development, and pool innovative elements such as knowledge, technology, capital, and talents to comprehensively create an ecosystem conducive to the development of strategic emerging industries.

(1) Improve management approaches.

Streamline administration, delegate power, strengthen regulation, and improve service reform. In the fields of telecommunications, new drugs and medical equipment, and new energy vehicle production access, further improve review and approval methods, minimize restrictions on prior access, modify and abolish administrative regulations and regulatory documents that hinder development, and stimulate the vitality of market players. Adhere to the delegation of power, differentiate between different regions, actively explore and innovate regulatory methods to suit the development of new technologies, new products, new formats,

and new models, and inspire innovation and creative vitality and yet guard against possible risks. Formulate custom regulatory models for new formats such as "Internet Plus" and the sharing economy that are well-defined for development prospects and potential risks, strengthen monitoring and analysis in areas that are not visible, and encourage inclusive development, and avoid excessive strictness. Strengthen supervision over people with high potential risk that may cause serious adverse social consequences and resolutely ban those who illegally operate in the name of innovation. Strictly implement various policies and measures to reduce the cost of enterprises in the real economy, implement relevant policies and measures for the management of funds for central financial research projects, and advance the reform of the property rights system for scientific and technological achievements. Fully implement and deepen the various arrangements for the reform of state-owned enterprises, lead pilot demonstrations of mixed-ownership reform in state-owned enterprises in strategic emerging industries, and experiment with employee shareholding in mixed-ownership enterprises. Promulgate a catalog of key products and services for strategic emerging industries.

Create a fair competitive market environment. Improve supporting legislation under the anti-monopoly law, further increase anti-monopoly and anti-unfair competition law enforcement, and seriously investigate and deal with corporate violations in the fields of information services and medical services. Establish sound working mechanisms, ensure the orderly implementation of a fair competition review system, break past bottlenecks and industry monopolies in areas such as renewable energy power generation, medical equipment, and drug bidding, and strengthen the investigation and punishment of local protectionism and monopolistic industry behavior. Improve the credit system, give full play to the role of the national credit information sharing platform and the national enterprise credit information publicity system, and promote the establishment and linkage of, and service innovation for, various credit information platforms. Strengthen online disclosure and the sharing of credit records and provide operators with services such as credit information inquiry and corporate identity online certification.

Strengthen policy coordination. Give full play to the role of the inter-ministerial joint conference system for strategic emerging industries, promote the implementation of reform measures, strengthen work communication, and avoid fragmentation of relevant policies. Continue to carry out industrial development status assessment and forward-looking research and accurately position the direction of reform and development. Establish high-level government-enterprise dialog and consultation mechanisms and actively listen to corporate opinions when researching and formulating relevant policy measures. Regularly release key developments for the development of the new economy, foster new kinetic energy, strengthen strategic emerging industries, and coordinate and promote relevant reform and development work.

(2) Construct a system for industrial innovation.

Deeply carry out widespread entrepreneurship and innovation. Create crowd-creation, crowdsourcing, crowd support, and crowdfunding platforms. Relying on regions, research institutes and innovation enterprises, and other carriers of entrepreneurship and innovation resources, support the construction of "entrepreneurship and innovation" (“双创”)

demonstration bases, and develop professional spaces for innovation. Relying on the internet to create open and shared innovation mechanisms and innovation platforms, promote synergistic innovation among enterprises, scientific research institutions, universities, creators, and other innovators. Strive to improve and promote the system of "entrepreneurship and innovation" laws and policies. Continue to strengthen propaganda on "entrepreneurship and innovation," hold the annual "entrepreneurship and innovation" activity week, create a good atmosphere in which the whole of society pays attention to "entrepreneurship and innovation," and understand and support "entrepreneurship and innovation."

Strengthen the construction of a public innovation system. Implement a number of major scientific and technological projects and major works to strengthen the research, development, and industrialization of disruptive technologies. Create new major project organization and implementation methods and explore the implementation of relatively separate organizational management mechanisms for project management, decision-making, implementation, evaluation, and supervision. Build an industrial technology innovation alliance that is enterprise-led and combines governance with production, scholarship, and research. Support the construction of key technology research and development platforms and adopt a new mechanism in key industries to establish a number of industrial innovation centers. Focusing on innovation needs in key areas, coordinate the deployment of innovative platforms such as major national science and technology infrastructures and strengthen the open sharing of facilities and platforms. In accordance with the optimal layout of scientific research bases, build a number of national technology innovation centers to support the development of strategic emerging industries. Strengthen the construction of public service platforms for measurement and testing, inspection and testing, certification and accreditation, and knowledge and data centers. Establish a strategic emerging industry measurement technology innovation alliance to strengthen the certification and recognition of innovation. Implement and improve standardized development planning for strategic emerging industries, improve the system of standards, and support the application of new technology standards in key areas.

Support the establishment of enterprise innovation capabilities. Implement national technological innovation projects, strengthen the capacity building of enterprise technology centers, promote the top 100 projects of innovative enterprises, foster a group of innovative leading enterprises with international influence, and lead the drive to improve the innovation capabilities of upstream and downstream industries. Increase innovation support for small and medium-sized enterprises in science and technology, implement tax incentives such as deductions for research and development expenses, and guide enterprises to increase investment in research and development.

Improve upon the transfer and transformation system for scientific and technological achievements. Implement relevant laws, regulations, and policies and organize the implementation of the scientific and technological achievements transfer and optimization initiative. Implement reform measures related to the transformation of scientific and technological achievements into commercial products, increase the proportion of revenue from the transformation of achievements into commercial products that goes to scientific research personnel, and accelerate the establishment of performance evaluations and annual reporting systems for the transfer of scientific and technological achievements into commercial products. Guide qualified universities and research institutes to establish specialized and market-oriented

technology transfer institutions, strengthen the release of scientific and technological achievements in strategic emerging industries, and explore the preliminary transformation of scientific and technological achievements formed by the use of fiscal funds in strategic emerging industries.

(3) Strengthen the protection and application of intellectual property rights.

Strengthen intellectual property rights protections and safeguards. Actively advance the revision of the Patent Law and the Copyright Law. Track the development and innovation of new technologies, new formats, and new models, strengthen research on intellectual property protection rules in the fields of the internet, e-commerce, and big data, and improve relevant legislation on business model intellectual property protections, trade secret protections, and practical art design patent protections. Improve intellectual property rights rapid rights protection mechanisms and build a number of rapid rights protection centers. Incorporate international intellectual property rights infringement on social credit records, improve mechanisms for investigating and dealing with intellectual property rights and administrative infringement, strictly crack down on intellectual property rights in accordance with the law, increase customs enforcement on intellectual property rights, and promote higher limits for statutory compensation for intellectual property infringement for intellectual property rights infringement.

Strengthen the use of intellectual property rights. Rigorously promote the standardized management of intellectual property rights and enhance the intellectual property management capabilities of innovators. Implement the intellectual property industry layout and regional layout projects and guide the establishment of intellectual property layout design centers in strategic emerging industry clusters and leading enterprises. Build a system of intellectual property rights operation services, promote the construction of a national public service platform for intellectual property rights operations, and cultivate a group of specialized and branded intellectual property service agencies. Encourage development applications such as high-end search and analysis tools and guide the construction of intellectual property alliances. Focus on strategic emerging industries, encourage innovative intellectual property financial products, develop new products such as intellectual property investment, insurance, and funding linkages, and explore intellectual property rights equitization and securitization. Encourage enterprises to comprehensively use patents, copyrights, trademarks, and other intellectual property rights to create their own brands.

Improve development mechanisms for intellectual property rights. Implement strategic advancement plans for the intellectual property rights industry for strategic emerging industries, deploy the intellectual property rights service chain around strategic emerging industry clusters, and establish intellectual property rights cluster management systems. Strengthen patent analysis and trend monitoring for strategic emerging industries. Establish an evaluation system for intellectual property rights analysis of major economic and technological activities and encourage enterprises to establish evaluation mechanisms for intellectual property rights analysis. Improve the overseas system of intellectual property rights services and establish an early warning mechanism for overseas intellectual property rights risks. Study and publish information on the overseas intellectual property environment, track and study international intellectual property trends in key industries, guide the establishment of

information submission mechanisms for overseas intellectual property cases, and strengthen research on major intellectual property cases. Provide intellectual property rights support for enterprises that carry out overseas mergers, acquisitions, and rights protection activities.

(4) Further promote military-civil fusion.

Construct a strategic emerging industry system for military-civil fusion. Promote mutual compatibility and coordinated development of military and civilian science and technology innovation systems and promote the development of the military-civil fusion industry. Relying on the national military-civil fusion innovation demonstration zones, promote the industrialization of military-civilian dual-use technology. Construct a number of military-civil fusion and innovation platforms. In areas where military units are concentrated and industries have good industrial bases, promote the two-way transfer of military and civilian technologies and their transformation and application. Support military enterprises in giving full play to their advantages in new fields such as new energy, civil aerospace, and the Internet of Things, guide private enterprises to enter the field of national defense scientific research, production, and maintenance, and build a policy environment for fair competition among enterprises.

Strengthen the construction of major projects for military-civil fusion. In transforming the country into a space superpower (航空强国), coordinate the planning and development of military and civilian satellites, strengthen the integration and information sharing of ground station networks, and actively develop power systems, key components, and basic materials with a high degree of generalization. Adapt to the airspace reform process, strengthen airspace control system technology and equipment research and development, and promote the in-depth integration and development of the aviation industry. In transforming the country into a networking power, strengthen the sharing of next-generation information infrastructure and systems for military and civilian construction and organize the implementation of demonstration projects related to safe and reliable information network products and services. Facing the building of a maritime power, adapt to the needs of military and local marine resource surveys, use of sea areas, marine observation and forecasting, marine environmental protection, and island and reef construction, and develop dual-use high-performance equipment and material technologies for both military and civilian purposes. Carry out military-civilian common standardization projects to promote two-way transfer of military-civilian technology.

(5) Increase financial and taxation support.

Increase the proportion of direct financing for enterprises. Actively support the listing or public financing of qualified enterprises in strategic emerging industries, research and launch the national share transfer system for the listing of companies on the growth enterprises market board, and establish a joint docking mechanism between the national share transfer system and the regional equity market. Explore and advance the OTC securities trading market and the construction of inter-agency private equity product quotation and service systems to support the development of strategic emerging industry ventures. Rigorously develop venture capital investment and angel investment, improve tax support policies for encouraging venture capital enterprises and angel investors to invest in seed-based and start-up technology-based enterprises, and enrich merger and acquisition financing and venture capital investment methods. Actively support the issuance of bond financing by qualified enterprises in strategic emerging industries, expand the scale of credit enhancement bonds for small and micro-sized

enterprises and collective bills for small and medium-sized enterprises, encourage the exploration and development of financial products such as high-yield bonds and convertible bonds, and steadily promote the development of debt financing instruments for non-financial enterprises. Encourage insurance companies, social insurance funds and other institutional investors to participate in strategic emerging industry venture capital and equity investment funds in a legal and compliant manner. Promote pilot work on investment and loan linkage.

Strengthen financial product and service innovation. Guide financial institutions to actively improve credit management and loan review systems that adapt to the characteristics of strategic emerging industries. Explore the establishment of an investment and financing information service platform for strategic emerging industries to connect banks to enterprises. Encourage the establishment of a system for determining, assessing, pledging, and transferring intangible assets in digital creative, software, and other areas and advance financial product innovation, such as intellectual property rights pledge financing, equity pledge financing, supply chain financing, and technology insurance. Guide policy and development financial institutions towards increasing support for strategic emerging industries. Promote the development of a number of financial leasing and lending companies that cater to such industries as the aircraft, marine engineering equipment, and robotics industries. Accelerate the establishment of a national financing guarantee fund to support financing guarantee work for strategic emerging industry projects.

Create new fiscal and taxation policy support methods. Give play to the guiding role of fiscal funds, create new ways to attract social investment, and rigorously support the development of strategic emerging industries. Give full play to the role of the National Emerging Industry Venture Capital Guidance Fund (国家新兴产业创业投资引导基金) in serving entrepreneurship and innovation. Improve management rules and properly prevent and control risk. Efficiently carry out investment operations, introduce social capital to set up a group of venture capital funds and increase investment in strategic emerging industries. Encourage regions with the right conditions to set up strategic emerging industry development funds and guide community investment to set up a number of strategic emerging industry investment funds and international investment funds. Actively use models such as public-private partnership (PPP) to guide social capital to participate in the establishment of major projects. Improve government procurement policies, increase support for "entrepreneurship and innovation" and cloud computing, big data, and the recycling economy (循环经济), and advance demonstration applications, such as smart cities, information-for-citizens, "urban mines" (“城市矿山”) and smart equipment. Further improve subsidies for renewable energy power generation such as photovoltaics, wind power, and biomass. Adjust and improve subsidy policies for new energy vehicles. Improve the individual income tax policy for equity incentives for strategic emerging industries.

(6) Strengthen personnel training and incentives.

Cultivate talent for industry shortages. Implement the leading innovative talent initiative, focus on key areas for strategic emerging industries, build a group of innovative talent training demonstration bases based on major projects and major works, and support a group of science and technology innovators and entrepreneurs. Formulate a catalog of talented professionals in demand by industry for strategic emerging industries and focus on supporting relevant national

talent programs. According to the needs of industrial development, dynamically adjust the teaching content and curriculum of colleges and universities and reasonably expand the proportion of enrollment associated with strategic emerging industries. Strengthen the training of technical and skilled talent in strategic emerging industries, promote the new system of enterprise apprenticeships, establish a national basic vocational training package, and encourage related enterprises to provide jobs for students in vocational schools in strategic emerging industries. Relying on the knowledge and expertise of professional and technical personnel to update projects, train a large number of high-level, urgently-needed talented people and key professional and technical personnel to build a number of national-level continuing education bases. Promote the development of online training.

Encourage the flow of scientific and technological talent to enterprises. Explore policies related to scientific research personnel in the public sector who wish to start their own businesses and leave their jobs. Guide and support scientific research personnel in the public sector to carry out innovative work or start businesses in accordance with relevant state regulations. Set up a group of post-doctoral research workstations in enterprises in strategic emerging industries to encourage the development of key core technologies in those industries. Implement state incentives for scientific research personnel and encourage enterprises to mobilize the enthusiasm of researchers for innovation through incentives such as equity and dividends. Establish and improve talent utilization, flow, evaluation, and incentive systems in line with industry characteristics.

Make the most of global talent. Introduce and train a group of high-end talented people on the basis of giving full play to the role of existing talent. Research and optimize permanent residency for foreigners, simplify the procedures for applying for permanent residency for high-level foreign talent, and facilitate residency and entry and exit convenience for their spouses and adolescent children.

All regions and relevant government ministries must attach great importance to the development of strategic emerging industries. Strengthen organizational leadership, speed up work, properly implement this plan, and strengthen the connection between specialized plans, local plans, and this plan. Local people's governments at all levels must establish and improve working mechanisms, refine policies and measures, and promote the implementation of various tasks in this plan. Relevant provinces (autonomous regions and municipalities) are encouraged to jointly prepare regional development plans to promote the differentiated and strategic development of strategic emerging industries. The National Development and Reform Commission must work with the Ministry of Science and Technology, the Ministry of Industry and Information Technology, and the Ministry of Finance and give play to the leading role of the Inter-Ministerial Joint Conference on Strategic Emerging Industry Development (战略性新兴产业发展部际联席会议). Strengthen overall guidance, coordination, and supervision, keep a close track of industry developments, and research and coordinate on major issues in industrial development in a timely manner. All member units of the joint meeting and relevant ministries must actively cooperate. Enforce tasks according to the division of responsibilities. Accelerate the formulation of supporting policies, form a workforce, and work together to promote the development of strategic emerging industries.

Appendix: Key Task Division Plan

Appendix

Key Task Division Plan

No.	Key Task	Responsible Ministry
1	Building an infrastructure for the country to become an internet superpower and organizing the implementation of the broadband rural demonstration project	Led by the Ministry of Industry and Information Technology and National Development and Reform Commission along with Cyberspace Administration of China, Ministry of Commerce, Ministry of Agriculture, Ministry of Finance, and State Administration of Radio, Film, and Television, which are responsible in accordance with the division of responsibilities.
2	Promoting the development of network convergence infrastructure, advancing the integration and interconnection of national cable television networks, and accelerating the construction of next-generation broadcast networks	The Ministry of Industry and Information Technology and State Administration of Radio, Film, and Television are responsible in accordance with the division of responsibilities.
3	Advancing the "Internet Plus" initiative and organizing the implementation of the "Internet Plus" project	Led by the National Development and Reform Commission along with the Ministry of Industry and Information Technology, Ministry of Science and Technology, Ministry of Human Resources and Social Security, Cyberspace Administration of China, Ministry of Agriculture, National Energy Administration, People's Bank of China, Ministry of Commerce, Ministry of Transport, Ministry of Environmental Protection, and State Administration for Industry and Commerce, which are responsible in accordance with the division of responsibilities.
4	Implementing the national big data strategy and organizing the implementation of big data development projects	Led by the National Development and Reform Commission along with the Ministry of Industry and Information Technology, Cyberspace Administration of China, and Ministry of Science and Technology, which are responsible in accordance with the division of responsibilities.
5	Strengthening the core industries of information technology and organizing the implementation of integrated circuit development projects	The National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Science and Technology, Ministry of Finance, Cyberspace Administration of China, and General Administration of Quality Supervision, Inspection and Quarantine are responsible in accordance with the division of responsibilities.
6	Developing artificial intelligence and organizing the implementation of artificial intelligence innovation projects	The National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Finance, and Cyberspace Administration of China are responsible in accordance with the division of responsibilities.

7	Improving network economy management methods, deepening telecommunication system reform, and strengthening the enactment of relevant legislation	The National Development and Reform Commission, Ministry of Industry and Information Technology, State-owned Assets Supervision and Administration Commission of the State Council, Cyberspace Administration of China, Legislative Affairs Office of the State Council, State Administration of Radio, Film, and Television, and State Administration for Industry and Commerce are responsible in accordance with the division of responsibilities.
8	Creating high-end smart manufacturing brands and organizing the implementation of the smart factory application demonstration project for key areas	Led by the Ministry of Industry and Information Technology along with the National Development and Reform Commission, Ministry of Science and Technology, Ministry of Finance, and General Administration of Quality Supervision, Inspection and Quarantine, which are responsible in accordance with the division of responsibilities.
9	Implementing new aviation industry breakthroughs and organizing the implementation of the next-generation civil aviation innovation project	Led by the Ministry of Industry and Information Technology and National Development and Reform Commission along with the Ministry of Science and Technology, Ministry of Finance, and General Administration of Quality Supervision, Inspection and Quarantine, Civil Aviation Administration of China, which are responsible in accordance with the division of responsibilities.
10	Making the satellites and applications industry bigger and stronger and organizing the implementation of spatial information intelligent sensing projects	The National Development and Reform Commission, State Administration for Science, Technology and Industry for National Defense, Ministry of Finance, Ministry of Science and Technology, Ministry of Industry and Information Technology, Cyberspace Administration of China, General Administration of Quality Supervision, Inspection and Quarantine, and Chinese Academy of Sciences are responsible in accordance with the division of responsibilities.
11	Strengthening the leading position of rail transit equipment	The National Development and Reform Commission, Ministry of Transport, National Railway Administration, China Railway Corporation, Ministry of Housing and Urban-Rural Development , Ministry of Science and Technology, Ministry of Industry and Information Technology, State-owned Assets Supervision and Administration Commission of the State Council, and General Administration of Quality Supervision, Inspection and Quarantine are responsible in accordance with the division of responsibilities.
12	Enhancing the international competitiveness of marine engineering equipment and organizing the implementation of the marine engineering equipment innovation and development project	The National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Science and Technology, Ministry of Finance, General Administration of Quality Supervision, Inspection and Quarantine, State Administration for Science, Technology and Industry for National Defense, and State Oceanic Administration are responsible in accordance with the division of responsibilities.

13	Improving the basic support capacity of new materials and organizing the implementation of the new materials upgrade and synergistic applications project	Led by the Ministry of Industry and Information Technology and National Development and Reform Commission along with the Ministry of Science and Technology, Ministry of Finance, General Administration of Quality Supervision, Inspection and Quarantine, State Administration for Science, Technology and Industry for National Defense, and State Oceanic Administration, which are responsible in accordance with the division of responsibilities.
14	Building a new biotech pharmaceutical system and organizing the implementation of the new drug creation and industrialization project	The National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Science and Technology, National Health Commission, Ministry of Finance, State Food and Drug Administration, and National Administration of Traditional Chinese Medicine are responsible in accordance with the division of responsibilities.
15	Enhancing the development level of biomedical engineering and organizing the implementation of the beneficial biotechnology project	The National Development and Reform Commission, Ministry of Industry and Information Technology, National Health Commission, State Food and Drug Administration, Ministry of Finance, National Administration of Traditional Chinese Medicine, and State Oceanic Administration are responsible in accordance with the division of responsibilities.
16	Accelerating the industrialization of biotech agriculture	The Ministry of Agriculture, National Development and Reform Commission, and Ministry of Science and Technology are responsible in accordance with the division of responsibilities.
17	Advancing biotech manufacturing technology to penetrate the chemical, materials, and energy fields	The National Development and Reform Commission, Ministry of Industry and Information Technology, and Ministry of Science and Technology are responsible in accordance with the division of responsibilities.
18	Cultivating new forms of biotech services	The National Development and Reform Commission, Ministry of Industry and Information Technology, and National Health Commission are responsible in accordance with the division of responsibilities.
19	Organizing the implementation of the biotech industry innovation development platform building project	Led by the National Development and Reform Commission along with the Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Finance, National Health Commission, State Food and Drug Administration, General Administration of Quality Supervision, Inspection and Quarantine, and State Oceanic Administration, which are responsible in accordance with the division of responsibilities.
20	Creating models for the development of bioenergy	The National Energy Administration, National Development and Reform Commission, Ministry of Science and Technology, Ministry of Finance, Ministry of Agriculture, and State Oceanic Administration are responsible in accordance with the division of responsibilities.

21	Organizing the implementation of the new energy vehicle automotive battery upgrade project	Led by the Ministry of Industry and Information Technology, National Development and Reform Commission, and Ministry of Science and Technology along with the Ministry of Finance, General Administration of Quality Supervision, Inspection and Quarantine, and National Energy Administration, which are responsible in accordance with the division of responsibilities.
22	Promoting new energy industry development and organizing the implementation of the new energy high-proportional development project	Led by the National Energy Administration along with the National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology, and Ministry of Finance, which are responsible in accordance with the division of responsibilities.
23	Rigorously promoting the development of high-efficiency and energy-saving industries and organizing the implementation of energy-saving technology and equipment development projects	Led by the National Development and Reform Commission along with the Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Commerce, and General Administration of Quality Supervision, Inspection and Quarantine, which are responsible in accordance with the division of responsibilities.
24	Accelerating the development of advanced environmental protection industries	The National Development and Reform Commission, Ministry of Environmental Protection, Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Agriculture, and State Oceanic Administration are responsible in accordance with the division of responsibilities.
25	Organizing the implementation of the green low-carbon technology comprehensive innovation demonstration project	Led by the National Development and Reform Commission along with the Ministry of Science and Technology, Ministry of Industry and Information Technology, National Energy Administration, Ministry of Finance, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, and General Administration of Quality Supervision, Inspection and Quarantine, which are responsible in accordance with the division of responsibilities.
26	Deeply advancing resource recycling and organizing the implementation of the resource recycling alternative system demonstration project	Led by the National Development and Reform Commission along with the Ministry of Environmental Protection, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, and Ministry of Commerce, which are responsible in accordance with the division of responsibilities.
27	Creating digital cultural and creative technology and organizing the implementation of the cultural and creative technology and equipment innovation enhancement project	The Ministry of Industry and Information Technology, Ministry of Culture, National Development and Reform Commission, Ministry of Science and Technology, Ministry of Finance, State Administration of Radio, Film, and Television, and Cyberspace Administration of China are responsible in accordance with the division of responsibilities.

28	Enriching the content and forms of digital culture and creativity and organizing the implementation of the digital content innovation and development project	The Ministry of Culture, Ministry of Industry and Information Technology, State Administration of Radio, Film, and Television, Cyberspace Administration of China, Ministry of Science and Technology, National Development and Reform Commission, and Ministry of Finance are responsible in accordance with the division of responsibilities.
29	Raising the level of innovative design and organizing the implementation of the innovative design development project	The Ministry of Industry and Information Technology, National Development and Reform Commission, Ministry of Science and Technology, Ministry of Culture, Ministry of Housing and Urban-Rural Development, and Ministry of Finance are responsible in accordance with the division of responsibilities.
30	Preparing the groundwork for strategic industries and achieving breakthroughs in the core areas of air and sea, information networks, life sciences, and nuclear technology	The Ministry of Science and Technology, National Development and Reform Commission, Ministry of Industry and Information Technology, State Administration for Science, Technology and Industry for National Defense, Ministry of Finance, Chinese Academy of Engineering, Chinese Academy of Sciences, National Energy Administration, and State Oceanic Administration are responsible in accordance with the division of responsibilities.
31	Promoting the cluster development of strategic emerging industries	The National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Finance, and Ministry of Commerce are responsible in accordance with the division of responsibilities.
32	Actively establishing international collaboration mechanisms and promoting the signing and implementation of intergovernmental cooperation agreements on emerging industries and innovation Promoting bilateral mutual recognition personnel qualifications and product standards, certification, and accreditation results and participating in international multilateral cooperation and mutual recognition mechanisms	The Ministry of Commerce, National Development and Reform Commission, Ministry of Foreign Affairs, Ministry of Science and Technology, Ministry of Industry and Information Technology, General Administration of Quality Supervision, Inspection and Quarantine, State Administration for Science, Technology and Industry for National Defense, and State Oceanic Administration are responsible in accordance with the division of responsibilities.
33	Establishing bilateral international cooperation parks for distinctive industries and raising the level of open cooperation in key areas, focusing on developed countries and countries along the Belt and Road	Led by the Ministry of Commerce along with the National Development and Reform Commission and Ministry of Industry and Information Technology, which are responsible in accordance with the division of responsibilities.
34	Building a global innovation and development network	The National Development and Reform Commission, Ministry of Foreign Affairs, Ministry of Commerce, Ministry of Science and Technology, and Ministry of Industry and Information Technology are responsible in accordance with the division of responsibilities.
35	Advancing the streamlining of administration, delegation of power,	The National Development and Reform Commission, Ministry of Industry and Information Technology,

	strengthening of regulations, and improvements in service reform, distinguishing between different situations, and actively exploring and innovating regulatory methods that are suitable for the development of new technologies, new products, new formats, and new models	Ministry of Civil Affairs, Ministry of Transport, Ministry of Culture, People's Bank of China, General Administration of Customs, State Administration for Industry and Commerce, General Administration of Quality Supervision, Inspection and Quarantine, State Administration of Radio, Film, and Television, China Banking Regulatory Commission, China Securities Regulatory Commission, and China Insurance Regulatory Commission are responsible in accordance with the division of responsibilities.
36	Leading pilot demonstrations of mixed-ownership reform in state-owned enterprises in strategic emerging industries and carrying out employee shareholding experiments in mixed-ownership enterprises	Led by the National Development and Reform Commission along with the State-owned Assets Supervision and Administration Commission of the State Council, Ministry of Finance, and Ministry of Industry and Information Technology, which are responsible in accordance with the division of responsibilities.
37	Promulgating a catalog of key products and services for strategic emerging industries	Led by the National Development and Reform Commission along with the Ministry of Industry and Information Technology, Ministry of Commerce, and Ministry of Culture, which are responsible in accordance with the division of responsibilities.
38	Improving supporting legislation under the anti-monopoly law, further increasing anti-monopoly and anti-unfair competition law enforcement, and seriously investigating and dealing with corporate violations in the fields of information services and medical services	The National Development and Reform Commission, Ministry of Commerce, State Administration for Industry and Commerce, Ministry of Industry and Information Technology, and National Health Commission are responsible in accordance with the division of responsibilities.
39	Establishing sound working mechanisms, ensuring the orderly implementation of a fair competition review system, breaking past bottlenecks and industry monopolies in areas such as renewable energy power generation, medical equipment, and drug bidding, and strengthening the investigation and punishment of local protectionism and monopolistic industry behavior	The National Development and Reform Commission, Legislative Affairs Office of the State Council, Ministry of Commerce, State Administration for Industry and Commerce, Ministry of Finance, National Health Commission, and National Energy Administration are responsible in accordance with the division of responsibilities.
40	Establishing high-level government-enterprise dialog and consultation mechanisms and actively listening to corporate opinions when researching and formulating relevant policy measures	The National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Science and Technology, Ministry of Finance, and Ministry of Commerce are responsible in accordance with the division of responsibilities.
41	Deeply carrying out widespread entrepreneurship and innovation, building platforms for crowd creation, crowdsourcing, crowd support, and crowdfunding, supporting the construction of "entrepreneurship and innovation" demonstration bases, and developing a professional space for innovation. Relying on the internet to create open and shared	The National Development and Reform Commission, Ministry of Science and Technology, Ministry of Human Resources and Social Security, Ministry of Finance, Ministry of Industry and Information Technology, and Chinese Academy of Sciences are responsible in accordance with the division of responsibilities.

	innovation mechanisms and innovation platforms and promoting synergistic innovation among enterprises, scientific research institutions, universities, creators, and other innovators.	
42	Implementing a number of major scientific and technological projects and major works to strengthen the research, development, and industrialization of disruptive technologies	The Ministry of Science and Technology, National Development and Reform Commission, Ministry of Industry and Information Technology, Cyberspace Administration of China, State Administration for Science, Technology and Industry for National Defense, Ministry of Finance, Chinese Academy of Engineering, and Chinese Academy of Sciences are responsible in accordance with the division of responsibilities.
43	Strengthening the construction of public service platforms for measurement and testing, inspection and testing, certification and accreditation, and knowledge and data centers	The General Administration of Quality Supervision, Inspection and Quarantine, National Development and Reform Commission, Ministry of Science and Technology, and Ministry of Industry and Information Technology are responsible in accordance with the division of responsibilities.
44	Implementing and improving standardized development planning for strategic emerging industries, improving the system of standards, and supporting the application of new technology standards in key areas	The General Administration of Quality Supervision, Inspection and Quarantine, Ministry of Science and Technology, National Development and Reform Commission, Ministry of Industry and Information Technology, and Cyberspace Administration of China are responsible in accordance with the division of responsibilities.
45	Strengthen the capacity building of enterprise technology centers and promoting the top 100 projects of innovative enterprises	The National Development and Reform Commission, Ministry of Science and Technology, and Ministry of Industry and Information Technology are responsible in accordance with the division of responsibilities.
46	Implementing tax incentives such as deductions for research and development expenses and guiding enterprises to increase investment in research and development	The Ministry of Finance, State Taxation Administration, and Ministry of Science and Technology are responsible in accordance with the division of responsibilities.
47	Improving upon the transfer and transformation system for scientific and technological achievements and organizing the implementation of the scientific and technological achievements transfer and optimization initiative. Accelerating the establishment of performance evaluations and annual reporting systems for the transfer of scientific and technological achievements.	The Ministry of Science and Technology, Ministry of Finance, Ministry of Education, National Development and Reform Commission, Ministry of Industry and Information Technology, and Chinese Academy of Sciences are responsible in accordance with the division of responsibilities.
48	Exploring the preliminary transformation of scientific and technological achievements formed by the use of fiscal funds in strategic emerging industries	Led by the Ministry of Science and Technology, Ministry of Finance, and National Development and Reform Commission along with the Ministry of Education and Ministry of Industry and Information Technology, which are responsible in accordance with the division of responsibilities.

49	Actively advancing the revision of the Patent Law and the Copyright Law. Tracking the development and innovation of new technologies, new formats, and new models, improving relevant legislation on business model intellectual property protections, trade secret protections, and practical art design patent protections. Promoting higher limits for statutory compensation for intellectual property infringement.	The National Intellectual Property Administration, State Administration of Radio, Film, and Television, Legislative Affairs Office of the State Council, Ministry of Science and Technology, and State Administration for Industry and Commerce are responsible in accordance with the division of responsibilities.
50	Strengthening intellectual property rights protections and safeguards. Building a number of rapid rights protection centers Incorporating international intellectual property rights infringement on social credit records, improving mechanisms for investigating and dealing with intellectual property rights and administrative infringement, strictly cracking down on intellectual property rights in accordance with the law, and increasing customs enforcement on intellectual property rights.	Led by the National Intellectual Property Administration along with the Ministry of Industry and Information Technology, National Development and Reform Commission, Ministry of Public Security, State Administration for Industry and Commerce, and General Administration of Customs, which are responsible in accordance with the division of responsibilities.
51	Implementing strategic advancement plans for the intellectual property rights industry for strategic emerging industries, deploying the intellectual property rights service chain around strategic emerging industry clusters, establishing intellectual property rights cluster management systems, cultivating a group of specialized and branded intellectual property rights service agencies, and promoting the formation of a group of clusters with intellectual property rights advantages	The National Intellectual Property Administration, National Development and Reform Commission, Ministry of Science and Technology, State Administration for Industry and Commerce, and Ministry of Industry and Information Technology are responsible in accordance with the division of responsibilities.
52	Improving the overseas system of intellectual property rights services, establishing an early warning mechanism for overseas intellectual property rights risks, and providing intellectual property rights support for enterprises that carry out overseas mergers, acquisitions, and rights protection activities	The Ministry of Commerce, National Intellectual Property Administration, Ministry of Foreign Affairs, National Development and Reform Commission, Ministry of Industry and Information Technology, and State Administration for Industry and Commerce are responsible in accordance with the division of responsibilities.
53	Actively supporting the listing or public financing of qualified enterprises in strategic emerging industries, researching and launching the national share transfer system for the listing of companies on the growth enterprises market board, and establishing a joint docking mechanism between the national share transfer system and the regional equity market	The China Securities Regulatory Commission, National Development and Reform Commission, and Ministry of Industry and Information Technology are responsible in accordance with the division of responsibilities.

54	Actively supporting the issuance of bond financing by qualified enterprises in strategic emerging industries, expanding the scale of credit enhancement bonds for small and micro-sized enterprises and collective bills for small and medium-sized enterprises, encouraging the exploration and development of financial products such as high-yield bonds and convertible bonds, and steadily promoting the development of debt financing instruments for non-financial enterprises	The People's Bank of China, National Development and Reform Commission, and China Securities Regulatory Commission are responsible in accordance with the division of responsibilities.
55	Guiding financial institutions to actively improve credit management and loan review systems that are adapted to the characteristics of strategic emerging industries. Encouraging the establishment of a system for determining, assessing, pledging, and transferring intangible assets in digital creative, software, and other areas and advancing financial product innovation, such as intellectual property rights pledge financing, equity pledge financing, supply chain financing, and technology insurance.	Led by the People's Bank of China and China Banking Regulatory Commission along with the China Securities Regulatory Commission, China Insurance Regulatory Commission, National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Culture, State Administration for Industry and Commerce, and National Intellectual Property Administration, which are responsible in accordance with the division of responsibilities.
56	Exploring the establishment of an investment and financing information service platform for strategic emerging industries to connect banks to enterprises	The National Development and Reform Commission, Ministry of Industry and Information Technology, China Banking Regulatory Commission, and People's Bank of China are responsible in accordance with the division of responsibilities.
57	Guiding policy and development financial institutions towards increasing support for strategic emerging industries	The People's Bank of China, China Banking Regulatory Commission, National Development and Reform Commission, Ministry of Finance, and Ministry of Industry and Information Technology are responsible in accordance with the division of responsibilities.
58	Promoting the development of a number of financial leasing and lending companies that cater to such industries as the aircraft, marine engineering equipment, and robotics industries	The Ministry of Commerce, China Banking Regulatory Commission, National Development and Reform Commission, Ministry of Industry and Information Technology, State Oceanic Administration, and Civil Aviation Administration of China are responsible in accordance with the division of responsibilities.
59	Accelerating the establishment of a national financing guarantee fund to support the financing of strategic emerging industry projects	The Ministry of Finance, National Development and Reform Commission, and Ministry of Industry and Information Technology are responsible in accordance with the division of responsibilities.
60	Encouraging regions with the right conditions to set up strategic emerging industry development funds and guiding community investment to set up a number of strategic emerging industry investment funds and international investment funds	The National Development and Reform Commission, Ministry of Finance, China Securities Regulatory Commission, and Ministry of Industry and Information Technology are responsible in accordance with the division of responsibilities.

61	Improving government procurement policies, increasing support for "entrepreneurship and innovation" and cloud computing, big data, and the recycling economy, and advancing demonstration applications, such as smart cities, information-for-citizens, "urban mines," and smart equipment	Led by the Ministry of Finance, along with the National Development and Reform Commission, Ministry of Science and Technology, and Ministry of Industry and Information Technology, which are responsible in accordance with the division of responsibilities.
62	Further improving subsidies for renewable energy power generation such as photovoltaics, wind power, and biomass Adjusting and improving subsidy policies for new energy vehicles	The National Development and Reform Commission, Ministry of Finance, National Energy Administration, and Ministry of Industry and Information Technology are responsible in accordance with the division of responsibilities.
63	Implementing the leading innovative talent initiative, focus on key areas for strategic emerging industries, building a group of innovative talent training demonstration bases based on major projects and major works, and supporting a group of science and technology innovators and entrepreneurs Introducing and training a group of high-end talented people on the basis of giving full play to the role of existing talent	The Ministry of Human Resources and Social Security, Organization Department of the CPC Central Committee, Ministry of Education, Ministry of Science and Technology, and National Development and Reform Commission are responsible in accordance with the division of responsibilities.
64	According to the needs of industrial development, dynamically adjusting the teaching content and curriculum of colleges and universities and reasonably expanding the proportion of enrollment associated with strategic emerging industries	Led by the Ministry of Education along with the Ministry of Industry and Information Technology, they are responsible in accordance with the division of responsibilities.
65	Relying on the knowledge and expertise of professional and technical personnel to update projects, training a large number of high-level, urgently-needed talented people and key professional and technical personnel to build a number of national-level continuing education bases	The Ministry of Human Resources and Social Security, Ministry of Education, and Ministry of Industry and Information Technology are responsible in accordance with the division of responsibilities.
66	Guiding and supporting scientific research personnel in the public sector to carry out innovative work or to start businesses in accordance with relevant state regulations	Led by the Ministry of Human Resources and Social Security, Ministry of Science and Technology, and Ministry of Education along with the National Development and Reform Commission and Ministry of Industry and Information Technology, which are responsible in accordance with the division of responsibilities.
67	Setting up a group of post-doctoral research work stations in enterprises in strategic emerging industries to encourage the development of key core technologies in those industries	Led by the Ministry of Human Resources and Social Security along with the Ministry of Education and Ministry of Science and Technology, which are responsible in accordance with the division of responsibilities.
68	Researching and optimizing permanent residency for foreigners, simplifying the procedures for applying for permanent residency for high-level foreign talent, and	The Ministry of Public Security and Ministry of Human Resources and Social Security are responsible in accordance with the division of responsibilities.

	facilitating residency and entry and exit convenience for their spouses and adolescent children	
69	Conducting statistical monitoring surveys of strategic emerging industries	Led by the National Bureau of Statistics of China along with the National Development and Reform Commission and Ministry of Industry and Information Technology, which are responsible in accordance with the division of responsibilities.

EXHIBIT 36

RESTRICTED

WT/TPR/S/415

15 September 2021

(21-6703) Page: 1/206

Trade Policy Review Body

TRADE POLICY REVIEW

REPORT BY THE SECRETARIAT

CHINA

This report, prepared for the eighth Trade Policy Review of China, has been drawn up by the WTO Secretariat on its own responsibility. The Secretariat has, as required by the Agreement establishing the Trade Policy Review Mechanism (Annex 3 of the Marrakesh Agreement Establishing the World Trade Organization), sought clarification from China on its trade policies and practices.

Any technical questions arising from this report may be addressed to Masahiro Hayafuji (tel. 022 739 5873), Arne Klau (tel. 022 739 5706), Katie Waters (tel. 022 739 5067), Michael Kolie (tel. 022 739 5931), and Verena Hess-Bays (tel. 022 739 5489).

Document WT/TPR/G/415 contains the policy statement submitted by China.

Note: This report covers developments up until mid-April 2021, in accordance with the work programme initially agreed with China. This report is subject to restricted circulation and press embargo until the end of the first session of the meeting of the Trade Policy Review Body on China. This report was drafted in English.

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SUMMARY

1. Since China's previous Trade Policy Review in 2018, the country's economy has been a major driver of global growth. Real GDP growth rates fell from just under 7.0% in 2016-18 to 6.0% in 2019 and 2.3% in 2020. Growth is projected to reach 6.0% again in 2021, as economic activities are expected to normalize. China's GDP per capita was USD 11,710 in 2020, up from USD 9,976 in 2018. The long-term structural changes in China's economy, away from agriculture and industry towards services, continued during the review period. Services now make up some 55% of GDP. Remarkable progress on poverty alleviation has been achieved over the past decades, resulting from high GDP growth rates and market-oriented reforms.

2. The outbreak of the COVID-19 pandemic in early 2020 had a major impact on output and employment. At the beginning of 2020, China's economy contracted by 6.8%. Virtually all sectors were severely hit by the pandemic, with the notable exceptions of financial services and information technology. Starting in mid-2020, the economy began to recover, mainly driven by public investment and international trade. Swift fiscal and monetary policy reactions helped mitigate the economic impact of the COVID-19 pandemic, but as a result of the Government's stabilizing measures, financial stability risks may have increased.

3. Price stability remains the main goal of monetary policy. Inflation rates remained low during the review period, fluctuating between -0.5% and 3.8%. China has a managed floating exchange rate regime. The exchange rate of the Chinese yuan (CNY) is determined with reference to a basket of currencies with a publicly known composition; the CNY's central parity is determined daily as a "fix". Officially reported foreign exchange reserves held steady during the review period, at around USD 3.1 trillion. Regulations on capital movements remain in place on inflows and outflows. China's bilateral lending to the rest of the world, notably to African countries, has increased over the past years. The CNY is fully convertible for current account transactions and partially convertible for some capital account transactions. China continued its efforts to further internationalize the CNY. As at mid-2020, about 2% of global payments were conducted through the CNY.

4. China's current account surplus contracted between 2016 and 2018, but grew again in 2019, to USD 102.9 billion. Available information for 2020 indicates a widening of the surplus, to USD 273.9 billion (1.9% of GDP), while for 2021, the authorities predict a narrowing of the current account surplus. The financial account (excluding reserve assets) posted a strong deficit in 2015, a surplus between 2016 and 2019, and a deficit in 2020. Direct investment was in surplus in all recent years except for 2016. The portfolio investment account was in deficit until 2016 and has posted a surplus since 2017. China's merchandise trade surplus declined between 2016 and 2018, which was a major driver of its narrowing current account surplus. In 2019 and 2020, the trade surplus grew again. China's balance of trade in services has traditionally posted a deficit, which grew between 2015 and 2018, but fell in 2019 and 2020.

5. China's merchandise exports increased every year during the review period, to attain a peak of nearly USD 2.6 trillion in 2020. Exports fell in the first half of 2020 due to the COVID-19 pandemic, but grew strongly afterwards due to China being the first manufacturing power to resume operations after the first wave of global shutdowns, and its role as leading supplier of protective health equipment and electronics related to working from home. At over 44%, machinery and electrical equipment continue to represent a very large and rising share in China's merchandise exports. The United States and the European Union remain China's main destinations for merchandise exports. Asia remains the most important region for China's merchandise exports, with a share of over 44% in 2020. Within Asia, Japan and the Republic of Korea are the most important trading partners. Africa and the Middle East received between 4% and 5% of China's exports, while the share for Latin America fluctuated around 6%.

6. China's merchandise imports increased sharply between 2016 and 2018, but fell in 2019 and 2020. At about 35%, machinery and electrical equipment make up an important and stable share of China's imports, followed by mineral products (some 25%). The European Union remains the most important supplier of goods, while the share of the United States in China's imports fell, from nearly 9% in 2015 to 6.6% in 2020. The share of imports originating in Asia fluctuated at around 47% between 2016 and 2019, but increased to over 49% in 2020. Africa, Australia, and the Middle East account for about 4%, 5%, and 7% of China's merchandise imports, respectively.

7. China's services exports grew from USD 217 billion in 2015 to USD 244 billion in 2019, but fell to USD 235 billion in 2020. They are mostly composed of various business services, transportation, and travel. Services imports grew from USD 436 billion in 2015 to USD 506 billion in 2019, but fell to USD 380 billion in 2020. Travel is traditionally by far the most important individual category.

8. Annual foreign direct investment (FDI) inflows into China continued to grow between 2016 and 2019, although at a much slower pace than in previous periods. Outward FDI, after lagging behind for many years, overtook inward FDI in 2015. It peaked in 2016 and has fallen sharply every year since. Manufacturing remains by far the largest sector of FDI inflows into China. The most important sectors for China's FDI abroad are leasing and business services, and manufacturing. Investment under the Belt and Road Initiative accounts for some 13% of China's recent outward FDI; it is mostly concentrated in Central and South East Asia, with a focus on infrastructure projects.

9. During the review period, China continued to aim at expanding international trade and investments, as outlined in Five-Year Plans and various Administrative Measures. Efforts to address climate change issues were also noticeable within China's trade policy framework. The main ongoing actions in this regard included industrial restructuring, energy structure optimization, energy conservation and efficiency, and the establishment of a carbon emissions trading market.

10. In pursuit of its trade policy objectives, China accords a leading role to the multilateral trading system and regional trade agreements (RTAs) in which it participates. China is an active Member of the WTO; it is an observer to the Committee on Government Procurement, and has been negotiating its accession to the Plurilateral Agreement on Government Procurement since 2007. China is also an observer to the Plurilateral Agreement on Trade in Civil Aircraft, and a participant in the Information Technology Agreement. It also participates in Joint Statement Initiatives on e-Commerce; investment facilitation for development; micro, small, and medium-sized enterprises; and domestic regulation in services. Between 2018 and mid-April 2021, China was involved in 10 trade disputes as a complainant and 11 as a respondent. During the review period, China signed new RTAs with Mauritius, Cambodia, and 14 other countries within the framework of the Regional Comprehensive Economic Partnership (RCEP) Agreement. By the end of February 2021, China had signed 19 RTAs with 26 countries and territories. China submitted various notifications to the WTO during the review period. Nevertheless, some notifications, including those on state trading enterprises and domestic support, remain outstanding.

11. A new Foreign Investment Law was adopted, with the aim of, *inter alia*, improving China's business environment for foreign investors and ensuring that they participate in market competition on an equal basis. The legislation stipulates that investors are protected against expropriation, restrictions on cross-border remittances, IPR infringement, and forced transfer of technology.

12. Various negative lists and the Catalogue of Encouraged Industries for Foreign Investment, which are revised periodically, remain the main instruments used to guide FDI in China. The 2020 version of the Special Administrative Measures on Access to Foreign Investment (National Negative List) further reduced the number of restrictive measures from 63 in 2017 to 33 in 2020. FDI in the Pilot Free Trade Zones (PFTZs) is guided by another negative list (PFTZ Negative List). In 2020, three PFTZs were established, bringing the total to 21. FDI is not allowed in prohibited industries that are included in either the PFTZ Negative List or the National Negative List; for those in a restricted industry, investors must comply with the required administrative measures. Projects in the encouraged category are eligible for preferential treatment. In 2018, China issued the Market Access Negative List, which lists industries that are prohibited or subject to licensing for investment and operation within China by market participants of any kind, including state-owned, private, domestic, or foreign-invested enterprises. Certain FDI projects may be subject to national security reviews if they are deemed to have an influence on national security. Examination and approval are required for foreign-invested projects involving fixed asset investment and projects involving "serious" overcapacity.

13. Various tax incentives are available to foreign-invested enterprises (FIEs) to promote sectors deemed beneficial to the development of China's economy. Furthermore, several relief measures were recently taken or announced for foreign investors, as a response to the COVID-19 pandemic.

14. China has taken various trade-facilitating measures with respect to import registration, documentation, and inspection requirements, as well as in response to the COVID-19 pandemic. Its national single window for international trade was extended and, reportedly, the overall customs clearance time for imports nationwide was reduced.

15. China's simple average applied most-favoured nation (MFN) rate decreased from 9.3% in 2017 to 7.1% in 2021, with tariff-rate reductions in nearly all product categories. The percentage of tariff lines bearing rates higher than 15% (international tariff peaks) was 4.5% in 2021, significantly lower than the 13.9% in 2017. Applied MFN tariffs ranged from 0%-65%; the highest tariffs of 65% apply to 20 agricultural tariff lines. China applies lower tariffs under its preferential trade agreements (PTAs) and RTAs. The share of duty-free tariff lines in China's RTAs ranges between 0.04% (RTAs with Hong Kong, China and Macao, China) and 6.6% (Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu (Chinese Taipei)). Duty-free lines accounted for 12.6% of all lines. China also grants preferential tariff treatment to imports from least developed countries (LDCs) that have established diplomatic relations with China and completed the exchange of diplomatic notes. By February 2021, China had implemented zero tariffs on 97% of tariff lines for these 41 LDCs.

16. Other charges affecting imports are the value added tax (VAT), the consumption tax, the Automobile Purchase Tax, and (until recently) port construction fees. During the review period, some VAT rates were reduced. Port construction fees levied on imported and exported goods were permanently abolished in January 2021.

17. Some changes were made in the import regime on prohibition and licensing. Since 1 January 2021, imports of all solid waste products have been prohibited, and the previous regime for allowing imports of certain wastes under licensing conditions has been terminated. Certain recycling materials for brass, iron-steel materials, copper, and cast aluminium alloys may be imported if they meet the required standards. Automatic import licensing requirements, in place for monitoring purposes have been removed on certain items and non-automatic import licensing requirements were removed for some used mechanical and electrical products.

18. Changes in legislation concerning anti-dumping measures during the review period included the adoption of the Ministry of Commerce's (MOFCOM) Rules on Interim Review of Dumping and Dumping Margins (Interim Review Rules) in April 2018 and the entering into force of the Rules on Questionnaires in Anti-Dumping Investigations and the Rules for Hearing of Anti-Dumping and Anti-Subsidy Investigations in May 2018. Other than these, the laws and regulations governing anti-dumping, countervailing, and safeguard measures in China remained largely unchanged during the review period. Between January 2018 and December 2020, China initiated 34 anti-dumping investigations and 8 countervailing investigations; it did not initiate any new safeguard investigations. As at end-December 2020, China was enforcing 113 anti-dumping definitive measures affecting imports from 16 countries or territories and 6 countervailing measures. Chemical products continue to account for most anti-dumping measures in force at end-December 2020, followed by products made of resin, plastic, and rubber.

19. Regarding the export regime, in the wake of the COVID-19 pandemic, the authorities took steps to further streamline customs procedures, including inspections and quarantine, and reduce port charges for exporters of medical devices. To ensure the quality of exported medical devices, reinforced quality control measures were also put in place for enterprises involved in the export of COVID-19-related test kits and other medical devices.

20. China charges export taxes on certain products. As at January 2021, 102 tariff lines (at the 8-digit level) were subject to statutory export duties, while 75 tariff lines carried interim duties. Prohibitions and restrictions are also in place on a variety of export items. Restricted exports may be subject to quotas or licences. During the review period, 23 new items were added to the list of technologies subject to export restrictions, while 4 items that were subject to export prohibition and 5 items that were subject to export restriction were removed.

21. During the review period, a new Export Control Law was adopted; it provides for the establishment of a single framework for restricting exports of controlled items, i.e. dual-use items (with both civilian and military applications); military products; nuclear products; and goods, technologies, and services that are related to the maintenance of national security and interests and the implementation of international obligations such as nuclear non-proliferation.

22. The authorities indicate that China did not maintain or introduce any export subsidies on agricultural products during the review period. All exporters are generally entitled to VAT rebates. To promote exports, the Trade Development Bureau of MOFCOM organizes exhibitions in emerging markets and provides export-oriented training activities. It also maintains the websites of China Trade Promotion and provides, through various service platforms, background information about foreign markets.

23. China continued to provide incentives and financial support to different sectors and industries during the review period. In June 2019, China notified its support programmes for the period 2017-18. The notification contains information on 79 central-level and 420 subcentral-level programmes, many of which, however, had expired by the time of the notification. No information was provided by the authorities on how many of the programmes were still active as at April 2021. The notifications submitted to the WTO and the replies provided by China to questions asked by other Members did not enable the Secretariat to have a clear overall picture of China's support programmes. In particular, the notifications do not contain information on expenditure levels in certain critical sectors, such as aluminium, electric vehicles, glass, shipbuilding, semiconductors, or steel. Information on subsidies going beyond the 2019 notification was not made available to the Secretariat. In addition to the notified programmes, numerous other initiatives are reported to be in place to support different industries and attract foreign investment. So-called "government guidance funds" use public resources to make equity investments in industries that the Government considers important, while numerous policy-related funds finance direct investments to support a particular policy initiative. Many of these funds seem to be endowed with sums over CNY 100 billion. According to the authorities, the incentives provided by these funds do not constitute subsidies and are not required to be notified under the Agreement on Subsidies and Countervailing Measures (SCM Agreement).

24. Since its previous Review, China introduced or revised various laws and regulations related to standards and other technical requirements. On 1 January 2018, the revised Standardization Law entered into force and included new provisions such as those on association standards. According to the authorities, at end-2020, among the national standards that correspond to the relevant international standards, 92.4% of mandatory standards (technical regulations) and 91.4% of voluntary standards were adoptions or adaptations of international standards, compared with 74.3% and 85.9% at end-2017. Between January 2018 and mid-April 2021, China submitted 344 technical barriers to trade (TBT) notifications. During this period, in the TBT Committee, 25 specific trade concerns were raised by Members regarding TBT measures maintained or planned by China.

25. During the review period, there was a substantial reorganization of the agencies responsible for sanitary and phytosanitary (SPS)-related issues. The main change to the legal framework for SPS-related issues was the entry into force of the Implementing Regulations of the 2015 Food Safety Law 2019. During the review period, 13 specific trade concerns were raised in the SPS Committee on SPS measures maintained by China, of which 8 were raised for the first time. Between 1 January 2018 and mid-April 2021, China submitted 165 notifications to the SPS Committee.

26. In 2018, the State Administration for Market Regulation (SAMR) was established as the national administrative body for regulating market-related issues, including competition. The previous functions and personnel of the National Development and Reform Commission (NDRC), the State Administration for Industry and Commerce (SAIC), and MOFCOM in their respective fields of competition policy merged into the SAMR. A new Anti-Monopoly Bureau and a new Price Supervision and Anti-Unfair Competition Bureau were established as the competition agencies within the SAMR. The State Council also established an Anti-Monopoly Committee to organize, coordinate, and guide the anti-monopoly work across the country. In 2019, the Anti-Unfair Competition Law was revised to strengthen the protection of trade secrets. There were no changes to the legislation concerning price controls during the review period.

27. China's state trading enterprises have the exclusive right to import or export the following products: wheat, maize, sugar, tobacco, rice, cotton, crude and processed oil, refined coal, chemical fertilizers, tungsten and tungstate products, antimony, and silver. State ownership remains very important in China's economy, even in non-strategic, commercially oriented sectors, with state-owned enterprises (SOEs) still having large market shares. No privatization took place during the review period; reform of SOEs proceeded almost exclusively in the context of mixed ownership reform.

28. There have been no major changes to China's legislative and regulatory regime concerning government procurement since the previous Review, while modifications to relevant laws are currently under consideration. The total value of government procurement in China was CNY 3.3 trillion in 2019 (the latest year for which data were made available), accounting for 3.3% of GDP; important infrastructure projects implemented by SOEs are not covered by the Government Procurement Law. The majority of procurement takes place at the sub-Central Government level.

29. During 2018 and 2019, China undertook wide-ranging reforms that included its intellectual property (IP) regime; the infrastructure of IP courts; and amendments to the Trademark Law, the Patent Law, and the Anti-Unfair Competition Law, which govern trade secrets. As part of these reforms, in 2018, the State Intellectual Property Office became the China National Intellectual Property Administration under the SAMR. The IP enforcement regime continued to evolve in response to the challenges posed by the shift from brick-and-mortar stores to virtual marketplaces and the implementation of international agreements. For example, copyright surveillance of large-scale video, music, and literature websites, as well as online storage service providers, was strengthened.

30. While the overall value of production of agriculture and animal husbandry increased steadily over the review period, China continues to be a net importer of agricultural products. China is pursuing a rural revitalization strategy. Rural reform initiatives have included amending the Law on the Contracting of Rural Land to legally upgrade the institutional arrangements on the land management right on rural contracted land, and steps have been taken to extend a similar approach to rural homesteads. As part of the Government's restructuring in 2018, the Ministry of Agriculture (MOA) was renamed the Ministry of Agriculture and Rural Affairs (MARA), and its responsibilities were expanded, a National Food and Strategic Reserves Administration was created, and the State Administration of Grain was dissolved. In 2021, the average MFN applied tariff on agricultural products was 12.7% (14.8% in 2017). China continues to make use of tariff-rate quotas on wheat, corn, rice, sugar, wool, wool tops, and cotton, which are administered through import licences; fill rates have fluctuated and were under 50% for wheat, rice, and wool tops in 2019. Little up-to-date information was available on current government support to the agriculture sector, given that China's most recent domestic support notification to the WTO covers the period up to 2016, and its SCM notification to 2018. China continues to implement a minimum purchase price policy for rice and wheat, with certain price reductions reported in recent years. Likewise, China continues to maintain reserves of maize, rice, soya beans, and wheat, as well as a subsidized agricultural insurance scheme providing coverage for natural disasters.

31. China is one of the world's largest fish-producing countries, particularly in aquaculture, and is a net importer of fish. The simple average MFN tariff on fish and fishery products (WTO definition) was 6.8% in 2021, with tariffs ranging from 0%-15%. Since 2018, China has revised its fishing licence rules. No updated data were available on fisheries subsidies from 2019, and on fuel subsidies to the fisheries sector over the whole review period. However, the authorities indicate that the Government will shortly issue a new policy to terminate fuel and boat construction subsidies, with the last of these pay-outs being made at end-2020. Reportedly, the Government has taken measures to monitor and control fishing vessels, enhance its international compliance capability, and prevent illegal, unreported, and unregulated fishing activities, and it is taking first steps to introduce a total allowable catch system.

32. During the review period, some liberalization steps were taken in the mining sector to allow increased foreign participation; foreign investment prohibitions and restrictions on the exploration and development of a number of mining products were removed. Foreign investment in the exploration, exploitation, and processing of rare earths, radioactive minerals, and tungsten is prohibited. The average MFN applied tariff on mining products was 1.7% in 2021, unchanged since 2017.

33. China continues to reduce its proportion of coal consumption, in line with objectives set for green and low-carbon energy development in the 13th Five-Year Plan for Energy Development. Other measures regarding the promotion of clean energy included the authorities' efforts to fully operationalize China's carbon emission trading framework, set renewable electricity consumption quotas as a share of total power consumption in each province, and implement a new environmental tax policy. The energy sector was further opened to foreign investments during the review period, through several liberalization measures, such as the removal of the restrictions on the exploration and development of oil and natural gas (except for oil shale, oil sands, and shale gas).

34. The Made in China 2025 (or China Manufacturing 2025) initiative (launched in 2015) and the Internet Plus initiative (launched in 2015) remain China's main initiatives to promote its manufacturing sector. The authorities undertook a series of market-opening measures, such as lifting of restrictions on the shareholding ratio of foreign investment in commercial vehicle manufacturing, with a view to promoting the sector's competitiveness. Furthermore, some manufacturing activities were added to the list of encouraged industries, mainly certain items for integrated circuits, chip packaging equipment, cloud computing devices, key components of industrial robots, new energy vehicles, and intelligent vehicles. The average MFN applied tariff on manufactured products was 7% in 2021 (9.7% in 2017).

35. During the review period, China continued to liberalize its financial sector to allow increased foreign participation. A new supervision framework was established to address new types of financial risks, such as shadow banking. Foreign shareholding ratio limits were lifted for commercial banks, life insurers and insurance asset management companies, securities companies, futures companies, and fund management companies. Furthermore, foreign investors were allowed to participate in various segments of China's financial sector, including bond rating and private pension fund management.

36. In the telecommunications sector, China granted 5G licences to its three major telecom operators and a broadcasting company. At the same time, the authorities put in place strategic plans for an integrated development of 5G and industrial Internet. Several regulations, administrative measures, and technical specifications were adopted or published for public comment, with a view to fully implementing the 2017 Cybersecurity Law. The E-commerce Law was passed during the review period to regulate business activities of selling goods and/or providing services through information networks such as the Internet.

37. The State continues to have major presence in maritime and air transport. Developments in the maritime transport sector since 2018 have included continued measures to encourage qualified Chinese-funded international "Flag of Convenience" ships to return to China and a lifting of restrictions on foreign investment in international shipping and international shipping agency services in China. As is the case for other economies, the COVID-19 pandemic has had a big impact on the air transport sector, with international and domestic passenger flights dropping dramatically from February 2020; only the domestic passenger flight segment has recovered. China has taken various measures to support the air and maritime sectors in the wake of the COVID-19 outbreak.

1 ECONOMIC ENVIRONMENT

1.1 Main Features of the Economy

1.1. China's GDP per capita rose to USD 11,710 in 2020, up from USD 8,148 in 2016 (Table 1.1). Real GDP growth rates fell from just under 7% in 2016-18 to 6.0% in 2019 and 2.3% in 2020. Despite the slowdown in growth rates, China continues to be a major driver of global growth, and its convergence with advanced economies continues. Rapid economic development over the last decades, induced by market-oriented reforms, lifted hundreds of millions of people out of poverty.

1.2. China's population stood at an estimated 1.41 billion in 2020.[1] While the population is estimated to peak in 2029, at around 1.44 billion, the working-age population has been shrinking since 2012.[2] In 2020, China's newly born population was 12 million, the lowest since 1949. The percentage of people aged 65 and over has been rapidly rising, from 6.96% in 2000 to 13.50% in 2020. Urbanization further increased, with around 65% of the population now living in cities. Life expectancy is currently estimated at 77.3 years.

1.3. China's growth has been accompanied by an increase in income inequality. Despite unprecedented poverty reduction over the past decades, the income gap between the richest and the poorest remains significant. According to the National Bureau of Statistics, the Gini index of income distribution fell from 49.1 in 2008 to 46.2 in 2015, to climb again to 46.5 in 2019.[3] According to World Bank data, income distribution is more equal, with a Gini index of 43.0 in 2008, falling to 38.5 in 2016.[4] With regard to wealth distribution, some academic studies suggest that the top decile and percentile shares of wealth increased sharply between 1990 and 2015.[5] According to the authorities, official indicators on wealth distribution do not exist.

Table 1.1 Selected macroeconomic indicators, 2015-20

	2015	2016	2017	2018	2019	2020
Nominal GDP (CNY billion)	68,885.8	74,639.5	83,203.6	91,928.1	98,651.5	101,598.6
Nominal GDP (USD billion)	11,061.6	11,233.3	12,310.5	13,894.9	14,280.0	14,722.8
Real GDP (CNY billion, 2015 prices)	68,885.8	73,603.6	78,717.0	84,030.3	89,030.5	91,120.5
Real GDP (USD billion, 2015 prices)	11,061.6	11,077.4	11,646.7	12,701.1	12,887.3	13,204.4
GDP per capita (CNY)	50,237.0	54,139.0	60,014.0	66,006.0	70,581.0	..
GDP per capita (USD)	8,067.0	8,148.0	8,879.4	9,976.8	10,216.7	11,710.0
National accounts						
Real GDP (percentage change)	7.0	6.8	6.9	6.7	6.0	2.3
Domestic demand	7.3	7.9	6.8	7.4	5.5	1.5
Consumption	8.3	8.5	7.3	8.1	6.0	-0.8
Investment	6.1	7.2	6.1	6.5	4.5	4.6
Fixed	7.9	7.3	5.9	7.1	5.1	4.3
Contribution to GDP growth[a]						
Consumption	4.9	4.5	3.9	4.3	3.5	-0.5
Investment	1.6	3.1	2.7	2.9	1.7	2.2
Net exports	0.6	-0.8	0.3	-0.5	0.7	0.7
Unemployment rate (%)[b]	4.1	4.0	3.9	3.8	3.6	..
Prices and interest rates						
Inflation (CPI, percentage change)	1.4	2.0	1.6	2.1	2.9	3.8
Benchmark lending rate (%, end of year)	4.35	4.35	4.35	4.35	4.15	3.85
Benchmark deposit rate (%, end of year)	1.50	1.50	1.50	1.50	1.50	1.50
Exchange rate						
CNY per USD (period average)	6.227	6.644	6.759	6.616	6.908	6.899
Nominal effective exchange rate index (percentage change)	9.7	-5.4	-2.5	1.5	-1.8	-1.2
Real effective exchange rate (REER) index[c] (percentage change)	9.8	-4.9	-2.9	1.4	-0.8	1.3
Monetary indicators						
Net domestic credit (percentage change, end-period)	23.7	20.1	11.3	10.3	10.7	13.3
Broad money, M2 (percentage change, end-period)	13.3	11.3	9.0	8.1	8.7	10.1

[1] The authorities indicate that more accurate figures will be published with the results of the 2020 census, which were only partially available as at April 2021.

[2] Information provided by the authorities.

[3] National Bureau of Statistics, *Statistical Yearbook*, various issues.

[4] World Bank. Viewed at: https://data.worldbank.org/indicator/SI.POV.GINI.

[5] Picketty, T. (2020), *Capital and Ideology*, Cambridge, Massachusetts: Harvard University Press; and Piketty, T., Yang. L., and Zucman, G. (2019), "Capital Accumulation, Private Property, and Rising Inequality in China, 1978-2015", *American Economic Review*, Vol. 109, No. 7, pp. 2469-2496.

	2015	2016	2017	2018	2019	2020
Required reserve ratio (RRR) (% of bank deposits)	17.5	17.0	..	..	..	..
Excess reserve ratio (% of bank deposits)	2.1	..	..	..	..	..
Fiscal policy[d] (% of GDP)						
Financial deficit	-3.4	-3.8	-3.7	-4.1	-4.9	..
Total revenue	22.1	21.4	20.7	19.9	19.2	..
Tax revenue	18.1	17.5	17.4	17.0	15.9	..
Total expenditure	25.5	25.2	24.4	24.0	24.1	..
General government gross debt	41.1	44.2	46.8	50.6	51.6	..
Saving and investment (source: National Bureau of Statistics)						
GDP by expenditure approach (CNY billion)	69,209.4	74,598.1	82,898.3	91,577.4	99,070.8	..
Final consumption expenditure (CNY billion)	37,192.1	41,080.6	45,651.8	50,613.5	55,263.2	..
Households	26,020.2	28,866.8	32,069.0	35,412.4	38,718.8	..
Government	11,171.8	12,213.8	13,582.9	15,201.1	16,544.4	..
Gross capital formation (CNY billion)	29,782.7	31,819.9	35,788.6	40,258.5	42,667.9	..
Net exports of goods and services (CNY billion)	2,234.6	1,697.6	1,457.8	706.0	1,139.8	..
Savings (CNY billion)	31,354.1	33,196.5	37,405.9	40,805.9	43,807.7	..
Savings (% of GDP by expenditure)	45.3	44.5	45.1	44.6	44.2	..
Investment (% GDP by expenditure)	43.0	42.7	43.2	44.0	43.1	..
Savings-investment gap (% of GDP by expenditure)	2.3	1.8	1.9	0.6	1.2	..
Saving and investment (source: IMF)						
Gross national savings (% of GDP)	45.8	44.5	44.8	44.1	44.1	45.0
Gross investment (% of GDP)	43.0	42.7	43.2	44.0	43.1	43.1
Savings-investment gap (% of GDP)	2.8	1.8	1.6	0.1	1.0	1.9
External sector (% of GDP, unless otherwise indicated)						
Current account balance	2.6	1.7	1.5	0.2	0.7	1.9
Net merchandise trade	5.2	4.4	3.9	2.7	2.8	3.5
Value of exports	19.4	17.7	18.0	17.4	16.7	17.0
Value of imports	14.2	13.4	14.1	14.7	14.0	13.5
Services balance	-2.0	-2.1	-2.1	-2.1	-1.8	-1.0
Capital account	0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Financial account (excluding reserve assets)	-0.8	0.2	0.1	1.1	0.2	-0.7
Direct investment, net	0.6	-0.4	0.2	0.7	0.4	0.7
Reserve assets	3.1	3.9	-0.7	-0.1	0.1	-0.2
Merchandise exports[e] (percentage change)	-4.5	-7.2	11.4	9.1	-1.3	4.6
Merchandise imports[e] (percentage change)	-13.4	-4.2	16.0	17.1	-2.1	-0.6
Service exports[e] (percentage change)	-0.8	-4.1	2.2	9.6	4.6	-3.7
Service imports[e] (percentage change)	0.7	1.3	6.9	11.4	-3.8	-24.7
Gross official reserves[f] (USD billion; end-period)	3,406.1	3,097.8	3,235.9	3,168.0	3,222.9	3,356.5
Foreign currency reserves (USD billion; end-period)	3,330.4	3,010.5	3,139.9	3,072.7	3,107.9	3,216.5
Total external debt (USD billion; end-period)	1,383.0	1,415.8	1,758.0	1,982.8	2,057.3	2,132.4
Debt service ratio[g]	5.0	6.1	5.5	5.5	..	..

.. Not available.

a Refers to the growth of GDP multiplied by the respective contribution share.
b Registered unemployment in urban areas.
c A positive increase in the REER means an appreciation of the CNY relative to the other major currencies in the index.
d Including central and local governments.
e Growth rates on merchandise and services trade are based on USD.
f Including foreign currency reserves, IMF reserve position, special drawing rights, and gold.
g Debt service ratio refers to the ratio of the payment of principal and interest of foreign debts to the foreign exchange receipts from foreign trade and non-trade services of the current year.

Source: National Bureau of Statistics; State Administration of Foreign Exchange; People's Bank of China; and the IMF.

1.4. Since the global financial crisis in 2008, China has experienced a marked slowdown in growth of total factor productivity (TFP), according to a World Bank study; the authorities indicate that no estimates of TFP were conducted by the Government, and they do not agree with this assessment.[6] Aggregate TFP growth is reported to have slowed from 2.8% in 1998-2008 to 0.7% in 2009-18. In 2017, signs of improving labour productivity and TFP growth emerged, but both remain significantly lower than their pre-crisis levels. According to this study, it would also appear that the allocation of a larger share of credit and investment to infrastructure and housing led to lower returns on capital, a rapid build-up in debt, and higher risks to growth. Also, an academic study suggests that the resurgence in the state sector following the global financial crisis may have contributed to larger

[6] Brandt, L., Litwack, J., et al. (2020), *China's Productivity Slowdown and Future Growth Potential*, World Bank Policy Research Working Paper 9298.

entry barriers for non-state firms and, hence, lower non-state sector growth.[7] The authorities do not agree with these views.[8]

1.5. Under its 14th Five-Year Plan for Economic and Social Development (2021-25), China aims to achieve "sustained and healthy" economic development in 2021-25, with a focus on higher quality growth.[9] While not suggesting specific GDP growth targets, the Plan lays out a 15-year goal to raise per capita GDP levels to those of a moderately developed country by 2035, while strengthening China's technological capacities, developing a robust domestic market, and reaffirming a significant green transformation of production and lifestyles.

1.2 Recent Economic Developments

1.2.1 Growth and impact of COVID-19

1.6. The COVID-19 pandemic has posed an unprecedented shock to China's economy. Besides inflicting human costs, it has had a major impact on output, trade, and employment. At the beginning of 2020, economic growth fell to its lowest level in 40 years: between the last quarter of 2019 and the first quarter of 2020, growth fell by almost 13 percentage points, from 5.8% to -6.8%.[10] Apart from financial services and information technology, all sectors were severely hit. Over 100 million workers were directly affected by the pandemic, by being put on unpaid leave in retention schemes or reduced-work programmes, exiting the labour market, or becoming unemployed.[11] In May 2020, the Government abandoned the announcement of the annual GDP target for the first time in more than 25 years due to factors that are difficult to predict, such as the coronavirus pandemic and uncertainties around trade.

1.7. Fuelled by a middle class that has been increasing both in number and in average income, consumption played an important role in sustaining economic growth until 2019, although household saving rates remained high. Over the same period, investment growth slowed. Starting in mid-2020, China's economy began to recover from the pandemic, as economic activity normalized. The recovery was mainly driven by public investment and international trade, whereas private consumption remained sluggish in the presence of continued uncertainties; the authorities consider that the recovery in private consumption gained momentum in recent months, as observed in retail sales of consumer goods.

1.8. Poverty rates fell during the review period. According to the authorities, the incidence of poverty dropped from 3.1% in 2017 to 1.7% in 2018 and to 0.6% in 2019, using the 2011 poverty line.[12] At the same time, income levels of those over the poverty line or living in poor regions rose significantly. The authorities also underline the results that were achieved regarding access to basic education, electricity, healthcare, and improved infrastructure. The authorities further indicate China's aim to completely eradicate poverty by 2020.

1.9. With regard to the sectoral composition of China's GDP, the long-term structural change away from industry towards services continued during the review period (Table 1.2). The contribution of agriculture to GDP fell from 8.7% in 2015 to 7.3% in 2018, before slightly climbing again during the pandemic. While the share of industry fell, it remains very high by international comparison, at around 31%. Services now make up 55% of China's GDP, up from 51% in 2015. The fastest-growing service sectors during the review period include information transmission, software, and information

[7] Lardy, N. (2019), *The State Strikes Back: The End of Economic Reform in China?* Washington, DC: Peterson Institute for International Economics.

[8] According to the authorities, by end-2020, the balance of CNY real estate loans grew by 11.7% year-on-year, 3.1 percentage points lower than the growth rate of end-2019; according to China's official statistics, in regard to profit, the growth rate of private companies was higher than that of state-owned enterprises.

[9] NDRC. Viewed at: https://www.ndrc.gov.cn/xxgk/zcfb/ghwb/202103/t20210323_1270124.html.

[10] Data provided by the authorities.

[11] ILO (2020), *China – Rapid Assessment of the Impact of COVID-19 on Employment*. The authorities indicate that in 2020 11.86 million new jobs were created for urban residents, and the average surveyed urban unemployment rate was 5.6%.

[12] It should be noted that China's progress in poverty alleviation is strongly dependent on the poverty line chosen as a benchmark. According to an academic study, progress is most impressive when using the 1985 poverty line, equivalent to USD 0.98 in 2011 prices. The use of the 2000 (equivalent to USD 1.30 in 2011 prices) or the 2011 (USD 2.29) poverty lines leads to lower poverty reduction. Chen, S. and Ravallion, M. (2020), *Reconciling the Conflicting Narratives on Poverty in China*, NBER Working Paper 28147.

technology; and leasing and business services. Nevertheless, the pandemic-related slump was strong for individual subsectors such as accommodation and food service activities, as well as wholesale and retail trade.

Table 1.2 GDP by sector, 2015-20

	2015	2016	2017	2018	2019	2020
GDP by industry at constant prices (annual percentage change)						
Agriculture, forestry and fishing	4.0	3.5	4.1	3.6	3.2	3.1
Industry[a]	5.7	5.7	6.2	6.1	4.8	2.4
Manufacturing	6.2	5.9	6.5	6.1	4.6	2.3
Construction	7.3	7.7	3.9	4.8	5.2	3.5
Services	8.8	8.1	8.3	8.0	7.2	2.1
Wholesale and retail trade	6.7	7.7	7.8	6.7	5.6	-1.3
Accommodation and food service activities	6.6	7.7	8.2	6.7	5.5	-13.1
Transport, storage and communication	4.4	6.9	9.6	8.3	6.5	0.5
Financial intermediation	16.7	4.8	4.8	4.8	6.6	7.0
Real estate	3.8	8.8	7.0	3.5	2.6	2.9
Information transmission, software and information technology	13.7	16.9	20.5	27.8	21.7	16.9
Leasing and business services	11.1	13.0	12.0	10.9	8.7	-5.3
Other	8.7	8.0	7.8	7.6	6.9	1.0
Share of main sectors in current GDP (%)						
Agriculture, forestry and fishing	8.7	8.4	7.8	7.3	7.5	8.0
Industry[a]	34.1	32.9	33.1	32.8	31.6	30.8
Manufacturing	29.0	28.1	28.1	27.8	26.8	26.2
Construction	6.9	6.9	7.0	7.1	7.2	7.2
Services	50.8	52.4	52.7	53.3	54.3	54.5
Wholesale and retail trade	9.8	9.9	9.8	9.7	9.7	9.4
Accommodation and food service activities	1.8	1.8	1.8	1.8	1.8	1.6
Transport, storage and communication	4.4	4.4	4.5	4.4	4.3	4.1
Financial intermediation	8.2	8.0	7.8	7.7	7.7	8.3
Real estate	6.2	6.7	6.9	7.0	7.1	7.3
Information transmission, software and information technology	2.5	2.7	2.9	3.1	3.4	3.7
Leasing and business services	2.6	2.9	3.0	3.2	3.3	3.1
Other[b]	14.7	15.4	15.6	15.9	16.4	16.5

a Including mining and quarrying, manufacturing, and production and supply of electricity.
b Includes scientific research and technical services; water, environment, and public facilities management; resident services, repairs and other services; education; health and social work; culture, sports and entertainment; and public management, social security, and social organizations.

Source: National Bureau of Statistics. Viewed at: https://data.stats.gov.cn/english/easyquery.htm?cn=B01.

1.10. Swift fiscal and monetary policy reactions (Section 1.2.2) helped mitigate the economic impact of the COVID-19 pandemic and prepare for the recovery. GDP growth was 2.3% in 2020, which made China the only G-20 economy with a positive growth rate that year. Growth is projected to be over 6% in 2021, as economic activities continue to normalize and further domestic outbreaks of COVID-19 remain under control. However, according to the IMF, risks of the projection are tilted to the downside, with a possible resurgence of the pandemic and a tightening of financial conditions.[13]

1.2.2 Monetary and exchange rate policy

1.11. Price stability remains the primary, but not the only, goal of monetary policy. Under the Law on the People's Bank of China (PBOC), the objective of monetary policy is to maintain the stability of the value of the currency and thereby promote economic growth. However, the PBOC refrains from explicit inflation targeting. Overall, monetary policy remained prudent until early 2020.

1.12. In August 2019, the PBOC changed the formation mechanism of China's lending benchmark rate, the loan prime rate (LPR). With a view to better reflecting market dynamics, the new LPR is linked to rates set during open market operations, namely the PBOC's medium-term lending facility, which is determined by broader financial system demand for central bank liquidity. The number of quotation banks was expanded from national banks to urban commercial banks, rural commercial

[13] IMF (2021), *People's Republic of China: Staff Report for the 2020 Article IV Consultation*, IMF Country Report No. 21/6. The authorities indicate that they do not agree with various conclusions of recent IMF and OECD reports.

banks, foreign-invested banks, and private banks. Since August 2019, the new LPR has been announced on the 20th of every month, in lieu of publishing it on a daily basis.

1.13. With a view to safeguarding financial market stability and providing liquidity to the banking system during the pandemic, the PBOC expanded its relending facilities to provide targeted support to manufacturers of medical supplies and daily necessities. Furthermore, the authorities tolerated rising levels of non-performing loans in heavily impacted regions and sectors, and introduced a payment moratorium for most micro, small, and medium-sized enterprises (MSMEs) and other eligible firms until end-2021. Furthermore, the PBOC lowered various policy rates. Non-interest rate instruments deployed by the PBOC aimed to provide additional support especially to smaller firms. They included expanding relending facilities, reducing targeted reserve requirement ratios, increasing bank lending targets, expanding credit support by policy banks, subsidizing local banks' repayment moratoria, and introducing a zero-interest scheme for uncollateralized lending to MSMEs. The various measures led to a rapid increase in bank lending and had a significant positive measure on corporate bond issuance.

1.14. As a result of the Government's stabilizing measures, however, financial stability risks increased.[14] According to the IMF, these risks include a strong increase in private sector debt, a likely deterioration of credit quality, and intensified pressure on small banks and some local governments. The authorities consider that the quality of credit assets of commercial banks is basically stable. The IMF estimates corporate debt to have increased by some 10 percentage points to 127% of GDP in 2020, while local government debt (excluding local government financing vehicles) also rose rapidly, to some 25% of GDP.

1.15. The CPI inflation rate was low during the review period. However, in the first half of 2020, inflation picked up, to increase to 3.8%, mainly caused by increasing food (notably pork) prices due to the lingering effects of the African swine fever and heavy rains and floods. In November 2020, the CPI fell by 0.5%, China's first decrease in the CPI since November 2009. The decrease in prices was caused by a drop in food prices, notably of pork.

1.16. China has a managed floating exchange rate regime. Since 2015, the exchange rate of the Chinese yuan (CNY) has been determined with reference to a basket of currencies with a publicly known composition; the CNY's central parity is determined daily as a "fix". The fix takes into account the previous day's closing rate, and the move of the currency basket overnight. The use of the counter-cyclical adjustment factor in the daily trading band's central parity formation, which was introduced in 2017, was phased out in October 2020. Market makers can deviate 2% in either direction. At the end of 2020, the central parity of the CNY exchange rate was CNY 6.5249 per US dollar, down from a seasonal high of CNY 7.1690 in May 2020.

1.17. Officially reported foreign exchange reserves have held steady at around USD 3.1 trillion since mid-2016, signalling that the CNY faced no great appreciation or depreciation pressure during the review period.

1.18. China continued its efforts during the review period to further internationalize the CNY; for example, it took measures including bilateral swap agreements[15], the pursuit of alternatives to the SWIFT inter-bank payments system[16], and investment in credit rating agencies for sovereign debt. According to the authorities, China promotes the two-way opening of the capital market, facilitates foreign investors to invest in CNY assets, optimizes policies on cross-border CNY business, promotes trade and investment facilitation, and further improves the CNY internationalization infrastructure. About 70 countries now also use the CNY as reserve currency. Yet as at mid-2020, only about 2% of global payments were conducted through the CNY.[17] It would appear that regulations on capital movements (see below) constitute a major obstacle for the further internationalization of the CNY.

[14] IMF (2021), *People's Republic of China: Staff Report for the 2020 Article IV Consultation*, IMF Country Report No. 21/6.

[15] As at January 2021, China entered into bilateral swap agreements with 40 trading partners. The largest are with Hong Kong, China (CNY 450 billion), the Republic of Korea (CNY 400 billion), the United Kingdom (CNY 350 billion), and Singapore (CNY 300 billion).

[16] China launched the China Inter-bank Payment Service (CIPS) clearing and settlement services system in 2015. Supervised by the Central Bank, CIPS states that it processed CNY 181.8 billion (USD 28.2 billion) a day in 2020, with participation of banks from 99 countries and regions.

[17] PBOC (2020), *2020 RMB Internationalization Report*. According to the Report, more than 70 central banks and monetary authorities have incorporated the CNY into their foreign exchange reserves.

China's bilateral lending to the rest of the world substantially increased over the past years (Table A1.1).

1.19. Since 2014, the PBOC has been developing a central bank digital currency, the e-CNY or e-renminbi. It is designed to be a legal tender combining digital currency and electronic payment characteristics, thus serving as cash (M0). The e-CNY is currently being tested across several regions, selected banks, and electronic payment platforms. It is expected to offer a higher degree of anonymity and lower handling charges than those of existing payment providers, higher compatibility across platforms, and, by broadening the reach of people with limited access to finance, to lead to more financial inclusion. The PBOC plans to use the e-CNY for domestic transactions initially.

1.20. The CNY is fully convertible for current account transactions and partially convertible for some capital account transactions. Residents and non-residents are permitted to use the CNY for foreign direct investment.

1.21. Regulations on capital movements, set by the State Administration on Foreign Exchange (SAFE), remain in place on inflows and outflows. New foreign exchange measures entered into force on 1 January 2020. The 12 measures introduced various relaxations and simplifications and extended the scope and application of existing regional pilot schemes.

1.22. "Qualified institutional investors" (overseas institutional investors that have been approved by the China Securities Regulatory Commission) may invest in China's stock and bond market through specific channels. Regulations on portfolio inflows have been further liberalized. In November 2020, the two major inbound foreign investment programmes (Qualified Foreign Institutional Investors, QFII, and Renminbi Qualified Foreign Institutional Investors, RQFII) were combined, while applications were simplified, review cycles shortened, data submission requirements reduced, and some restrictions lifted. Foreign portfolio investment (the market value of equities held by QFII/RQFII) in China amounted to CNY 1,081 billion in February 2021.

1.2.3 Fiscal policy

1.23. Against the background of dampening of domestic demand and weaker exports, partly resulting from trade tensions, the authorities resorted to various stimulus measures during the review period, involving taxes, access to credit, and infrastructure investment; however, according to an OECD study, the stimulus may increase corporate sector indebtedness and, more generally, reverse progress in the deleveraging of state-owned enterprises (SOEs).[18] The authorities do not agree with the conclusion of the OECD study. They indicate that the description in the study does not reflect the facts. For example, they state that the overall debt risk of central SOEs is dropping; there has been no bond default since 2017, and the average debt ratio of central SOEs decreased from 66.7% in 2016 to 65.0% in 2019.

1.24. With a view to mitigating the economic impact of the COVID-19 pandemic, the Government put in place strong and exceptionally high fiscal support, including an extension of the coverage of unemployment insurance. The Government also provided various tax relief measures and partially waived social security contributions by employers to protect employment. With the reopening of the economy, fiscal policy measures shifted to demand support, including infrastructure investment, while employment measures remained important.

1.25. According to the IMF, the total amount of discretionary fiscal policy measures implemented in 2020 was estimated at 4.7% of GDP. Coupled with declining tax revenue, the measures contributed to a strong increase in the deficit of the Central Government, to some 18.2% of GDP.[19] This is a major increase compared with the period since 2015, when fiscal deficits oscillated between 3% and 5% of GDP. As a result, China's augmented debt[20] to GDP ratio increased to some 92%

[18] IMF (2021), *People's Republic of China: Staff Report for the 2020 Article IV Consultation*, IMF Country Report No. 21/6; and OECD (2019), *OECD Economic Surveys: China 2019*.

[19] IMF (2021), *People's Republic of China: Staff Report for the 2020 Article IV Consultation*, IMF Country Report No. 21/6.

[20] The augmented deficit, as defined by the IMF, includes local government investment vehicles, government-guided funds, and other off-budget activities.

in 2020. Against the background of narrowing fiscal space and a rapidly ageing population, fiscal consolidation with appropriate adjustment policies will be important in the medium term.

1.26. Value added tax and other indirect taxes contribute to some 65% of fiscal revenues, whereas corporate taxes account for around 26% and the personal income tax (PIT) for some 5%. A 2018 reform of the PIT raised the taxable income threshold and introduced a wide range of deductions that further narrowed the tax base. Customs tariffs and other import duties accounted for about 1.8% of total fiscal revenue in 2018. China's tax to GDP ratio amounted to 17% in 2018, and to 16% in 2019.

1.2.4 Structural measures

1.27. Structural reforms since China's previous Review include the implementation of tariff cuts (Section 3.1.3), the further opening of the financial sector with a shortening of the negative list for financial FDI, and the removal of restrictions on the investment quota for foreign institutional investors (Section 4.4.1).

1.28. Labour market reforms provided for a cautious liberalization of the *hukou*[21] or permit system, with a view to increasing labour market mobility and improving the allocation of labour. Under the 2019 Urbanization Plan, cities with populations of less than 3 million eliminated all restrictions on household registration. Moreover, cities with populations between 3 million and 5 million relaxed restrictions on new migrants and removed limits on key population groups.

1.29. State ownership remains important, even in non-strategic, commercially oriented sectors, with SOEs still having large market shares. At the same time, reform of SOEs proceeded almost exclusively in the context of mixed ownership (Section 3.3.5).

1.30. Various regulatory measures were undertaken during the review period in order to ensure financial stability by enhancing prudential regulations and deleveraging highly indebted corporations (Section 4.4.1). These measures include the reining-in of shadow banks, tighter rules on informal lending, the merger of the banking regulator and the insurance regulator into the China Banking and Insurance Regulatory Commission (CBIRC) in 2018, and ongoing reforms of the comprehensive national social credit system, which covers firms and individuals.[22]

1.31. Under the One Belt and One Road Initiative, or the Belt and Road Initiative (BRI)[23], launched in 2013, the Government seeks to connect nearly 140 countries and regions through rail lines, pipelines, highways, ports, and other infrastructure. As at March 2021, total expenditure under the BRI amounted to USD 640 billion. According an OECD study, infrastructure projects of the BRI may have an impact on the debt burden on recipient countries.[24] Nonetheless, the authorities do not agree with the conclusion of the study. The authorities also underline the trade-enhancing and mutually beneficiary nature of the projects.

1.2.5 Balance of payments

1.32. China's current account surplus started to decline in 2016, with a surplus of USD 191.3 billion (1.7% of GDP). In 2018, the surplus narrowed to USD 24.1 billion, but grew again to USD 102.9 billion in 2019 (Table 1.3). Available information for 2020 indicates a widening of the surplus, to USD 273.9 billion (1.9% of GDP), caused mainly by lower commodity prices, the collapse

[21] *Hukou* is a household registration system. The authorities state that the registration distinction between agricultural and non-agricultural households has been abolished, and certain policies differentiating urban and rural household registrations have been abolished.

[22] China's social credit system is composed of databases and initiatives that monitor and assess the trustworthiness of individuals, companies, and government entities. Each entry is given a social credit score, with rewards for those who have a high rating, and negative consequences for those with low scores. The databases are managed by the National Development and Reform Commission (NDRC), the PBOC, and the country's court system.

[23] The BRI is a network of ports, roads, railways, airports, power plants, oil and gas pipelines and refineries, and free trade zones. It also incorporates the supporting IT, telecom, and financial infrastructure. On land, it follows the ancient Silk Road connecting Asia with Europe, while at sea, the Maritime Silk Road connects eastern China to the Middle East, Africa, and Europe.

[24] OECD (2019), *OECD Economic Surveys: China 2019*.

in outbound tourism, and a surge in exports of pandemic-related and other goods. For 2021, the authorities predict a narrowing of the current account surplus.

Table 1.3 Balance of payments, 2015-20

(USD million)

	2015	2016	2017	2018	2019	2020
Current account	**293,022**	**191,337**	**188,676**	**24,131**	**102,910**	**273,980**
Goods and services balance	357,871	255,737	217,010	87,905	131,844	369,673
Trade balance	576,191	488,883	475,941	380,074	392,993	515,000
Exports	2,142,753	1,989,519	2,216,214	2,417,443	2,386,640	2,497,156
Imports	1,566,562	1,500,636	1,740,272	2,037,369	1,993,647	1,982,156
Service balance	-218,320	-233,146	-258,932	-292,168	-261,149	-145,327
Exports	217,399	208,404	213,064	233,567	244,359	235,209
Imports	435,719	441,550	471,995	525,735	505,508	380,536
Income	-52,199	-54,880	-16,478	-61,365	-39,184	-105,173
Credit	223,816	226,654	289,698	268,496	273,514	241,681
Compensation of employees	33,105	26,883	21,699	18,109	14,258	14,736
Investment income	189,885	199,210	267,303	248,295	257,464	224,393
Other	826	560	697	2,092	1,792	2,552
Debit	276,015	281,533	306,176	329,861	312,699	346,854
Compensation of employees	5,718	6,211	6,762	9,946	11,157	14,360
Investment income	270,139	275,108	299,156	319,616	300,820	331,508
Other	158	215	258	299	722	986
Current transfers	-12,649	-9,520	-11,856	-2,410	10,250	9,480
Credit	35,938	30,900	28,168	27,757	25,907	37,607
Debit	48,588	40,420	40,024	30,167	15,657	28,127
Capital account	**316**	**-344**	**-91**	**-569**	**-327**	**-77**
Financial account	**-91,523**	**27,594**	**18,021**	**153,795**	**26,598**	**-105,765**
Assets	9,454	-231,985	-423,920	-362,039	-260,532	-626,329
Liabilities	-100,977	259,579	441,941	515,835	287,130	520,563
Financial account excluding reserve assets	-434,462	-416,070	109,537	172,682	7,308	-77,759
Direct investment	68,099	-41,675	27,791	92,338	50,260	102,554
Assets	-174,391	-216,424	-138,293	-143,027	-136,910	-109,922
Liabilities	242,489	174,750	166,084	235,365	187,170	212,476
Portfolio investment	-66,470	-52,271	29,498	106,874	57,948	87,329
Assets	-73,209	-102,770	-94,803	-53,507	-89,419	-167,333
Equity securities	-39,679	-38,238	-32,847	-17,712	-29,332	-130,996
Debt securities	-33,530	-64,531	-61,956	-35,795	-60,087	-36,338
Liabilities	6,739	50,499	124,301	160,381	147,366	254,662
Equity securities	14,964	23,416	36,209	60,668	44,906	64,138
Debt securities	-8,226	27,083	88,092	99,713	102,460	190,525
Financial derivates (other than reserves) and employee stock options	-2,087	-5,384	354	-6,153	-2,355	-11,409
Assets	-3,420	-6,550	1,538	-4,816	1,393	-6,901
Liabilities	1,333	1,166	-1,185	-1,338	-3,748	-4,508
Other investment	-434,004	-316,741	51,894	-20,376	-98,545	-256,234
Assets	-82,465	-349,906	-100,847	-141,803	-54,886	-314,166
Other equity	-12	-2	40	-1,493	-1,491	-484
Currency and deposits	-55,010	-64,280	-57,111	-14,999	-101,750	-130,397
Loans	-47,464	-110,267	-43,466	-81,830	25,962	-128,177
Insurance, pension, and standardized guarantee schemes	-3,198	-266	-47	-573	-1,168	-3,330
Trade credits and advances	-45,966	-100,800	-19,400	-65,300	36,800	-36,900
Other accounts receivable	69,186	-74,292	19,137	22,392	-13,240	-14,878
Liabilities	-351,538	33,165	152,742	121,427	-43,659	57,933
Currency and deposits	-122,552	9,062	107,944	51,436	-55,734	77,437
Loans	-166,667	-17,361	50,060	32,115	42,540	-35,442
Insurance, pension, and standardized guarantee schemes	2,393	-668	657	210	1,803	3,275
Trade credits and advances	-62,283	16,200	-1,200	40,800	-28,750	7,550
Other accounts payable	-2,428	25,932	-4,719	-3,135	-3,517	5,113
Reserve assets	342,939	443,665	-91,516	-18,887	19,291	-28,006
Net errors & omissions	**-201,816**	**-218,587**	**-206,606**	**-177,358**	**-129,181**	**-168,138**

Note: In the financial account, a positive value for assets represents a net decrease, while a negative value represents a net increase. A positive value for liabilities represents a net increase, while a negative value represents a net decrease.

Source: State Administration of Foreign Exchange. Viewed at: http://www.safe.gov.cn/.

1.33. The financial account (excluding reserve assets) posted a strong deficit in 2015, a surplus between 2016 and 2019, and a deficit in 2020. Direct investment posted a surplus in all recent years except for 2016. Projects under the BRI played an important role in outward investments. The authorities consider that the surplus was due in part to China's endeavours to open the economy.

The deficit on the portfolio investment account declined until 2016 and turned into a surplus in 2017. In 2020, the surplus amounted to USD 87.3 billion.

1.34. China's declining merchandise trade surplus was a major driver of its narrowing current account surplus. The merchandise trade surplus fell from USD 576 billion in 2015 to USD 380 billion in 2018, before climbing again to USD 393 billion in 2019. Available figures for 2020 indicate that the COVID-19 pandemic led to a further increase in China's trade surplus, to USD 515 billion; in the first phase of the pandemic, imports plummeted more quickly than exports, and in the second phase exports recovered earlier. China's balance of trade in services has traditionally posted a deficit, which grew between 2015 and 2018, but fell in 2019 and 2020.

1.3 Developments in Trade and Investment

1.3.1 Trends and patterns in merchandise and services trade

1.35. China's merchandise exports increased every year between 2016 and 2019, to attain a peak of nearly USD 2.6 trillion in 2020 (Chart 1.1 and Table A1.2). In the first half of 2020, export levels fell due to the COVID-19 pandemic, but China's share of global manufacturing exports rose to a record high in the second half of the year. Exports received a boost because China was the first manufacturing power to resume operations after the first wave of international shutdowns, and it is the world's bigger producer of protective health equipment, such as masks and surgical gowns, and electronics related to working from home.

1.36. China's merchandise imports increased sharply between 2016 and 2018, but fell in 2019 and 2020 (Table A1.3). During the pandemic, merchandise imports fell sharply, to USD 931 billion in the first half of 2020, but the decrease in imports was less pronounced than that for exports. During the second half of 2020, imports recovered and contributed to sustaining global growth.

1.37. During the review period, the United States and the European Union (EU-27) remained China's main destinations for merchandise exports (Chart 1.2 and Table A1.4). The European Union's share in China's exports increased from 13.5% in 2016 to 15.1% in 2020. Within the European Union, the importance of Germany and the Netherlands as export destinations further increased. The United States' share fell, from over 19% in 2018 to 17.5% in 2020. Asia remains the most important region for China's goods exports, with a share of over 44% in 2020. Within Asia, Japan and the Republic of Korea are the most important trading partners. Africa and the Middle East received between 4% and 5% of China's exports, while the share for Latin America fluctuated around 6%.

1.38. On the import side, the European Union is the most important suppliers of goods, with a share of 12.6% of all imports in 2020 (Table A1.5). The share of the United States in China's imports fell, from nearly 9% in 2015 to 6.6% in 2020. The share of imports originating in Asia fluctuated around 47% between 2016 and 2019. It increased to over 49% in 2020. Australia's share increased over time, to 5.6% in 2020. Africa and the Middle East account for 4% and 7% of China's imports, respectively.

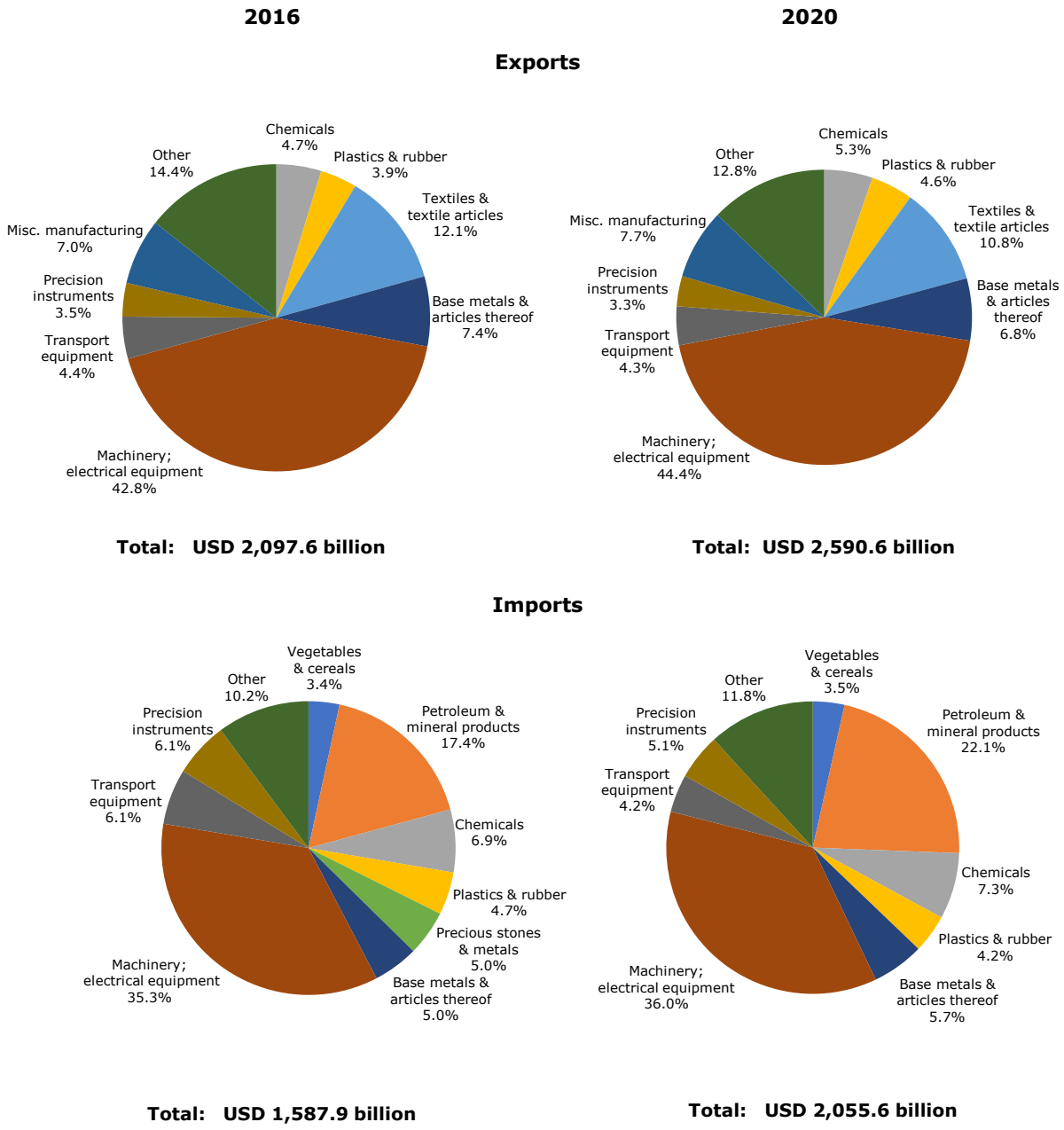
1.39. Machinery and electrical equipment continue to represent a very large and rising share in China's merchandise exports – over 44% in 2020 (Chart 1.1 and Table A1.2). The share of textiles and textile articles fell from 12.0% in 2015 to 10.4% in 2019, and up slightly to 10.8% in 2020. The shares of chemical products and plastics increased during the same period.

1.40. At about 35%, machinery and electrical equipment make up an important and stable share of China's imports (Table A1.3). The share of mineral products in China's imports increased from some 17% in 2016 to 25% in 2019, mainly caused by an increase of the share of fuels. Its share dropped to 22.1% in 2020. Until 2017, China was the leading importer of plastic waste (totalling USD 3,263 million), but since then it has reduced its imports to USD 49 million in 2018, USD 0.5 million in 2019, and USD 0.1 million in 2020.[25]

[25] UN Comtrade database.

1.41. According to an academic study, it would appear that the structure of merchandise trade has been characterized by a rapid expansion of production stages conducted in China.[26] It states that Chinese firms span more production stages as they grow more productive, larger, and more experienced.

Chart 1.1 Product composition of merchandise trade by main HS section, 2016 and 2020



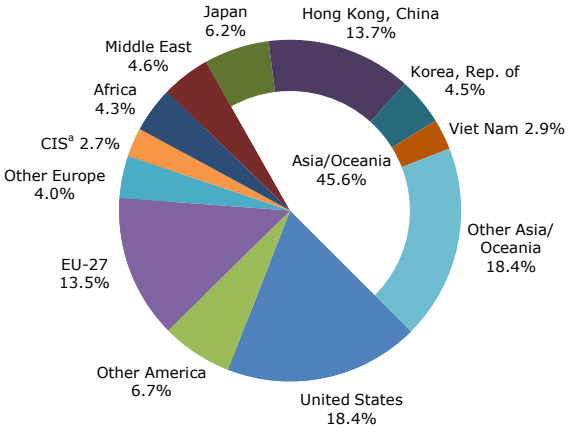
Source: UN Comtrade database.

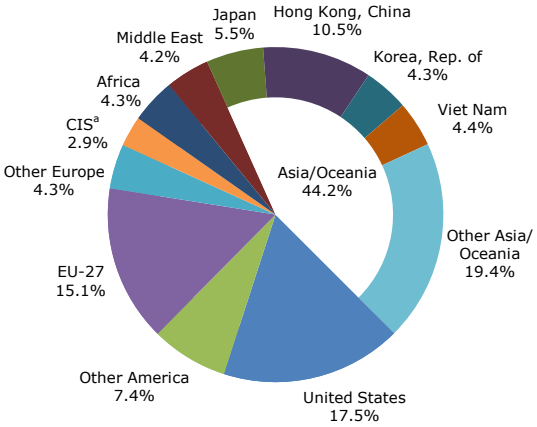
[26] Chor, D., Manova, K., and Yu, Z. (2020), *Growing Like China: Firm Performance and Global Production Line Position*, NBER Working Paper No. 27795, September 2020.

Chart 1.2 Direction of merchandise trade, 2016 and 2020

2016 **2020**

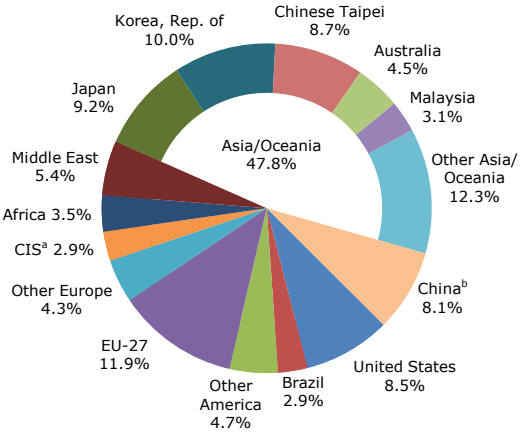
Exports (f.o.b.)

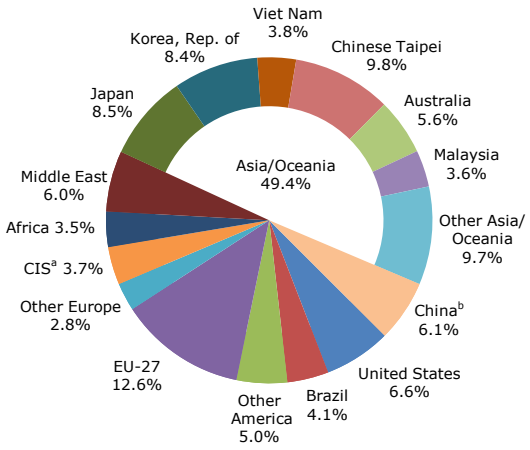




Total: USD 2,097.6 billion **Total: USD 2,590.6 billion**

Imports (c.i.f.)





Total: USD 1,587.9 billion **Total: USD 2,055.6 billion**

a Commonwealth of Independent States, including certain associate and former member states.
b Includes goods that have been exported from China and thereafter re-imported into China.

Source: UN Comtrade database.

1.42. Services exports grew from USD 217 billion in 2015 to USD 244 billion in 2019, but fell to USD 235 billion in 2020. They are mostly composed of various business services, transportation, and travel (Table 1.4). The relative importance of communication, computer, information, maintenance, repair, and other business services grew, while the shares of manufacturing services and travel decreased over time.

Table 1.4 Composition of trade in services, 2015-20

	2015	2016	2017	2018	2019	2020
Total credit (USD billion)	217.4	208.4	213.1	233.6	244.4	235.2
	% of total credit					
Manufacturing services on physical inputs	9.4	8.9	8.5	7.5	6.4	5.6
Maintenance and repair services	1.7	2.5	2.8	3.1	4.2	3.3
Transportation	17.8	16.2	17.5	18.1	18.9	24.1
Travel	20.7	21.3	18.1	17.3	14.7	6.0
Construction	7.7	6.1	5.7	5.8	5.9	5.4
Insurance and pension	2.3	1.9	1.9	2.1	2.0	2.3
Financial services	1.1	1.5	1.6	1.4	1.6	1.8
Charges for the use of intellectual property	0.5	0.6	2.3	2.4	2.7	3.6
Communication, computer & information	11.3	12.2	12.6	12.9	14.3	16.5
Other business services	26.9	27.8	27.8	28.3	28.3	29.9
Personal, cultural & recreational services	0.3	0.4	0.4	0.4	0.4	0.4
Government goods and services	0.5	0.6	0.8	0.8	0.6	1.1
Total debit (USD billion)	435.7	441.5	472.0	525.7	505.5	380.5
	% of total debit					
Manufacturing services on physical inputs	0.04	0.04	0.04	0.1	0.1	0.1
Maintenance and repair services	0.3	0.4	0.5	0.5	0.7	0.9
Transportation	19.6	18.2	19.8	20.8	20.8	24.9
Travel	57.3	56.6	54.6	52.7	50.4	34.3
Construction	2.3	1.9	1.8	1.6	1.8	2.1
Insurance and pension	2.0	2.9	2.4	2.2	2.2	3.2
Financial services	0.6	0.5	0.3	0.4	0.5	0.9
Charges for the use of intellectual property	5.1	5.4	6.1	6.8	6.8	9.9
Communication, computer & information	2.6	2.9	4.1	4.5	5.3	8.7
Other business services	9.1	9.8	9.0	8.9	9.9	13.3
Personal, cultural & recreational services	0.4	0.5	0.6	0.6	0.8	0.8
Government goods and services	0.6	0.7	0.7	0.9	0.7	0.9

Source: Information provided by the authorities.

1.43. According to the authorities, in 2019, China's major trading partners for trade in services were Hong Kong, China; the United States; Japan; Singapore; Germany; and the United Kingdom.

1.44. Services imports grew from USD 436 billion in 2015 to USD 506 billion in 2019, but fell to USD 380 billion in 2020. Travel is traditionally by far the most important individual category, though its share had already declined before the pandemic, followed by transport services and business services. While the contribution of travel and construction services decreased, the relative importance of telecommunications, computer and information services, and of charges for the use of intellectual property grew over time.

1.3.2 Trends and patterns in FDI

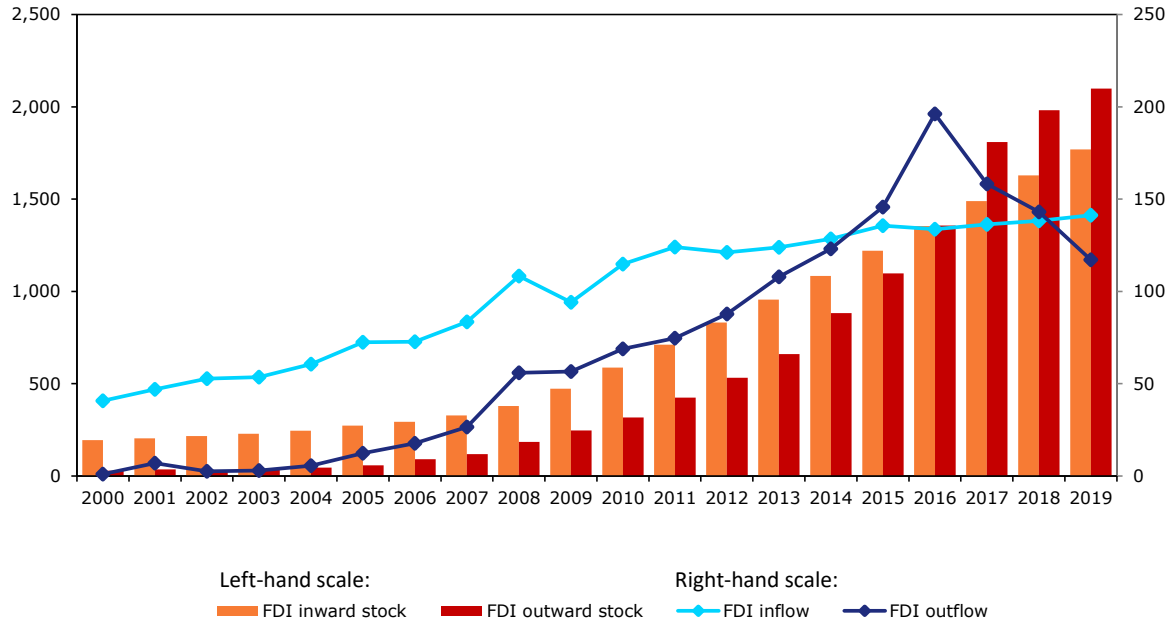
1.45. Foreign investment into China continued to grow between 2016 and 2019, although at a much slower pace than in previous periods (Chart 1.3). China's inward FDI stock amounted to USD 1.8 trillion in 2019. Outward FDI, after lagging behind for many years, overtook inward FDI in 2015. It peaked in 2016 and has fallen sharply every year since. The total stock of China's outward FDI amounted to USD 2.1 trillion in 2019.

1.46. Hong Kong, China is by far the most important source for FDI into China (Table 1.5). Other important sources include Singapore, the Republic of Korea, the British Virgin Islands, Japan, and the United States.

1.47. The manufacturing sector remains by far the largest recipient of FDI into China, followed by real estate and leasing and business services (Table 1.6). Sectors such as agriculture, mining, and construction are of limited importance for FDI.

Chart 1.3 Foreign direct investment, 2000-19

(USD billion)



Source: UNCTAD, *World Investment Report 2020*. Viewed at: https://unctad.org/en/Pages/DIAE/World%20Investment%20Report/Annex-Tables.aspx.

Table 1.5 Inward foreign direct investment by source, 2015-19

(USD billion)

	2015	2016	2017	2018	2019	
						% of total FDI
Total	**126.27**	**126.00**	**131.04**	**134.97**	**138.14**	
Hong Kong, China	86.39	81.47	94.51	89.92	96.30	69.7
Singapore	6.90	6.05	4.76	5.21	7.59	5.5
Korea, Republic of	3.20	4.75	3.67	4.67	5.54	4.0
British Virgin Islands	7.39	6.74	3.99	4.71	4.96	3.6
Japan	3.20	4.75	3.26	3.80	3.72	2.7
United States	2.09	3.10	2.65	2.69	2.69	1.9
Cayman Islands	2.09	3.10	2.18	4.07	2.56	1.9
Netherlands	0.75	0.56	2.17	1.27	1.80	1.3
Macao, China	0.89	0.82	0.64	1.28	1.74	1.3
Germany	1.44	1.39	1.54	3.67	1.66	1.2
Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu (Chinese Taipei)	1.56	2.39	1.77	1.39	1.59	1.1
Samoa	7.63	8.08	1.23	1.55	1.19	0.9
United Kingdom	0.00	0.00	1.00	2.48	0.86	0.6
France	1.22	0.87	0.79	1.01	0.79	0.6
Switzerland	0.22	0.55	0.46	0.60	0.64	0.5
Bermuda	0.71	0.46	1.34	2.17	0.48	0.4
Other	0.60	0.96	5.06	4.47	4.03	2.9

Note: Figures refer to foreign capital actually used.

Source: WTO Secretariat calculations based on data from the National Bureau of Statistics. Viewed at: https://data.stats.gov.cn/english/easyquery.htm?cn=C01.

Table 1.6 Inward foreign direct investment by main sectors, 2015-19

(USD billion)

	2015	2016	2017	2018	2019	
						% of total FDI
Total	**126.27**	**126.00**	**131.04**	**134.97**	**138.14**	**100.0**
Agriculture, forestry and fishery	1.53	1.90	1.07	0.80	0.56	0.4
Mining	0.24	0.10	1.30	1.23	2.19	1.6
Manufacturing	39.54	35.49	33.51	41.17	35.37	25.6
Electricity, gas and water	2.25	2.15	3.52	4.42	3.52	2.6
Construction	1.56	2.48	2.62	1.49	1.22	0.9
Wholesale and retail trade	12.02	15.87	11.48	9.77	9.05	6.6
Transport, storage and post	4.19	5.09	5.59	4.73	4.53	3.3
Hotels and catering service	0.43	0.37	0.42	0.90	0.97	0.7
Information transmission, computer and software	3.84	8.44	20.92	11.66	14.68	10.6
Financial intermediation	14.97	10.29	7.92	8.70	7.13	5.2
Real estate	28.99	19.66	16.86	22.47	23.47	17.0
Leasing and business services	10.05	16.13	16.74	18.87	22.07	16.0
Scientific research, technical services and geological prospecting	4.53	6.52	6.84	6.81	11.17	8.1
Water conservancy, environment and public facilities	0.43	0.42	0.57	0.47	0.52	0.4
Other	1.68	1.11	1.68	1.46	1.67	1.2

Note: Figures refer to foreign capital actually used.

Source: WTO Secretariat calculations based on data from the National Bureau of Statistics. Viewed at: https://data.stats.gov.cn/english/easyquery.htm?cn=C01.

1.48. China continues to be a significant investor abroad, although annual outward flows have dropped considerably since 2017. The most important destinations are Hong Kong, China; the British Virgin Islands; Singapore; the United States; and Indonesia (Table 1.7). Projects under the BRI play an important role for outward investment. The most important sectors for China's FDI abroad are leasing and business services, manufacturing, financial intermediation, and wholesale and retail trade (Table 1.8).

1.49. According to the authorities, investment under the BRI accounts for some 13% of China's recent outward FDI. It accounts for a wide geographical dispersion of the FDI stock. Investments are mostly concentrated in Central and South East Asia, mainly with a focus on infrastructure projects.

Table 1.7 Outward FDI by main destination, 2015-19

(USD billion)

	2015	2016	2017	2018	2019	
						% of total FDI
Total	**145.67**	**196.15**	**158.29**	**143.04**	**136.91**	**100.0**
Hong Kong, China	89.79	114.23	91.15	86.87	90.55	66.1
British Virgin Islands	1.85	12.29	19.30	7.15	8.68	6.3
Singapore	10.45	3.17	6.32	6.41	4.83	3.5
United States	8.03	16.98	6.43	7.48	3.81	2.8
Indonesia	1.45	1.46	1.68	1.86	2.22	1.6
Australia	3.40	4.19	4.24	1.99	2.09	1.5
Viet Nam	0.56	1.28	0.76	1.15	1.65	1.2
Germany	0.41	2.38	2.72	1.47	1.46	1.1
Thailand	0.41	1.12	1.06	0.74	1.37	1.0
United Kingdom	1.85	1.48	2.07	1.03	1.10	0.8
Japan	0.24	0.34	0.44	0.47	0.67	0.5
Macao, China	1.08	0.82	-1.02	0.81	0.59	0.4
Korea, Republic of	1.32	1.15	0.66	1.03	0.56	0.4
Cayman Islands	10.21	13.52	-6.61	5.47	-4.36	-3.2
Other	14.61	21.73	29.09	19.11	21.68	15.8

Source: WTO Secretariat calculations based on data from the National Bureau of Statistics. Viewed at: https://data.stats.gov.cn/english/easyquery.htm?cn=C01.

Table 1.8 Outward FDI by main sectors, 2015-19

(USD billion)

	2015	2016	2017	2018	2019	
						% of total FDI
Total	**145.67**	**196.15**	**158.29**	**143.04**	**136.91**	**100.0**
Agriculture, forestry and fishery	2.57	3.29	2.51	2.56	2.44	1.8
Mining	11.25	1.93	-3.70	4.63	5.13	3.7
Manufacturing	19.99	29.05	29.51	19.11	20.24	14.8
Electricity, gas and water	2.14	3.54	2.34	4.70	3.87	2.8
Construction	3.74	4.39	6.53	3.62	3.78	2.8
Wholesale and retail trade	19.22	20.89	26.31	12.24	19.47	14.2
Transport, storage and post	2.73	1.68	5.47	5.16	3.88	2.8
Hotels and catering service	0.72	1.63	-0.19	1.35	0.60	0.4
Information transmission, computer and software	6.82	18.66	4.43	5.63	5.48	4.0
Financial intermediation	24.25	14.92	18.79	21.72	19.95	14.6
Real estate	7.79	15.25	6.80	3.07	3.42	2.5
Leasing and business services	36.26	65.78	54.27	50.78	41.88	30.6
Scientific research, technical services and geological prospecting	3.35	4.24	2.39	3.80	3.43	2.5
Water conservancy, environment and public facilities	1.37	0.85	0.22	0.18	0.27	0.2
Other	3.49	10.06	2.62	4.49	3.07	2.2

Source: WTO Secretariat calculations based on data from the National Bureau of Statistics. Viewed at: https://data.stats.gov.cn/english/easyquery.htm?cn=C01.

2 TRADE AND INVESTMENT REGIMES

2.1 General Framework

2.1. China's general legal and institutional framework has remained largely unchanged since the previous Review.[1] China's legislature comprises the National People's Congress (NPC) and its Standing Committee.[2] The State Council (the Central Government) is the executive body and the highest organ of state administration.[3] China's judicial system consists of the Supreme People's Court, local People's Courts at different levels, and special courts dealing with, *inter alia*, intellectual property[4], military, financial, and maritime issues.

2.2. During the review period, China proceeded with the reform of its judicial system, which was initiated in 1999 through a Five-Year Reform Program for People's Courts. The fifth cycle of such reforms was launched in May 2019 to cover the period 2019-23. The main objectives include the enforcement of judicial accountability. In this regard, in December 2018, the Supreme People's Court promulgated the Opinions on the Further and Full Implementation of the Judicial Accountability System; in addition, the Opinions on Deepening the Comprehensive Supportive Reforms of the Judicial Accountability System were issued in July 2020. They aim to enhance the mechanisms of trial supervision and management and the uniform application of law, as well as improving the supportive mechanism for judicial personnel.

2.3. Steps were also taken in recent years to further modernize the judicial specialization for issues related to e-commerce. In addition to the Hangzhou Internet Court, which was established on 18 August 2017, the Beijing Internet Court and the Guangzhou Internet Court were established on 9 September 2018 and 28 September 2018, respectively. They aim to handle 11 types of Internet-related cases, including contracts for financial loans, the purchase of goods, services, online disputes about torts, and copyright infringements. The authorities state that the three Internet Courts had dealt with 248,258 Internet-related cases by end-December 2020.

2.4. In the hierarchy of China's domestic legislation, the Constitution prevails over any other law or statute, followed by laws and administrative regulations (issued by the State Council); local, autonomous, and separate regulations; departmental rules (enacted by ministries at the Central Government level or bodies directly under the State Council exercising regulatory functions); and local rules (enacted by the People's Government at the provincial, autonomous region, or municipal level directly under the State Council and the People's Government of cities with districts or autonomous prefectures).

2.5. In order to regulate actions taken by various public bodies, including local governments, and prevent the introduction of policy measures that eliminate or restrict competition, on 1 June 2016, the State Council published the Opinions on Establishing a Fair Competition Review System in the Development of the Market System in an effort to restrain regional authorities from adopting policies and practices that may impede competition. According to the authorities, since the establishment of the system, all regions and departments have reviewed new policy measures concerning the economic activities of market entities in accordance with the requirements.

2.6. In principle, all trade-related rules formulated by the authorities at all levels must comply with international trade agreements to which China is a party, including the Marrakesh Agreement

[1] WTO document WT/TPR/S/375/Rev.1, 14 September 2018.

[2] The NPC meets in session once a year. The deputies elect the members of its Standing Committee, which has the power to interpret the Constitution and other laws, and enact and amend laws, except for those enacted by the NPC. When the NPC is not in session, the Standing Committee may also exercise the following functions: amend laws enacted by the NPC; review and approve adjustments to the national economic and social development plans or to the state budget; and appoint Ministers. The NPC elects the President and the Vice President of China. The President promulgates the legislation adopted by the NPC or its Standing Committee. In accordance with the Constitution, the President, in pursuance of the decisions of the Standing Committee of the NPC, ratifies or abrogates treaties and important agreements concluded with foreign States. The President appoints the Premier and other members of the State Council, i.e. Vice Premiers, State Councillors, Ministers, the Auditor-General, and the Secretary-General, in line with the decisions of the NPC and its Standing Committee.

[3] Led by the Premier, the State Council is composed of Vice Premiers, State Councillors, Ministers in charge of ministries and Ministers in charge of commissions, the Auditor-General, and the Secretary-General.

[4] Intellectual property courts are established in Beijing, Shanghai, Guangzhou, and Haikou.

Establishing the World Trade Organization and its follow-up agreements, China's accession protocol, and China's Working Party Report.[5] Draft laws and regulations at the ministerial and departmental levels are published online in Chinese for not less than a 30-day period for public comments[6], except when, as per a decision of the State Council, laws and regulations need to be kept confidential. Public comments can be submitted through the Ministry of Justice website.[7] The China Foreign Trade and Cooperation Economic Gazette, issued by the Ministry of Commerce (MOFCOM), publishes China's trade-related laws, regulations, and rules.[8]

2.7. Administrative decisions may be appealed within a statutory time-limit. Appeals can be made to a department at higher level than the one that made the decision. Several independent administrative reconsideration commissions are currently established on a pilot basis.

2.8. Pursuant to the Regulations on the Implementation of the Foreign Investment Law (FIL), MOFCOM established a Complaint Coordination Mechanism for Foreign-invested Enterprises (FIEs) within relevant ministries or departments of the State Council. It coordinates and facilitates the work related to complaints of FIEs at the Central Government level, and it guides and supervises local authorities in their handling of complaints. The Measures for Complaints by Foreign-invested Enterprises further provide that MOFCOM shall be responsible for handling issues in three categories: (i) complaints related to the administrative actions of relevant departments of the State Council, provincial People's Governments, and their staff; (ii) proposals to improve relevant policies and measures by the departments of the State Council and provincial People's Governments; and (iii) complaints with a significant national or international bearing, for which MOFCOM established the National Complaint Centre for FIEs (temporarily administered by the Investment Promotion Agency).

2.2 Trade Policy Framework and Objectives

2.2.1 Institutional framework

2.9. The National Development and Reform Commission (NDRC) oversees China's macroeconomic planning. It is responsible for formulating and implementing strategies for national economic and social development and coordinating major economic operations.[9] The NDRC is also responsible for conducting research and setting objectives and policies on economic reforms, such as those included in the Five-Year Plans for Economic and Social Development. Each year, it submits a plan for national economic and social development to the NPC on behalf of the State Council.

2.10. MOFCOM is mainly responsible for the coordination and implementation of trade-related investment and economic cooperation policies. In particular, regarding domestic and international trade, foreign investment, and international economic cooperation, its responsibilities include: (i) formulating strategies, guidelines, and policies; and (ii) drafting laws, regulations, and departmental rules.[10] Other Ministries involved in trade policy formulation and implementation include those in charge of: agriculture, ecology and environment, finance, industry and information technology, and transportation.

2.11. On 7 March 2018, the NPC approved the Plan to Deepen Reforms of Party and State Institutions. The Plan sought to reorganize existing ministries and agencies that comprise the State Council. In the context of the restructuring, some functions of MOFCOM were transferred to other agencies. For example, the newly established State Administration for Market Regulation (SAMR) assumes responsibility for anti-monopoly law enforcement from the NDRC, MOFCOM, and the former State Administration for Industry and Commerce (SAIC). The SAMR also took over the functions of the Office of the Anti-Monopoly Commission of the State Council and the National Leading Group on

[5] State Council, Guo Ban Fa No. 29, 2014, Notice of the General Office of the State Council on Further Enhancing the Compliance of Trade Policies.

[6] In accordance with Regulations on Procedures of the Rules Formulating, and on the Procedures for the Formulation of Administrative Regulations (amended in December 2017).

[7] Ministry of Justice. Viewed at: http://www.chinalaw.gov.cn.

[8] *China Foreign Trade and Cooperation Economic Gazette*, No. 46, 2015. Viewed at: http://english.mofcom.gov.cn/article/policyrelease/gazette/201509/20150901125925.shtml.

[9] NDRC, *Main Functions of the NDRC*, 17 December 2008. Viewed at: https://en.ndrc.gov.cn/mfndrc_8237/200812/t20081217_1193980.html.

[10] MOFCOM, *Mission*, 7 December 2010. Viewed at: http://english.mofcom.gov.cn/column/mission2010.shtml.

the Fight against IPR Infringement and Counterfeiting, as well as MOFCOM's law enforcement functions concerning the Anti-Monopoly Law. MOFCOM's responsibilities with respect to foreign aid were assigned to the China International Development Cooperation Agency, and its function of administering sugar reserves is now assigned to the National Food and Strategic Reserves Administration. The CBIRC also took over MOFCOM's previous functions of formulating business operation and regulatory rules for pawn shops, financial leasing companies, and commercial factoring enterprises. The supervisory structure of financial services also underwent a significant change during the review period (Section 4.4.1).

2.2.2 Trade policy formulation and objectives

2.12. China's trade policy objectives have remained largely unchanged since the previous Review; China seeks to further liberalize its trade and investment regime to reshape its economy. The 13th Five-Year Plan for Economic and Social Development (2016-20), which was issued in December 2016, lays out objectives to expand trade and increase outbound and inbound investment.[11] Reflecting China's broader industrial and economic goals, the Plan aims to widen market access for foreign investment by, *inter alia,* loosening foreign investment restrictions in various sectors such as manufacturing and finance, as recently reflected in the negative lists for foreign investments (Section 2.4). The 14th Five-Year Plan for Economic and Social Development (2021-25) was adopted by the National People's Congress on 11 March 2021.

2.13. Trade policy objectives are also outlined in sectoral and provincial Five-Year Plans and various Administrative Measures (such as negative lists and catalogues) that provide guidance to the implementation of the overall policies, such as on products that are subject to licences or export duties; industries that can benefit from preferential treatment; and sectors in which investment is encouraged, permitted, or restricted.

2.14. The Government continues to promote its vision to expand international trade, and outward direct investment is considered one way to promote trade. Consequently, the Government continues to proceed with the Belt and Road Initiative (BRI), which aims to, *inter alia*, promote intergovernmental cooperation; improve roads, energy, and information infrastructure; remove trade and investment barriers; deepen financial cooperation; and promote cultural and educational exchanges.

2.15. In November 2019, the State Council issued the Guiding Opinions on Promoting High-quality Trade Development, which reiterate the authorities' intention to promote high-quality trade development through, *inter alia*, innovation in science and technology, improved trade structure, and two-way investments.

2.16. The Pilot Free Trade Zones (PFTZs) programme was adopted as a testing ground for nationwide investment liberalization and streamlined regulations; the authorities consider that the PFTZs play an important role in optimizing China's business environment, and serve to stimulate open development and cooperation of trade and investment. The PFTZs offer preferential policies for the import, handling, manufacturing, and exporting of goods, via, *inter alia*, tax incentives, free flow and exchange of capital, and fast-tracked procedures for investment.

2.17. Since 2013, China has established an increasing number of PFTZs. In 2020, three PFTZs were established in Beijing, Anhui, and Hunan, while the area of the Zhejiang PFTZs was expanded. This brought the total to 21, including the existing 18 PFTZs (in Chongqing, Fujian, Guangdong, Guangxi, Hainan, Hebei, Heilongjiang, Henan, Hubei, Jiangsu, Liaoning, Shaanxi, Shandong, Shanghai, Sichuan, Tianjin, Yunnan and Zhejiang).

2.18. In pursuing its trade policy objectives, China recognizes the leading role of the multilateral trading system (MTS), trade and investment liberalization and facilitation, and the expansion of its regional trade agreements (RTAs), which the authorities view as a complement to the MTS.[12]

[11] NDRC, *The 13th Five-Year Plan for Economic and Social Development of the People's Republic of China (2016-2020)*. Viewed at: https://en.ndrc.gov.cn/policyrelease_8233/201612/P020191101482242850325.pdf.

[12] WTO document WT/TPR/G/375, 13 July 2018.

2.19. During the review period, as reflected in several measures, China attached great importance to addressing climate change issues. The authorities indicate that the country implements an active national strategy on climate change and has achieved positive results through a series of measures, such as industrial restructuring, energy structure optimization, energy conservation and efficiency improvement, the establishment of a carbon emissions trading market, and expanding the forest carbon sink. They also expect that China will reach a peak in carbon dioxide emissions before 2030 and carbon neutrality before 2060.

2.3 Trade Agreements and Arrangements

2.3.1 WTO

2.20. China has been a WTO Member since 11 December 2001. At the Trade Policy Review Body, its trade policies have been reviewed seven times; the previous Review took place in July 2018. China is an observer to the Committee on Government Procurement and has been negotiating its accession to the Plurilateral Agreement on Government Procurement (GPA) since 2007. On 21 October 2019, China introduced to the parties to the Agreement its sixth revised market access offer in the context of its negotiations to join the GPA (Section 3.3.6). China is an observer to the Plurilateral Agreement on Trade in Civil Aircraft. China is also a participant in the Information Technology Agreement.

2.21. The authorities state that China attaches great importance to and supports the work related to e-commerce within the WTO framework; it joined the Friends of e-Commerce for Development (FED) in September 2017. China also participates in the Joint Statement Initiatives on electronic commerce; investment facilitation for development; micro, small, and medium-sized enterprises; and domestic regulation in services.

2.22. During the review period, China submitted various notifications to the WTO (Table A2.1). Nevertheless, some notifications, including those on state trading enterprises and domestic support, remain outstanding. According to the authorities, China is preparing new notifications.

2.23. Under the WTO dispute settlement system, between 2018 and 13 April 2021, China was involved in 10 disputes as a complainant and 11 as a respondent (Table A2.2). China was involved as a third party in 38 disputes brought to the Dispute Settlement Body during the same period.

2.3.2 Regional and preferential agreements

2.24. The authorities state that China is committed to creating a global network of RTAs to further consolidate economic and trade ties between the country and its trading partners and reinforce two-way trade and investment; such efforts have accelerated the pace to open relevant industries and enhanced the competitiveness of their respective enterprises. China considers its network of RTAs as means to complement the MTS and further promote free trade rules.

2.25. By the end of February 2021, China had signed 19 RTAs with 26 countries and territories.[13] On 12 November 2018, the Protocol to Update the Free Trade Agreement between China and Singapore was signed; it entered into force on 16 October 2019. The Protocol revised the original agreement in six areas (i.e. the rules of origin, customs procedures and trade facilitation, trade remedies, trade in services, investment, and economic cooperation); furthermore, it added e-commerce, competition policy, and environment to the Agreement.

2.26. On 28 April 2019, the Protocol to Update the Free Trade Agreement between China and Pakistan was signed; it entered into force on 1 December 2019. It made revisions to the original agreement in terms of, *inter alia*, market access and the schedule of tariff concessions of trade in goods, rules of origin, trade remedy, and investment; it also added a chapter on customs cooperation. The tariff reduction arrangement was implemented on 1 January 2020. It is set to increase the proportion of bilateral duty-free lines to 75% (from the original 35%). Both sides immediately eliminated tariffs on 45% of the tariff lines, and China committed to gradually eliminate

[13] MOFCOM, *China FTA Network*. Viewed at: http://fta.mofcom.gov.cn/list/rcepen/enrcepnews/1/encateinfo.html.

tariffs on 15% of the tariff lines in 5 years and another 15% in 10 years. In addition, tariff rates were cut by 20% on other products that account for 5% of China's tariff lines.

2.27. The China-Mauritius Free Trade Agreement was signed on 17 October 2019; it entered into force on 1 January 2021. It covers topics such as trade in goods, trade in services, investment, and economic cooperation. China and Mauritius pledged to eventually reach zero tariffs on 96.3% and 94.2% of traded items, respectively. As for China, the duties applicable on 87.6% of these tariff lines will be eliminated with immediate effect upon the entry into force, while the remaining tariffs will be eliminated over a seven-year period. The Agreement also covers more than 40 services sectors, including financial, telecommunications, ICT, professional, construction, and health. The two sides are committed to liberalize more than 100 subsectors.[14]

2.28. The China-Cambodia Free Trade Agreement was signed on 12 October 2020. It has not yet entered into force. The Agreement includes provisions on trade in goods, rules of origin, customs procedures and trade facilitation, sanitary and phytosanitary measures, trade in services, investment cooperation, cooperation under the BRI, e-commerce, economic and technical cooperation, transparency, administrative and institutional provisions, and dispute settlement. It has annexes on Schedules of Specific Commitments on trade in services, in which the two sides are committed to liberalize some of their services sectors. China and Cambodia pledged to eventually eliminate tariffs on 97.53% and 90% of the tariff lines, respectively. In particular, the duties applicable on 97.44% of tariff lines from China, and 87.5% of tariff lines from Cambodia, will be eliminated upon the entry into force of the Agreement, while the remaining tariffs on 0.09% and 2.5% of the tariff lines will be eliminated over 5 to 20 years.

2.29. On 15 November 2020, China and 14 other countries signed the Regional Comprehensive Economic Partnership (RCEP) Agreement.[15] The Agreement has provisions on trade in goods; rules of origin; customs procedures and trade facilitation; sanitary and phytosanitary measures; standards, technical regulations, and conformity assessment procedures; trade remedies; trade in services; temporary movement of natural persons; investment; intellectual property; e-commerce; competition; small and medium-sized enterprises (SMEs); economic and technical cooperation; government procurement; institutional provisions; and dispute settlement. It has four market access annexes (schedules of tariff commitments, schedules of specific commitments for services, schedules of reservations and non-conforming measures for services and investment, and schedules of specific commitments on temporary movement of natural persons).[16] In general, tariffs on 90% of tariff lines will be eliminated; regarding trade in services, some participating signatories made commitments in over 100 sectors/subsectors. In addition, participating countries adopt a negative list approach to make commitments on investment in non-services sectors. The RCEP Agreement will take effect 60 days after its ratification by at least six Association of Southeast Asian Nations (ASEAN) and three non-ASEAN signatories.

2.30. On 26 January 2021, the Protocol to Upgrade the Free Trade Agreement between China and New Zealand was signed; it has not yet entered into force. The Upgrade Protocol revised the original agreement in five areas (rules of origin, customs procedures and trade facilitation, technical barriers to trade, trade in services, and cooperation); furthermore, it added e-commerce, government procurement, competition policy, and environment and trade chapters to the Agreement.

2.31. During the review period, China was negotiating the following agreements: the China-Japan-Republic of Korea FTA, the China-Gulf Co-operation Council FTA, the China-Sri Lanka FTA, the China-Israel FTA, the China-Norway FTA, the China-Republic of Moldova FTA, the China-Panama FTA, the China-Palestine FTA, and the Agreement on Trade in Services and Investments between China and Belarus. In addition, the country is involved in subsequent or upgrading negotiations with the Republic of Korea, Peru, and Singapore.

[14] MOFCOM, *China FTA Network: China and Mauritius Sign Free Trade Agreement*, 18 October 2019. Viewed at: http://fta.mofcom.gov.cn/enarticle/chinamauritiusen/enmauritius/201910/41658_1.html.

[15] MOFCOM, *Regional Comprehensive Economic Partnership (RCEP)*. Viewed at: http://fta.mofcom.gov.cn/topic/enperu_recp.shtml.

[16] MOFCOM, "The Leading Official of the Department of International Trade and Economic Affairs of MOFCOM Expounded on the Regional Comprehensive Economic Partnership (RCEP) Agreement (I)", press release, 16 November 2020. Viewed at: http://english.mofcom.gov.cn/article/newsrelease/policyreleasing/202011/20201103017259.shtml.

2.32. The authorities indicate that on 11 December 2018, a Memorandum of Understanding between MOFCOM and the Ministry of the Economic Development of the Russian Federation was signed on a cooperation and development plan for the Russian Federation's Far East Region[17], a policy document that aims to guide cooperation between the two sides and serve as a guiding document for Chinese enterprises to invest in the region.

2.33. On 15 January 2020, China and the United States signed the China-United States Phase 1 Economic and Trade Agreement.[18] It contains provisions related to, *inter alia*, intellectual property, technology transfer, trade in food and agricultural products, and financial services.

2.3.3 Other agreements and arrangements

2.34. China continues to grant unilateral preferences to least developed countries (LDCs). According to the authorities, since 2015, it has implemented zero tariffs on 97% of taxable items for LDCs that have established diplomatic relations with China and completed the exchange of diplomatic notes. As at end-August 2020, 39 LDCs had been given unilateral preferences. Bangladesh, Burkina Faso, and Kiribati were added to the list of beneficiaries on 1 July 2020, 1 September 2018, and 1 August 2020, respectively. Since 1 January 2020, Equatorial Guinea has been excluded from the list, as it "graduated" from the LDC category in June 2017.

2.4 Investment Regime

2.4.1 Regulatory framework and market access

2.35. On 15 March 2019, China adopted the FIL, which aims to improve the business environment for foreign investors and ensure that FIEs participate in market competition on an equal basis with their domestic counterparts, in accordance with the law. On 31 December 2019, the State Council promulgated the Implementing Regulations of the FIL. Both the FIL and its Implementing Regulations entered into force on 1 January 2020. Subsequently, the previous laws and implementing regulations for foreign investors and FIEs, i.e. the Law on Sino-Foreign Equity Joint Ventures, the Law on Sino-Foreign Cooperative Joint Ventures, and the Law on Foreign-Invested Enterprises, as well as their administrative regulations and rules, were repealed.

2.36. The FIL grants national treatment to foreign investments in industries outside the Special Administrative Measures on Access to Foreign Investment (National Negative List) through the "pre-establishment national treatment and negative list management system", under which foreign investors and their investments are to be granted treatment no less favourable than that granted to domestic investors and their investments at the establishment stage (FIL, Article 4). Article 28 of the FIL stipulates that "for industries outside of the National Negative List, the investment administration shall be conducted under the principle of equal treatment to domestic and foreign investment". Furthermore, the FIL's Implementing Regulations require that FIEs and wholly Chinese-invested enterprises be equally treated in such aspects as government funding arrangements, land supply, tax and fee reduction and exemption, qualification licensing, development of standards, project applications, and human resource policies.

2.37. The authorities state that the system was developed after being implemented in PFTZs and was expanded nationwide in 2016, followed by the adoption of the National Negative List in 2017.

2.38. The FIL and its Implementing Regulations also accord domestic companies and FIEs equal treatment regarding access to government funding arrangements, land supply, tax abatement or exemption, qualification licensing, standard setting, project application, or human resource policies. In addition, FIEs are accorded equal treatment under the FIL in, *inter alia*, participation in government procurement, protection of intellectual property, and licensing formalities. Article 10 of the FIL provides that foreign companies may comment on new legislation and administrative rules concerning foreign investment.

2.39. Various investment protection measures exist under the FIL. In a case where the State needs to expropriate a foreign investor to protect the public interest, such expropriation shall be made

[17] Sino-Russian Cooperation and Development Plan in Russia's Far East Region (2018-2024).
[18] MOFCOM. Viewed at: http://www.mofcom.gov.cn/article/ae/ai/202001/20200102930845.shtml.

pursuant to statutory procedures and in a non-discriminatory manner, with compensation made based on the market value of the expropriated investment. Local governments must comply with policy commitments[19] made to, and perform various contracts concluded with, foreign investors in accordance with the law. If it becomes necessary to adjust those commitments or agreements due to the public interest, foreign investors shall be compensated for losses incurred.

2.40. With respect to cross-border remittances, in accordance with the FIL, a foreign investor may freely transfer inward and outward, in CNY or foreign currencies, *inter alia*, its capital contributions, profit, capital gains, proceeds from disposition of assets, royalties from IPRs, lawfully obtained compensation or indemnity amounts, and proceeds from liquidation. Under the FIL, no entity or individual shall illegally restrict, *inter alia*, the type of currencies, amount, or frequency of such remittances.

2.41. Under the FIL, legal liability shall be pursued in case of any IPR infringement. In addition, the FIL prohibits government officials from forcing foreign investors to transfer their technology by administrative means; it also requires the authorities to keep confidential any trade secret of foreign investors that they may become aware of during the performance of their duties.[20]

2.42. Under the FIL, FDI in China is also guided by the National Negative List and the Catalogue of Encouraged Industries for Foreign Investment (Encouraged FDI Catalogue), which lists industries where FDI is encouraged. Industries that are listed in the Encouraged FDI Catalogue are eligible for preferential measures, such as discounted land prices and tax incentives.

2.43. For restricted industries, foreign investors must meet the specific conditions, such as shareholding limits, stipulated by the National Negative List. Foreign investors might need prior approval from the Government to invest in restricted markets. For industries not on the National Negative List, foreign investors shall receive treatment equal to their domestic counterparts when investing.

2.44. In June 2018, the National Negative List was issued and the 2017 version of the Catalogue of Industries for Guiding Foreign Investment was repealed. Since then, the National Negative List has been revised every year. Compared with the 2017 version, the 2020 National Negative List introduced new opening-up measures in such industries as seeds, oil and gas, mineral resources, ship and aircraft manufacturing, infrastructure, finance, value-added telecommunications, and culture.

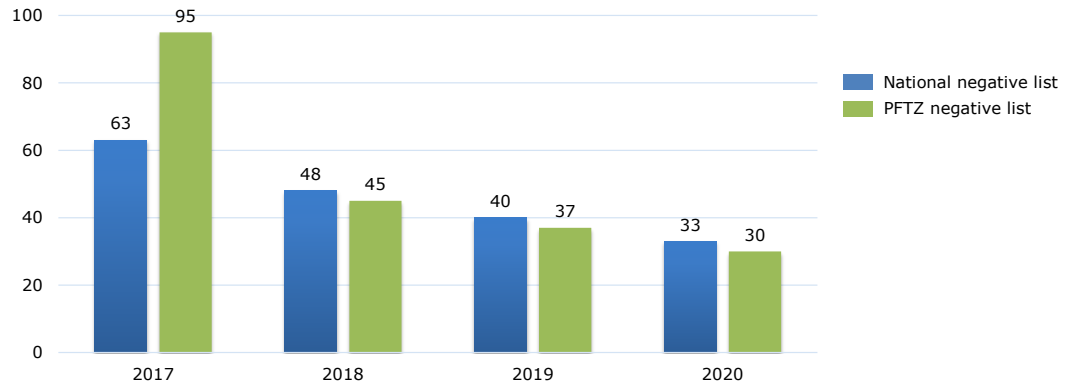
2.45. On 23 June 2020, the current version of the National Negative List was issued by the NDRC and MOFCOM to replace the 2019 version.[21] It further reduced the number of restrictive measures, which continues to decrease (from 63 in 2017 to 33 in 2020) (Chart 2.1). The sectors liberalized concern services, manufacturing, and agriculture. For example, in the financial sector, the caps on foreign ownership of securities companies, securities investment fund management companies, futures companies, and life insurance companies were lifted; in manufacturing, the restrictions on foreign investment in the smelting and processing of radioactive minerals, as well as on the production of nuclear fuel, were eliminated. In agriculture, the selection and breeding of new wheat varieties and the production of seeds are no longer required to be controlled by the domestic party. The main differences between the 2018, 2019, and 2020 National Negative Lists are highlighted in Box 2.1 and Box 2.2. Table A2.3 and Table A2.4 provide the lists of restricted and prohibited measures, respectively, in 2019 and/or 2020.

[19] Article 27 of the Implementing Regulations now defines "policy commitments" as any written commitment made by a local People's Government at any level or its relevant departments to foreign investors and FIEs with respect to supporting policies, preferential measures, and other means of facilitating foreign investment.

[20] The authorities state that the Government has never made, through existing laws, regulations, or policies, technology transfer a precondition for inward FDI, or issued any laws, regulations, or policies obligating investors to transfer their technologies.

[21] NDRC. Viewed at: https://www.ndrc.gov.cn/xxgk/zcfb/fzggwl/202006/P020200624549035288187.pdf.

Chart 2.1 Number of restrictive measures in China's Special Administrative Measures determining access to foreign investment, 2017-20



Source: Special Administrative Measures on Access to Foreign Investment and the Free Trade Zone Special Administrative Measures on Access to Foreign Investment (2017, 2018, 2019, and 2020 editions).

Box 2.1 Main changes in the 2019 National Negative List for foreign investments and the 2019 Encouraged Catalogue

Encouraged category

Activities added

Manufacturing

1. Electronic equipment such as 5G equipment (mobile phones, cars, drones, etc.) and their core components, etchers for integrated circuits, chip packing equipment, cloud computing equipment, etc.
2. Equipment such as industrial robots, key components of new energy vehicles (NEVs), smart vehicles, etc.
3. New raw materials for vaccines, cell therapy medicine, large-scale cell culture products, etc.
4. New materials for aerospace, monocrystalline silicon, and large wafers, etc.

Services

1. Development of cold-chain logistics, e-commerce, construction and operation of special railway lines, etc.
2. Artificial intelligence technology, clean production, carbon capture, and circular economy
3. Construction and management of ecological protection projects
4. Medical institution services
5. Tourism infrastructure construction, and tourism information services

Encouraged areas of investment

1. Yunnan, Hunan, and Inner Mongolia: Agriculture products processing, textile and clothing, furniture manufacturing, etc.
2. Anhui, Sichuan, and Shanxi: Integrated circuits, tablet computers, communication terminals, etc.
3. Henan and Hunan: Logistics storage facilities, car filling stations, etc.

Restricted category

Activities removed

Mining

1. Exploration and development of oil and natural gas (excluding coal-bed methane, oil sands, shale gas, etc.) – limited to joint venture and cooperation

Energy and water supply

1. Construction and operation of gas and heat in cities with a population of more than 500,000 – requirement that the Chinese party shall hold the controlling majority of shares

Telecommunications

1. Multi-party communication, store-and-forward, and call centre businesses – requirement that foreign investment should not exceed 50%

Transportation

1. Domestic shipping agent business – requirement that the Chinese party shall hold the controlling majority of shares

Culture, sports, and entertainment

1. Performance brokerage institutions – requirement that the Chinese party shall hold the controlling majority of shares
2. Construction and operation of movie theatres – requirement that the Chinese party shall hold the controlling majority of shares

Prohibited category

Activities removed
Mining
1. Exploration and mining of molybdenum, tin, antimony, and fluorite

Manufacturing
1. Production of Xuan paper and ink ingot

Environment
1. Exploitation of wildlife resources originally produced in China and protected by the country

Activities added
Mining
1. Exploration, mining and mineral processing of rare earths, radioactive minerals, and tungsten

Source: National Negative List (2019) and the Encouraged Catalogue (2019).

Box 2.2 Main changes in the 2020 National Negative List for foreign investments and the 2020 Encouraged Catalogue

Encouraged category

Activities added (National Catalogue)
Advanced manufacturing
1. High-end manufacturing – Integrated circuit packaging and test equipment manufacturing, laser projection equipment, ultra-high-definition TV (UHD TV), ventilator, extracorporeal membrane oxygenation, artificial intelligence auxiliar medical equipment, hardware manufacturing related to L3/L4/L5 autopilot, etc.
2. New materials – High-purity electron-grade hydrofluoric acid, hydrogen fluoride, special glass fibre, polarizing film, diffusion film, photomask, polyvinyl polyamine, high-performance fibre, environmental biofilm, new pesticides, and other items
3. Key components – High-pressure vacuum element, special valve, special bearing, special glass, wheel speed sensor, etc.
4. Environmental protection – Construction and equipment manufacturing of receiving and disposing facilities for marine pollutants at ports, construction and equipment manufacturing of emergency facilities for hazardous chemicals and oil products at ports, etc.
5. Pharmaceutical – Production of vaccines against AIDS, hepatitis C, cervical cancer, malaria, hand-foot-and-mouth disease, etc.

Production-oriented services
1. Research and development (R&D) and design – R&D of 5G mobile communication technology, block chain technology, sewage treatment facilities design, etc.
2. Commercial services – High-end equipment maintenance, transformation, and integration of digital production line, industrial service network platform, etc.
3. Modern logistics – Bulk commodity import and export distribution centre, community logistics and distribution system, etc.
4. Information services – Online education, online healthcare, online office, etc.

Activities added (Regional Catalogue)
1. Heilongjiang and Yunnan: Agricultural product processing, tourism development, etc.
2. Henan, Shaanxi, and Guangxi: Medical equipment, epidemic prevention and protection articles, active pharmaceutical ingredient (API) production, etc.
3. Hubei, Sichuan, and Chongqing: Semiconductor materials, graphene, industrial ceramics, etc.
4. Anhui and Shanxi: vocational school, etc.
5. Hainan: Yacht design and manufacturing, financial leasing services, R&D, design, and parts manufacturing of NEVs, etc.

Restricted category

Activities removed

Agriculture
1. Selection and breeding of new wheat varieties and production of seeds – requirement that the Chinese party shall hold the controlling majority of shares (a share ratio of not less than 34%)

Manufacturing
1. Manufacturing of commercial vehicles – requirement that foreign investment should not exceed 50%

Energy and water supply
1. Construction and operation of city water drainage network for a city with a population of more than 500,000 – requirement that the Chinese party shall hold the controlling majority of shares

Financial services
1. Foreign investment in life insurance, futures, and securities companies – requirement that foreign investment should not exceed 51%

Leasing and business services
1. Market research projects – limited to cooperative joint ventures

Health and social work
1. Investment in medical institutions – limited to cooperative joint ventures

Prohibited category

Activities removed

Scientific research and technical services
1. Investment in geodetic measurement, marine mapping, aerial photography mapping, ground movement measurement, administrative boundary mapping, topographic maps, maps of world's state regions, maps of national administrative regions, maps of provinces below administrative regions, national maps for educational purposes, local maps for educational purposes, true three-dimensional maps and electronic navigation maps, regional geological mapping, mineral geology, geophysics, geochemistry, hydrogeology, environmental geology, geological disasters, remote sensing geology and other mapping and measurements – prohibition lifted for mining right owners in carrying out their work within the scope of their mining rights

Transportation, warehousing, and mail services
1. Investment in air traffic control

Manufacturing
1. Investment in smelting and processing of radioactive minerals, as well as in production of nuclear fuel

Activities added

Transportation, warehousing, and mail services
1. Construction and operation of airport towers

Source: National Negative List (2020) and the Encouraged Catalogue (2020).

2.46. In 2018, the NDRC and MOFCOM jointly issued the Market Access Negative List, which was implemented nationwide. It listed industries that are prohibited or subject to licensing for investment and operation within China. According to the authorities, for industries not on the List, market participants of any kind may enter in a lawful and equal manner. It is a common negative list that applies equally to market participants of any kind, including state-owned and private enterprises, domestic-invested enterprises, and FIEs, as well as large enterprises and SMEs. It aims to further open up the economy and provide a level playing field for market participants.[22] The most recent version was issued in 2020; it contains 123 items (down from 151 in the 2018 version and 131 in the 2019 version) that are banned to non-state companies (both domestic and foreign-owned) or require government approval for entry. While the National Negative List applies only to foreign investors, the Market Access Negative List applies to both domestic and foreign investors. When investing in China, a foreign investor must first meet the requirements of the Negative List for the Access of Foreign Investments, and then those of the Market Access Negative List.

2.47. The 2020 edition of the Catalogue of Encouraged Industries for Foreign Investment, which replaced the 2019 edition, contains two sections: one national and one regional for 22 provinces and municipalities located in Central and Western China.[23] The national section of the 2020 Encouraged Catalogue contains 480 industries. Compared with the 2019 Catalogue, 65 items were added, and 50 were revised. The main changes in the 2019 and 2020 Encouraged Catalogues' national section are summarized in Box 2.1 and Box 2.2. The regional section of the 2020 Encouraged Catalogue contains 755 items, with 62 items added and 38 revised, compared with the 2019 edition.

2.48. FDI in the PFTZs is guided by a different negative list. The current one is the Special Administrative Measures for Foreign Investment Access to Pilot Free Trade Zones (2020 PFTZ Negative List). The 2020 PFTZ Negative List provides an outline of sectors in which foreign investment is restricted or prohibited in PFTZs. For all industries not listed in this document, foreign

[22] China started its Market Access Negative List Scheme, on a pilot basis, in March 2016 via the Market Access Negative List (Trial Edition). The pilot programme listed 328 items and covered the provinces of Shanghai, Guangdong, Tianjin, and Fujian. The trial was subsequently expanded in 2017 to cover 15 provinces.

[23] The regional section covers Anhui, Chongqing, Gansu, Guangxi, Guizhou, Heilongjiang, Hainan, Henan, Hubei, Hunan, Inner Mongolia, Jiangxi, Jilin, Liaoning, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Tibet, Xinjiang, and Yunnan.

investors will receive the same treatment as that for domestic companies with regard to the establishment and approval requirements and process.

2.49. The 2020 PFTZ Negative List, issued on 23 June 2020 and entered into force on 23 July 2020, reduced the number of restrictive measures from 95 in 2017 to 30 in 2020 (Chart 2.1).[24]

2.50. According to the authorities, some administrative regulations in the PFTZs were temporarily adjusted during the review period.[25] On 26 October 2019, the Standing Committee of the NPC authorized the State Council to temporarily adjust the application of relevant regulations of the Foreign Trade Law, the Road Traffic Safety Law, the Fire Prevention Law, the Food Safety Law, the Customs Law, and the Seed Law in PFTZs for three years. On 15 January 2020, the State Council decided to temporarily adjust and implement the relevant provisions of the Regulations on the Administration of Commercial Performances, the Regulations on the Administration of Foreign-Invested Telecommunications Enterprises, and the Regulations on the Administration of the Printing Industry in PFTZs (Guo Han No. 8, 2020). On 29 April 2020, the Standing Committee of the NPC authorized the State Council to temporarily adjust the application of the relevant provisions of the Land Administration Law, the Seed Law, and the Maritime Law in the China (Hainan) PFTZ until 31 December 2024. On 18 June 2020, the State Council decided to temporarily adjust and implement the Regulations on Customs Affairs Guarantees, the Regulations on Import and Export Tariffs, the Regulations on International Maritime Transportation, the Regulations on the Inspection of Ships and Offshore Facilities, and the Regulations on the Administration of Domestic Water Transport, until 31 December 2024.

2.51. Some of China's policies also reflect the country's efforts to phase out industries considered to be heavily polluting. These efforts are documented in the Catalogue for Guiding Industry Restructuring, which was last updated in October 2019, entered into force on 1 January 2020, and superseded the 2011 version.[26] The Catalogue consists of three categories – "encouraged", "restricted", and "obsolete" industries (industries that conform to the relevant laws, regulations, and policies of the State are "permitted", but are not listed in the Catalogue). It lists 821 encouraged items, 215 restricted items, and 441 items that will be phased out. Encouraged items shall be examined, approved, or filed in accordance with relevant regulations. Restricted items shall not be newly built, and the existing production capacity is allowed to be upgraded within a certain period of time. Items to be phased out shall be prohibited from investment and shall be phased out within the prescribed time-limit. In principle, this provision applies to all types of enterprises in China.

2.4.2 Examination and approval procedures

2.52. Foreign investments are not allowed in prohibited industries included in either the PFTZ or the National Negative List. Regarding foreign investment in a restricted industry included in either the PFTZ or the National Negative List, investors must comply with the required administrative measures, such as those for equity shareholding and qualifications for senior management officers. Under the regime, the market regulation authority shall conduct a formal examination of relevant application materials. Where a foreign investor or FIE invests in any sector not specified in either the PFTZ or the National Negative List, registration (record-filing) shall be conducted under the principle of equal treatment for domestic and foreign investments. For investments in a sector that is included in a negative list and subject to restrictions on the proportion of contribution and the nationality of the legal representative (primary person in charge), the registration shall be conducted in accordance with the law.

2.53. Until 2019, under the examination and approval system, foreign investors who invest in restricted areas could have their companies registered at the relevant market regulatory authority, only after being approved by MOFCOM or relevant industrial administrative departments. On 1 January 2020, the FIL and its Implementing Regulations removed the requirement of approval by the commercial and industrial authorities. Instead, new FIEs must be registered directly with the State Council's administration of market regulation, or the administrations for market regulation of

[24] The number of prohibited or restricted items in the PFTZ Negative List was 190 in 2013.

[25] Temporarily adjusted administrative regulations will be re-adjusted as appropriate based on the results of related reforms.

[26] State Council, *The National Development and Reform Commission Revised and Issued the "Industrial Structure Adjustment Guidance Catalogue (2019)*". Viewed at: http://www.gov.cn/xinwen/2019-11/06/content_5449193.htm.

the local People's Government authorized by the State Council in accordance with the FIL. Investment in industries and fields that require a licence in accordance with the law shall go through the relevant licensing procedures.

2.54. A foreign investor or FIE shall submit investment information to the commerce authority through the enterprise registration system. Investment information accessible via the interdepartmental information-sharing system shall not be required to be submitted separately to a different authority. The authorities state that the contents and scope of foreign investment information reporting shall be determined by the principle of real necessity.[27] For the submission of annual reports, instead of preparing three different reports, foreign investors or FIEs shall combine specific information required by MOFCOM and the State Administration of Foreign Exchange (SAFE) into a single report prepared for the SAMR.[28] The reporting system applies to FIEs and foreign-invested partnerships. The reporting requirements cover information with respect to the establishment of and changes to FIEs and their subsidiaries, as well as annual reporting. For the sectors not specified in the National Negative List, the registration requirements are the same as those for domestic enterprises. The business forms, structures, and rules of activities of companies shall be governed by the Company Law, the Partnership Law, and other laws. The FIL and the Implementing Regulations provide for an interim period of five years (until 31 December 2024) for FIEs to adapt to the new legal requirements and to implement relevant corporate changes.

2.55. Foreign-invested projects (FIPs) involving fixed assets investment are subject to the general filing system and limited approval system.[29] The authorities note that in February 2021, about 99% of FIPs were subject to the informative filing system. The system did not undergo a substantial change during the review period. Projects subject to verification (approval) are those listed in the Catalogue of Investment Projects Subject to Government Approval (2016), while those not included in it are subject to record-filing. The approval standards are based on several core criteria, including laws and regulations; the development plan; market access conditions; and industrial, land, and environmental policies. The authorities indicated that FIP applications are generally approved as long as they have no negative impact on national security, the environment, or public interest, and they comply with the relevant laws, regulations, and Catalogues, and the national development plans and industrial policies.

2.56. The Catalogue of Investment Projects Subject to Government Approval (2016) indicates in which instances FIPs are subject to approval and the authorities in charge of undertaking the procedure. Depending on the amount invested, approval is granted by various agencies listed in the Catalogue. Investment projects valued at USD 300 million or more in the restricted industries require approval from the NDRC, and they are submitted to the State Council for record-filing, provided that the total investment amounts to at least USD 2 billion. Provincial governments may approve restricted projects funded by foreign investment of up to USD 300 million.

2.57. The Catalogue also lists specific projects that require the approval of the Government for both domestic and foreign enterprises in such areas as agriculture, energy, transportation, information technology, raw materials, manufacturing of machinery, light manufacturing, high and new technology, and construction in urban areas.

2.58. In the case of projects involving "serious" overcapacity, the approval process is outlined in the Guiding Opinions on Resolving Serious Production Overcapacity Conflicts, Guo Fa No. 41, 2013. In accordance with requirements of existing policies, projects designed to expand capacity in any of these sectors are strictly prohibited.

2.59. Pursuant to the Circular on the Establishment of a System for Security Review of Acquisition of Domestic Enterprises by Foreign Investors, foreign investments in Chinese domestic enterprises might be subject to national security review if the FDI is deemed to have an influence on national security. It applies only to certain types of foreign M&A transactions. The Circular provides for the

[27] On 31 December 2019, MOFCOM and the SAMR issued the Measures for Reporting of Information on Foreign Investment, followed by the Notice on Matters Concerning the Reporting of Information on Foreign Investment, a supporting document released by MOFCOM. Both regulations took effect on 1 January 2020.

[28] On 16 December 2019, MOFCOM, the SAMR, and SAFE jointly issued the Notice on Completing Annual Reporting "Multiple Reports in One" Reform Related Work.

[29] As regulated by the Administrative Measures for the Approval and Record-Filing of Foreign-Invested Projects (FIPs), NDRC Order No. 12, 2014.

scope, content, working mechanism, and procedures for the M&A security review, and it creates a unified and standardized security review system for M&A activities conducted by foreign investors. The FIL and its Implementing Regulations contain provisions on national security review. In April 2019, the NDRC issued Announcement No. 4, 2019, clarifying that the application materials for the security review of foreign investment shall be received by the NDRC Government Affairs Service Hall. On 19 December 2020, the NDRC and MOFCOM issued the Measures for the Security Review of Foreign Investment, further clarifying the review authorities, scope, and procedures, which aimed at improving the standardization, accuracy, and transparency of security review. The Measures came into force on 18 January 2021.

2.60. The document containing Trial Measures for the National Security Review of Foreign Investment in Pilot Free Trade Zones (Guo Ban Fa No. 24, 2015) was published in 2015 to explore and improve the system for national security review of foreign investments.[30] It continues to govern the security review of foreign investment in PFTZs, and its scope of application is wider than the above-mentioned review system. Under the Measures, investments by foreign companies are reviewed if they involve businesses related to the military fields, key agricultural products, energy, infrastructure, transportation, culture, information technology, and equipment manufacturing that relate to national security. The review evaluates the influence of foreign investment on national security, economic stability, social order, morality, Internet safety, and the development of key technology concerning state security. A joint committee with representatives from the NDRC, MOFCOM, and other agencies is in charge of conducting the review.

2.61. The authorities state that the SAMR has been working with relevant ministries and agencies to shorten the time for the enterprise registration process and streamline the procedures. The SAMR has provided guidance for relevant local governmental departments in the construction of a unified online service platform for enterprise establishment. Enterprise registration, official seal making, invoice application, and purchase of tax control equipment can be completed online by filling out one single form. The authorities indicate that it takes less than five working days to establish an enterprise in China.

2.4.3 Incentives to foreign direct investments

2.62. China offers various tax incentives to FIEs to promote sectors deemed beneficial to the development of its economy. Most equipment imported to be used in projects in sectors listed in the Catalogue of Encouraged Industries may benefit from customs duty exemptions. Goods listed in the Catalogue of Products Imported for Foreign Investment Projects and Not Eligible for Tax Exemption and in the Catalogue of Imported Major Technical Equipment and Products Not Eligible for Tax Exemption (last revised in 2019 and entered into force on 1 January 2020) are excluded from this treatment.

2.63. In September 2018, the Ministry of Finance, the State Taxation Administration, the NDRC, and MOFCOM jointly issued the Notice on Widening the Scope of Application of Temporary Waiver for Withholding Income Tax for Overseas Investors Using Distributed Profits for Direct Investments (Cai Shui No. 102, 2018). According to the Notice, the scope of application of the favourable tax policy put in place in 2017 (Cai Shui No. 88, 2017) was expanded from encouraged FIPs to all non-prohibited FIPs and areas. Under the Notice, profits derived by foreign investors from resident companies in China are entitled to a tax deferral incentive and will not trigger withholding tax if the investors reinvest the profits in any non-prohibited FIPs.

2.64. Until 2019, projects in sectors listed in the Catalogue of Priority Industries for Foreign Investment in the Central-Western Regions of China (Central-Western Regions Catalogue) could benefit from customs duty exemptions on the importation of equipment within the scope stipulated by relevant policies. On 30 June 2019, the Government combined the encouraged category of the Catalogue for the Guidance of Foreign Investment Industries with the Central-Western Regions Catalogue, and accordingly issued a unified Catalogue of Encouraged Industries for Foreign Investment.

[30] State Council, *Notice of the General Office of the State Council on Issuing the Trial Measures for the National Security Review of Foreign Investment in Pilot Free Trade Zones*. Viewed at: http://www.gov.cn/zhengce/content/2015-04/20/content_9629.htm.

2.65. Enterprises may enjoy a reduced enterprise income tax rate of 15%, provided that they meet certain conditions and engage in encouraged industries in certain areas.

2.66. Foreign investment is encouraged in high-tech enterprises and R&D. When importing R&D equipment or procuring it domestically, "qualified" domestic and foreign R&D centres can apply for import duty, VAT, and consumption tax exemption, and a VAT refund for domestic equipment.[31]

2.67. The following region-specific preferential tax regimes (establishing reduced rates for the beneficiaries) were extended or initiated during the review period: the preferential policies for corporate income tax in the Large-scale Development in the Western Region[32]; the preferential income tax policy of Hainan Free Trade Port[33]; individual income tax incentives in the Guangdong-Hong Kong, China-Macao, China Greater Bay Area.[34] Furthermore, some tourism industry projects were added to the catalogue of preferential corporate income tax in Hengqin New Area.[35]

2.68. As a response to the COVID-19 pandemic, several relief measures were taken or announced for foreign investors. For example, all export tax rebates must be made in full without delay except for energy-intensive and polluting products. In addition, the measures provide that China will work to shorten the negative list on foreign investment and expand the catalogue of industries where foreign investment is encouraged, encourage financial institutions to increase foreign trade loans to cope with the impact of the pandemic, and encourage commercial insurance companies to offer short-term export credit insurance and lower premium rates. Under the measures, recent tax and fee relief policies designed to help companies in difficulty should equally apply to both domestic enterprises and FIEs.

2.69. On 9 March 2020, the NDRC issued the Circular on Further Deepening the Reform regarding Foreign Investment Projects Responding to the COVID-19 Pandemic (NDRC Foreign Investment Announcement No. 343, 2020). The Circular includes a number of measures, such as simplifying the approval procedures for foreign investment projects.[36]

2.4.4 Bilateral investment and tax agreements

2.70. As at end-June 2020, China had signed 107 agreements on avoidance of double taxation, 101 of which have come into effect.[37] In addition, China has tax arrangements with the Hong Kong Special Administrative Region (SAR) and the Macao SAR. Since January 2018, China has entered into agreements on avoidance of double taxation with Angola, Argentina, the Republic of the Congo, and Gabon, and has fully revised and signed new double taxation avoidance agreements with New Zealand, Italy, and Spain. On 30 December 2020, China and the European Union concluded, in principle, a Comprehensive Agreement on Investment; the text of the Agreement is yet to be finalized by both sides.

[31] Notice of the Ministry of Finance, the General Administration of Customs and State Taxation Administration on Import Tax Policies that Support Sci-Tech Innovation during the 13th Five-Year Plan Period (Cai Guan Shui No. 70, 2016) and Announcement of the Ministry of Finance, the Ministry of Commerce and State Taxation Administration on Continuing to Implement the VAT Policy on Equipment Purchased by R&D Institutions.

[32] Announcement on Continuing Corporate Income Tax Policies for Large-scale Development in the Western Region (MOF Announcement No. 23, 2020).

[33] Notice on Preferential Corporate Income Tax Policies for the Hainan Free Trade Port (Cai Shui [2020] No. 31) and Notice on Individual Income Tax Policies for High-end Talents in Short Supply in Hainan Free Trade Port (Cai Shui No. 32, 2020).

[34] Notice on Individual Income Tax Incentives for Guangdong-Hong Kong, China-Macao, China Greater Bay Area (Cai Shui No. 31, 2019).

[35] Notice on Adding Projects in the Tourism Industry to the Catalogue of Corporate Income Tax Preferences for Hengqin New Area (Cai Shui No. 63, 2019).

[36] State Council, *Notice of the National Development and Reform Commission on Responding to the Epidemic*. Viewed at: http://www.gov.cn/zhengce/zhengceku/2020-03/11/content_5490062.htm.

[37] State Taxation Administration, *Tax Policy and Tax Treaties*. Viewed at: http://www.chinatax.gov.cn/chinatax/n810341/n810770/index.html.

3 TRADE POLICIES AND PRACTICES BY MEASURE

3.1 Measures Directly Affecting Imports

3.1.1 Customs procedures, valuation, and requirements

3.1. The General Administration of Customs (GACC) remains responsible for customs matters. In 2018, the GACC took on responsibilities relating to exit-entry inspection and quarantine previously held by the General Administration of Quality Inspection and Supervision (Section 3.3.3). China has 45 customs institutions directly under the GACC (including 42 customs areas, 678 subordinated customs institutions, and 132 subordinated customs offices).

3.2. Customs procedures are regulated by several pieces of legislation (Table 3.1). Recent changes to the Customs Law and the Regulations on Import and Export Duties removed the administrative licensing requirements for temporary imports and export.[1] Changes to various other customs-related regulations, including the Provisions on the Customs Administration of Declarations for the Import and Export of Goods and the Customs Rules on Administration of the Levying of Duties on Imports and Exports, were aimed at optimizing the business environment, reducing institutional transaction costs, simplifying customs procedures, and shortening the time for customs clearance.[2]

Table 3.1 China's legislation related to customs procedures

Legislation	Date of issuance/amendment
Customs Law	Decree No. 50 issued in 1987, and amended in 2000, 2013, 2016, and 2017
Regulations on Import and Export Duties	State Council Decree No. 392, adopted in 2003, and amended in 2011, 2013, 2016, and 2017
Provisions on the Customs Administration of Declarations for the Import and Export of Goods	GACC Decree No. 103, adopted in September 2003, and amended in 2014, 2017, and 2018
Customs Rules on Administration of the Levying of Duties on Imports and Exports	GACC Decree No. 124, adopted in 2005, and amended in 2010, 2014, 2017, and 2018

Source: Information provided by the authorities.

3.3. As at the time of China's previous Review, importers must register as foreign trade operators with the Ministry of Commerce (MOFCOM) or its authorized bodies before filing customs declarations. Foreign-invested enterprises (FIEs) may register as foreign trade operators; FIEs require a copy of the certificate of "approval of foreign-invested enterprises" to register. According to the authorities, the GACC has taken measures to simplify and facilitate registration procedures[3], has cancelled the validity period for the registration of customs declaration enterprises and their branches so that registration is of long-term effect[4], and will no longer check the approval certificate of FIEs under certain circumstances.[5]

[1] Customs Law (as amended in 2017). Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/1880958/index.html; and Regulations on Import and Export Duties (as amended in 2016). Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2558681/index.html.

[2] Amendments to the Customs Administration of Declarations for the Import and Export of Goods and the Customs Rules on Administration of the Levying of Duties on Imports and Exports (through GACC Order No. 235 on Decree on the Publication of the General Administration of Customs Decision on the Amendment of Some Regulations. Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/1413710/index.html.

[3] The relevant GACC announcements are: No. 28, 2018, on Issues Concerning the Integration of Enterprises' Qualifications for Customs Declaration and Inspection. Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/1662054/index.html; No. 143, 2018, on Relevant Matters concerning the Promotion of Integrated Customs Declaration and Inspection to Optimize the Registration of Customs Declaration Entities. Viewed at: http://www.customs.gov.cn/xining_customs/533860/533861/2060885/index.html; and No. 191, 2018, on Matters concerning Further Optimizing the Administration of the Registration of Customs Declaration Entities. Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2136553/index.html.

[4] GACC Announcement No. 213, 2019, on Cancelling the Validity Period of the Registration of Customs Declaration Enterprises and Their Branches.

[5] GACC Announcement No. 226, 2019, on No Longer Verifying the Approval Certificate for a Foreign-Funded Enterprise. The circumstances when verification of approval certificates is not required include when: (i) foreign-invested international freight agent enterprises apply for customs declaration agency of inbound and

3.4. Import declarations may be submitted on paper or in electronic format through the single window system (see below). The use of a customs broker is mandatory. Documents to be provided with import declarations are listed in the Provisions on the Customs Administration of Declarations for the Import and Export of Goods. They include contracts, invoices, a packing list, a list of freight (manifest of cargo), bills of ladings (transport bills), acting customs clearance authorization entrustment agreement, import licences, and any other import documents as prescribed by the GACC.[6] The authorities indicate that since 2020 some documents, including contracts and packing lists, no longer need to be submitted to customs in the import declaration process[7], and other required documents have been simplified or optimized for the application and printing processes. The GACC does not charge fees for making customs declarations or for the use of the National Single Window (see below). With the consent of the GACC, import declarations may be filed, and customs clearance may take place, in advance of the goods' arrival in China[8]; according to the authorities, this is encouraged.

3.5. In 2019, the GACC launched a reform of the "two-step declaration" for imports, which means that enterprises do not need to submit all declarations and documents at one time. The first step involves making the summary declaration with the bill of lading to pick up the goods. The second step involves completing the whole declaration process within a specified time. According to the authorities, the reform, which was first piloted in some customs offices, made enterprise declaration more efficient and convenient, accelerated cargo release, and further improved the efficiency of customs clearance. It has been applied across the country since 1 January 2020.

3.6. China maintains a standardized National Single Window (NSW) for international trade (www.singlewindow.cn), initiated in 2016 and based on the China E-Port.[9] The NSW connects the systems of the relevant port management and international trade departments, providing a one-stop service for customs formalities and procedures. It is interconnected with provincial single windows, which are nationally standardized but also embedded with locally distinct services.[10] The NSW was also enhanced to provide a one-stop platform for trade services and for inter-connection with trading partners. Since China's previous Review, the number of connected ministries and commissions increased (from 11 in January 2018 to 25 at end-2020), and the number of basic service functions (e.g. port law enforcement services) increased from 9 to 16 over the same period. The NSW is now fully operational. The NSW is the main online entry point for traders to submit their customs declarations and associated documents. In 2018, over 70% of imports were declared through the single window. By end-2019, the percentage had risen to 100%. Use of the NSW remains voluntary. According to the authorities, the online application rates for other major declaration services, such as cargo, manifest, and ship declarations, has reached 100%. China shared its experience of the NSW with the WTO Committee on Trade Facilitation in 2019.[11]

3.7. The GACC operates an "Internet + Customs" platform, which provides online access to government customs services, such as pre-declaration information input, export rebates, administrative approval, and intellectual property rights (IPR) registration. The system allows enterprises to submit information in one place rather than to different port management authorities.[12] It is separate from the NSW (see above), which provides a single platform for the submission of standardized information and documentation to the relevant authorities.

3.8. Importers are required to comply with the inspection and quarantine requirements of Customs, as stipulated by law, regulations, and the Catalogue of Import and Export Commodities Subject to Compulsory Inspection. The Catalogue lists commodities as required to protect human, animal or plant health, and the environment, and to prevent fraud and safeguard national security. The list

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outbound express; and (ii) consignees and consigners of foreign-invested import and export goods go through the cancellation procedures with customs.

[6] Provisions on the Customs Administration of Declarations for the Import and Export of Goods, Article 27. Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2539748/index.html.

[7] GCC Notice on Issuing the List of Measures to Coordinate Port Epidemic Prevention and Control and Facilitate Customs Clearance (Shu Zong Fa No. 57, 2020).

[8] Provisions on the Customs Administration of Declarations for the Import and Export of Goods, Chapter III.

[9] China E-Port is a large information-sharing platform for customs clearance that was jointly established several years ago by the GACC and other relevant departments under the State Council.

[10] WTO document WT/TPR/M/375/Add.1, 1 February 2019.

[11] WTO TFA Database. Viewed at: https://tfadatabase.org/members/china.

[12] GACC. Viewed at: http://english.customs.gov.cn/.

was amended twice (in 2019 and 2020) to remove import supervision inspection requirements on 390 tariff lines (at the 10-digit HS level), including cloth and adult clothing, textiles, machinery, and cold-rolled steel plates.[13] During the review period, the GACC issued various administrative measures for the inspection and/or quarantine of specific goods.

3.9. Enterprises are classified into different groups based on risk analysis, which is based on their credit rating and the characteristics of the commodities they import. Additionally, transport modes have different risk indices, for example, relating to sensitive routes and the country of departure.[14] The authorities indicate that data on the share of imports subject to physical inspection are not available.

3.10. In October 2018, the GACC adopted the inspection and supervision method of "inspection and release before testing" for imported low-risk minerals such as iron ore, manganese ore, chromium ore, lead ore and its concentrate, and zinc ore and its concentrate. According to the authorities, the average inspection and release time of imported iron ore has been significantly reduced from 18.89 days to 2.21 days.

3.11. The authorities indicate that, in October 2020, the overall clearance time for imports nationwide was 43.48 hours, reduced by 55.35% compared with 2017.[15]

3.12. China's Authorized Economic Operator (AEO) scheme remains in place; the authorities indicate that, over the past decade, it underwent several revisions and improvements and developed from the initial single system to a customs credit management system that combines the requirements of the national credit system with the AEO system of the World Customs Organization. By end-2020, there were 3,523 AEOs in China, accounting for 0.65% of all import and export enterprises but covering around 30% of the total value of imports and exports. By end-February 2021, China had signed mutual recognition agreements of AEO systems with 43 trading partners. China shared its AEO programme experience with the WTO Trade Facilitation Committee in 2018.[16]

3.13. Some 163 "special customs supervision areas", governed by their own respective regulations, continue to exist; 39.3% are located in the Pilot Free Trade Zones (PFTZs). The objectives of such areas include carrying out bonded processing, logistics, and services. China's special customs supervision areas are approved by the State Council and supervised by Customs. There are six types of these areas: bonded zones, export processing zones, bonded logistics parks, bonded ports, comprehensive bonded zones, and cross-border industrial zones. There have been no major changes in their rules and regulations. China also applies different customs procedures to specific areas, in some instances on a trial basis, to assess their functionality.[17] Special customs procedures remain in place to facilitate customs formalities for importers (and exporters) of multiple batches of time-limited, fresh, perishable, difficult-to-store, and dangerous goods, as well as bonded goods exported

[13] GACC Announcements No. 220, 2019, and No. 9, 2020. Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2811876/index.html; and http://www.customs.gov.cn/customs/302249/302266/302267/2858709/index.html.

[14] WTO documents WT/TPR/S/375/Rev.1, 14 September 2018; and WT/TPR/M/375/Add.1, 1 February 2019. An enterprise's credit rating is based on import and export records and whether it is law-abiding. Enterprises are categorized according to their credit rating into authorized enterprises, enterprises of general integrity, and dishonest enterprises.

[15] The authorities indicate that figures on import clearance times cited in the previous Secretariat Report (WTO document WT/TPR/S/375/Rev.1, 14 September 2018) referred to handling procedures for customs clearance (the time from Customs' acceptance of the declaration of goods to the issuing of the release order). The figures provided in this Review consider overall clearance time for goods at the port (the time from the arrival of goods at the port to their pick-up, including arrival at the port, unloading and tally, clearance preparation, customs clearance, and customs release).

[16] WTO TFA Database. Viewed at: https://tfadatabase.org/members/china.

[17] GACC Decree No. 209, 27 June 2013, Customs Supervision Measures for Hengqin New Area. Viewed at: http://www.mofcom.gov.cn/article/b/g/201309/20130900326388.shtml; and GACC Decree No. 208, 27 June 2013, China Customs Regulatory Approach to Pingtan Comprehensive Experimental Zone (Trial). Viewed at: http://www.mofcom.gov.cn/article/b/g/201309/20130900326405.shtml.

from or imported into China via road ports.[18] Specific customs clearance supervision modes to support China's cross-border e-commerce pilot projects have been continued.[19]

3.14. Citizens, legal persons, or other organizations believing that a specific administrative act of Customs infringes upon their legitimate rights and interests may file an application for administrative reconsideration within 60 days of the knowledge of such an act, or file a lawsuit in a People's Court within six months of such knowledge. For tax payment disputes, a party can file an application for administrative reconsideration with Customs in accordance with the Customs Law. If the party is dissatisfied, the next step is to file an administrative proceeding with a People's Court. Between January 2018 and July 2020, the GACC accepted 104 administrative review cases, including 43 government information publicity cases, 6 inspection and quarantine treatment cases, 12 administrative penalty cases, 8 taxpaying disputes, 1 complaint report reply, 2 administrative licensing cases, and 2 enterprise management cases. Over the same period, the GACC handled 46 lawsuits, including 16 complaints and reports, 1 taxpaying dispute, 3 administrative penalty cases, 20 government information publicity cases, 5 unaccepted reconsideration cases, 1 administrative compensation case, and 1 administrative licensing case.

3.1.1.1 Preshipment inspection

3.15. In 2019, China notified to the WTO its laws and regulations putting the Agreement on Preshipment Inspection into force.[20] These are the Law on Import and Export Commodity Inspection (amended in 2018)[21]; Regulations on the Implementation of the Law on Import and Export Commodity Inspection (revised in 2019)[22]; Measures for the Inspection, Supervision and Administration of Imported Old Mechanical and Electrical Products[23]; and the Measures for the Supervision and Administration of Inspection and Quarantine of Imported Solid Waste Which Can Be Used as Raw Materials.[24] The authorities indicate that mandatory preshipment inspection (PSI) requirements are applied to a specified range of imported old mechanical and electrical products; PSI requirements also used to be required for imports of solid waste before such imports were prohibited on 1 January 2021 (Section 3.1.5).

3.1.1.2 Customs valuation

3.16. There have been no changes in China's customs valuation rules and procedures since its previous Review. These are contained in GACC Decree No. 2013 and were notified to the WTO in 2018.[25] Customs value is determined on the basis of the transaction value and, when it cannot be used, the other valuations methods are used in sequential order, as stipulated in the WTO Customs Valuation Agreement.

3.1.1.3 Trade facilitation

3.17. China deposited its instrument of acceptance of the Protocol of Amendment inserting the Agreement on Trade Facilitation (TFA) into Annex 1A to the WTO Agreement on 4 September 2015.

[18] Administrative Measures for Centralized Declaration of Imported and Exported Goods.

[19] At the time of China's previous Review, four new customs clearance supervision modes had been proposed to support cross-border e-commerce pilot projects (general export, export to special areas, direct purchase import, and e-commerce bonded import), three new supervision modes for cross-border e-commerce had been set up; and a cross-border e-commerce retail import and export informational customs clearance management system had been established (WTO document WT/TPR/M/375/Add.1, 1 February 2019). As indicated by the authorities in the context of this Review, in 2020 Customs carried out the pilot programme of business-to-business export in cross-border e-commerce in 22 customs offices.

[20] WTO document G/PSI/N/1/Rev.4/Add.1, 23 October 2019.

[21] Law on Import and Export Commodity Inspection. Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2369445/index.html.

[22] Regulations on the Implementation of the Law on Import and Export Commodity Inspection. Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2369666/index.html.

[23] Measures for the Inspection, Supervision and Administration of Imported Old Mechanical and Electrical Products. Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2371611/index.html.

[24] Measures for the Supervision and Administration of Inspection and Quarantine of Imported Solid Waste Which Can Be Used as Raw Materials. Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2371598/index.html.

[25] WTO document G/VAL/N/1/CHN/6, 12 April 2018.

China notified its Category A commitments, which cover the majority of measures, in June 2014[26], and its Category B commitments in June 2017.[27] China does not have any Category C commitments. The authorities indicate that implementation of Category B clauses was accelerated and, in some cases, achieved ahead of schedule. Notably, the "Single Window" clause was implemented in July 2019, and the "establishment and publication of average release times" was implemented in January 2020. According to the WTO TFA database, China fully implemented the Agreement ahead of the original date of 22 February 2020.[28] China updated official publication locations and contact points with relevant information and participated in exchanges of experience within the Committee on Trade Facilitation (it shared its AEO programme experience with the Committee in October 2018 and its single window experience in October 2019).[29]

3.18. In February 2020, the GACC issued 10 Measures to Cope with the Impact of the Epidemic and Promote the Steady Growth of Foreign Trade in order to reduce the impact of COVID-19 on the Chinese economy and promote the steady growth of foreign trade when preventing and controlling the epidemic (Box 3.1). Additionally, in March 2020, the GACC issued a List of Measures for Coordinating Work to Prevent and Control the Epidemic at Ports and Facilitating Customs Clearance. Reportedly, this list contains 50 measures to implement the decisions and arrangements on epidemic prevention and control and the facilitation of customs clearance at ports, focusing on four aspects: (i) preventing imported cases of COVID-19; (ii) facilitating customs clearance; (iii) reducing import and export costs; and (iv) ensuring the unimpeded operation of industrial chains and foreign trade supply chains.[30]

Box 3.1 GACC trade facilitation measures

1. Simplification of business registration and help with clearance formalities. Applications for changes to a business's registration information (except name changes) may be postponed until after the outbreak ends. The GACC will provide more timely assistance to businesses (especially micro, small, and medium-sized enterprises (MSMEs)) with import/export problems.
2. Expedited clearance of imported electromechanical equipment and raw materials urgently needed for domestic production, including through increased use of inspection machines and minimized used of laboratory testing of goods on strength of third-party certificates, test reports, or enterprise quality and safety self-declarations.
3. Import facilitation of food and agricultural product imports. Expedited process to grant market access to more categories of agri-food products from more countries and to register more establishments. Shortening of quarantine approval process. Green lanes to be established at key ports to provide around-the-clock clearance for foreign agri-food products on a reservation basis. Priority inspection of imported food and agricultural products over other goods and priority testing of products suspected to contain pests or disease.
4. Support businesses in export expansion. The GACC optimizes of pre-export control and certification services. Expedited administrative approval for registered exporters and training in dealing with technical trade barriers.
5. Simplified sanitary approval for imported special medical supplies. Direct release by customs of imported special medical supplies used for curing, preventing, and diagnosing COVID-19 on the strength of certificates issued by relevant competent authorities, provided the sanitary risk is controllable.
6. Simplified extension formalities for processing trade enterprises, in case of delayed resumption of production.
7. Simplified write-off formalities and reduced on-site audits. The GACC handles write-off formalities based on the inventory data provided by enterprises, without checking at the factory. If feasible, the GACC conducts off-site audits by video or electronic data transmission to minimize interruption to enterprises' production and operation.
8. Simplified and expedited administrative penalty procedures. The GACC handles law-breaking cases involving anti-epidemic supplies in a fast and simple way, and should not detain the involved goods, items, transportation conveyances or account documents under usual circumstances. The involved party's written confession, if proven by key evidence such as inspection records can be used as evidence by the GACC.

[26] WTO documents WT/PCTF/CHN/1, 1 June 2014; and G/TFA/N/CHN/1/Add.1, 24 November 2017.
[27] WTO documents G/TFA/N/CHN/1, 6 June 2017; and G/TFA/N/CHN/1/Add.2, 14 February 2018.
[28] WTO TFA Database. Viewed at: https://tfadatabase.org/members/china.
[29] All TFA notifications may be viewed at: https://tfadatabase.org/members/china.
[30] GACC. Viewed at: http://www.customs.gov.cn/customs/xwfb34/302425/2892073/index.html.

9. Enhanced international coordination and steps to cope with external trade restrictions. Monitoring, analysis, and publication of external trade restrictions by the GACC and provision of consultation services.

10. Efficiency with support of "Internet + Customs". When a paper document is required for verification, its electronic copy can be accepted by the GACC upon approval before the submission of the paper document. Customs, through a new service hotline and media platforms, answers queries from enterprises and publishes customs policies and measures.

Source: GACC. Viewed at: http://www.customs.gov.cn/customs/ztzl86/302414/302415/qmzyx/zcwj5/3358972/index.html; and GACC, *GACC Launches Facilitative Measures as Foreign-Trade Businesses Begin to Resume Operations*, 19 February 2020. Viewed at: http://english.customs.gov.cn/Statics/8f0f8824-eef2-492b-ace6-77d84bf12f1f.html.

3.19. The authorities confirm that China's COVID-19-related measures affecting goods, in the area of trade facilitation, include: (i) a MOFCOM notice actively guiding and encouraging enterprises to apply for import and export licences through a paperless process, further simplifying the materials required for the paperless application for import and export licences, optimizing the application and updating processes of electronic keys, and encouraging enterprises to apply for and update electronic keys online; (ii) a Ministry of Agriculture and Rural Affairs (MARA) circular implementing nine facilitation measures regarding three categories of agricultural administrative approval (licence renewal, simplification of approval procedure, and optimization of approval process); and (iii) trade facilitation measures through the holding of the 127th Canton International Fair online.[31]

3.1.2 Rules of origin

3.20. China continues to apply preferential and non-preferential rules of origin.

3.21. Non-preferential rules of origin are used to apply the most-favoured nation (MFN) tariff rate; ensure the origin of goods subject to anti-dumping, countervailing, and safeguard measures; ensure that import quotas and tariff quota limits are imposed on specific countries; and determine the origin of imported goods purchased by the Government. During the review period, the GACC simplified the application process for certificates of non-preferential origin.[32]

3.22. Preferential rules of origin apply in accordance with the specifications of the various preferential agreements signed by China. They are also used to grant preferential treatment to imports from least developed countries (LDCs). In general, the criteria used to determine origin include change in tariff classification, whether the good is wholly obtained in one party, regional value content, processing operation, or other requirements. Most free trade agreements (FTAs) provide for the possibility of bilateral cumulation. Since China's previous Review, rules of origin of FTAs with Chile; Macao, China; and Georgia were notified to the WTO.[33] The main features of all of China's preferential rules of origin in force are described in the Secretariat report for China's previous Review.[34] To facilitate customs regulation-compliant clearance, China extended its electronic networking systems of origin, which enable the transmission of electronic data regarding certificates of origin in real time; the systems now cover 16 countries and regions under 13 RTAs.[35]

[31] WTO, *COVID-19: Measures Affecting Trade in Goods*. Viewed at: https://www.wto.org/english/tratop_e/covid19_e/trade_related_goods_measure_e.htm.

[32] This change was introduced through GACC Administrative Measures for the Issuance of Certificates of Non-Preferential Origin, implemented through GACC Order No. 240, which amends various regulations. Viewed at: www.customs.gov.cn/customs/302249/302266/302267/1880777/index.html. Filing procedures were changed to simplify material submission requirements; applicants are no longer required to submit copies of documents, including the business licence, registration form for foreign trade operators, and organization code certificates, and they do not need to submit the original copies to be checked.

[33] WTO documents G/RO/N/191, 20 January 2020; G/RO/N/187, 20 September 2019; and G/RO/N/171, 24 May 2018.

[34] WTO document WT/TPR/S/375/Rev.1, 14 September 2018. Table A3.1 describes the main features of the rules of origin under the Asia Pacific Trade Agreement and the Association of South East Asian Nations Free Trade Agreement, as well as China's RTAs with Australia; Hong Kong, China; Macao, China; Chile; the Republic of Korea; New Zealand; Pakistan; Singapore; Peru; Switzerland; Iceland; Georgia; and Costa Rica.

[35] New systems that became operational during the review period were under China's RTAs with Pakistan (online date of 30/04/2018); Chile (01/01/2019); Singapore (01/01/2019); ASEAN (Singapore, 01/11/2019; and Indonesia, 15/10/2020); Georgia (01/01/2020), and five LDCs (Bangladesh, Niger, Ethiopia, Mozambique, and Timor-Leste on 18/08/2020).

3.1.3 Tariffs

3.1.3.1 Applied MFN tariffs

3.23. China's tariff structure is composed of MFN tariff rates, "agreement tariff rates", special preferential tariff rates, general tariff rates, and tariff quota rates. In addition, interim tariff rates, which are usually lower than MFN rates, are applied for a specific period of time (usually one year).[36]

3.24. China's applied MFN tariff in 2021 consists of 8,580 lines at the 8-digit level in the 2017 Harmonized System. Most tariff lines (87.4%) carry *ad valorem* tariffs. One thousand eighty-one tariff lines (12.6% of all lines) were duty-free. Thirty-four tariff lines (0.4 % of all lines) carry specific rates.

3.25. The simple average applied MFN rate in 2021 was 7.1%, compared with 9.3% in 2017, with tariff-rate reductions in nearly all product categories. The tariff was higher for agricultural products (WTO definition), at 12.7%, showing a notable decrease compared with 2017 and 2015 (Table 3.2). The average applied tariff on non-agricultural products fell to 6.2% (from 8.5% in 2017 and 8.6% in 2015). The percentage of tariffs that exceeded 15% (international tariff peaks) was 4.5% (significantly lower than the 13.9% in 2017). The percentage of tariffs subject to domestic tariff peaks was 1.9% (compared with 1.8% in 2017).

3.26. With respect to agriculture, the main decreases in tariff rates can be found under food preparations. The tariff average under HS Chapter 16 (preparations of meat and fish) dropped from 10.4% in 2017 to 5.5% in 2021, and the maximum tariff rate dropped from 23% to 12%. The tariff average under HS Chapter 19 (preparations of cereals, flour, starch, or milk) dropped from 17.5% in 2017 to 9.0% in 2021, and the maximum tariff rate dropped from 30% to 10%. Under HS Chapter 20 (preparations of vegetables, fruit, or nuts), the tariff average dropped from 20.1% in 2017 to 6% in 2021.

3.27. Among the main products/product groups affected by decreases in tariff peaks were food preparations, clothing and footwear (HS Chapters 62-64), articles of stone and cement (HS Chapter 68), articles of precious metals (HS 7113 to HS 7117), motor vehicles (HS 8703), and monitors and projectors (HS 8528).

Table 3.2 Tariff structure, 2015, 2017, and 2021

	MFN applied				Current bound[a,c]	Final bound[c]
	2015	2017[a]	2017[b]	2021[a]		
Bound tariff lines (% of all tariff lines)	100.0	100.0	100.0	100.0	100.0	100.0
Simple average rate	9.5	9.5	9.3	7.1	9.6	9.6
WTO agricultural products	14.8	14.8	14.6	12.7	15.1	15.1
WTO non-agricultural products	8.6	8.6	8.5	6.2	8.8	8.7
Duty-free tariff lines (% of all tariff lines)	9.7	9.8	9.8	12.6	9.6	10.3
Simple average rate of dutiable lines only	10.5	10.5	10.3	8.1	10.7	10.7
Tariff quotas (% of all tariff lines)	0.6	0.6	0.6	0.5	0.5	0.5
Non-*ad valorem* tariffs (% of all tariff lines)	0.5	0.4	0.4	0.4	0.0	0.0
Domestic tariff "peaks" (% of all tariff lines)[d]	2.2	2.0	1.8	1.9	2.1	2.1
International tariff "peaks" (% of all tariff lines)[e]	14.4	14.6	13.9	4.5	15.5	15.3
Overall standard deviation of tariff rates	7.5	7.5	7.4	6.1	7.7	7.6
Coefficient of variation of tariff rates	0.8	0.8	0.8	0.9	0.8	0.8
Nuisance applied rates (% of all tariff lines)[f]	2.9	2.9	3.2	4.3	2.8	2.5

[36] Agreement rates apply to imports from countries and customs territories with which China has preferential trade agreements (Section 2). Special preference duty rates are unilateral preferences applied to imports originating in LDCs with which China has a trade agreement. General rates apply to: products whose origin cannot be determined; products from countries that do not have a reciprocal trade agreement with China; non-WTO Members; and some territories of EU member States. If a country appears in several lists, the most favourable duty rate applies, taking into account the rules of origin. Interim duties are fixed annually by the Customs Tariff Commission, and usually apply from 1 January to 31 December of each year. Interim duties are applied on an MFN basis and replace the MFN duties for the lines that are affected. Interim duty rates are lower than the MFN rates, and in certain instances the interim duty rate applies to just part of a tariff line.

	MFN applied				Current bound[a,c]	Final bound[c]
	2015	2017[a]	2017[b]	2021[a]		
Number of lines	8,285	8,547	8,547	8,580	8,580	8,580
Ad valorem rates (> 0%)	7,437	7,671	7,669	7,499	7,753	7,696
Duty-free rates	806	838	840	1,081	827	884
Specific rates	34	34	34	34	0	0
Alternate rates	3	3	3	3	0	0
Other[g]	5	1	1	0	0	0

a As at 1 July. Tariff cuts implemented by the expansion of the Information Technology Agreement are included.
b As at 1 December 2017. Tariff cuts fully applied at the 8-digit level (179 tariff lines) are included.
c Bound rates are based on the 2021 tariff schedule. Final bound rates are fully implemented by 2023.
d Domestic tariff peaks are defined as those exceeding three times the overall average applied rate.
e International tariff peaks are defined as those exceeding 15%.
f Nuisance rates are those greater than zero, but less than or equal to 2%.
g Rates involving either an *ad valorem* rate, if the price is below or equal to a certain amount, or a compound rate, if the price is higher.

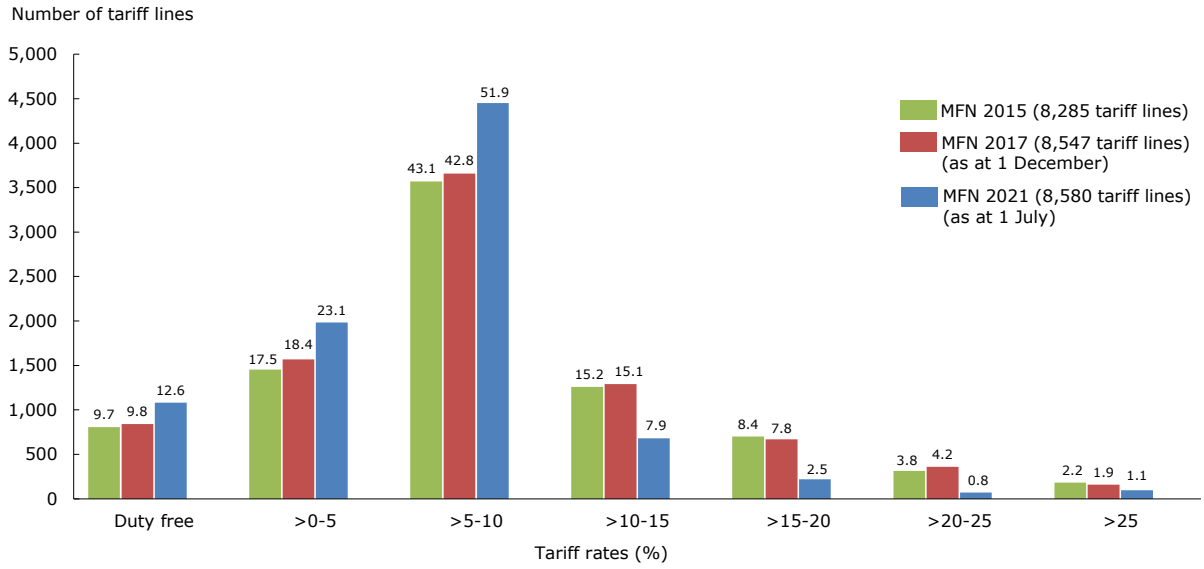
Note: Calculations are based on national tariff line level (8-digit), excluding in-quota rates and including *ad valorem* equivalents (AVEs) for non-*ad valorem* rates provided by the authorities.
Interim duty rates are used for the calculations when fully applied at the 8-digit level.

Source: WTO Secretariat calculations, based on data provided by the authorities.

3.28. In 2021, China's applied MFN tariff contained 50 different *ad valorem* tariff rates (compared with 78 in 2017). These ranged from 0-65%, with a standard deviation of 6.1 (Table A3.1).

3.29. Over 87% of all tariffs ranged from duty-free to 10%, higher than the 71% reported in 2017, and in tandem the share of lines with rates higher than 10% decreased significantly. In 2021, 1.9% of tariff lines had rates of over 20% (Chart 3.1). China's highest tariffs of 65% apply to 20 tariff lines (wheat and meslin; maize, other than seed; rice; wheat and meslin flour; cereal groats, meal and pellets; certain worked cereal grains (of maize and of barley); and vermouth and other wine flavoured with plants (in containers holding more than 2 litres)). Rates of 57% apply to four tariff lines (other manufactured tobacco (HS 2403)). Rates of 50% apply to 10 tariff lines (7 to cane or beet sugar and chemically pure sucrose in solid form (HS 1701) and 3 to mineral or chemical fertilizers (HS 3105)).

Chart 3.1 Distribution of MFN applied tariff rates, 2015, 2017, and 2021

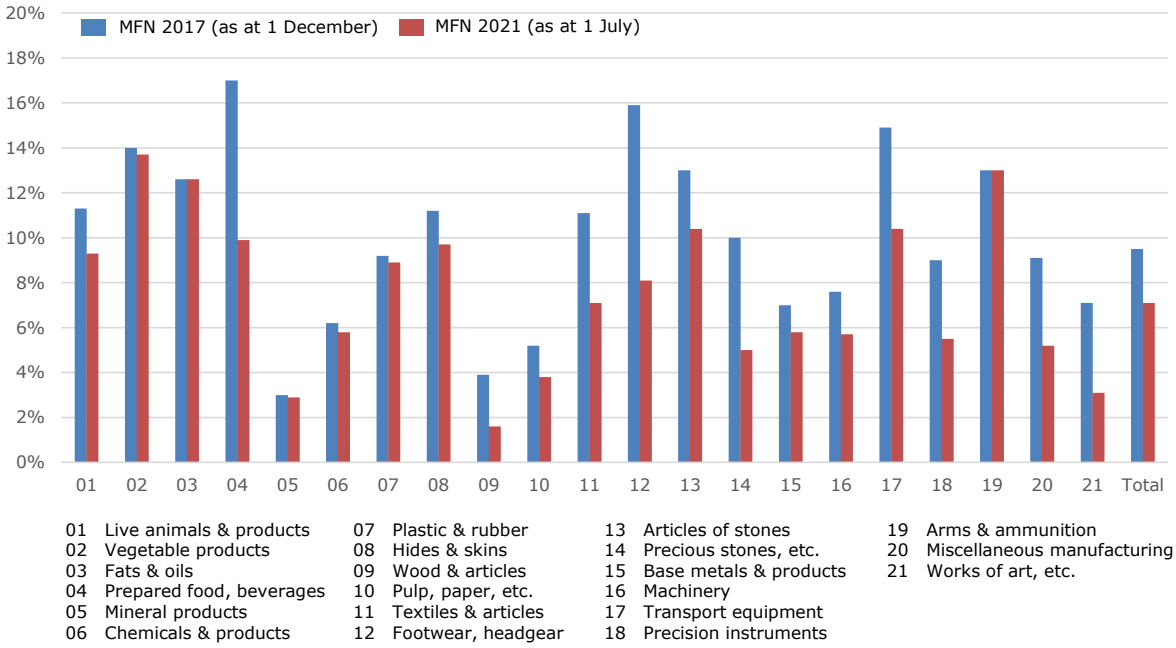


Note: Figures above the bars denote the share of total lines. 2015 tariff schedule is based on HS12 nomenclature, and 2017 and 2021 on HS17.

Source: WTO Secretariat calculations, based on data provided by the authorities.

3.30. Between 2017 and 2021, average tariff rates decreased across all HS sections except for 03 (fats and oils) and 19 (arms and ammunition). The most significant drops were seen in HS Sections 04 (prepared food, beverages); 11 (textiles and articles); 12 (footwear and headgear); 14 (precious stones, etc.); 17 (transport equipment); 20 (miscellaneous manufacturing); and 21 (works of art, etc.) (Chart 3.2).

Chart 3.2 Average applied tariff rates, by HS section, 2017 and 2021



Note: Excluding in-quota rates and including AVEs for non-*ad valorem* rates. Interim duty rates are used for the calculations when fully applied at the 8-digit level.

Source: WTO Secretariat calculations, based on data provided by the authorities.

3.1.3.2 Tariff rate quotas (TRQs)

3.31. Wheat (7 tariff lines), corn (5 lines), rice (14 lines), sugar (7 lines), wool and wool top (9 lines), cotton (2 lines), and chemical fertilizer (3 lines) are subject to TRQs (Section 4.1.2).

3.1.3.3 Bound tariffs

3.32. Upon its entry into the WTO, China bound 100% of its tariffs at *ad valorem* rates ranging from 0-65% for agriculture (WTO definition) and from 0-50% for non-agricultural products. The simple average current bound rate is 9.6% (15.1% for agriculture and 8.8% for non-agricultural goods); final bound rates must be implemented by 2023. While all tariffs were bound at *ad valorem* rates, applied MFN tariffs on 37 tariff lines are non-*ad valorem*. At the time of China's previous Review, the authorities indicated that *ad valorem* equivalents do not exceed the bound tariff rate in practice, as the lower rate is applied.

3.1.3.4 Preferential rates

3.33. China applies preferential tariffs under its preferential (PTAs) and regional trade agreements (RTAs) (Section 2.3.2). Hong Kong, China and Macao, China face the lowest average tariff duties, followed by Chile and New Zealand (Table 3.3). The share of duty-free tariff lines in China's RTAs ranges between 0.04% (RTAs with Hong Kong, China and Macao, China) and 6.6% (Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu (Chinese Taipei)). Data on utilization of preferential tariffs under RTAs and PTAs were not available.

3.34. China also grants preferential tariff treatment to imports from LDCs that have established diplomatic relations with China, and completed the exchange of diplomatic notes. By February 2021,

China had implemented zero tariffs on 97% of tariff lines for these 41 LDCs. Submissions have been made by LDCs and China to the WTO Committee on Rules of Origin regarding utilization rates of LDC exports under China's LDC preferential trade arrangement.[37]

Table 3.3 Summary analysis of the Chinese preferential tariff, 2020

	Total		WTO agriculture		WTO non-agriculture	
	Average (%)	Duty-free rates[a] (%)	Average (%)	Duty-free rates[a] (%)	Average (%)	Duty-free rates[a] (%)
MFN	7.1	12.6	12.7	8.9	6.2	13.2
Agreement tariff rates						
APTA[b]	6.5	12.8	11.8	9.8	5.7	13.3
ASEAN[c]	0.6	94.0	1.6	92.5	0.4	94.3
Hong Kong, China CEPA[d]	0.04	99.2	0.0	100.0	0.05	99.1
Macao, China CEPA[d]	0.04	99.2	0.0	100.0	0.05	99.1
Chinese Taipei ECFA[e]	6.6	19.9	12.5	10.3	5.7	21.4
Pakistan FTA	3.8	46.3	8.9	27.8	3.0	49.2
Chile FTA	0.4	97.6	1.9	94.9	0.1	98.0
New Zealand FTA	0.4	97.9	1.9	94.8	0.1	98.4
Singapore FTA	4.1	45.8	8.4	43.1	3.4	46.2
Peru FTA	0.9	93.4	2.5	89.2	0.6	94.0
Costa Rica FTA	0.5	95.9	2.5	86.6	0.2	97.4
Iceland FTA	0.5	96.0	2.6	90.9	0.2	96.8
Switzerland FTA	2.0	62.2	5.0	39.6	1.6	65.8
Australia FTA	0.5	94.6	2.5	87.2	0.2	95.8
Korea, Rep. of FTA	3.5	42.1	7.1	24.9	2.9	44.8
Georgia FTA	0.8	90.8	3.3	80.6	0.4	92.4
Mauritius FTA	1.6	87.9	4.6	78.0	1.1	89.5
Least developed preferential rates						
Special preferential tariff agreement for:						
Bangladesh and Lao PDR under APTA	7.0	13.9	12.6	9.1	6.1	14.7
Cambodia	6.5	18.7	10.1	30.0	6.0	16.9
Lao PDR	6.8	16.4	10.9	23.8	6.1	15.2
Myanmar	6.8	16.5	11.9	14.7	6.0	16.8
LDC1 (40 countries)	0.6	96.6	2.3	93.5	0.3	97.0
LDC2 (Benin, Timor-Leste, Myanmar)	0.8	94.4	2.4	92.3	0.5	94.8
Memorandum item:						
Bangladesh[f]	0.5	96.6	2.3	93.5	0.3	97.0
Cambodia[g]	0.4	97.1	1.4	94.6	0.2	97.5
Lao PDR[h]	0.4	97.1	1.4	94.7	0.2	97.5
Myanmar[i]	0.5	95.7	1.4	94.6	0.3	95.8
Singapore[j]	0.6	94.1	1.5	92.6	0.4	94.3
Korea, Rep. of[k]	3.4	42.1	7.1	24.9	2.8	44.8

a Duty-free lines as a percentage of total tariff lines.
b Preferential rates under the Asia Pacific Trade Agreement (APTA) are applicable to the Republic of Korea, Sri Lanka, Bangladesh, India, and Lao People's Democratic Republic (PDR).
c Preferential rates under the Association of South East Asian Nations (ASEAN) Agreement are applicable to Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam.
d Closer Economic Partnership Arrangement (CEPA).
e Cross-straits Economic Co-operation Framework Agreement.
f Based on lowest rates taken among APTA, Bangladesh and Lao PDR under APTA, and LDC1.
g Based on lowest rates taken among ASEAN, special preferential for Cambodia under APTA, and LDC1.
h Based on lowest rates taken among APTA, ASEAN, Bangladesh and Lao PDR under APTA, special preferential for Lao PDR, and LDC1.
i Based on lowest rates taken among ASEAN, special preferential for Myanmar, and LDC2.
j Based on lowest rates taken among ASEAN, and Singapore FTA.
k Based on lowest rates taken among APTA, and the Republic of Korea FTA.

Note: Calculations are based on national tariff line level (8-digit), excluding in-quota rates and including AVEs for non-*ad valorem* rates provided by the authorities. Interim duty rates are used for the calculations when fully applied at the 8-digit level.

Source: WTO Secretariat calculations, based on data provided by the authorities.

[37] WTO document G/RO/W/192, 9 October 2019; and G/RO/W/197, 20 July 2020.

3.1.3.5 Tariff exemptions or concessions

3.35. Tariff exemptions apply to the following imports: (i) goods in a single consignment on which the duties are estimated to be less than CNY 50; (ii) advertising material and samples of no commercial value; (iii) goods donated by international organizations or foreign governments; (iv) goods damaged prior to customs clearance; (v) fuels and provisions to be used by vessels that are in transit in China; and (vi) goods imported for daily use and valued at less than CNY 8,000 per person per day. Tariff concessions can apply to goods that are processed and exported within a specific period of time.

3.36. In addition, duty exemptions and reductions may apply in accordance with the relevant regulations by the State Council, and on goods imported into designated areas, for specific enterprises for a specific use.[38] For instance, imported commodities are exempt from import duties and other taxes when entering special customs supervision areas. Various customs duty exemptions in place for the period 2017-18 were notified to the WTO Committee on Subsidies and Countervailing Measures.[39] Information was not available on any customs duty exemptions or reductions introduced since 2019; the authorities indicate that there were no available data on revenue forgone from tariff concessions or exemptions over the same period.

3.1.4 Other charges affecting imports

3.37. As noted in previous Reviews, other charges affecting imports are the value added tax (VAT), the consumption tax, the Automobile Purchase Tax, and (until March 2020) port construction fees. To support COVID-19 prevention and control, companies and individual businesses are exempt from VAT and consumption tax (and various other charges that do not affect imports[40]) for goods self-produced, processed through commissioning, purchased, or donated for the purposes of curbing the spread of COVID-19, through public welfare social organizations, People's Governments and their departments at or above the country level and other state entities, or directly to hospitals undertaking the task of COVID-19 prevention and control. This exemption was effective from 1 January 2020.[41]

3.1.4.1 Value added tax (VAT)

3.38. In 2019, VAT accounted for 39.5% of total tax revenue (up from 39.1% in 2017). In May 2018, VAT tiers were reduced to 16%, 10%, and 6% (from 17%, 11%, and 6% in 2017).[42] Effective from April 2019, VAT was further reduced to 13%, 9%, and 6% (Table 3.4).[43]

3.39. As notified to the WTO, preferential VAT policies were in place during the period 2017-18 for: (i) incubators of science and technology enterprises; (ii) science and technology parks of national universities; (iii) integrated utilization of resources; (iv) new-type wall materials; (v) photovoltaic-generated electricity; (vi) hydropower electricity; (vii) small enterprises making little profit; (viii) enterprises that employ disabled people; (ix) imported products exclusively used by disabled people; (x) products for disabled people; (xi) anti-HIV-AIDS medicine; (xii) tea sold in the border areas; (xiii) imported products for the purpose of replacing the planting of poppies; (xiv) imports of seeds (seedlings); (xv) the integrated circuit industry; (xvi) large passenger aircraft; and (xvii) anti-cancer drugs.[44] Pending China's submission of its new notification to the WTO Committee on Subsidies and Countervailing Measures, information was not provided by the authorities regarding which preferential VAT policies remain in place. From 1 January 2020 to 31 December 2020, taxpayers were exempt from VAT on income obtained by providing film

[38] Customs Law, Article 57.
[39] WTO document G/SCM/N/343/CHN, 19 July 2019.
[40] These taxes/charges are the urban maintenance and construction tax, the educational surtax, and local education surcharges.
[41] MOFCOM and State Taxation Administration, Announcement No. 9, 2020, on the Relevant Donation Tax Policies Supporting the Prevention and Control of the COVID-19 Outbreak.
[42] State Taxation Administration. Viewed at: http://www.chinatax.gov.cn/eng/c101270/c101271/c5094511/content.html.
[43] KPMG, *China's VAT System Takes Significant Steps Forward in Applying International Best Practice VAT Policies*, 25 March 2019. Viewed at: https://home.kpmg/cn/en/home/insights/2019/03/china-tax-alert-12.html.
[44] WTO document G/SCM/N/343/CHN, 19 July 2019.

projection services.[45] From 1 January 2019 to 31 December 2022, taxpayers are exempt from VAT on goods donated for poverty alleviation, under certain conditions.[46]

Table 3.4 VAT rates, December 2020

Rate	Products and services
13%	(1) Rate applied for taxpayers selling goods, labour services, or tangible movable property leasing services or imported goods, except as otherwise specified in items (2), (4), and (5).
9%	(2) Rate applied to taxpayers selling transportation, postal, basic telecommunications, construction, or immovable leasing services, selling immovables, transferring the right to use the land, or selling or importing: (i) grain and other agricultural products, edible vegetable oil, and edible salt; (ii) tap water, heating, cooling, hot water, coal gas, liquefied petroleum gas, natural gas, dimethyl ether, methane gas, and coal products for residential use; (iii) books, newspapers, magazines, audio-visual recordings, and electronic publications; (iv) feed, fertilizer, pesticide, agricultural machinery, and agricultural films; and (v) other goods specified by the State Council.
6%	(3) Rate applied to taxpayers selling services or intangible assets, except as otherwise specified in items (1), (2), and (5).
Zero-rated	(4) Rate applied to taxpayers exporting goods, except as specified by the State Council, and to domestic entities and individuals selling services or intangible assets across national borders within the scope prescribed by the State Council.
Exempt	(5) VAT exemptions apply to: self-produced agricultural products sold by agricultural producers; contraceptive medicines and devices; antique books; apparatus and equipment imported and directly used for scientific research, experiments, and teaching; imported materials and equipment from foreign governments and international organizations as gratuitous aid; articles exclusively for persons with disabilities that are directly imported by organizations of persons with disabilities; and self-used articles sold by the seller.

Source: Interim Regulation on Value Added Tax (State Council Order No. 691), Articles 2 and 15; Notice of the Ministry of Finance and State Taxation Administration on the Relevant Policies on the Streamlining and Combination of Value-added Tax Rates (Cai Shui No. 37, 2017); and Announcement of the Ministry of Finance, the State Taxation Administration, and the GACC on Relevant Policies for Deepening the Value-added Tax Reform (Announcement No. 39, 2019).

3.1.4.2 Consumption (excise) tax

3.40. In 2019, the consumption (excise) tax (CT) accounted for 8% of total tax revenue (up from 7.1% in 2017). The CT continues to be levied on products that are considered to be harmful to human health, social order, and the environment; luxury goods; high-energy consumption and high-end products; and non-renewable and non-replaceable petroleum products. Tax rates vary depending on the product; they can be *ad valorem*, specific, or compound. There have been no changes to excise tax rates since China's previous Review (Table 3.5). As notified to the WTO, preferential CT rates were available for petroleum products produced with comprehensive utilization of resources, imported products exclusively used by disabled people, and refined oil.[47] Pending China's submission of its new notification to the WTO's Committee on Subsidies and Countervailing Measures, information was not provided by the authorities regarding new preferential CT rates or exemptions recently introduced.

Table 3.5 Consumption tax, March 2021

Product	Tax rate
Cigars	36%
Cigarettes	
Production procedure	
Price higher than CNY 70 per carton	56% plus CNY 0.003/cigarette
Price lower than CNY 70 per carton	36% plus CNY 0.003/cigarette
Wholesale	11% plus CNY 0.005/cigarette
Cut tobacco	30%

[45] Announcement of the Ministry of Finance and State Taxation Administration on the Tax and Fee Support Policies for the Film Industry and Other Industries (Announcement No. 25, 2020).

[46] Announcement of the Ministry of Finance, the State Taxation Administration, and the State Council Leading Group Office of Poverty Alleviation and Development on the Policy of Exemption of Value-Added Tax on Goods Donated for Poverty Alleviation (Announcement No. 55, 2019).

[47] WTO document G/SCM/N/343/CHN, 19 July 2019.

Product	Tax rate
Alcoholic drinks and liquor	
White spirit distilled from grain, potatoes or grapes	20% plus CNY 0.5/500 g (or per 500 ml)
Yellow rice wine	CNY 240/tonne
Beer made from malt, whose factory price of a value over or equal to CNY 3,000 (VAT excluded) per tonne	CNY 250/tonne
Beer made from malt, whose factory price of a value of less than CNY 3,000 (VAT excluded) per tonne	CNY 220/tonne
Other fermented alcoholic beverages	10%
Luxury cosmetics	15%
Precious jewellery, pearls, jade, and precious stone	
Gold, silver platinum jewellery, and diamonds	5%
Pearls, jade, and precious stones	10%
Firecrackers and fireworks	15%
Gasoline	
Motor gasoline and aviation gasoline (containing > 0.013 g of lead per litre)	CNY 1.52/litre
Motor gasoline and aviation gasoline (containing < 0.013 g of lead per litre)	CNY 1.52/litre
Diesel oil	CNY 1.2/litre
Aviation kerosene	CNY 1.2/litre
Naphtha	CNY 1.52/litre
Solvent	CNY 1.52/litre
Lubricants	CNY 1.52/litre
Fuel oil	CNY 1.2/litre
Motor vehicles	
Passenger vehicles with less than 9 seats with a cylinder capacity of:	
- less than 1,000 ml	1%
> 1,000 ml, but < 1,500 ml	3%
> 1,500 ml, but < 2,000 ml	5%
> 2,000 ml, but < 2,500 ml	9%
> 2,500 ml, but < 3000 ml	12%
> 3,000 ml, but < 4,000 ml	25%
- 4,000 ml or more	40%
Middle-size or light passenger vehicles for commercial purposes	5%
"Ultra-luxurious" vehicles	In addition to the CT for the production (import) based on the above rate, the CT for retail is levied at 10%
Motorcycles	
Those with a cylinder capacity of not more than 250 ml	3%
Those with a cylinder capacity of more than 250 ml	10%
Yachts	10%
Luxury watches, with a unit price higher than CNY 10,000	20%
Golf equipment	10%
Solid wood flooring	5%
Disposable chopsticks	5%
Batteries	4%
Paint	4%

Source: Information provided by the authorities.

3.1.4.3 Automobile Purchase Tax

3.41. Under the 2019 Automobile Purchase Tax Law, China levies a 10% tax on domestically produced and imported vehicles.[48] The 2019 Law replaces the 2000 Provisional Regulations Vehicle Purchase Tax. For domestic production, the tax is applied to the full price paid by the taxpayer to the seller, excluding VAT. For imported vehicles, the taxable price is the duty-paid price plus customs

[48] Automobile Purchase Tax Law. Viewed at: http://www.npc.gov.cn/englishnpc/c23934/202009/f0e542fd054f412c9af8ceef9298c573.shtml. Changes introduced by the 2019 Law: (i) adjusted the scope of taxation (from automobiles, motorcycles, trams, trailers, and agricultural transport vehicles to automobiles, trams, automobile trailers, and motorcycles with an engine displacement of more than 150 ml; and adjusted the types of taxable vehicles; (ii) abolished the maximum taxable price requirement; (iii) added the statutory exemption items; (iv) cancelled the paper tax clearance certificate of vehicle purchase tax; (v) revised the definition of non-transportation vehicles with fixed items; (vi) upgraded the legal level of tax refund provisions; and (vii) added provisions related to the coordination mechanism.

duty and CT. It is applied to the cost of the vehicle including the import tax and CT.[49] The tax does not apply to urban rail vehicles (e.g. subways and light railways), special wheeled machinery vehicles (e.g. loaders, graders, excavators, and bulldozers), cranes, forklifts, and electric motorcycles. Since 2014, the tax has been exempted for certain new energy vehicles (NEVs); this exemption will remain in place until end-2022. NEVs exempt from the tax/levy are administered by the Ministry of Industry and Information Technology (MIIT) and the State Taxation Administration through the regularly updated Catalogue of Models of New Energy Vehicles Exempted from Automobile Purchase Tax. Both domestically produced and imported NEVs that meet all the specific requirements (which relate to, *inter alia*, technical requirements and testing and services standards) can apply to be listed in the Catalogue, and all the Catalogue-listed models can enjoy tax exemptions.[50] As notified to the WTO, other preferential tax rates applied in 2017 and 2018 to urban public transportation enterprises that purchase public buses and trolleybuses, low emission cars, and trailers.[51] Pending China's submission of its new notification to the WTO Committee on Subsidies and Countervailing Measures, information was not available on whether these preferential tax policies remain in place or if any new preferential tax rates/exemptions have been recently introduced.

3.1.4.4 Port construction fees

3.42. Until 1 March 2020, China levied port construction fees on imported and exported goods.[52] For domestic export containers and inland containers, the fees were CNY 32 per 20-foot container and CNY 48 per 40-foot container. For foreign import and export containers, the fees were CNY 64 per 20-foot container and CNY 96 per 40-foot container. The fee for other non-standard containers, except 20-foot and 40-foot containers, was levied according to that of similar types of containers (for non-standard containers less than 30 feet, the fee was levied according to that of 20-foot containers; for non-standard containers of 30 feet and above, the fee was levied according to that of 40-foot containers). The authorities indicate that a temporary decision was taken not to collect these fees from 1 March to 31 December 2020, followed by a permanent decision to abolish fees from 1 January 2021.

3.1.5 Import prohibitions, restrictions, and licensing

3.43. China continues to classify imports into three categories: not restricted, restricted, and prohibited. The import of restricted goods is administered through licences or import quotas, although the latter were not applied during the review period. The licensing system does not differentiate between the origins of products unless otherwise provided for in RTAs entered into by China.[53]

3.1.5.1 Import prohibitions

3.44. According to the Foreign Trade Law (last amended in 2016), China may maintain import prohibitions on the grounds of protection of human health or safety, protection of the lives or health of animals and plants, protection of the environment, and implementation of measures related to the import or export of gold or silver.

3.45. China notified to the WTO its import prohibitions in place for the period 2018-20 (Table 3.6). These prohibitions applied to certain toxic substances and wild animal products; certain old/second-hand mechanical and electrical equipment; certain hazardous chemicals, pesticides, and persistent organic pollutants; mercury-added products; certain solid wastes; ractopamine; certain types of filament lamp; and charcoal imported from Somalia. This list of prohibited products is also contained

[49] For full details, see Automobile Purchase Tax Law, Article 6.

[50] The exemption criteria for the period 2017-20 are contained in the Announcement of the Ministry of Finance, the State Taxation Administration, the MIIT, and the Ministry of Science and Technology on the Exemption of Automobile Purchase Tax for New Energy Vehicles (Announcement No. 172, 2017). Seemingly, the exemption was extended until end-2022. *Global Times*, "China Scraps Vehicle Purchase Tax for all NEVs", 22 April 2020. Viewed at: https://www.globaltimes.cn/content/1186457.shtml#:~:text=China%20has%20already%20scrapped%20the,to%20all%20NEVs%20this%20time.

[51] WTO document G/SCM/N/343/CHN, 19 July 2019.

[52] Ministry of Finance and Ministry of Transport Administrative Measures for the Collection and Use of Port Construction Fees (Cai Zong No. 2011, 2019).

[53] WTO document G/LIC/N/3/CHN/18, 30 January 2020.

in MOFCOM's Catalogue of Commodities Subject to Import Prohibition.[54] In 2018, MOFCOM and the GACC adjusted the list of used mechanical and electrical products prohibited from import, by removing from the Catalogue used mechanical and electrical products such as aircraft engines, ship engines, non-medical X-ray equipment, and computer gamespot.[55]

Table 3.6 Import prohibitions notified to the WTO for period 2018-20

Product	Tariff line code(s) affected, based on HS17	WTO justification and grounds for restriction	National legal basis and entry into force
Certain toxic substances and wild animal products	ex0506, ex0507, ex1302, ex2903	Article XX of GATT 1994	Former Ministry of Foreign Trade and Economic Cooperation (MOFTEC) Announcement No. 19, 2001
Certain old/second-hand mechanical and electrical equipment	ex7311, ex7321, ex7613, ex8402, ex8403, ex8404, ex8416, ex8417, ex8519, ex8520, ex8521, ex9018, ex9022, ex9504, ex8407, 84078408, 87	Article XX of GATT 1994	MOFTEC, GACC, and AQSIQ Joint Announcement No. 37, 2001
Certain hazardous chemicals, pesticides, persistent organic pollutants, and mercury-added products	ex2524, ex2903, ex2908, ex2910, ex2915, ex2918, ex2919, ex2921, ex2924, ex2925, ex2932, ex2914, ex2909, ex2920, ex3808, ex3824, ex8506, ex8535, ex8536, ex8539, ex3304, ex3401, ex3808, ex9025, ex9026, ex9018	Article XX of GATT 1994, the Rotterdam Convention, the Stockholm Convention, and the Minamata Convention	MOFCOM, GACC, and former State Environmental Protection Administration (SEPA) Joint Announcement No. 116, 2005; MOFCOM, GACC, and Ministry of Ecology and Environment (MEE) Joint Announcement No. 73, 2020
Certain solid wastes (also including other solid waste of which tariff lines unspecified)	ex0501, ex0502, ex0505, ex0506, ex0507, ex0511, ex1522, ex1703, ex2517, ex2525, ex2530, ex2618, ex2619, ex2620, ex2621, ex2710, ex2713, ex2804, ex3006, ex3804, ex3825, ex4004, ex4017, ex4115, ex4707, ex6309, ex6310, ex7001, ex7112, ex7401, ex7802, ex8102, ex8105, ex8107, ex8110, ex8111, ex8112, ex8548, ex2520, ex2524, ex6806, ex8415, ex8418, ex8450, ex8469 to ex8473, ex8508-ex8510, ex8516, ex8517, ex8518, ex8539, ex9504, ex8519 to ex8531, ex8532 to ex8534, ex8540 to ex8542, ex9018-ex9022, ex84, ex85, ex90, and other solid waste unspecified ex3915, ex5103, ex5104, ex5202, ex5505	Article XX of GATT 1994, the Basel Convention	Ministry of Environmental Protection (MEP), MOFCOM, National Development and Reform Commission (NDRC), GACC, and AQSIQ Joint Announcement No. 39, 2017
Certain solid wastes	ex2618, ex2619, ex3915, ex7204, ex7404, ex7602, ex8908	Article XX of GATT 1994, the Basel Convention	MEE, MOFCOM, NDRC, and GACC Joint Announcement, No. 6, 2018
Certain solid wastes	ex4401, ex4501, ex7204, ex8101, ex8104, ex8106, ex8108, ex8109, ex8112, ex8113	Article XX of GATT 1994, the Basel Convention	MEE, MOFCOM, NDRC, and GACC Joint Announcement, No. 6, 2018

[54] Catalogue of Goods Prohibited from Import (1st Batch), MOFCOM Announcement No. 19, 2001. Viewed at: http://www.mofcom.gov.cn/article/b/e/200207/20020700031637.shtml; 3rd Batch, MOFCOM, GACC, and State Administration of Environmental Protection Announcement No. 36, 2001. Viewed at: http://www.mofcom.gov.cn/article/b/c/200404/20040400209990.shtml; 4th Batch and 5th Batch, MOFCOM, GACC, and State Administration of Environmental Protection Announcement No. 25, 2002. Viewed at: http://www.mofcom.gov.cn/article/b/c/200404/20040400205769.shtml; 6th Batch, MOFCOM, GACC, and State Administration of Environmental Protection Announcement No. 116, 2005. Viewed at: http://www.mofcom.gov.cn/article/b/c/200602/20060201575919.shtml; and Adjustment of Catalogue of Goods Prohibited from Import (3rd Batch), MOFCOM, GACC, and State Administration of Environmental Protection Announcement No. 73, 2004. Viewed at: http://www.mofcom.gov.cn/article/b/c/200412/20041200313887.shtml.

[55] MOFCOM and GACC Announcement on Matters Concerning Adjustments to the Catalogue of Used Machinery Items Prohibited from Import No. 106, 2018. Viewed at: http://www.mofcom.gov.cn/article/b/c/201812/20181202821859.shtml. The Catalogue of Goods Prohibited from Import (2nd Batch) issued by MOFCOM, the GACC, and the General Administration of Quality Supervision, Inspection and Quarantine of 27 December 2001 was concurrently repealed. "Gamespot" refers to video games on a TV receiver, video games or other game consoles operated by coins, and other video games.

Product	Tariff line code(s) affected, based on HS17	WTO justification and grounds for restriction	National legal basis and entry into force
Ractopamine	29225020	Article XX of GATT 1994	MOFCOM and GACC Joint Announcement No. 110, 2009
Certain type of filament lamp	ex8539	Article XX of GATT 1994	NDRC, MOFCOM, GACC, State Administration for Industry and Commerce (SAIC), and AQSIQ Joint Announcement No. 28, 2011
Charcoal imported from Somalia	4402	Article XXI of GATT 1994, United Nations S/RES/2036 (2012)	MOFCOM Announcement No. 27, 2012

Source: WTO document G/MA/QR/N/CHN/5/Rev.1, 15 February 2019; and information provided by the authorities.

3.46. Since 1 January 2021, imports of all solid waste products have been prohibited, and the previous regime for allowing imports of certain wastes under licensing conditions has been terminated.[56] These wastes were contained in the Catalogue of Restrictive Solid Waste (that can be used as raw materials) and the Catalogue of Non-restrictive Solid Waste. During the review period, questions and concerns about China's changes to measures restricting and prohibiting imports of solid waste were raised in the WTO Committee on Import Licensing by the European Union, the United States, Canada, the Republic of Korea, Australia, and Japan. Concerns related to, *inter alia*, the impact of these measures on global recycling processing capacity, and the apparent non-application of the same bans and restrictive contaminant standards to domestically sourced solid wastes. China was urged to ensure transparency by notifying measures, both introduced and planned, and to consider less trade-restrictive measures. In response, China has drawn attention to, *inter alia*, pollution in China and the imperative of limiting the negative effects of solid waste.[57] Certain recycling materials for brass, iron-steel materials, copper, and cast aluminium alloys may be imported if they meet the required standards.[58]

3.1.5.2 Import licensing requirements

3.47. China's import licensing system includes automatic and non-automatic import licences. In addition, licences are used to allocate TRQs (Section 4.1.2). Furthermore, China applies import licences to specific dual-use substances for the purposes of safeguarding national security and public interest and under relevant international agreements.[59] Most import licensing requirements are in HS Sections 17 (transport equipment) and 3 (animal/vegetable fats and oils) (Chart 3.3).

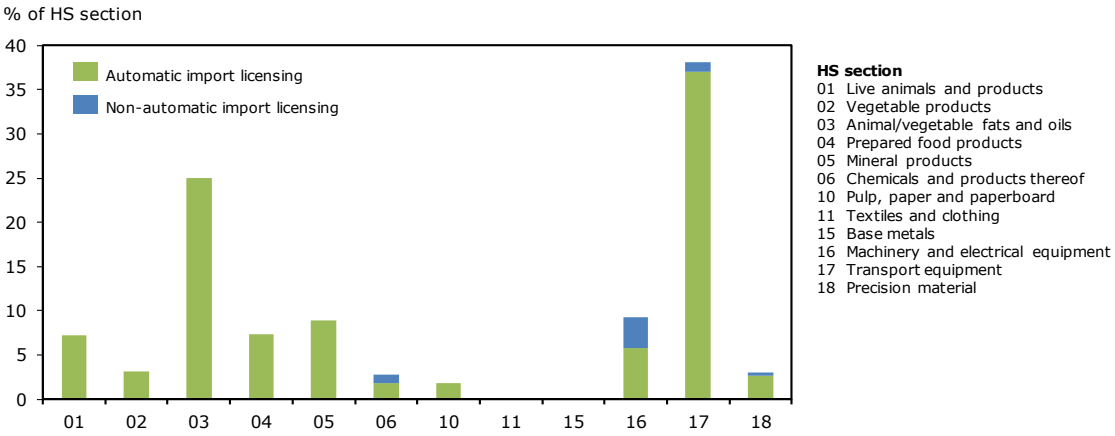
[56] Ministry of Ecology and Environment, MOFCOM, NDRC, and GACC Announcement on Relevant Issues Regarding Complete Prohibition on Imported Solid Waste (Announcement No. 53, 2020). Viewed at: https://www.mee.gov.cn/xxgk2018/xxgk/xxgk01/202011/t20201125_809835.html.

[57] WTO documents G/LIC/M/50, 15 January 2020; G/LIC/M/49, 21 August 2019; G/LIC/M/48, 14 March 2019; and G/LIC/M/47, 25 September 2018.

[58] MEE, *Announcement on Issues Related to Standardizing the Management on the Imports of Recycling Materials for Brass, Recycling Materials for Copper and Recycling Materials for Cast Aluminium Alloys*. Viewed at: https://www.mee.gov.cn/xxgk2018/xxgk/xxgk01/202010/t20201019_803869.html. The texts of the relevant national standards may be viewed at: http://openstd.samr.gov.cn.

[59] WTO document G/LIC/N/3/CHN/18, 30 January 2020; and GACC Announcement No. 68, 2019, on the Issuance of the Catalogue of Dual-Use Items and Technologies Subject to Import and Export Licensing. Viewed at: http://cys.mofcom.gov.cn/article/zcgz/201912/20191202927099.shtml.

Chart 3.3 Import licensing by HS section, 2020



Note: Calculations are based on the 2020 tariff schedule at 8-digit level.

Source: WTO Secretariat calculations, based on data provided by the authorities.

3.1.5.2.1 Automatic import licensing requirements

3.48. A Catalogue of Goods Subject to Automatic Import Licensing is issued annually.[60] All commodities listed in the Catalogue can be imported freely; automatic import licences are maintained only for monitoring purposes. In 2020, 24 categories of goods were subject to automatic import licensing requirements implemented by MOFCOM (comprising 356 tariff lines at the HS 10-digit level)[61], and a further 18 categories of goods (comprising 206 tariff lines at the HS 10-digit level)[62] were subject to automatic import licensing requirements, implemented by provincial-level local competent commercial departments or local and departmental electromechanical offices, entrusted by MOFCOM. Changes to the Catalogue during the review period involved the removal of licensing requirements for 15 product types totalling 118 HS codes, including steam turbines and automobile products[63], and the cancellation of automatic licensing measures for bauxite and aluminium oxide (two HS codes) in January 2020.

3.49. There have been no major changes in the application procedures and terms of automatic import licences since the previous Review.[64] The validity of an automatic import licence is six months; it can be extended in certain cases. Applications can be filed with MOFCOM or its entrusted institutions. Licence applications shall be immediately approved by the issuing authority (or within a maximum of 10 working days under special circumstances). Automatic import licences

[60] Catalogue of Goods Subject to Automatic Import Licensing (2020), MOFCOM and GACC Joint Announcement No. 63, 2019. Viewed at: http://images.mofcom.gov.cn/wms/202001/20200108224418706.pdf.

[61] These categories are beef; pork; lamb; fresh milk; milk powder; cassava; barley; sorghum; soybeans; rapeseed; sugar (out-of-quota); corn distillers grains; soybean meal; tobacco; crude; refined oil; fertilizer; diacetic acid; fibre tow; tobacco machinery; mobile communication products; satellite, radio, and TV equipment; car products; aircraft; and ships.

[62] These categories are broiler products, vegetable oil, iron ore, copper concentrate, coal, refined oil, fertilizer, steel, construction machinery, printing machines, textile machinery, metal smelting and processing equipment, metal processing machine tools, electrical equipment, car products, aircraft, ships, and medical equipment.

[63] Products for which licensing requirements were removed included some mobile communication products, some ships, game consoles, steam turbines, non-vehicle engines and key parts, hydraulic turbines and other power plants, chemical plants, food machinery, paper machinery, some textile machinery, some metal smelting and processing equipment, electrical equipment, railway locomotives, some automotive products, and some medical equipment.

[64] For details regarding the procedure to obtain automatic import licences, see China's last notification under Article 7.3 of the Agreement on Import Licensing Procedures (WTO document G/LIC/N/3/CHN/18, 30 January 2020).

are not transferable. Enterprises are allowed, and encouraged, to apply for and receive import licences online.[65]

3.1.5.2.2 Non-automatic import licensing requirements

3.50. Products subjected to non-automatic licences are listed in the Catalogue of Import Goods Subject to Licensing.

3.51. In 2020, the Catalogue of Import Goods Subject to Licensing listed 118 tariff lines at the HS 10-digit level that were subject to non-automatic import licensing (compared with 139 tariff lines at the HS 10-digit level in 2017).[66] During the review period, some used mechanical and electrical products, such as engineering machinery, electric power and electrical equipment, and textile machinery, were deleted from the Catalogue. As noted in previous Reviews, imports subject to non-automatic licences mainly include used mechanical and electronic equipment, and substances that deplete the ozone layer. The purpose of non-automatic import licensing for ozone-depleting substances is to fulfil China's obligations under the Montreal Protocol on Substances that Deplete the Ozone Layer, and the licensing requirements with respect to used machinery are to serve social interests and to protect the environment and consumer health and security.[67] The procedures to obtain a non-automatic import licence have remained unchanged since the previous Review.

3.1.6 Anti-dumping, countervailing, and safeguard measures

3.1.6.1 Anti-dumping measures

3.52. As noted in previous Reviews, MOFCOM is the agency responsible for initiating and conducting anti-dumping investigations and determining the existence of dumping and of injury, and their causal link. MOFCOM's Trade Remedy and Investigation Bureau (TRB) is responsible for anti-dumping, countervailing duty, and safeguards investigations and determinations (with the exception of anti-dumping investigations involving agricultural products, where the injury investigation is conducted jointly by MOFCOM and the Ministry of Agriculture).

3.53. The legal framework for the conduct of anti-dumping investigations and the application of anti-dumping measures remains the Foreign Trade Law[68], the Regulations on Anti-Dumping[69], and a number of published Rules, some of them provisional.[70] During the review period, three of these Rules were amended (see below); there have been no other changes to the anti-dumping procedures that are covered in detail in China's previous Reviews.[71] The authorities indicate that China is preparing notification to the WTO regarding these amended rules. In 2018, China notified to the WTO its Interim Rules on Implementation of the World Trade Organization Ruling in Disputes Concerning Trade Remedy Measures, which entered into force on 29 July 2013.[72]

3.54. On 4 April 2018, MOFCOM promulgated the Rules on Interim Review of Dumping and Dumping Margins (Interim Review Rules), which replace the Interim Rules for the Mid-Term Review of Dumping and Dumping Margins that have been in place since 2002. They introduced various changes. First, they refined and clarified provisions relating to the rights and obligations of the investigating agency and interested parties, including in relation to: (i) clarifying the timing for filing a periodical review application to provide an opportunity for a periodical review application under special circumstances; (ii) clarifying that exporters and manufacturers must submit evidence that proves the necessity of a review; (iii) clarifying the period for domestic industry to request evidence

[65] MOFCOM and GACC Announcement No. 82, 2018, on Paperless Application and Receiving of Import Licences and Paperless Customs Clearance for Goods. Viewed at: http:/www.mofcom.gov.cn/article/b/e/201810/20181002794907.shtml.

[66] Catalogue of Import Goods Subject to Licensing (2020), MOFCOM and GACC Announcement No. 65, 2019. Viewed at: http://www.mofcom.gov.cn/article/b/e/201912/20191202927133.shtml.

[67] WTO document G/LIC/N/3/CHN/18, 30 January 2020.

[68] WTO document G/ADP/N/1/CHN/2/Suppl.4, 1 December 2004.

[69] WTO document G/ADP/N/1/CHN/2/Suppl.3, 20 October 2004.

[70] WTO documents G/ADP/N/1/CHN/2/Suppl.1, 18 February 2003; G/ADP/N/1/CHN/2/Suppl.2, 14 April 2003; G/ADP/N/1/CHN/2/Suppl.4, 1 December 2004; G/ADP/N/1/CHN/2/Suppl.5, 11 January 2007; and G/ADP/N/1/CHN/2/Suppl.6, 19 October 2007.

[71] WTO document WT/TPR/S/375/Rev.1, 14 September 2018; and WT/TPR/S/342/Rev.1, 12 October 2016.

[72] WTO document G/ADP/N/1/CHN/2/Suppl.7, 3 October 2018.

materials to be submitted during the review; (iv) clarifying that the exporter/producer can submit an application for an interim review; and (v) cancelling the provision that the periodical review is not completed as an automatic end-of-term review. Second, they adopted clearer and stricter periodical review procedures and time requirements to ensure investigation efficiency. Third, they incorporated provisions to be consistent with WTO rules (e.g. improving the description of the sampling survey and the disclosure before final ruling).[73]

3.55. The Rules on Questionnaires in Anti-Dumping Investigations, which came into force on 4 May 2018, are the basis for conducting questionnaire investigations in anti-dumping investigations and replaced rules in place since 2002. Changes introduced related to: (i) extending the application of questionnaire surveys beyond determining dumping and dumping margins to include determining damage issues; (ii) clarifying the rights and obligations of the investigating agency and interested parties[74]; (iii) deleting the content that should be stated in the specific questionnaire descriptions and requirements; (iv) setting questionnaire survey procedures and time requirements; and (v) incorporating WTO-consistent provisions into the rules relating to handling of information that requires confidentiality, providing interested parties with an opportunity to comment, and setting out the conditions for applying facts available.[75]

3.56. The 2018 Rules for Hearing of Anti-dumping and Anti-Subsidy Investigations also came into force on 4 May 2018.[76] The Rules replaced three rules governing such hearings in place since 2002.[77] Changes introduced related to: (i) the creation of a unified hearing procedures (there is no longer a distinction between different types of investigations (anti-dumping, countervailing, and damage)); (ii) the refining of procedural provisions and clarification of rights and obligations of the investigating agency and interested parties (including with respect to the investigating agency's consideration for the need for confidentiality, its notification of the holding of hearings through an online announcement, its explanation of reasons for not holding a hearing, and the provision of opportunities for interested parties to express their opinions); (iii) introduction of clearer and stricter hearing procedures and time requirements; and (iv) introduction of WTO-consistent provisions relating to interested parties' rights to express their opinions/reasons to the investigating agency through other means if they are not physically present at the hearing.[78]

3.57. China initiated 34 anti-dumping investigations from January 2018 to end-December 2020 (Table 3.7). These investigations related to the following products/trading partners: polyphenylene ether (United States, August 2020); wines in containers holding 2 litres or less (Australia, August 2020); certain monoalkyl ethers of ethylene glycol and propylene glycol (United States, August 2020); polyvinyl chloride (PVC) (United States, August 2020); ethylene-propylene-non-conjugated diene rubber or ethylene propylene diene monomer (European Union, Republic of Korea, and United States, June 2019); polyphenylene sulphide (Japan, Republic of Korea, Malaysia, and United States, May 2019); methionine (Japan, Malaysia, and Singapore, April 2019); m-Cresol (European Union, Japan, and United States, July 2019); n-Propanol (United States, July 2019); ortho-dichlorobenzene (India and Japan, January 2018); phenol (European Union, Japan, Republic of Korea, Thailand, and United States, March 2018); barley (Australia, November 2018); stainless steel billet and hot-rolled stainless steel plate (coil) (European Union, Indonesia, Japan, and Republic of Korea, July 2018); 7-phenylacetamido-3-chloromethyl-3-cephem-4-carboxylic acid p-methoxybenzyl ester (India, November 2018); vertical machining centres (Japan and Chinese Taipei, October 2018); and grain sorghum (United States, February 2018).

[73] MOFCOM. Viewed at: http://english.mofcom.gov.cn/article/policyrelease/announcement/201804/20180402734712.shtml. The Interim Review Rules stipulate the meaning of the periodical review, the conditions and procedures for filing a case, the procedures and standards for deciding to file a case, the scope of investigation for the review period, calculation of dumping margin and price commitments in review, time-limit, and announcement of review and effectiveness of measures.

[74] Investigating agencies under the amended rules are required to notify and explain to interested parties the reasons for not accepting submitted information and give them the opportunity to explain further. The number of response sheets submitted by interested parties was reduced to lift the burden on enterprises. Interested parties are now allowed to submit their own answer sheets.

[75] MOFCOM. Viewed at: http://gpj.mofcom.gov.cn/article/bi/bj/gzjd/201804/20180402729842.shtml.

[76] These rules stipulate hearing procedures, including the holding method, application time-limit and method, decision and notification, registration and participation, and submission of written materials.

[77] The three rules were the Interim Rules for Anti-dumping Investigation Hearings, Interim Rules for Countervailing Investigation Hearings, and Industrial Damage Hearing Rules.

[78] MOFCOM. Viewed at: http://gpj.mofcom.gov.cn/article/bi/bj/gzjd/201804/20180402729839.shtml.

Table 3.7 Anti-dumping investigations and measures, January 2018-December 2020

	2018	2019	2020
Investigation initiations	16	14	4
Provisional measures	22	9	5
Definitive measures	23	13	2
Expired/terminated measures	4	11	6

Source: WTO documents G/ADP/N/350/CHN, 9 March 2021; G/ADP/N/342/CHN, 16 October 2020; G/ADP/N/335/CHN, 21 April 2020; G/ADP/N/328/CHN, 23 October 2019; G/ADP/N/322/CHN, 12 April 2019; and G/ADP/N/314/CHN, 22 October 2018.

3.58. China's anti-dumping measures on the following products were terminated during the review period: methyl methacrylate (MMA) (Singapore, Thailand, and Japan, December 2020); adipic acid (United States, European Union, and Republic of Korea, October 2020); pyridine (India and Japan, November 2019); methyl ethyl ketone (Japan and Chinese Taipei, November 2019); polyvinyl chloride (Japan, Republic of Korea, Chinese Taipei, and United States, October 2019); cellulose pulp (Brazil, Canada, and United States, April 2019); solar-grade polysilicon (European Union, November 2018); toluene diisocyanate (European Union, March 2018); sulfamethoxazole (India, June 2018); and broiler products (United States, February 2018).[79]

3.59. As at end-December 2020, China was enforcing 113 anti-dumping definitive measures. Imports from 16 countries or territories (counting the European Union as one when measures are applied to all EU member States) were affected. Among all affected trading partners, imports from the United States were subject to the largest number of anti-dumping measures, followed by Japan, the European Union, and the Republic of Korea, reflecting the same trend as in previous years (Table 3.8).

Table 3.8 Anti-dumping measures in force, by trading partner/region, January 2018-December 2020

Trading partner/region	2018	2019	2020
United States	23	22	24
Japan	20	20	21
European Union	15	17	17
Korea, Republic of	13	15	16
Chinese Taipei	10	8	7
India	6	6	6
Singapore	4	4	4
Thailand	5	6	6
Turkey	1	1	1
Australia	0	0	1
Brazil	2	2	2
Canada	1	0	0
France	1	1	0
Indonesia	0	1	1
Italy	1	1	0
Malaysia	3	3	4
Russian Federation	1	1	1
Saudi Arabia, Kingdom of	1	1	1
South Africa	1	1	1
Total	**108**	**110**	**113**

Note: Figures for 2018-20 reflect anti-dumping measures in force on 31 December of each year. Undertakings and duties are considered as separate measures.

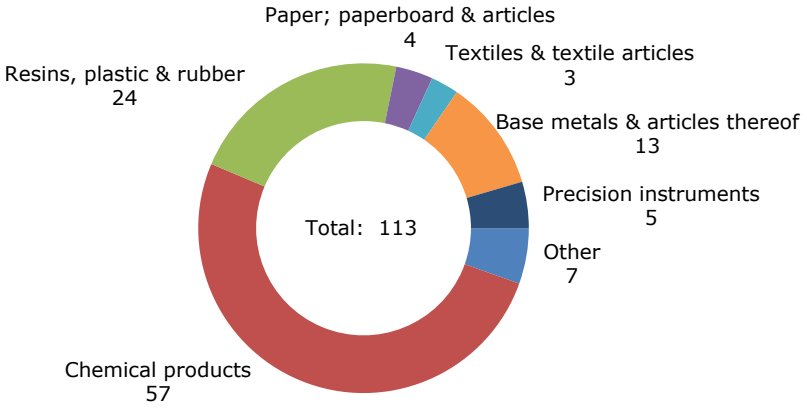
Source: WTO documents G/ADP/N/350/CHN, 9 March 2021; G/ADP/N/335/CHN, 21 April 2020; and G/ADP/N/322/CHN, 12 April 2019.

3.60. China's longest-standing anti-dumping measures in force relate to chloroprene rubber from the European Union, Japan, the Republic of Korea, and the United States; dispersion unshifted single-model optical fibre from Japan and the Republic of Korea; potato starch from the European Union; nonyl phenol from India and Chinese Taipei; paper for electrolytic capacitors from Japan; and bisphenol-A from Japan, the Republic of Korea, Singapore, and Chinese Taipei.

[79] WTO documents G/ADP/N/335/CHN, 21 April 2019; G/ADP/N/328/CHN, 23 October 2019; G/ADP/N/322/CHN, 12 April 2019; and G/ADP/N/314/CHN, 23 October 2018.

3.61. Chemical products continue to account for most measures in force at end-December 2020, followed by products made of resin, plastic, and rubber (Chart 3.4).

Chart 3.4 Anti-dumping measures in force, by product, 31 December 2020



Note: Other includes live animals and products (two measures); vegetable products (two measures); prepared foodstuff (one measure); and glassware (two measures).

Source: WTO notifications.

3.1.6.2 Countervailing measures

3.62. The legal framework governing countervailing measures remains the Foreign Trade Law (last amended in 2016), the Regulations on Countervailing Measures (last amended in 2004), and a number of published rules. There have been no changes to existing rules, nor have new ones been introduced, since January 2018. In 2018, China notified to the WTO its Interim Rules on Implementation of the World Trade Organization Ruling in Disputes Concerning Trade Remedy Measures, which entered into force on 29 July 2013.[80]

3.63. There have been no changes to the procedures for countervailing investigations. These procedures are similar to those applied for anti-dumping investigations; the main differences are described in China's Trade Policy Review Report for its previous Review.[81]

3.64. The number of China's countervailing investigations initiated and measures in force have remained relatively constant over the past five years (Table 3.9). Eight countervailing investigations were initiated during the review period (since 2018), one of which then terminated due to public interest considerations and one of which was terminated due to withdrawal by the applicant (Table 3.10). In January 2019, China undertook a sunset review of countervailing measures on solar-grade polysilicon from the United States, resulting in continuation of the definitive duties imposed in January 2020. In April 2019, China undertook a *rebus sic stantibus* review of countervailing measures on distiller dried grains with solubles from the United States, resulting in maintaining the original measures.

3.65. Details of China's RTA provisions on CV measures are contained in the Trade Policy Review Report for its previous Review.[82]

[80] WTO document WT/SCM/N/1/CHN/1/Suppl.5, 3 October 2018.
[81] WTO document WT/TPR/S/375/Rev.1, 14 September 2018.
[82] WTO document WT/TPR/S/375/Rev.1, 14 September 2018.

Table 3.9 Countervailing investigations and measures, 2016-20

	2016	2017	2018	2019	2020
Investigation initiations	1	1	3	1	4
Provisional measures	1	0	1	0	2
Definitive measures	0	1	1	0	2
Expired/terminated measures	0	0	2	0	0
Measures in force (end-period)	4	5	4	4	6

Source: WTO documents G/SCM/N/371/CHN, 26 February 2021; G/SCM/N/363/CHN, 16 October 2020; G/SCM/N/356/CHN, 13 March 2020; G/SCM/N/349/CHN, 23 October; G/SCM/N/342/CHN, 9 April 2019; G/SCM/N/334/CHN, 22 October 2018; G/SCM/N/328/CHN, 6 April 2018; G/SCM/N/313/CHN, 1 March 2017; and WT/TPR/S/375/Rev.1, 14 September 2018.

Table 3.10 Countervailing investigations initiated during the review period, as at 31 December 2020

Partners	Product	Initiation	Provisional measures	Final measures	Import volume
Australia	Barley	21/12/2018	-	19/05/2020 6.9% All others 6.9%	61.57% of apparent domestic consumption
	Wines in containers holding 2 litres or less	31/08/2020	11/12/2020 6.3%-6.4% All others 6.4%	-	13.36% of apparent domestic consumption
India	7-phenylacetamido-3-chloromethyl-3-cephem-4-carboxylic-acid p-methoxybenzyl ester	26/11/2018	-	None (application withdrawn on 25/05/2020)	100% of total imports
United States	polyvinyl chloride (PVA)	14/10/2020	-	-	1.54% of apparent domestic consumption
	Certain monoalkyl ethers of ethylene glycol and propylene glycol	14/09/2020	-	-	18.29% of apparent domestic consumption
	Polyphenylene ether	14/08/2020	-	-	15.18% of apparent domestic consumption
	n-Propanol (NPA)	29/07/2019	09/09/2020 34.2%-37.7% All others 37%	18/11/2020 34.2%-37.7% All others 37%	67.43% of total imports
	Grain sorghum	04/02/2018	-	None (Terminated – Public Interest) 18/05/2018	-

- None.

Source: WTO documents G/SCM/371/CHN, 26 February 2021; G/SCM/N/363/CHN, 16 October 2020; G/SCM/N/356/CHN, 13 March 2020; G/SCM/N/349/CHN, 23 October 2019; G/SCM/N/342/CHN, 9 April 2019; and G/SCM/N/334/CHN, 22 October 2018.

3.1.6.3 Safeguard measures

3.66. During the review period, China did not initiate any new safeguard investigations. As indicated in the previous Review, China imposed a safeguard measure on sugar on 22 May 2017.[83] China notified to the WTO that the measure would remain in force for three years (i.e. until May 2020). China did not notify an extension of the safeguard measure. On 16 October 2018, Brazil requested

[83] The investigation was initiated in September 2016 and definitive safeguard measures in the form of an additional *ad valorem* duty of 45% were imposed on 22 May 2017. The duty applied to imports outside the existing quota and were to be reduced to 35% within three years (WTO document WT/TPR/S/375/Rev.1, 14 September 2018; see also WTO documents G/SG/N/8/CHN/2/Suppl.1, G/SG/N/10/CHN/2, and G/SG/N/11/CHN/2, 23 May 2017). China subsequently notified the WTO that exemptions from this measure applicable to certain developing countries had been revoked, and that the safeguard measure would apply to imports of sugar from all developing countries (regions) from 1 August 2018 (WTO documents G/SG/N/8/CHN/2/Suppl.2, G/SG/N/10/CHN/2/Suppl.1, and G/SG/N/11/CHN/2/Suppl.1, 18 July 2018).

consultations with China pursuant to the Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU) on certain Chinese measures concerning imports of sugar.[84] This request covers: (i) China's 22 May 2017 safeguard measure on imported sugar; (ii) China's administration of its TRQ for sugar; and (iii) China's so-called "automatic import licensing" system for out-of-quota sugar. The European Union, Thailand, and Guatemala requested to join the consultations.[85] A panel has not been established as of the writing of this report.

3.67. In 2018, China notified to the WTO its Interim Rules on Implementation of the World Trade Organization Ruling in Disputes Concerning Trade Remedy Measures, which entered into force on 29 July 2013.[86] Other than this new information, the laws and regulations governing safeguard measures in China did not change during the review period. The Foreign Trade Law (last amended in 2016), the Regulations on Safeguards (last amended in 2004), and other published rules provide the regulations on safeguard investigations and the application of measures.

3.68. As noted in previous Reviews, MOFCOM, specifically the TRB, is in charge of investigating and determining if there has been an increase in imports and if injury has been caused. If an investigation involves agricultural goods, the investigation and determination must be done jointly with the Ministry of Agriculture. Investigation procedures have not changed since, and are detailed in, China's Trade Policy Review Report for its previous Review, as are details on safeguard provisions in the RTAs to which China is signatory.[87]

3.2 Measures Directly Affecting Exports

3.2.1 Customs procedures and requirements

3.69. The general framework of export procedures, including registration and documentation, remained largely unchanged during the review period. Registration formalities for exports of goods for commercial purposes are similar to those for imports and governed by the same regulations (Section 3.1.1).

3.70. An exporter must register as a foreign trade operator with MOFCOM or its authorized bodies, before filing customs declarations. Export declarations must be made on paper or in electronic format. As at the time of the previous Review, declarations can be made either by the consignor, or by a customs declaration enterprise entrusted by the consignor. On 1 January 2020, the authorities established a paperless application system for export licences and customs clearance operations for goods subject to exports control.[88] Exporters of the specified goods may choose to adopt paper or paperless operations. On 9 September 2019, the same system was established for export licence application of used cars.[89]

3.71. As stipulated by the Law on Inspection of Import and Export Commodities, exporters must comply with the requirements of the Catalogue of Import and Export Commodities Subject to Compulsory Inspection, which is regularly amended to add or subtract commodities. The inspection of import and export commodities aims to protect the health and safety of human beings, protect the life and health of animals or plants, protect the environment, prevent fraud, and safeguard national security. The import and export commodities that are included in the Catalogue shall be inspected by Customs. For cabins and containers used for the exports of perishable food, the carrier or the packing unit must apply for inspection before loading.[90]

3.72. Some items, such as dangerous chemicals, fireworks, lighters, food products, and rare earths, are subject to export inspection. These goods must be inspected where they are produced. The packaging of the exports of dangerous chemicals or goods must also undergo inspection and tests.

[84] WTO document WT/DS568/1, 22 October 2018.
[85] WTO documents WT/DS568/2, 2 November 2018; and WT/DS568/3-4, 5 November 2018.
[86] WTO document G/SG/N/1/CHN/2/Suppl.5, 3 October 2018.
[87] WTO document WT/TPR/S/375/Rev.1, 14 September 2018.
[88] MOFCOM, MOFCOM and GACC Notice No. 64, 2019. Viewed at: http://www.mofcom.gov.cn/article/b/e/201912/20191202927111.shtml.
[89] Shang Ban Mao Han No. 297, 2019.
[90] FAO, *Law of the People's Republic of China on Import and Export Commodity Inspection*. Viewed at: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC152646/.

3.73. Under China's risk management system, enterprises are classified into different groups based on risk analysis. As with import procedures, customs inspection and supervision depend upon the enterprise's rating (Section 3.1.1). Goods exported by high-risk enterprises and other high-risk goods (based on risk analysis) are inspected, while other exports are released through fast-track clearance or a "low-risk examination".

3.74. Following the global outbreak of the COVID-19 pandemic, China launched a series of trade facilitation and compliance measures with a view to, *inter alia*, containing COVID-19, maintaining trade flows of medical supplies, and minimizing the disruption caused by COVID-19. An emergency plan was adopted to further streamline customs procedures, including inspections and quarantine, and reduce port charges.[91] In February 2020, the GACC rolled out 10 measures to support new importers and exporters to overcome challenges relating to the pandemic, including the simplification of business registration and clearance formalities, optimization of pre-export control and certification services, and the supply of up-to-date market information.[92]

3.75. The authorities also implemented more stringent control measures on enterprises involved in the export of COVID-19-related test kits and other medical devices. On 31 March 2020, MOFCOM, the GACC, and the National Medical Products Administration issued Announcement No. 5, 2020, on Ensuring the Orderly Export of Medical Supplies[93]; subsequently, on 25 April 2020, MOFCOM, the GACC, and the State Administration for Market Regulation (SAMR) issued Announcement No. 12, 2020, on Reinforcing Quality Regulation on Exported Supplies for COVID-19 Response.[94] The Announcements introduced a new quality verification procedure for the export of medical products, including a requirement to provide a valid medical device product registration certificate in China. In addition, exporters must provide proof that the products meet the quality standards of the importing country.[95]

3.2.2 Taxes, charges, and levies

3.76. China applies export duties in accordance with the Regulations on Import and Export Tariffs. They are applied with a view to protecting the domestic environment and supporting the effective utilization and sustainable development of energy and scarce resources. Interim tariff rates may be applied to export goods within a certain period. The State Council shall establish the Customs Tariff Commission to decide on the goods subject to interim tariff, the tariff rates, and the time-limit. The authorities state that interim export tariff rates are adjusted as appropriate based on national economic development considerations.

3.77. Export duties are calculated based on the transaction value of exports, plus transport-related fees, and insurance cost. In 2020, all export duties were *ad valorem*. Certain items are subject to the interim export tariff levied at a rate of zero.

3.78. As at January 2021, 102 tariff lines (at the 8-digit level) were subject to statutory export duties, unchanged since 2015, while 75 tariff lines carried interim duties, down from 180 in 2017 (Table 3.11). The highest tax rate (50%) applies to tin ores and concentrates (HS 2609).

[91] UNCTAD, *Case Study: China's Trade Facilitation Responses to the COVID-19 Pandemic*, 22 May 2020. Viewed at: https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2328.

[92] GACC, *GACC Launches Facilitative Measures as Foreign-Trade Businesses Begin to Resume Operations*, 19 February 2020. Viewed at: http://english.customs.gov.cn/Statics/8f0f8824-eef2-492b-ace6-77d84bf12f1f.html.

[93] MOFCOM. Viewed at: http://www.mofcom.gov.cn/article/b/e/202003/20200302950371.shtml.

[94] MOFCOM. Viewed at: http://english.mofcom.gov.cn/article/policyrelease/announcement/.

[95] National Medical Products Administration. Viewed at: https://www.nmpa.gov.cn/. The updated lists of products covered by the Announcements are available on the website of the China Chamber of Commerce for Import and Export of Medicines and Health Products (www.cccmhpie.org.cn).

Table 3.11 Export duties by type and HS chapter, 2020

HS chapter	Statutory duties		Interim duties	
	No. of lines	Range %	No. of lines	Range %
Total	102	20-50	75	0-35
03 Fish and crustaceans	1	20	0	n.a.
05 Products of animal origin, n.e.s.	4	40	1	0
26 Ores, slag and ash	7	20-50	2	0-20
28 Inorganic chemicals	3	20-30	1	10
29 Organic chemicals	1	40	1	0
41 Raw hides and skins	2	20	0	n.a.
72 Iron and steel	17	20-40	5	10-20
74 Copper and articles thereof	32	30	32	0-15
75 Nickel and articles thereof	4	40	4	5-15
76 Aluminium and articles thereof	24	20-30	24	0-15
79 Zinc and articles thereof	4	20	4	0-15
81 Other base metals	3	20	1	5

n.a. Not applicable.

Note: Tariff lines where export duties are only partially applied are included.

Source: Customs Tariff of Import and Export of the People's Republic of China, 2020.

3.2.3 Export prohibitions, restrictions, and licensing

3.79. Export restrictions and prohibitions are aimed to, *inter alia,* maintain national security, social public interests, or public morality; protect human health or safety, or the lives or health of animals and plants; protect the environment; protect exhaustible natural resources that are in short domestic supply or may require effective protection; and take effect in case of serious disturbance of the order of export business operations.

3.80. Export restrictions, including prohibitions and licensing requirements are in place on a variety of items, as highlighted in China's WTO notification in 2019 on its quantitative restrictions.[96] The list of items that are subject to prohibitions and restrictions is generally announced by MOFCOM, in collaboration with other relevant departments. Export prohibitions apply to products such as certain forest litter and turf, ractopamine, certain hazardous chemicals, natural sand (except metallic sand), pesticides and persistent organic pollutants, charcoal, certain toxic substances, and wild animal products. The legal basis for export prohibitions are mainly provided by: (i) former Ministry of Foreign Trade and Economic Cooperation (MOFTEC) Announcement No. 19, 2001; (ii) MOFCOM, GACC, and SFA Joint Announcement No. 40, 2004; (iii) MOFCOM, GACC and former State Environmental Protection Administration (SEPA) Joint Announcement No. 116, 2005; (iv) MOFCOM, GACC Joint Announcement No. 87, 2006; (v) MOFCOM, GACC Joint Announcement No. 96, 2008; and (vi) MOFCOM and GACC Joint Announcement No. 110, 2009.

3.81. China applies export licences to specific dual-use substances for the purposes of safeguarding national security and public interest and performing the obligations under relevant international agreements. The control is executed by the State Administration of Science, Technology and Industry for National Defence and MOFCOM, in coordination with other relevant agencies.

3.82. Restricted exports may be subject to quotas and licences. China imposes global and destination-specific export quotas. The list of products subject to quotas (Table 3.12) and the quota volumes for the following year is published on 31 October of each year. MOFCOM announces the total export quota of goods before 31 October each year. The authorities state that the latest total quota was provided through the Announcement on the Total Export Quotas for Goods (MOFCOM Announcement No. 49, 2020).

3.83. Regarding licensing requirements, MOFCOM issues on a yearly basis the Catalogue of Goods Subject to the Administration of Export Licences.[97] The Catalogue lists goods that are subject to export licensing (Table 3.12). The 2019 announcement, set to be implemented in 2020, lifted the licensing requirements for export of vitamin C and penicillin products. The Catalogue also lists goods

[96] WTO document G/MA/QR/N/CHN/5/Rev.1, 15 February 2019.

[97] MOFCOM Announcement No. 47, 2019; and MOFCOM and GACC Announcement No. 66, 2019. Viewed at: http://www.mofcom.gov.cn/article/b/e/201912/20191202927141.shtml.

that are subject to export quota (Table 3.12). For exports subject to a quota, the exporter must obtain the quota prior to applying for a licence.

Table 3.12 Products subject to export quotas and licensing, 2020

Products	Type of management	Comment
Products subject to quotas and licensing		
Wheat, maize, rice, cotton, and coal	Export quota (licence)	The export quota is allocated by the NDRC and the licence issued by MOFCOM.
Wheat, maize, and rice flour; ephedra herbs for medicinal use (cultivated); sawn timber; live chicken (for export to Hong Kong, China); live swine and cattle (for export to Hong Kong, China and Macao, China); crude oil; and refined oil (excluding lubricating oil, grease, and lubricating base oil)	Export quota (licence)	The export quota is allocated by MOFCOM.
Rush and rush products; liquorice and liquorice products	Export quota bidding (licence)	The export quota is allocated by MOFCOM.
Products subject to licensing		
Live cattle and swine (for export to markets other than Hong Kong, China and Macao, China); live chicken (for export to markets other than Hong Kong, China); beef, pork, and chicken; natural sand (including standard sand); bauxite; phosphate rock; magnesia; talc block (powder); fluorite (fluorspar); rare earths; tin and tin products; tungsten and tungsten products; molybdenum and molybdenum products; antimony and antimony products; coke; refined oil (lubricating oil, grease, lubricating oil base oil); paraffin; semimetals and semimetal products; disodium sulphate; silicon carbide; citric acid; silver; platinum (exported under processing trade); indium and indium products; motorcycles (including all-terrain vehicles) and motorcycle engines and frames; and automobiles (including complete sets of parts) and automobile chassis.	Export licence	Export traders apply for export licences with relevant export contracts.
Substances that deplete the ozone layer	Export licence	Export of such product must be allowed before applying for an export licence.

Source: MOFCOM Announcement No. 47, 2019; and MOFCOM and GACC Announcement No. 66, 2019.

3.84. According to the authorities, the value of exports of goods subject to export licensing stood at USD 63.86 billion in 2020, up from USD 39.50 billion in 2017.

3.85. In addition, to "maintain foreign trade order", export declarations of certain products subject to export licensing (liquorice, liquorice products, and natural sand), when exported to Chinese Taipei; Hong Kong, China; and Macao, China, may be cleared only through designated ports. The export clearance ports of liquorice are Tianjin Customs, Shanghai Customs, and Dalian Customs; the export clearance ports of liquorice products are Tianjin Customs and Shanghai Customs; the export clearance ports of natural sand (to Chinese Taipei; Hong Kong, China; and Macao, China) are limited to the province (autonomous region, municipalities) customs. The authorities state that the measures of administration at designated ports for the export of liquorice and liquorice products, and natural sand shall be cancelled in 2021.

3.86. The Catalogue of Technologies Restricted or Forbidden for Export was published in August 2020 by MOFCOM and the Ministry of Science and Technology (MOST).[98] The first version of the Catalogue was released in 1998 and was amended twice (in 2001 and in 2008). The amendments to the 2020 Catalogue were based on the draft proposed revisions released by MOFCOM and the corresponding public comments collected in 2018.

3.87. The Amendment added 23 new items to the list subject to export restrictions, including technologies related to drones, production of space materials, design and construction of large-scale high-speed wind tunnels, and aerospace bearings and lasers. It also provides description of new

[98] MOFCOM, 2020 Catalogue, Notification No. 38/2020, 28 August 2020. Viewed at: http://www.mofcom.gov.cn/article/b/c/202008/20200802996641.shtml.

elements and technical specifications subject to export control. For example, it adds "personalised information recommendation service technology based on data analysis" and "artificial intelligence interactive interfaces", one type of which uses voice recognition.

3.88. The Amendment removed four items that were subject to export prohibition in the 2008 Catalogue, which involve technologies related to microbial fertilizers, as well as the production of synthetic and semisynthetic caffeine and vitamin B2 production, and it removed five items that were subject to export restriction in the 2008 Catalogue, which involve technologies related to the Newcastle disease vaccine (for chickens), production of natural medicines, preparation and processing of functional polymer materials with biological activity, production of certain synthetic and semisynthetic chemicals, and information security firewall software.

3.89. Exports of a technology, either by means of transfer or licensing, would be prohibited if such technology is classified as a prohibited technology in the Catalogue. With regard to transfer of any technology subject to export restrictions in the Catalogue, approval from a competent commerce authority at the provincial level is required before entering into any substantial transfer negotiation with foreign counterparties, and an export licence issued by the same authority would be also required when completing the technology transfer agreement.

3.90. On 17 October 2020, the Standing Committee of the NPC passed the Export Control Law, which entered into force on 1 December 2020. Under Article 2 of the Law, export control refers to "prohibitions or restrictions on transfer of controlled items from the territory of the People's Republic of China to overseas and the provision of controlled items by any citizen or incorporated or non-incorporated organization of the People's Republic of China to any foreign organization or individual".

3.91. The Law defines "controlled items" to include dual-use items (with both civilian and military applications), military products, and nuclear products. In addition, "controlled items" include "other goods, technologies, services that are related to the maintenance of national security and interests and the implementation of international obligations such as non-proliferation". It also requires exporters to provide documentation establishing the intended end-use and end-user for the controlled items to be issued by the end-user or the Government at the end-user's location. End-users are required to commit not to change the end-use or transfer the item to any third party without authorization from the Chinese export control authorities. Exporters and importers are further obliged to report any potential change in the end-use or end-user.

3.92. While the previous export control framework still remains in place on a number of fragmented lists of items, the new Export Control Law provides for the establishment of a single framework for restricting exports of controlled items through published control lists. According to the authorities, China has formulated six administrative laws and regulations on export control, including the Administrative Rules on Monitored Chemicals, the Regulations on the Control of Nuclear Exports, the Administrative Regulations on the Export of Military Products, the Regulations on the Export Control of Dual-use Nuclear Items and Related Technologies, the Regulations on the Export Control of Missiles and Missile-related Items and Technologies, and the Regulations on the Export Control of Dual-use Biological Items and Related Equipment and Technologies. Specific export control lists were also released. In addition to the established control lists, the new legislation authorizes export control authorities to list items for "temporary controls" for a provisional period of up to two years before determining whether to list the items on a control list. The authorities indicate that China is in the process of formulating supporting regulations and shall release further regulations at a later stage.

3.93. Besides the item-based control lists, the Law provides for the establishment of control lists of foreign business entities that fall under one of the following cases: (i) violate end-user or end-use restrictions; (ii) "possibly endanger national security and interests"; or (iii) use controlled items for terrorist purposes. Chinese exporters will be barred from dealing with foreign business entities on the controlled list. However, they will be able to request exemptions under certain conditions, according to the Law.

3.94. Exporters must apply for an export licence from the relevant export control authority in order to export any item listed on a control list or subject to temporary controls. Article 13 of the Law provides that approval or disapproval of exports will be based on eight criteria: national security and interests, international obligations and external commitments, the type of exports, the sensitivity of

controlled items, the countries or regions they are bound for, the end-users and end-uses, relevant credit records of exporting companies, and "other factors stipulated by laws and administrative regulations". For goods, technologies, and services other than those listed on the export control list and temporarily controlled items, an exporter must apply to the national export control authorities for an export licence, if the exporter knows or should know, or has been notified by the national export control authorities, that the relevant goods, technologies, and services may endanger national security and interests, or may be used for the design, development, production, or use of weapons of mass destruction and their means of delivery, or may be used for terrorism.

3.95. Under the Law, China may take measures reciprocally, according to the actual circumstances, if any country or region "abuses" its export control measures in ways that endanger China's national security and interest.

3.2.4 Export support and promotion

3.96. China's most recent notification to the WTO regarding export subsidies was submitted in 2020. China indicated that export subsidies were not granted to agricultural products in 2019.[99]

3.97. Exporters are entitled to VAT rebates.

3.98. After the issuance by the Ministry of Finance (MOF) and the State Taxation Administration of the Announcement on Increasing the Export Tax Refund Rate of Some Products in 2020[100], the VAT rebate rate of all products, except for the high-pollution, high-energy consuming, and resource-based products, became equal to the applied rate. The MOF and the State Taxation Administration administer the VAT rebate regime.

3.99. Since 2018, VAT rebate rates on exports have been successively adjusted through the following measures: Notice of the MOF and the State Taxation Administration on Adjusting the VAT Rates (Cai Shui No. 32, 2018); Notice on Increasing the Export Rebate Rates for Mechanical and Electrical Products, Cultural Products and Other Products (Cai Shui No. 93, 2018); Notice on Adjusting the Export Tax Rebate Rates for Certain Products (Cai Shui No. 123, 2018); MOF, State Taxation Administration, and GACC Announcement on Policies for Deepening the VAT Reform (Announcement No. 39, 2019); and MOF and State Taxation Administration Announcement on Increasing the Export Tax Refund Rates for Certain Products (Announcement No. 15, 2020).

3.100. The latest adjustment to VAT rebate rates (Announcement No. 15, 2020) increased VAT refund rates for 1,464 goods as from 20 March 2020.[101] The announcement includes 380 agricultural and agricultural-related items and increases the rebate rate from 6% to 9%. The rate for the remaining 1,084 tariff lines in the Announcement increased from 9% to 13%.

3.101. Following the most recent round of adjustments of VAT rebate on exports, four refund rates are in force: 13%, 9%, 6%, and 0%, with the proportion of tariff lines subject to each rebate rate being 61.2%, 18.9%, 0.1%, and 19.6%, respectively. Products not subject to VAT rebate include high-energy-consuming products, high-polluting products, and endangered species of fauna and flora.

3.102. Exports promotion may also take the form of import duty exemptions for certain products (Section 3.1.3). Beyond their primary role as a test ground for policy reforms, PFTZs have attracted companies that export. Since 2013, China has established an increasing number of PFTZs across the country; currently, there are 31 PFTZs. In the Shanghai PFTZ, for example, benefits available to companies include a reduced corporate income tax rate of 15% (standard 25%) for five years in industries such as integrated circuits, artificial intelligence, biomedicine, and civil aviation; reduced individual income tax for foreign staff in PFTZ companies; and streamlined customs handling for PFTZ imports and exports.

3.103. Companies located in the Shanghai PFTZ can produce either in bonded or non-bonded areas. The payment of import tariffs by companies located in bonded areas is suspended and only becomes

[99] WTO document G/AG/N/CHN/53, 7 December 2020.
[100] Ministry of Finance and State Taxation Administration Announcement No. 15, 2020.
[101] The Bulletin is available at: http://szs.mof.gov.cn/zhengcefabu/202003/t20200317_3484123.htm.

effective when final products are sold to the rest of China. The PFTZ also features a distinctive mechanism for dispute resolution, with arbitration governed by a separate set of Arbitration Rules issued by the Shanghai International Arbitration Centre.

3.104. According to the authorities, in 2020, the total foreign trade value amounted to CNY 4.7 trillion in the 18 PFTZs, and 393,000 new companies were established (including 6,472 newly established foreign-funded enterprises).

3.105. Export support programmes also include the organization, by MOFCOM's Trade Development Bureau (TDB), of exhibitions in emerging markets and export-oriented training activities. The TDB also maintains the websites of China Trade Promotion and provides, through various service platforms, background information about foreign markets.

3.106. The Overseas Commercial Complaint Service Centre for Chinese Enterprises provides services to Chinese enterprises in the areas of complaint-handling, consulting, talent base construction, and support for start-ups.

3.107. The authorities indicate that several export promotion and assistance activities abroad were implemented during the review period. As at June 2020, the China Council for the Promotion of International Trade had established 387 trade cooperation mechanisms with 341 institutions in 143 countries and regional organizations. Since 2019, trade forums were held with countries including Cambodia, Pakistan, and Nepal.

3.2.5 Export finance, insurance, and guarantees

3.108. Export finance[102], insurance, and guarantees are predominantly granted by a number of policy financial institutions with the mandate to promote foreign trade and cross-border investment. The bulk of export finance is provided by the China Export-Import Bank (China Eximbank), which provides export finance, and the state-owned China Export & Credit Insurance Corporation (SINOSURE), which provides export credit insurance and related guarantees. Foreign-owned companies are also eligible for the services of China Eximbank and SINOSURE. China is not a member of the OECD; it does not participate in the OECD's Arrangement on Officially Supported Export Credits. The authorities indicate that China has always been actively involved in the consultation of the International Working Group on export credits, including its technical working group.

3.109. China Eximbank is a state-owned policy bank with the status of an independent legal entity. It is dedicated to supporting China's foreign trade, investment, and international economic cooperation.[103] It was created in 1994 to provide financing for the importation and exportation of capital goods and services and for Chinese companies that undertake overseas construction and investment projects. Its main mandate includes facilitation of export and import of equipment and new- and high-tech products, and assisting Chinese companies with comparative advantages in their offshore projects. According to the authorities, the Government injects capital into China Eximbank as its shareholder; in the course of business, China Eximbank raises funds mainly by issuing bonds in both domestic and international capital markets.

3.110. China Eximbank primarily offers overseas financing through a range of activities such as export credits (including export buyer's credit and export seller's credit), loans for overseas construction and investment, and concessional loans. Export buyer's credit consists of loans extended to overseas borrowers to finance their imports of Chinese goods, while export seller's credit consists of loans granted to domestic enterprises within the scope of their export activities. The Bank provides two preferential facilities: government concessional loans and preferential export buyer's credit. Concessional loans are offered to developing countries at rates lower than market interest rates and are usually tied to Chinese exports.[104] The authorities note that all projects operate according to market principles, and banks do not attach any additional conditions to their loans.

[102] According to the authorities, this relates only to official export credit.

[103] China Eximbank, *About the Bank*. Viewed at: http://english.eximbank.gov.cn/Profile/AboutTB/Introduction/.

[104] OECD Development Centre, Perspectives on Global Development 2010 Shifting Wealth, *How China is Influencing Africa's Development*, April 2010. Viewed at: https://www.oecd.org/development/pgd/45068325.pdf.

China Eximbank provides its services to various enterprises. In 2018, China Eximbank conducted USD 178.1 billion worth of international settlement (USD 118.3 billion), letters of guarantee (USD 9.4 billion), and trade finance transactions (USD 50.3 billion), a year-on-year increase of 8.85%.[105]

3.111. China Eximbank is the designated institution to implement the Chinese Government Concessional Loan and Preferential Export Buyer's Credit, two Concessional facilities provided to other developing countries. As at end-2018, China Eximbank's concessional business covered more than 90 countries in the ASEAN region, South Asia, Central Asia, West Asia, Africa, Latin America, and the South Pacific.[106]

3.112. China's official export credit insurance agency is SINOSURE. It was created in 2001 by merging the export credit insurance departments of China Eximbank and the People's Insurance Company of China, with the mandate to promote exports and cross-border investments through export credit insurance and investment insurance. Based on information provided by the authorities, SINOSURE's export credit insurance in 2018 and 2019 covered around 20% of total exports.

3.113. SINOSURE offers, *inter alia*, short-, medium-, and long-term export credit insurance, bond and guarantee facilities, and overseas investment insurance and credit information services. There are several kinds of short-term export credit insurance, with a maximum term of two years (Table 3.13). The list of available insurance products is available online.[107] Exporters may choose from the following insurance products/solutions: (i) comprehensive cover insurance, which indemnifies exporters from the direct loss arising from political or commercial risks; (ii) small and medium-size enterprise (SME) comprehensive cover insurance, which protects SME exporters from the risk of foreign exchange collection; (iii) small and micro enterprise easy credit insurance, which is tailor-made to meet the specific need of small and micro businesses; and (iv) additional pre-export insurance, which mainly covers the credit risk before export of goods. Financing banks may also choose specific insurance products.

Table 3.13 Overview of SINOSURE short-term export credit insurance policy

Covered risks and insured percentage
Covered commercial risks
The buyer goes bankrupt or insolvent.
The buyer defaults on payment for goods.
The buyer refuses to take delivery of goods.
The issuing bank goes bankrupt, closes down, or is under receivership.
The issuing bank defaults in spite of consistency of trading documents and consistency between letter of credit and trading documents, or dishonours under usance of letter of credit.
Covered political risks
The country or region of the buyer or issuing bank prohibits or restricts the buyer or issuing bank from paying for goods or making letter of credit payment to the insured.
An import ban is imposed on the goods purchased by the buyer, or the import permit issued to the buyer is revoked.
A war, civil war, or riot makes the buyer unable to perform the contract, or makes the issuing bank unable to discharge its payment obligation under letter of credit.
A third country through which the payment by the buyer or issuing bank has to be routed issues a moratorium.
Insured percentage
Up to 90% for the loss resulting from political loss.
Up to 90% for the loss resulting from bankruptcy, insolvency, default, or other commercial risks.
Up to 90% for the loss resulting from the buyer's refusal to accept goods.
Up to 100% under the export credit insurance (forfaiting) policy.
Up to 90% under the SME comprehensive cover insurance.

Source: China Export & Credit Insurance Corporation (SINOSURE). Viewed at: http://www.sinosure.com.cn/en/Insurance/steci/index.shtml.

[105] China Eximbank, *2018 Export-Import Bank Annual Report*. Viewed at: http://www.eximbank.gov.cn/aboutExim/annals/2018_2/.

[106] China Eximbank, *Chinese Government Concessional Loan and Preferential Export Buyer's Credit (Two Concessional Facilities).* Viewed at: http://english.eximbank.gov.cn/Business/CreditB/SupportingFC/201810/t20181016_6972.html.

[107] SINOSURE, *ST Export Credit Insurance*. Viewed at: http://www.sinosure.com.cn/en/Insurance/steci/index.shtml.

3.114. SINOSURE offers various medium- and long-term insurance instruments to protect various risks born by exporters and financial institutions (Table 3.14). The term is generally between 2 and 15 years. Four insurance instruments exist under the medium- and long-term framework: export buyer's credit insurance; export supplier's credit insurance; export deferred payment refinancing insurance; and overseas financial leasing insurance.[108]

Table 3.14 Overview of SINOSURE medium- and long-term export credit insurance policy

Covered risks and insured percentage
Covered commercial risks
The debtor declares bankruptcy, or the winding-up and/or dissolution or the debtor's default of payment of the principal or/and interest due and payable on the due date under the loan agreement or commercial contract.
Covered political risks
The debtor is being prohibited or inhibited from repaying its debt to the insured with the currency agreed in the loan agreement or with other freely convertible currencies as a result of the promulgation of any law, decree, order, rule, or adoption of any administrative measure by the government of the debtor's country (or region) or a third country (or region) through which the repayment must be effected.
The debtor is unable to implement its repayment obligations under the loan agreement as a result of any moratorium announced by the government of the debtor's country (or region) or a third country (or region) through which the repayment must be effected.
The occurrence of war, revolution, or riot in the debtor's country (or region) or other applicable political events to be determined by SINOSURE.
Insured percentage
Up to 95% for export buyer's credit insurance and export deferred payment refinancing insurance.
Up to 90% for export supplier's credit insurance.
Up to 90% for overseas lease insurance with financial institution ((FI), including financial lease company) insured, or 90% for overseas lease insurance with non-FI insured.

Note: SINOSURE medium- and long-term export credit insurance covers risks in relation to the collection of deferred payment by exporters, the account receivable by financial leasing companies, and the recovery of loan principal and interest by financial institutions. The tenor is normally 2 to 15 years.

Source: SINOSURE, *M / LT Export Credit Insurance*. Viewed at: http://www.sinosure.com.cn/en/Insurance/meci/index.shtml.

3.3 Measures Affecting Production and Trade

3.3.1 Incentives

3.115. During the review period, China continued to provide incentives and financial support to different sectors and industries. The authorities indicate that these measures are in place to accelerate transformation and upgrading of traditional industries, foster infant industries, stimulate innovation, promote development in remote areas, enhance competitiveness of SMEs, and attract FDI. Furthermore, support was also granted with a view to protecting the environment, reducing emissions, and conserving energy. Generally, support is granted by the Central Government or local governments in the form of direct transfers and tax preferences. The authorities indicate that no incentives are granted in the form of access to credit.

3.116. The Government's Five-Year Plans for Economic and Social Development serve as a reference for the design of support policies and for the identification of priority areas, even though the plans do not outline specific measures. The 13th Five-Year Plan (2016-20) highlighted the importance of innovation capacity, and advocated increased innovation in agriculture, strategic emerging industries, intelligent manufacturing, and services. In addition to the Five-Year Plans for Economic and Social Development, there are also sector-specific Five-Year Plans for individual industries.

3.117. In June 2019, China notified to the WTO its support programmes at the central and subcentral levels during the period 2017-18.[109] The 249-page notification contains information on 79 central-level and 420 subcentral-level programmes. According to the notification, the objectives of the subsidies are to support rural and regional development, protect the environment, conserve

[108] SINOSURE, *M / LT Export Credit Insurance*. Viewed at: http://www.sinosure.com.cn/en/Insurance/meci/index.shtml.

[109] WTO documents G/SCM/N/343/CHN, 19 July 2019; and G/SCM/N/343/CHN/Corr.1, 31 July 2019.

energy, upgrade specific industries, improve productivity and efficiency, and increase welfare of disabled people.

3.118. At the central level, support is provided in form of preferential taxes, payment and stamp duty exemptions, tariff and VAT reductions, and fiscal appropriation. Fifteen of the 79 programmes had already expired by the time of provision of the notification (Table A3.2). No information was provided by the authorities on how many of the programmes were still active as at April 2021. Among the 59 central programmes still active in 2019, 7 were on the agricultural sector; 5 each on technology, fishery, energy, and disability; 4 on infrastructure; 3 each on waste management, financing, environment, and automobile and transportation; 2 each on SMEs, poverty reduction, pharmaceuticals, and economic development; and 1 each on oil and gas, mining, and FDI. Among the active programmes, budget information was only made available for 14 programmes that provided support in form of fiscal appropriation.

3.119. At the subcentral level, the notification contains 420 programmes in 31 provincial administrations and 5 designated city administrations. Of these programmes, 283 were still active in 2019. No information was provided by the authorities on how many of the programmes were still active as at April 2021. Under these programmes, incentives are provided to specific industries, SMEs, research and development (R&D) activities, industry upgrade, less developed regions, and rural areas. Support at the subcentral level is through fiscal appropriation. The amount of subsidies differs by municipality and by industry.

3.120. During the review period, several communications were submitted by other Members concerning China's subsidy policy and notifications.[110] These communications referred to the amount of central and subcentral subsidies, the role of government guidance funds, China's fulfilment of its subsidy notification requirements (in particular, subsidies not mentioned in the notifications), subsidies to individual sectors (e.g. agriculture, fisheries, and steel), and eligibility criteria for specific subsidy schemes. China provided written answers to questions asked in these communications.[111] Specifically, China provided further information about the beneficiaries and eligibility criteria of the programmes. However, the total amount of expenditure or revenue forgone was usually not provided; according to the authorities, this is due to the lack of statistics on tax expenditures.

3.121. The authorities indicate that a notification on subsidies covering the years 2019 and 2020 will be submitted to the WTO in due course.

3.122. The notifications submitted to the WTO and the replies provided by China to questions asked by other Members did not enable the Secretariat to have a clear overall picture of China's support programmes. In particular, the notifications do not contain information on expenditure levels in certain sectors such as aluminium, electric vehicles, glass, shipbuilding, semiconductors, or steel. Information on subsidies going beyond the 2019 notification was not made available to the Secretariat. In the WTO Committee on Subsidies and Countervailing Measures, China generally provides answers to questions that focus on its subsidy notifications, but not on subsidy policies not covered in its notification.[112] The authorities indicate that under the provisions of the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement), there is no obligation to provide written information on programmes not contained in the subsidy notification.

3.123. It would appear that transparency on government support may also be hampered, as the Government, through numerous state-owned enterprises (SOEs), is involved in the financing and management of companies, making it difficult to identify the precise policy actions (see also Section 3.3.5). The authorities do not agree with this statement and indicate that no implicit

[110] WTO documents G/SCM/Q2/CHN/75-76, 30 January 2019; G/SCM/Q2/CHN/77, 5 March 2019; G/SCM/Q2/CHN/78, 4 April 2019; G/SCM/Q2/CHN/79, 9 April 2019; G/SCM/Q2/CHN/85, 27 January 2020; G/SCM/Q2/CHN/86-89, 29 January 2020; and G/SCM/Q2/CHN/90, 20 August 2020. Questions were asked by the United States, the Dominican Republic, Japan, New Zealand, the European Union, Canada, and Australia.

[111] WTO documents G/SCM/Q2/CHN/80-84, 20 November 2019; G/SCM/Q2/CHN/91-95, 28 October 2020; and G/SCM/Q2/CHN/96, 30 October 2020.

[112] WTO document G/SCM/M/110, 13 February 2020, paras. 109 and 117. Furthermore, in April 2017 questions were posed by the European Union and the United States under Article 25.8 of the SCM Agreement, regarding non-notified steel subsidies, to which China has not yet provided written replies (WTO document G/SCM/Q2/CHN/70, 13 April 2017).

subsidies were paid to China's SOEs. According to the authorities, the Government does not intervene in SOEs' financing, operation, and management.

3.124. In addition to the notified programmes, it would appear that numerous other initiatives are in place to support different industries and attract foreign investment. So-called "government guidance funds", or government-guided investment funds, use public resources to make equity investments in industries that the Government considers important (Table 3.15). The Secretariat was not able to get clarity on what these funds are.[113] Some of them are still in the process of being established, and it is unclear what their ultimate size will be. According to some external sources, they are mostly financed by the Central Government and local governments, large SOEs, and state-owned financial institutions. Most of the funds are utilized to finance advanced manufacturing, new materials, and other innovative industries. Information provided in Table 3.15 was not confirmed by the authorities; they expressed the view that the information is not relevant to this Review. They also state that these funds were in part privately funded, that they would not provide any subsidies, and hence would not have to be notified. According to the authorities, these funds are not required to be notified under the SCM Agreement as support provided through these funds does not constitute subsidies.

Table 3.15 Government guidance funds

Name	Size (CNY billion)	Founding year	Industries
Beijing Science and Technology Innovation Fund	20	2017	Optoelectronics, big data, new materials, clean energy, artificial intelligence, advanced manufacturing, healthcare, information technology, quantum computing
Chengdu Qianhai Industry Guidance Fund	40	2016	Infrastructure, emerging industry, advanced manufacturing industry, innovative industry, public services
Futian Guiding Fund	10	2015	New energy, new material, aviation, healthcare, information technology
Guangdong Semiconductor and Integrated Circuit Industry Investment Fund	15	2016	Integrated circuits, advanced manufacturing, devices
Haihe River Industrial Fund	100	2015	Healthcare, biotechnology, new energy, advanced manufacturing, mobile Internet, new materials
Henan Industrial Agglomeration Area Development Investment Fund	60	2017	Advanced manufacturing, services
Jiangxi Development and Upgrade Guidance Fund	100	2017	Innovative and emerging industry, traditional industry upgrade, services
Jilin Industry Investment Guidance Fund	10	2015	Strategic emerging industry, modern agriculture, services
National Emerging Industry Investment Guidance Fund	40	2016	Not specified
National SME Development Fund	100	2016	Not specified
Shandong Finance Group	10	2014	Not specified
Shenzhen Guidance Fund	100	2010	Information technology, healthcare, smart devices, environmental protection
Shenzhen State-owned Asset Reform and Development Fund	150	2016	Environmental protection, advanced manufacturing
Smart Yangtze River Industry Guidance Fund	30	2016	Real estate, sports, culture, tourism, agriculture, transportation, public services
Xiamen Industrial Investment Fund	10	2015	Displays, computer and telecom devices, healthcare, new material, tourism and exhibitions, logistics, software, finance, culture
Xuzhou Industry Development Fund	39.5	2016	Not specified
Yangtze River Industry Fund	200	2015	Information technology, advanced manufacturing, new materials, healthcare, clean energy, emerging industries
Zhongyuan Silk Road Fund	20	2017	Airport construction, logistics, trade, culture, tourism

Source: Compiled by the WTO Secretariat from various sources.

[113] Therefore, it is not clear if they are subject to notification to the WTO.

3.125. In addition, some other funds that are related to government policies appear to conduct direct investments to support a particular policy initiative (Table 3.16). These funds include expenditures under the Belt and Road Initiative (BRI), and funds for China's SOEs. According to the authorities, the incentives provided by these funds do not constitute subsidies and are not required to be notified under the SCM Agreement.

Table 3.16 Policy-related funds

Name	Size (CNY billion)	Founding year	Industries
Advanced Manufacturing Investment Fund	20 (first phase)	2016	"Made in China 2025" focus industries: rail transport, high-end shipping, marine engineering equipment, industrial robots, new energy cars, modern agricultural equipment, advanced medical devices, new materials
Beijing Big Data Industry Investment Fund	10 (first phase)	2016	Big data transaction platforms, sensors, chips, data resources, data technology
Central Enterprise Guochuang Investment Guidance Fund	150	2017	High-speed rail, nuclear energy, aerospace, clean energy, 3D printing, new energy cars, robotics, quantum network
China Big Data Industry Development Fund	20-30	2016	Big data and related value chains in Guiyang City
China Culture Industry Investment Fund	20	2011	Culture, media, entertainment, performing arts, data
National Integrated Circuit Industry Investment Fund	139 (first phase)	2014	Semiconductor manufacturing, chip design, materials, testing and assembly
Shanghai Integrated Circuit Industry Investment Fund	50	2017	Semiconductor manufacturing, chip design, materials, testing and assembly
Silk Road Fund	265	2014	BRI-related projects

Source: Compiled by the WTO Secretariat from several sources.

3.126. It would appear that financial support is also provided to the semiconductor industry. According to an OECD study, it was estimated that Chinese semiconductor firms received 86% of global equity support and 98% of all below-market borrowing.[114] The study also estimated that Chinese semiconductor companies receive more government funding than companies in other countries, and have below-market equity returns. Moreover, the study estimated that state participation in China's semiconductor industry has increased significantly over the past years, including in companies that started as privately owned. The authorities state that they cannot confirm the results of the study; they also indicate that the conclusions of the study are not credible as they are based on estimated data.

3.127. Given the importance of the Chinese economy and the size of government support accorded to individual companies, China's support measures are reported to be susceptible to affect global markets, downstream industries, and individual value chains. Such effects of China's support cannot be quantified in general, as relevant data are not publicly available. Nevertheless, a study by the OECD found, for example, that China's financial support on energy and concessional finance for aluminium smelting, coupled with export restrictions on raw aluminium, provide Chinese exporters of semi-finished aluminium goods with a significant cost advantage, leading to important repercussions in global markets.[115] The authorities state that they do not agree with this view, and indicate that China does not provide subsidies on energy and concessional finance for aluminium smelting.

3.128. No official studies on the impact of China's public support on productivity growth and innovation are available. Available firm-level data have allowed academic studies to analyse the efficiency of China's government support. With regard to the overall efficiency, it has been found that government support had a negative effect on corporate investment efficiency and is positively correlated with overinvestment.[116] With regard to R&D support specifically, it has been shown that

[114] OECD (2019), *Measuring Distortions in International Markets: The Semiconductor Value Chain*, OECD Trade Policy Papers No. 234.

[115] OECD (2019), *Measuring Distortions in International Markets: The Aluminium Value Chain*, OECD Trade Policy Papers No. 218.

[116] Hu, J. et al. (2019), "Government Subsidies and Corporate Investment Efficiency: Evidence from China", *Emerging Markets Review*, Vol. 41.

China's public support led to an increase in patent quantity, but not in patent quality.[117] The authorities do not agree with the conclusions of these studies.

3.129. In the wake of the COVID-19 pandemic, the Central Government and regional governments launched a series of policies to cushion the economic consequences caused by the pandemic, besides ensuring steady medical supplies and daily necessities. The Central Government's measures include tax reductions, reduction of certain social insurance fees, increase of employer contributions for unemployment insurance, temporary exemptions of social insurance fees for SMEs, reduction of electricity and gas costs, and deferred tax payments for SMEs. Measures taken by regional governments include the waiving of rents for SMEs, extending government procurement to support SMEs, selected repayment of employers' social insurance contributions, and exempting companies severely impacted by the pandemic from various taxes.

3.130. In April 2020, the Government released a Notice on Optimizing Fiscal Subsidies for Promoting New Energy Vehicles, extending subsidies for electric and hybrid vehicles until end-2022. Vehicles must meet minimum technical and performance criteria to qualify. The notice for the first time introduced a sales limit of 2 million vehicles per year. A price limit of CNY 300,000 including tax was also introduced. No information was available on total expenditure under this programme.

3.131. During the review period, China has continued to provide government support to its agriculture sector (Section 4.1.2). China's 2019 subsidy notification also provides information about various programmes in the agriculture sector.[118] China notified that it did not provide export subsidies in 2018.[119] No notification on domestic support has been submitted to the WTO since the previous Review in 2018. The authorities indicate that a new notification would be submitted before mid-July 2021.

3.132. Available figures indicate that China also continued to provide substantial support to its fisheries sector. China's subsidy notification refers to six different programmes at the Central Government level and 25 programmes at the local level.[120] For example, CNY 398.5 million was provided in 2017 and 2018 for stock enhancement. According to external estimates, China's government support to its fisheries sector totalled USD 7.3 billion in 2018.[121] Moreover, a large share of China's government support to the sector is considered as "capacity-enhancing". The authorities indicate that a new fisheries policy would be issued soon.

3.3.2 Standards and other technical requirements

3.3.2.1 Overview

3.133. Since its previous Review, China introduced or revised various laws and regulations related to standards and other technical requirements. On 1 January 2018, the revised Standardization Law entered into force and included new provisions such as those on association standards. According to the authorities, the Law improved the procedures for setting mandatory standards (or technical regulations), clearly defined local and sector standards, and established a disclosure system for self-declaration of enterprise standards. On 6 January 2020, the SAMR promulgated the Measures for the Administration of Mandatory National Standards, which stipulate the procedures for making and revising mandatory standards. They entered into force on 1 June 2020. On 16 January 2020, the SAMR promulgated the Measures for the Administration of Local Standards, which stipulate procedures for making and revising local standards; they entered into force on 1 March 2020. On 6 January 2020, the SAMR published the Measures for the Administration of Mandatory National Standards, which stipulate the procedures for making and revising mandatory standards; they

[117] Boeing, P. and Mueller, E. (2019), "Measuring China's Patent Quality: Development and Validation of ISR Indices", *China Economic Review*, Vol. 57; Boeing, P. and Mueller, E. (2016), *Measuring Patent Quality and National Technological Capacity in Cross-country Comparison*, Centre for European Economic Research Discussion Paper No. 16-048.

[118] WTO documents G/SCM/N/343/CHN, 19 July 2019; and G/SCM/N/343/CHN/Corr.1, 31 July 2019.

[119] WTO documents G/AG/N/CHN/51-52, 6 November 2019.

[120] WTO documents G/SCM/N/343/CHN, 19 July 2019; and G/SCM/N/343/CHN/Corr.1, 31 July 2019 (Programmes 74-79).

[121] Sumaila, U.R., et al. (2019), "A Global Dataset on Subsidies to the Fisheries Sector", *Marine Policy*, Vol. 27; and Sumaila, U.R, et al. (2019), "Updated Estimates and Analysis of Global Fisheries Subsidies", *Marine Policy,* Vol. 109.

entered into force on 1 June 2020.[122] Other changes during the review period included: (i) the adoption on 29 June 2019 of the Vaccine Administration Law at the 11th Session of the Standing Committee of the 13th National People's Congress (it entered into force on 1 December 2019); (ii) the adoption on 26 August 2019 of the revised Pharmaceutical Administration Law at the 12th Session of the Standing Committee (it entered into force on 1 December 2019); (iii) the promulgation on 3 September 2019 of the Circular on the Standards of Cosmetics Registration, Record-Filing, Inspection and Test by the National Medical Products Administration (NMPA)[123]; (iv) the adoption on 31 August 2018 of the Soil Pollution Prevention and Control Law at the Standing Committee of the 13th National People's Congress; and (v) the issue on 29 April 2020 of the Measures for the Environmental Management Registration of New Chemical Substances by the Ministry of Ecology and Environment (MEE) (Order No. 12 of the Ministry), which entered into force on 1 January 2021.[124]

3.134. The Standardization Law classifies China's standards into five major categories: national, sector, local, association, and enterprise. The national standards include both voluntary and mandatory standards. Sector standards and local standards are voluntary. The Law also stipulates that, where there are other provisions on the formulation of mandatory standards in laws, administrative regulations, and decisions of the State Council, such provisions shall prevail.

3.135. The Plan for Deepening Standardization Reform issued by the State Council proposes that the current mandatory national, sector, and local standards will be gradually integrated into mandatory national standards; the three-level system of mandatory national, sector, and local standards concerning environmental protection, engineering, construction, and medicine and healthcare will be retained. Sector standards in military industries involving national security and secrets, such as nuclear and aerospace, are managed by the National Defence Science and Technology Industry Authorities of the State Council.

3.136. The SAMR, established in 2018, is responsible for organizing and guiding the comprehensive law enforcement of market supervision, including law enforcement and inspection work in the fields of quality, measurement, certification, accreditation, and standardization. Specifically, the Law Enforcement and Inspection Bureau of the SAMR is responsible for formulating and organizing the implementation of systems and measures for the comprehensive law enforcement of market supervision and investigation and handling of cases; guiding the investigation and handling of relevant violations of market entities in access, production, operation, and trading; undertaking the work of organizing, investigating, and supervising the handling of major and important cases with national influence, or major and important cases involving more than one province (autonomous region or municipality directly under the Central Government); and guiding the comprehensive law enforcement of local market supervision.

3.137. While the China National Certification and Accreditation Administration (CNCA) and the Standardization Administration of China (SAC) no longer exist as entities, the SAMR retains their functions, using their names where relevant. The General Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ) was dismantled when the SAMR was established.

3.138. China's standardization system is administered by the SAMR, performing as the SAC. The Department of Standard Technical Management of the SAMR issues, under the name of the SAC, national standards plans; approves the release of national standards; and reviews and releases important documents such as standardization policies, management systems, plans, and announcements. In addition, it notifies the public of mandatory national standards, undertakes the management of the National Professional Standardization Technology Committee, and carries out the regular work of the State Council's standardization coordination mechanism. The Department of Standards Innovative Management of the SAMR, under the name of the SAC, coordinates, guides,

[122] The SAMR also promulgated the Measures for the Administration of Local Standards, which entered into force on 1 March 2020.

[123] NMPA Circular No. 72, 2019. The Circular cancels requirements on qualification recognition for cosmetic administrative licensing inspection institutions and the designation of record-filing inspection institutions; it stipulates that inspection institutions can register themselves for recording administration, and revises the procedures of registration, record-filing, inspections and tests, requirements for inspection items, and requirements for and styles of inspection reports.

[124] Measures for the Environmental Management of New Chemical Substances (Ministry of Environmental Protection Order No. 7), issued on 19 January 2020, are to be repealed as Order No. 12 enters into force.

and supervises the work related to sector, local, association, and enterprise standards. It is also in charge of organizing and participating in the activities of the International Organization for Standardization, International Electrotechnical Commission, and other international or regional standardization organizations, as well as the signing of relevant international cooperation agreements.

3.139. Work related to standardization is carried out under the unified organization of the SAC, the NDRC, the NMPA, other ministries, and local and industry associations (such as the China Association for Standardization) in their respective fields.[125]

3.140. The responsibility of the MIIT and other institutions, such as the China Electronics Standardization Institute, the China Communications Standards Association, the NMPA, and the National Health Commission, in regard to standard setting has remained largely unchanged since the previous Review.[126]

3.141. The GACC is responsible for: (i) entry-exit health quarantine, entry-exit inspection, and quarantine of animals and plants and their products, and the statutory inspection of imports and exports; (ii) supervision and administration of the appraisal, verification, and quality safety of imports and exports; (iii) inspection and quarantine as well as supervision and administration of food and cosmetics imports; and (iv) food export-related work in accordance with bilateral and multilateral agreements.

3.142. China's technical barriers to trade (TBT) Enquiry Point is headquartered in the Research Centre of the GACC for International Inspection and Quarantine Standards and Technical Regulations; it assists the Notification and Enquiry Bureau of MOFCOM to submit TBT notifications.

3.143. National standards are formulated in accordance with the Measures on Administration of National Standards, Order No. 10, 24 August 1990, unchanged since the previous Review.[127] At the technical examination stage, mandatory standards must be publicly reviewed by convening meetings, and the period for receiving comments cannot be less than two months. The authorities state that before their approval, mandatory standards that may have a significant effect on trade and whose technical content is not in accordance with the technical content of relevant international standards must be notified to the WTO. Government agencies, such as the NDRC and the MIIT, have the staff to approve and promulgate technical regulations that may refer to voluntary standards, rendering them mandatory.

3.144. As at end-2020, there were 39,460 national standards (2,133 mandatory and 37,327 voluntary standards). According to the authorities, at end-2020, among the national standards that correspond to the relevant international standards, 92.4% of mandatory standards and 91.4% of voluntary standards were adoptions or adaptations of international standards, compared with 74.3% and 85.9% at end-2017. Of the national standards approved in 2020 (before 15 July), 4.0% were mandatory, compared with 2.8% in 2018.

3.145. Between January 2018 and 13 April 2021, China submitted 344 TBT notifications, most of them under Article 2.9 of the TBT Agreement.[128] In the Committee on Technical Barriers to Trade,

[125] According to the authorities, both domestic and registered foreign-funded enterprises may participate in China's national standardization activities. They must file an application to participate in the corresponding technical committee, as specified in the Administration Provisions on National Professional Standardization Technology Committee.

[126] WTO document WT/TPR/S/375/Rev.1, 14 September 2018.

[127] Industry or sectoral standards are formulated by the relevant technical committees. The standardization administrations of the competent ministries, with the support of the industry institutes of standardization and technical committees, are responsible for establishing industry or sectoral standard development plans and approving the corresponding standards. Local standards are formulated by the standardization authorities of provinces, autonomous regions, and municipalities directly under the Central Government in accordance with the Administrative Measures on Local Standards. Industry or sectoral and local standards must also be reviewed within five years of their implementation (Guo Bao Wei Ban No. 3, 2009).

[128] WTO documents G/TBT/N/CHN/ series from 1 January 2016 to 8 April 2021.

between January 2018 and 13 April 2021, 25 specific trade concerns (STCs) were raised by Members regarding TBT measures maintained or planned by China, including 9 new STCs.[129]

3.3.2.2 Product certification

3.146. Except for the establishment of the SAMR, and the concurrent abolition of the AQSIQ, no changes have taken place in the laws and regulations governing China's certification system since the previous Review. Certification and accreditation are regulated by: the Product Quality Law; the Import and Export Commodity Inspection Law; the Regulations on Certification and Accreditation; the Regulations on Compulsory Product Certification; the Measures for the Administration of Certification Bodies; the Measures for the Administration of Certification Certificates and Certification Marks; the Measures for the Administration of Organic Product Certification; and the Measures for the Administration of Energy-Saving and Low-Carbon-Emission Product Certification. China administers both a voluntary certification system and a compulsory product certification system.

3.147. The Certification and Supervision Department and Accreditation, Testing and Inspection Department under the SAMR, performing as the CNCA, is responsible for, *inter alia*, policies related to certification, accreditation, testing, and inspection. The CNCA participates in the certification, accreditation, testing, inspection, and other international cooperation of qualification certification; undertakes the signing of relevant international cooperation protocols; organizes national inter-ministerial conferences on certification and accreditation; and coordinates with local and sectoral authorities regarding certification, accreditation, testing, and inspection.

3.148. The China National Accreditation Service for Conformity Assessment (CNAS), under the administration of the SAMR, is responsible for the accreditation of certification bodies, laboratories, inspection bodies, and relevant bodies. The CNAS is the national accreditation body recognized by the SAMR (as the CNCA) in accordance with the Regulations on Certification and Accreditation. The Secretariat of the CNAS is located in the China National Accreditation Institute for Conformity Assessment (CNAI). As the legal entity of the CNAS, the CNAI assumes legal liabilities arising from CNAS accreditation activities. The CNAS is mainly responsible for: (i) establishing and operating the national accreditation system for conformity assessment bodies, and formulating and publishing accreditation rules, principles, guidelines, and other normative documents in accordance with, *inter alia*, China's relevant laws and regulations and international and national standards; (ii) assessing the competence of local or foreign conformity assessment bodies that have filed applications, making accreditation decisions, and conducting accreditation-related surveillance and management on accredited conformity assessment bodies; (iii) directing and regulating the use of the CNAS logo and accreditation symbols; (iv) organizing personnel training related to accreditation, and qualifying, recruiting, and managing accreditation personnel; (v) offering relevant technical services to conformity assessment bodies, and providing the public with publicly available information on accredited conformity assessment bodies; (vi) participating in international activities related to conformity assessment and its accreditation, and signing bilateral or multilateral accreditation cooperation agreements with relevant accreditation bodies, related bodies, or international organizations; (vii) dealing with appeals and complaints related to accreditation; (viii) undertaking tasks assigned by relevant government departments; and (ix) carrying out other activities related to accreditation.

3.149. China's compulsory product certification system, which applies to both domestic products and imports, aims to enforce product compliance with technical requirements. The products subject to compulsory product certification are listed in the Compulsory Product Certification Catalogue (CCC Catalogue); they cannot be sold in China or imported without a China Compulsory Certification (CCC) and the corresponding CCC marks.[130] The CCC system is based on national compulsory standards. The products that have been listed in the compulsory certification directory may only leave the factory, be sold, imported, and used in other business activity after they have been certified and labelled. In April 2020, for the purpose of optimizing the business environment and facilitating imports, the Announcement of the State Administration for Market Regulation and the General Administration of Customs on Releasing the Catalogue of Products Subject to CCC and

[129] STCs 294, 296, 428, 456, 457, 466, 477, 489, 493, 509, 526, 527, 533, 534, 545, 547, 551, 576, 584, 611, 641, 642, 644, 665, and 667.

[130] SAMR Announcement on the Compulsory Product Certification Catalogue (CCC Catalogue) and Description and Definition Form (Announcement No. 18, 2020). Viewed at: http://gkml.samr.gov.cn/nsjg/rzjgs/202004/t20200428_314776.html.

2020 Reference Table for the Products Numbers (Announcement No. 21, 2020) was issued, specifying the product numbers involved in the CCC Catalogue.[131]

3.150. Under SAMR Announcement on the Compulsory Product Certification Catalogue and Description and Definition Form (Announcement No. 18, 2020), the CCC Catalogue includes 103 products, 19 of which adopted self-declaration assessment. Under this method, the CCC marks can be applied after the submission of conformity information; there is no need to involve accreditation bodies for compulsory product certification.

3.151. The CCC Catalogue is approved and released jointly by the SAMR and the CNCA, together with the relevant industrial administrative departments, if approval from the industry regulator is required. Responsibility for the general administration of the compulsory product certification system and its implementation lies with the CNCA. Random conformity sampling tests are conducted on imports that have already acquired a CCC.

3.152. Procedures to obtain the CCC mark have remained largely unchanged since the previous Review; with the exception of 19 products that have been accredited by self-declaration, an application must be submitted to the authorized accredited certification bodies designated by the CNCA, each of which is authorized to provide certification for several products subject to the CCC. In the context of the present Review, the authorities have indicated that there are 35 mandatory certification bodies.[132]

3.153. Under certain circumstances, exemptions from CCC certification may be granted. Eligible products include goods and samples required for research, testing, and certification testing; parts/goods needed directly for end-users' maintenance purposes; equipment/spare parts (excluding office supplies) used to complement factory production lines/complete production lines; goods used only for commercial display but not for sale; imported spare parts for the purpose of exports as a whole machine; and other goods that are exempt from CCC certification for special purposes.

3.3.2.3 Labelling and packaging

3.154. Imported pre-packaged food or food additives require a label in Chinese, and instructions, as long as laws require, in Chinese. Such labels and instruction manuals must specify the origin of the product and the name, address, and contact details of the domestic agent importing the food.[133] The labels and instructions must comply with the provisions of the Food Safety Law and other relevant laws and administrative regulations and the requirements of the National Food Safety Standards, and state the country of origin of the food, as well as the name, address, and contact details of the domestic agent. Pre-packed food without labels and/or instructions in Chinese or whose labels or instructions do not comply with the provision of the Law may not be imported.

3.155. Several changes to labelling and packaging requirements took place during the review period. For example, Articles 67-71 of the Food Safety Law, as amended in 2018, specify the requirements on food labelling. Article 33 of the Regulations on the Implementation of the Food Safety Law, as amended in 2019, provides that producers and distributors shall print conspicuous marks for their involvement in the business of genetically modified foods; it also stipulates that the labelling measures shall be formulated by the food safety supervision and administration department of the State Council while consulting the agricultural administrative department of the State Council.

[131] This involves updating the CCC Catalogue, drafting and promulgating the implementing rules for the compulsory certification of products listed in the CCC Catalogue, designing and promulgating certification marks, defining the requirements for CCCs, designating certification bodies and testing laboratories, carrying out conformity assessment activities for CCC certification, and supervising and inspecting compulsory product certification. The SAMR may also authorize market regulation authorities of local People's Governments at or above the county level as local regulation authorities for products listed in the CCC Catalogue in areas under their administration.

[132] Certification bodies include the China Quality Certification Centre, China Security Technology Certification Centre, China Agricultural Product Quality Certification Centre, China Safety Glass Certification Centre, Product Conformity Assessment Centre, China Certification Centre for Fire Products under the Ministry of Public Security, and China Automotive Certification Centre.

[133] Food Safety Law, Article 97; and General Rules for the Labelling of Pre-packaged Foods (GB 7718-2011), Article 4.1.6.3.

3.156. Other labelling and packaging requirements include the National Safety Standard General Rules for the Nutrition Labelling of Pre-packaged Foods (GB28050-2011), the National Food Safety Standard General Rules for the Labelling of Pre-packaged Foods (GB7718-2011), the National Food Safety Standard General Rules for Labelling of Pre-packaged Foods for Special Dietary Uses (GB13432-2013), the Vaccine Administration Law (adopted on 29 June 2019), the revised Pharmaceutical Administration Law (issued on 26 August 2019), Regulations for the Implementation of the Drug Administration Law (unchanged since 2018), Regulations for the Supervision and Administration of Medical Devices (unchanged since 2018, currently being revised), the Regulations on the Supervision and Administration of Cosmetics (issued on 16 June 2020), the Product Quality Law (unchanged since 2018), the Administrative Measures for the Packaging and Labelling of Agricultural Products (unchanged since 2018), and the Provisions for the Administration of Food Labelling (AQSIQ Decree No. 123).[134]

3.157. The draft Measures for Supervision and Administration of Food Labelling, published by the SAMR in November 2019, have not yet been adopted by the legislature. The revised draft of the Wildlife Protection Law was submitted to the 22nd session of the Standing Committee of the 13th National People's Congress for the first review on 13 October 2020. Currently, it is being revised and improved based on the opinions of various parties.

3.3.3 Sanitary and phytosanitary requirements

3.3.3.1 Legal, institutional, and policy framework

3.158. During the review period, there was a substantial reorganization of the agencies responsible for sanitary and phytosanitary (SPS)-related issues. In 2018, the former China Food and Drug Administration, General Administration for Industry and Commerce, and the AQSIQ were restructured into the SAMR, and the NMPA was established under the SAMR's responsibility. The GACC took on many of the responsibilities previously held by AQSIQ. The respective responsibilities of the different institutions in charge of China's SPS system are set out in Table 3.17. China's WTO SPS Enquiry Point is the SPS Notification and Enquiry Division in the Research Centre for International Inspection and Quarantine Standards and Technical Regulations within the GACC. Its national notification authority is the WTO Notification and Enquiry Centre within MOFCOM.[135]

3.159. As set out in the Food Safety Law, local food safety standards may be developed and published by the health administrative departments of provinces, autonomous regions, or municipalities directly under the Central Government for local specialties without national food safety standards. These must be reported to the heath administrative department of the State Council for recordation and must be immediately repealed after the relevant national food safety standards are issued.

3.160. The main SPS-related laws and regulations are set out in Table 3.18. Amendments to the Law on Import and Export Commodity Inspection in 2018 involved deletion of references to customs inspection and release of goods based on a customs declaration certificate issued by a commodity inspection organization[136], while changes the Law's 2019 Implementing Regulations reflected institutional changes.[137] Similarly, amendments to the Food Safety Law in 2018[138] were to reflect changes to the names of relevant authorities.

[134] AQSIQ Decree No. 123 is planned to be abolished after the Measures for the Supervision and Administration of Food Labelling are issued and enter into force. The Provisions for the Supervision and Administration of Production of Food Additives (AQSIQ Decree No. 127) were abolished on 13 July 2020.

[135] WTO Sanitary and Phytosanitary Information Management System. Viewed at: http://spsims.wto.org/en/EnquiryPointsNotificationAuthorities/Search?countryCode=C156&filter=.

[136] Law on Inspection of Import and Export Commodities (as amended in December 2018). Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2369445/index.html. Changes were made to Articles 11 and 15 of the Law.

[137] Implementing Regulations of the Law on Inspection of Import and Export Commodities (revised and promulgated on 2 March 2019). Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2369666/index.html.

[138] Food Safety Law (revised and promulgated on 29 December 2018. Viewed at: http://www.npc.gov.cn/npc/c30834/201901/c6d064de8295489288ec1383b33212ee.shtml.

Table 3.17 Central Government institutions with SPS-related responsibilities, 2021

Institution	Responsibilities
National Health Commission	Supervision and management of public health; food safety risk assessment; organization and formulation of national standards for food safety; monitoring, assessment, and information exchange of food safety risks; and safety reviews of novel food, new food additives, and new varieties of food-related products.
Ministry of Agriculture and Rural Affairs (MARA)	Supervision of the safety and quality of agricultural products; supervision and management of livestock and poultry slaughtering facilities; and leading the work of national entry-exit animal and plant quarantine.
State Administration for Market Regulation (SAMR)	Coordination of food safety supervision and administration; organization of the formulation of major food safety policies; building a food safety emergency response system; organization and guidance of emergency responses; investigation and handling of major food safety incidents; food safety inspection and administration; establishment of a supervision and inspection system and a mechanism for identifying and controlling hidden dangers that cover the whole process of food production, distribution, and consumption; organization of supervision and sampling inspection to ensure food safety, risk monitoring, guiding, and urging the verification and treatment of substandard foods, as well as pre-warning and exchanges of information on risks.
General Administration of Customs (GACC)	Entry-exit commodity inspection; entry-exit health quarantine; entry-exit animal and plant quarantine; administration of inspection and quarantine of imported food and cosmetic products; and implementation of work related to exported food in accordance with multilateral and bilateral agreements.

Source: Information provided by the authorities.

Table 3.18 Main SPS-related laws and regulations, January 2021

Laws	Promulgation/revision
Law on the Entry and Exit Animal and Plant Quarantine	Effective 1992. Last revised 2009
Food Safety Law	Effective 2009. Last revised 2018
Law on Inspection of Import and Export Commodities	Effective 1989. Last revised 2018
Law on Quality and Safety of Agricultural Products	Effective 2006
Regulations on Implementation of the Law on the Entry and Exit Animal and Plant Quarantine	Effective 1997
Implementing Regulations of the Food Safety Law	Effective 2009. Last revised 2019
Implementing Regulations for the Law on Inspection of Import and Export Commodities	Effective 2005. Last revised 2019
Law on Animal Epidemic Prevention	Effective 1997. Last revised January 2021

Source: Information provided by the authorities.

3.161. The Implementing Regulations of the Food Safety Law entered into force in December 2019[139]; changes to these regulations reflect the major changes to the Food Safety Law in 2015 (described in China's previous Review). A draft of the Implementing Regulations was notified to the WTO in 2017.[140] It would appear that an underlying principle of the Law and the Implementing Regulations is that food producers should hold primary accountability for food safety; they also contain provisions on traceability of food and agricultural products sold in China.

3.162. China's 13th Five-Year Food Safety Plan (2016-20) set out the priority goals and associated tasks to improve food safety governance and the development of the food industry.[141] These included, *inter alia*, increasing inspections and testing, addressing pollution, improving food safety standards and their integration with international standards, upgrading research and testing capacities, strengthening enforcement and improving related laws and regulations. The authorities indicate that several steps have been taken to realize the goals in the Food Safety Plan including: projects to formulate or revise standards and inspection methods[142]; revisions to Administrative

[139] Implementation Regulations of the Food Safety Law (which entered into force on 1 December 2019). Viewed at: http://www.gov.cn/zhengce/content/2019-10/31/content_5447142.htm.

[140] WTO document G/SPS/N/CHN/1055, 14 August 2017.

[141] FAO, *13th Five-Year National Food Safety Plan*. Viewed at: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC175008.

[142] These projects covered general standards; hygienic standards for production and operation; supporting inspection methods; and standards for food safety and nutrition practices of formula foods for infants and young children, formula foods for special medical purposes, and group meals for key populations.

Measures on Food Safety Standards[143]; improvements to data collection to inform food safety risk assessments through monitoring activities, studies, and surveys; improvements to quantitative risk assessment techniques and models in the fields of chemistry and microbiology in order to discover and assess food safety hazards developed by the China National Center for Food Safety Risk Assessment; updates to the Manual of National Food Safety Standards; and strengthened sampling inspection and monitoring of food safety. The authorities also indicate that China has become increasingly active in developing international food standards.

3.163. MARA plans to introduce an edible agriculture product compliance certificate system and a National Agriculture Product Quality and Safety Traceability Platform. According to the authorities, these measures are only applicable to domestic production and operation of edible agricultural products.

3.164. From 2018 to early 2021, the GACC signed several memoranda of understanding or cooperation protocol with the relevant authorities in 28 trading partners on SPS-related issues, namely: import and export water product safety cooperation; import and export food safety cooperation; implementing SPS measures; animal and/or plant quarantine/inspection; animal health and quarantine; SPS measures cooperation; further promoting e-certificate exchange and paperless cooperation; food safety and animal and plant health cooperation; implementing paperless cooperation on inspection and quarantine certificates; water product e-certificate cooperation; establishing a cooperation system for joint prevention and control of plant epidemics and diseases in border areas; establishing the SPS measures working group; and notification and control procedures for certain significant poultry diseases.

3.3.3.2 SPS measures

3.165. Between 1 January 2018 and 13 April 2021, China submitted 165 notifications to the WTO Committee on Sanitary and Phytosanitary Measures (SPS Committee), including 2 emergency notifications.[144] The emergency notifications related to the suspension of imports of logs originating in six Australian states to prevent the introduction of quarantine pests[145], and measures with respect to imported cold-chain food to prevent the transmission of COVID-19 (see below).[146] Most of China's notifications during the review period relate to human health and food safety (Chart 3.5). Forty-four of the SPS measures notified by China during the review period were based on international standards, recommendations, or guidelines.

3.166. The authorities indicate that, over the period January 2018 to December 2020, China issued 22 national standards, including 4 revised ones, for animal health and 77 national standards in the phytosanitary area (including 2 revised standards). In 2019, China released the latest versions of the National Food Safety Standard – Maximum Residue Limits for Pesticides in Foods and the National Food Safety Standard – Maximum Residue Limits for Veterinary Drugs in Goods, which are applicable to foods sold in the Chinese market.[147]

3.167. In 2020, the GACC issued the Announcement on Adjusting the Supervision Requirements for Certain Imports and Exports.[148] This is aimed at optimizing the port business environment and reducing the burden on enterprises through removing certain SPS-related reporting, registration, certification, inspection, and other regulatory requirements.

3.168. In order to prevent the reintroduction of the COVID-19 virus through imported cold-chain food and to protect the health and safety of consumers, the GACC implemented emergency preventive measures for foreign manufacturers of imported cold-chain foods with positive novel coronavirus nucleic acid results. This was notified to the WTO as an emergency measure in 2020,

[143] According to the authorities, these revisions involved food safety standards of new food raw materials, new varieties of food-related products, and new varieties of food additives; the harmonization of local and national standards; and the harmonization of the standards set for imported food without national food safety standards.

[144] WTO Sanitary and Phytosanitary Information Management System. Viewed at: http://spsims.wto.org.

[145] WTO document G/SPS/N/CHN/1194, 12 January 2021.

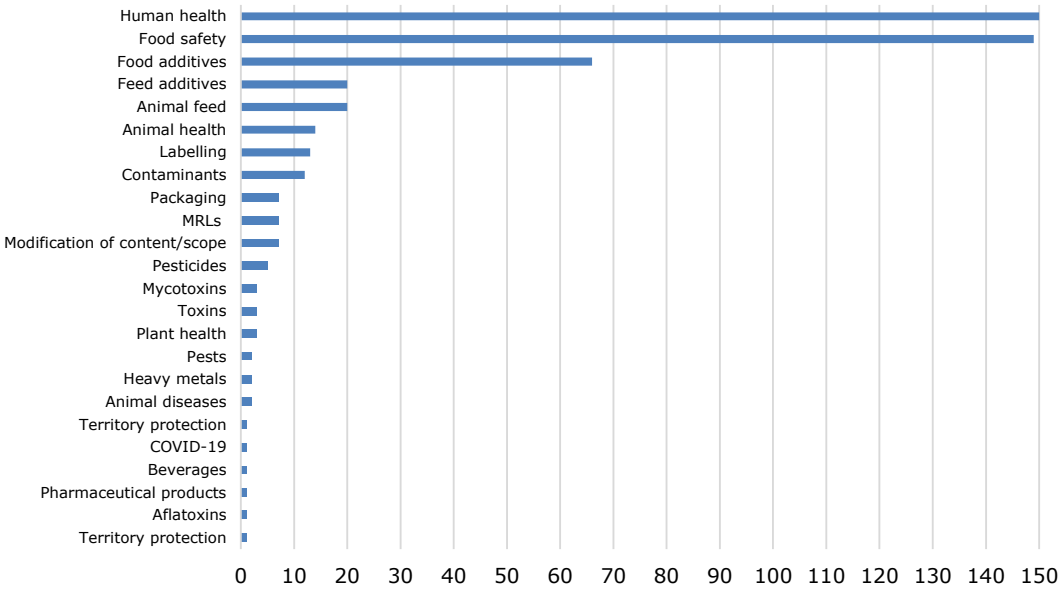
[146] WTO document G/SPS/N/CHN/1173, 21 September 2020.

[147] GB 2763-2019 and GB 31650-2019, respectively.

[148] GACC Announcement No. 9, 2020. Viewed at: http://www.customs.gov.cn/customs/302249/2480148/3262223/index.html.

which is still in force.[149] It has been reported that, in 2020, the city of Shenzhen introduced COVID-19 handling and testing requirements for imports of frozen meat and seafood. In response to the pandemic, China has also taken measures to facilitate the imports of food and agricultural products and simplify sanitary approval for imported special medical supplies (Box 3.1).

Chart 3.5 Main elements contained in SPS measures notified by China, 1 January 2018-13 April 2021



Note: This chart indicates the keywords contained in notifications in the WTO Sanitary and Phytosanitary Information Management System. Most notifications contain more than one keyword.

Source: WTO Sanitary and Phytosanitary Information Management System. Viewed at: http://spsims.wto.org.

3.169. During the review period, eight new STCs were raised in the SPS Committee, regarding: (i) restrictions on imports of US beef; (ii) administrative measures for registration of overseas manufacturers of imported food; (iii) actions related to COVID-19 that affect trade in food and agricultural products; (iv) restrictions related to Highly Pathogenic Avian Influenza (HPAI); (v) recognition of equivalence for third parties as part the China-United States Phase 1 Economic and Trade Agreement; (vi) a proposed new health certificate format for shrimp imports; (vii) restrictions on bovine meat imports; and (viii) delays in approving requests for new listings or reinstatements of export establishments. An additional five STCs were raised in the SPS Committee regarding Chinese measures in place prior to this review period (Table 3.19).

Table 3.19 SPS-related STCs raised against China, 1 January 2018-13 April 2021

STC	Member(s) raising STC, (Members supporting the concern)	First raised/last raised, (number of times subsequently raised)
China's AQSIQ official certification requirements for food imports	Israel, United States, (Australia, Canada, Chile, Costa Rica, European Union, Guatemala, Japan, Republic of Korea, Mexico, Norway, Singapore, Switzerland, and Thailand)	2004/2019, (7)
General import restrictions due to bovine spongiform encephalopathy (BSE)	European Union, United States, (Canada, Switzerland, and Uruguay)	2004/2020, (39)

[149] WTO document G/SPS/N/CHN/1173, 21 September 2020. The notification refers to GACC Announcement on the Implementation of Emergency Preventive Measures for Foreign Manufacturers of Imported Cold-chain Foods with Novel Coronavirus Nucleic Acid Positive Results (Announcement No. 103, 2020).

STC	Member(s) raising STC, (Members supporting the concern)	First raised/last raised, (number of times subsequently raised)
Import restrictions due to African swine fever	European Union	2015/2020, (9)
Proposed amendments to the implementation regulations on safety assessment of agricultural GMOs	Paraguay, United States	2015/2019, (9)
Import restrictions due to HPAI	European Union, United States	2016/2020, (11)
Restrictions on imports of US beef	United States	2019
Administrative measures for registration of overseas manufacturers of imported food	United States, (European Union, Japan, Switzerland, and Thailand)	2020, (1)
Actions related to COVID-19 that affect trade in food and agricultural products	Canada, United States, (Australia, Brazil, Mexico, Paraguay, United Kingdom)	2020, (0)
HPAI-related restrictions	Ukraine	2020, (0)
Recognition of equivalence for third parties as part of the China-United States Phase 1 Economic and Trade Agreement	Australia	2020, (0)
Proposed new health certificate format for shrimp imports	India	2021, (0)
Restrictions on bovine meat imports	India	2021, (0)
Delay in approving requests for new listing and reinstatement of export establishments	Australia	2021, (0)

Source: WTO Sanitary and Phytosanitary Information Management System. Viewed at: http://spsims.wto.org.

3.3.3.3 Inspection and quarantine

3.170. The Law on Entry and Exit Animal and Plant Quarantine and its Implementing Regulations regulate the inspection of animals, plants, and related products that enter, exit, or transit through China; containers, packing materials, and bedding materials that contain or carry animals, plants, and related products; and means of transport from animal/plant epidemic or infected areas. The Catalogue of Entry-Exit Commodities Subject to Inspection and Quarantine list all the imports and exports subject to statutory inspection by the entry and exit inspection and quarantine authorities prior to their commercialization (or exit) into (from) China. The current catalogue is contained in GACC Announcement No. 220, 2019.[150] During the review period, the GACC issued revised measures for the supervision and/or inspection and/or quarantine of imports (and exports) of various products, including cultivation media; fruit; aquatic products, feed, and feed additives; cereals; genetically modified products; meat products, food, dairy products, and aquatic animals; propagation materials for entry plants; animals and plants; genetic materials of animals; cotton; and non-edible animal products.[151]

3.3.3.4 Genetically modified organisms (GMOs)

3.171. China has so far approved the certificates of import safety only for the following genetically engineered crops for processing as raw materials: soybeans, corn, rapeseed, cotton, beets, and papayas, and their products. As indicated by the authorities during China's previous Review, safety evaluation is required for research, testing, production, processing, operation, and import of agricultural GMOs in China.[152] This is undertaken by China's National Agricultural Genetically Modified Organisms Safety Council. China's agricultural GMO safety assessment systems are governed by the Guidelines for the Safety Assessment of Genetically Modified Plants, Guidelines for the Safety Assessment of Genetically Modified Animals, and Guidelines for the Safety Assessment of Genetically Modified Microorganisms for Animals, as well as several measures on safety assessment, testing, and regulation of agricultural GMOs.[153] Reportedly in 2018, MARA amended the regulations on safety assessment, import approval, and labelling of agricultural GMOs; apparently these regulations

[150] GACC Announcement No. 220, 2019. Viewed at: http://www.customs.gov.cn/customs/302249/302266/302267/2811876/index.html.
[151] GACC Decrees No. 240 and No. 243, 2018.
[152] WTO document WT/TPR/M/375/Add.1, 1 February 2019.
[153] WTO document WT/TPR/M/375/Add.1, 1 February 2019.

provide for additional in-country trials and studies on new biotech events as part of the dossier submission process.

3.172. The Implementing Regulations of the 2019 Food Safety Law require the introduction of conspicuous labelling requirements for genetically modified foods. China has not replaced the Regulations on Administration of the Labelling of Agricultural Genetically Modified Organisms with the Implementing Regulations of the Food Safety Law.

3.3.4 Competition policy and price controls

3.3.4.1 Competition policy

3.3.4.1.1 Legislative and institutional framework

3.173. During the review period, the legislative and institutional framework of the competition regime underwent significant adjustments. Relevant adjustments are still in progress. As part of the institutional reform of the State Council in 2018, the SAMR was established as the national administrative body for regulating market-related issues, including competition. The previous functions and personnel of the NDRC, the SAIC, and MOFCOM in their respective fields of competition policy merged into the SAMR. Thus, the fragmentation of the administrative enforcement of competition policy came to an end.[154] A new Anti-Monopoly Bureau and a new Price Supervision and Anti-Unfair Competition Bureau were established as the competition agencies within the SAMR. The institutional structure of competition authorities at the provincial and local levels of government has also been adjusted accordingly. The functions of the new Anti-Monopoly Bureau include: (i) coordinating and promoting the implementation of competition policies, and organizing and guiding the review of fair competition; (ii) formulating anti-monopoly measures and guidelines; (iii) organizing the enforcement of anti-monopoly rules; and (iv) undertaking international cooperation and exchanges in anti-monopoly enforcement. The State Council also established an Anti-Monopoly Committee to organize, coordinate, and guide the anti-monopoly work across the country. The Committee is headed by a leader of the State Council and composed of senior officials from relevant ministries and commissions. Following the institutional reform in 2018, the SAMR now serves as the General Office of the Committee and is responsible for its day-to-day work.[155]

3.174. Following the completion of the institutional adjustment, one of the priorities of the SAMR is the adjustment of the competition policy legal framework by updating and integrating relevant departmental rules and guidelines that had been issued by previous enforcement authorities. The Anti-Monopoly Law (AML)[156], the Anti-Unfair Competition Law[157], and the Price Law remain the main legislation in the area of competition policy. The Anti-Unfair Competition Law was revised again in 2019 to strengthen the protection of trade secrets. The SAMR issued several new integrated rules and guidelines, and many previous rules and guidelines ceased to apply. Notably, in June 2019, the SAMR issued new rules concerning monopoly agreements, the abuse of dominant market positions, and the abuse of administrative monopoly. They are: (i) the Interim Provisions on Prohibiting Monopoly Agreements (SAMR Order No. 10, 2019); (ii) the Interim Provisions on Prohibiting Abuse of Dominant Market Positions (SAMR Order No. 11, 2019); and (iii) the Interim Provisions on Prohibiting Abuse of Administrative Power to Eliminate or Restrict Competition (SAMR Order No. 12, 2019). These new rules are expected to unify enforcement procedures and standards in relevant fields. Concerning concentration of undertakings, in September 2018, the SAMR updated and issued seven guiding rules on notifications of concentration of undertakings. In October 2020, the SAMR issued the Interim Provisions on the Examination of Concentration of Undertakings (SAMR Order No. 30, 2020). With regard to competition issues related to IPR, in October 2020, the SAMR amended the Provisions on Prohibiting Abuse of Intellectual Property Rights to Eliminate or Restrict

[154] Since the promulgation of the Anti-Monopoly Law in 2008, the administrative enforcement of the Law had long been divided among the NDRC, MOFCOM, and the former SAIC. There had been the academic view that such an institutional framework had not been able to ensure the full functioning of competition policy because it had diminished coherence in law and policy. See WTO document WT/TPR/S/375/Rev.1, 14 September 2018, paras. 3.148-3.149.

[155] Before the institutional reform in 2018, MOFCOM served as the General Office of the Committee.

[156] For more information about the Anti-Monopoly Law, see WTO document WT/TPR/S/375/Rev.1, 14 September 2018, paras. 3.144-3.145.

[157] The Anti-Unfair Competition Law was amended in 2017 to remove its overlaps with the Anti-Monopoly Law. Major changes were explained in WTO document WT/TPR/S/375/Rev.1, 14 September 2018, para. 3.146.

Competition (SAMR Order No. 31, 2020). In addition, the Anti-Monopoly Committee of the State Council issued several guidelines concerning various aspects of competition policy enforcement. Box 3.2 presents the main applicable laws, regulations, and guidelines dealing with competition policy issues in China.

3.175. The AML is currently under amendment. The main purpose of the amendment is to further improve the anti-monopoly system and rules and enhance the enforcement of the Law. The SAMR published a draft of the amended Law for public comments on 2 January 2020.[158] According to the authorities, 265 comments were received from 75 organizations and citizens. These comments concern almost all aspects of competition policy, including monopoly agreements, abuse of dominant market position, abuse of administrative power, notification of concentration of undertakings, investigation, and legal liability. The draft of the Law was completed and submitted to the State Council in December 2020.

Box 3.2 Main laws, regulations, and guidelines dealing with competition policy issues

Laws
- Anti-Monopoly Law (2007)
- Anti-Unfair Competition Law (as amended in 2019)
- Price Law (1997)

Generally applicable regulations/guidelines
- SAMR Notice on the Authorization of Anti-monopoly Law Enforcement (SAMR Anti-Monopoly Notice No. 265, 28 December 2018)
- SAMR Notice on Special Documentation Templates in Anti-Monopoly Cases (SAMR Anti-Monopoly Notice No. 72, 3 April 2019)
- Provisions on Prohibiting Abuse of Intellectual Property Rights to Eliminate or Restrict Competition (as amended by SAMR Order No. 31, 23 October 2020)
- Guidelines of the Anti-Monopoly Committee of the State Council on the Definition of Relevant Market (24 May 2009)
- Guidelines of the Anti-Monopoly Committee of the State Council on Commitments by Operators in Monopoly Cases (4 January 2019)
- Guidelines of the Anti-Monopoly Committee of the State Council on Conformity with the Anti-Monopoly Laws and Regulations (11 September 2020)
- Guidelines of the Anti-Monopoly Committee of the State Council on Anti-Monopoly in the Field of Intellectual Property Rights (4 January 2019)
- Guidelines of the Anti-Monopoly Committee of the State Council on Anti-Monopoly in the Field of Internet Platform Economy (7 February 2021)

Regulations on abuse of administrative power
- Interim Provisions on Prohibiting Abuse of Administrative Power to Eliminate or Restrict Competition (SAMR Order No. 12, 26 June 2019)
- State Council Opinions on Establishing A Fair Competition Review System in the Development the Market System (Guo Fa No. 34, 2016)
- NDRC, MOF, MOFCOM, SAIC and Legislative Affairs Office of the State Council Notice on Issuing the Detailed Rules for the Implementation of the Fair Competition Review (Trial) (NDRC Notice Jia Jian No. 1849, 2017)
- SAMR Announcement on Issuing the Guidelines for the Implementation of Third-party Assessments in Fair Competition Reviews (SAMR Announcement No. 6, 2019)

Regulations on monopoly agreements
- Interim Provisions on Prohibiting Monopoly Agreements (SAMR Order No. 10, 26 June 2019)
- Guidelines of the Anti-Monopoly Committee of the State Council on the Application of A Leniency Programme in Horizontal Monopoly Agreement Cases (4 January 2019)

Regulations on abuse of dominant market positions
- Interim Provisions on Prohibiting Abuse of Dominant Market Positions (SAMR Order No. 11, 26 June 2019)

Regulations on price-related monopoly
- Provisions on the Administrative Punishment of Price-related Violation (2010 Revision)

[158] The draft amended Law is available at: http://www.samr.gov.cn/hd/zjdc/202001/t20200102_310120.html.

Regulations on concentration of undertakings • Interim Provisions on the Examination of Concentration of Undertakings (SAMR Order No. 30, 2020) • Provisions of the State Council on Thresholds for Prior Notification of Concentrations of Undertakings (State Council Decree No. 529, 2008) • Notification Form of Anti-monopoly Examination on the Concentration of Undertakings (as amended by SAMR on 29 September 2018) • Measures for Calculating the Turnover for the Declaration of Business Concentration in the Financial Industry (MOFCOM, PBOC, China Banking Regulatory Commission, China Securities Regulatory Commission, and China Insurance Regulatory Commission Order No. 10, 2009) • Guidelines on the Procedures of Anti-Monopoly Review of Concentration of Undertakings (29 September 2018) • Guiding Opinions on the Notification of Simple Cases of Concentration of Undertakings (as amended on 29 September 2018) • Guiding Opinions on Prior Notification of Concentration of Undertakings (as amended on 29 September 2018) • Guiding Opinions on Regulating Notification Names for Cases of Concentration of Undertakings (as amended on 29 September 2018) • Guiding Opinions on Documentations and Materials in the Prior Notification of Concentration of Undertakings (as amended on 29 September 2018) • Model Text of Entrustment Agreement on Monitoring the Fulfilment of Attached Remedies in Concentration of Undertakings (non-binding) (amended on 29 September 2018)
Sectoral regulations • Guidelines of the Anti-Monopoly Committee of the State Council on Anti-Monopoly in Automotive Industry (4 January 2019)
Other regulations • Interim Provisions on Regulating Sales Promotion (SAMR Order No. 32, 29 October 2020)

Source: Information provided by the authorities.

3.3.4.1.2 Monopoly agreements

3.176. The AML and the SAMR's Interim Provisions on Prohibiting Monopoly Agreements (SAMR Order No. 10, 26 June 2019) prohibit six types of horizontal agreements: (i) fixing prices; (ii) restricting the availability of products; (iii) splitting the markets; (iv) restricting the purchase or development of new technologies; (v) joint boycotting of transactions; and (vi) other agreements confirmed by the authorities; and three types of vertical agreements: (i) fixing the prices of products resold to a third party; (ii) restricting the lowest prices of products resold to a third party; and (iii) other agreements confirmed by the authorities. The prohibition applies to written or verbal monopoly agreements or decisions and to concerted behaviour among firms without explicit written or verbal agreement. Trade associations are prohibited from introducing charters, rules, decisions, and standards that would eliminate or restrict competition and from organizing or promoting monopoly agreements among their members.

3.177. The AML provides for the application of administrative penalties for concluding and implementing a monopoly agreement, including issuing an order to discontinue the violation, the confiscation of any unlawful gains, and the imposition of a fine of between 1% and 10% of the turnover realized in the previous year. If the monopoly agreement has not yet been implemented, the fine may not exceed CNY 500,000. Monopoly agreements as a result of the abuse of administrative power are equally subject to penalties. Mitigation or exemption from the penalty may be obtained in cases of voluntary collaboration with the investigating authority or by providing material evidence during the investigation. On 4 January 2019, the Anti-Monopoly Committee of the State Council published Guidelines on the Application of a Leniency Programme in Horizontal Monopoly Agreement Cases, according to which, generally speaking, a maximum of three qualified operators may be granted lenient treatment. The first company that applies for leniency will be given full or no less than 80% immunity from the fine; the second company, 30%-50%; the third, 20%-30%; and others, no more than 20%.

3.3.4.1.3 Dominant market positions

3.178. The AML and the SAMR's Interim Provisions on Prohibiting Abuse of Dominant Market Positions (SAMR Order No. 11, 26 June 2019) prohibit operators holding dominant market positions from certain types of conduct by abusing their dominant position. For instance, these firms are prohibited from: (i) selling products at unfairly high prices or purchasing products at unfairly low

prices[159]; (ii) selling products at prices below costs without valid reasons; (iii) refusing to deal with counterparts, or imposing anti-competitive conditions in transactions; (iv) unreasonable product bundling; (v) applying differential prices among counterparts on an equal footing; and (vi) refusing counterparts access to essential facilities without justified reasons.

3.179. The Interim Provisions also make it clear that operators in the public utility sectors, such as water, electricity, gas, heating, telecommunications, cable television, postal services, and transportation, should not abuse their dominant market position to hurt consumers.

3.180. Operators found to have violated relevant provisions may be subject to the confiscation of any unlawful gains and to fines of 1%-10% of the turnover achieved in the previous year.

3.3.4.1.4 Mergers and acquisitions

3.181. According to the AML, the Provisions of the State Council on Thresholds for Prior Notification of Concentrations of Undertakings (State Council Decree No. 529, 2008) and the SAMR's Interim Provisions on the Examination of Concentration of Undertakings (SAMR Order No. 30, 2020), all concentrations reaching certain thresholds must be notified to the SAMR for approval before any concentration activity takes place. Concentrations may take the form of merger, acquisition, or business control through contract. The notification thresholds are: (i) a combined worldwide turnover of all concerned operators exceeding CNY 10 billion in the year preceding the merger, and an individual turnover in the mainland of China of at least two of the operators exceeding CNY 400 million; or (ii) a combined turnover in the mainland of China of all concerned operators exceeding CNY 2 billion in the year preceding the merger, and an individual turnover in China of at least two operators exceeding CNY 400 million. In case the SAMR concludes that the proposed concentration has or could have the effect of eliminating or restricting competition, the SAMR will allow the notifying operator to submit additional written comments and materials to support their application.

3.182. Operators participating in a concentration proposal may submit to the SAMR a proposal with a commitment to implement certain remedies that would alleviate the anti-competitive effect. The SAMR may attach three types of remedies to an approved concentration: (i) structural remedies requiring the disinvestment of tangible assets, IPRs, and other intangible assets, or relevant rights and interests, etc.; (ii) behavioural remedies such as operators making available their respective networks, platforms, and other infrastructure; licensing key technologies (including patents, proprietary technologies, or other IPRs); and terminating exclusive agreements; and (iii) a combination of structural and behavioural remedies. For concentrations approved subject to additional conditions, relevant operators are obliged to report to the SAMR on how relevant conditions are fulfilled. The SAMR may monitor and check the fulfilment by itself or through a trustee. Trustees that have not fulfilled their monitoring obligations may face a fine of no more than CNY 30,000.

3.183. To facilitate notification, swift review procedures were established for cases that are defined as "simple cases". The relevant rules are contained in the SAMR's Interim Provisions on the Examination of Concentration of Undertakings and the SAMR Guiding Opinions on the Notification of Simple Cases of Concentration of Undertakings (as amended on 29 September 2018).[160] The simple

[159] Article 14 of the Interim Provisions provides that consideration may be given to prices offered by different operators in the same market, prices offered by the same operator in the same or similar markets, and abnormal price fluctuation in relation to production cost.

[160] Article 17 of the SAMR's Interim Provisions on the Examination of Concentration of Undertakings (SAMR Order No. 30, 2020) provides that a concentration shall be considered as a simple case when: (i) in the same relevant market, the total market share of all business operators participating in the concentration is less than 15%; (ii) an upstream-downstream relationship exists among the business operators participating in the concentration, and the market share of such business operators in both the upstream and the downstream markets is less than 25%; (iii) the business operators participating in the concentration are neither in the same relevant market nor have any upstream-downstream relationship, and their market share in each market relevant to the concentration is less than 25%; (iv) the business operators participating in the concentration intend to establish a joint venture abroad, which will not engage in any economic activities within the territory of China; (v) the business operators participating in the concentration intend to acquire the equity or assets of an overseas enterprise that does not engage in any economic activities within China; or (vi) a joint venture jointly controlled by two or more business operators will be controlled by one or more of the existing business operators after the concentration.

cases shall be published on the SAMR website for 10 days for public comment. Simple cases require simpler documentation and less consultation and are intended to result in higher efficiency and shorter timelines.

3.3.4.1.5 Administrative monopoly

3.184. The AML generally prohibits administrative organs or organizations empowered by law or administrative regulation to administer public affairs from abusing their administrative power to eliminate or restrict competition. On 26 June 2019, the SAMR issued the Interim Provisions on Prohibiting Abuse of Administrative Power to Eliminate or Restrict Competition (SAMR Order No. 12, 2019). The Interim Provisions further elaborate on the prohibitions defined in the AML. Under the provisions of the AML, remedies against administrative monopoly consist of rectification orders by the superior authorities, together with punishment of officials in charge and other directly liable persons.

3.185. To address administrative monopolies, China continuously promoted fair competition review of all of its administrative policies and measures during the review period. The initiative started in 2016 under the guidance of the State Council Opinions on Establishing a Fair Competition Review System in the Development the Market System (Guo Fa No. 34, 2016). It aims to tackle anti-competitive issues such as local protectionism, regional market closure, barriers to market entry, and illegal preference polices, which are caused by inappropriate administrative measures of the Government. The mechanism requires that all administrative rules, norms, and measures in relation to market access, industrial development, investment promotion, tendering activities, government procurement, business operation norms, and qualification criteria go through fair competition review before being introduced. Any administrative measures that have the effect of eliminating or restricting competition should not be put into place unless they fall into the exceptions prescribed by the State Council Opinions. In the course of policy-making and fair competition review, the authorities should hear the viewpoints of stakeholders or collect public comments. In 2017, the NDRC, the MOF, MOFCOM, the SAIC, and the Legislative Affairs Office of the State Council jointly issued the Detailed Rules for the Implementation of the Fair Competition Review (Trial) (NDRC Notice Jia Jian No. 1849, 2017). The SAMR, the NDRC, the MOF, and MOFCOM jointly published the Notice on Clearing Policies and Measures that Impede the Single Market and Fair Competition (SAMR Anti-Monopoly Notice No. 245, 2019) on 25 December 2019 and the Notice on Further Promoting Fair Competition Reviews (SAMR Anti-Monopoly Notice No. 73, 2020) on 9 May 2020. The latter requires that such clearing work be conducted periodically in the future. According to the authorities, 1.89 million documents were examined in 2019 and 2020, and nearly 30,000 of them were abolished or revised.

3.3.4.1.6 Enforcement

3.186. Following the institutional reform of 2018, the SAMR has been the main anti-monopoly enforcement agency in China. On 28 December 2018, the SAMR circulated the Notice on the Authorization of Anti-monopoly Law Enforcement (SAMR Anti-Monopoly Notice No. 265, 2018) that specifies the enforcement mechanism and the obligations of relevant authorities. According to the Notice, the SAMR is directly responsible for cross-provincial anti-monopoly cases, anti-competitive conduct of provincial governments involving abuse of their administrative power, and complicated cases and cases of nationwide significance. The SAMR may delegate such responsibilities to provincial-level administrations. The SAMR may also ask provincial-level administrations to carry out investigations in specific cases on its behalf. These administrations are also responsible for anti-monopoly cases within their respective regions. The Notice also requires that enforcement agencies at different levels take a proactive approach in handling anti-monopoly cases and preventing anti-monopoly conduct. It also emphasizes the importance of consistent enforcement procedures and criteria, improving transparency in relevant cases, strengthening the capacity of enforcement agencies, and enhancing competition advocacy.

3.187. In December 2020, the SAMR published its first enforcement annual report, the 2019 Annual Report on Anti-Monopoly Enforcement in China.[161] According to the Report, in 2019, the SAMR and the provincial administrations for market regulation initiated 103 monopoly investigations, including 28 cases on monopoly agreements, 15 on abuse of dominant market positions, 24 on abuse of administrative power, and 36 on illegal concentration of undertakings. Among those 103 cases,

[161] SAMR. Viewed at: http://www.samr.gov.cn/xw/zj/202012/P020201224808232684415.pdf.

46 were closed, and fines totalling CNY 320 million were issued. These cases mainly concerned the following industries: natural gas, pharmaceuticals, auto parts, milk powder, transportation, storage, and real property. Investigated undertakings include SOEs, FIEs, private companies, and industrial associations. Concerning concentration of undertakings, the SAMR received 503 notifications, investigated 462 cases, and concluded 465 cases. Among the closed cases, five were approved with conditions, accounting for about 1.1%. Decisions on monopoly cases and the reviews of concentration cases are published on the SAMR website (http://www.samr.gov.cn/fldj/tzgg/). The 2019 Annual Report on Anti-Monopoly Enforcement also presented 11 typical anti-monopoly cases, covering different types of anti-monopoly conducts.

3.3.4.1.7 International cooperation

3.188. China has been active in international cooperation in the area of competition policy. By mid-2020, China signed 53 international anti-monopoly cooperation documents with 32 countries and regions and established bilateral and multilateral anti-monopoly cooperation mechanisms. Since its establishment in 2018, the SAMR has signed bilateral memoranda of understanding (MOUs) on anti-monopoly cooperation with the competition authorities of the European Union, Japan, the Republic of Korea, Serbia, Belarus, the Philippines, and Morocco. China and the Russian Federation renewed their MOU on the Implementation of the Agreement on Cooperation and Exchanges in Anti-monopoly and Anti-Unfair Competition (2020-21). The SAMR extended the MOU on Cooperation with BRICS Countries in the Field of Competition Laws and Policies.[162] China actively participated in the BRICS Competition Conference and furthered cooperation with BRICS countries in competition policy. China also carried out cooperation and coordination in many merger and monopoly agreement cases with its trade partners such as Canada, the European Union, Germany, India, the United States, the Russian Federation, and South Africa. China also participated in the United Nations Conference on Trade and Development (UNCTAD) activities in the area of competition and consumer protection.

3.189. There are competition chapters in China's bilateral FTAs with seven separate countries, as well as the Regional Comprehensive Economic Partnership (RCEP) Agreement and the Agreement on Economic and Trade Cooperation with the Eurasian Economic Union (EAEU). Discussions on such chapters are ongoing in the context of several other FTA or FTA upgrade negotiations, including those with Japan and the Republic of Korea, the Gulf Cooperation Council, Norway, the Republic of Moldova, Israel, and Peru.

3.3.4.2 Price controls

3.190. There were no changes to the legislation concerning price controls during the review period. Article 18 of the Price Law[163] authorizes the competent authorities to carry out, when necessary, price controls over: (i) products that have a significant bearing on the national economy and people's livelihoods; (ii) a limited number of rare products; (iii) products of natural monopoly; (iv) key public utilities; and (v) key public services. Laws and regulations on specific industrial/service sectors may also contain provisions on price administration that reaffirm that relevant business operators or service providers should follow the principles and rules set out by the Price Law. These laws and regulations include, *inter alia*, the Pharmaceutical Administration Law, the Railway Law, the Postal Law, the Compulsory Education Law, the Notary Law, the Decision of the Standing Committee of the National People's Congress on the Administration of Judicial Authentication, the Civil Aviation Law, and the Commercial Bank Law. Laws and regulations related to price controls are summarized in Table 3.20.

3.191. Price controls take two forms: "government-set prices" or "government-guided prices". Government-set prices are fixed prices set by the competent authorities, while government-guided prices are prices set by business operators within a range of prices set by the competent pricing departments or other related government departments, within which the real price is allowed to fluctuate. The determination of government-set prices or government-guided prices varies according to the type of product or service. Consideration is usually given to the market situation and average social costs, as well as economic, regional, and seasonal factors, and development and social needs.

[162] BRICS countries are Brazil, the Russian Federation, India, China, and South Africa.

[163] MOFCOM. Viewed at: http://english.mofcom.gov.cn/article/policyrelease/Businessregulations/201303/20130300046121.shtml.

Table 3.20 Department rules related to price controls, 2021

Laws/regulations	
Central Government Pricing Catalogue	NDRC Order No. 31, 2020
Regulations on Government Pricing	NDRC Order No. 7, 2017
Measures on Monitoring and Auditing the Costs in Government Pricing	NDRC Order No. 8, 2017
Measures on Hearings in Government Pricing	NDRC Order No. 2, 2008
Regulations on Prohibiting Low Price Dumping	State Planning Commission[a] Order No. 2, 1999
Regulations on Prohibiting Price Fraud	State Planning Commission Order No. 15, 2001
Provisions on Price Monitoring	NDRC Order No. 1, 2003
Administrative Measures on the Price of Water Supplied by Conservancy Projects	NDRC and the Ministry of Water Resources Order No. 4, 2003

a The State Planning Commission is the predecessor of the National Development and Reform Commission and was replaced by the latter in 2008 in the internal reorganization of the State Council.

Source: Information provided by the authorities.

3.192. The commodities and services subject to price controls are listed in a Central Government Pricing Catalogue and in Local Government Pricing Catalogues compiled by the provinces, autonomous regions, and municipalities, and they approved by the State Council. The Catalogues are updated regularly. The current Central Government Pricing Catalogue was issued by the NDRC on 13 March 2020 (NDRC Order No. 31, 2020) and came into effect on 1 May 2020.[164] The previous Catalogue (NDRC Order No. 29, 2015) was replaced at the same time.

3.193. Products subject to government-set or -guided prices are listed in Table 3.21. Currently, less than 3% of the economy is covered by price controls.

3.194. Products and services subject to prices set or guided by local governments are summarized in Table 3.22.

Table 3.21 Products/services subject to price controls by the Central Government, 2021

Item	Pricing contents		Remarks
Electricity transmission and distribution	Electricity transmission-distribution price at or above the provincial level		
Oil and gas pipeline transportation	Trans-provincial (autonomous region or municipality directly under the Central Government) pipeline transportation price		Except for the internal pipelines of enterprises
Basic transportation	Railway transportation services	Hard seat and hard sleeper passenger fares of ordinary passenger trains on railways wholly owned or controlled by the Central Government through stockholding	Powered car trainsets and newly built railway-passenger-dedicated lines controlled by social capital investment are not included in the pricing range.
		Bulk cargo and baggage transportation prices of the railways wholly owned or controlled by the Central Government through stockholding	The pricing range covers the transportation prices of coal, oil, grains, fertilizers, and other full-car loads of cargos and baggage, except for cargo transportation through newly built railways controlled by social capital investment.
	Port services	Service fees of the monopolistic services of the main ports along the coast and the main trunk of the Yangtze River and all the other ports open to vessels of foreign nationality	The pricing range covers the entering and leaving ports, and the berthing and departing of ships, port security, and other services.

[164] The Central Government Pricing Catalogue. Viewed at: https://www.ndrc.gov.cn/xxgk/zcfb/fzggwl/202003/t20200316_1223371.html.

Item	Pricing contents		Remarks
	Civil aviation services	Passenger fares for domestic civil air routes and domestic sections of international civil air routes not eligible for competition Fees of the monopolistic part of safeguard services for civil aviation	Except for first-class and business-class fares The pricing range covers the service fees of the monopolistic services of civil airports and military and civil dual-use airports, flight inspection service fees of civil airlines, and civil air traffic management service fees.
Water supply of major water conservancy projects	Prices for water supplied by trans-provincial (autonomous region or municipality directly under the Central Government) water conservancy projects directly under the Central Government		Except for the prices negotiated voluntarily between suppliers and demanders
Important postal services	Mail delivery fees Postal remittance fees Classified mail correspondence fees Fees for the distribution of newspapers and periodicals prescribed by the State Mailing fees of packages with the single weight of less than 10 kg		Except for competitive fields (including volume weight-calculated packages)
Important professional services	Basic service charges of commercial banks, bank card transaction fees		The pricing range covers the basic services of commercial banks such as transfer and remittance, cash remittance and bills, and bank card transaction services (except for competitive links such as acquiring service fees).
Special drugs and blood	Special drugs Blood	Prices of narcotic drugs and the first category of psychotropic drugs Supply prices at blood banks of blood for clinical use by citizens	

Source: Information provided by the authorities.

Table 3.22 Products/services subject to price controls by local governments, 2020

Product	Type of control/rationale	Regulation
Environment protection charges	The compensated use and trading of pollutant discharge right and hazardous wastes disposal charges are subject to local government pricing regulation. Rationale: public utilities	Regulations on Urban Drainage and Sewage Treatment
Urban household garbage disposal charges	Urban household waste charges are subject to local government pricing regulation. Rationale: public utilities	Circular on Implementing Urban Household Garbage Disposal Charges and Promoting Garbage Disposal Industrialization
Sewage disposal charges	Sewage disposal charges are subject to local government pricing regulation. Rationale: public utilities	Measures for the Administration of Collection Standards for Pollutant Discharge Fees
Real estate prices and charges of related services	Economical housing, low-price house rental, and property service charges are subject to local government-guided prices. Rationale: public service	Administrative Measures on Economical Housing Administrative Measures on Low-price House Rental
Entrance to state-owned key sightseeing sites	Prices are subject to regulation of local government pricing or local government-guided prices. Rationale: public service	Tourism Law

Source: Information provided by the authorities.

3.195. The Government continues to implement the minimum procurement price (MPP) policy in government procurements of unhusked rice and wheat in their main production areas so as to maintain stable prices. In October 2019, the Government announced that the MPP of wheat would

remain unchanged in 2020, with a total procurement volume of 37 million tonnes. In February 2020, the Government announced that the MPP of unhusked rice would remain basically the same as in the previous year with a total government procurement volume of 50 million tonnes.

3.3.5 State trading, state-owned enterprises, and privatization

3.196. China provided its last full notification on state trading enterprises (STEs) in 2018.[165] The authorities indicate that a new notification would be submitted before mid-July 2021. The legislation regulating state trading has not changed since 2014, nor have the reasons for maintaining this practice or the products subject to it. According to the authorities, state trading remains in place to ensure a stable supply and price of the products concerned, ensure food security, and protect exhaustible and non-recyclable natural resources and the environment.

3.197. STEs in China have the exclusive right to import or export the following products: wheat, maize, sugar, tobacco, rice, cotton, crude and processed oil, refined coal, chemical fertilizers, tungsten and tungstate products, antimony, and silver. The authorities indicate that STEs in China operate following the market mechanism, with no government interference.

3.198. The authorities indicate that the following companies can be considered as STEs: China Tobacco International Inc., China National Offshore Oil Corporation, Sinochem Group, China International Petroleum and Chemicals Co. Ltd., China National Agricultural Means of Production Group Co., Chinatex Corporation Co. Ltd., and Xinjiang Yin Long International Agriculture Cooperation Co. Ltd.[166]

3.199. In China's economy, state ownership of companies is important and coexists with diverse forms of private ownership. State participation varies from wholly SOEs and majority state ownership to the State acting as another shareholder. The authorities note that the preponderance of public ownership is upheld in China's economy; the State encourage the development of a mixed-ownership economy, which involves cross-ownership holdings and an integration between state-owned, collective, non-public (private), and other types of capital. The private sector is dominant in industries such as clothing, food, and assembly for export, while companies are predominantly state-owned in sectors such as energy, utilities and transport, and financial and telecom services. SOEs are divided into commercial entities and public welfare entities.

3.200. The authorities indicate that, while privatization of SOEs is not planned, progress has been achieved in mixed-ownership reform. According to the authorities, in November 2020, the Central Commission for Comprehensive Reforms approved a new proposal for a structural plan of China's SOEs.

3.201. The number of state-owned industrial enterprises in the industrial sector increased slightly during the past years, whereas their number in the construction sector fell (Table 3.23). Profits of industrial SOEs increased until 2018, but fell strongly in 2019. SOEs and their subsidiaries with mixed ownership also play an important role on the stock markets.

3.202. The State-Owned Asset Supervision and Administration (SASAC) is in charge of contributing capital to, and appointing top managers in, SOEs under its management. It acts as a representative of the Government and is directly subordinated to the State Council. In January 2021, the number of SOEs under SASAC's authority totalled 97 (compared with 98 in January 2018), 428 subsidiaries of which are listed on national or international stock exchanges. No information was available on the number of employees or total assets of the companies controlled by SASAC. SOEs in the financial sector are controlled by the State Council and the MOF.

3.203. The legal status of SOEs varies from fully Government-owned entities to stock companies with the State or state agencies as the dominant stockholder. Hence, many large and formally private companies that may even be traded on the stock market have the State as an important or major shareholder, through direct ownership or state investment vehicles. For example, Ping An

[165] WTO documents G/STR/N/16-17/CHN, 24 July 2018.

[166] These companies are mentioned in WTO documents G/STR/Q1/CHN/9 and G/C/W/749, 13 December 2017.

Insurance, China's biggest insurance company, has Shenzhen Investment as its single largest shareholder, and several other state entities also own significant portions of the company.[167]

Table 3.23 SOEs in China's economy, 2013-19

Sector	2013	2014	2015	2016	2017	2018	2019
Industrial sector[a]							
Number of total enterprises	369,813	377,788	383,148	378,599	372,729	378,440	377,815
Number of SOEs[b]	18,574	18,808	19,273	19,022	19,022	18,670	20,683
% of SOEs	5.0	5.0	5.0	5.0	5.1	4.9	5.5
Total assets (CNY billion)	87,075	95,678	102,340	108,587	112,191	113,438	120,587
Total assets of SOEs[b] (CNY billion)	34,399	37,131	39,740	41,770	43,962	43,991	46,968
% of SOEs	39.5	38.8	38.8	38.5	39.2	38.8	38.9
Total profits (CNY billion)	6,815	6,815	6,619	7,192	7,492	6,635	6,580
Total profits of SOEs[b] (CNY billion)	1,592	1,451	1,142	1,232	1,722	1,858	1,607
% of SOEs	23.4	21.3	17.2	17.1	23.0	28.0	24.4
Construction							
Number of enterprises	78,919	81,141	80,911	83,017	88,074	95,400	..
Number of SOEs	3,847	3,753	3,603	3,593	3,453	3,080	..
% of SOEs	4.9	4.6	4.5	4.3	3.9	3.2	..
Gross output value (CNY billion)	16,037	17,671	18,076	19,357	21,394	23,509	..
Gross output value of SOEs (CNY billion)	2,074	2,207	2,177	2,385	2,641	2,626	..
% of SOEs	12.9	12.5	12.0	12.3	12.3	11.2	..

.. Not available.

a Including mining, manufacturing, and production and supply of electricity, gas, and water.
b Numbers referring to SOEs including state-holding enterprises.

Source: National Bureau of Statistics, *China Statistical Yearbook* (various issues).

3.204. Of China's 10 largest SOEs, 3 are under SASAC's supervision (Table 3.24). The State remains a majority shareholder in 16 of the 100 largest publicly listed Chinese companies.

Table 3.24 China's 10 largest state-owned enterprises, 2020

(USD billion)

Company name	Revenue
SINOPEC Group[a]	407.0
State Grid	383.9
China National Petroleum[a]	379.1
China State Construction Engineering[a]	205.8
Industrial & Commercial Bank of China	177.1
China Construction Bank	158.9
Agricultural Bank of China	147.3
Bank of China	135.1
China Life Insurance	131.2
SAIC Motor	122.1

a Controlled by SASAC.

Source: Fortune Global 500.

3.205. SOEs are very important in China's economy, in particular for the Government's employment and social and regional policy objectives. While no official figures exist on employment in SOEs and their share in GDP, an academic study estimated that in 2017 their share in GDP was between 23% and 28%, and that their share in employment was between 5% and 16%.[168] According to the IMF, the productivity of China's SOEs is generally low compared with that of privately owned companies; the average productivity gap between SOEs and private companies is estimated at about 20%.[169]

[167] The authorities state that China's state-owned enterprises are all legal persons established in accordance with the Company Law and are not part of the Government. According to the authorities, based on commercial considerations, state-owned enterprises make independent decisions to make equity participation into private enterprises including large listed private companies.

[168] Zhang, C. (2019), *How Much Do State-Owned Enterprises Contribute to China's GDP and Employment?*, World Bank document. For the industrial sector, it has been estimated that SOEs in 2017 made up 18% of employment, 39% of assets, and 23% of sales revenue. Viewed at: http://documents1.worldbank.org/curated/en/449701565248091726/pdf/How-Much-Do-State-Owned-Enterprises-Contribute-to-China-s-GDP-and-Employment.pdf.

[169] IMF (2021): *People's Republic of China, Staff Report for the 2020 Article IV Consultation*, IMF Country Report No. 21/6. Viewed at: https://www.imf.org/en/Publications/CR/Issues/2021/01/06/Peoples-Republic-of-China-2020-Article-IV-Consultation-Press-Release-Staff-Report-and-49992.

The authorities state that they do not agree with the IMF's conclusion. The IMF also suggests that SOE reform would significantly lift productivity and growth.

3.206. The importance of SOEs in China's economy, coupled with high amounts of financial support, may affect the functioning of market-oriented policies and practices. It would appear that SOEs in China often benefit from credits extended by state banks or other forms of financing, implicit guarantees, capital injections, and preferential access to inputs. The authorities object to this statement and indicate that SOEs in China operate under market conditions, with no privileges granted by the Government.

3.207. It would appear that the China Structural Reform Fund, set up by 10 SOEs in September 2016, aims to optimize the management of Central Government enterprises, through the financing of SOE restructuring, overseas mergers and acquisitions, and capacity adjustment, with a view to enhancing industrial integration and improving the performance and efficiency of capital operations. The authorities state that the Fund is established, invested, and operated in a market-oriented manner. According to the authorities, no information is available on the paid-in capital of the Fund.

3.208. In July 2020, China established a bailout fund with a fundraising target of CNY 100 billion to provide emergency funding for SOEs short on cash in order to avoid possible defaults. The authorities indicate that the Fund is a market-based credit safeguard fund for central SOEs. No information was available on the fund's filling rate or disbursements.

3.209. The AML stipulates that for SOEs legally enjoying exclusive rights in production and sales or activities in sectors considered vital for China's economy and to safeguard national security, the State shall, in order to protect the consumer interest and facilitate technological advancement: (i) protect these business operations; and (ii) supervise and control these business operations and the prices of relevant services and commodities provided by these operators (Section 3.3.4).

3.3.6 Government procurement

3.3.6.1 Overview

3.210. According to data provided by the authorities, the total value of government procurement in China was CNY 3.3 trillion in 2019 (the latest year for which data were made available), accounting for 3.3% of GDP (Table 3.25). The majority of procurement takes place at the sub-Central Government level. Procurement by local entities accounted for 91.9% of China's total value of government procurement in 2019; in the same year, procurement by the Central Government accounted for 8.1%.[170]

Table 3.25 Government procurement by type of purchase, 2017-19

(CNY billion)

	2017	2018	2019
TOTAL	3,211.4	3,586.1	3,306.7
Goods	800.2	806.5	860.7
Central Government entities	110.4	122.9	146.4
Local government entities	689.8	683.6	714.3
Construction and engineering services	1,521.1	1,571.4	1,500.4
Central Government entities	52.0	60.4	67.5
Local government entities	1,469.1	1,511.0	1,432.9
Other services	890.2	1,208.1	945.5
Central Government entities	28.9	40.7	52.7
Local government entities	861.3	1,167.5	892.9
Total procurement by the Central Government	191.3	224.0	266.6
Total procurement by local government entities	3,020.2	3,362.1	3,040.0

Source: Information provided by the authorities.

[170] Among the 31 provincial-level governments that report procurement data to the Central Government, the top 10 provinces/municipalities in terms of government procurement contract value are Guangdong, Shandong, Jiangsu, Henan, Zhejiang, Anhui, Sichuan, Shanghai, Guangxi, and Hebei.

3.3.6.2 Legal and institutional framework

3.211. There have been no major changes to China's legislative and regulatory regime concerning government procurement since the previous Review. The Government Procurement Law remains the primary legislation regulating government procurement activities.[171] It applies to procurements of goods, services, and construction works by state organs, public institutions, and social organizations.[172] The Government Procurement Law does not apply to SOEs; a large number of infrastructure projects and public utility works carried out by SOEs are therefore excluded from the scope of application of the Government Procurement Law. Furthermore, Article 4 of the Government Procurement Law provides that the construction works that fall within its definition of government procurement, i.e. those works procured by state organs, public institutions, and social organizations (and not SOEs), must follow the tendering procedures set out by the Tendering Law when tendering is used as the procurement method. In all events, such construction works must still follow other policy requirements set out by the Government Procurement Law. The Tendering Law regulates tendering procedures regardless of whether the tendering concerns a project of a government agency or an SOE. Furthermore, according to the Government Procurement Law, the Central Military Commission issues separate regulations concerning military procurement and administrates their enforcement.

3.212. Both the Government Procurement Law and the Tendering Law are currently under amendment. The draft amended Bid Invitation and Tendering Law was published online for public comment from 3 December 2019 to 1 January 2020.[173] A further revised draft reflecting those public comments has been submitted to the State Council for review. At present, the Ministry of Justice is organizing a legislative review of the draft amendments. According to the Explanatory Note on the Draft[174], the amended Tendering Law will, *inter alia*: (i) redefine its scope of application and deregulate tendering activities in private investments; (ii) enhance transparency of tendering activities; (iii) adjust the time periods in tendering procedures in order to improve efficiency; (iv) restrict the use of lowest price criteria in tender evaluation and encourage life-cycle cost assessment; (v) promote e-tendering; (vi) clarify tendering requirements in public-private partnership (PPP) projects; and (vii) enhance anti-collusion in tendering and the monitoring of contract performance. The draft amended Government Procurement Law was published online for public comment from 4 December 2020 to 5 January 2021.[175] According to its Explanatory Note, the amended Government Procurement Law will, *inter alia*: (i) adjust the scope of application of the Government Procurement Law[176]; (ii) give full play to the policy goals of government procurement policy by including provisions on promoting innovation and safeguarding the interest of vulnerable groups, and specify relevant competent authorities and implementation measures; (iii) improve and clarify government procurement methods and procedures; (iv) improve the system of government procurement contracts; (v) strengthen demand management in government procurement; (vi) enhance the position of procuring entities; and (vii) simplify supplier qualification procedures. According to the authorities, the revision of the two Laws will further align China's government procurement and tendering administration systems and harmonize the application of the two Laws.

3.213. The MOF and local financial departments at different levels of the government are the competent authorities to apply the Government Procurement Law. The NDRC and the Development and Reform Commissions at the sub-central levels of the government are authorities that guide and coordinate the implementation of the Tendering Law. They have issued various measures and

[171] For more information on the Government Procurement Law, the Tendering Law, and their respective Implementing Regulations, see WTO document WT/TPR/S/375/Rev.1, 14 September 2018, paras. 3.191-3.192.

[172] According to the authorities, "state organs" include organs of state power, administrative organs, judicial organs, procuratorial organs, and military organs. The term "public institutions" refers to public service organizations that are established by state organs or other organizations established by state-owned assets to carry out activities in the fields of education, science and technology, culture, and hygiene. There is no definition of "social organizations" in China's legal system.

[173] NDRC. Viewed at: https://www.ndrc.gov.cn/hdjl/yjzq/yjfk/zbtbf/202001/t20200103_1218432.html.

[174] The Explanatory Note on the Draft was published together with the draft amended Law.

[175] Ministry of Finance. Viewed at: http://tfs.mof.gov.cn/zhengcefabu/202012/t20201204_3632547.htm.

[176] The amended draft Law provides that government procurement refers to the act of obtaining goods, construction works, and services by state organs, public institutions, social organizations, and other procuring entities, for the purpose of fulfilling government affairs and public services, via contract means with fiscal funds or other public resources.

guidelines to implement the two Laws and their Implementation Regulations. The departments responsible for industry and information technology, housing and urban-rural development, transport, railways, water resources, commerce, and civil aviation under the State Council issued their own administrative measures and/or guidelines on the application of the two Laws. The SASAC and local state-owned assets supervision and administration departments at different levels of the government guide SOEs to improve their internal control systems and regulate their operation from an investor representative's perspective so as to ensure their full compliance with relevant laws, regulations, and institutional requirements. Table 3.26 provides a list of major government procurement-related laws, regulations, and administrative measures applicable nationwide.

Table 3.26 Government procurement-related laws, regulations, and administrative measures

Law/Regulation	Promulgation year	Latest amendment
Government Procurement Law	**2002**	**2014**
Regulations for the Implementation of the Government Procurement Law	2015	
Administrative Measures on Tendering for Government Procurement of Goods and Services	MOF Order No. 18, 2004	MOF Order No. 87, 2017
Administrative Measures on Government Procurement by Non-Bid Procurement Methods	MOF Order No. 74, 2013	
Measures for the Administration of Government Procurement of Imported Products	MOF Notice Cai Ku No. 119, 2007	
Administrative Measures on Release of Government Procurement Information	MOF Order No. 19, 2004	MOF Order No. 101, 2019
Measures on Government Procurement Challenges and Complaints	MOF Order No. 20, 2004	MOF Order No. 94, 2017
Administrative Measures on Government Procurement of Public-Private Partnership Projects	MOF Notice Cai Ku No. 215, 2014	
Measures on Promoting the Development of Small and Medium Enterprises through Government Procurement	MOF Notice Cai Ku No. 46, 2020	
Notice of the Ministry of Finance, the National Development and Reform Commission, the Ministry of Ecology and Environment and the State Administration for Market Regulation on Adjusting and Optimizing Execution Mechanisms for Government Procurement of Energy-saving Products and Environmentally Labelled Products	MOF Notice Cai Ku No. 9, 2019	
Notice of the Ministry of Finance and the Ministry of Ecology and Environment on Environmentally Labelled Product Categories and Items for Government Procurement	MOF Notice Cai Ku No. 18, 2019	
Notice of the Ministry of Finance and the National Development and Reform Commission on Energy-Saving Product Categories and Items for Government Procurement	MOF Notice Cai Ku No. 19, 2019	
Notice of the Ministry of Finance on Promoting Fair Competition and Optimizing the Business Environment in Government Procurement	MOF Notice Cai Ku No. 38, 2019	
Notice of the Ministry of Finance on the Public Disclosure of Government Procurement Intentions	MOF Notice Cai Ku No. 10, 2020	
Notice of the General Office of the Ministry of Finance on Printing and Issuing the Standard Format for Government Procurement Announcements and Publicizing Information (2020)	MOF Notice Cai Ban Ku No. 50, 2020	
Tendering Law	**1999**	**2017**
Regulations for the Implementation of the Tendering Law	2011	2017, 2018, and 2019
Provisions on Construction Projects Subject to Mandatory Tendering	NDRC Order No. 16, 2018	
Provisions on Infrastructure and Utilities Projects Subject to Mandatory Tendering	NDRC Order Fa Gai Fa Gui No. 843, 2018	
Notice on Improving the Implementation of the Provisions on Construction Projects Subject to Mandatory Tendering and the Provisions on Infrastructure and Utilities Projects Subject to Mandatory Tendering	NDRC Notice Fa Gai Ban Fa Gui No. 770, 2020	
Administrative Measures for Franchising Projects in Infrastructure and Public Utilities	NDRC Order No. 25, 2015	
Interim Provisions on Bid Evaluation Committees and Bid Evaluation Methods	SDPC Order No. 2, 2001	
Measures for Electronic Tendering	Order No. 20 of eight ministries, 2013	

Law/Regulation	Promulgation year	Latest amendment
Measures for Handling Complaints about Tendering Activities in Engineering Construction Projects	Order No. 11 of seven ministries, 2004	
Measures for Goods Tendering in Engineering Construction Projects	NDRC Order No. 27, 2005	
Measures for Surveying and Designing Tendering in Engineering Construction Projects	Order No. 2 of eight ministries, 2003	
Measures for Construction Tendering in Engineering Construction Projects	Order No. 30 of seven ministries, 2003	
Measures for the Administration of Bid Evaluation Experts and Comprehensive Bid Evaluation Experts Databases	SDPC Order No. 29, 2003	
Administrative Measures for Tendering Announcement and Release of Public Information	NDRC Order No. 10, 2017	
Interim Provisions on Standard Documents of Prequalification and Tendering in Engineering Construction Projects	NDRC Order No. 56, 2007	
Notice of National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Housing and Urban-Rural Development, Ministry of Transport, Ministry of Railways, Ministry of Water Resources, National Radio and Television Administration and Civil Aviation Administration of China on Printing and Distributing Concise Standard Construction Tendering Documents and Standard Designing Construction General Contract Tendering Documents	NDRC Notice Fa Gai Fa Gui No. 3018, 2011	
Notice on Printing and Distributing Five Standard Tendering Documents Including the Standard Equipment Procurement Tendering Document	NDRC Notice Fa Gai Fa Gui No. 1606, 2017	
Budget Law	**1994**	**2014 and 2018**
Regulations for the Implementation of the Budget Law	1995	2020
Civil Code	**2021**	

Source: Information provided by the authorities.

3.214. The Regulations for the Implementation of the Tendering Law were amended in 2017, 2018, and 2019. The 2017 Revision deleted the content regarding the professional qualification for tendering personnel; the 2018 Revision deleted the content regarding the qualification for the tendering agency; and the 2019 Revision removed the requirement for financial departments to supervise the budgetary performance of government procurement construction projects that are subject to tendering. According to the authorities, those Revisions have exerted no impact on trade. The Administrative Measures on Release of Government Procurement Information was amended in 2019 (MOF Order No. 101, 2019). The new Measures further strengthen the information release system and provide that a designated Internet media is the principal channel for publishing government procurement information. They specify that the Government Procurement website (www.ccgp.gov.cn) and its subordinate provincial-level websites should serve as the platform for the collection and publication of government procurement information. They also emphasize enhanced enforcement of relevant rules in this regard.

3.215. The authorities have also been promoting the use of PPPs in investments in infrastructure and public utilities. Franchising is the main form of PPP in China.[177] Article 15 of the Administrative Measures for Franchising Projects in Infrastructure and Public Utilities (NDRC Order No. 25, 2015) provides that franchisees should be selected through competition. The NDRC Notice on Strengthening the Administration of the Investment and Construction of PPP Projects in Accordance with Laws and Regulations (NDRC Notice Tou Zi Gui No. 1098, 2019) further specifies that public tendering should be the main method in selecting franchisees. Franchisees who are selected through tendering procedures and have the capacity to implement the projects on their own can carry out the projects by themselves without going through tendering procedures again. The Administrative

[177] Article 3 of the Administrative Measures for Franchising Projects in Infrastructure and Public Utilities (NDRC Order No. 25, 2015) defines franchising as agreements between the Government and legal persons or other organizations, either domestic or foreign, under which the latter invest, build, and operate infrastructure and public utilities to provide public goods and services within certain periods and geographical areas. The agreements define rights and obligations of the Government and the franchisees and risk distribution between the two. Franchisees are entitled to gain profits from such projects.

Measures on Government Procurement of Public-Private Partnership Projects (MOF Notice Cai Ku No. 215, 2019) apply to PPP projects. Foreign investors are allowed to participate in PPP projects and, according to the authorities, there are already numerous such cases in practice.

3.216. The administrative measures on promoting green procurement and SMEs' participation in government procurement were also amended in 2019 and 2020 (Section 3.3.6.4).

3.217. The authorities note that China does not introduce special policies for government procurement activities under the BRI, including economic corridor projects. China does not have special government procurement policies in its PFTZs either.

3.3.6.3 Procurement methods and e-procurement

3.218. During the review period, there were no changes to the procurement methods and procedures.[178] The Government Procurement Law, its Implementing Regulations, and relevant Administrative Measures provide for six procurement methods: (i) public tendering; (ii) selective tendering; (iii) price inquiry; (iv) competitive negotiations; (v) competitive consultations; and (vi) single-source procurement. According to data provided by the authorities, in 2019, procurement through public tendering accounted for 78.31% of total procurement, selective tendering for 0.99%, price inquiry for 1.41%, competitive negotiations for 3.55%, and single-source procurement for 6.19%. The value under single-source procurement decreased from CNY 552.7 billion in 2017 to CNY 204.6 billion in 2019 (Table 3.27).

Table 3.27 Government procurement by procurement method, 2017-19

(CNY billion)

Year	Procurement method						
	Total	Public tendering	Selective tendering	Price inquiry	Competitive negotiations	Competitive consultations	Single-source procurement
2017	3,211.4	2,170.1	24.9	73.9	133.0	180.8	552.7
2018	3,586.1	2,528.8	39.4	83.6	129.6	298.7	423.3
2019	3,306.7	2,589.6	32.6	46.7	117.5	204.7	204.6

Source: Information provided by the authorities.

3.219. With regard to e-procurement, China planned to fully implement e-tendering by end-2020. In 2017, six ministries jointly issued the "Internet + Tendering/Procurement" Action Plan (2017-19) (NDRC Notice No. 357, 2017). In 2019, the MOF issued the new Administrative Measures on Release of Government Procurement Information (MOF Order No. 101, 2019). The old Measures (MOF Order No. 19, 2004) were repealed at the same time. All government procurement notices and relevant information should be published in the standard format announced by the MOF in 2020 (Cai Ban Ku No. 50, 2020). The NDRC Administrative Measures for Tendering Announcement and Release of Public Information (NDRC Order No. 10, 2017) also require that tendering notices and other relevant information of a project subject to mandatory tendering be published on the China Tendering Public Service Platform or the provincial e-tendering platforms. The State Council further requires that all such information, upon publication, should also be transferred to and published in real time on the National Public Resources Trading Platform.[179] According to the authorities, most regions and most industrial areas have fully implemented e-tendering.

3.220. To enhance predictability of government procurement and facilitate suppliers' awareness of market opportunities, the MOF issued a Notice on Disclosure of Future Government Procurement Plans (MOF Notice Cai Ku No. 10, 2020), which requires that all procuring entities should disclose their procurement plans in advance where possible. The MOF notes that, during the review period, it organized a third-party evaluation of the work of local governments regarding the disclosure of

[178] For more information on the procurement methods and procedures, see WTO document WT/TPR/S/375/Rev.1, 14 September 2018, paras. 3.197-3.207.

[179] The National Public Resources Trading Platform is the general hub for sharing public resources trading data in China. Information published on this platform contains, but is not limited to, government procurement. It also collects and publishes information on transactions of land use rights, mining rights, and state-owned property rights.

information about government procurement. The evaluation shows that the transparency of government procurement has been significantly improved across the country.

3.3.6.4 Other policy considerations in government procurement

3.221. China maintains buy-national policies in government procurement. Article 10 of the Government Procurement Law provides that unless the subject matter cannot be obtained within the territory of China or cannot be obtained with reasonable commercial terms, or the procurement is for use outside the territory of China, the procuring entities shall procure domestic goods, services, and construction works. The Measures for the Administration of Government Procurement of Imported Products (Cai Ku No. 119, 2007) further require that in each specific case, the conditions that allow procurement of imported products need to be verified by the financial authorities.

3.222. It is also noted that the buy-national requirement does not apply to procurements by SOEs, as they are not considered as government procurement in China and are not bound by the Government Procurement Law. Therefore, the authorities state that there is no differential treatment of foreign goods, services, and suppliers in SOEs' procurements, including those in the areas of infrastructure and public utilities. In addition, Article 16 of the new Foreign Investment Law (FIL) (promulgated in March 2019) provides that "the State shall guarantee that foreign-invested enterprises can participate in government procurement activities through fair competition; products produced and services provided by foreign-invested enterprises within the territory of China shall be treated equally in government procurement".

3.223. Furthermore, Article 9 of the Government Procurement Law provides that government procurement shall be carried out to facilitate the realization of the economic and social development policy goals of the State, including environmental protection, assistance to underdeveloped or ethnic minority regions, and promoting the development of SMEs. According to the authorities, SMEs became more active in participating in government procurement activities in the past 10 years. More than 70% of China's government procurement in value terms is currently performed by SMEs.[180] To address issues arising in the implementation of previous Measures[181], China issued the new Measures on Promoting the Development of Small and Medium Enterprises through Government Procurement (MOF Circular Cai Ku No. 46, 2020) on 18 December 2020.[182] The new Measures came into force on 1 January 2021, and the previous Measures ceased to apply at the same time. Compared with the previous measures, the new Measures provide more details on the SME contract set-aside policy. They require that, in principle, small-value contracts, i.e. goods and services contracts below CNY 2 million and construction work contracts below CNY 4 million, be set aside for SMEs. For contracts above the aforementioned thresholds, no less than 30% of them in value terms should be performed by SMEs. In contracts set aside for SMEs, no less than 60% should be performed by small and micro enterprises. The goal shall be achieved through contract set-asides, contract splitting, consortium bidding, or subcontracting. As regards the grant of price preferences to SMEs, the new Measures maintain the preference margins for procurements where the tender evaluation is based on the lowest price criterion.[183] Additionally, they set out rules on granting preferences to SMEs in the procurement of construction works where the tender evaluation is based on the criterion of the

[180] Ministry of Finance. Viewed at: http://gks.mof.gov.cn/guizhangzhidu/202012/t20201228_3637423.htm.

[181] Interim Measures on Promoting the Development of Small and Medium Enterprises through Government Procurement (MOF Circular Cai Ku No. 181, 2011). For more information about policies in favour of SMEs under the previous Interim Measures, see WTO document WT/TPR/S/375/Rev.1, 14 September 2018, para. 3.212.

[182] Ministry of Finance. Viewed at: http://gks.mof.gov.cn/guizhangzhidu/202012/t20201228_3637419.htm.

[183] In tender evaluation for procurement of goods and services, the tender submitted by a small or micro enterprise will compete with other tenders based on a price 6%-10% lower than the original price offered by it. When the contract is delivered, it will be paid the full original price. For procurement of construction works, the price preference margin is 3%-5%. For joint tendering where small or micro enterprises' share accounts for more than 30% of the contract value and for a large enterprise that intends to subcontract more than 30% of the contract value to small or micro enterprises, the tender will benefit from a price preference margin of 2%-3% for procurement of goods and services, and 1%-2% for procurement of construction works.

most advantageous tender.[184] The new Measures also contain provisions to support SMEs through contract payment and credit guarantees.

3.224. With regard to environmental protection, China maintains policies to provide more favourable treatment to energy-saving products and environmentally friendly products in government procurement. Such policies were first introduced in 2004 and 2006. During the review period, China adjusted implementation measures in this regard. Specifically, in 2019, the MOF, the NDRC, the MEE, and the SAMR jointly issued a Notice on Adjusting and Optimizing Execution Mechanisms for Government Procurement of Energy-Saving Products and Environmentally Labelled Products (Cai Ku No. 9, 2019).[185] Under the old measures, relevant authorities published not only the catalogues but also the lists of brands and models that had been granted conformity certificates for such purposes.[186] Under the new measures, the authorities publish only the generic catalogues and energy conservation and environment protection standards[187], and not the lists of brands and models. Product brands and models that have been granted certificates by recognized certification agencies are eligible for favourable treatment in government procurement. According to the authorities, such adjustments made it unnecessary for suppliers to apply for being included on the list and provide more equal opportunities for suppliers. The new Measures also enhance the obligation of procuring entities to implement such policies.

3.225. In addition, in 2020, relevant authorities published green packaging standards and green express mail packaging standards relating to government procurement. Procuring entities are required to specify in their procurement documentation that the packaging should be recyclable, organic, and renewable.[188]

3.226. The authorities note that, during the review period, no specific government procurement policies were introduced to promote innovation.

3.3.6.5 COVID-19-related government procurement measures

3.227. To address the COVID-19 pandemic, China established "green channels" for government procurement in relation to the prevention and control of the pandemic. On 26 January 2020, the MOF circulated the Notice on Facilitating Procurement for Pandemic Prevention and Control (Cai Ban Ku No. 23, 2020) which requires that state organs, public institutions, and social groups at all levels should open "green channels" for the procurement of goods, services, and construction works for pandemic prevention and control.[189] The Notice also requires that sound internal control mechanisms be established and maintained for emergency procurement. On 6 February 2020, the MOF circulated the Notice on Government Procurement-related Matters during the Period of Pandemic Prevention and Control (Cai Ban Ku No. 29, 2020).[190] This Notice focuses on the protection of the health and

[184] For procurement of construction works where the tender evaluation is based on the criterion of the most advantageous tender (not the lowest price), the tender submitted by small and micro enterprises will benefit from a 3%-5% mark-up in its price points. For joint tendering where small or micro enterprises' share accounts for more than 30% of the contract value and for a large enterprise that intends to subcontract more than 30% of the contract value to small or micro enterprises, such a tender will benefit from a 1%-2% mark-up in its price points.

[185] Ministry of Finance. Viewed at: http://gks.mof.gov.cn/guizhangzhidu/201902/t20190212_3146226.htm.

[186] For more information about the previous measures, see WTO document WT/TPR/S/375/Rev.1, 14 September 2018, para. 3.213.

[187] The product lists are published through the joint Notice of the Ministry of Finance and the Ministry of Ecology and Environment on Environmentally Labelled Product Categories and Items for Government Procurement (Cai Ku No. 18, 2019) and the joint Notice of the Ministry of Finance and the National Development and Reform Commission on Energy-saving Product Categories and Items for Government Procurement (Cai Ku No. 19, 2019).

[188] These measures are contained in the joint Notice of the Ministry of Finance General Office, the Ministry of Ecology and Environment General Office, and the State Post Bureau General Office on Commodity Packaging Standards for Government Procurement (Trial Edition) and the Express Mail Packaging Standards for Government Procurement (Trial Edition) (Cai Ban Ku No. 123, 2020).

[189] Ministry of Finance. Viewed at: http://gks.mof.gov.cn/guizhangzhidu/202001/t20200126_3464030.htm.

[190] Ministry of Finance. Viewed at: http://gks.mof.gov.cn/guizhangzhidu/202002/t20200207_3466846.htm.

safety of procurement professionals and suppliers during the pandemic and encourages the use of electronic means in government procurement.

3.3.6.6 Supplier complaint mechanism

3.228. The supplier complaint mechanism remained unchanged during the review period.[191] The Government Procurement Law and the Measures for Handling Challenges and Complaints against Government Procurement (MOF Order No. 94, 2017) require that the finance authorities at different levels of government review suppliers' complaints regarding government procurement activities at their respective levels.[192] The results of complaint reviews are published in designated media.

3.3.6.7 Accession to the GPA and other international cooperation

3.229. China became an Observer in the WTO Committee on Government Procurement in 2002. It initiated its GPA accession negotiation in 2007. During the review period, significant progress was made on the accession. China submitted its 6th revised market access offer on 20 October 2019.[193] The new offer, for the first time, included non-sensitive military procurement. It also added seven provinces and municipalities, 16 SOEs, and 36 local universities. No minority autonomous regions at the provincial level were included in the new offer, and some SOEs in the infrastructure and public utility sectors are missing. Some services sectors are not included in the offer. On 29 May 2020, China circulated its updated Replies to the Checklist of Issues, which contain comprehensive information on China's government procurement regime.[194] Consultations continue between China and GPA Parties to address the remaining issues in the accession process.

3.230. China has not included any market access commitments in the area of government procurement in the context of any of the FTAs that it has negotiated with trading partners. According to the authorities, it remains China's priority to conclude its GPA accession before liberalizing its government procurement market through bilateral/regional tracks.

3.3.7 Intellectual property rights

3.3.7.1 Overview

3.231. During the review period, China's intellectual property (IP) regime and institutional framework continued to evolve, adjusting to technological developments and new business practices. China also made efforts to mainstream IP into its economy and adjust its programmes to enhance their effectiveness and compliance with international commitments.

3.232. In 2019, China was recognized as one of the top four economies in innovation capability.[195] In 2020, China was the 8th most performing economy in economic transformation priorities[196], and was ranked as the 14th of the 131 economies featured in the Global Innovation Index.[197] These high rankings on IP-intensive indicators underpin the positive evolution of the Chinese IP regime.

3.233. China's participation in trade in IP has increased, as shown by the growth in total receipts of fees for the use of IP from USD 14 billion in 2010 to USD 41 billion in 2019. The trade deficit in this rubric has incrementally narrowed down since 2010, reflecting the export activity related to royalties and licensing fees (Chart 3.6).

[191] For more information about the supplier complaint mechanism, see WTO document WT/TPR/S/375/Rev.1, 14 September 2018, paras. 3.215-3.216.

[192] For more information in this regard, see WTO document WT/TPR/S/375/Rev.1, 14 September 2018, paras. 3.215-3.216.

[193] WTO document GPA/ACC/CHN/51, 21 October 2019.

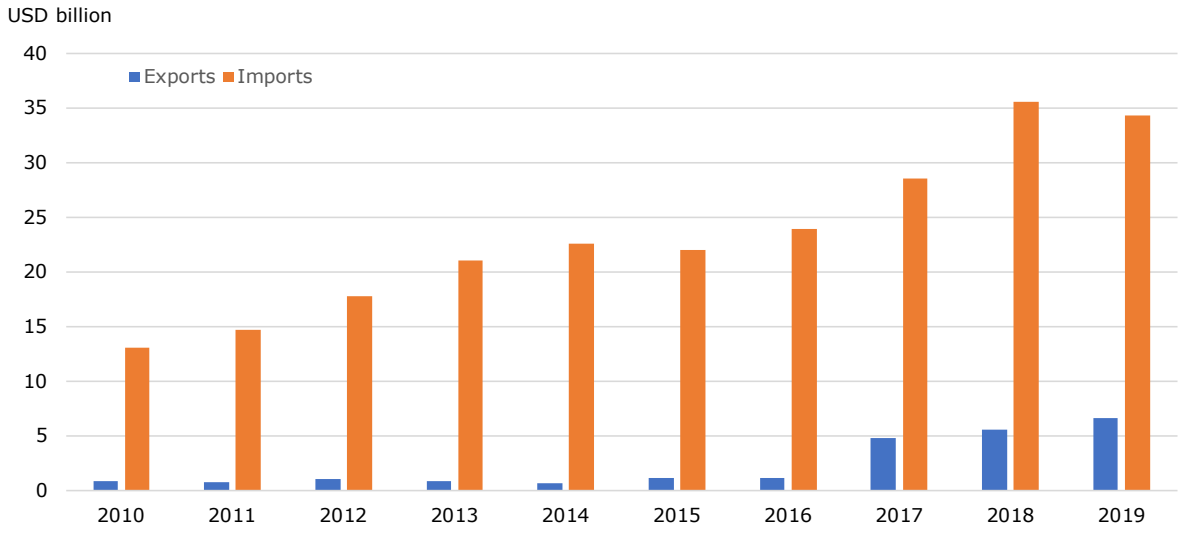
[194] WTO document GPA/ACC/CHN/8/Rev.1, 2 June 2020.

[195] WEF (2019), *The Global Competitiveness Report 2019*, p. 7. Viewed at: http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf.

[196] WEF (2020), *The Global Competitiveness Report, Special Edition 2020*, p. 45. Viewed at: http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2020.pdf.

[197] WIPO, *2020 Global Innovation Index*. Viewed at: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020/cn.pdf.

Chart 3.6 Exports and imports of fees for the use of IP, 2010-19



Source: WTO Data Portal. Viewed at: https://data.wto.org/.

3.3.7.2 Institutional reforms and IP-related policies

3.234. During 2018 and 2019, China undertook wide-ranging domestic reforms that included its IP regime, the infrastructure of IP courts, and amendments to the Trademark Law, the Patent Law, and the Anti-Unfair Competition Law, which govern trade secrets (Section 3.3.7.5.8). As part of these reforms, in 2018, the State Intellectual Property Office became the China National Intellectual Property Administration (CNIPA). The authorities state that the CNIPA is under the authority of the SAMR and is responsible for: (i) promoting IP protection; (ii) improving the IP protection system; (iii) registering and making administrative decisions on trademarks, patents, and geographical indications (GIs); and (iv) providing guidance on enforcement of trademarks and patents. The law enforcement staff of market supervision is responsible for the enforcement of trademarks and patents.

3.235. In 2019, the CNIPA, together with other relevant authorities responsible for the Innovation Policy, issued the Notice on Further Strengthening Intellectual Property Pledge Financing, which implements support measures to improve the service system of IP pledge financing, strengthen service innovation, enhance risk management, and improve supporting measures. It also establishes an online channel to facilitate the registration of patent pledges. In 2020, there were 12,039 patent and trademark pledge financing cases, totalling CNY 218 billion in loans, an increase of 43.8% for patents and 43.9% for trademarks from 2019.[198]

3.236. Building on previous work, the CNIPA published the Plan for Further Implementation of the National Intellectual Property Strategy to Accelerate the Construction of an Intellectual Property Power Country in May 2020. The Plan listed 100 measures related to, *inter alia*, the creation, use, protection, management, service, and international cooperation of IP, which aim to reduce subsidies or rewards for utility model, design, and trademark applications; cut examination periods for trademark and patent applications; reduce low-quality patent applications and malicious filing of trademarks; and ensure that decisions to grant awards or to promote or appoint staff in universities are not solely based on patent filings and grant rates.

3.237. Regarding IP-related issues, the 14th Five-Year Plan for Economic and Social Development aims to promote modernization through innovation and technological advancements and promote high-end, intelligent, and green production. Investment in R&D would have an important role in the areas of artificial intelligence, quantum information, integrated circuits, life and health sciences, neuroscience, biological breeding, and aerospace technology.

[198] *Summary of 2020: Chinese IP System to a New Height*, 28 January 2021. Viewed at: http://english.ipraction.gov.cn/article/ns/202101/334627.html.

3.238. The China Manufacturing 2025 strategy highlights, *inter alia*, the importance of IP protection and enforcement to promote IP-intensive sectors such as robotics, information technology, and clean energy.

3.239. China amended its Anti-Unfair Competition Law in April 2019 and its Trademark Law in November 2020. The amendments to the Patent Law were reviewed twice by the NPC Standing Committee in October 2020 and are expected to be implemented from 1 June 2021. The Copyright Law was revised in November 2020. Other IP-related laws have remained unchanged since the previous Review (Table A3.3).[199]

3.3.7.3 International context

3.240. China is a member state of the World Intellectual Property Organization (WIPO), and participates in a number of international conventions and treaties related to IPRs (Table A3.4). During the review period, China acceded to the Beijing Treaty on Audiovisual Performances, which entered into force on 28 April 2020.[200]

3.241. The China-United States Phase 1 Economic and Trade Agreement contains specific provisions related to: (i) protecting trade secrets; (ii) strengthening pharmaceuticals-related IP; (iii) adjusting and extending patent terms; (iv) preventing piracy and counterfeit on e-commerce platforms; (v) increasing transparency in the protection of GIs; (vi) preventing manufacture and export of counterfeit goods; (vii) ensuring adequate and effective protection and enforcement of trademark rights, particularly against bad-faith trademark registrations; and (viii) increasing bilateral cooperation on IP protection.[201]

3.242. China is a party to several bilateral trade agreements and RTAs that include IP chapters. Notably, in November 2020, China and other 14 Asia Pacific economies finalized the negotiations of the RCEP Agreement. Its IP chapter covers a wide range of topics such as copyrights, trademarks, GIs, patents, designs, genetic resources, traditional knowledge and folklore, protection against unfair competition, enforcement, cooperation, transparency, and technical assistance.

3.243. In February 2019, the CNIPA and the Saudi Authority for Intellectual Property (SAIP) signed an MOU, which covers exchanges and cooperation in the development of the IP regime, capacity-building, data exchange, trademarks, and GIs.

3.244. A two-year pilot collaboration project between the CNIPA and the European Patent Office (EPO) started in December 2020. It allows Chinese nationals and residents to select the EPO as the International Searching Authority for English-language international patent applications filed at the CNIPA or WIPO.

3.3.7.4 Copyright and related rights

3.245. The legal framework for the protection of copyrights and related rights is provided in the Copyright Law and relevant regulations, e.g. the Regulations for the Implementation of Copyright Law, the Regulations for the Protection of Computer Software, the Regulations on Collective Copyright Management, the Regulations on the Protection of the Right of Dissemination via Information Network, and the Interim Measures for the Payment of Remuneration for the Broadcast of Sound Recordings by Radio and Television Stations. Copyright owners or owners of related rights may authorize collective non-profit copyright management organizations to exercise their rights.

3.246. The National Copyright Administration administers copyright registration nationally. In the case of computer software, the Copyright Protection Centre of China registers copyrighted works.

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[199] WTO documents IP/N/1/CHN/P/2, 21 December 2010; IP/N/1/CHN/P/3, 26 August 2011; IP/N/1/CHN/C/1 (2001 Version), 8 July 2002; IP/N/1/CHN/L/1/Rev.1, 13 October 2003; IP/N/1/CHN/9 (2013 Amendment), 19 October 2017; and IP/N/1/CHN/T/5 (2019 Amendment), 30 January 2020; and information provided by the authorities.

[200] WIPO IP Portal, *WIPO-Administered Treaties: Contracting Parties: China*. Viewed at: https://wipolex.wipo.int/en/treaties/ShowResults?country_id=38C.

[201] Government of China. Viewed at: http://www.gov.cn/guowuyuan/2020-01/16/content_5469650.htm.

3.247. The procedure of registration under the Copyright Law has remained unchanged since the previous Review. Registration is voluntary and is not a requirement for copyright protection.[202] The Copyright Law provides for copyright licensing and transfer of rights, unchanged since the previous Review. Copyright infringement can be sanctioned with fines.

3.248. The term of copyright protection for natural persons, as well as for certain works[203], is life plus 50 years.[204] Software copyright exists from the date on which its development is completed. The term of protection for typographical designs is 10 years. The authorities state that the term of protection for photographic works is the life of the author plus 50 years, and audio-visual works are protected for 50 years.

3.249. As at January 2021, there were five copyright collective management organizations in China: Music Copyright Society of China; China Audio-Video Copyright Association; China Written Works Copyright Society; the Images Copyright Society of China; and China Film Copyright Association (Table 3.28).

Table 3.28 Copyright collective management organizations – fees and membership

Organization	Fees collected (CNY million)	No. of members
Music Copyright Society of China	404	10,031
China Audio-Video Copyright Association	270	247 (including unit members and individual members)
China Written Works Copyright Society	19.31	10,046
Images Copyright Society of China	5.59	20,500
China Film Copyright Association	0.0274	88

Source: Information provided by the authorities.

3.3.7.5 Industrial property

3.3.7.5.1 Trademarks

3.250. The legal framework for the protection and enforcement of trademarks is provided by the Trademark Law. Amendments to the Trademark Law entered into force in November 2019. The objectives of these amendments are to curb bad-faith applications, strengthen protection, and foster a favourable business environment. In order to implement the amendments, the Rules on Regulating Applications for Registration of Trademarks were developed and came into force in December 2019. The authorities indicate that the amendments and/or the regulations do not contain new provisions regarding parallel imports.

3.251. Since the reform of 2018, the CNIPA has been responsible for the examination of trademark applications, registration and administration.

3.252. Registration is a prerequisite for protection, and ownership is determined on a first-to-file basis. According to Article 18 of the Trademark Law, foreign businesses are required to appoint a Chinese trademark agent. The period of protection is 10 years. According to the authorities, the request to renew the registration is to be filed 12 months before the date of expiration.

3.253. Foreign brand owners have the possibility to file trademark applications either as national applications or international registrations under the Madrid Protocol.[205] China adopted the Nice

[202] The copyright on the works of Chinese citizens, legal entities, or other organizations are automatically protected; this protection also applies to the copyright of foreigners whose works are first published in China. Copyright protection for works published abroad has remained unchanged since the previous Review.

[203] These include works of a legal entity or other organization, works created in the course of employment and the copyright of which is held by a legal entity or other organization, and cinematographic and photographic works. Audio and video productions, broadcasting, and public performances are also granted protection for 50 years from the first day of production, broadcasting, or performance.

[204] In the case of more than one right holder, protection is granted for 50 years after the death of the last surviving right holder.

[205] WIPO, *Madrid – The International Trademark System*. Viewed at: https://www.wipo.int/madrid/en/.

Classification of Goods and Services for the Purposes of the Registration of Marks.[206] In addition, the CNIPA also developed a sub-class system, whereby goods and services under each Nice class are classified into sub-classes, and some sub-classes are further categorized into different groups. The sub-classes are listed in the Chinese Classification Manual.

3.254. The China-United States Phase 1 Economic and Trade Agreement contains provisions regarding bad-faith trademark registrations; with a view to strengthening trademark protection, both Parties shall ensure adequate and effective protection and enforcement of trademark rights, particularly against bad-faith trademark registrations.

3.255. During the review period, trademark applications and registration continued to increase. In 2019, residents accounted for 97% of trademark applications and 96% of registrations (Table 3.29).

Table 3.29 Trademark applications and registrations, 2017-19

Trademarks		2017	2018	2019
Applications	Resident	5,538,980	7,127,032	7,582,356
	Non-resident	209,195	243,677	255,085
	Madrid System submitted by Chinese applicants	4,810	6,900	6,491
Registrations	Resident	2,656,039	4,796,851	6,177,791
	Non-resident	136,033	210,544	228,049

Source: Information provided by the authorities.

3.3.7.5.2 Geographical indications

3.256. GIs can be protected as certification marks or collective marks under the Trademark Law or by a *sui generis* system contained in the Provisions on the Protection of Geographical Indication Products, administered by the CNIPA. In 2020, the CNIPA established the Technical Sub-committee on Geographical Indications of the National Technical Committee on Knowledge and Intellectual Property Management Standardization.

3.257. According to the authorities, GIs that have not been officially registered are still protected by the relevant laws, e.g. the Trademark Law, the Anti-Unfair Competition Law, the Food Safety Law, and the Law on Quality and Safety of Agricultural Products.

3.258. The China-United States Phase 1 Economic and Trade Agreement contains GI-related provisions, particularly: (i) using relevant factors when making determinations for genericness, including usage of a term in dictionaries, newspapers, and websites; how the good referred to by a term is marketed and used in trade; and whether the term is used in relevant standards; (ii) not providing GI protection to individual components of multi-component terms if the individual component is generic; and (iii) publicly identifying which individual components are not protected when granting GI protection to multi-component terms. The CNIPA published Guidelines on Determining Common Names in Geographical Indication Protection (Draft) in 2020, clarifying the determining factors, cancellation, and other aspects of common names in terms of the common name determination in GI protection.[207]

3.259. In September 2020, China and the European Union signed a bilateral agreement to protect 100 European GIs in China and 100 Chinese GIs in the European Union against infringement. During the four years after its entry into force, the agreement will expand in scope to cover an additional 175 GIs from both sides. These GIs will have to follow the same approval procedure as the 100 names originally covered by the agreement (i.e. assessment and publication for comment).[208] The authorities indicate that the agreement entered into force on 1 March 2021.

3.260. In 2018, 12 new applications for GI protection were accepted, 67 GI protection products were granted, 223 companies were approved to use special signs of GI products, and 961 GIs were registered in the form of collective marks and certification marks. The authorities indicate that in

[206] WIPO, *Nice Classification*. Viewed at: https://www.wipo.int/classifications/nice/en/.
[207] Government of China. Viewed at: http://www.gov.cn/guowuyuan/2020-01/16/content_5469650.htm.
[208] MOFCOM. Viewed at: http://tfs.mofcom.gov.cn/article/zscq/202009/20200903002354.shtml.

2019, five new applications for GI protection were accepted, 301 companies were approved to use special signs of GI products, and 462 GIs were registered in the form of collective marks and certification marks. In 2020, 10 applications for GI protection were filed and 6 were granted; 1,052 companies were authorized to use GI signs, and 765 GI trademarks were registered.[209]

3.3.7.5.3 Patents

3.261. The Patent Law and its Rules for Implementation provide the legal framework for the protection of inventions, utility models, and industrial designs.[210] Parallel imports of patented goods are allowed, as provided by Article 69 of the Patent Law. Articles 48-58 relate to compulsory licence provisions. Compulsory licences of patents may be granted in the public interest, or in the event of a national emergency or extraordinary circumstances. So far, no compulsory licences have been granted in China.

3.262. The CNIPA is the authority responsible for receiving and processing patent applications and granting patents. The person concerned is free to request a People's Court or administrative authority to settle disputes with respect to patents. The period of protection is 20 years.

3.263. During the review period, several regulations were amended. The amendments to the Regulations on Patent Agencies came into force in March 2019. Their objective is to improve the provisions regarding qualifications for practitioners, the code of conduct, and services supervision. According to the authorities, the revised Administrative Measures for Patent Agencies were implemented in May 2019; the revised Measures for the Patent Agent Qualification Examination were effective as at June 2019. In September 2019, the CNIPA issued the Administrative Regulations of Collective Patent Examination, which aim to improve the examination efficiency and quality of important patent applications. "Collective Patent Examination" means the collective processing of a group of patent applications focusing on the same key technology by the same applicant(s).[211] The CNIPA also amended the Patent Examination Guidelines in order to clarify the examination standard in patent applications involving artificial intelligence and other new industries. The amendment entered into force in February 2020.

3.264. Amendments to the Patent Law were prepared with the objectives of improving protection, boosting the application and use of patents, and enhancing the patent system. The NPC Standing Committee approved the amendments in October 2020; they are expected to enter into force on 1 June 2021.

3.265. In November 2020, the CNIPA issued draft amendments to the Implementing Regulations of the Patent Law for public consultation. The deadline for submitting opinions was 11 January 2021. The CNIPA will further complete the draft according to the opinions, and then submit the final draft to the legislature for review.

3.266. UNCTAD reported in 2019 that, in the 156 high-tech development zones established in China by end-2017, the ratio of R&D expenditures to total production value was 6.5%, three times the average in the national economy. Patents granted to enterprises within such high-tech development zones accounted for 46% of all business patents granted nationwide.[212]

3.267. The National Bureau of Statistics reported that the added value of China's patent-intensive industries reached approximately USD 1.53 trillion, contributing 11.6% to the GDP, in 2018. The equipment manufacturing sector contributed to 30.7% to the added value of the patent-intensive sectors. It was followed by information technology for manufacturing and services, manufacture of new materials, healthcare, high-technology services, and environmental protection industries. Data

[209] CNIPA, *2020 Statistics*, 25 January 2021. Viewed at: http://english.ipraction.gov.cn/article/ns/202101/334279.html.

[210] Other patent-related regulations notified to the TRIPS Council are listed in WTO documents IP/N/1/CHN/3, 15 December 2010; IP/N/1/CHN/P/2, 21 December 2010; IP/N/1/CHN/4, 24 August 2011; and IP/N/1/CHN/P/3, 26 August 2011.

[211] CCIPT Patent and Trademark Office, *China: CNIPA Issued Regulations on Collective Patent Examination*, 18 November 2019. Viewed at: https://www.mondaq.com/china/patent/864738/cnipa-issued-regulations-on-collective-patent-examination.

[212] WTO (2020), *World Trade Report 2020*, p. 115. Viewed at: https://www.wto.org/english/res_e/booksp_e/wtr20_e/wtr20_e.pdf.

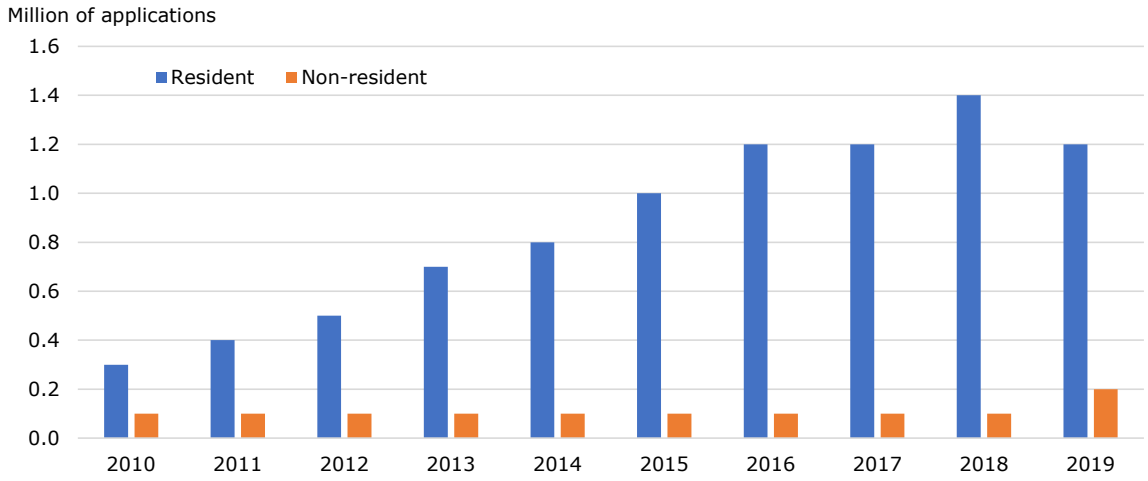
provided by the authorities indicate that in 2019 the added value of China's patent-intensive industries reached CNY 11.4631 trillion, up by 7.0% compared with the previous year (including price factors), contributing 11.6% to GDP, equal to the previous year.

3.268. In 2019, the CNIPA was ranked as the top IP office, reaching 43.4% of world's total patent applications[213] with 1.4 million filings, composed of 1.2 million filed by residents and 0.2 million by non-residents (Chart 3.7).[214]

3.269. In 2019, there was a total of 452,804 patent grants: 360,969 patents were granted to residents and 91,885 to non-residents (Chart 3.8).[215]

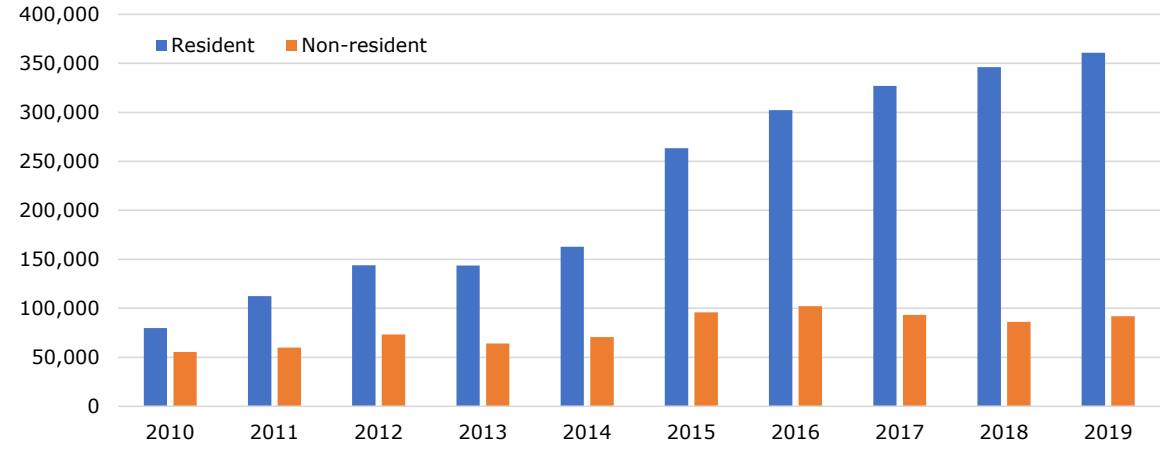
3.270. According to information from WIPO, in 2019, 10% of patents were granted in the field of computer technology, followed by 8% in measurement; 8% in electrical machinery, apparatus, and energy; and 7% in digital communication technologies. Chart 3.9 shows the top 15 fields of technology.

Chart 3.7 Patent applications, 2010-19



Source: WIPO IP Portal, WIPO IP Statistics Data Center. Viewed at: https://www3.wipo.int/ipstats/.

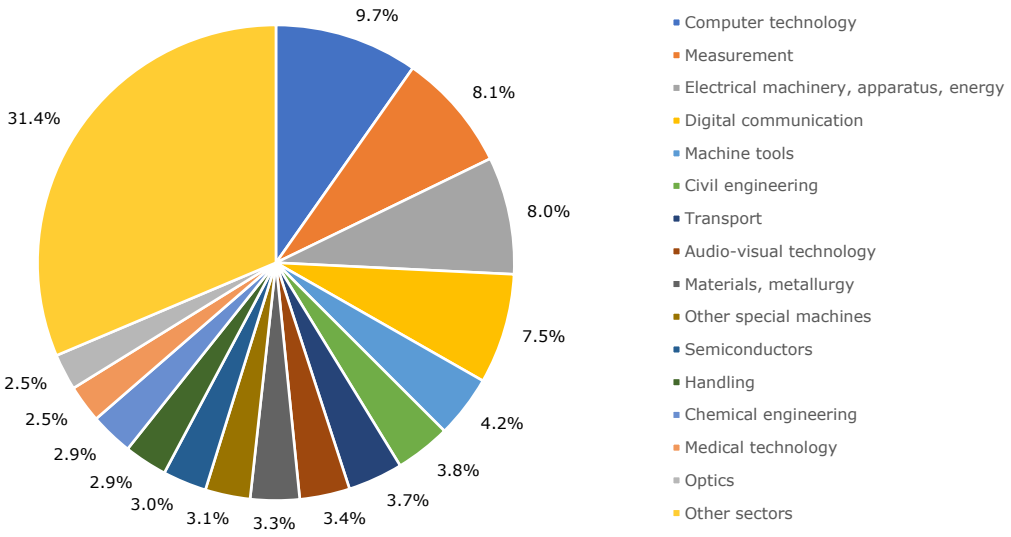
Chart 3.8 Patent grants, 2010-19



Source: WIPO IP Portal, WIPO IP Statistics Data Center. Viewed at: https://www3.wipo.int/ipstats/.

[213] WIPO (2020), *WIPO IP Facts and Figures 2020*. Viewed at: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_943_2020.pdf.
[214] WIPO IP Portal, WIPO IP Statistics Data Center. Viewed at: https://www3.wipo.int/ipstats/.
[215] WIPO IP Portal, WIPO IP Statistics Data Center. Viewed at: https://www3.wipo.int/ipstats/.

Chart 3.9 Patent grants by top fields of technology, 2019



Source: WIPO IP Portal, WIPO IP Statistics Data Center. Viewed at: https://www3.wipo.int/ipstats/.

3.271. The China-United States Phase 1 Economic and Trade Agreement contains provisions regarding patent term extensions to compensate for unreasonable patent office and marketing approval delays that cut into the effective patent term, and to permit the use of supplemental data to meet relevant patentability criteria for pharmaceutical patent applications. It also establishes a mechanism for the early resolution of potential pharmaceutical patent disputes, including a cause of action to allow a patent holder to seek expeditious remedies before the marketing of an allegedly infringing product.[216] Accordingly, China has formulated measures for the implementation of the early settlement mechanism for drug patent disputes in accordance with the provisions of the Agreement and the relevant provisions of the Patent Law. The measures were published for comment on 11 September 2020, and revised on the basis of domestic and foreign opinions. Articles 42 and 76 of the fourth revision to the Patent Law touch upon "Effective Patent Term Extension" and "Effective Mechanism for Early Resolution of Patent Disputes", specified in the China-United States Phase 1 Economic and Trade Agreement. The 22nd session of the NPC Standing Committee adopted a decision on revising the Patent Law, and the revised Patent Law is expected to come into force on 1 June 2021. In addition, on 14 December 2020, the CNIPA published Announcement No. 391 on amending the Patent Examination Guidelines, which was implemented on 15 January 2021; according to the authorities, it further clarified the examination standard for submitting experiment data after the application deadline.

3.272. In response to the challenges posed by the COVID-19 pandemic, the China Patent Information Center (CNPAT) developed in collaboration with the Patent Examination Cooperation (Beijing) Center of the Patent Office and the CNIPA to jointly develop an information-sharing public platform for patents related to the prevention of COVID-19. The platform provides precise patent information on almost 10,000 patents.[217]

3.3.7.5.4 Utility models

3.273. The applications and registrations of utility models continued to grow during the review period. Resident applicants represented 99% of applications and registrations (Table 3.30).[218]

[216] Government of China. Viewed at: http://www.gov.cn/guowuyuan/2020-01/16/content_5469650.htm.
[217] CNPAT, Information Sharing Platform for Patents on Pandemic Prevention against COVID-19. Viewed at: https://ncp.patentstar.cn/en.
[218] WIPO IP Portal, WIPO IP Data Center. Viewed at: https://www3.wipo.int/ipstats/.

Table 3.30 Utility models – Applications and registrations, 2017-19

(million)

Utility models		2017	2018	2019
Applications	Resident	1.68	2.06	2.26
	Non-resident	0.01	0.01	0.01
Registrations	Resident	0.97	1.47	1.57
	Non-resident	0.01	0.01	0.01

Source: WIPO IP Portal, WIPO IP Statistics Data Center. Viewed at: https://www3.wipo.int/ipstats.

3.3.7.5.5 Industrial designs

3.274. The applications and registrations of industrial designs continued to grow during the review period. Resident applicants represented 97% of total applications and 96% of registrations (Table 3.31).

Table 3.31 Industrial designs – Applications and registrations, 2017-19

Industrial designs		2017	2018	2019
Applications	Resident	610,817.00	689,097.00	691,771.00
	Non-resident	17,841.00	19,702.00	19,846.00
Registrations	Resident	426,442	517,693	539,282
	Non-resident	16,554	18,558	17,247

Source: WIPO IP Portal, WIPO IP Statistics Data Center. Viewed at: https://www3.wipo.int/ipstats.

3.3.7.5.6 Layout-designs of integrated circuits

3.275. Layout-designs of integrated circuits are protected under the Regulations on the Protection of Layout-Designs of Integrated Circuits and under the Rules for Implementing the Regulations on the Protection of Layout-Designs of Integrated Circuits.

3.276. The CNIPA is responsible for the registration of layout-designs of integrated circuits. The authorities state that a layout-design shall no longer be protected 15 years after the date of the completion of its creation, regardless of its registration or commercial exploitation.

3.277. Data provided by the authorities indicate that in 2018, the CNIPA received 4,431 registration applications of layout-designs of integrated circuits, a year-on-year increase of 37.3%, and issued certificates for 3,815 layout-designs of integrated circuits, a year-on-year increase of 42.9%; in 2019, it received 8,319 registration applications of layout-designs of integrated circuits, a year-on-year increase of 87.7%, and issued certificates for 6,614 layout-designs of integrated circuits, a year-on-year increase of 73.4%. And in 2020, 14,375 applications were submitted, a 72.8% increase from the previous year, and 11,727 registrations were granted, a yearly increase of 77.3%.[219]

3.3.7.5.7 New plant varieties

3.278. The legal framework for the protection of new plant varieties is provided for by the Regulations on the Protection of New Varieties of Plants (1997) and a body of implementing rules (Table A3.5). China acceded to the 1978 Act of the International Convention for the Protection of New Varieties of Plants in 1999.

3.279. The period of protection is 20 years from the date of authorization in the case of vines, forest trees, fruit trees, and ornamental trees, and 15 years for other plants. The Implementation Rules (Agriculture Part) and the Implementation Rules (Forestry Part) stipulate rules for protection of new plant varieties in agriculture and forestry, respectively, and Rules for the Review Board on New Plant Varieties regulate the review procedures for the authorization of new plant varieties.

3.280. The protection of new plant varieties in China is carried out by MARA and the National Forestry and Grassland Administration (NFGA). The Office of Plant Variety Protection of MARA is responsible for reviewing new varieties of agricultural plants and other related matters, including

[219] CNIPA, 2020 *Statistics*, 25 January 2021. Viewed at: http://english.ipraction.gov.cn/article/ns/202101/334279.html.

grain, cotton, oil-bearing plants, bast-fibre plants, sugar, vegetables (including watermelon and musk melon), tobacco plants, mulberries, tea plants, fruit trees (except dry fruits), ornamental plants (except ligneous plants), grasses, green manure, herbaceous medicinal plants, edible fungi, algae, rubber trees, and other plants. The NFGA Science and Technology Development Center is responsible for the receipt, examination, and authorization of new varieties of forestry plants and other related matters.

3.281. Over the past 20 years, protection has expanded to a growing number of plant varieties. The number of applications has also increased annually, making China the country with the largest number of annual applications for agricultural plant varieties. According to the data released by the Office of Plant Variety Protection of MARA, since 1999, the number of applications and registrations for plant varieties has increased rapidly. In early 2019, the cumulative number of applications had reached 26,000 and the total number of grants was 12,000. In 2018, the number of applications for new varieties of agricultural plants reached more than 4,800, which is equivalent to the total number of applications in the last 10 years.[220] The numbers of applications for new varieties of agricultural plants in 2017, 2018, and 2019 were 3,842, 4,854, and 7,032, respectively, and the total number of grants reached 1,486, 1,990, and 2,288, respectively.

3.282. The NFGA released 7 lists of new varieties protection, covering 284 varieties, most of which are active in forestry breeding. The number of applications for new varieties of forestry plants has also increased annually. By 2020, the total number of applications for new varieties of forestry plants reached 5,566, and the total number of authorizations reached 2,643. In 2017, 2018, and 2019, there were, respectively, 623, 906, and 802 applications and 160, 145, and 439 authorizations for new varieties of forestry plants.

3.283. The authorities started reviewing the Regulations on the Protection of New Varieties of Plants in 2019. The Supreme People's Court plans to issue a judicial interpretation on the Provisions on Application of Law in the Trial of Disputes over New Plant Variety Rights in 2021.[221]

3.3.7.5.8 Undisclosed information and trade secrets

3.284. The legal framework governing the protection of undisclosed information and trade secrets is composed by the Anti-Unfair Competition Law (last amended in 2019), the Administrative Licensing Law (last amended in 2019), the Criminal Law (last amended in 2020), the Labour Law, the Regulations for the Implementation of the Law on Drug Control, and the Regulations on Administration of Agricultural Chemicals.

3.285. The Anti-Unfair Competition Law, as amended in 2019, contains revised provisions on trade secrets. Article 9 defines "trade secrets" as "technical information, business operation information, and other commercial information that are not known to the public, have commercial value, and for which the trade secret owner has adopted corresponding measures to maintain its confidentiality".

3.286. The amendment adds new types of trade secret infringements, particularly the acquisition of trade secrets through "cyber invasion"; prohibits indirect infringement of trade secrets that "instigates, induces, or helps others to obtain, disclose, use, or allow others to use the trade secrets of the rights holders in breach of confidential obligations or in violation of the requirements of the relevant rights holder on keeping confidential trade secrets"; expands the scope of persons who are subject to the provisions of trade secret infringement to include all individual and legal persons; adds punitive damages for malicious trade secret infringement; and increases the administrative fines that may be imposed for trade secret infringement.

3.287. Serious infringement of trade secrets constitutes a crime under the Criminal Law. In December 2020, the NPC Standing Committee passed the Criminal Law Amendments, which covered infringement of trade secrets. Specifically, the maximum and minimum penalty for this crime was increased, and the maximum penalty was increased from 7 to 10 years. The conviction and sentencing standards were revised, and actual losses will not be considered as the only prerequisite

[220] Twelve Tables Law Firm, "Introduction to the Protection of New Plant Varieties in China", 18 July 2019. Viewed at: https://www.lexology.com/library/detail.aspx?g=b012e1f4-d0a3-4ba3-9715-f045afc8118c#:~:text=China%20has%20established%20a%20legal,1%20of%20the%20same%20year.

[221] AFD China Intellectual Property Law Office, *New Plant Varieties Protection in China*, 26 October 2020. Viewed at: https://www.lexology.com/library/detail.aspx?g=2d8f77dd-bb01-463c-9783-41e1fa6bd0c0.

for constituting a crime. According to the authorities, the definition of trade secrets in the Criminal Law was deleted, and its definition was mentioned in the corresponding provisions of the Anti-Unfair Competition Law revised in 2019.

3.288. According to Article 23 of the FIL, implemented in March 2019, administrative agencies and their employees shall keep confidential, according to the Law, the trade secrets of foreign investors and foreign-funded enterprises to which they have access in performing their duties, and neither divulge nor illegally provide others with such secrets. Article 39 of the FIL stipulates that during the promotion, protection, and administration of foreign investment, where an employee of an administrative agency divulges or illegally provides others with any trade secret to which he or she has access in performing his or her duties, disciplinary action shall be taken against the employee according to the Law; and if it is criminally punishable, the employee shall be held criminally liable according to the Law. In April 2019, the Administrative Licensing Law, which governs business licences and certain regulatory approvals, was amended to incorporate similar content as that in the FIL. Article 5 prohibits that individuals (including government officials and external experts) involved in licensing procedures to disclose trade secrets and other confidential business information without the consent of the applicant, except in situations required by law or justified under national security or public interest grounds.

3.289. The China-United States Phase 1 Economic and Trade Agreement required China to enumerate additional prohibited acts that constitute trade secret misappropriation, including: (i) electronic intrusions; (ii) breach or inducement of a breach of duty not to disclose information that is secret or intended to be kept secret; and (iii) unauthorized disclosure or use that occurs after the acquisition of a trade secret under circumstances giving rise to a duty to protect the trade secret from disclosure or to limit the use of the trade secret. In addition, the agreement provides for burden shifting to an accused party in civil proceedings for misappropriation when the holder of a trade secret has produced *prima facie* evidence, including circumstantial evidence, of a reasonable indication of trade secret misappropriation by the accused party. Other measures include the use of preliminary injunctions, clarifying criminal enforcement of misappropriation, and preventing unauthorized disclosure of trade secrets by government entities.[222]

3.3.7.6 Enforcement

3.3.7.6.1 Overview

3.290. The IP enforcement regime continued to evolve in response to the challenges posed by the shift from brick-and-mortar stores to virtual marketplaces and the implementation of international agreements. In China, IP holders have the possibility of bringing action against the infringer either directly in a court or by requesting the competent administrative authority to handle the case. An administrative resolution is not necessary prior to the judicial resolution. All public security authorities above the prefecture and city levels have IPR crime-coordinating activities and lead organizations to arrange and coordinate action to crack down on infringement and counterfeiting activities. The Ministry of Public Security has cooperation agreements with other agencies (e.g. Customs) to facilitate the prompt reporting of and intervention on IP-related infringements. The SAMR launched the "Iron Fist" Intellectual Property Law Enforcement Action to crack down on trademark infringement, counterfeit patents, and other illegal activities. Table 3.32 provides an overview of enforcement actions taken by the authorities during the review period.

3.291. Regarding IP enforcement, the China-United States Phase 1 Economic and Trade Agreement contains provisions aimed to: (i) provide effective and expeditious action against infringement in the online environment, including requiring expeditious takedowns and ensuring the validity of notices and counternotices; (ii) take effective action against e-commerce platforms that fail to take necessary measures against infringement; (iii) take effective enforcement action against counterfeit pharmaceuticals and related products, including active pharmaceutical ingredients; (iv) increase actions to stop the manufacture and distribution of counterfeits with significant health or safety risks; (v) provide that the judicial authorities shall, except in exceptional circumstances, order the forfeiture and destruction of pirated and counterfeit goods, as well as the materials and implements predominantly used in their manufacture; (vi) significantly increase the number of enforcement actions against pirated and counterfeit goods at physical markets in China and those that are exported or in transit; (vii) ensure, including through third-party audits, that government agencies

[222] Government of China. Viewed at: http://www.gov.cn/guowuyuan/2020-01/16/content5469650.htm.

and SOEs only use licensed software; (viii) provide deterrent-level civil remedies and criminal penalties for IP theft, including increasing the range of minimum and maximum pre-established damages, sentences of imprisonment, and monetary fines; (ix) require the transfer of cases from administrative authorities to criminal authorities when there is a reasonable suspicion of a criminal violation; (x) ensure expeditious enforcement of judgments for violations of IPR; (xi) provide legal presumptions of copyright ownership and waive certain other requirements for bringing copyright infringement claims; (xii) eliminate or streamline requirements for foreign litigants to authenticate evidence for use in Chinese courts; and (xiii) provide a reasonable opportunity to present witnesses and to cross-examine opposing witnesses in civil proceedings.[223]

Table 3.32 IP enforcement, 2018-20

	2018	2019	2020
Cases dealt with by governmental agencies (administrative level)			
Patents			
Number of disputes	66,700	77,300	39,000
Copyright			
Number of disputes/administrative penalties	3,033	2,539	..
Imposition of fines (CNY million)	16	24	..
Cases transferred to judicial agencies	203	186	..
Businesses inspected	522,135	384,641	..
Illegal operation units banned	2,361	1,224	..
Underground dens detected	203	152	..
Trademarks			
Number of disputes	30,200	31,900	31,300
Cases transferred to judicial agencies	172	236	709
Value of fine (CNY million)	470	514	445
Cases handled by Customs at the border			
Cases dealt with by courts			
First-instance civil IPR cases accepted	201,039	283,414	399,031
First-instance civil IPR cases closed	192,938	273,945	394,521
Patent cases accepted	16,010	21,699	22,272
Patent cases closed	14,254	19,151	23,071
Trademark cases accepted	37,946	51,998	65,209
Trademark cases closed	35,816	49,367	64,784
Copyright cases accepted	137,267	195,408	293,066
Copyright cases closed	133,357	192,385	289,029
Technical contract cases accepted	2,098	2,680	3,135
Technical contract cases closed	2,214	2,452	3,181
Unfair competition cases accepted	2,429	4,080	4,128
Unfair competition cases closed	2,179	3,207	3,902
Other IPR cases accepted	5,289	7,549	11,221
Other IPR cases closed	5,118	7,382	11,445
Second instance civil IPR cases accepted	21,818	27,621	49,704
Second instance civil IPR cases closed	20,525	26,288	48,710

.. Not available.

Source: Information provided by the authorities.

3.292. China also released five judicial interpretations, including trade secret protection, patent licensing and confirmation, online IP infringement, criminal protection for IPRs, and evidence in IP-related civil proceedings, as well as providing three guiding opinions on IP protection for e-commerce platforms, strengthening the efforts of punishing IP infringements, and reinforcing the protection of copyrights and related rights.

3.3.7.6.2 Administrative procedures

3.293. Copyright administrative authorities have been established in all provinces, autonomous regions, municipalities, and certain cities to administer local copyright affairs including copyright enforcement. In 2018, local copyright law enforcement departments had 3,033 cases, of which 203 were transferred to criminal judicial agencies. More than 7.4 million pirated products were seized. Special measures to crack down on copyright infringement and piracy included the Sword

[223] Government of China. Viewed at: http://www.gov.cn/guowuyuan/2020-01/16/content_5469650.htm.

Network 2018 and Sword Network 2019 strategies to promote copyrights in key areas such as network reprinting, short videos, movies, streaming media, and images. Data provided by the authorities indicate that 994 network infringement cases were investigated.

3.294. During the review period, copyright surveillance of large-scale video, music, and literature websites, as well as online storage service providers, was strengthened. In 2018 and 2019, early warnings for 14 batches of key works, and 139 films and television works, were issued. These were reaffirmed by resident and non-resident right holders. The authorities have actively implemented outreach and training activities on enforcement and produced specific publications to inform the public.

3.295. During the review period, the CNIPA organized and launched IP protection campaigns and led nationwide efforts to crack down on infringements of trademarks, GIs, and patents. In 2018, the CNIPA joined MARA and four other departments to curb counterfeit, low-quality food in rural areas. In 2019, the CNIPA distributed the Special Action Plan for IP Law Enforcement and Protection. Also in 2019, the SAMR issued the Iron Fist Action Plan for IP Enforcement for 2019 and 2020; according to the authorities, it launched law enforcement actions against trademark infringement, counterfeit patents, and other illegal activities, and issued the Implementation Measures for Reinforcing IP Law Enforcement in Online Shopping and Imports and Exports jointly with the Ministry of Public Security, MARA, the GACC, the National Copyright Administration, and the National Intellectual Property Administration.

3.296. According to the authorities, since 2018, the CNIPA has taken the initiative to crack down on infringements in the area of forestry plant varieties. There is a plan to amend the Measures for Administrative Law Enforcement on the Protection of New Varieties of Forestry Plants to strengthen the protection of plant variety rights.

3.3.7.6.3 Judicial measures

3.297. During the review period, China continued its efforts to strengthen the capability of judicial enforcement. In January 2019, the new IP Court of the Supreme Court was established and has national jurisdiction over technical IP appeals. This is a major milestone in the Chinese IP litigation system. The IP Court implemented the Uniform Judgment Standard System Project and explored the simultaneous trial mode of administrative and civil cases, as well as optimized the trial mechanism of technical IP cases. Data provided by the authorities indicate that the IP Courts in Beijing, Shanghai, and Guangzhou have accepted more than 100,000 cases.

3.298. Since 2017, intermediate courts in 21 municipalities have set up special judicial agencies for first-instance IP cases. According to the authorities, local IP courts have improved the conduct of trials. Table 3.33 shows the number of judicial cases related to IP during 2018 and 2019.

Table 3.33 Judicial measures, 2018-19

Cases/growth	2018	2019
New cases received	334,951	481,793
Cases concluded	319,651	475,853
Percentage growth 2018-19	44.16%	48.87%

Source: Information provided by the authorities.

3.299. The courts have implemented the Opinions on Strengthening the Protection of Intellectual Property Rights, improved the timeliness and suitability of judicial remedies, and made efforts to achieve coordination and proportionality between compensation for infringement damages and the market value of IPRs. According to the authorities, the quality and effectiveness of trials have been improved, and the leading role of courts in IPR enforcement has become more prominent.

3.300. According to the authorities, the Opinions of the Supreme People's Court on Promoting the "Three-in-One" Trial of Civil, Administrative and Criminal Cases Involving Intellectual Property Rights in Courts Nationwide were put into practice. The Supreme People's Court reinforced its guidance on the "three-in-one" reform nationwide; researched IP-related criminal cases and revised relevant judicial interpretations; appointed a national database of technical investigators and experts; and issued the Technical Investigator Work Manual (2019) to provide work guidelines for courts. Courts

at all levels have further clarified how staff members could participate in technical fact-finding investigations.

3.301. The judicial system has worked to improve transparency by implementing the work requirements called "Disclosure as Principle and Non-Disclosure as Exception" and widening the scope of public hearings.

3.302. In April 2020, the Supreme People's Court released the list of the top 10 IP law cases of 2019. The cases cover patents (invention and industrial design), trademarks, copyrights, and unfair competition. The cases were adjudicated by courts throughout China at different appeal levels.

3.3.7.6.4 Customs measures

3.303. The legal framework for IP enforcement at the border is provided by the Customs Law, the Regulations on Customs Protection of Intellectual Property, and the Rules of the Customs for Implementing the Regulations on Customs Protection of Intellectual Property.

3.304. *Ex officio* or active IPR enforcement upon entry into China requires recording the information of the relevant IPRs with the GACC. This procedure is free and allows customs officials to monitor suspicious activities, inspect import and export shipments, and work directly with the right holder to identify infringing goods. The GACC has the authority to suspend the customs clearance of suspected infringing goods, detain the shipment at the request of the IPR holder, and investigate the infringement. If no determination on infringement is possible, the IPR holder can still pursue the case in court. If an IPR holder has not registered with the GACC, the customs authority is not in a position to investigate. The IPR holder can request that customs detain a shipment by providing evidence of the infringement and a deposit equivalent to the value of the goods. The IPR holder would need to file a case in court within 20 working days or the customs authority would release the goods. About 50,000 valid IPR registrations have been recorded with the GACC up to September 2019. In 2017, China Customs applied 22,500 IP protection measures, resulting in seizures of 19,100 shipments of goods suspected of IPR infringement. In 2018, China Customs applied 49,700 border protection measures, resulting in seizures of 47,200 shipments of goods suspected of IPR infringement. In 2019, China Customs applied 55,600 IP protection measures, resulting in seizures of 51,600 shipments of goods suspected of IPR infringement. Between 2017 and 2019, more than 97% of the seizures were based on China Customs' *ex officio* actions, while only around 3% was initiated by brand owners under passive protection scheme.

3.3.7.6.5 Criminal procedures

3.305. In December 2020, the Standing Committee of the National People's Congress adopted the amendments to the Criminal Law, which provide for stronger criminal penalties for IPR infringements, raising the maximum prison term for trademark and copyright infringements from 7 to 10 years; added the protection of service marks; and supplemented the types of criminal acts that infringe on trade secrets, adding "industrial espionage crime". The amendment is scheduled to enter into force in March 2021.[224]

[224] China's Website for the Campaign against IPR Infringements and Counterfeits, "China Amends Criminal Law", 28 December 2020. Viewed at: http://english.ipraction.gov.cn/article/ps/202012/331706.html.

4 TRADE POLICIES BY SECTOR

4.1 Agriculture, Forestry, and Fisheries

4.1.1 Overview

4.1. The contribution of agriculture, animal husbandry, forestry, and fisheries to current GDP gradually decreased during the review period. The real growth rate fluctuated year-on-year, and employment (as a percentage of total employment) also gradually declined. Farming and animal husbandry continue to account for the majority of gross value output (over 81.3% in 2020) (Table 4.1).

Table 4.1 Principal indicators for agriculture, animal husbandry, forestry, and fisheries, 2015-20

	2015	2016	2017	2018	2019	2020
Contribution to current GDP (%)	8.7	8.4	7.8	7.3	7.4	6.0
Real growth rate (%)	3.9	3.3	4.0	3.5	3.2	1.1
Employment (percentage of total employment)[a]	28.3	27.7	27.0	25.1	..	..
Share of gross output value (%)[b]						
Farming	55.6	54.8	55.8	57.1	56.2	52.1
Forestry	4.5	4.6	4.8	5.0	4.9	4.3
Animal husbandry	29.4	30.0	28.2	26.6	28.1	29.2
Fishery	10.6	10.7	11.1	11.3	10.7	9.3

.. Not available.

a Percentage of employment of the primary industry in total employment not including mining; data for employment in agriculture, forestry, animal husbandry, and fisheries were not available.

b Including auxiliary services.

Note: The farming output data for 2020 are estimated data.

Source: Information provided by the authorities.

4.1.2 Agriculture

4.1.2.1 Features and market development

4.2. Over the period 2015-19, the overall value of production of agriculture and animal husbandry increased steadily (Table 4.2). Longer term trends are contained in Chart 4.1 and Chart 4.2.

Table 4.2 Agricultural production, 2015-19

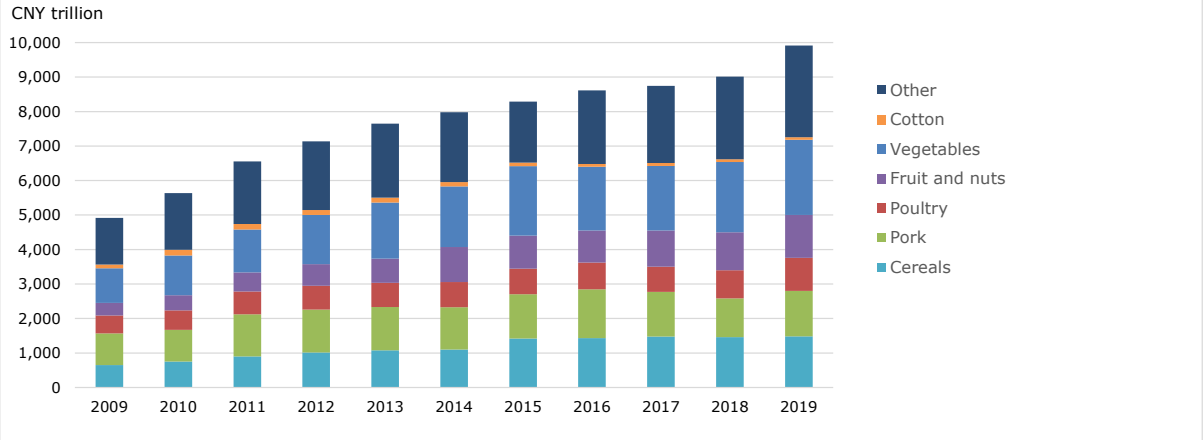
	Value of production of agriculture and animal husbandry	Cereals[a]	Pork	Poultry	Fruits	Vegetables	Cotton
CNY million							
2015	8,285,466	1,418,998	1,285,965	739,547	961,309	2,009,154	104,142
2016	8,612,106	1,429,738	1,413,344	777,516	929,945	1,851,000	79,010
2017	8,742,095	1,473,846	1,296,611	732,987	1,049,366	1,871,516	81,162
2018	9,015,000	1,460,160	1,120,265	816,272	1,102,956	2,037,395	81,216
2019	9,913,080	1,479,773	1,320,716	959,815	1,243,312	2,175,413	77,934
'000 tonnes							
2015	..	618,184	56,454	19,195	245,246	664,251	5,907
2016	..	616,665	54,255	20,017	244,052	674,342	5,343
2017	..	615,205	54,518	19,817	252,419	691,927	5,653
2018	..	610,036	54,037	19,937	256,884	703,467	6,103
2019	..	613,697	42,553	22,386	274,008	703,467	5,889

.. Not available.

a Main cereals produced are rice, wheat, and corn.

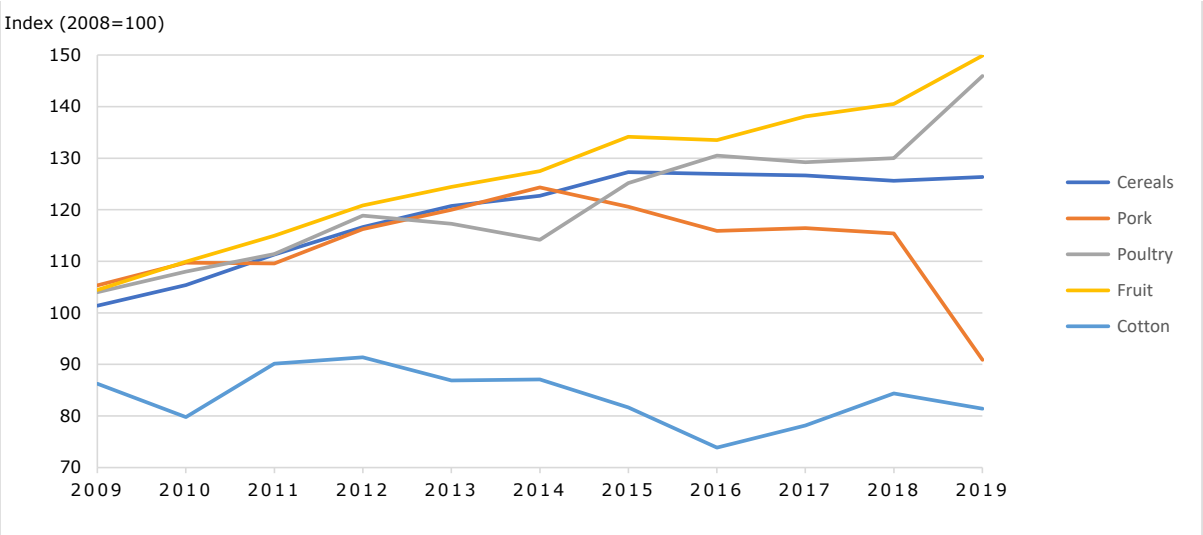
Source: National Bureau of Statistics, *China Statistical Yearbook 2019*. Viewed at: http://www.stats.gov.cn/tjsj/ndsj/2019/indexeh.htm; WTO document WT/TPR/S/375/Rev.1, 14 September 2018; and data provided by the authorities.

Chart 4.1 Value of production of agriculture and animal husbandry, 2009-19



Source: National Bureau of Statistics, *China Statistical Yearbook 2019*. Viewed at: http://www.stats.gov.cn/tjsj/ndsj/2019/indexeh.htm; and data provided by the authorities.

Chart 4.2 Volume of production, 2009-19



Source: National Bureau of Statistics, *China Statistical Yearbook 2019*. Viewed at: http://www.stats.gov.cn/tjsj/ndsj/2019/indexeh.htm; and data provided by the authorities.

4.3. China continues to be a net importer of agricultural products, although agricultural imports represented only 6.4% of total merchandise imports in 2020. As at the time of China's previous Review, China's main agricultural exports by tariff line (at the HS 4-digit level) are fruits and vegetables. Imports of agricultural products continue to be dominated by soya beans, although their share in imports dropped between 2017 and 2020 (Table 4.3).

Table 4.3 Agricultural exports and imports, 2015-20

	2015	2016	2017	2018	2019	2020
Exports[a] (USD million)	50,425.8	52,491.7	54,576.6	57,619.8	58,490.6	57,486.6
% of total exports	2.2	2.5	2.4	2.3	2.3	2.2
Growth rate (%)	0.2	4.1	4.0	5.6	1.5	-1.7
Top 10 exports at HS 4-digit level (% of total)						
0703 Onions, garlic, fresh or chilled	4.7	6.0	5.0	3.4	4.5	4.6
2008 Fruit and nuts prepared/preserved, n.e.s.	5.1	4.8	5.0	5.1	4.5	4.4
2106 Food preparations, n.e.s.	2.5	2.6	2.7	3.2	3.5	4.0
0712 Dried vegetables	5.6	6.2	7.3	7.0	5.0	3.7
0808 Apples, pears and quinces, fresh	2.9	3.7	3.7	3.2	3.1	3.7
2309 Preparations of a kind used in animal feed	3.2	3.2	3.4	3.7	3.3	3.6
0902 Tea	2.7	2.8	2.9	3.1	3.5	3.5

	2015	2016	2017	2018	2019	2020
2005 Other prepared/preserved vegetables	3.7	3.8	3.9	3.8	3.7	3.5
1302 Vegetable saps and extracts, etc.	2.5	2.4	2.5	2.6	2.7	2.8
2103 Sauces; mixed condiments and seasonings	2.0	1.8	2.0	2.1	2.2	2.7
Imports[a] (USD million)	108,526.1	102,992.2	115,441.9	123,793.3	132,583.1	157,424.1
% of total imports	5.8	6.5	6.5	6.3	5.8	6.4
Growth rate (%)	-5.1	-5.1	12.1	7.2	7.1	18.7
Top 10 imports at HS 4-digit level (% of total)						
1201 Soya beans	32.1	33.0	34.3	30.8	26.7	25.1
0203 Meat of swine, fresh, chilled or frozen	1.3	3.1	1.9	1.7	3.4	7.5
0202 Meat of bovine animals, frozen	2.1	2.4	2.6	3.8	6.0	6.2
1901 Food preparations of cereals, flour or milk	2.7	3.4	3.9	4.4	4.4	3.7
1511 Palm oil and its fractions	3.4	2.8	3.0	2.7	3.1	2.6
0810 Fresh fruit, n.e.s. in chapter 8	1.8	1.8	1.7	2.0	2.4	2.6
2106 Food preparations, n.e.s.	1.2	1.4	1.7	2.2	2.4	2.5
5201 Cotton, not carded or combed	2.4	1.5	1.9	2.6	2.7	2.3
0207 Meat of poultry, fresh, chilled or frozen	0.9	1.2	0.9	0.9	1.5	2.2
0402 Milk and cream, concentrated or containing added sugar	1.4	1.5	1.9	2.0	2.4	2.1

a WTO definition.

Note: Top 10 agricultural exports and imports by HS 4-digit level are sorted by the year 2020.

Source: WTO Secretariat calculations, based on trade figures from UN Comtrade database.

4.4. Farmland continues to be owned by villagers' collectives that had a 15-year ownership for a first round and a 30-year ownership for a second round under the household contract responsibility system set up in the late 1970s and early 1980s. Having signed the contract, farmers are guaranteed the right to occupy, use, and profit from the tenure of the farmland during the period covered by the contract. Rural households can transfer the land management right in exchange for income through the "three-rights" separation system, which was embedded in law through amendments to the Rural Contract Law in 2018.[1] According to the authorities, this system facilitated a more efficient allocation of land management rights to support appropriately scaled management and the development of modern agriculture. Reportedly, the registration and certification of 200 million rural households' contracted land rights have been completed, and, by the end of 2019, 550 million mu (1 mu being 667 m^2) of rural contracted land had been transferred. During the review period, a greater emphasis was placed on experimenting with a similar approach to underused or unused rural homesteads, to promote housing use and densification, as well as to liberate construction land for new industries. Homesteads are collective rural construction lands owned by the village collectives and allocated for villagers to build homes and supporting facilities.[2] The authorities indicate that pilot programmes for rural homestead reform have been carried out in 33 counties (cities or districts) since 2015. Following the requirement of acquisition in a lawful and fair manner, economic and intensive use, and voluntary paid exit, pilot projects have explored guaranteeing housing for all rural households, establishing homestead paid use and exit mechanisms, delegating homestead approval authority, and improving the homestead management system. Some of the results gained from pilot programmes were incorporated into the newly revised Land Management Law. In 2018, the Government announced a policy to explore the three-rights separation system for homesteads.[3] In June 2020, China adopted the Pilot Program for Deepening the Rural Homestead System Reform,

[1] Under a pilot three-rights separation system initiated in 2014, the right of collective ownership, the contracting right of farmer households, and the operating right of rural land were separated. The objective was to optimally utilize farmland considering increasing levels of urbanization and a corresponding underutilization of farmlands owned by farmers no longer living in rural areas and thus enable active farmers or agri-businesses to work the land (CTGN, *China's "No. 1. Document" to Continue Land Reforms as Part of Revitalization Strategy*, 4 February 2018. Viewed at: https://news.cgtn.com/news/7751444e31677a6333566d54/index.html). In 2016, China adopted the Opinions on Improving the System for Separating Rural Land Ownership, Contract Rights and Management Rights, making a systematic and comprehensive institutional arrangement for the "separation of three rights" of the rural contracted land, proposing to speed up the liberalization of land management rights, and establish and perfect a standardized management system for land transfer.

[2] The authorities indicate that, in the context of this Review, the Government has not yet calculated the total area of homesteads; however, in the future, MARA will establish a nationwide homestead survey system and make the survey results public, according to law.

[3] MDPI, "Report from a Chinese Village 2019: Rural Homestead Transfer and Rural Vitalization", *MDPI Sustainability Journal*, 18 October 2020. Viewed at: https://www.mdpi.com.

which requires the relevant authorities to explore the implementation of homestead collective ownership, the protection of rural households' entitlement to homestead and housing property rights, and the moderate relaxing of specific paths/measures regarding the rights of use of homesteads and rural houses while safeguarding and developing the rights and interests of farmers.

4.1.2.2 Legal and institutional framework

4.5. The Government is responsible for establishing the general agricultural policy framework and the rules for its implementation. As part of the Government's restructuring in 2018, various institutional changes were made. The Ministry of Agriculture (MOA) was renamed the Ministry of Agriculture and Rural Affairs (MARA) and falls under the responsibility of the State Council. Its priorities are resolution of the "three-rights" issues (Section 4.1.2.1), agricultural and rural development, implementation of the rural revitalization strategy (Section 4.1.2.3), promotion of agricultural upgrading, farmer development, and acceleration of agricultural and rural modernization. MARA took over the responsibilities of the MOA, as well as the management responsibilities for the agricultural investment projects of the National Development and Reform Commission (NDRC), the comprehensive agricultural development projects of the Ministry of Finance, the farmland investment projects of the Ministry of Land and Resources, and the farmland water conservancy construction projects of the Ministry of Water Resources. The National Food and Strategic Reserves Administration (NAFRA) was also established under the purview of the NDRC, with a view to strengthening the overall planning and building of a unified national material reserves system, enhancing the supervision and management of the central grain and cotton reserves, and improving the national reserve's capacity to respond to emergencies. The NAFRA is responsible for: (i) implementing the purchase, storage, rotation, and management of emergency reserves in accordance with the overall development plan and the catalogue of the national reserves system; (ii) constructing and managing related infrastructure; and (iii) supervising and inspecting government and enterprise reserves and the implementation of the reserve policies. It is also responsible for industry guidance of grain distribution and administrative management of the central reserves of grain and cotton. The State Administration of Grain was dissolved. Additionally, the Ministry of Science and Technology (MOST), which has a lead role in supporting the development of the biotechnology industry, took responsibility for China's National Science Foundation, a public science funding body. MARA, together with, *inter alia*, the NDRC, the Ministry of Finance, and the Ministry of Commerce (MOFCOM), is in charge of implementing agricultural policy.

4.6. Among the central state-owned enterprises (SOEs) and their subsidiaries under the State-owned Assets Supervision and Administration Commission's (SASAC) supervision operating in the agriculture sector and related sectors, such as food processing and the production of seeds, fertilizers, and pesticides, are: the China Agriculture Development Group; COFCO Corporation; the China Grain Storage Group; China Salt Industry Group; Sinochem; China National Chemical Group; and the China National Seed Group.

4.7. Key laws in the agriculture sector are set out in Table 4.4.

4.8. In 2018, amendments to the Law on the Contracting of Rural Land were made to legally upgrade the institutional arrangements on the "three-rights" separation system of rural contracted land (Section 4.1.2.1). Major changes to the Land Administration Law in 2019 were made to narrow the scope of land requisition, allow collective operating construction land to enter the market, establish the means of protecting rural land designated for housing, and strengthen the protection of arable land (especially permanent basic farmland). Amendments to the Law and Safety of Agricultural Products in 2018 reflected institutional changes. The main change to the Law on the Organization of Villagers' Committees in 2018 was to change the term of a Villagers' Committee member from three to five years. The 2018 revision to the Agricultural Mechanization Promotion Law did not involve any substantial changes.[4]

4.9. Since China's previous Review, FDI restrictions on companies selecting and cultivating new varieties of crop and producing seeds have been eased, except for soybean and rice; the requirement for Chinese parties to be controlling shareholders now applies only to corn. With respect to wheat, the Chinese shareholding threshold has been reduced to 34% (Table A2.3).[5]

[4] The revision merged the first and second paragraphs of Article 12.
[5] See also WTO document WT/TPR/S/375/Rev.1, 14 September 2018, Table A2.3.

Table 4.4 Main agriculture-related laws, December 2020

Law (date of last amendment)	Coverage
Agriculture Law, 1993 (2012)	Principles for agriculture development, management, and preservation. Agriculture encompasses crop-plantation, forestry, animal husbandry, and fisheries.
Law on Specialized Farmers' Cooperatives, 2006 (2017)	Regulations on norms and behaviour of specialized farmers' cooperatives.
Law on Promotion of Agricultural Mechanization, 2004 (2018)	Provisions to encourage and support peasants and agricultural production and operation organizations to use advanced machines, promote mechanization, and develop modern agriculture.
Law on the Contracting of Rural Land, 2002 (2018)	Provisions to stabilize and perfect the two-level operation system that is based on the responsibility system of contracting by households supplemented by unified management, entitling peasants to a long-term and guaranteed right to land use.
Law of Agricultural Engineering Extension, 1993 (2012)	Provisions to strengthen agricultural engineering extension, and advance agricultural scientific research and new technology to ensure agricultural development and modernization.
Land Administration Law, 1986 (2019)	Provisions on the ownership and land use rights, land use planning, protection of cultivated land, land for construction, and supervision and inspection.
Law on the Quality and Safety of Agricultural Products, 2006 (2018)	Provisions on quality and safety standards, origin, production, packing and labelling, and supervision and inspection of agricultural products.
Law on the Organization of Villagers' Committees, 1998 (2018)	Provisions on composition and responsibilities of villagers' committees, election of village committees, villagers' meetings, and democratic supervision and management.

Source: FAOLEX Database, *China*. Viewed at: http://www.fao.org/countryprofiles/index/en/?iso3=CHN; Land Administration Law. Viewed at: http://www.moj.gov.cn/Department/content/2019-09/18/592_3232173.html; Agricultural Mechanization Promotion Law. Viewed at: http://www.moa.gov.cn/gk/zcfg/fl/202007/t20200716_6348748.htm; Law on Quality and Safety of Agricultural Products. Viewed at: http://www.moj.gov.cn/Department/content/2019-01/17/592_226992.html; Law on the Organization of Villagers' Committees. Viewed at: http://www.moj.gov.cn/Department/content/2019-01/17/592_227048.html; and Rural Contract Law. Viewed at: http://www.npc.gov.cn/npc/c30834/201901/cd063e4c0f19465e9d41946001fe839c.shtml.

4.1.2.3 Policy objectives and reforms

4.10. The main agricultural strategy in China is the Strategic Plan for Rural Revitalization (2018-22) released in 2018.[6] The reasons for issuing the Plan were to build on improvements achieved in the agricultural sector and to address challenges relating to improving the quality and effectiveness of agricultural development, developing rural talents, lagging construction of rural public facilities, and closing the large gap between urban and rural public services and the income of urban and rural residents. According to the authorities, the Plan gives priority to agricultural and rural development, and the overall requirement of making the countryside prosperous in terms of industrial development, liveable in terms of ecological environment, civilized in terms of conduct, effective in terms of governance, and well off in terms of the standard of living. Under the Plan, institutional mechanisms and policy frameworks for integrated development of the urban and rural areas are being developed to accelerate the modernization of rural governance systems and capabilities, as well as of agricultural and rural areas. Various plans were released to implement the goals contained in Strategic Plan, including China's No. 1 Central Documents on Agriculture and Rural Development of 2018, 2019 and 2020[7]; the Development Plan for Digital Agriculture and Rural Areas (2019-25)[8]; and a white paper on food security in China.[9]

[6] Strategic Plan for Rural Revitalization. Viewed at: http://www.gov.cn/zhengce/2018-09/26/content_5325534.htm.

[7] For an explanation of the contents of these documents, as well as a link to the official texts, see FAO, *China No. 1 Central Document of 2018.* Viewed at: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC179223; *China No. 1 Central Document of 2019*. Viewed at: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC192851; and *China No. 1 Central Document of 2020.* Viewed at: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC192850.

[8] FAO (2019), *Development Plan for Digital Agriculture and Rural Areas (2019-2025)*. Viewed at: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC193207.

[9] FAO (2019), *White Paper: Food Security in China*. Viewed at: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC195922.

4.11. Policy objectives for modernizing the agricultural sector are also contained in China's 13th Five-Year Plan for Economic and Social Development (2016-20), which has four main elements: (i) strengthening the capacity for ensuring the safety of agricultural products; (ii) establishing a modern agricultural operations system; (iii) improving technology and equipment and increasing information technology (IT) application in agriculture; and (iv) improving systems for providing support and protection for agriculture. It also contains goals for developing the agricultural biotechnology segment, including genetically modified crops. In the 14th Five-Year Plan for Economic and Social Development, policy objectives in agriculture included: implementing the strategy of rural revitalization, strengthening the use of industry to supplement agriculture, and promoting the formation of a new type of urban-rural relationship between industry and agriculture. The authorities state that steps to implement the goals/reforms contained in the above-mentioned plans include promotion of large-scale construction of high-standard farmland, demarcation of functional areas of grain production and essential production areas for agricultural products, strengthened innovation in agricultural science and technology, and promotion of whole-process mechanized production of major crops. Additionally, support is being given to establishing modern agricultural industrial parks and townships and industry clusters, and developing new business models (i.e. leisure agriculture, rural tourism, and rural e-commerce). Other areas of focus include encouraging clean agricultural production, developing a three-year action plan to protect and restore the rural environment, promoting rural culture, and improving transport infrastructure, utilities, and public service delivery.

4.12. In July 2020, MARA issued a 2020-25 National Plan for Rural Industrial Development[10], which sets out the goals and revenue targets for rural industrial development over the period, with priorities including upgrading agricultural product processing industries, expanding rural speciality industries, improving agricultural tourism, developing new-type rural service industries, promoting synergies between vertical integration of agriculture and rural industries development, and advancing entrepreneurship and innovation in rural areas.

4.1.2.4 Policy instruments

4.1.2.4.1 Border measures

4.13. Agricultural products (WTO definition) are, with the exception of some animal products, subject to *ad valorem* applied rates.[11] In 2021, the average most-favoured nation (MFN) applied tariff on agricultural products was 12.7% (14.8% in 2017). The product groups subject to higher-than-average tariff protection included sugars and confectionery (30.6%); cotton (22.0%); cereals and preparations (19.7%); beverages, spirits and tobacco (14.9%); and coffee and tea (13%). The simple average tariff for oilseeds, fats, and oils (including soybeans, one of China's major imports) was the lowest among agricultural products, at 10.1% (10.5% in 2017). In addition, the variability of agricultural tariffs, with a standard deviation (SD) of 10.1, was higher than that of non-agricultural products (SD 4.6). Variability was particularly high for cereals and preparations (SD 20.4) and sugars and confectionery (SD 16.2), followed closely by beverages, spirits and tobacco (SD 15.8) and cotton (SD 14.7) (Table A3.1).

4.14. China continues to make use of tariff rate quotas (TRQs), which are administered through import licences (Section 3.1.5).[12] Except for uncombed cotton, in-quota and out-of-quota tariff rates are *ad valorem*. China applies an interim rate in the form of a sliding duty to a certain amount of uncombed cotton (HS 5201.0000) imported out of quota, with the sliding duty rate capped at 40% (i.e. the bound rate for cotton). Taking 2021 as an example, the sliding duty rate in the year depends on the base price (CNY 14/kg). If the dutiable value of the cotton imported is equal to or higher than the base price, a specific duty of CNY 0.28/kg is levied, and if the import price is lower than the base price, an *ad valorem* rate based on the sliding-scale duty formula applies. Since 2018, the implementation rate of tariff quotas has fluctuated, along with domestic and foreign market conditions. In 2018, the tariff quota fill rates for wheat, corn, and wool tops were relatively low at 32%, 39%, and 13%, respectively (Table 4.5). In 2019, fill rates for wheat, rice, and wool tops were 36%, 48%, and 17%, respectively. The authorities indicate that fluctuating fill rates are due to

[10] MARA. Viewed at: http://www.moa.gov.cn/govpublic/XZQYJ/202007/t20200716_6348795.htm.

[11] These products are six tariff lines under HS 0207 – frozen meat and edible offal of fowls of the species *Gallus domesticus* (poultry), and one line under HS 0504.00.21 – frozen gizzard. Three tariff lines carry alternate/mixed rates under HS 4001 – natural rubber; those three alternate rates are interim duties.

[12] WTO document G/LIC/N/3/CHN/18, 30 January 2020.

changes in domestic and international market conditions; they note a higher fill rate of 87% for wheat in 2020.

Table 4.5 TRQs on agricultural products and their utilization, 2018-19

Products	Out-of-quota rates	In-quota rates	Tariff quota quantity	In-quota imports	
				2018	2019
	(%)		(tonnes)		
Wheat (7 lines)			9,636,000	3,098,719	3,487,626
Wheat and meslin (4 lines)	65	1			
Wheat or meslin flour (1 line)	65	6			
Groats and meal of wheat (1 line)	65	9			
Pellets of wheat (1 line)	65	10			
Corn (5 lines)			7,200,000	2,827,288	4,793,424
Maize (corn) seed (1 line)	20	1			
Maize (corn) other than seed (1 line)	65	1			
Maize (corn) flour (1 line)	40	9			
Groats and meal of corn (1 line)	65	9			
Rolled or flaked corn (1 line)	65	10			
Rice (14 lines)			5,320,000[a]	3,076,644	2,545,726
Rice, other than broken (8 lines)	65	1			
Broken rice (2 lines)	10	1			
Rice flour (2 lines)	40	9			
Meal of rice (2 lines)	10	9			
Sugar (7 lines)	50	15	1,945,000	1,945,000	1,945,000
Wool (6 lines)	38	1	287,000	253,832	277,166
Wool tops (3 lines)	38	3	80,000	10,307	13,961
Cotton (2 lines)	40	1	894,000	894,000	894,000

a Tariff quota quantity is 2,660,000 tonnes for short- and medium-grain rice combined and 2,660,000 tonnes for long-grain rice.

Note: The number of tariff lines in brackets (HS 8-digit level) refers to the 2018-19 customs tariff.

Source: WTO documents G/AG/N/CHN/55, 7 December 2020; and G/AG/N/CHN/50, 6 November 2019; and Ministry of Finance (2019), *Customs Tariff of Imports and Export of the People's Republic of China*.

4.15. The NDRC is responsible for allocating TRQs for grains and cotton, and MOFCOM allocates the rest. Some products subject to TRQs (i.e. grains, cotton, and sugar) are also subject to state trading. In these cases, one part of the quota is allocated to state trading enterprises and the other part to other enterprises. The administration methods of the TRQs as described by China in its notification to the WTO remained unchanged.[13]

4.16. The importation of grain (wheat, maize, and rice), sugar, tobacco, and cotton is subject to state trading.[14]

4.17. The VAT rate on agricultural domestic and imported goods stood at 9% in 2020 (reduced from 11% in 2017).[15] Self-produced agricultural products sold by agricultural producers are VAT exempt (Table 3.4). Tobacco leaf (i.e. sun-dried leaf tobacco and toasted leaf tobacco) purchased in China is subject to a 20% tobacco leaf tax.[16] The authorities state that this tax is not levied on imported tobacco leaf.

4.1.2.4.2 Measures affecting exports

4.18. China notified the WTO that export subsidies were not granted to agricultural products during the calendar years 2018 and 2019.[17] The authorities did not provide an update as to whether export subsidies were provided in 2020. As indicated in its previous Review, China replied to the questionnaire on export competition, circulated on 31 October 2016, that it provides export financing

[13] WTO document G/AG/N/CHN/2, 25 September 2003, Table MA:1.

[14] WTO documents G/STR/N/16/CHN and G/STR/N/17/CHN, 24 July 2018. The period covered by the notification is 2015-17. The authorities confirm that this remains the case as at early 2021.

[15] State Taxation Administration, together with the Ministry of Finance, issued the Circular on Policies for Simplifying and Consolidating Value-added Tax (VAT) Rates (Cai Shui No. 37, 2017), which reduced the applicable tax rate from 13% to 11% for agricultural products.

[16] Tobacco Tax Law of 2017. This Law replaced the Interim Regulation on Tobacco Tax. The 20% tax rate did not change.

[17] WTO documents G/AG/N/CHN/51, 6 November 2019; and G/AG/N/CHN/53, 7 December 2020.

programmes (i.e. export credit, export credit guarantees, and insurance programmes) covering, *inter alia*, agricultural goods.[18] With respect to the questionnaire on export competition circulated on 17 January 2020, the authorities indicate that the related information would be disclosed in its coming notification. No data were available on food aid provided by China during the review period.

4.19. Export taxes are levied on four tariff lines (at the HS 8-digit level) relating to products of animal origin, and two tariff lines on raw hides and skins (Table 3.11).[19]

4.20. Exports of cotton, rice, maize, and tobacco are subject to state trading.[20] These products, except for tobacco, are also subject to export quotas, which are managed by the NDRC and MOFCOM, and are allocated only to state trading enterprises. Wheat is also subject to export quotas (Table 4.6).

Table 4.6 Agricultural products subject to export quotas and licensing in 2020

Products	Type of licence	Comment
Goods subject to quota and licensing		
Rice, maize, wheat, and cotton	Export quota licence	The quota is allocated by the NDRC and MOFCOM, and the licence is issued by MOFCOM.
Live cattle and swine (for export to Hong Kong, China and Macao, China); live chicken for export to Hong Kong, China; and flour of maize rice and wheat	Export quota licence	The quota is allocated by MOFCOM.
Goods subject to licensing		
Live cattle and swine (for markets other than Hong Kong, China or Macao, China) and chicken (for markets other than Hong Kong, China) and frozen and chilled beef, pork, and chicken meat	Export licence	A licence is granted if the exporter has the relevant export contract.

Source: Information provided by the authorities.

4.21. Table 4.7 describes the size of the export quotas for maize, rice, and wheat flour in 2018, 2019, and 2020.

Table 4.7 Export quotas for maize, rice, and wheat flour, 2018-20

(Tonnes)

Product	2018	2019	2020
Maize flour	20,500	330	420
Rice flour	2,500	50	60
Wheat flour	329,600	154,200	155,540

Source: Information provided by the authorities.

4.1.2.4.3 Internal measures

4.1.2.4.3.1 Support measures

4.22. Central Government support to farmers takes the form of tax incentives (Table 4.8) or fiscal appropriations (Table 4.9). In 2018, China notified the WTO Agriculture Committee of the support given to the agriculture sector over the period 2011-16 (Section 4.1.2.4.4).[21] Support programmes covering the period 2017-18 were notified by China under the Agreement on Subsidies and Countervailing Measures (SCM Agreement). The only new notified programme introduced in 2018 was the subsidy for a new round of returning cultivated land to forests and grassland. With respect to tax incentives, no information was provided on revenue forgone from Central Government tax incentives (Table 4.8), as apparently China does not collect tax expenditures. Information was also

[18] WTO document WT/TPR/S/375/Rev.1, 14 September 2018.
[19] The lines concerned are 0506.10.00 (ossein and bones treated with acid); 0506.90.11, 0506.90.19, and 0506.90.90 (powder and waste of bones); and 4103.90.11 and 4103.90.19 (dried hides and skins of goats).
[20] WTO documents G/STR/N/16/CHN and G/STR/N/17/CHN, 24 July 2018.
[21] WTO documents G/AG/N/CHN/42-47, 14 December 2018.

not provided on which incentive schemes remain in force as at early 2021 and, in several cases, the form that fiscal appropriations take (i.e. grants, preferential loans, etc.).

Table 4.8 Central Government tax incentives provided to the agriculture sector, 2018

Title *Legal basis*	Objective	Subsidy	Start date
Projects of agricultural, forestry, animal, and fishery *Law of the People's Republic of China on Enterprise Income Tax (2007); Regulations for the Implementation of the Law of the People's Republic of China on Enterprise Income Tax (2007); MOF Circular Cai Shui No. 149, 2008; MOF Circular Cai Shui No. 26, 2011; MOF Circular Cai Shui No. 73, 2016*	To support the development of agriculture	Enterprise income tax exemption/reduction from income derived by an enterprise from stipulated projects of preliminary processing related to farming, forestry, animal husbandry, and fisheries	2008
Imported products for the purpose of replacing the planting of poppies *MOF Circular Cai Shui No. 63, 2000*	To support the replacement of the planting of poppies in the border areas in Yunnan province	VAT and tariff exemption for approved imported products	2000
Imports of seeds (seedlings) *MOF Circular Cai Shui No. 26, 2016*	To introduce and promote improved breeds, strengthen the protection of species resources, and develop high-quality, productive, and efficient agriculture and forestry industries	VAT exemptions for approved imported seeds (seedlings), breeding stock (fowl), fish fries (breeds), and wild animals	2006
Preferential tax treatment for tea sold in the border areas *MOF Circular Cai Shui No. 73, 2016*	To reduce costs of ethnic minorities living in border areas to purchase border-selling tea, and ensure sufficient supply of border-selling tea at border areas inhabited by ethnic minorities	VAT exemption for tea sold in border areas produced or distributed by designated enterprises/distribution entities	2016

Source: WTO documents G/SCM/N/343/CHN, 19 July 2019; and G/SCM/N/343/CHN/Corr.1, 31 July 2019.

Table 4.9 Central Government fiscal appropriations for the agriculture sector, 2018

Title *Legal basis*	Objective(s)	Subsidy	Start date	Budgetary allotments (CNY million)
Fund for development of agriculture *MOF Circular Cai Nong No. 41, 2017*	To promote agricultural production, optimize industrial structure, facilitate integration of industries, and improve agricultural efficiency	Provided to farmers, family farms, farmer cooperatives, and agriculture machinery service providers for green and efficient technology promotion service and agricultural production development	2017	2018: 193,650
Subsidy for agricultural comprehensive development *MOF Decree No. 60 (date not provided)*	To strengthen agricultural infrastructure and ecological construction, improve comprehensive agricultural production capacity, promote the adjustment of agricultural structures, and increase farmers' incomes	Provided to local governments for eligible agricultural comprehensive development projects	1988	2018: 39,540
Fund for poverty alleviation (in Sanxi Area and for state-owned poverty-stricken farms and forestry farms) *MOF Circular Cai Nong No. 8, 2017*	To improve production, income, and living conditions of poor farmers, and accelerate economic and social development in poverty-stricken areas	Provided to local governments for development-oriented projects in Sanxi Area, and state-owned poverty-stricken farms and forestry farms	1980	2018: 106,095
Fund for water resources development (for farmland water and soil conservation projects) *MOF Circular Cai Nong No. 181, 2016*	To support rural areas to develop small farmland water conservation projects to prevent water and soil erosion	Provided to provincial governments for farmland water and soil conservation projects	1983	2018: 30,694.76

Title *Legal basis*	Objective(s)	Subsidy	Start date	Budgetary allotments (CNY million)
Fund for disaster prevention and relief for agriculture, flood control, and drought *MOF Circular Cai Nong No. 91, 2017*	To support the response to agricultural disasters, floods, and droughts	To be allocated to beneficiaries that are to be determined in accordance with the disaster situation	2017	2018: 7,060.5
Fund for agricultural resources and ecological protection *MOF Circular Cai Nong No. 42, 2017*	To be used for agricultural resource conservation, ecological protection, and benefit compensation	Provided to provincial governments to be allocated to eligible farmers, herdsmen, new types of agricultural entities, and units and individuals that undertake project tasks	2017	2018: 24,536
Subsidy for a new round of returning cultivated land to forests and grassland *MOF Circular Cai Nong No. 66, 2018*	To improve the ecological environment and promote sustainable development	Provided to provincial governments to be distributed to farmers to return cultivated land to forests and grassland	2018	2018: 12,789

Note: Forestry-related subsidies are not included in this table, with the exception of those related to turning cultivated land into forest.

Source: WTO documents G/SCM/N/343/CHN, 19 July 2019; and G/SCM/N/343/CHN/Corr.1, 31 July 2019.

4.23. The authorities indicate that pending China's new notification, which is apparently being prepared, information on new support programmes introduced during the review period (which are not covered in China's latest SCM notification) was not available. However, it would appear that since 2018, at least two additional new programmes have been introduced: (i) an environmental tax exemption for farming enterprises under which a temporary environmental protection tax exemption is provided for agricultural production pollutant discharges (excluding large-scale breeding)[22]; and (ii) a subsidy fund for farmland construction that aims to optimize the layout of farmland and improve its quality, and to attract talent and social capital to invest in agricultural development. With respect to the latter, it would appear that farmland construction subsidy funds (comprising investment subsidies and loan discounts) are used for the construction of high-standard farmland and farmland water conservation. Target beneficiaries include small farmers, rural collective economic organizations, family farms, farmer cooperatives, large professional farms, and agricultural enterprises in grain production functional areas and important agricultural production protection areas.[23] The budgetary allotments were CNY 67,392 million in 2019 and CNY 68,280 million in 2020.

4.24. A few subsidy programmes to support farmers at the sub-Central Government level were also notified to the WTO.[24] Pending China's submission of its new notification to the SCM Committee, information was not available on whether these programmes remained in force as at early 2021 or if any new programmes have been introduced at the sub-Central Government level since 2018.

4.1.2.4.3.2 Price controls and market price support systems

4.25. As noted in previous Reviews, China implements a minimum purchase price policy for rice and wheat, considered to be the two most important grain varieties, in major producing areas. The authorities state that, in general, farmers sell grain at market prices. Only when the market prices of rice and wheat fall below the minimum procurement prices (MPPs) can farmers sell the commodities that meet quality requirements to designated enterprises, so as to reduce losses caused by falling grain prices. These prices, as well as limited total purchase volumes, are set on a yearly basis by the NDRC in consultation with MARA and other government agencies. The MPP of rice in

[22] Environmental Protection Tax Law of the People's Republic of China 2018, Article 12(1). Viewed at: https://www.ecolex.org/details/legislation/environmental-protection-tax-law-lex-faoc162625.

[23] MARA, Cai Nong No. 46, 2019. Viewed at: http://www.moa.gov.cn/gk/zcjd/201909/t20190904_6327227.htm.

[24] WTO documents G/SCM/N/343/CHN, 19 July 2019; and G/SCM/N/343/CHN/Corr.1, 31 July 2019. These programmes were: (i) a grant for returning farmland to forests or pastures (Shanxi Province); (ii) a subsidy for tobacco industry development (Fuling District of Chongqing Municipality); (iii) a reward for agricultural science parks (Qinghai Province); (iv) a fund for treating domestic sewage in farming and pastoral areas (Qinghai Province); and (v) a grant for turning the cultivated land into forestry (Dalian City, Liaoning Province).

2018 was substantially lowered, while the MPPs of wheat in both 2018 and 2019 were slightly lowered. (Table 4.10).

Table 4.10 Minimum procurement prices, 2016-21

(CNY/tonne)

	2016	2017	2018	2019	2020	2021
Wheat	2,360	2,360	2,300	2,240	2,240	2,260
Rice – early long-grain non-glutinous	2,660	2,600	2,400	2,400	2,420	..
Rice – late long-grain non-glutinous	2,760	2,720	2,520	2,520	2,540	..
Rice – round-grained non-glutinous	3,100	3,000	2,600	2,600	2,600	..

.. Not available.

Source Information provided by the authorities.

4.26. Grain reserves of maize, rice, soya beans, and wheat are maintained by the Central Government and local governments; according to the authorities, the reserves are used only to cope with major natural disasters or other emergencies.

4.1.2.4.3.3 Other measures

4.27. Under a subsidized agricultural insurance scheme, insurance premiums are subsidized by the Central Government and local governments, so that farmers pay only a balance of 20%-30% of the premium. The insurance scheme covers natural disasters such as rainstorms, floods, and droughts, but not income or levels of production. The distribution of financing between the Central Government and local governments varies by crop (Table 4.11). Data on total expenditures were not available.

Table 4.11 Distribution of the financing of the agricultural insurance scheme between central and local authorities

	Crops	Breeding	Non-commercial forestry	Commercial forestry	Tibetan varieties and natural rubber
Central Government	40% in central and western regions; 35% in the eastern region	50% in central and western regions; 40% in the eastern region	50%	30%	40%
Local governments	25%	30%	40%	25%	25%

Source: Information provided by the authorities.

4.28. The authorities indicate that all banks are allowed to provide financing to agricultural projects based on commercial conditions. Following on from efforts taken by the People's Bank of China (PBOC) to increase access to finance in rural areas as reported in China's previous Review, in April 2020, the PBOC cut the Required Reserve Ratio by 1 percentage point, with a cut of 0.5 percentage points on 15 April and again on 15 May, for rural credit cooperatives, rural cooperative banks, and village banks, as well as city commercial banks operating solely within provincial-level administrative regions.

4.1.2.4.4 Levels of support

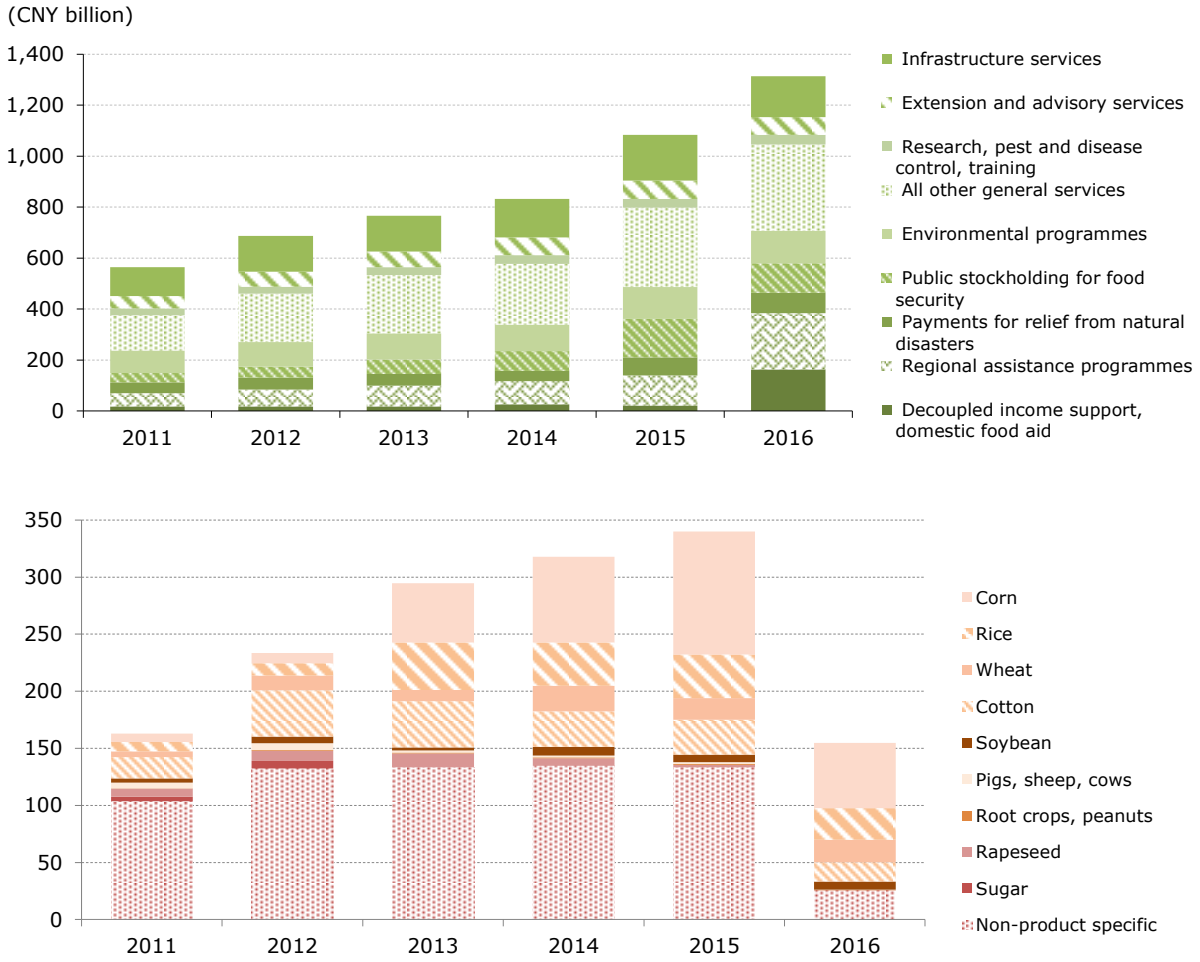
4.29. In December 2018, China notified its domestic support commitments for the calendar years 2011 to 2016.[25] These notifications show no support under the Blue Box (production limiting schemes) until 2016, when China notified corn producer subsidies paid, based on fixed area and yields. Support notified under the Green Box increased year-on-year. Support under the Amber Box (including *de minimis*) increased from 2011 to 2015 and then decreased significantly in 2016 (Chart 4.3).

4.30. The OECD continues to calculate estimates of support to agriculture in China that provide more up-to-date indicators over the review period (with data available up to 2019) than do China's support notifications to the WTO (which cover up to 2016). However, the authorities indicate that

[25] WTO documents G/AG/N/CHN/42-47, 14 December 2018.

OECD data do not reflect China's official position and that they could not confirm OECD estimates; they do not agree with the methodologies or data source of the estimation.

Chart 4.3 Green and Amber Box support, 2011-16



Source: WTO documents G/AG/N/CHN/42-47, 14 December 2018.

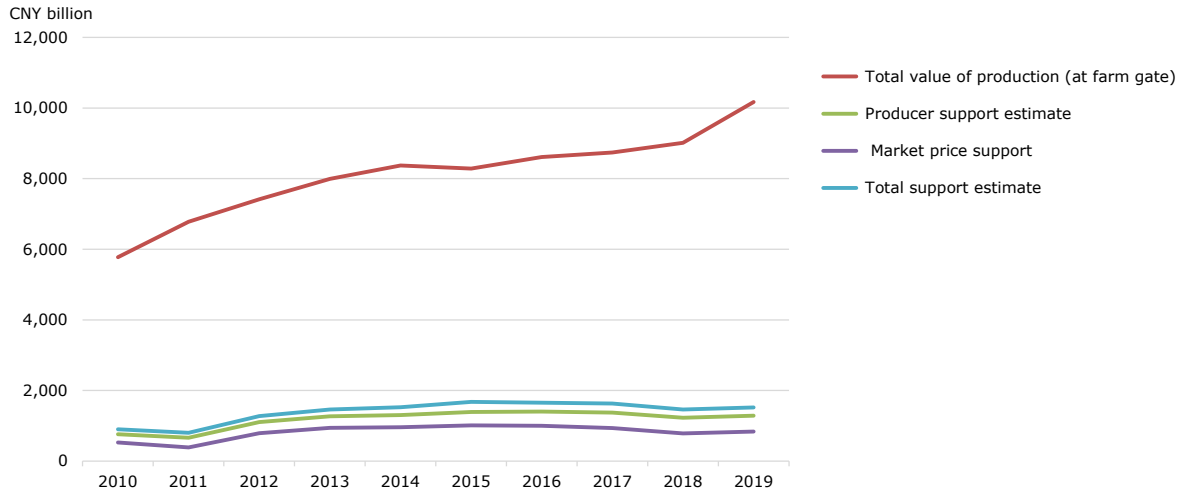
4.31. Compared with the WTO's methodology used to calculate the level of support provided under the Amber, Blue, and Green Boxes, the OECD's annual monitoring and evaluation reports on agricultural policies use a different methodology to calculate the value of support that is expressed in a number of indicators, including: (i) the Producer Support Estimate (PSE) for gross transfers from consumers and taxpayers to agricultural producers; (ii) the Total Support Estimate (TSE) for transfers to the agricultural sector in general; and (iii) the Single Commodity Transfers (SCT) for transfers to specific commodities. As noted in previous Reviews, the PSE represents the value of transfers to producers, unlike support under the Amber, Blue, and Green Boxes that measure compliance with WTO commitments. Therefore, the value of support as notified to the WTO is neither compatible nor comparable with the values calculated by the OECD.[26]

4.32. According to the OECD, total support to agriculture over the past decade peaked at CNY 2,676.7 billion in 2015, dropped to CNY 1,462.4 billion by 2018, and then picked up slightly in 2019. Most of the total support to agriculture is from market price support arising from tariff protection, government purchases, and other programmes (Chart 4.4). While domestic prices remain, in general, greater than import prices, the gap has closed for certain products like wheat and milk, which at the time of China's previous Review had high producer nominal protection coefficients (the ratio of the price received by the producers to the border price). For wheat, the

[26] OECD (2017), *Agricultural Policy Monitoring and Evaluation 2017,* OECD Publishing, Paris. Viewed at: http://dx.doi.org/10.1787/agr_pol-2017-en.

producer nominal protection coefficient was 1.82 in 2016 and decreased to 1.18 in 2019. For milk at its peak, the coefficient was 1.94 in 2016 and fell to 1.46 in 2019 (Table 4.12).

Chart 4.4 OECD measurement of support, 2010-19



Source: OECD, *Agricultural Policy Monitoring and Evaluation*. Viewed at: http://www.oecd.org/agriculture/topics/agricultural-policy-monitoring-and-evaluation/.

Table 4.12 OECD indicators for support to agriculture in China, 2010-19

(CNY billion, except nominal protection coefficient)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total value of production	5,776.7	6,775.9	7,413.0	7,993.3	8,372.8	8,285.5	8,612.1	8,742.1	9,015.0	10,166.9
TSE	902.3	804.1	1,273.0	1,461.4	1,523.7	1,676.7	1,653.8	1,633.4	1,462.4	1,521.8
PSE	762.2	659.6	1,102.4	1,269.1	1,302.3	1,391.9	1,403.0	1,374.6	1,225.3	1,284.8
MPS	529.3	388.4	788.0	939.5	961.4	1,013.7	999.0	937.9	783.0	834.8
Producer nominal protection coefficient	1.15	1.10	1.17	1.18	1.18	1.19	1.18	1.18	1.15	1.14
Wheat										
Value of production	230.0	246.6	265.4	291.5	309.5	308.9	297.5	313.2	294.9	300.0
SCT	64.9	35.2	79.7	83.6	105.0	111.2	134.1	111.5	71.9	46.2
MPS	64.9	35.2	79.7	83.6	105.0	111.2	134.1	111.5	71.9	46.2
Producer nominal protection coefficient	1.39	1.17	1.43	1.40	1.51	1.56	1.82	1.55	1.32	1.18
Maize										
Value of production	357.2	448.3	510.2	540.7	558.7	499.4	405.9	425.7	451.6	467.1
SCT	74.5	11.1	60.2	128.9	156.3	133.5	81.5	80.1	102.6	96.0
MPS	74.5	11.1	60.2	128.9	156.3	133.5	71.0	70.2	92.4	85.8
Producer nominal protection coefficient	1.26	1.03	1.13	1.31	1.39	1.36	1.21	1.20	1.26	1.22
Rice										
Value of production	462.0	540.8	564.0	555.9	580.8	574.8	566.5	586.3	549.1	523.5
SCT	-2.3	-56.3	162.1	176.3	185.2	204.8	165.5	157.6	59.5	34.1
MPS	-2.3	-56.3	162.1	176.3	185.2	204.8	165.5	157.6	59.5	34.1
Producer nominal protection coefficient	1.00	0.91	1.40	1.46	1.47	1.55	1.41	1.37	1.12	1.07

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Soya beans										
Value of production	55.9	57.8	60.9	54.0	51.0	41.0	43.7	53.3	55.5	63.1
SCT	10.1	7.3	4.7	3.8	2.7	11.0	11.2	17.3	16.1	19.1
MPS	10.1	7.3	4.7	3.8	2.7	7.7	5.2	4.5	3.4	6.3
Producer nominal protection coefficient	1.22	1.15	1.08	1.08	1.06	1.23	1.14	1.09	1.06	1.11
Milk										
Value of production	105.9	116.9	127.5	135.2	143.3	133.8	136.3	114.7	113.3	124.2
SCT	10.2	15.0	34.1	34.3	33.7	58.9	65.2	40.3	37.0	37.4
MPS	10.2	15.0	34.1	34.3	33.7	58.9	65.2	40.3	37.0	37.4
Producer nominal protection coefficient	1.12	1.15	1.38	1.36	1.33	1.82	1.94	1.55	1.52	1.46
Beef and veal										
Value of production	184.8	225.9	300.7	346.8	341.5	330.5	339.3	303.8	321.7	367.4
SCT	23.5	29.9	39.2	44.7	43.8	42.3	43.5	39.2	40.9	47.0
MPS	23.5	29.9	39.2	44.7	43.8	42.3	43.5	39.2	40.9	47.0
Producer nominal protection coefficient	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Pig meat										
Value of production	783.0	1,149.7	1,061.7	1,082.4	1,018.3	1,125.8	1,311.0	1,095.7	941.9	1,116.2
SCT	93.8	157.4	117.7	110.4	99.3	123.8	152.3	122.9	99.3	132.7
MPS	93.8	157.4	117.7	110.4	99.3	123.8	152.3	122.9	99.3	132.7
Producer nominal protection coefficient	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Poultry meat										
Value of production	326.6	364.0	347.9	368.2	370.0	361.3	365.9	399.2	476.9	577.3
SCT	41.4	52.5	44.5	43.8	46.1	46.3	50.5	61.0	69.8	86.1
MPS	41.4	52.5	44.5	43.8	46.1	46.3	50.5	61.0	69.8	86.1
Producer nominal protection coefficient	1.17	1.17	1.17	1.17	1.18	1.18	1.18	1.20	1.19	1.19

Source: OECD, *Agricultural Policy Monitoring and Evaluation*. Viewed at: http://www.oecd.org/agriculture/topics/agricultural-policy-monitoring-and-evaluation/.

4.1.3 Fisheries

4.1.3.1 Features and market developments

4.33. China is one of the world's largest fish-producing country. According to the UN Food and Agriculture Organization (FAO), it accounted for 35% of global fish production in 2018. In the same year, it accounted for around 15% of total global capture, and its share in world aquaculture production was 57.9%.[27]

4.34. During the period between 2015 and 2019, there was a downward trend in employment, the number of registered fishing vessels, and the marine catch. Aquaculture production remained relatively stable (Table 4.13).

4.35. During the same period, fish exports (WTO definition) accounted for between 0.8% and 1.0% of the value of its total exports. Imports of fish gradually increased from 0.4% to 0.7% of total imports over the same period (Table 4.14). Data provided by the authorities indicate that, in 2019, China imported 6.3 million tonnes of fish and exported 4.3 million tonnes. The simple average tariff on fish and fishery products (WTO definition) was 6.8% in 2021, with tariffs ranging from 0%-15%

[27] FAO (2020), *The State of the World Fisheries and Aquaculture 2020*. Viewed at: http://www.fao.org/3/ca9229en/online/ca9229en.html#chapter-1_1.

(Table A3.1). Export duties are levied on one tariff line for fish and crustaceans, namely live eels, fry (HS 0301.92.10) (Table 3.11).

Table 4.13 Fisheries indicators, 2015-19

	2015	2016	2017	2018	2019
Employment	9,045,338	8,795,228	8,692,042	8,514,503	8,253,274
Fishing vessels *(of which motorized fishing vessels)*	1,042,489 *(672,416)*	1,011,071 *(654,154)*	946,160 *(599,331)*	863,892 *(556,150)*	731,169 *(468,312)*
Marine catch ('000 tonnes) *(of which algae)*	17,617.476 *(26.177)*	17,588.591 *(24.311)*	15,393.376 *(20.349)*	14,665.968 *(18.349)*	14,012.888 *(17.445)*
Aquaculture production ('000 tonnes) *(of which algae)*	49,379.012 *(2,098.078)*	51,423.931 *(2,178.103)*	49,059.903 *(2,235.012)*	49,910.590 *(2,350.810)*	50,790.728 *(2,543.861)*

Note: The number of fishing vessels and the figures on the marine catch include China's distant water fleet and the catch on these vessels. Motorized fishing vessels include production fishing vessels and auxiliary fishing vessels, of which production fishing vessels include fishing vessels and culturing vessels. Fish catches include domestic marine fishing volume, pelagic fishing volume, and freshwater fishing volume. Aquaculture production includes mariculture output and freshwater aquaculture output.

Source: Information provided by the authorities.

Table 4.14 Fishery exports and imports, 2015-20

	2015	2016	2017	2018	2019	2020
Exports[a] (USD million)	19,802.4	20,205.2	20,601.7	21,740.3	20,163.0	18,589.4
% of total exports	0.9	1.0	0.9	0.9	0.8	0.7
Growth rate (%)	-6.0	2.0	2.0	5.5	-7.3	-7.8
Top five exports at HS 4-digit level (% of total):						
1604 Prepared/preserved fish; caviar and caviar substitutes	15.1	14.4	15.0	16.9	18.6	22.4
1605 Crustaceans, molluscs, etc., prepared/preserved	16.5	16.8	19.8	21.3	18.4	18.7
0304 Fish fillets and other fish meat, fresh, chilled or frozen	21.6	21.0	21.4	20.6	21.3	18.0
0307 Molluscs, live, fresh, chilled, frozen, salted or in brine	17.2	18.2	16.5	15.1	14.6	14.6
0303 Fish, frozen, excluding fish fillets and other fish meat of heading 0304	12.8	13.6	13.3	13.2	14.1	12.8
Imports[a] (USD million)	8,489.0	8,850.0	10,711.9	14,377.4	17,996.6	14,920.2
% of total imports	0.4	0.5	0.6	0.6	0.7	0.9
Growth rate (%)	-0.5	4.3	21.0	34.2	25.2	-17.1
Top five imports at HS 4-digit level (% of total):						
0306 Crustaceans, live, fresh, chilled, frozen, salted or in brine	21.9	24.0	23.5	30.4	39.0	39.6
0303 Fish, frozen, excluding fish fillets and other fish meat of heading 0304	36.3	36.6	34.7	31.7	27.4	26.3
230120[b] Flours, meals and pellets of fish or crustaceans /molluscs etc.	21.2	18.3	20.8	15.5	11.0	13.2
0307 Molluscs, live, fresh, chilled, frozen, salted or in brine	9.7	10.3	9.7	8.7	8.7	7.9
0304 Fish fillets and other fish meat, fresh, chilled or frozen	1.6	1.7	2.1	3.1	3.6	3.5

a WTO definition.
b Shown at HS 6-digit level since only the 6-digit level code 230120 under 2301 is a fishery item.

Note: Top five fishery exports and imports by HS 4-digit are sorted by the year 2020.

Source: WTO Secretariat calculations, based on trade figures from UN Comtrade database.

4.1.3.2 Legal, institutional, and policy framework

4.36. MARA leads the preparation of draft laws and regulations related to fisheries, develops departmental regulations, and guides fishery law development. Local governments are in charge of fisheries affairs in their respective administrative areas, including marine fisheries in contiguous sea

areas (unless the State Council designates otherwise). Official information was not provided on the presence of SOEs in the shipping sector.

4.37. The main law governing the fisheries sector is the 2005 Fisheries Law, last amended in 2013. A revision to the Fisheries Law was drafted and comments were solicited in 2019; as at April 2021, the draft law was being revised. The Rules for the Implementation of the Fisheries Law were amended in 2020, with changes relating to approval reequipments for constructing artificial reefs.[28] In 2018, MARA revised the Provisions on the Administration of Fishing Licences (MARA Decree No. 1, 2018[29]), and certain articles of these Provisions were further amended in 2020.[30] The objective was to strengthen the management of fishing vessels and fishing licences; protect fishery resources; adapt to the Government's requirement for decentralization, regulation, and service; and address problems such as illegal shipbuilding, inconsistent ship certificates, and off-site anchoring, which have made supervision difficult. Changes include bringing the method for classifying fishing vessels into conformity with international management rules; stipulating central and local entities responsible for examining, approving, and controlling vessels' catch quotas and net devices used; and stipulating the sea areas where the different-sized vessels may fish in. The Provisions also include specific guidance on fishing log contents, submission methods, and punitive measures for violations. According to the authorities, first steps are being taken to introduce a total allowable catch system. However, further details were not provided.

4.38. Under the Fisheries Law, foreigners and foreign fishing vessels engaging in fishery production in waters under China's jurisdiction must be approved by MARA. If the vessels belong to China's trading partners that have signed relevant treaties/agreements with China, the matters are handled in accordance with these treaties.[31] The Special Administrative Measures for the Access of Foreign Investment in the Pilot Free Trade Zones (2019) (FTA Negative List) lifted restrictions on foreign investment in aquatic product fishing in seas and inland waters under China's jurisdiction. The authorities indicate that the Government currently imposes no restrictions on FDI in aquaculture production.

4.39. The main government strategy for the fishing sector implemented during the review period was the 13th Five-Year Plan on Fishery Development (2016-20).[32] The Plan sought to tackle some of the main challenges facing the sector, including infrastructure weaknesses and old fishing vessels, and requirements in the areas of fisheries insurance and the development of a legal framework for fisheries and its enforcement. The Plan's basic principles are to: (i) adhere to ecology as a priority and promote green development, with a shift in focus from quantity growth to improving quality and efficiency; (ii) promote innovation and scientific development; (iii) implement a "going out" strategy involving, *inter alia*, the orderly development of deep-sea fisheries, improvements to the industrial chain, and strengthening of bilateral and multilateral fishery cooperation; (iv) adhere to people-oriented development so those who are engaged in fishing are participants in and benefit from fishery modernization; and (v) strengthen the rule of law in the sector, through improved laws, regulations, and enforcement mechanisms. One of the elements of the Plan is to increase public financial investment in the fisheries sector to, *inter alia*, establish a policy support system that is conducive to the development of modern fisheries. Elements include reform and improvement of the fishery oil price subsidy and a focus on supporting the reduction in the number of boats, the renovation and transformation of fishing vessels, the construction of artificial reefs, the maintenance and transformation of fishing ports, the standardization of ponds, the further development of factory-based aquaculture, and subsidies for banned fishing.[33] The Plan also stipulates the continued implementation of support policies for: (i) multiplying and releasing healthy aquaculture breeding stock; (ii) ensuring special funds for fishery administration, resource investigation[34], species

[28] Rules for the Implementation of the Fisheries Law (2020), amended through State Council Decree No. 726. Viewed at: http://www.gov.cn/zhengce/2020-12/25/content_5574001.htm.

[29] MARA Decree No. 1, 2018. Viewed at: http://www.yyj.moa.gov.cn/bjwj/201904/t20190419_6197470.htm.

[30] MARA Order No. 5, 2020. Viewed at: http://www.moa.gov.cn/nybgb/2020/202008/202010/t20201020_6354689.htm.

[31] Fisheries Law, Article 8.

[32] MARA, China's 13th Five-Year Plan on Fishery Development. Viewed at: http://www.moa.gov.cn/nybgb/2017/derq/201712/t20171227_6131208.htm.

[33] Subsidies for banned fishing refer to the livelihood subsidy for fishermen and -women affected by fishing moratoria and fishing bans.

[34] Resource investigation refers to the investigation of the reproduction, growth, death, migration, distribution, quantity, habitat, prospects, and means of exploitation of individuals or groups of aquatic animals.

resource protection, disease prevention and control, quality and safety supervision, fishing port supervision, safety production supervision, and fishing vessel inspection supervision; (iii) increasing aquatic breeding, disease prevention, resource conservation, fishery equipment, and other technological innovations and promotion support. The fisheries sector objectives in the 14th Five-Year Plan for Economic and Social Development include: achieving a breakthrough in a number of key core technologies in areas such as marine engineering, marine resources, and marine environment; cultivating and expanding marine engineering equipment and marine biomedicine industries; optimizing offshore green breeding and building marine pastures; building a number of marine economic development demonstration zones and characteristic marine industrial clusters; and improving the development of the three major marine economic circles in the north, east, and south.

4.1.3.3 Government support to the fisheries sector

4.40. Support to the sector is provided by both the Central Government and local/provincial governments. China's latest notification to the WTO covers the period 2017-18 and contains six incentives/support programmes at the Central Government level; these relate to fuel subsidies and supporting fish processing, enhancing fish stocks, supporting aquatic breed improving farms, preventing aquatic animal disease, and scrapping and renovating fishing vessels (Table A4.1). According to the authorities, the Government will shortly issue a new policy to terminate fuel and boat construction subsidies, with the last of these pay-outs being made at end-2020.

4.41. Twenty-three programmes over the period 2017-18 were notified to the WTO regarding measures in place in the coastal provinces of Hebei, Jilin, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Liaoning. These included support for marine economic development, marine and fishery structural adjustment, aquatic breeding, supporting fishermen during the closed season, fishery insurance, fishery management and industry development, fishing vessel standardization and scrapping, processing, aquaculture, and distant water fisheries (Table A4.1). Pending China's new notification to the SCM Committee, information was not available on any new support/incentive schemes introduced at the local government level from the beginning of 2019. The authorities indicate that the notification is being prepared.

4.42. The authorities note that fisheries insurance has not been incorporated in the policy-based agricultural insurance.

4.1.3.4 Fisheries conservation measures

4.43. China is a major player in the distant water fisheries segment. As indicated by the FAO, China reported about 2.26 million tonnes from its "distant water fishery" in 2018; however, this is considered to be an underestimate, as the report provided details on species and fishing areas only for catches marketed in China (about 40% of the total of distant water catches).[35] The authorities indicate that China has taken measures recently to strengthen monitoring and control of fishing vessels, enhance its international compliance capability, fulfil its international obligations to conserve high-seas fishery resources, and prevent illegal, unreported, and unregulated (IUU) fishing activities (Box 4.1). They also indicate that China has undertaken investigations into various kinds of illegal fishing activities, and punished illegal enterprises and fishing vessels in accordance with the law. According to the authorities, between January 2018 and early 2021, the Government imposed different levels of penalties on 84 deep-sea fishing vessels belonging to 51 enterprises.

4.44. China has acceded to various international conventions or agreements related to fisheries.[36] During the review period, China became a signatory to the Southern Indian Ocean Fisheries

[35] FAO (2020), *The State of the World Fisheries and Aquaculture 2020*. Viewed at: http://www.fao.org/3/ca9229en/online/ca9229en.html#chapter-1_1.

[36] These conventions/agreements include: (i) the International Convention for the Conservation of Atlantic Tunas (ICCAT); (ii) the Agreement for the Establishment of the Indian Ocean Tuna Commission (IOTC); (iii) the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC); (iv) the Inter-American Tropical Tuna Commission Convention for the Strengthening of the Inter-American Tropical Tuna Commission Established by the 1949 Convention between the United States of America and the Republic of Costa Rica "Antigua Convention" (IATTC); (v) the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR); (vi) the Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean (SPRFMO); (vii) the Convention on the Conservation and Management of High Seas Fisheries Resources in the North Pacific Ocean (NPFC); and (viii) the International Convention for the Regulation of Whaling.

Agreement in October 2019. China has not acceded to the FAO's Port State Measures Agreement; the authorities state that they are studying this possibility and that the Government has included the list of IUU fishing vessels released by the acceding regional fisheries organizations into the controlling scope of Chinese ports. They note that China prohibits fishing vessels on the list from entering Chinese ports; refuses such fishing vessels to refuel, resupply, or repair in Chinese ports; and refuses the catches carried by such fishing vessels to be unloaded, transhipped, packed, or processed in Chinese ports.

Box 4.1 Fisheries conservation measures, 2018-20

1. January 2019 – Notice on Further Strictly Adhering to International Tuna Management Measures issued by MARA. Objective: to implement resource conservation and management measures adopted by the International Tuna Conservation Organization.
2. January 2019 – List of IUU fishing vessels approved by relevant regional fishery organizations provided by MARA and Ministry of Foreign Affairs, the Ministry of Communications, the General Administration of Customs (GACC), and other domestic departments and commercial and fishing ports. Objectives: to implement Port State Measures and tackle illegal fishing activities. This list was updated in June 2020.
3. August 2019 – Measures for the Monitoring and Management of Positions of Ocean Fishing Vessels revised by MARA. Objective: to strengthen supervision of ocean fishing vessels by increasing the frequency of reporting positions of fishing vessels from every 4 hours to every hour.
4. November 2019 – Notice on Trial Implementation of Performance Evaluation of Pelagic Fishery Enterprises issued by MARA. Objectives: to establish a performance evaluation system for pelagic fisheries to strengthen fishery management and improve performance capability of pelagic fishery enterprises.
5. April 2020 – Revised Regulations on the Management of Pelagic Fishery implemented. Objectives: to strengthen supervision and management, and sustainable utilization of fishery resources; and to prevent IUU fishing activities.
6. May 2020 – Notice on Strengthening the Management of High-Seas Transfer of Pelagic Fisheries issued by MARA. Objectives: to further standardize high-seas transfer activities and promote scientific conservation of high-seas fishery resources.
7. July 2020 – Government implementation of a fishing moratorium on high-seas squid fisheries and take all-around management measures to protect high-seas squid resources and spawning population. Objective: to strengthen conservation of high-seas squid resources.

Source: Information provided by the authorities.

4.2 Mining and Energy

4.2.1 Mining

4.45. China has an abundance and a large variety of mineral resources. By end-2018, 173 kinds of minerals had been discovered, including 13 kinds of energy minerals, 59 kinds of metal minerals, 95 kinds of non-metal minerals, and 6 kinds of water and gas minerals.[37] The main mining production is described in Table 4.15.

Table 4.15 Main mining production, 2017-19

Mineral products	2017	2018	2019
Crude oil (million tonnes)	192	189	191
Natural gas (billion m^3)	133.0	141.5	150.9
Shale gas (billion m^3)	9.0	10.9	15.4
Coal (billion tonnes)	2.78	3.04	3.13
Ferrous metals (billion tonnes)	0.575	0.591	0.624
of which iron ore (billion tonnes)	0.567	0.583	0.613
Non-ferrous metal (million tonnes)	327.69	361.70	376.13
Precious metal (million tonnes)	94.09	91.41	88.67
Rare elements, rare earth elements and scattered elements (million tonnes)	12.98	42.70	34.91
Metallurgical auxiliary materials (e.g. cannonite) (million tonnes)	111.49	127.80	142.55
Chemical materials (million tonnes)	276.26	269.49	296.40
Construction materials and other non-metal mineral (billion tonnes)	3.90	4.08	4.45
Underground water and mineral water (million tonnes)	12.06	12.87	12.80

Source: Information provided by the authorities.

[37] MNR (2019), *China Mineral Resources*. Viewed at: http://www.chinaminingtj.org/images/document/2019/CM_Resources_2019_en.pdf.

4.46. The legal framework for mining did not change substantially during the review period. To a large extent, mining activities continue to be regulated under the Mineral Resources Law (promulgated in March 1986, and revised in August 1996 and August 2009) and a large body of implementing measures: the Rules for the Implementation of the Mineral Resources Law (State Council Decree No. 152, 26 March 1994); the Regulations for Registering to Explore for Mineral Resources Using the Block System (State Council Decree No. 240, 12 February 1998; amended on 29 July 2014); the Procedures for Administration of Registration of Mining of Mineral Resources (State Council Decree No. 241, 12 February 1998, amended on 29 July 2014); and the Measures for the Administration of Transfer of Mineral Exploration Right and Mining Right (State Council Decree No. 242, 12 February 1998, amended on 29 July 2014). Other regulations in the sector include the Regulation on the Exploitation of Continental Petroleum Resources in Cooperation with Foreign Enterprises (State Council Decree No. 131, 7 October 1993, amended on 18 July 2013) and the Regulations on the Exploitation of Offshore Petroleum Resources in Cooperation with Foreign Enterprises (amended on 18 July 2013). The Law on the Exploration and Development of Resources in Deep Seabed Areas (adopted on 26 February 2016 and entered into force on 1 May 2016) regulates the exploration and exploitation of deep seabed resources. A Resource Tax Law was adopted in 2019.

4.47. The Ministry of Natural Resources (MNR) was established in 2018. Its area of competence consolidates the responsibilities of the former Ministry of Land and Resources and those of the National Administration of Surveying, Mapping and Geoinformation.

4.48. China continued to liberalize its mining sector during the review period. For example, the 2019 National Negative List and Pilot Free Trade Zones (PFTZs) Negative List removed foreign investment prohibitions on the exploration or mining of molybdenum, tin, antimony, and fluorite. In the 2018 PFTZ Negative List, the measure that oil and natural gas exploration and development shall be restricted to equity joint ventures or contractual joint ventures was abolished, and the same measure was abolished nationally in 2019. No modification pertaining to mining was made to the 2020 editions of National and PFTZ Negative Lists. The only foreign investment limitation in mining consists of prohibition of foreign investment in the exploration, exploitation, and processing of rare earths, radioactive minerals, and tungsten.

4.49. The Constitution proclaims state ownership of all minerals. However, the Government may transfer to a qualified holder the right to possess, use, and benefit from the mineral resources. The Civil Code protects the exploration and mining rights obtained according to the law. Methods and processes for obtaining mining rights did not change substantially during the review period.[38] Mining rights can be acquired through tender, auction, or listing, or agreements in limited cases. Subject to the Negative List for the Access of Foreign Investments (Table 4.16), China allows foreign companies and individuals to invest in exploration and exploitation of the mineral resources within its territory and sea areas under its jurisdiction. They operate in the exploration and exploitation of minerals under the same condition as their domestic counterparts.

4.50. Steps were taken in the recent years to reform administrative procedures with respect to mining rights allocation. In 2017, the Ministry of Land and Resources issued four normative documents[39] aiming to, *inter alia*: (i) improve the approval, registration, and management system of mineral exploration and mining rights; and (ii) streamline the mineral rights application process.[40] Along the same lines, efforts were made by the authorities to encourage allocation of mining rights through competitive procedures. In fact, the Opinion of the MNR on Several Matters Concerning Promoting the Reform of Mineral Resources Administration (for Trial Implementation) (published on 31 December 2019), in line with the Overall Programme for the Reform of the Ecological Civilisation System (published on 21 September 2016), seeks to abolish the application for prior distribution of mineral resources, reduce the proportion of mineral resources allocated through agreements, and promote the competitive allocation of mineral resources. While the Opinion requires the competent authorities to implement tender, auction, and listing methods to grant mineral rights, it imposes strict restrictions on the granting of mineral rights via agreements. At the same time, it stipulates

[38] WTO document WT/TPR/S/375/Rev.1, 14 September 2018.

[39] These documents are: (i) Mineral Rights Transfer Rules; (ii) Notice on Further Standardizing Approval, Registration and Management of Mineral Resources Exploration; (iii) Notice on Further Standardizing Mineral Rights Application Materials; and (iv) Notice on Improving Issues Related to Approval, Registration and Management of Mineral Resources Exploitation.

[40] MNR (2018), *China Mineral Resources*. Viewed at: https://www.gov.cn/xinwen/2018-10/22/5333589/files/01d0517b9d6c430bbb927ea5e48641b4.pdf.

that the exploration rights and mining rights for key construction projects approved by the State Council, or projects related to exploration and exploitation of rare earths and radioactive minerals, may be granted by the agency in charge of natural resources through agreements.

Table 4.16 Mining industry foreign investment regime, 2017 and 2020

	2017	2020
Encouraged	Exploration and exploitation of oil and natural gas as well as utilization of mine gas (limited to Chinese-foreign equity or contractual joint ventures)	Exploration and exploitation of oil and natural gas, as well as utilization of mine gas
	Improvement in enhanced oil recovery (in the form of engineering services), as well as development and application of related new technologies	Same as in 2017
	Development and application of new technologies for oil exploration and exploitation in areas such as geophysical prospecting, drilling, well logging, mud logging, and down-hole operation	Same as in 2017
	Development and application of new technologies for enhancing utilization rate of mine tailings and the comprehensive application of ecological restoration technology in mining areas	Same as in 2017
	Exploration and exploitation of mines in short supply in China (such as mines of sylvite and chromite) and mineral separation	Same as in 2017
Restricted	Exploration and exploitation of oil and natural gas (including coal-bed gas and excluding oil shale, oil sand, shale gas, etc.) (limited to Chinese-foreign equity or contractual joint ventures)	Not listed
	Exploration and exploitation of special and rare kinds of coal (with Chinese party as the controlling shareholder)	Not listed
	Exploration and exploitation of graphite	Not listed
	Smelting and separation of rare earths (limited to Chinese-foreign equity or contractual joint ventures); smelting of tungsten	Not listed
Prohibited	Exploration and exploitation of tungsten, molybdenum, tin, stibium, and fluorite Exploration, exploitation, and ore dressing of tungsten	Not listed
	Exploration, exploitation, and ore dressing of rare earths	Same as in 2017
	Exploration, exploitation, ore dressing, and smelting of radioactive minerals	Exploration, exploitation and ore dressing of radioactive minerals

Source: MOFCOM and the NDRC, *Catalogue for the Guidance of Foreign Investment Industries 2017*, *Catalogue of Encouraged Industries for Foreign Investment* (2020 edition), *Special Administrative Measures on Access to Foreign Investment* (2020 edition); and 2020 National Negative List.

4.51. According to the authorities, in 2018 alone, 1,248 mining rights were granted, of which 772 were allocated through competitive procedures, 55 through agreements, and the remainder through automatic allocation to the holders of the related exploration rights. Three hundred sixty exploration rights were granted, of which 175 were funded by the Government, 90 were granted through competitive procedures, 37 were filed through prior applications, and 58 were granted through agreements.

4.52. Some specific measures were adopted to further standardize and strengthen the approval management of rare earth and tungsten exploration and mining. On 14 December 2018, the MNR issued the Notice on Further Regulating the Approval Administration of Mineral Rights on Rare Earths and Tungsten, which stipulates, *inter alia*, the continued suspension of the acceptance of new applications for rare earth exploration and mining registration; and the establishment, renewal, change of registration, transfer, reservation, and termination of rare earth and tungsten exploration and mining rights. The Notice also specifies the principle for determining the total production quotas of rare earths and tungsten, and the distribution of annual production quotas in various provinces.

4.53. The Mineral Resources Law stipulates that mining rights allocation is subject to fixed charges. Therefore, in April 2017, the State Council issued the Reform Plan for Mineral Royalty System (Guo Fa No. 29, 2017) to protect the nation's mineral interests and create a fair mineral market

environment.[41] It provides that mineral rights holders must pay the following fees to the competent authorities: (i) the mineral rights grant proceeds for obtaining such mineral rights; (ii) the mineral rights occupancy fee (i.e. the rental fee that mineral rights holders must pay each year, which is determined according to block size); and (iii) the resource tax for the sale of mineral products. In line with the State Council's reform plan, in June 2017, the Ministry of Finance and the former Ministry of Land and Resources issued the Interim Measures for Administrating the Collection of Proceeds from Granting Mineral Rights (Cai Zong No. 35, 2017). The Measures stipulate that the proceeds from granting mineral rights represent the rights and interests of state owners; it also clarifies specific regulations on the collection of such proceeds.

4.54. With respect to taxation, on 26 August 2019, the National People's Congress adopted the Resource Tax Law, which entered into force on 1 September 2020. It replaces the Provisional Regulations on Resource Tax of 25 December 1993 (amended on 30 September 2011 and implemented from 1 November 2011). Among the taxable resources specified by the Law (Tables A4.3 and A4.4), some resources, including crude oil, natural gas, and shale gas, are subject to single rates that are applicable nationwide. For those resources with the range of rates specified, the Law grants provincial-level governments the power to propose the actual rates to be applied. The new law introduces unified tax items, clarifies the authorization for determining tax rates, and standardizes tax reduction and exemption policies.[42]

4.55. Regarding trade in mineral resources, according to the Catalogue of Commodities Subject to the Administration of Export Licences for 2020, exports of certain mineral products, including coal and oil (excluding lubricating oil), are subject to an export quota and an export licence, while exports of rare earth minerals, tin and tin products, tungsten and tungsten products, molybdenum and molybdenum products, antimony and antimony products, indium and indium products, coke, lubricating oil, and fluorite are subject to an export licence.

4.2.2 Energy

4.2.2.1 Overview including environmental policy

4.56. China is the world's largest energy producer and consumer. In 2019, its total primary energy production was 3.97 billion tonnes of standard coal equivalents (SCEs). The energy self-sufficiency rate was 78.5%. China's energy consumption structure continued to change during the review period, as the proportion of coal declined, accounting for 57.7% of the total energy consumption, down from 63.8% in 2015. Petroleum accounts for 18.9%, natural gas accounts for 8.1%, and primary electricity and other energy such as hydropower, nuclear power, and wind power account for 15.3%.[43]

4.57. Charts 4.5 and 4.6 describe the evolution of the energy mix of the total primary supply of energy, and its consumption by type of users.

4.58. The National Energy Commission (NEC), headed by the Premier of the State Council, acts as the coordinating and consultation body responsible for drafting the national energy strategy, and reviews key issues associated with national energy security and development. The National Energy Administration (NEA) is administered by the NDRC. The NEA is responsible for formulating and implementing energy development strategies, plans, and policies; makes recommendations on institutional reforms in the energy sector; and performs executive functions as the regulator and as the general office of the NEC.[44]

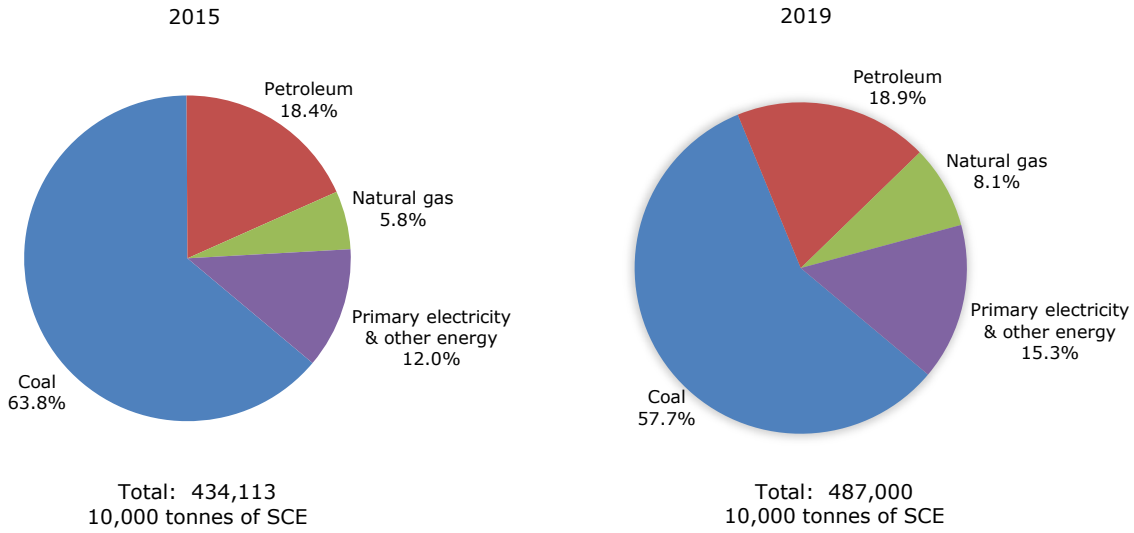
[41] State Council, *State Council to Reform Mineral Resource Equity Benefit System*, 20 April 2017. Viewed at: http://english.www.gov.cn/policies/latest_releases/2017/04/20/content_281475632183056.htm.

[42] State Council, *China's Resource Tax Law to Take Effect on Sept 1*, 1 September 2020. Viewed at: http://english.www.gov.cn/statecouncil/ministries/202009/01/content_WS5f4d96dec6d0f7257693b5fc.html.

[43] MNR (2020), *China Mineral Resources*. Viewed at: http://www.mnr.gov.cn/sj/sjfw/kc_19263/zgkczybg/202010/P020201022612392451059.pdf.

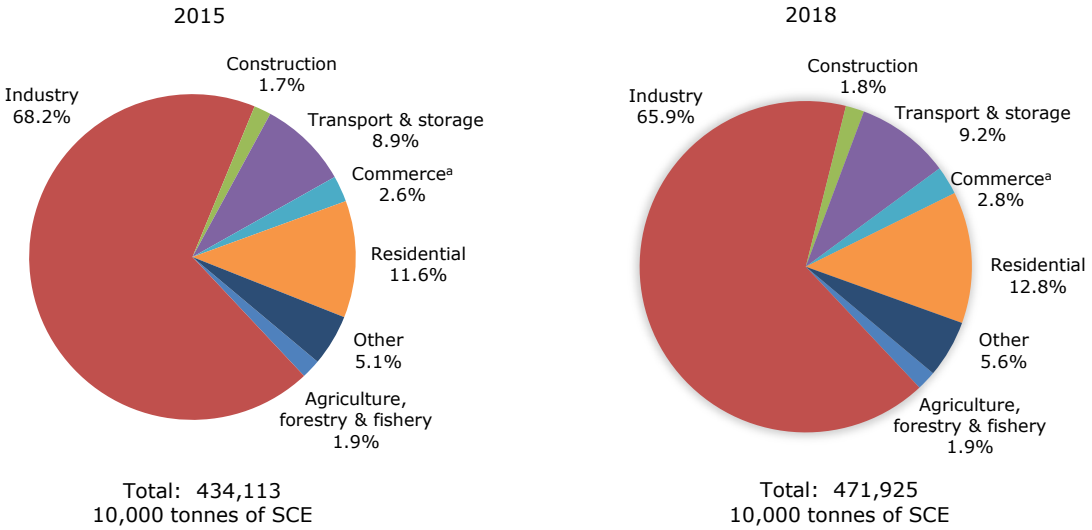
[44] In principle, the NEA has a broad mandate over the whole energy sector, i.e. coal, oil, gas, electricity (including nuclear power), new energy, and renewable energy (including hydropower). The NEA is also the regulator of the oil refinery, coal fuel, and fuel ethanol industries. Petrochemical and coal chemical industries that are not under the jurisdiction of the NEA are regulated by the MIIT.

Chart 4.5 Total consumption of energy and its composition, 2015 and 2019



Source: Data provided by the authorities.

Chart 4.6 Total energy consumption by sector, 2015 and 2018



a Commerce refers to wholesale and retail trade, and hotels and catering.

Source: National Bureau of Statistics. *Statistical Yearbook 2020*.

4.59. The authorities indicate that a new Energy Law is currently being drafted.

4.60. The authorities state that China regards the development of clean and low-carbon energy as the main direction for adjusting the energy mix. China intends to gradually reduce its proportion of coal consumption, increase its proportion of non-fossil energy consumption, reduce carbon dioxide and pollutant emission levels, and optimize the distribution of energy production. The country is actively pursuing a policy of decoupling of economic growth and energy consumption, through increased energy efficiency. In the context of the 13th Five-Year Plan for Economic and Social Development (2016-20), the national objective for the reduction of energy consumption per unit of GDP is 15%, and intermediary objectives are set on an annual basis. In 2015, energy consumption per unit of GDP dropped by 5.3%, surpassing the objective of 3.1%, and in 2016 it dropped by 4.8% (objective of 3.4%). The authorities indicated that the energy consumption per unit of GDP dropped by 3.5% in 2017, 3% in 2018, and 2.5% in 2019.

4.61. The 13th Five-Year Plan for Energy Development represents the basic outline of China's energy policy for 2016-20.[45] It aims to optimize China's energy system, promote energy product and consumption reform, and build a clean, decarbonized, safe, and efficient modern energy system. Along the same lines, Five-Year Plans have been launched for energy subcategories such as electricity, coal, natural gas, renewable energy, and energy technology.

4.62. The broader objectives set for green and low-carbon energy development in the 13th Five-Year Plan for Energy Development include that by 2020: (i) the proportion of non-fossil energies in total energy consumption should be over 15%; and (ii) the carbon dioxide emission per unit of GDP should decrease by 18% compared with that in 2005. In the context of this Review, the authorities state that at the 75th United Nations General Assembly in September 2020, China pledged that it would strive to have carbon dioxide emissions peak by 2030 and to achieve carbon neutrality by 2060. Furthermore, China announced that the carbon dioxide emission per unit of GDP should decrease by 65% compared with the level of 2005, and the proportion of non-fossil energy consumption should reach about 25%. According to the authorities, as at 2019, non-fossil energy and natural gas accounted for 15.3% and 8.1%, respectively, of total energy consumption.

4.63. In December 2017, China launched the construction plan for the National Carbon Emission Right Trading Market (Power Generation Industry) to start building its National Carbon Emission Trading System. According to the plan, the power generation industry will be the first to carry out transactions on the national carbon market, which will be gradually expanded to other industries. In 2018, the work of responding to climate change was adjusted and incorporated into the mandates of the newly formed Ministry of Ecology and Environment.

4.64. In December 2020, China issued the Regulations on Carbon Emission Trading (Trial) and the Implementation Plan on National Carbon Emission Trading Quota Determination and Distribution for 2019-2020 (Power Generation Industry). The Regulations provided a list of key emission units in the power generation industry that are included in the quota management, as well as the specific requirements for quota allocation and compliance, and officially launched the first compliance cycle of the national carbon market.

4.65. Other measures regarding the promotion of clean energy included the Notice on Establishing and Improving the Safeguard Mechanism of Renewable Energy Power Consumption, which was jointly adopted on 10 May 2019 by the NEA and the NDRC. It provides a general framework for, *inter alia*, setting renewable electricity consumption quotas as a share of total power consumption in each province, defining quota setting methods, and monitoring quota trading.[46] The authorities note that a number of periodic monitoring and evaluation reports have been issued to guide provincial authorities in formulating their local renewable energy power consumption plans. The same efforts will continue in 2021, as the authorities are calculating the 2021 consumption quota, according to the broad national objective of achieving carbon neutrality by 2060.

4.66. On 1 January 2018, China implemented a new environmental tax policy aimed at promoting environmental protection and reducing pollution.

4.67. Subject to the Negative List for the Access of Foreign Investments, China allows foreign investment in the energy sector. Since 2018, in terms of foreign investment access in the oil and natural gas field, restrictions on the exploration and development of oil and natural gas (except for oil shale, oil sands, and shale gas) have been removed, including those requirements that such investment projects must be joint ventures and cooperatives and that the construction and operation of gas pipeline networks in cities with a population of more than 500,000 must be controlled by Chinese shareholders.

4.2.2.2 Coal

4.68. Coal, an abundant and relatively cheap resource in China, continues to represent a large part of the country's primary energy, and it is also the main cause of air pollution. Its share in national energy consumption was 57.7% in 2019 (down from 63.8% in 2015). China's coal production ranks

[45] The 13th Five-Year Plan for Energy Development targets are aligned with objectives of the 13th Five-Year Plan for Economic and Social Development.

[46] NEA. Viewed at: http://zfxxgk.nea.gov.cn/auto87/201905/t20190515_3662.htm.

first in the world, reaching 3.85 billion tonnes in 2019. Newly discovered reserves of coal amounted to 30.01 billion tonnes, which brough the total to 1,738.58 billion tonnes.[47]

4.69. The authorities note that, in recent years, China implemented policy measures to strictly control the new capacity of coal-fired power. In 2019, China's coal-fired power installed capacity stood at 1.04 TW. Its growth rate dropped by 30% on average over the period 2016-20 compared with the period 2011-15. The proportions of installed capacity and power generation of coal-fired power have been declining steadily year-on-year. Between 2018 and 2019, over 20 GW of coal-fired power units were shut down. The authorities also note that China's new power demand in recent years was mainly supplied through renewable energy.

4.2.2.3 Oil

4.70. In 2019, newly discovered geological reserves of oil were 1.12 billion tonnes, of which, the increased proven technical recoverable reserves were 160 million tonnes. Crude oil production was 191 million tonnes, while consumption stood at 670 million tonnes.

4.71. The government policy on oil is defined in the 13th Five-Year Plan for Energy Development (2016-20). The Plan aims to increase crude oil reserves and the recovery efficiency of traditional oil fields, as well as speed up the development of shale oil and extend the corresponding pipeline network for crude oil and refined products. The exploration and development of oil is listed among encouraged industries nationwide.

4.72. To implement the recommendations of the Several Opinions on Deepening Oil and Gas System Reform, the MNR issued the Opinions on Promoting the Reform of Mineral Resources Management (Trial) on 31 December 2019. Among the several reform steps promoted by the Opinions, domestic and foreign enterprises that are registered in China, and have a minimum net asset of CNY 300 million, are entitled to obtain mining rights of oil and gas. The Opinions state that the validity period of a prospecting right may be extended to five years at the time of initial registration, and each extension shall be five years.[48] The regulation also unifies the exploration right and mining right of oil and gas. Under the Opinions, oil and gas exploration right owners who make a recoverable discovery should sign the mining right grant contract within five years.

4.73. The Special Administrative Measures on Access of Foreign Investment (National Negative List) (2019) abolished the requirement that exploration and development of oil and natural gas (except for those including coal-bed methane, oil shale, oil sands, and shale gas) are limited to Chinese-foreign equity.

4.74. Enterprises are allowed to determine their own oil prices based on the supply and demand in the market, on the premise of not exceeding the "ceiling price" decided by the NDRC. The pricing mechanism allows the NDRC to adjust the guided price when the moving average of prices over 22 consecutive trading days fluctuates more than 4% in the international oil markets.[49] The latest pricing mechanism was released in 2016.

4.75. The authorities indicate that China has not released any law or regulation on enterprises' compulsory oil reserve and does not require that oil companies must engage in oil reserve.

4.76. Over the last three years (2018-20), the Kingdom of Saudi Arabia, the Russian Federation, Iraq, Angola, Brazil, and Oman remained the top oil exporters to China. In 2020, the share of Norway and the State of Kuwait in China's imports of oil increased substantially, while the share of the Islamic Republic of Iran remained on a significant decreasing trend (Table 4.17).

4.77. In 2020, China processed 670 million tonnes of crude oil. Foreign investors can participate in refining projects and are not subject to limitations in terms of legal forms.

[47] MNR (2020), *China Mineral Resources.* Viewed at: http://www.mnr.gov.cn/sj/sjfw/kc_19263/zgkczybg/202010/P020201022612392451059.pdf.

[48] Twenty-five per cent of the block area shall be deducted for each extension to urge mineral right holders to accelerate exploration.

[49] Interim Administration Measures for Oil Prices (Fa Gai Jia Ge No. 1198, 2009).

Table 4.17 China's key trading partners for oil imports, 2018-20

('000 tonnes)

	2018	2019	2020
World	461,907.9	505,890.3	542,385.5
Saudi Arabia, Kingdom of	56,733.9	83,322.3	84,923.0
Russian Federation	71,494.4	77,664.9	83,572.3
Iraq	45,044.5	51,799.0	60,117.5
Brazil	31,622.2	40,156.6	42,189.9
Angola	47,387.6	47,368.5	41,785.1
Oman	32,909.8	33,871.7	37,838.3
Kuwait, State of	12,199.2	15,294.0	31,168.1
United Arab Emirates	23,212.4	22,688.3	27,496.9
United States	12,281.3	6,349.5	19,760.3
Norway	895.1	1,018.2	12,712.8
Malaysia	8,882.7	12,046.6	12,529.0
Colombia	10,768.5	13,121.0	12,383.1
Congo	12,580.5	11,960.5	9,246.0
Qatar	1,347.7	858.3	6,200.4
United Kingdom	7,725.5	12,556.7	5,894.2
Gabon	3,624.9	7,022.4	5,853.5
Ecuador	1,872.4	2,050.4	4,712.6
Ghana	3,356.0	3,595.8	4,112.5
Nigeria	464.7	2,437.3	3,934.3
Iran, Islamic Republic of	29,272.7	14,769.4	3,917.7

Note: Top 20 import partners are sorted by the year 2020.

Source: WTO Secretariat calculations, based on UN Comtrade database.

4.78. Distribution of gasoline/petrol is mostly operated by the China National Petroleum Corporation (CNPC) and the China Petroleum and Chemical Corporation (SINOPEC). Foreign investors can participate in the retail distribution sector, as China has lifted restrictions on foreign investment in the construction and operation of petrol stations. The authorities indicate that a number of multinational corporations have entered the Chinese petrol station operation market.

4.2.2.4 Gas

4.79. In 2019, China's natural gas production (including shale gas and coal-bed methane) stood at 176.17 billion m^3; consumption of natural gas stood at 306 billion m^3.[50] The newly discovered geological reserves of shale gas were 764.42 billion m^3, of which the increased proven technical recoverable reserves were 183.84 billion m^3.

4.80. Under China's energy development plan, the use of natural gas is to be expanded, as it is considered clean energy. In 2019, gas accounted for 8.1% of energy consumption, up from 5.8% in 2015. In addition to industrial fuel and power generation, gas is mainly used for urban heating and cooking, transport, and the manufacture of raw chemical materials and chemical products.

4.81. Distribution of natural gas is mostly operated by the CNPC and SINOPEC, while private companies play a more substantial role in the retail sector. Foreign investors, notably from Hong Kong, China, are present in both the importing segment and in the urban gas retail distribution segment. According to the 2020 Negative List for the Access of Foreign Investments, the distribution of foreign-invested natural gas has been opened to foreign investors and shall be managed following the principle of consistent domestic and foreign investment.

4.2.2.5 Electricity

4.82. By end-2019, China's installed power generation capacity was 2.01 billion kW (up from 1.9 billion kW at end-2018). Thermal power, hydropower, nuclear power, wind power, and solar power accounted for 1.19 billion kW, 358 million kW, 49 million kW, 210 million kW, and 200 million kW, respectively. At end-2018, these figures were 1.04 billion kW, 352 million kW, 45 million kW, 180 million kW, and 170 million kW, respectively.

[50] MNR (2020), *China Mineral Resources*. Viewed at: http://www.mnr.gov.cn/sj/sjfw/kc_19263/zgkczybg/202010/P020201022612392451059.pdf.

4.83. On 19 December 2018, the Standing Committee of the NPC amended the Electricity Law (adopted in 1995 and came into force on 1 April 1996). It was previously amended in 2009 and 2015. The 2018 amendment aimed to address the approval procedures of power businesses. Under the amendment, applications for the establishment and a change in a power supply business shall be submitted to the electric power administrative department, which shall, in accordance with its duties and administrative authority, issue the electric power business licence after examination and approval in conjunction with the relevant departments.

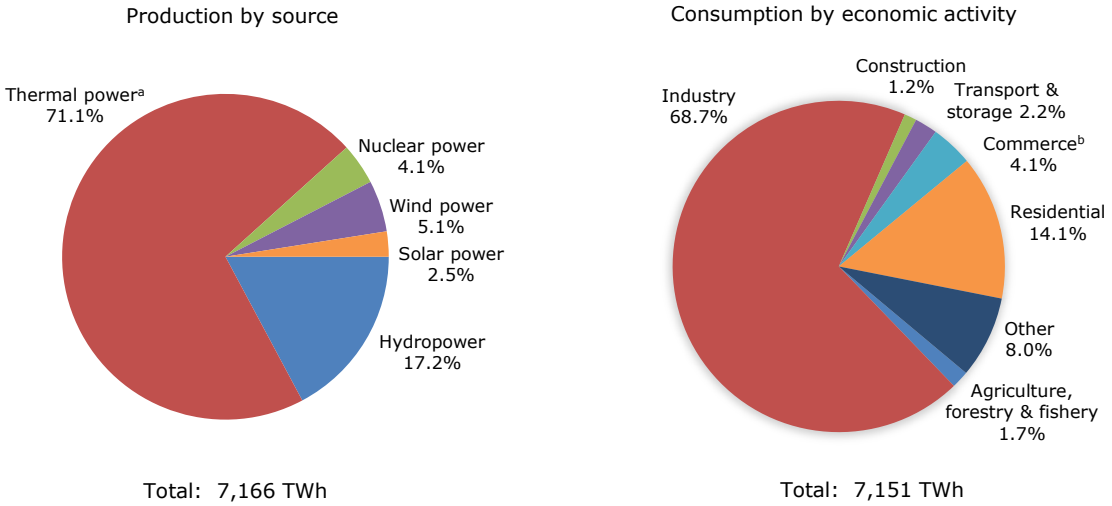
4.84. The Administration Measures on Power Grid Enterprises' Full Purchase of Electricity Generated by Renewable Energy[51] provide that on-grid electricity generated by renewable energy power plants must be purchased by distributors (regional monopolies) within the coverage of their power grids. Currently, Chinese grid companies include State Grid Corporation, China Southern Power Grid, Inner and Mongolia Power (Group) Co., Ltd., as well as a number of provincial grid enterprises.

4.85. Chart 4.7 describes electricity production, by source of primary energy, and electricity consumption, by type of economic activity, in 2018.

4.86. Chart 4.8 describes the installed generation capacities by source for 2019; Table 4.18 describes the investment in generation capacity by source for 2017 and 2019.

4.87. In 2019, China lifted the requirements that the construction and operation of gas pipeline networks in cities with a population of more than 500,000 must be controlled by Chinese shareholders. However, for construction and operation of nuclear power plants, the Chinese parties must be the controlling shareholders (Table 4.19). Private investment, including foreign investment, is encouraged in the development of the renewable energy sector. In the new 36-Clause on Private Investment (State Council Circular 2010/13), domestic private capital is "encouraged" to build new energy sectors such as wind, solar, geothermal, and biomass power. Electricity generation from wind, solar, or biomass power is also listed in the "encouraged" section of the Catalogue of Encouraged Industries for Foreign Investment (2020 edition). China also promotes electricity generation with nuclear energy; as in the case of renewable energy, FDI is encouraged.

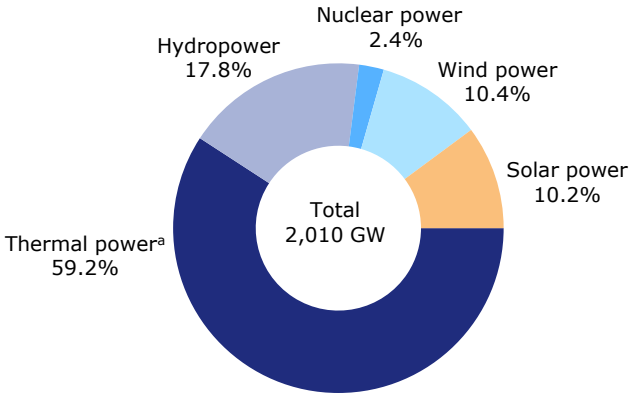
Chart 4.7 Structure of electricity production and consumption, 2018



a Thermal power refers to electricity generated by coal, oil, gas, residual heat, waste incineration, and biomass.
b Commerce refers to wholesale and retail trade, and hotels and catering.
Source: National Bureau of Statistics, *Statistical Yearbook 2020*.

[51] State Electricity Regulatory Commission (SERC), Decree 2007/25.

Chart 4.8 Installed generation capacities by primary energy, 2019



a Thermal power refers to electricity generated by coal, oil, gas, residual heat, waste incineration, and biomass.

Source: National Bureau of Statistics, *China Statistical Yearbook 2020*.

Table 4.18 Investment in power generation capacity by source, 2017-19

Type	Unit (CNY million)	2017	2018	2019
Hydropower	100	622	700	839
Thermal power	100	858	786	634
Nuclear power	100	454	447	382
Wind power	100	681	646	1,244
Solar power generation	100	285	207	184

Source: China Electricity Council, *Statistical Data Collection of Electric Power Industry, 2017-2019*.

Table 4.19 Investment regime for electricity, 2017 and 2020

	2017 Catalogue	2019 Encouraged Industries/2020 Negative List
Encouraged	Construction and operation of ultra-supercritical unit power station with the capacity of a single unit of 600,000 kW or more	Same as in 2017
	Construction and operation of back-pressure combined heat and power stations, combined cooling, heating and power stations, and combined heat and power stations with capacity of 300,000 kW or more	Same as in 2017
	Construction and operation of large air cooling unit power stations with the capacity of a single unit of 600,000 kW or more in water-deficient areas	Same as in 2017
	Construction and operation of integrated gasification combined cycle power generation and other clean coal power generation projects	Same as in 2017
	Construction and operation of power generating projects of a single unit of 300,000 kW or more by using fluidized bed combustion bolters and coal gangue and coal slime, etc.	Same as in 2017
	Construction and operation of hydropower stations for the primary purpose of power generation	Same as in 2017
	Construction and operation of nuclear power stations	Same as in 2017
	Construction and operation of new energy power stations (including but not limited to solar, wind, geothermal, tidal, tidal current, wave, and biomass)	Same as in 2017
	Construction and operation of power grid	Construction and operation of clean energy microgrid
	Seawater utilization (direct utilization of seawater or seawater desalination)	Seawater utilization (direct utilization of seawater or seawater desalination); brackish water utilization

	2017 Catalogue	2019 Encouraged Industries/2020 Negative List
	Construction and operation of water supply plants	Design, construction, and operation of water supply plant
	Construction and operation of renewable water	Design, construction, and operation of renewable water
	Construction and operation of sewage treatment plants	Design, construction, and operation of sewage treatment plants
	Construction and operation of vehicle charging stations and battery replacement stations	Same as in 2017
	Construction and operation of hydrogen refuelling stations	Same as in 2017
Restricted	Construction and operation of nuclear power stations (with Chinese party as the controlling shareholder)	Construction and operation of nuclear power stations (with Chinese party as the controlling shareholder)
	Construction and operation of power grid (with Chinese party as the controlling shareholder)	Not listed
	Construction and operation of pipeline networks for gas, heat, and water supply and sewage in cities with a population of more than 500,000 (with Chinese party as the controlling shareholder)	Not listed

Source: MOFCOM and NDRC, *Catalogue for the Guidance of Foreign Investment Industries 2017*, *Catalogue of Encouraged Industries for Foreign Investment* (2020 edition), and Special Administrative Measures on Access to Foreign Investment (2020 edition); and 2020 National Negative List.

4.88. China's efforts to liberalize power generation and utilization were outlined in Several Opinions on Further Deepening the Reform of the Electric Power System (Zhong Fa No. 9, 2015), issued in March 2015.[52] The reform liberalizes electricity prices (notably industrial ones), except for transmission and distribution and for public welfare purposes (i.e. residential, agricultural, and important utility uses, and other public welfare purposes determined by the Government). Transmission and distribution tariffs are regulated by the NDRC and the NEA. The authorities indicate that the NDRC has completed the approval of the transmission and distribution tariffs of the 33 provincial grids during the regulatory period (2020-22), and has for the first time ratified the transmission prices of five regional power grids. The new tariffs are set to come into force on 1 January 2021. Certain large industrial and commercial consumers are encouraged to buy electricity from generation companies based on direct electricity purchase agreements at negotiated prices.

4.89. In line with the liberalization steps initiated in 2015, the power retail market is open to non-state-owned investors under the Management Rules for Entry and Exit of Power Sale Companies and the Management Rules for Orderly Liberalizing of Power Distribution Businesses issued by the NDRC and the NEA in October 2016 (Fa Gai Jing Ti No. 2120, 2016).[53] The Rules stipulates licensing requirements for power sales enterprises. As at end-2020, there were about 4,500 electric power companies registered with the power trading agency of China. Since 2018, there has been no foreign investment restriction in the construction and operation of power grids. Under the current regime, the generation, transmission, and distribution of power shall be administered under the principle of equal treatment to both domestic and foreign investment.

4.90. Various electricity trading agencies have been established across the country, with the purpose of linking the grids and the retail distribution companies, and trading electricity on a market basis. They are mainly responsible for the construction, operation, and management of trading platforms; the organization of market trading; the provision of settlement evidence and relevant services; the registration of bilateral contracts signed by the power users and generation companies;

[52] The orientations of the reform were subsequently elaborated by six Supportive Documents for Electricity Mechanism Reform issued by the NDRC and the National Energy Administration (Fa Gai Jing Ti No. 2752, 2015), as well as by numerous implementing regulations and pilot projects, notably: (i) the Notice of NDRC and NEA on Standardizing the Pilot for Incremental Power Distribution Reform (Fa Gai Jing Ti No. 2480, 2016); (ii) the Reply of NDRC General Office and NEA General Affairs Division on Agreeing with the Establishment of Incremental Power Distribution Reform Pilot in Ningdong (Fa Gai Ban Jing Ti No. 570, 2017); and (iii) the Notice of NDRC and NEA on Standardizing the Second Batch of Pilot for Incremental Power Distribution Reform of 21 November 2017.

[53] NDRC and NEA, *The Management Rules for Entry and Exit of Power Sale Companies,* and *the Management Rules for Orderly Liberalizing of Power Distribution Businesses*. Viewed at: https://www.ndrc.gov.cn/xxgk/zcfb/tz/201610/t20161011_963217.html.

the registration and management of market actors; and the disclosure and release of market information.

4.91. The trial of "pilot spot markets", where trading of electricity takes place on a spot basis instead of by medium- to long-term contracts, began in August 2017 in eight areas (Guangdong, west of Inner Mongolia, Zhejiang, Shanxi, Shandong, Fujian, Sichuan, and Gansu). All pilot areas carried out a settlement trial in September. The authorities indicate that further simulations took place during the review period to verify the integrity of the market clearing and technical support system. In June 2019, all eight pilot power spot areas started simulated operation. In 2020, all pilot areas completed a monthly settlement trial. It is planned that in 2021 some areas will carry out longer settlement trials.

4.3 Manufacturing

4.3.1 Recent developments

4.92. China is the world's largest producer of industrial goods. In 2018, with a total value-added amounting to some USD 4 trillion, the Chinese manufacturing sector accounted for 28% of global manufacturing output.[54] The sector is an important driver of China's economy, despite its shrinking contribution to the country's GDP. Its share as a percentage of GDP stood at 27.2% in 2019, down from 29% in 2015. Additionally, its share in private sector employment was around 15.4% in 2018.[55] In 2019, manufactured products accounted for 95.4% of China's exports (up from 93.7% in 2016) and 66.5% of its imports (up from 64.9% in 2016).

4.93. The authorities consider that China's performance in manufacturing is largely attributed to its increasing integration in global value chains, driven by factors including trade and investment liberalization, abundant and productive labour, a large domestic market, high-quality infrastructure, and innovation. However, the long-term sustainability of the sector may face environmental challenges and excess capacity. Firms in this sector may consistently face low capacity utilization rates, as well as incurring losses. Nevertheless, the authorities state that, currently, there is no excess coal production capacity in China; since 2016, it has closed more than 1 billion tonnes of outdated coal production capacity, and the proportion of outputs of large-scale coal mines with or above 1.2 million tonnes per year has exceeded 80%. They also state that the steel, cement, aluminium, and chemicals sectors have sound profitability levels, and they consider that there is no excess capacity in these industries.

4.94. A number of policy initiatives remain in force to address the challenges facing manufacturing activities and further develop the sector. As described in detail in the previous Review, major initiatives include the Made in China 2025 (or China Manufacturing 2025) initiative (launched in 2015), and the Internet Plus initiative (launched in 2015). According to the authorities, these initiatives are non-binding guidelines.

4.95. While the current policy initiatives are intended to promote the expansion of higher value-added and knowledge-based activities through innovation, environmental considerations are also at the core of China's efforts in the manufacturing sector. They aim to reduce energy and resources consumed and pollutants emissions released per unit of industrial added value by 2025.[56] On 1 January 2018, China implemented a new environmental tax policy aimed at promoting environmental protection and reducing pollution. The new tax is set to affect companies in various economic sectors, mainly in manufacturing. It replaces the pollution discharge fee previously in place and applies to four pollutant categories when they are discharged directly into the environment in Chinese territory: atmospheric pollutants, water pollutants, solid waste, and noise.[57] Reductions

[54] World Economic Forum, *These Are the Top 10 Manufacturing Countries in the World*, 25 February 2020. Viewed at: https://www.weforum.org/agenda/2020/02/countries-manufacturing-trade-exports-economics/#:~:text= According%20to%20data%20published%20by,China%20overtook%20it%20in%202010.

[55] National Bureau of Statistics, *China Statistical Yearbook 2019*. Viewed at: http://www.stats.gov.cn/tjsj/ndsj/2019/indexeh.htm.

[56] OECD (2017), *Industrial Upgrading for Green Growth in China*. Viewed at: https://www.oecd.org/greengrowth/Industrial_Upgrading_China_June_2017.pdf.

[57] Exclusions include discharge of sewage/domestic waste into treatment facilities and solid waste into storage/disposal facilities where these meet national standards, emissions from agricultural production, and motor vehicle/vessel/aircraft emissions.

on environmental tax are provided to companies that pollute less than the standard. Penalties have been also strengthened.

4.96. The authorities are also cognizant of the issue of excess capacity in manufacturing[58], and have made efforts to reduce capacity in recent years. As an example, the Supply-Side Structural Reforms (SSSR), which were announced in 2015, aim to reduce capacity, among other goals. During the review period, the country's efforts to phase out industries that it considers outdated or heavily polluting were shown in the Catalogue for Guiding Industry Restructuring, last updated in 2019 (Section 2.4.1).

4.97. In an effort to increase the competitiveness of the economy, manufacturing activities were further liberalized during the review period. The 2020 Special Administrative Measures on Access to Foreign Investment (the 2020 National Negative List) lifted the restrictions on the share ratio of foreign investment in commercial vehicle manufacturing. In addition, they eliminated the prohibitions on foreign investment in the smelting and processing of radioactive minerals, as well as the production of nuclear fuel. Furthermore the 2020 Catalogue of Encouraged Industries for Foreign Investment (Encouraged FDI Catalogue) added a number of manufacturing activities to the list of encouraged industries, including fifth-generation equipment mobile terminals and their integrated system, etchers for integrated circuits, chip packaging equipment, cloud computing devices, key components of industrial robots, new energy vehicles (NEVs), intelligent vehicles, aerospace new materials, cell therapy drugs, and large-scale cells culture products.

4.98. At the same time, some restrictions and prohibitions are in place *vis-à-vis* foreign investments. In the automotive industry, Chinese parties must hold no less than 50% in the manufacturing of passenger vehicles.[59] In addition, a foreign investor may establish no more than two joint ventures in China to manufacture the same type of vehicles. Within the medicine production industry, foreign companies are prohibited from investing in the application of steaming, stir-frying, moxibustion, calcination of Chinese herbal medicines, and other processing techniques, as well as the production of confidential prescription products of proprietary Chinese medicines. Foreign investment in the production of satellite television broadcasting ground receiving facilities and key components is subject to licensing.

4.99. The Ministry of Industry and Information Technology (MIIT) is the main regulator for the manufacturing sector; it is responsible for developing industrial strategies, making industry plans and standards, and monitoring the operation of the industry, including licensing for production of road vehicles and civilian explosives, according to the law. The NDRC is responsible for coordinating industry development and developing industry upgrade strategies. MOST is also involved in industrial policies for high-tech manufacturing.

4.3.2 Selected subsectors

4.3.2.1 Automobiles, automotive parts, and components

4.100. In 2018, state-holding enterprises and foreign-invested enterprises (FIEs) accounted for 45.4% and 47.3%, respectively, of operating revenue in the automobile manufacturing sector (43.7% and 48.0%, respectively, in 2019).

4.101. China is the largest automobile market worldwide, both in terms of demand and supply. According to the results of the national survey of industries above a certain scale[60], the production volume of automobiles in 2018 and 2019 was around 27.8 million and 25.7 million, respectively.

4.102. China's automobile industry was hit hard by the COVID-19 pandemic. The authorities note that car production and sales fell by nearly 80% in February 2020. However, due to the epidemic prevention and control measures and recent economic developments, car production and sales have recovered markedly. In 2020, the decline in annual production and sales narrowed to less than 2%, and the production and sales of NEVs increased by 7.5% and 10.9%, respectively. According to the World Economic Forum, car manufacturers in China resorted to innovative marketing solutions to

[58] This challenge is also present in sectors beyond manufacturing, such as coal mining.
[59] The authorities state that the limit will be cancelled in 2022.
[60] The above-mentioned designated scale is a statistical term used in China to refer to industrial enterprises with annual main business revenue of CNY 20 million or more.

keep supply chains running. For example, some carmakers focused on consumers who were shopping online for cars, using tools including virtual reality and live broadcasts to stimulate sales.[61]

4.103. In 2020, the production and sales volume of automobiles were 25.22 million and 25.31 million, respectively. According to the National Bureau of Statistics, in 2020, the operating revenue of the automobile manufacturing sector above the state-designated scale was CNY 8,155.77 billion, an increase of 3.4% year-on-year, and the profit was CNY 509.36 billion, with a year-on-year increase of 4.0%. Statistics from the China Association of Automobile Manufacturers suggest that the number of employees in the 17 key automotive enterprises (groups) stood at 999,951, a year-on-year decrease of 5.6%.

4.104. In April 2020, in an effort to boost automobile consumption, 11 ministries and commissions, including the NDRC and MOFCOM, jointly issued a series of measures.[62] In substance, the regulations delay the implementation of the National VI emission standards for six months (until January 2021), for the production of light vehicles (total mass not exceeding 3.5 tonnes).[63] Measures were also taken, along the same lines, to extend the financial subsidy available for purchasing NEVs to end-2022[64], accelerate the elimination of scrapped diesel trucks through preferential tax policies, and encourage financial institutions to actively develop financial services, such as automobile consumer credit. Furthermore, the authorities indicate that in order to increase the sales of second-hand vehicles, from 1 May 2020 to 31 December 2023, VAT rate on the distribution of used cars shall be reduced to 0.5%. Prior to this reduction, VAT rate was at 2% (which is lower than the 3% rate under the "simplified method").[65]

4.105. The production of automobiles, including NEVs, is subject to approval by the NDRC and the MIIT. Measures were taken in November 2018 to reform the regulatory regime on the market admission (approval) of automobile manufacturers, as well as the admission of auto vehicle products.[66] Specifically, the new reform, *inter alia*, unifies the rules (requirements) that regulate the admission of manufacturers and products in the auto industry[67], and streamlines the list of matters subject to MIIT approval, so as to reduce the administrative burden on auto manufacturers.

4.106. In December 2018, the authorities took new measures to further facilitate certain administrative procedures on investments in the automotive sector.[68] According to the new rules, investment projects in complete vehicles and other related investments shall be managed by local Development and Reform Departments. The regulations also set strict control on new investments that aim to increase manufacturing capacity of traditional oil-fuelled cars, in line with the country's efforts to promote NEVs and the sustainable development of the automotive industry.

4.107. The Automobile Mid- and Long-term Development Plan (launched in 2017) is the main strategic plan to promote the auto industry. The Plan aims to, *inter alia*, improve the innovation system and promote the development of key areas, such as NEVs, smart network cars, and energy-saving cars. The Plan also emphasizes the importance of strengthening international cooperation.

4.108. In accordance with the vision of the Automobile Mid- and Long-term Development Plan, specific plans were adopted during the review period. With regard to new generation vehicle manufacturing, a number of supporting actions were taken during the review period to encourage production. In February 2020, the NDRC and other 11 departments jointly released the Intelligent

[61] World Economic Forum, *This Industry Was Crippled by the Coronavirus – Here's How It's Fighting Back*, 25 February 2020. Viewed at: https://www.weforum.org/agenda/2020/02/coronavirus-china-automotive-industry/.

[62] Notice on Measures to Stabilize and Expand Automobile Consumption (Fa Gai Chan Ye No. 684, 2020).

[63] The National VI Emission Standards refer to the new emission standards on diesel particulate filters.

[64] MOF, Announcement on the Relevant Policies Concerning the Exemption of Vehicle Purchase Tax on New Energy Vehicles. Viewed at: http://szs.mof.gov.cn/zhengcefabu/202004/t20200417_3500222.htm.

[65] Announcement on Value-Added Tax Policy Related to the Distribution of Used Cars (Announcement No. 17, 2020).

[66] Measures for the Administration of Access by Road Motor Vehicle Production Enterprises and Products (MIIT Decree No. 50).

[67] The MIIT divides road vehicles into six categories (i.e. passenger vehicle (PV), commercial vehicle (CV), special purpose vehicle (SPV), trailer, motorbike, and low-speed automobile) for which emission requirements and process used to be in place for each category.

[68] Provisions on the Management of Investments in the Automotive Industry.

Vehicle Innovation and Development Strategy to, *inter alia*, accelerate the transformation and upgrading of the automotive industry, and promote innovation and development of intelligent vehicles. Under the Plan, commercial application of highly automated driving vehicles is expected to take place by 2025.

4.109. In October 2020, the Government outlined a development plan for the NEV industry, aiming to accelerate technological innovation and infrastructure construction.[69] Under the plan, the average power consumption of new purely electric passenger cars shall be reduced to 12 kWh/100 km and the proportion of NEVs in the total sales of new vehicles shall be raised to 20% by 2025.

4.110. New rules were adopted in May 2019 to improve the management of the recycling and dismantling of scrapped motor vehicles.[70] The regulations lift the quota restriction on the number of recycling enterprises allowed in each region; though, without a qualification, no company or individual may operate such a business. The new rules are set to increase China's recycling and dismantling capability and promote the healthy development of the scrap industry.

4.3.2.2 Machinery and equipment

4.111. Similar to the whole manufacturing sector, the machinery and equipment industry was hit hard by the COVID-19 outbreak. According to data provided by the authorities, from January to May 2020, the accumulative operating income of the machinery industry was CNY 7.4 trillion, a year-on-year decrease of 9.03%, while imports stood at USD 112 billion, a year-on-year decrease of 11.02%; exports amounted to USD 167.9 billion, a year-on-year decrease of 7.61%. However, according to the authorities, since the second quarter of 2020, production in the machinery industry has steadily improved, and the annual accumulative operating income for 2020 stood at CNY 23 trillion, a year-on-year increase of 4.2%, while export delivery value amounted nearly CNY 2 trillion, a year-on-year decrease of 3.1%. Imports of machinery equipment in 2020 amounted to USD 191.96 billion, a year-on-year increase of 0.8%, while exports stood at USD 440.25 billion, a year-on-year increase of 5.7%. Exports of medical devices totalled USD 12.91 billion in 2019, a year-on-year increase of 13.2%; they totalled USD 18.14 billion in 2020, a year-on-year increase of 40.5%. The authorities note that machinery industry policy aims to pursue innovation-driven development; promote the transformation towards an intelligent, green, and service-oriented machinery industry; promote the optimization of industrial structures; improve product quality; improve the utilization rates of resources and energies; and reduce pollutant emissions.

4.112. In 2016, the Government launched the Robotics Industry Development Plan (2016-2020) to promote robot applications and to attract foreign investment. The plan aims to, *inter alia*, produce 100,000 industrial robots annually by 2020. The authorities state that these targets have not been fully met. Under the Plan, special funds from the central budget were set to be earmarked to support robotics research and development, and financial institutions were encouraged to finance robotic projects.[71]

4.113. With respect to recent developments in relation to medical equipment, the authorities took measures in 2020 to support the stable production of COVID-19 prevention and control materials. The State Taxation Administration and the MOF issued the Announcement on Tax Policies Supporting COVID-19 Prevention and Control (Announcement No. 8, 2020). The Announcement allows a one-time deduction from corporate income tax of expenses related to newly purchased equipment by key producers of COVID prevention and control to expand their production capacity.[72]

4.114. Other strategic actions in machinery and equipment industries include: (i) the MIIT's Guiding Opinions on Accelerating the Development of Environmental Protection Equipment Manufacturing Industry, which set the goal of reaching a production value of CNY 1 trillion for environmental equipment manufacturing by 2020; and (ii) the Action Plans for High-End Smart Remanufacturing

[69] State Council, *Cabinet Boost for New Energy Vehicles*, 13 October 2020. Viewed at: http://english.www.gov.cn/policies/policywatch/202010/13/content_WS5f85068dc6d0f7257693d696.html.

[70] State Council, Measures on the Management of the Recycling of Scrapped Motor Vehicles (State Council Decree No. 715).

[71] State Council, *China to Triple Industrial Robot Production by 2020*, 27 April 2016. Viewed at: http://english.www.gov.cn/state_council/ministries/2016/04/27/content_281475336534830.htm.

[72] State Taxation Administration. Viewed at: http://www.chinatax.gov.cn/chinatax/n810341/n810755/c5143465/content.html.

(2018-2020). In addition, the Plan of Intelligent Manufacturing Development (2016-2020), issued by MIIT and the MOF, was put in place to guide the development of intelligent manufacturing. The Plan, *inter alia*, sets the goals of completing the digitalization of traditional manufacturing sectors by 2020, establishing an intelligent manufacturing support system, and achieving intelligent transformation of key industries by 2025.

4.3.2.3 Iron and steel

4.115. The value of China's iron and steel exports stood at USD 33.4 billion in 2020, down from USD 46.9 billion in 2018, while the value of imports increased from USD 22.4 billion to USD 36.8 billion over the same period. According to the authorities, the same dynamic continued in 2020, in line with China's efforts to tackle overcapacity in the steel industry. Over the first half of 2020 steel exports sharply decreased, and imports substantially increased. From January to May, China exported 25 million tonnes of steel products, a year-on-year decrease of 14%, and imported 5.46 million tonnes of steel products, a year-on-year increase of 12%, reflecting the country's efforts to address excess capacity in the industry.

4.116. Efforts by China to eliminate production overcapacity in the steel industry are guided by the Opinions on Reducing Overcapacity in the Steel Industry to Achieve Development by Solving Difficulties (Guo Fa No. 6, 2016).[73] Among other actions, the Opinions prohibit the building up of new steel capacity. China also intends to encourage enterprises to eliminate part of their steel production capacity through, *inter alia*, proactive capacity elimination, mergers and acquisitions and restructuring, transformation and conversion of production lines, relocation and reconstruction, and global cooperation in production capacity. Under the Opinions, China plans to cut additional crude steel capacity by 150 million tonnes by 2020, to bring capacity closer to consumption.

4.117. The authorities indicate that, by the end of 2019, China had reduced crude steel capacity by about 170 million tonnes in cumulative terms, which outperformed the goal of the 13th Five-Year Plan for Economic and Social Development of reducing 150 million tonnes of excess steel capacity ahead of the 2020 deadline.[74] They also note that zombie companies[75] have been largely dismantled in the iron and steel industry. In addition, steel production not conforming to quality standards was cut by 140 million tonnes in 2017. The authorities state that the capacity of "standard steel" has been fully banned.

4.118. Going forward with its capacity reduction efforts, in January 2018, China announced a new policy to forbid steel plants from increasing their capacity. They were also required to remove at least 1.25 tonnes of outdated capacity for every tonne of new capacity in "environmentally sensitive" areas of the Beijing-Tianjin-Hebei region, the Yangtze River Delta, and the Pearl River Delta.[76] Under the Notice on Improving Capacity Replacement and Project Filing of Iron and Steel (Fa Gai Dian No. 19, 2020), as from 24 January 2020, the steel capacity replacement and project filing were suspended; guidelines for steel project filing were formulated and introduced, and revisions were made to the measures for steel capacity replacement. The Notice also imposed some environment-related provisions and prohibited steel smelting capacity extensions.

4.119. According to the OECD, in November 2019, the NDRC, the MIIT, and the National Bureau of Statistics jointly issued a notice requiring steel companies to conduct a study and submit a report on the capacity status and production changes in their facilities over the last three years. The aim

[73] State Council, *Opinions of the State Council on Resolving Excess Capacity in the Iron and Steel Industry*. Viewed at: http://www.gov.cn/zhengce/content/2016-02/04/content_5039353.htm.

[74] A 2020 report by the OECD on the world's steelmaking capacity noted a decrease in China's steelmaking capacity from 1,192.9 million tonnes in 2016 to 1,152.2 in 2019; these figures were not confirmed by the authorities. According to the study, these calculations are based solely on the sum of all the steelmaking plants in existence for which information is available to the OECD Secretariat. OECD (2020), *Latest Developments in Steelmaking Capacity*. Viewed at: https://www.oecd.org/industry/ind/latest-developments-in-steelmaking-capacity-2020.pdf.

[75] The term "zombie companies" refers to companies that are unable to cover debt servicing costs from current profits.

[76] State Council, *China Releases New Steel Capacity Replacement Policy*, 9 January 2018. Viewed at: http://english.www.gov.cn/state_council/ministries/2018/01/09/content_281476006915798.htm.

of this investigation was to review the changes in capacity and equipment in China's steel sector since 2016.[77]

4.3.2.4 Electronic, IT, and integrated circuits

4.120. According to the Statistical Yearbook of China's Electronic Information, the market share of SOEs in electronic information manufacturing enterprises (above a certain designated scale) stood at 3.5% in 2018, while private enterprises accounted for 47.3%.

4.121. The integrated circuit (IC) industry is the core of information technologies. As such, the authorities see it as a strategic industry supporting national economic and social development and maintaining national security. The Made in China 2025 initiative reiterated China's focus on next-generation IT, with reference to semiconductors. The authorities indicate that in 2018, the operating revenue of IC manufacturing enterprises (above a designated scale) was CNY 364.4 billion. In addition, the statistics of China Semiconductor Industry Association suggest that in 2019 the revenue of China's IC industry was about USD 108 billion, with 40.51% coming from IC designing, 28.42% from IC manufacturing, and 31.07% from IC packaging and testing.

4.122. China relies heavily on the imports of high-end ICs. Exports of ICs stood at USD 117.1 billion in 2020 (up from USD 84.7 billion in 2018), while imports amounted USD 350.8 billion (up from USD 312.7 billion in 2018). Most demand for semiconductors reflects the country's specialization in the assembly of electronics, as the majority of chips are not actually consumed in China but instead re-exported to other countries in the form of electronic equipment (e.g. phones, TVs, and tablets).

4.123. The 2014 Guidelines for Promoting the Development of the National Integrated Circuit Industry set specific targets to develop China's IC and semiconductor industry. It identified the goals of raising the industry's revenue to over CNY 350 billion by 2015, and achieving an annual rate of revenue growth of over 20% by 2020. Priority tasks include the establishment of the National Leading Group for the Development of Integrated Circuit Industry, the initiation of the National Integrated Circuit Industry Investment Fund, and the promotion of safe and reliable hardware and software.

4.124. On 24 September 2014, the National IC Industry Investment Fund was established, with initial funding of USD 23 billion. The authorities state that the Fund's investment management and decision-making of the Fund are under the market principles, and the Fund is not affiliated with any government authority. According to a study by the OECD, as at May 2019, shareholding in China's National IC Investment Fund included: the MOF (36%); China Development Bank Capital (22%); China National Tobacco, a central SOE (11%); and Beijing E-Town International Investment & Development, a local SOE (10%).[78] The authorities did not confirm these figures.[79] A second round of funding for the IC Fund was completed in 2019, which added USD 29 billion for investments into upstream, domestic semiconductor companies. According to the authorities, as at October 2019, the major shareholders included the MOF (11.02%), China Development Bank Capital (10.77%), Shanghai Guosheng Group (7.35%), China National Tobacco (7.35%), and Beijing E-Town International Investment & Development (4.89%).

4.125. As described in the Secretariat's report for China's previous Review, certain tax incentives continue to be granted to companies in the IC industry, mainly through the 2015 revised Circular on Enterprise Income Tax Policies for Further Encouragement to Development of Integrated Circuit Industry (MOF and SAT No. 6, 2015), and the 2016 Circular on Enterprise Income Tax Policies for Software Industry and Integrated Circuit Industry (MOF and SAT No. 49, 2016).[80]

[77] OECD (2020), *Latest Developments in Steelmaking Capacity*. Viewed at: https://www.oecd.org/industry/ind/latest-developments-in-steelmaking-capacity-2020.pdf.

[78] OECD (2019), *Measuring Distortions in International Markets – The Semiconductor Value Chain*. Viewed at: http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/TC(2019)9/FINAL&docLanguage=En.

[79] According to the OECD report, at the provincial level, the National IC Industry Investment Fund is supplemented by a series of local funds, such as the Beijing IC Industry Equity Investment Fund. The authorities also indicate that the local funds have no government involvement.

[80] WTO document WT/TPR/S/375/Rev.1, 14 September 2018.

4.126. On 4 August 2020, the State Council released the Policy on Promoting High-quality Development of Integrated Circuit Industry and Software Industry (Guo Fa No. 8, 2020).[81] Under the Policy, China rolled out a wide range of favourable measures, such as preferential corporate income tax, favourable financing, support for R&D, preferential import duties for certain products, and simplified customs formalities. The authorities indicate that these measures are designed for domestic and foreign-invested companies on the same terms, as specified by the law. The Policy also seeks to strictly implement an intellectual property protection system for ICs and software and increase the penalties for violations of IPRs. On international cooperation, the policy aims to, *inter alia*, create an environment for international companies to invest China; encourage international companies to build R&D centres in China; and promote the "Go Global" initiative of the IC industry and software industry. The authorities state that the incentives measures under this Policy are set to replace the existing preferential tax treatment, after a transition period.

4.127. The National Informatization Development Strategy, which was issued in July 2016, seeks to guide the development of national informatization in the next 10 years. Action plans for IT and its subsectors are presented in Table 4.20.

Table 4.20 Action plans for IT and its subsectors, 2016-20

Plans	Goals (by 2020)	Date of issue
Information Industry Development Guide	Revenue of the information industry will reach CNY 26.2 trillion (up 8.9% from 2015); general trade exports of electronic information products will account for 30% of the industry exports (up 4.5% from 2015)	16 January 2017
Plan for the Development of the Information and Communication Industry (2016-2020)	ICT revenue will reach CNY 3.5 trillion (up 15.5% from 2015)	17 January 2017
Plan for the Development of the Software and Information Technology Services (2016-2020)	Revenue of software and IT will exceed CNY 8 trillion, with an annual growth rate of 13%, accounting for 30% of the IT industry; exports of software products will exceed USD 68 billion	17 January 2017
Plan for the Development of the Large Data Industry (2016-2020)	Revenue of large data-related products and services will exceed CNY 1 trillion, with an annual growth rate of 30%	17 January 2017
Three-Year Action Plan for the Development of Cloud Computing (2017-2019)	By 2019, the cloud computing industry will reach CNY 430 billion	30 March 2017
Three-Year Action Plan for the Development of Industrial Electronic Commerce	E-commerce purchases will amount to CNY 9 trillion and e-commerce sales to CNY 11 trillion	25 September 2017
Information Industry Development Guide	Revenue of the information industry will reach CNY 26.2 trillion (up 8.9% from 2015); general trade exports of electronic information products will account for 30% of the industry's exports (up 4.5% from 2015)	16 January 2017

Source: Information provided by the authorities.

4.3.2.5 Shipbuilding

4.128. The Made in China 2025 initiative considers shipbuilding as one of its 10 priority sectors. The Plan has the overarching strategic objective to make China strong in high-end shipbuilding. Furthermore, in the context of the 13th Five-Year Plan for Economic and Social Development, the MIIT unveiled in December 2016 the Shipbuilding Industry Deepening Structural Adjustment, Accelerating Transformation and Upgrading Action Plan (2016-20), outlining the reform and transformation upgrade needed for the shipbuilding industry.

4.129. In addition, the Plan aims to improve technological innovation, streamline capacity, incorporate intelligent manufacturing, improve overall quality and branding, promote military-commercial shipbuilding collaboration, and extend the global reach in terms of investments and partnerships. It also urges shipbuilders to comply with environmental good practices and promote

[81] State Council, *Policy on Promoting High-quality Development of Integrated Circuit Industry and Software Industry.* Viewed at: http://www.gov.cn/zhengce/content/2020-08/04/content_5532370.htm.

green shipping and energy efficiency. China's policy to promote a green shipbuilding industry was previously signalled in 2009, as the country proposed to accelerate the scrap-and-build of old fleets and eliminate single-hulled oil tankers, aiming to increase the safety of ships and decrease the environmental burden from shipping by replacing old fleets with new greener vessels.

4.130. The 13th Five-Year Plan of China Ship Accessory and Equipment Industry (2016-20) also pursued the objective of raising the proportion of domestic equipment to reach 80%, 60%, and 40%, respectively, in three ship models, high-tech ships, and ocean engineering equipment by end-2020. According to the authorities, the Plan and its objectives serve only as guidelines.

4.131. In January 2017, the MIIT published a statement encouraging financial institutions to support the domestic shipbuilding industry. According to an OECD study, the China Banking Regulatory Commission (CBRC) encouraged financial institutions to support the domestic shipbuilding industry and exports of domestically built ships.[82] The authorities indicate that over the years, they have provided support to the development of the real economy, including shipbuilding. As such, they note that in recent years, with the continuous improvement of China's shipbuilding technology and quality, as well as the enhancement of China's business environment, including financing conditions, demand for ships in China has increased, which has played a positive role in supporting Chinese shipbuilding enterprises to resist the adverse impact of long-term market downturn and maintain the healthy and stable development of the industry.

4.132. China is the world's leading shipbuilder. In recent years, the level of ship design and shipbuilding in China has improved rapidly. China is building large container ships of above 20,000 TEU in batch. Construction of large cruise ships has also begun, but the product structure still needs to be optimized. Low value-added and low-tech ship types, such as bulk carriers, still account for a large proportion (52% of the total delivery in 2020 in terms of compensated gross tonnage).

4.133. In 2019, a plan to merge the country's two largest state-owned shipbuilders – the China State Shipbuilding Corp. (CSSC) and the China Shipbuilding Industry Co. (CSIC) – was announced.[83] The authorities state that as at March 2021, the joint reorganization of the CSSC and the CSIC had not yet been completed.

4.4 Services

4.4.1 Financial services

4.4.1.1 Overview

4.134. China's policy on financial services seeks to prevent and control financial risks, serve the real economy, and further promote liberalization.[84] The authorities indicate that some current policy measures are geared towards addressing the rebound of non-performing bank assets, regulating shadow banking, and combatting financial corruption and crime. Specific efforts include actions to further improve the monetary policy transmission channel, improve the capital market, support small and medium-sized banks to replenish their capital and optimize their governance, improve the corporate governance of financial institutions, and regulate the qualifications and behaviour of shareholders. In the foreign exchange market, the authorities aim to promote market-based development of the foreign exchange market.

[82] OECD, *Science, Technology and Industry Policy Papers*, August 2019, No. 75.

[83] Both the CSSC and the CSIC are managed by the State-owned Assets Supervision and Administration Commission (SASAC) on behalf of the Government. The shipyards of the CSIC are located in northeast and northern China. Its subsidiaries include Dalian Shipbuilding Industry, Bohai Shipbuilding Heavy Industry, Qingdao Beihai Shipping Heavy Industry, and Shanhaiguan New Shipbuilding Industry. CSSC shipyards are mainly located in eastern and southern China, and its subsidiaries include Shanghai Waigaoqiao Shipbuilding, Jiangnan Shipyard (Group) Co., Ltd., Hudong-Zhonghua Shipbuilding (Group) Co., Ltd., and the rebranded CSSC Offshore & Marine Engineering Company (COMEC).

[84] The description will mainly focus on the regulatory developments that have occurred during the review period. See WT/TPR/S/375/Rev.1, 13 July 2018, paras. 4.143-4.172; WT/TPR/S/342/Rev.1, 12 October 2016, paras. 4.44-4.84; WT/TPR/S/300/Rev.1, 7 October 2014, paras. 4.48-4.84; WT/TPR/S/264/Rev.1, 20 July 2012, paras. 96-164; and WT/TPR/S/230/Rev.1, 5 July 2010, paras. 47-82.

4.135. The sector accounted for 7.9% of GDP in 2019 and 2018; it employed 8.2 million people in 2019, up from 6.9 million in 2018. Its structure is still unbalanced, with a significant predominance of banks over other types of financial institutions. The stock market is relatively small. Market capitalization of listed domestic companies stood at CNY 8.5 trillion in 2019, representing roughly 59.3% of GDP.[85] By contrast, according to the World Bank, the ratio of total bank credit to GDP stood at 164.6% in 2019. Commercial banks' dominance of the sector is evident from their participation in the system's total assets: over 82% of assets and liabilities of banking institutions, up from some 78% for both indicators in 2018. The authorities indicated that in 2020, the market capitalization of listed domestic companies stood at CNY 79.72 trillion, representing 78.5% of GDP. In 2018, 2019, and 2020, equity financing[86] of non-financial sectors stood at CNY 861.5 billion, CNY 918.9 billion, and CNY 1.26 trillion, respectively; non-financial companies issued CNY 1.65 trillion, CNY 2.58 trillion, and CNY 3.45 trillion in corporate bonds (including corporate goods, convertible bonds, and exchangeable bonds), respectively, in those same years through the exchange bond market. The exchange bond market issued local government bonds totalling CNY 2.56 trillion, CNY 2.83 trillion, and CNY 2.42 trillion, respectively, in 2018, 2019, and 2020.

4.136. State-owned banks are among the major players in China's financial sector. Large banks in the system (e.g. the Big Six state-owned commercial banks and the three policy banks[87]) and most other financial institutions (e.g. credit cooperatives, non-bank financial companies, and insurance companies) are either directly state-owned or owned by other SOEs. In a report to the NPC, the State Council indicated that total assets of state-owned financial institutions at end-2017 was CNY 241 trillion, which represented 88% of the total.[88]

4.137. On 24 January 2019, the number of China's official big state-owned banks, the most important banks in the domestic system, reached six, following the inclusion of the Postal Savings Bank of China by the authorities, alongside Industrial and Commercial Bank of China, Agricultural Bank of China, Bank of China, China Construction Bank, and Bank of Communications.[89] The authorities state that, in recent years, China has encouraged joint-stock commercial banks to optimize corporate governance structure, improve governance and execution efficiency, and accelerate high-quality development and transformation. In June 2019, the CBIRC approved the initial public offering (IPO) of the Postal Savings Bank of China in A-shares.

4.138. Assets of banks continued to grow during the review period. As at the end of the first half of 2020, the total CNY and foreign currency assets of China's banking institutions reached CNY 309.4 trillion, up 9.7% year-on-year. Profit growth of commercial banks was generally stable during the review period. However, in the first half of 2020, profits of commercial banks decreased year-on-year. Commercial banks accumulated a net profit of CNY 1.0 trillion, down by 9.4% year-on-year. The average rate of net return on equity was 10.35%. The average rate of net return on total assets (ROA) of commercial banks was 0.83%. Compared with the end of the first quarter of 2020, it decreased by 0.15 percentage points. The authorities note that risk resilience remained strong. The core Tier 1 capital adequacy ratio (CAR) of commercial banks (excluding branches of foreign banks) was 10.47%, down by 0.41 percentage points compared with the end of last quarter 2019; Tier 1 CAR was 11.61%, down by 0.34 percentage points, and CAR was 14.21%, down by 0.31 percentage points compared with the end of the last quarter of 2019.[90]

4.139. Regarding non-performing loans (NPLs), at the end of 2020 Q2, the outstanding balance of NPLs of commercial banks was CNY 2.74 trillion, up by CNY 124.3 billion compared with last quarter. The NPL ratio of commercial banks was 1.94%, an increase of 0.03 percentage points compared with the previous quarter, which seems to reflect the economic impacts of the COVID-19 pandemic.

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[85] World Bank, *Market Capitalization of Listed Domestic Companies (Current US$) in China.* Viewed at: https://data.worldbank.org/indicator/CM.MKT.LCAP.CD?locations=CN.

[86] Including that in the Shanghai and Shenzhen Stock Exchanges and National Equities Exchange.

[87] The three policy banks are China Development Bank, Export-Import Bank of China, and Agricultural Development Bank of China.

[88] Zhang, C. (2019*), How Much Do State-Owned Enterprises Contribute to China's GDP and Employment?,* World Bank document. Viewed at: http://documents1.worldbank.org/curated/en/449701565248091726/pdf/How-Much-Do-State-Owned-Enterprises-Contribute-to-China-s-GDP-and-Employment.pdf.

[89] Industrial and Commercial Bank of China, Agricultural Bank of China, Bank of China, and China Construction Bank of China are designated as global systemically important banks by the Financial Stability Board.

[90] CBIRC, *Supervisory Statistics of the Banking and Insurance Sectors – 2020 Q2*, 8 October 2020. Viewed at: http://www.cbirc.gov.cn/en/view/pages/ItemDetail.html?docId=921929&itemId=983.

At the same time, the balance of loan loss provisions of commercial banks reached CNY 5.0 trillion, an increase of CNY 206.0 billion from the previous quarter. The provision coverage ratio was 182.4% in the first half of 2020, down by 0.80 percentage points compared with the end of last quarter 2019. The authorities have introduced a phased deferment of loan repayments scheme, in which banks have been allowed to grant deferment of loan repayments to micro, small, and medium-sized enterprises (MSMEs) and other eligible firms upon application. In this case, banks could refrain from downgrading enterprises' loan risk categories, while upholding the approach of substantive risk assessment. The authorities note that in the first half of 2020, COVID-19 had a sizeable impact on China's economy, and new NPLs in the banking sector rose. In this regard, the CBIRC urged banks to do a more accurate classification of credit assets, adopt various means to make up for capital, increase the withdrawal of provisions in advance, continue to increase the disposal of NPLs, and strictly control the increment of new NPLs. They indicate that as at first quarter 2021 the risk of NPLs has generally eased.

4.140. Over the period leading up to the COVID-19 pandemic, the Government had been exploring the resolution framework of financial institutions, and in accordance with laws and regulations, it intervened in three relatively weak banks. In 2019, developments in China's banking industry were marked by the takeover of Baoshang Bank and the recapitalization of the Bank of Jinzhou and Hengfeng Bank. In November 2020, Beijing No. 1 Intermediate People's Court ruled for the bankruptcy liquidation of Baoshang Bank.

4.141. In the insurance sector, assets of companies increased during the review period, amounting to CNY 22.0 trillion in the first half of 2020. Compared with the beginning of the year, assets of property and casualty insurance companies registered CNY 2.4 trillion, up 5.3%; assets of life insurance companies reached CNY 18.6 trillion, up 9.6%; assets of reinsurance companies recorded CNY 513.3 billion, up 20.5%; and assets of insurance asset management companies were CNY 64.4 billion, up 0.5%.

4.4.1.2 Reform of the financial supervision framework

4.142. During the review period, the authorities carried out a significant reshuffle of China's financial supervision system, in response to the changing realities of the country's financial environment. The recent liberalization efforts by China and the context of financial innovation have been marked by the prevalence of new types of challenges and the emergence of a more diverse typology of market participants, mainly shadow banking. In 2017, the IMF and the World Bank considered that coordination and detailed exchanges of information between regulators were lacking; they pointed out the need for China to reform its financial supervision structure.[91] The authorities consider that the establishment of the CBIRC in 2018 significantly strengthened the overall coordination and penetration supervision of banking and insurance. The recent reforms, including strict enforcement, have led to a decrease in shadow banking activities. The authorities state that in 2017 shadow banking dropped by about CNY 20 trillion from its historical peak. This helped to maintain the stability of the financial system.

4.143. The new structure follows an integrated type of supervisory model. The Financial Stability and Development Committee (FSDC), established in November 2017, is a financial regulatory body under the auspices of the State Council and headed by a Vice Premier, which is higher ranked than the ministry-level heads of the other financial regulators. The FSDC is tasked with, *inter alia*, implementing the decisions and plans of the State Council regarding the financial sector; deliberating major reform and development programmes for the financial sector; coordinating financial reform, development and regulation, issues concerning monetary policy and financial regulation, and major issues concerning financial regulation; analysing international and domestic financial situations, addressing international financial risks, and conducting policy research on systemic risk prevention and treatment to maintain financial stability; and guiding local financial reform, development, and supervision of the duty performance of local financial regulatory authorities and governments. During the review period, a new supervisory arrangement was adopted, combining the oversight structure of banking and insurance to form one single regulator, the CBIRC. The CBIRC was established in April 2018, as a result of a merger of the CBRC and China Insurance Regulatory Commission (CIRC).

[91] IMF (2017), *People's Republic of China: Financial Sector Assessment Program – Detailed Assessment of Observance of Basel Core Principles for Effective Banking Supervision*. Viewed at: https://www.imf.org/en/Publications/CR/Issues/2017/12/26/Peoples-Republic-of-China-Financial-Sector-Assessment-Program-Detailed-Assessment-of-45516.

Its mandate is to, *inter alia*, regulate and supervise banking and insurance institutions, maintain fair competition in the banking and insurance sectors, and protect the legitimate rights and interests of stakeholders, including depositors and insurance policyholders.[92] It also collects and publishes statistics on industry, approves the establishment or expansion of banks and insurance companies, and resolves potential liquidity, solvency, or other problems that might occur in individual companies. The China Securities Regulatory Commission (CSRC) has a similar mandate in the securities and futures market that includes, *inter alia*, the responsibilities of policy formulation and implementation, including monitoring of compliance.[93]

4.144. As part of the reform of financial supervision, some legislative and rulemaking responsibilities originally vested in the CBRC, the CIRC, and the CSRC within their respective segments were transferred to the PBOC. Moreover, in addition to its central bank responsibilities of, *inter alia*, formulating and implementing monetary and exchange rate policies; regulating interbank markets, foreign exchange markets, the payment and settlement system, and the credit information system; and building a macro-prudential monitoring system, and conducting regular risk assessments, the PBOC also leads the effort in preventing systemic financial risk and promoting the stability of the financial system. It is responsible for establishing the mechanism for the assessment and identification of systemically important financial institutions, and leading the drafting of basic rules, monitoring, and analysis, as well as supervising such financial institutions.

4.4.1.3 Recent regulatory developments

4.4.1.3.1 Overview

4.145. China continued to reform its financial sector during the review period. While a number of licensing and prudential regulations were adopted or amended, several measures were taken to liberalize financial activities and to further promote foreign participation in the banking, insurance, pension fund management, and securities industries. As regards the opening of the financial market, in July 2019, the FSDC announced a package of 11 reform measures covering: (i) credit rating by foreign-invested companies; (ii) foreign participation in asset management; (iii) steps to encourage foreign financial institutions to invest in wealth management subsidiaries of Chinese commercial banks; (iv) foreign participation in pension fund management; (v) foreign participation in currency brokerage; (vi) lifting the foreign ownership cap on life insurance companies; (vii) lifting the restrictions on foreign ownership in insurance asset management companies; (viii) relaxing the entry restrictions on foreign-invested insurance companies; (ix) lifting foreign ownership limits on securities companies, futures companies, and fund management companies; (x) allowing foreign-invested financial institutions access to Type-A underwriting licences in the interbank bond market; and (xi) allowing foreign institutional access to inter-bank bond markets.

4.4.1.3.2 Regulatory developments in banking

4.4.1.3.2.1 Developments in licensing of foreign banks

4.146. The 2018 National Negative List lifts the cap on foreign ownership in Chinese commercial banks, which was previously set at 20% for an individual foreign investor and 25% for a group of investors. Accordingly, on 17 August 2018, the CBIRC published the Decision on Abolishing and Revising Some Rules, which revises the Implementation Measures for the Administrative Licensing Items Concerning Chinese-Funded Commercial Banks.

4.147. Furthermore, on 15 October 2019, the State Council amended the Regulations on Administration of Foreign-Funded Banks (State Council Order No. 720), followed in December 2019 by its implementing rules published by the CBIRC. The amendment abolishes the requirements that obliged foreign shareholders to have total assets of no less than USD 10 billion to establish wholly foreign-owned banks or a joint venture with Chinese banks, or USD 20 billion to establish branches in China. It also allows foreign investors to establish and operate both branches and wholly owned or joint ventures simultaneously in China, and operate agency collection and payment business. In addition, the amended regulation removed the requirement that "the Chinese sole or key shareholder of a joint venture bank shall be a financial institution". While the new regulation lowers

[92] CBIRC, *About the CBIRC*. Viewed at: https://www.cbirc.gov.cn/en/view/pages/ItemList.html?itemPId=974&itemId=975&itemUrl=About/Mandates.html&itemTitle=Mandates&itemPTitle=About%20the%20CBIRC.

[93] CSRC, *About CSRC*. Viewed at: http://www.csrc.gov.cn/pub/csrc_en/about/.

the minimum amount of the fixed-term CNY deposit that branches of foreign banks in China can accept from Chinese individuals (from no less than CNY 1 million to no less than CNY 0.5 million per deposit), it also removes the approval requirement applicable to foreign-invested banks engaging in CNY-related businesses.

4.148. The authorities indicate that on 27 April 2018 a Notice was issued by the CBRC[94], allowing the operating capital of foreign banks to be calculated in a "consolidated manner". Under the new framework, if the operating capital of an established branch meets the minimum required capital, the foreign bank may authorize the established branch to allocate its excess operating capital to an additional branch in China.[95]

4.4.1.3.2.2 Developments in banking prudential regulations and measures to tackle other systemic risks

4.149. Measures were taken during the review period to further improve China's prudential regulation framework, in accordance with the Core Principles of Effective Banking Supervision under Basel III (Revisions) and based on the actual situation of the banking industry in China.

4.150. On 24 April 2018, the authorities adopted the Measures for the Administration of the Large Exposures of Commercial Banks, effective on 1 July 2018, in line with Basel III supervisory framework for measuring and controlling large exposures. Under the Measures, the total exposure of a commercial bank to an interbank counterparty or a group of connected interbank counterparties shall not exceed 25% of the bank's net value of Tier 1 capital. The total exposure of a global systemically important bank to another global systemically important bank shall not exceed 15% of the bank's net Tier 1 capital.

4.151. On 25 May 2018, the Measures on Liquidity Risk Management of Commercial Banks were adopted, with an effective date of implementation of 1 July 2018. The Measures require commercial banks to increase the diversification of and to further stabilize their financing sources. They introduce three new indicators for liquidity risk supervision in response to Basel III reforms[96]:

- the net stable funding ratio (NSFR), which measures banks' long-term stable funding to support their business development, applies to lenders with assets of no less than CNY 200 billion;
- the adequacy ratio of the high-quality liquid assets (HQLA) ratio, which evaluates whether banks have enough HQLA to cover short-term liquidity gaps when under stress, applies to lenders with assets below CNY 200 billion; and
- the liquidity matching ratio, which applies to all lenders, measures the maturity matching of bank assets and liabilities.

4.152. In accordance with the Liquidity Risk Management Measures, a commercial bank with an asset size of CNY 200 billion and above shall continuously meet the minimum supervisory standards for the liquidity coverage ratio (LCR) (at 100%), NSFR (at 100%), liquidity ratio (at 25%), and liquidity matching ratio (at 100%). A commercial bank with an asset size of less than CNY 200 billion shall continuously meet the minimum supervisory standards for adequacy ratio of HQLA (at 100%), liquidity ratio (at 25%), and liquidity matching ratio (at 100%). Commercial banks shall fully implement the supervisory requirements for the liquidity matching ratio from 1 January 2020.

4.153. On 30 April 2019, the CBIRC launched a consultation on the draft Interim Measures for the Classification of Financial Asset Risks of Commercial Banks, following the release of new benchmarks by the Basel Committee on Banking Supervision. The draft measures extend the risk classification from loans to all financial assets that bear credit risk. The draft Measures, once adopted, would

[94] Notice of the General Office of the CBRC on Issues Concerning the Amendment and Implementation of Measures for the Administrative Licensing of Foreign-Funded Banks (CBIRC Notice No. 45, 2018).

[95] State Council Information Office, Notice of the CIRC on Further Liberalizing Market Access for Foreign Banks. Viewed at: http://www.scio.gov.cn/32344/32345/39620/41925/xgzc41931/Document/1666285/1666285.htm.

[96] These indicators are in addition to two indicators that were already in place: liquidity coverage ratio (LCR) and liquidity ratio.

replace the 2007 Guidelines for Risk-Based Loan Classification, which classifies commercial loans into five tiers: normal, special mentioned, substandard, doubtful, and loss. According to the authorities, the draft Measures extend the risk classification from loans to all financial assets that bear credit risk, emphasize the concept of debtor-centred classification, clarify the number of overdue days as an objective indicator of risk classification, and refine the risk classification requirements for restructured assets.

4.154. Several other measures were taken by the authorities to better contain financial risks. In January 2018, the CBRC released the Measures for the Administration of Entrusted Loans by Commercial Banks to regulate entrusted loans and risks thereof.[97] The Measures set clear guidelines on the sources of funds, loan purposes, and risk management, as well as strict supervisory rules on entrusted loans in commercial banks. Under the Measures, the CBRC forbids the use of entrusted loans for, *inter alia*, bonds, futures, and financial derivatives investment. Over the same period, the CIRC revised rules to tighten regulation over the use of insurance funds, in order to better serve the real economy.

4.155. In April 2018, China's financial regulators jointly issued the Guiding Opinions on Regulating the Asset Management Business of Financial Institutions, and a supplementary notice was issued on 20 July 2018 to clarify operational details.[98] The new rules set, *inter alia*, strict standards for investment in non-standard assets, standards of asset management product leverage, and strict controls on implicit guarantees.

4.156. In November 2018, the PBOC, the CBIRC, and the CSRC issued the Guidelines on Improving Regulation of Systemically Important Financial Institutions, which clarify the overall framework for the identification, regulation, and resolution of domestic systemically important financial institutions. In December 2020, the PBOC and the CBIRC issued the Measures for the Evaluation of Systemically Important Banks, which specify the scope, methodology, and procedure for evaluating domestic systematically important banks.

4.157. Other measures were also taken in relation to equity management by commercial banks. On 5 January 2018, the Interim Measures for the Equity Management of Commercial Banks were adopted by the CBRC. The Measures standardize the behaviour of shareholders of commercial banks. It also strengthens the information disclosure and reporting requirements imposed on shareholders that have a significant impact on the operation and management of commercial banks.

4.4.1.3.2.3 Other measures in banking

Foreign participation in bond rating

4.158. The FSDC announced in July 2019 that it would allow foreign-invested entities to provide credit ratings on all types of bonds in the Chinese interbank bond market and exchange-traded bond market. The move was initiated through the release on 1 July 2017 of PBOC Circular No. 7/2017, which opened the interbank bond market to foreign credit rating agencies. The authorities indicate that S&P Global and Fitch Ratings have established wholly foreign-owned subsidiaries in China.

4.159. Prior to the 2019 Announcement, S&P Global Ratings was the only foreign entity that was allowed to participate in giving ratings to all kinds of bonds on the China interbank bond market, including financial institution bonds, debt financing instruments for non-financial enterprises, structured products, and foreign bonds. On 11 July 2019, S&P Global (China) Ratings released its first rating report for a domestic issuer in China, rating ICBC Financial Leasing Co., Ltd. "AAA" with a "stable" outlook. On 14 May 2020, the US firm Fitch Ratings was allowed, via its wholly owned subsidiary, to conduct certain bond rating business in the interbank bond market. Moody's, another foreign-owned rating agency, operates in the Chinese market through equity participation. At present, Moody's holds 30% of the equity in China Chengxin International Credit Rating (CCXI),

[97] Entrusted loans refer to loans provided by a corporate lender to a corporate borrower through a commercial bank that acts as a trustee of the lender. Entrusted loans are considered to be shadow banking in China.

[98] Notice on Further Clarifying Relevant Matters in the Guiding Opinions on Regulating the Asset Management Business of Financial Institutions (detailed rules).

which is qualified to provide rating services for all bond products in the interbank and exchange markets.

Participation of foreign financial institutions in the establishment and investment of the wealth management subsidiaries of commercial banks

4.160. The FSDC announced that China will encourage foreign financial institutions to participate in the establishment of, and make investments in, the wealth management subsidiaries of Chinese commercial banks. Furthermore, joint ventures between foreign asset management agencies and Chinese banks or insurance companies to establish an asset management company controlled by the foreign party would be permitted. On 24 September 2020, the CBIRC approved the establishment of Huihua Wealth Management Co., Ltd., a joint venture co-invested by France's Amundi Asset Management (55%) and Bank of China Wealth Management Co., Ltd. (45%). In addition, on 11 August 2020, the CBIRC approved a joint wealth management venture among Blackrock Financial Management Inc., CCB Wealth Management Co., Ltd., and Fullerton Management Pte Ltd.

4.161. On 3 January 2020, the CBIRC published the Guiding Opinions on Promoting the High-Quality Development of the Banking and Insurance Industries, which encourage foreign-funded institutions to participate in various aspects of the wealth management business. While the Guiding Opinions further encourage business collaboration in financing (including trade finance, finance granted to SMEs, and commodity finance), they also emphasize collaboration in the wealth management business.

Currency brokerage by foreign companies

4.162. According to the FSDC's announcement, China will support foreign entities to establish currency brokerage firms using their own capital or to take an equity stake in a Chinese broker. On 3 September 2020, the CBIRC approved the establishment of Japan's Ueda Yagi Money Broking (China) Co., Ltd., China's first wholly foreign-invested currency brokerage.

Reform of the interest rate setting mechanism

4.163. On 17 August 2019, the PBOC released an announcement to improve the formation mechanism of the loan prime rate (LPR), to further reflect market dynamics.[99] Under the reforms, the new LPR will be linked to rates set during open market operations, namely the PBOC's medium-term lending facility (MLF), which is determined by broader financial system demand for central bank liquidity. Since August 2019, the new LPR is announced at 9:30 a.m. on the 20th of every month, in lieu of publishing it on daily basis. The rate had up until the reform been set using quotations from 10 contributing banks. The number of quotation banks was expanded from the top 10 nationwide banks by loan volume to 18 quotation banks, including 10 nationwide banks, 2 city commercial banks, 2 rural commercial banks, 2 foreign-invested banks, and 2 private banks, to further reflect the representativeness of quotation banks and encourage small- and medium-sized banks to use LPR.

4.4.1.3.3 Regulatory developments in insurance

4.4.1.3.3.1 Developments in licensing requirements

4.164. Since 2018, the Central Government has launched several measures to open up the insurance industry, including abolishing the requirement of having a representative office in China for at least two years and 30-year operation period to establish foreign-invested insurance institutions in China, allowing foreign insurance groups to invest in insurance institutions, and opening-up measures in the field of insurance intermediaries. On 15 October 2019, the State Council announced its decision to modify certain provisions in the Administrative Regulations on Foreign-

[99] PBOC, *China Monetary Policy Report Quarter Four, 2019*, 19 February 2020. Viewed at: http://www.pbc.gov.cn/en/3688229/3688353/3688356/3830461/3985458/2020030717393760199.pdf.

invested Insurance Companies[100]; it was followed in December 2019 by implementing rules published by the CBIRC.

4.165. Foreign ownership limits were also lifted on life insurers and insurance asset management companies. In 2018, the PBOC announced that the foreign ownership cap on life insurance companies would be raised to 100% by 2021. Subsequently, in July 2019, the FSDC announced that China will accelerate this transition timeline by allowing Chinese life insurance companies to be fully foreign-owned in 2020. On 9 December 2019, the CBIRC released the Notice Concerning Clarification of the Timeframe for the Cancellation of Foreign Ownership Restrictions on Joint Venture Life Insurance Companies. The Notice states that all restrictions on foreign ownership of joint-venture insurance companies that engage in life insurance operations will be officially lifted starting 1 January 2020, giving foreign investors the opportunity for full ownership. In addition, in line with FSDC's announcement, the CBIRC is revising the Interim Administrative Regulations on Insurance Asset Management Companies, which lift the 25% foreign ownership cap on insurance asset management companies.

4.4.1.3.3.2 Developments in prudential regulations

4.166. China's current solvency regime, the China Risk Oriented Solvency System (C-ROSS), was first brought into operation in January 2016. Under C-ROSS, three indicators need to be reported by insurers to the regulator in their solvency reports: (i) the core solvency ratio (the ratio of core capital to minimum capital); (ii) the overall solvency ratio (the ratio of core capital plus supplementary capital to minimum capital); and (iii) the integrated risk rating (IRR), which ranges from A (highest rating) to D (lowest) based on both quantitative capital requirements and an evaluation of unquantifiable capitalized risks.

4.167. In September 2017, the CIRC launched a public consultation on C-ROSS Phase II, to take into account the evolving nature of risks in the insurance industry. In January 2021, the CBIRC revised and issued the Regulations on the Solvency Management of Insurance Companies, which specify solvency standards as follows: core solvency ratio to be not less than 50%; comprehensive solvency ratio to be not less than 100%; and IRR, which measures the overall solvency risk of insurance companies (including capitalized and uncapitalized risks), shall not be lower than Class B. A company will be considered to meet solvency standards only when all three indicators are satisfied. According to the authorities, after two rounds of quantitative testing and a number of expert discussions by the insurance industry, a draft containing all rules under C-ROSS Phase II has been completed. The authorities asked to receive the opinions from the industry by end-January 2021.

4.4.1.3.4 Recent developments in securities activities

4.4.1.3.4.1 Foreign participation

4.168. In March 2021, the authorities stated that the legislative work on the Futures Law was ongoing. The Futures Law is set to be the next overarching legislation for China's futures industry.

4.169. Efforts have been made in recent years to develop and vitalize China's securities market, including expanding the range of products available to foreign investors, enlarging foreign investors' access to the Chinese market, and enhancing the legal regime governing the sector.

4.170. On 28 June 2018, the 2018 edition of the Special Administrative Measures for the Market Entry of Foreign Investment (Negative List) provided that foreign shareholding restrictions in securities companies, futures companies, fund management companies, and life insurance companies would be eased to allow investment up to a maximum stake of 51%, and the measures approved the lifting of all such restrictions in 2021. However, the shareholding restrictions for foreign securities companies, fund management companies, futures companies, and life insurance companies would be officially lifted in 2020, a year earlier than previously scheduled, which means that full foreign ownership is therefore allowed. The authorities note that caps on foreign ownership of fund management companies and securities companies have been abolished nationwide since

[100] State Council, *Amendments to Regulations in Finance Sector*, 15 October 2019. Viewed at: http://english.www.gov.cn/policies/latestreleases/201910/15/content_WS5da57b97c6d0bcf8c4c1524e.html.

1 January 2020 and 1 December 2020, respectively. In addition, caps on foreign ownership of futures companies were lifted from 1 January 2020.

4.171. China also extended market access opportunities for holders of Qualified Foreign Institutional Investors (QFII) status and Renminbi Qualified Foreign Institutional Investors (RQFII) status. Initially, these statuses were created to allow foreign institutional investors to have access to a range of Chinese financial products (entire A-share market, bond markets, and other asset classes). In September 2020, the CSRC, the PBOC, and State Administration of Foreign Exchange (SAFE) released the Measures for the Administration of Domestic Securities and Futures Investment by QFII and RQFII, which took effect on 1 November 2020. The measures consolidated the QFII and RQFII schemes into one and further streamlined application procedures. As a result, foreign institutions can make a one-time application for the new QFII status, which allows them to invest in China's securities and futures market in either CNY or a tradable foreign currency. The new rules also expanded QFIIs' scope of investment to include, *inter alia*, financial futures and commodity futures.[101]

4.172. On 7 May 2020, the PBOC and SAFE issued the Regulations on Fund Administration for Domestic Securities and Futures Investments by Foreign Institutional Investors (PBOC and SAFE Announcement No. 2, 2020) to end the quota system for both QFII and RQFII schemes. Under the defunct quota system, institutional investors seeking to participate in the QFII and RQFII schemes were required to apply for an individual quota that sets limits on how much they can invest in the capital market. The reform steps also aimed to, *inter alia*, allow the QFII/RQFII to independently choose the currency and time of inward remittance and perform integrated management of domestic and foreign currencies, and cancel the requirements that a Chinese certified public accountant must issue special audit reports on tax-related filing of investment income. The authorities note that the recent reforms have further promoted foreign participation, as at February 2021, a total of 576 QFII institutions had invested in China's capital market.

4.173. Regarding foreign participation in China's bond market, the authorities continued to gradually open the bond market to foreign market participants. Pursuant to the FSDC announcement in July 2019, the authorities note that China now allows foreign-invested entities to become Type-A lead underwriters in the interbank bond market, which allows them to act as lead underwriters of all types of bonds.

4.4.1.3.4.2 Measures to improve governance and prevent risks

4.174. On 26 October 2018, the 13th National People's Congress adopted a decision to revise the Company Law. The revision seeks to improve the current share repurchase regime, mainly by broadening the share repurchase scenarios, simplifying the decision-making procedures for share repurchase, extending the period in which a company holds the shares that it had repurchased, increasing the upper limit of the number of shares of a company held by the company itself, establishing and improving the treasury stock system of joint-stock companies, and supplementing the normative requirements of share repurchase of listed companies. Before the revision, companies were banned from buying back their publicly traded shares except under four circumstances.[102] The new regime further loosens the restrictions by allowing companies to convert repurchased shares into corporate bonds issued by listed companies, or to buy back shares to defend their corporate value and shareholders' interests.

4.175. An amendment to the Securities Law was adopted on 28 December 2019 and entered into force on 1 March 2020.[103] Major changes in the amended Securities Law include implementing a registration-based IPO regime (which replaces the current approval regulatory framework), enhancing disclosure requirements and investor protection rules, and strengthening regulatory enforcement and risk prevention and control. The authorities indicate that in accordance with the

[101] CSRC, *CSRC, PBC and SAFE Release the Measures for the Administration of Domestic Securities and Futures Investment by Qualified Foreign Institutional Investors and RMB Qualified Foreign Institutional Investors*, 25 September 2020. Viewed at: http://www.csrc.gov.cn/pub/csrc_en/newsfacts/release/202009/t20200925_383652.html.

[102] The four circumstances were capital reduction, merger with other companies, awarding the shares to employees, and at the request of dissident shareholders.

[103] State Council, *New Securities Law Takes Effect*, 1 March 2020. Viewed at: http://english.www.gov.cn/policies/latestreleases/202003/01/content_WS5e5b6168c6d0c201c2cbd4dc.html.

Securities Law, the administrative measures for the issuance and trading of asset-backed securities and asset management products shall be formulated by the State Council in accordance with the principles of the Law.

4.176. The authorities have also taken several measures with a view to further strengthening the supervision over securities companies, regulating certain activities of securities companies, and preventing risks faced by securities companies. In this respect, in 2018, the CSRC, *inter alia*, issued the Guidelines for the Internal Control of Investment Banking Business of Securities Companies and revised the Administrative Measures on Sponsorship for Securities Issuance and Listing. In addition, the CSRC issued the Regulations on the Administration of the Equity of Securities Companies, the Regulations on Issues Concerning the Implementation of the Regulations on the Administration of the Equity of Securities Companies, and the Administrative Measures for the Private Asset Management Business of Securities and Futures Operating Institutions. In January 2020, the CSRC revised the Regulations on the Calculation Standards for Risk Control Indicators of Securities Companies.

4.177. In July 2020, the CSRC and the CBIRC jointly revised and issued the Administrative Measures for Securities Investment Fund Custody Business. It allows foreign bank branches in China to apply for qualification as a securities investment fund custody business and their financial indicators such as net assets can be calculated based on the overseas head office. The Measures also specify the responsibilities that shall be undertaken by overseas head offices and strengthen supporting risk management and control arrangements.[104]

4.178. Several measures were adopted to further modernize the futures market. On 7 September 2018, the Announcement on Further Strengthening the Collection of Trading Terminal Information from Futures Operators Clients (CSRC Announcement No. 27, 2018) was adopted. It requires futures companies to ensure, *inter alia*, that the trading orders placed by its clients through trading terminal software directly reach their information system.

4.179. In June 2019, the CSRC issued the Amended Measures for the Supervision and Administration of Futures Companies, setting out stricter qualification requirements for major shareholders of futures companies, especially the controlling shareholders and the largest shareholders, than those in the 2014 version of the Measures. The Amended Measures also set disciplines on, *inter alia*, the obligations of the shareholders, notably when it comes to the management of futures companies, and the management of domestic branches, subsidiaries, and overseas operating institutions of futures companies.[105]

4.180. The authorities indicate that in February 2019 the CSRC issued the amended Regulation on the Classification and Supervision of Futures Companies.[106] On 15 January 2021, the CSRC issued a Decision on Amending and Abolishing Some Rules on Securities and Futures (CSRC Order No. 179), which amended the Administrative Measures for the Qualifications of Directors, Supervisors and Senior Managers of Futures Companies and the Measures for the Administration of Futures Exchanges.

4.4.1.3.4.3 Foreign activities of Chinese companies

4.181. Regarding foreign activities of Chinese securities companies, in September 2018, the CSRC issued the Administrative Measures for the Overseas Establishment, Acquisition, and Shareholding of Financial Institutions of Securities Companies and Securities Investment Fund Management Companies to further clarify the conditions for Chinese companies going abroad and to strengthen the parent company's control over its overseas subsidiaries.

[104] CSRC*, CSRC and CBIRC Jointly Promulgated the Administrative Measures on Custodian Business for Securities Investment Funds*, 11 July 2020. Viewed at: http://www.csrc.gov.cn/pub/csrc_en/laws/rfdm/DepartmentRules/202007/t20200711_379940.html.

[105] CSRC, CSRC Order No. 155, 2019, Measures for the Supervision and Administration of Futures Companies. Viewed at: http://www.csrc.gov.cn/zjhpublic/zjh/201906/t20190614_357276.htm.

[106] CSRC, CSRC Notice No. 5, 2019, Decision on Amending the Regulation on the Classification and Supervision of Futures Companies. Viewed at: http://www.csrc.gov.cn/pub/zjhpublic/zjh/201902/t20190222_351228.htm.

4.4.1.3.5 Developments in pension fund management

4.182. The FSDC announced that China will permit foreign financial institutions to set up or invest in Chinese private pension fund management companies. However, China's pension fund management sector is still operating under a pilot programme. According to the authorities, China continues to adopt the model of "one-on-one approval for eligible companies". They indicate that the CBIRC has not received formal applications from foreign financial institutions to set up or invest in private pension fund management companies in China.

4.183. The only foreign presence in the industry was made effective on 27 March 2019, as the CBIRC approved Heng An Standard Retirement Insurance Co., Ltd., a joint venture between the UK insurance company Standard Life Aberdeen PLC and Tianjin TEDA International to establish the first foreign-invested pension insurance company in China. Currently, there are eight established Chinese pension insurance companies.

4.184. China's private pension segment has considerable growth potential. The authorities are considering measures to promote individual pillar-three pensions, including formulating new laws and regulations, and launching preferential tax policies.

4.4.1.3.6 Measures to ease cross-border transactions and promote CNY internalization

4.185. Measures were taken during the review period to promote the internationalization of the CNY – among them, the recent reforms of the QFII/RQFII status (as described in Section 4.4.1.3.4.1) to further facilitate qualified overseas investors to invest in China's capital market. In 2019, the PBOC reformed the procedures for foreign Central Banks to have better access to China's interbank market.

4.186. In addition, the Notice on Further Improving Cross-border CNY Business Policies to Promote Trade and Investment Facilitation (Yin Fa No. 3, 2018), adopted on 5 January 2018, aims to promote cross-border CNY business in relation to trade and investment. The Notice provides that companies may settle with CNY for all cross-border transactions that can be settled in foreign currencies in accordance with the law. It also states that domestic enterprises may transfer CNY funds raised abroad by issuing bonds and stocks back to the domestic market for use as needed.

4.187. On 23 October 2019, SAFE issued the Circular on Further Promoting the Facilitation of Cross-border Trade and Investment (Hui Fa No. 28, 2019). The regulation consists of measures to simplify the foreign exchange control requirements under both current account transactions (e.g. import/export of goods and services) and capital account cross-border transactions (e.g. equity investment and debt financing), and relax the longstanding domestic equity investment restriction imposed on FIEs. Prior to this reform, only FIEs with the explicit wording of "investment" in their business scope (such as foreign-invested holding companies and foreign-invested venture capital/private equity investment enterprises) were allowed to use their capital funds to make further onshore equity investments. Now, with the implementation of the regulation, normal FIEs (without an investment business scope) are also allowed to utilize and convert their capital received from foreign investors to make equity investment provided that: (i) the restrictions of the applicable Negative List are complied with, and (ii) the investment is genuine and legitimate.

4.188. Regarding the necessary infrastructure for CNY internationalization, on 2 May 2018, the CNY Cross-border Interbank Payment System (Phase II) was established. According to the authorities, it improved the settlement mode, extended the system's external service hours, lengthened the list of direct participants, and further improved the application system design.

4.4.1.3.7 Developments in the fintech industry

4.189. The authorities encourage financial institutions to adopt new information technologies, as a way to improve the accessibility of financial services and reduce risk through the application of big data and artificial intelligence. In 2019, the PBOC issued the Fintech Development Plan, which lays out the basic principles, development goals, and supportive measures from 2019-21. The PBOC

conducted a pilot programme in 10 different places.[107] In recent years, the surge of fintech has opened new possibilities for expanding access to credit for small borrowers, including small and medium-sized enterprises (SMEs). Big Tech companies, such as Alibaba and Tencent, have extended loans to millions of small borrowers.[108] The leading virtual banks, MYbank (affiliated with Alibaba), WeBank (affiliated with Tencent), and XW Bank (affiliated with tech giant Xiaomi), provide loans to millions of small firms annually, more than 80% of which have no credit history.[109] The Central Bank's digital currency (e-CNY), which is currently being tested, is also expected to expand the coverage of payment services to unbanked households and small firms. This could improve their access to finance and further promote financial inclusion.

4.190. The 13th Five-Year Plan for the Development of Information Technology in China's Financial Sector also seeks to promote, *inter alia*, the innovative development of inclusive finance, financial infrastructure development, comprehensive financial statistics, and financial IT. The Plan identifies the following priorities: (i) attaining international advanced standards with regards to financial information infrastructure; (ii) harnessing IT to drive financial innovation; (iii) comprehensively deepening financial standardization; (iv) improving the security of all financial networks; and (v) significantly improving governance capabilities of financial IT.[110]

4.191. Baidu, Alibaba, and Tencent are responsible for most of the high-profile innovations that have occurred in China's finance industry. Millions of people use Tencent's WeChat Pay and Alibaba's Alipay daily to make third-party mobile payments. The fintech products currently offered include mainly online payment services, Internet banking, Internet loans, crowdfunding, Internet wealth management, Internet securities, and Internet insurance. Tech companies are required to obtain the corresponding financial licences to conduct financial services business.

4.192. There is no single comprehensive regulation that governs fintech activities. Various administrative measures on financial services apply to fintech business operators. Additionally, China has not set up a single supervisory authority for the regulation of the fintech industry. As indicated in Table 4.21, the relevant businesses of the fintech industry are subject to the supervision of the traditional regulatory authorities, depending on the characteristics of the services provided. The authorities indicated that in the fintech industry, financial innovation must be carried out on the premise of prudential supervision; supervision must be strictly implemented. All financial activities must be licensed and fully regulated in accordance with the law to avoid regulatory arbitrage. According to the authorities, all types of entities, domestic or foreign, are treated equally.

Table 4.21 Overview of the regulatory regime for fintech

Business	Regulator	Specific legislation
Online payment	People's Bank of China	Administrative Measures on Payment Services of Non-financial Institutions; Management Measures for Bank Card Acquiring Business; Administrative Measures on Online Payment Business of Non-bank Payment Institutions; Barcode Payment Service Specification (Trial)
Insurance sales on the Internet	China Banking and Insurance Regulatory Commission	Measures on Internet Insurance Business
Online trust business and consumer financing	China Banking and Insurance Regulatory Commission	..
Blockchain information service	Cybersecurity Administration of China	Administrative Rules on Block Chain Information Services

.. Not available.

Source: Information provided by the authorities.

[107] The projects include the Industrial and Commercial Bank of China's supply chain financing project; the Bank of Agriculture's microloan product; a payment token project jointly developed by Citic Bank, China UnionPay, Baidu's fintech arm Du Xiaoman Financial, and the online travel service platform Ctrip.com; Citic Bank's application programming interface solutions; Bank of Ningbo's fast loan product; and China UnionPay, Xiaomi and JD's joint project using cell phones as point-of-sale devices.

[108] Frost et al. (2019), *BigTech and the Changing Structure of Financial Intermediation*. Viewed at: https://www.bis.org/publ/work779.pdf.

[109] IMF (2020), *Fintech Credit Risk Assessment for SMEs: Evidence from China*, IMF working paper WP/20/193. Viewed at: https://www.imf.org/en/Publications/WP/Issues/2020/09/25/Fintech-Credit-Risk-Assessment-for-SMEs-Evidence-from-China-49742.

[110] PBOC. Viewed at: http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/3333848/index.html.

4.193. On 10 November 2020, the State Administration for Market Regulation (SAMR) issued a consultation draft of the Anti-Monopoly Guidelines on the Sector of Platform Economies, aiming to prevent monopolistic behaviour by Internet platforms to ensure fair competition and strengthen anti-monopoly law enforcement. All companies engaged in Internet platform business must be subject to anti-monopoly supervision. The draft expressly refers to the Anti-Monopoly Law, and set rules to discipline the online market, in compliance with the provisions already stated under the Anti-Monopoly Law.

4.194. Since 4 September 2017, initial coin offerings (ICOs), i.e. fundraising in which virtual currencies (such as Bitcoin) are raised by way of the sale and circulation of digital tokens, are strictly prohibited in China, pursuant to the Announcement on Preventing Risks relating to Fundraising through Token Offerings. Consequently, financial institutions and non-bank payment institutions are prohibited from providing products or services for token fundraising activities, including account opening, registration, trading, clearing, settlement, and other services.

4.195. On 21 March 2018, the PBOC circulated Announcement No. 7, 2018, which allows qualified foreign institutions to provide electronic payment services in respect of both domestic transactions and cross-border transactions. To provide third-party electronic payment services in China, qualified foreign investors must establish a foreign-invested payment institution and obtain a payment business operating licence in accordance with the 2010 Administrative Measures on Payment Services of Non-financial Institutions. In addition, they must store, process, and analyse in Chinese territory all personal information and financial data collected and generated in China. Where international transfers of such information are necessary to process cross-border transactions, the transfer must comply with applicable laws and regulations.

4.196. As a consequence of the reform, on 31 December 2020, the US fintech company PayPal completed a stake acquisition deal that makes it the first foreign company to offer digital payment services in China. PayPal acquired a 30% stake in Gopay, a Chinese provider of electronic payment services, more than a year after its purchase of 70% of Gopay, making it the sole owner.

4.4.2 Telecommunications

4.4.2.1 Overview

4.197. China is the world's largest telecommunications market in terms of mobile, fixed-telephone, fixed-broadband, and mobile broadband subscriptions.[111] In 2020, information, communication, and computer services accounted for 16.5% of total services exports (14.3% in 2019) and 8.7% of total services imports (5.3% in 2019).

4.198. According to the authorities, China's telecommunications policy aims at guiding and facilitating a sound and high-quality development of the information and communication industry, including guiding technological transformation and upgrades, optimizing the allocation of resources and productive factors, improving the accessibility and affordability of information and communication services, maintaining fair market competition environment, safeguarding the legitimate interests of market entities and users, and ensuring network security.

4.199. China's telecommunications market has experienced noticeable development in recent years, in particular with regard to optical broadband, and 4G and 5G networks. As at September 2020, the proportion of optical fibre users reached 93%, and the proportion of 4G users reached 80%. China was ranked 80th of 176 economies in the 2017 International Telecommunication Union (ITU) Information and Communications Technology Development Index, moving up three places from the previous year.[112]

4.200. The main economic characteristics of the telecommunications sector and their recent evolution are described in Box 4.2. Table 4.22 provides average telecom prices in 2019 in China, computed by the ITU as a percentage of the gross national income (GNI) per capita. The authorities indicate that China's telecommunications charges are determined by the market and have been set by telecom companies since 2014. They also note that since 2018 the out-bundle charges for local

[111] ITU (2018), *Measuring the Information Society*. Viewed at: https://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2018/MISR-2018-Vol-2-E.pdf.

[112] ITU, *ICT Development Index 2017.* Viewed at: https://www.itu.int/net4/ITU-D/idi/2017/index.html.

mobile calls have been in the range of CNY 0.10-CNY 0.15/minute, and the charges for international long-distance calls were CNY 0.49-CNY 2.99/minute, while the charges for local and international calls made by fixed lines have been about CNY 0.10/minute and CNY 0.39-CNY 6.88/minute, respectively.

Box 4.2 Selected indicators of the telecommunications sector, 2020

Total telephone subscribers (per 100 inhabitants): 1.776 billion (126.9)
Mobile phone subscribers (% total telephone subscribers): 1.594 billion (89.8)
Internet users (per 100 inhabitants): 989 million as at end-March 2020 (70.4)
Broadband Internet subscribers: 484 million

Main actors
Number of companies providing value-added telecoms services: about 85,000 nationwide by end-June 2020.
Names and market shares of the leading companies for fixed telecoms services (2020): China Telecom (61.9%), China Unicom (26.0%), and China Mobile (12.1%).
Name and market shares of the leading companies for mobile telephones services (2020): China Mobile (58.8%), China Telecom (22.0%), and China Unicom (19.2%).
Name and market share of the broadband Internet services (2020): China Telecom (38.7%), China Mobile (43.5%), and China Unicom (17.8%).
Foreign ownership participation in telecom companies (2019): In the basic telecoms sector, the proportions of overseas public shares of China Telecom, China Mobile, and China Unicom were 17.15%, 27.28%, and 20.1%, respectively.
By end-2020, a total of 395 foreign-invested enterprises had entered China's telecoms market, mainly engaged in information services and e-commerce-related businesses.
State ownership (2019): In the field of basic telecoms services, the proportions of state-owned shares of China Telecom, China Mobile, China Unicom, and China Broadcasting Network were 82.85%, 72.72%, 52.10%, and 100.00%, respectively.

Source: Information provided by the authorities.

Table 4.22 Telecoms prices as a percentage of GNI per capita, 2019

	China	Asia and Pacific	World
Mobile voice prices (% GNI per capita)	0.4	2.5	4.3
Mobile data prices (% GNI per capita)	1.0	2.7	4.3
Fixed-broadband prices (% GNI per capita)	0.6	6.4	10.3

Source: ICT, *Price Trends 2019*. Viewed at: https://www.itu.int/en/mediacentre/Documents/Documents/ITU-Measuring_Digital_Development_ICT_Price_Trends_2019.pdf.

4.201. According to the ITU, under the universal service policy, which has remained unchanged since the previous Review, enterprises invested more than USD 6.2 billion between 2015 and 2017 to build optical fibre in 130,000 administrative villages, covering 95% of the nation's administrative villages.[113] The authorities did not confirm these figures.

4.4.2.2 Regulatory framework

4.202. The regulatory regime for telecoms services in China has been described in detail in previous Reviews[114] and has remained largely unchanged. The principal statute governing telecoms services remains the 2000 Telecoms Regulations (last amended in 2016). It is supplemented by a large body of implementing regulations covering a wide range of matters, including licensing, fee collection, interconnectivity, and foreign participation. For example, the Classified Catalogue of Telecommunications Services 2015 lists the classifications of basic telecoms service and value-added telecoms service. These classifications affect the licensing and administration of a particular telecoms service. Telecoms licences are granted for a limited scope of operation, i.e. the holder of a telecoms licence is only permitted to carry out the activities specified in the licence.

4.203. The MIIT is the main regulator of the telecommunications and information service market. It is in charge of the licensing and administration of telecoms services and access tariffs and charges.

[113] ITU (2018), *Measuring the Information Society Report 2018*, Vol. 2. Viewed at: https://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2018/MISR-2018-Vol-2-E.pdf.

[114] Notably in WTO documents WT/TPR/S/375/Rev.1, 13 July 2018, paras. 4.119-4.142; WT/TPR/S/342/Rev.1, 12 October 2016, paras. 4.29-4.43; WT/TPR/S/300/Rev.1, 7 October 2014, paras. 4.37-4.47; WT/TPR/S/264/Rev.1, 20 July 2012, paras. 165-204; and WT/TPR/S/230/Rev.1, 5 July 2010, paras. 83-98.

It is also responsible for formulating national telecoms regulations, standards, and policies. The telecoms administration bureaus of provinces, autonomous regions, and municipalities (the Local Communications Bureaus) under the MIIT are in charge of administrating telecoms services within their jurisdictions, as well as the initial review of applications to operate nationwide.

4.204. The regulations on foreign investment in telecommunications services in China are stipulated in, *inter alia*, the Special Administrative Measures on Access to Foreign Investment (National Negative List) and the Pilot Free Trade Zone Special Administrative Measures on Access to Foreign Investment (PFTZ Negative List). Telecommunications companies are subject to the provision of telecommunications services pursuant to the market opening commitments made at China's accession to the WTO. These specify that the foreign share ratio for value-added telecommunications services (except for e-commerce, domestic multi-party communications, storage-forwarding, and call centres) shall not exceed 50%; for basic telecommunications, the controlling stake shall be held by the Chinese national. Within the PFTZs, there is no restriction on the foreign share ratio for investment in information services (application store only) and Internet access service. For investment in domestic virtual private network (VPN) services, the foreign share ratio shall not exceed 50%.

4.205. Pursuant to the Mainland China and Hong Kong, China/Macao, China Closer Economic Partnership Arrangement, Internet data centre (IDC) services are open to service providers from Hong Kong, China and Macao, China, and the share ratio of Hong Kong, China or Macao, China service providers shall not exceed 50%.

4.206. Since 2018, notable developments in the telecommunications sector have included the launch by China of its first 5G licences, a new law on e-commerce, regulations on cybersecurity, the launch of a number portability programme, measures to promote facility sharing, and a series of measures to further modernize the telecoms sector.

4.4.2.2.1 Developments in 5G

4.207. On 6 June 2019, the MIIT issued the Basic Telecommunication Business Operation License to three state-owned carriers (China Telecom, China Mobile, and China Unicom) and a state-owned broadcasting company (China Broadcasting Network) to approve their operation of "fifth generation digital cellular mobile communication services". As a consequence, the MIIT revised the Telecommunication Services Classification Catalogue (2015) to accommodate the new item. The 2019 revised Catalogue adds "A12-4 Fifth generation digital cellular mobile communication services" to "A12 Cellular mobile communication services" under Category A "Basic telecommunication services". The new item refers to voice, data, multimedia, and other services provided through fifth-generation (5G) digital cellular mobile communication networks. According to the authorities, by end-June 2020, more than 400,000 5G base stations had been built.

4.208. In March 2020, the MIIT issued the Notice on Promoting the Accelerated Development of 5G. It provides guidance for the industry to fully promote 5G network construction, application popularization, technological development, and security assurance.

4.209. In November 2019, the MIIT issued the Plan for Advancing the 512 Program on 5G Plus Industrial Internet, a policy document to facilitate the integrated development of 5G and industrial Internet. It aims to promote the use of 5G technologies to upgrade five public service platforms by 2022.

4.4.2.2.2 Facility sharing

4.210. On facility sharing, the MIIT continues to require basic telecommunications enterprises to carry out infrastructure construction in accordance with the requirements of sharing basic telecommunications facilities or co-construction. In addition, Internet access service providers in China can provide Internet access services to users by leasing the network resources from basic telecommunications companies and wired access facilities service providers. In June 2020, China issued the Implementation Opinions on Supporting the Accelerated Development of 5G Networks Through the Co-construction and Sharing of Telecommunication Infrastructure. According to the authorities, as at end-June 2020, the sharing rate of newly built towers in China stood at 90%, which

is equivalent to sharing the construction of 780,000 towers and saving a total of CNY 140 billion. As at end-2020, China's telecom operators had opened more than 330,000 shared 5G base stations.

4.4.2.2.3 Number portability

4.211. In November 2019, in order to further improve the service quality of the telecommunications industry, China officially rolled out a mobile number portability programme, which allows mobile users to keep their phone numbers when switching to a new mobile provider. According to the authorities, as at end-2020, 19.18 million subscribers had taken advantage of number portability, accounting for 1.48% of the total number of mobile subscribers. As a first step in this programme, the MIIT had carried out a number portability trial in Tianjin and Hainan Provinces in November 2010 and expanded it to five provinces in 2017. As at end-June 2017, number portability had been employed by more than 790,000 subscribers in five provinces.[115]

4.4.2.2.4 Spectrum management

4.212. There were also new developments in the framework of spectrum management. In 2019, the MIIT promulgated provisions on the management of the use of the frequencies of enhanced Machine-Type Communication (eMTC) systems, specifying the usage frequency of eMTC systems, the management requirements of base station terminals, and other content. The Ministry also issued Announcement No. 52, 2019, which defines the catalogue, radio frequency specifications, and management requirements of micro-power short-range radio transmitting equipment, with a view to further standardizing the management of such equipment.

4.4.2.2.5 Cloud computing

4.213. The authorities state that since the previous Review, no substantial progress has been made with regard to cloud-enabled services regulations. The Notice on Standardizing Cloud Service Market and Facilitating the Sound Development of the Industry, which was adopted in 2017, has not yet been implemented. However, the authorities note that the Notice sets a clear path and institutional guarantees for foreign investors to participate in China's market for cloud-enabled services. While cloud services are not open to foreign investment[116], the authorities allow the joint provision of cloud services through contractual partnerships between Chinese and foreign enterprises, where the Chinese enterprise applies for a cloud services licence to conduct a partnership with a foreign-invested enterprise.

4.4.2.2.6 Cybersecurity

4.214. The Cybersecurity Law, which entered into force on 1 June 2017, remains in force; it aims "to ensure network security, to safeguard cyberspace sovereignty, national security and the societal public interest, to protect the lawful rights and interests of citizens, legal persons and other organizations, and to promote the healthy development of economic and social informatization". Article 37 of the Law requires "critical information infrastructure" operators (CIIOs) to store within the mainland of China all personal information and "important data" gathered or produced within the mainland of China.[117] The Law further stipulates conditions regarding a security assessment of locally stored data. During the review period, in order to implement the Law, several regulations, administrative measures, and technical specifications were adopted or published for public comment. According to the authorities, regulations concerning CIIOs are being drafted. On 28 May 2019, the Cyberspace Administration of China (CAC) released, for public comment, draft measures to clarify the definition of "important data". In addition, the Draft Measures on Security Assessment of Cross-Border Transfer of Personal Information were released on 13 June 2019. With respect to cross-border transfer of scientific data, on 17 March 2018, the Measures for the Administration of Scientific

[115] WTO document WT/TPR/S/375/Rev.1, 13 July 2018.

[116] In China's Classification Catalogue of Telecommunications Services (2015 Version), cloud services are a form of Internet data centre (IDC) services for which China did not make a commitment when it acceded to the WTO.

[117] Article 31 states that operators in the following sectors are liable to be designated as CIIOs: public communication and information services, power, traffic, water resources, finance, public service, e-government and other critical information infrastructure that if destroyed, suffer a loss of function, or experience a data leak might seriously endanger national security, national welfare, the people's livelihood, or the public interest.

Data took effect. The Measures include basic rules for managing scientific data in China and would, *inter alia*, regulate cross-border transfers of this type of data.

4.215. Regarding network security, Article 21 of the Cybersecurity Law stipulates that China shall implement a tiered system of network security protection, in which network operators are required to comply with a Multi-Level Protection Scheme (MLPS). Network operators shall, according to the requirements of the tiered system, fulfil security protection obligations. The tiered system is a basic system in the field of network security determined by law. Network operators shall, in accordance with the significance of their networks in such factors as national security, economic construction and social life, and the severity of the harm to national security, social order, public interest, and the legitimate rights and interests of citizens, legal persons, and other organizations, determine the level of security protection according to the degree of harm to the factors. There are five levels of network security protection, escalating from Level 1 to Level 5. A network at Level 2 or above shall be filed with a public security authority at or above the prefectural level. In order to implement the tiered system, China issued a series of technical standards, and improved the standard system with technological innovation and development. In line with the MLPS's implementation, the SAMR issued a series of national standards on 13 May 2019, to provide detailed technical requirements for enhancing the MLPS.[118] These new national standards, together with the Regulation on the Cybersecurity Multi-level Protection Scheme (which came into force on 1 December 2020), constitute a substantial base for what is referred to as MLPS 2.0, as they impose heightened regulatory requirements compared with MLPS 1.0. Public security organs have strengthened their supervision, inspection, and guidance on the implementation of the tiered system to ensure the security of network operation. Any network operator who fails to perform the security protection obligations as prescribed by Article 21 shall be punished in accordance with Article 59 of the Cybersecurity Law.

4.216. The Regulation on Internet Security Supervision and Inspection by Public Security Organs (promulgated on 15 September 2018 and came into effect on 1 November 2018) is another regulation along the lines of Internet protection in China.[119] It regulates the authorities of Public Security Bureaus (PBSs) in inspecting Internet service providers, including Internet information providers, Internet cafes, and data centres. Under the Regulation, PBSs must comply with legal authorities and procedural requirements when entering business sites, reviewing and copying relevant information, and checking technical measures in place to safeguard network and information security.

4.217. The Encryption Law was also enacted on 26 October 2019 and came into effect on 1 January 2020.[120] It encourages enterprises to voluntarily apply to qualified testing and certification agencies for the testing and certification of their commercial encryption products. However, testing and certification might be mandatory for certain commercial encryption products and services that may affect "national security, national welfare and people's livelihood, and society's interest" and shall be included in the Catalogue of Critical Network Equipment and Network Security-specific Products.[121]

4.218. In China's ongoing efforts to regulate its cyber domain, on 17 January 2017, the MIIT issued the Circular on Cleaning up and Regulating the Internet Access Service Market, which is legislation that prohibited the use of VPNs as at 31 March 2018. However, it would appear that companies in China can still apply to the Government to offer VPNs for commercial purposes.

4.219. There were also new developments regarding the protection of personal information. On 6 March 2020, the SAMR and the Standardization Administration of China (SAC) jointly published the Information Security Technology – Personal Information (PI) Security Specification (GB/T 35273-2020) to replace the 2017 version (GB/T 35273-2017). The Specification took effect on 1 October 2020. The Specification is a national standard (not mandatory, in principle), as well as

[118] These standards include: Information Security Technology – Baseline for Classified Protection of Cybersecurity (GB/T 22239-2019); Information Security Technology – Technical Requirements of Security Design for Classified Protection of Cybersecurity (GB/T 25070-2019); and Information Security Technology – Evaluation Requirements for Classified Protection of Cybersecurity (GB/T 28448-2019).

[119] State Council. Viewed at: http://www.gov.cn/gongbao/content/2018/content_5343745.htm.

[120] NPC. Viewed at: http://www.npc.gov.cn/npc/c30834/201910/6f7be7dd5ae5459a8de8baf36296bc74.shtml.

[121] CAC, *Critical Network Equipment and Special Network Security Product Catalog (First Batch)*. Viewed at: http://www.cac.gov.cn/2017-06/09/c_1121113591.htm.

a recommended guideline that reinforces the Cybersecurity Law.[122] The authorities rely on it as a benchmark to determine whether business operators follow the country's data protection rules. The 2020 Specification seeks to ensure that individuals or entities that provide their PI (subjects) have a certain degree of autonomy. It also regulates the behaviour of those who collect PI for providing a product or service (controllers). On some issues, such as the collection of biometric data or when sharing and transferring PI, the Specification states that controllers must obtain explicit consent, i.e. an authorized statement on either paper or an electronic format affirming the collector has the right to process the PI of the subject. Collectors are also required to inform subjects on their intended purposes, method of collection, scope, and storage time. Regarding cross-border transfer, Article 9.8 of the Specification states that PI collected and generated in China can be transferred overseas, but the controller must comply with all relevant national regulations and standards. On the specific legislation concerning PI protection, on 21 October 2020, China published for public comment the first draft of the Personal Information Protection Law[123], the country's first comprehensive law regulating, *inter alia*, the processing of PI.[124]

4.220. China also implemented the provision of the Cybersecurity Law concerning national security review requirements for CIIOs purchasing certain network products and services. This was made through the Measures on Cybersecurity Review, and was jointly adopted on 27 April 2020 (effective 1 June 2020) by the CAC and 11 other government agencies.[125] The Measures seek to implement Article 35 of the Cybersecurity Law, which established a cybersecurity review requirement on network products and services procured by CIIOs. Purchases of network products or services with a potential effect on national security are subject to the cybersecurity review system outlined under the Measures. Such network product and services include core network devices, high-performance computers and servers, mass storage devices, large databases and application software, network security devices, cloud computing services, and other network products and services that have a significant impact on the security of the critical information infrastructure.

4.221. The Measures establish an interagency cybersecurity review body, which consists of members from 12 government agencies – the CAC, the NDRC, the MIIT, the Ministry of Public Security, the Ministry of National Security, MOFCOM, the Ministry of Finance, the PBOC, the SAMR, the National Radio and Television Administration, the National Administration of State Secrets Protection, and the State Cryptography Administration – and is led by the CAC. The Office of Cybersecurity Review is established in the CAC.

4.222. Under the Measures, CIIOs shall conduct an assessment of potential national security risk exposure prior to the procurement of network products or services. If the self-assessment identifies a national security risk, the CIIO shall report the case to the Office of Cybersecurity Review for a cybersecurity review. However, if a member of the interagency cybersecurity review body believes the network products or services used by the CIIO affect or may affect national security, the Office of Cybersecurity Review shall report the case to the CAC and initiate a cybersecurity review without an application from a CIIO.

4.4.2.2.7 E-commerce

4.223. On 31 August 2018, the Standing Committee of the NPC passed the E-commerce Law, which came into force on 1 January 2019. The Law applies to all business activities of selling goods and/or providing services through information networks such as the Internet, with the exception of financial products and services or services that provide news, audio, and video programmes; publications; or cultural products. It contains provisions on, *inter alia*: (i) the definitions of e-commerce operators, e-contracts, and e-payments; (ii) guarantees for e-commerce transactions; (iii) data protection and promotion of consumer protection; (iv) fair competition and mechanisms for dispute resolution; (v) cross-border commerce; and (vi) the provision of substantial civil and criminal penalties.

[122] Dai, K. and Deng, J. (2019), "A 15-Step Guide to Data Protection, Privacy and Cybersecurity in China", *Swiss Chinese Law Review Journal*, Issue 2. Viewed at: https://www.sclalawreview.org/a-15-step-guide-to-data-protection-privacy-and-cybersecurity-in-china/.

[123] China Law Insight, *Personal Information Protection Law (Draft): A New Data Regime*, 11 November 2020. Viewed at: https://www.chinalawinsight.com/2020/11/articles/compliance /personal-information-protection-law-draft-a-new-data-regime/.

[124] NPC. Viewed at: http://www.npc.gov.cn/flcaw/more.html.

[125] CAC. Viewed at: http://www.cac.gov.cn/2020-04/27/c_1589535450769077.htm.

4.224. According to Article 2 of the E-commerce Law, e-commerce refers to business activities that sell goods or provide services via information networks like the Internet. Article 9 further defines e-commerce operators to be natural persons, legal persons, and unincorporated organizations that engage in the business activities of selling merchandise or providing services on the Internet or other information networks. As such, the E-commerce Law mainly applies to the following three types of operators: (i) platform operators, i.e. any legal persons or unincorporated organizations that provide a space for digital business, transaction matching, information release, and other services to facilitate parties in an e-commerce transaction; (ii) operators on platforms, i.e. third-party merchants that sell goods or provide services on e-commerce platforms; and (iii) online sellers, i.e. other e-commerce players doing business through their own websites or through other online channels, such as social media applications.

4.225. By law, all e-commerce operators, except individuals who sell their own agricultural products or handcrafts or who carry out sporadic and small transactions, are required to obtain a business licence. E-commerce operators must fulfil their taxation obligations and could enjoy preferential tax treatments according to relevant laws and regulations.

4.226. Regarding intellectual property (IP) protection, the E-commerce Law holds liable both counterfeiters and e-commerce operators that fail to take appropriate measures to prevent sellers in violation of intellectual property rights (IPRs). It also provides that IP holders can notify a platform owner of an alleged infringement, and the platform owner has the obligation to prevent the trade of the infringed good pending investigation. Platform operators that fail to fulfil their responsibilities in terms of IP protection within a specified time period are punishable by a fine ranging from CNY 50,000 to CNY 2 million.

4.227. Article 17 of the E-commerce Law further fosters consumer protection by requiring e-commerce operators to disclose truthful, accurate, and timely information concerning commodities or services and to avoid engaging in misleading and deceptive practices.

4.228. Article 22 of the E-commerce Law spells out fair competition obligations for all e-commerce operators, with special emphasis on those with dominant market positions. Operators with advantages in the market due to technology or number of users are prohibited from abusing their position to exclude or restrict competition.

4.229. On consumers' privacy protection, pursuant to Articles 23 and 24 of the Law, e-commerce operators must abide by existing Chinese laws and regulations in respect of protection of personal data when collecting and using users' personal data. The Law further requires e-commerce operators to expressly specify to users the procedures for inquiring about, correcting, and deregistering their accounts. Operators are required to deal with personal data in a timely manner if users request to see, correct, or delete their data. Further efforts are also ongoing in connection with personal data protection, as China unveiled its draft of the Personal Data Protection Law for public consultation on 21 October 2020. Once adopted, the Law will, *inter alia*, clarify state agencies' role in protecting individuals' data and implement consent-based rules for processing information.

4.230. Regarding foreign business, the E-commerce Law provides that China shall encourage cross-border e-commerce (CBEC) development. In practice, the authorities have been promoting CBEC (activities of purchasing or selling products via online shopping across national borders). On 27 April 2020, the State Council issued the Approval of the Establishment of Integrated Pilot Areas for Cross-border E-commerce in 46 Cities and Areas (Guo Han No. 47, 2020). This brought the total number of CBEC pilot zones to 105. In December 2019, the authorities extended the List of Goods under Cross-border E-commerce Retail Importation to allow more foreign goods to be delivered to Chinese consumers through the CBEC retail importation programme.[126]

4.231. Oversees enterprises involved as vendors in CBEC must be registered with the General Administration of Customs (GACC). In practice, they must entrust a Chinese company as "domestic agent" to handle the registration procedures. The domestic agent must be a legal entity registered with the SAMR.[127] They must also designate a Chinese agent, which will be held directly accountable by the authorities for consumer complaints, product recall, and other product quality or safety

[126] MOFCO. Viewed at: http://cws.mofcom.gov.cn/article/swcjzc/202001/20200102929369.shtml.

[127] Announcement on Matters Concerning the Supervision of Retail Imports and Exports in Cross-Border E-commerce (GACC Announcement No. 194, 2018).

obligations. Domestic enterprises shall undergo registration formalities with Customs in their location, in accordance with the provisions on the administration of the registration of customs declaration entities.[128]

4.232. CBEC pilot areas have promoted the development of innovative systems such as import e-commerce platforms, export e-commerce platforms, third-party payment platforms, and logistics companies.

4.233. The E-commerce Law provides that e-commerce disputes can be settled by: (i) negotiating; (ii) requesting mediation by consumer organizations, industry associations, or other legally established mediating organizations; (iii) filing complaints with relevant authorities; (iv) filing for arbitration; or (v) instituting legal proceedings. Additional measures to bolster e-commerce include the establishment of Internet courts. Internet courts in Beijing and Guangzhou were formally established in September 2018, following the opening of China's first Internet court in Hangzhou in 2017 (Section 2.1). Internet courts were established to hear matters relating to e-commerce and online transactions. In general, the entire litigation process is conducted online. Internet courts may decide to complete part of the litigation process offline, upon application by the litigants or due to the needs of trying cases. In September 2018, the Supreme People's Court also issued the Provisions on Several Issues Concerning the Trial of Cases by Internet Courts, to regulate the litigation activities of Internet courts.

4.4.3 Transport

4.234. The share of transport, storage, and communication in GDP decreased from 4.4% in 2018 to 4.1% in 2020 (Table 1.2). Transportation is one of China's major traded services; during the review period, China maintained a slight deficit in transportation services trade. In 2018, there were 1.8 million people employed in the railway transportation sector, 3.6 million in road transport, 0.4 million in water transport, 0.6 million in air transport, and 0.03 million in pipeline transport. Around 0.3 million people were employed in the associated industries of intermodal transport and forwarding agencies, and 0.4 million people in loading, unloading, and storage.[129]

4.235. In value terms, shipping is the main mode of transport for imports and exports of merchandise goods (Table 4.23). Data were not available on the volume of merchandise trade transported through the different modes.

Table 4.23 Value of merchandise goods imported to and exported from China through different transport modes, 2018-20

(USD million)

	2018	2019	2020
Maritime transport			
- Imports	1,191,383.7	1,172,461.0	1,033,210.4
- Exports	1,655,367.9	1,660,002.5	1,502,594.3
Air transport			
- Imports	502,385.0	488,220.0	450,972.1
- Exports	402,449.4	405,995.6	410,163.5
Railway transport			
- Imports	20,284.2	20,284.7	22,989.2
- Exports	29,618.1	34,887.5	49,049.1
Road transport			
- Imports	364,768.3	338,584.4	314,322.7
- Exports	376,464.6	366,397.6	327,853.0

Source: Information provided by the authorities.

4.236. The Ministry of Transport (MOT) remains responsible for road, water, and air transport, as well as administration of rail transport.

[128] Announcement on Launching the Pilot Program of Supervision over Business-to-Business Export in Cross-Border E-commerce (GACC Announcement No. 75, 2020).

[129] National Bureau of Statistics, *China Statistical Yearbook 2019*. Viewed at: http://www.stats.gov.cn/tjsj/ndsj/2019/indexeh.htm.

4.4.3.1 Maritime transport

4.237. China is the world's third ship owning country in terms of cargo-carrying capacity, accounting for 6,896 ships in 2020 with a total dead weight tonne (DWT) capacity of 128,892,849. More than 4,500 of these ships operated under the national flag (43.56% of total in DWT terms), while 2,300 Chinese-owned ships operated under a foreign flag (56.44% of total in DWT terms).[130] In order to encourage qualified Chinese-funded international "Flag of Convenience" ships to return to China, ships that were declared for import and were registered between September 2016 and September 2019 were exempt from customs duties and import VAT.[131] A total of 80 vessels were approved for duty-free import, of which 39 vessels went through registration procedures in China.

4.238. China's main shipping law is the Maritime Law, which became effective in 1993.[132] There were no amendments to the Law during the review period. China's commitments related to maritime transport under the General Agreement on Trade in Services (GATS) are described in detail in a previous Review.[133]

4.239. China's major state-owned shipping companies include China COSCO Shipping Corporation Limited (COSCO Shipping) and China Merchants Group. COSCO Shipping is the world's biggest shipping company, with a fleet of 1,371 vessels with a combined capacity of 109.33 million DWT. Reportedly, it has the world's biggest container fleet, as well as dry bulk vessels, tankers, and general and specialized cargo vessels.[134] The shipping activities of the conglomerate China Merchants Group are undertaken through its subsidiaries China Merchants Energy Shipping Co. Ltd. (which specializes in energy and bulk cargo transportation), Xunlong Shipping, and Hong Kong, China Ming Wah Shipping Co. Ltd. Reportedly, China Merchants Group is the world's fourth-largest energy transportation enterprise.

4.240. There have been no changes to China's maritime cabotage policies during the review period; domestic water transport companies are required to have Chinese parties as the controlling shareholders (Table A2.3). The Maritime Law stipulates that maritime transport and towage services between ports in China must be undertaken by ships flying the Chinese flag, except as otherwise provided for by laws or administrative regulations. The Regulations on the Administration of Domestic Water Transport stipulate that operators of water transport may not operate domestic water transport business with foreign ships. However, with the permission of the competent department of transport under the State Council, operators of water transport may temporarily operate a transport business with foreign ships subject to time and voyage limitations. Between January 2018 and February 2020, eight foreign ships were so authorized.

4.241. In 2019, the State Council issued the Decision on Revising Certain Administrative Rules and Regulations (State Council Decree No. 709), and revised the Regulations on International Maritime Transportation, which lifted the restrictions on foreign investment in international shipping and international shipping agency services in China.[135] Previously, international maritime companies were limited to Chinese-foreign equity/cooperative joint venture operations.[136] The authorities confirm that there are no requirements for government cargo to be transported on domestically flagged ships.

[130] UNCTAD (2020), *Review of Maritime Transport 2020*. Viewed at: https://unctad.org/system/files/official-document/rmt2020_en.pdf.

[131] Notice of the State Taxation Administration of the Ministry of Finance and the General Administration of Customs on the List of the Fourth Batch of Chinese-funded "Flags of Convenience" Vessels Enjoying Import Tax Preferential Policies. Viewed at: http://www.chinatax.gov.cn/chinatax/n810341/n810825/c101434/c29917165/content.html.

[132] Maritime Law of the People's Republic of China. Viewed at: http://www.lawinfochina.com/display.aspx?lib=law&id=191.

[133] WTO document WT/TPR/S/264/Rev.1, 20 July 2012.

[134] COSCO Shipping, *Group Profile*. Viewed at: http://en.coscoshipping.com/col/col6918/index.html.

[135] Regulations on International Maritime Transportation, as revised in 2019. Viewed at: http://www.gov.cn/zhengce/content/2019-03/18/content_5374723.htm.

[136] Catalogue of Industries for the Guidance of Foreign Investment (2017 Revision), referenced in WTO document WT/TPR/S/375/Rev.1, 14 September 2018.

4.242. In 2018, the Ship Tonnage Tax Law was enacted, at the same time the Provisional Regulations of the Ship Tonnage Tax were repealed.[137] Ships entering domestic ports from ports outside China are subject to a ship tonnage tax. The Law sets preferential rates for Chinese taxable ships and taxable ships whose country of registry has signed treaties or agreements that mutually grant MFN treatment clauses of ship taxes and fees. For other taxable ships, the ordinary tax rate applies. The tax is levied in accordance with the net tonnage of the ship and the duration of the tonnage tax licence. The tonnage tax payable is calculated by multiplying the net tonnage of the ship by the applicable tax rate (Table 4.24). Various exemptions apply, including fishing and breeding fishing boats. The passage of the Law does not change the tax framework and burden, but it does raise the status of the previous administrative regulation to NPC law (as required by the 2015 amendment to the Law on Legislation).[138]

Table 4.24 Ship tonnage tax rates, 2020

	Ordinary tax rate according to licence period			Preferential tax rate according to licence period		
	1-year licence	90-day licence	30-day licence	1-year licence	90-day licence	30-day licence
No more than 2,000 net tonnes	12.6	4.2	2.1	9.0	3.0	1.5
2,000-10,000 net tonnes	24.0	8.0	4.0	17.4	5.8	2.9
10,000-50,000 net tonnes	27.6	9.2	4.6	19.8	6.6	3.3
Over 50,000 net tonnes	31.8	10.6	5.3	22.8	7.6	3.8

Source: FAO, *Vessel Tonnage Tax Law of the People's Republic of China*. Viewed at: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC172978/.

4.243. According to the authorities, during the COVID-19 pandemic, the MOT established an International Logistics Guarantee Coordination Mechanism, and set up international logistics work shifts for 24-hour entity operations and offered various guarantee measures for maritime transportation enterprises, including temporarily exempting port construction charges of imported or exported goods (Section 3.1.4), reducing cargo dues and port facility security charges, extending vessel certificates, offering online seaman training and licence renewal, formulating pandemic prevention guides, and assisting shipping companies in changes of shifts by seamen.

4.244. By end-2019, China had 408 ports. According to United Nations Conference on Trade and Development (UNCTAD), in 2019, four of China's ports were in the top five global container ports (in order of throughput: Shanghai, Ningbo-Zhoushan, Shenzhen, and Guangzhou).[139] The authorities state that no state-owned ports are operated by third parties (including foreign companies) under concession agreements. There are no restrictions on the share ratios of FDI in investment in Chinese ports. Information was not available as to whether there is any foreign investment in Chinese ports in practice. Various SOEs provide port services.

4.245. The Port Law is the main law governing the construction and operation of ports. In 2018, China revised the Law to allow port tally businesses to operate without having to obtain a permit.[140]

4.246. According to the Catalogue of Central Determined Prices and the Regulation on Port Charges, port operating service charges are divided into market-regulated price, government-guided price, and government pricing. Among them, the government-guided and government-priced port charges

[137] FAO, *Vessel Tonnage Tax Law of the People's Republic of China*. Viewed at: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC172978/.

[138] Library of Congress, *China: Tobacco Leaf Tax and Vessel Tonnage Tax Laws Passed*, 19 January 2018. Viewed at: https://www.loc.gov/law/foreign-news/article/china-tobacco-leaf-tax-and-vessel-tonnage-tax-laws-passed.

[139] UNCTAD (2020), *Review of Maritime Transport 2020*. Viewed at: https://unctad.org/system/files/official-document/rmt2020_en.pdf.

[140] FAO, *Law of the People's Republic of China on Ports* (Port Law). Viewed at: https://www.ecolex.org/details/ legislation/law-of-the-peoples-republic-of-china-on-ports-2015-lex-faoc155111/?q=china&type=legislation&xdate_min=&xdate_max=. The Port Law was amended in 2018 in accordance with the Decision of the Standing Committee of the National People's Congress to Amend Four Laws Including the Electric Power Law (Order No. 23 of the President). Viewed at: http://www.npc.gov.cn/zgrdw/npc/xinwen/2019-01/07/content_2070259.htm. Port tally business is the provision of services, such as tallying and the checking of the apparent condition of cargo for the consignor, in the cargo handover process.

are decided by the MOT and the NDRC. Market-set port charges, such as port handling lump sum charges, may be set by port operators themselves.

4.247. With respect to completion of major port infrastructural works in recent years, the authorities indicate that in December 2017 Phase IV of the Automated Container Terminal of Yangshan Port in Shanghai was completed and put into operation; reportedly, this terminal is the world's largest single fully automated terminal. In 2019, Phase II of the Yangtze River Nanjing Section Deepwater Channel Project was officially put into use. As notified to the WTO, China offers preferential tax policies for Chinese-foreign equity joint ventures engaged in port and dock construction, as well as for public infrastructure projects that are particularly supported by the State.[141]

4.4.3.2 Air transport

4.248. The Civil Aviation Administration of China (CAAC) remains the main regulator of the air transport industry. The strategy for the sector is contained in the 13th Five-Year Plan for the Development of China's Civil Aviation.[142] Additionally, the Program of Building National Strength in Civil Aviation in the New Era was issued on 10 December 2018; it outlines strategic plans, 8 major tasks, and 33 key measures for the future development of civil aviation.[143] In December 2018, minor amendments were made to the Civil Aviation Law.[144] During the review period, regulations on foreign civil aircraft flight management, civil airport management, and civil aircraft nationality registration were slightly revised.

4.249. Air connectivity has continued to increase; the number of international routes grew from 739 in 2016 to 953 in 2019, and the number of domestic routes increased from 3,055 to 4,568 over the same period.[145]

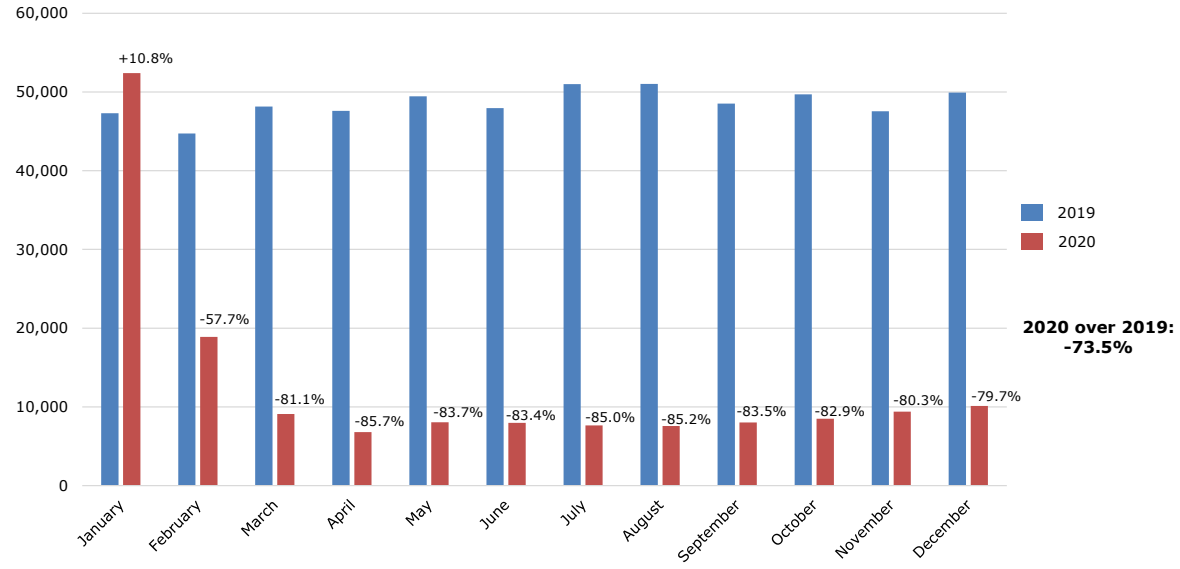
4.250. As at end-2020, 67 airlines were established in China; 50 were state owned, 9 have foreign equity participation, and 8 are listed as stock companies. The CAAC has approved 14 private or private-holding airlines. Information was not available as to whether it is required for persons or goods to be transported on nationally registered airlines. Restrictions on foreign investment in civil aviation remain unchanged.

4.251. International scheduled passenger and freight transportation are regulated by bilateral air services agreements. Since January 2018, China has signed new air service agreements with Congo (January 2018), Côte d'Ivoire (June 2018), Rwanda (July 2018), Dominica (November 2018), the European Union (May 2019), the Bahamas (September 2019), and Member States of the Association of South East Asian Nations (ASEAN) (Protocol III, November 2019). Cabotage remains reserved to domestic airlines.[146] The passenger fares of the domestic civil air routes are subject to prices guided by the Government (except for competitive areas). Airlines are permitted to raise the fare by no more than 25% of a benchmark fare. The rationale for maintaining price control is that competition has not yet developed in some areas of the passenger transportation industry in domestic civil air routes.

4.252. As a consequence of the COVID-19 outbreak, international passenger flights from China dropped dramatically from February 2020, as compared with February 2019, and have remained at a low level (Chart 4.9). The domestic passenger transport segment also declined significantly in February 2020, as compared with February 2019, but recovered by end-2020 (Chart 4.10).

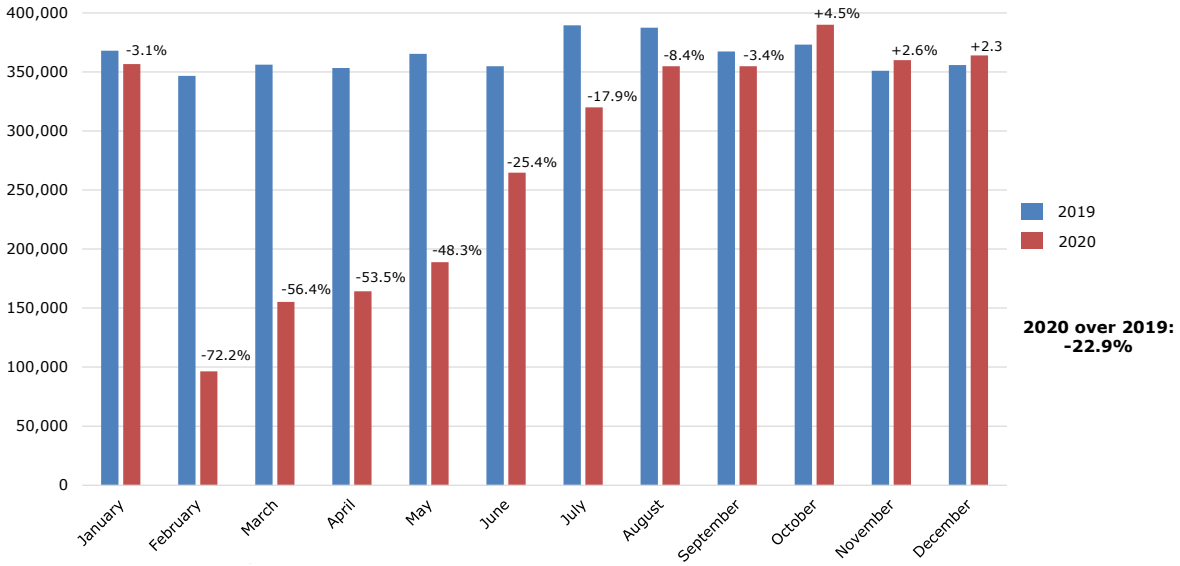
[141] WTO document G/SCM/N/343/CHN, 19 July 2019.
[142] CAAC, *13th Five-Year Plan for the Development of China's Civil Aviation*. Viewed at: http://www.caac.gov.cn/XXGK/XXGK/FZGH/201704/t20170405_43502.html.
[143] CAAC, *Program of Building National Strength in Civil Aviation in the New Era*. Viewed at: http://www.caac.gov.cn/XXGK/XXGK/ZCFB/201812/t20181212_193452.html.
[144] CAAC, *Civil Aviation Law* (as revised in 2018). Viewed at: http://www.caac.gov.cn/XXGK/XXGK/FLFG/201510/t20151029_2777.html. The amendments were as follows: civil airports other than those open to the public shall be put on record; the "quarantine" in Article 103 was deleted; and the drone authorization clause was included in the Law.
[145] National Bureau of Statistics, *China Statistical Yearbook 2019*. Viewed at: http://www.stats.gov.cn/tjsj/ndsj/2019/indexeh.htm; and updated information provided by the authorities.
[146] WTO document WT/TPR/S/264/Rev.1, 20 July 2012.

Chart 4.9 International passenger flights, January to December, 2019 and 2020



Source: ICAO, *Operational Impact on Air Transport*. Viewed at: https://data.icao.int/coVID-19/operational.htm.

Chart 4.10 Domestic passenger flights, January to December, 2019 and 2020



Source: ICAO, *Operational Impact on Air Transport*. Viewed at: https://data.icao.int/coVID-19/operational.htm.

4.253. In order to respond to the COVID-19 outbreak and mitigate its impact on the development of the aviation industry, the CAAC has taken the following measures: (i) the Guidelines for Preventing Spread of Coronavirus Disease 2019 (COVID-19) Airlines and Airports were issued and updated seven times; (ii) the pandemic prevention and control measures for civil aviation operations were adjusted and refined according to the needs of epidemic prevention and control; prevention measures on both human beings and goods were strengthened; and prevention and control requirements for cargo flights and cargo operations were enhanced; (iii) management measures for international operation crews were formulated to ensure the smooth flow of international passengers and cargo; (iv) supportive policies were introduced in early 2020 and have been implemented (Table 4.25); (v) the management of cargo routes and flights was optimized; (vi) a "green channel" for the approval of international cargo flights was opened and is available 24 hours a day and 7 days a week, so as to support the resumption of airlines; this has reportedly greatly reduced approval times and simplified approval procedures; and (vii) airlines were supposed to use surplus passenger

plans to carry cargo and implement "passenger-to-cargo" flights under the premise of ensuring safety.

Table 4.25 CAAC policies supporting active response to the COVID-19 outbreak

Areas	Policies
Proactive financial and economic policies	• Implement favourable policies, including exemption from payment by airlines into civil aviation development fund for landing. Ensure preferential measures for the civil aviation industry are effectively implemented. • Implement policies of financial support from the Central Government treasury during the COVID-19 outbreak to international scheduled passenger flights and major transport flight missions deployed by the Joint Prevention and Control Mechanism of the State Council. • Add incentive support for epidemic containment missions carried out by general aviation enterprises by fully leveraging on existing subsidy policies.
Fee reductions and burden alleviation	• Airport authorities to exempt airlines from charges associated with the operation of air transport services and ground handling for major transport flight missions deployed by the Joint Prevention and Control Mechanism of the State Council. Air traffic control entities to exempt airlines from approach command charges and route navigation service charges. • Reduced charges for airports and air navigation services on domestic and foreign airlines and airlines from Hong Kong, China; Macao, China; and Chinese Taipei regions. Reduced benchmark for landing charges at Category I and II airports by 10%; reduced benchmark of difference between purchase and sales of jet fuel for domestic flights of domestic airlines by 8% (effective from 23 January 2020). • Information service providers and subordinate public entities and companies of the CAAC are encouraged to reduce current charges as appropriate.
Infrastructure investment expansion	• Airport authorities, relevant operation support entities, and civil aviation medicine research institutions may apply for subsidies from civil aviation development fund for urgent procurements or R&D of dedicated fixed facilities and equipment for epidemic containment purposes. • Support for orderly start and resumption of major construction projects in a scientific manner. Online channels available for project applications to facilitate acceleration of pre-project formalities and coordinate solutions for priorities and difficult problems with project start and resumption. Major and emergency construction projects encouraged to use available trade centres to accelerate bidding process. Major infrastructure projects of hub airport building, poverty alleviation, and Blue Sky Protection Campaign to be started/resumed as a matter of priority. Aim is to complete an annual fixed asset investment of CNY 100 billion. • Implement current civil aviation development fund-related policies to better support airlines in improving safety capabilities. Expand investments in airlines' projects of safety, security, flight operation quality oversight, and application of satellite navigation and other new technologies. Support safety upgrade modifications of airlines' airborne equipment, and arrange full subsidy from civil aviation development fund for B737NG aircraft data frame expansion projects. • Support planning and construction of strategic infrastructure projects of air traffic control, IT, fuel supply, and others related to national, industrial, and public interests by increasing government funding.
Air transport development facilitation	• Increase policy flexibility for introducing aircraft transport capacity. Encourage and guide airlines to optimize current capacity and streamline capacity introduction procedures. • Improve approval administration of routes and flights to enable airlines to make dynamic adjustments to flight plans, international route structure, and traffic rights entitlement and capacity in line with market demands, by streamlining routes, flight approval procedures, and slot coordination procedures, and shorten time for approval on start or resumption of international route operation. • Extend flight schedule for the 2019 winter season until 2 May 2020, suspending evaluation of airlines regarding flight schedule execution rate, slot resource utilization rate, and flight regularity rate. Actively develop slot policies for flight rescheduling, taking into consideration needs of airlines to resume operation, exempting domestic flights from evaluation of slot execution rate for the 2020 summer season, and allowing orderly circulation of slots in domestic, international, and regional slot pools in light of changes in market demands for the 2020 summer season. • Actively support and assist airlines with their special operation requirements during the COVID-19 outbreak and traffic right and slot issues encountered in resumption of international route operation, and maintain close communication and coordination with relevant national civil aviation authorities regarding these issues.

Areas	Policies
Administrative service optimization	• Adjust working methods of administrative approval by enabling online processing and off-site processing channels. Optimize approval procedures and introduce informing and committing mechanism to improve approval efficiency. • Transform regulation method, improve oversight performance, reduce on-site supervision, and make full use of new regulation modes, such as off-site supervision.

Source: CAAC International Cooperation and Service Centre, *Notice of CAAC on Policies Supporting Active Response to COVID-19 Outbreak*, 29 April 2020. Viewed at: http://www.icscc.org.cn/en/content/details_98_1939.html.

4.254. By end-2019, China had 238 certified transportation airports, of which 59 were international. The Special Administrative Measures for Access of Foreign Investment (National Negative List) (2020) stipulate that the construction and operation of civil airports must be relatively controlled by Chinese parties and that foreign parties are prohibited from participating in the construction and operation of airport towers (Table A2.3); foreign parties may participate in the construction and operation of airports in accordance with this provision. There have been no changes to the rules on computer reservation services, repair and maintenance services, and ground-handling services during the review period.[147] China's GATS commitments in air transport were described in a previous Review.[148]

4.255. The authorities indicate that major airport infrastructure projects undertaken during the review period included the new project of Beijing Daxing International Airport and the Phase III Expansion Project of Shanghai Pudong International Airport.

[147] China's rules on computer reservation systems are described in WTO document WT/TPR/S/300/Rev.1, 7 October 2014. Its rules on repair and maintenance services and ground-handling services are described in WTO document WT/TPR/S/264/Rev.1, 20 July 2012.

[148] WTO document WT/TPR/S/264/Rev.1, 20 July 2012.

5 APPENDIX TABLES

Table A1.1 Bilateral debt stocks to China – public and publicly guaranteed (PPG), 2014-19

Country	2014	2015	2016	2017	2018	2019
Angola	9,283.6	8,789.3	17,623.7	18,592.7	17,493.2	15,724.7
Argentina	657.4	1,702.7	1,800.4	2,803.6	3,133.6	3,237.9
Bangladesh	888.2	919.4	974.5	1,357.0	3,099.1	3,599.6
Belarus	3,198.4	3,681.7	4,026.6	4,371.0	4,742.4	4,975.9
Bolivia, Plurinational State of	550.4	518.8	571.5	713.6	891.7	1,044.9
Brazil	7,705.4	6,211.9	4,720.2	11,224.8	10,328.1	5,042.9
Cambodia	2,374.8	2,683.4	2,797.7	3,137.6	3,424.9	3,608.6
Cameroon	1,904.3	2,139.5	2,385.8	3,076.0	3,154.9	3,626.6
Congo, Democratic Rep. of the	2,051.2	1,948.9	1,902.5	1,837.4	2,040.9	3,751.9
Côte d'Ivoire	569.6	796.4	1,203.6	1,697.4	1,969.3	2,546.6
Djibouti	178.7	518.0	887.5	1,160.5	1,186.5	1,195.5
Ecuador	5,184.0	5,484.3	8,213.4	7,548.9	6,823.6	6,057.4
Egypt	330.4	322.0	1,924.2	2,328.6	4,192.3	4,117.7
Ethiopia	5,465.1	7,271.2	8,243.8	8,734.1	8,655.9	8,351.6
Gabon	808.5	882.8	1,054.0	1,103.8	1,187.9	1,221.7
Ghana	2,369.7	2,469.1	2,332.3	2,101.0	1,893.6	1,824.0
Indonesia	964.9	969.7	1,026.0	1,317.1	1,614.7	1,764.8
Kazakhstan	..	..	257.6	906.2	1,245.0	1,180.6
Kenya	2,229.6	3,140.5	4,345.3	5,844.6	6,902.3	7,493.4
Kyrgyz Republic	1,115.9	1,303.0	1,521.3	1,708.1	1,719.4	1,778.5
Lao People's Democratic Rep.	2,635.6	3,048.7	3,379.5	3,739.1	4,431.5	5,252.0
Maldives	157.3	149.9	306.6	395.4	927.9	1,165.8
Mongolia	571.6	598.4	736.8	814.4	978.9	1,054.7
Mozambique	1,473.5	1,558.4	1,645.6	1,962.0	2,011.7	1,910.1
Myanmar	4,434.2	4,520.4	4,188.3	4,187.0	3,682.2	3,341.7
Nigeria	1,293.1	1,444.7	1,642.0	1,931.0	2,485.1	3,175.1
Pakistan	5,138.9	5,988.7	7,637.0	10,996.2	18,131.7	21,620.0
Senegal	360.0	503.8	902.2	1,142.9	1,315.0	1,225.4
Serbia	542.7	740.3	796.9	924.7	1,046.7	1,241.2
South Africa	..	..	..	1,500.0	1,900.0	2,298.8
Sri Lanka	4,294.7	4,520.8	4,678.4	5,070.1	6,060.9	6,371.6
Sudan	1,677.2	1,579.5	1,487.7	1,421.1	1,330.2	1,246.2
Tajikistan	901.5	1,045.6	1,152.8	1,187.4	1,169.1	1,122.7
Turkey	515.9	524.3	511.1	868.5	1,625.9	1,933.3
Uganda	399.4	762.5	1,098.8	1,545.5	1,945.7	2,149.2
Uzbekistan	1,094.0	1,273.9	1,768.4	1,813.8	1,824.2	1,958.1
Viet Nam	2,284.0	2,071.4	2,046.1	2,112.9	2,037.5	1,787.9
Zambia	1,294.6	1,638.1	2,061.0	2,496.8	2,827.5	3,420.2
Zimbabwe	816.5	1,003.2	1,141.2	1,254.9	1,470.2	1,565.5
Total of countries above	77,714.7	84,725.1	104,992.4	126,927.6	142,901.0	145,984.4
Total debt stocks to China	85,876.5	93,816.3	114,814.7	137,495.6	153,671.1	157,111.9

.. Not available.

Source: World Bank, International Debt Statistics database.

Table A1.2 Merchandise exports by HS section and major HS chapter/subheading, 2015-20

HS section/chapter/subheading	2015	2016	2017	2018	2019	2020
Total exports (USD billion)	2,273.5	2,097.6	2,263.4	2,494.2	2,499.0	2,590.6
	(% of total exports)					
Exports under processing trade	*35.1*	*34.1*	*33.5*	*32.0*	*29.4*	*27.1*
01 Live animals and products	0.8	0.8	0.8	0.7	0.7	0.6
02 Vegetable products	1.0	1.2	1.1	1.0	1.1	1.1
03 Fats and oils	0.03	0.03	0.04	0.04	0.05	0.1
04 Prepared food, beverages and tobacco	1.2	1.4	1.3	1.3	1.3	1.2
05 Mineral products	1.4	1.4	1.7	2.1	2.1	1.4
27 Mineral fuels and oils	1.2	1.3	1.6	1.9	1.9	1.2
2710 Petroleum oils and oils from bituminous minerals, not crude …	0.8	0.9	1.1	1.4	1.5	1.0
06 Chemicals and products thereof	4.7	4.7	5.1	5.5	5.2	5.3
29 Organic chemicals	1.9	2.0	2.2	2.4	2.3	2.2
07 Plastics and rubber	3.8	3.9	4.0	4.1	4.3	4.6
39 Plastics and articles thereof	2.9	3.0	3.1	3.2	3.4	3.7
08 Raw hides and skins; leather, furskins and articles thereof	1.5	1.5	1.5	1.4	1.4	1.0
09 Wood, cork, straw	0.7	0.7	0.7	0.7	0.6	0.6
10 Pulp of wood; paper and paperboard	1.0	1.0	1.0	0.9	1.0	0.9
11 Textiles and textile articles	12.0	12.1	11.4	10.7	10.4	10.8
61 Clothing, knitted or crocheted	3.7	3.5	3.2	2.9	2.9	2.4
62 Clothing, not knitted or crocheted	3.5	3.4	3.2	2.9	2.7	2.4
63 Other made up textile articles; worn articles; rags	1.2	1.2	1.2	1.1	1.1	2.9
12 Footwear, headgear, etc.	3.0	2.8	2.7	2.5	2.5	2.0
64 Footwear, gaiters and the like	2.4	2.3	2.1	1.9	1.9	1.5
13 Articles of stone, plaster, cement	2.4	2.1	2.0	2.1	2.2	2.2
14 Precious stones and metals	1.4	1.0	0.8	0.8	0.8	0.7
15 Base metals and articles thereof	7.8	7.4	7.3	7.5	7.3	6.8
73 Articles of iron and steel	2.7	2.5	2.5	2.6	2.8	2.7
16 Machinery, electrical equipment	42.2	42.8	43.4	43.9	43.5	44.4
84 Machinery and mechanical appliances, parts thereof	16.0	16.4	16.9	17.2	16.7	17.0
8471 Automatic data processing machines and units thereof …	6.0	6.0	6.3	6.2	5.9	6.6
8473 Parts … suitable for use with machines of heading no. 8469 to 8472	1.3	1.2	1.5	1.8	1.3	1.2
85 Electrical machineries and parts thereof	26.1	26.4	26.4	26.6	26.8	27.4
8517 Telephone sets, including telephones for cellular networks …	9.4	9.6	9.7	9.6	9.0	8.6
8528 Monitors and projectors …	1.2	1.3	1.4	1.3	1.2	1.2
8542 Electronic integrated circuits	3.1	2.9	3.0	3.4	4.1	4.5
17 Transport equipment	4.7	4.4	4.6	4.7	4.5	4.3
87 Vehicles, parts thereof	2.8	2.9	3.0	3.0	3.0	2.9
8708 Parts and accessories of motor vehicles of HS 8701 to 8705	1.2	1.3	1.4	1.4	1.3	1.3
18 Precision equipment	3.6	3.5	3.4	3.1	3.2	3.3
90 Optical, photographic, measuring, medical instruments …	3.2	3.2	3.1	2.9	2.9	3.1
19 Arms and ammunition	0.0	0.0	0.0	0.0	0.0	0.0
20 Miscellaneous manufactured articles	6.9	7.0	7.0	6.8	7.2	7.7
94 Furniture, lighting, signs, prefabricated buildings	4.3	4.2	3.9	3.9	4.0	4.2
95 Toys, games, sports requisites	1.9	2.1	2.4	2.3	2.5	2.8
21 Works of art, etc.	0.02	0.01	0.01	0.01	0.03	0.03
Other	0.0	0.2	0.2	0.2	0.7	1.0

Source: WTO Secretariat calculations, based on UN Comtrade database and information from the General Administration of Customs.

Table A1.3 Merchandise imports by HS section and major HS chapter/subheading, 2015-20

HS section/chapter/subheading	2015	2016	2017	2018	2019	2020
Total imports (USD billion)	1,679.6	1,587.9	1,843.8	2,135.0	2,069.0	2,055.6
	(% of total imports)					
Import under processing trade	*26.6*	*25.0*	*23.4*	*22.0*	*20.1*	*19.6*
01 Live animals and products	1.0	1.4	1.3	1.4	2.0	2.5
02 Vegetable products	3.6	3.4	3.3	2.9	3.0	3.5
12 Oil seeds and oleaginous fruit; misc. grains, seeds and fruit	2.4	2.4	2.4	2.0	1.9	2.2
1201 Soya bean, whether or not broken	2.1	2.1	2.1	1.8	1.7	1.9
03 Fats and oils	0.5	0.4	0.4	0.4	0.5	0.5
04 Prepared food, beverages and tobacco	1.2	1.2	1.2	1.2	1.3	1.4
05 Mineral products	17.7	17.4	20.7	23.0	24.9	22.1
26 Ores, slag and ash	5.6	5.9	6.9	6.4	7.9	8.8
2601 Iron ores and concentrates	3.4	3.7	4.1	3.5	4.8	5.8
27 Mineral fuels and oils	11.8	11.1	13.5	16.3	16.6	13.0
2709 Petroleum oils and oils obtained from bituminous minerals; crude	8.0	7.3	8.9	11.2	11.5	8.6
2711 Petroleum gases and other gaseous hydrocarbons	1.5	1.4	1.8	2.3	2.5	2.0
06 Chemicals and products thereof	6.7	6.9	7.2	7.3	7.5	7.3
29 Organic chemicals	2.8	2.8	3.0	3.2	2.8	2.2
30 Pharmaceuticals	1.1	1.3	1.4	1.3	1.6	1.7
07 Plastics and rubber	4.7	4.7	4.8	4.3	4.2	4.2
39 Plastics and articles thereof	3.9	3.8	3.7	3.5	3.4	3.5
08 Raw hides and skins; leather, furskins and articles thereof	0.7	0.6	0.5	0.4	0.4	0.4
09 Wood, cork, straw	1.1	1.2	1.3	1.2	1.1	1.0
10 Pulp of wood; paper and paperboard	1.4	1.4	1.5	1.5	1.3	1.3
11 Textiles and textile articles	1.9	1.8	1.7	1.6	1.5	1.4
12 Footwear, headgear, etc.	0.2	0.2	0.2	0.2	0.3	0.3
13 Articles of stone, plaster, cement	0.5	0.6	0.5	0.5	0.5	0.5
14 Precious stones and metals, pearls	5.8	5.0	3.5	2.9	2.9	1.5
7108 Gold, unwrought or in semi-manuf. forms, or in powder form	4.7	4.0	2.8	2.1	2.1	0.6
15 Base metals and articles thereof	5.2	5.0	5.2	5.0	4.6	5.7
72 Iron and steel	1.1	1.1	1.2	1.0	1.1	1.8
74 Copper and articles thereof	2.3	2.1	2.2	2.2	2.0	2.4
16 Machinery, electrical equipment	34.9	35.3	34.0	33.9	33.1	36.0
84 Machinery and mechanical appliances, parts thereof	9.4	9.3	9.2	9.5	9.2	9.3
85 Electrical machineries and parts thereof	25.5	26.0	24.8	24.4	23.9	26.7
8517 Telephone sets, including telephones for cellular networks …	2.9	2.9	2.6	2.3	2.0	2.1
8542 Electronic integrated circuits	13.7	14.3	14.2	14.6	14.7	17.1
17 Transport equipment	5.8	6.1	5.8	5.4	4.7	4.2
87 Vehicles, parts thereof	4.1	4.5	4.3	3.8	3.6	3.6
8703 Motor vehicles for the transport of persons	2.6	2.8	2.7	2.3	2.3	2.2
18 Precision instruments	6.2	6.1	5.5	5.0	5.0	5.1
90 Optical, photographic, measuring, medical instruments …	5.9	5.8	5.3	4.8	4.8	4.8
19 Arms and ammunition	0.0	0.0	0.0	0.0	0.0	0.0
20 Miscellaneous manufactured articles	0.4	0.5	0.5	0.4	0.4	0.3
21 Works of art, collectors' pieces and antiques	0.02	0.01	0.00	0.01	0.04	0.03
Other	0.4	0.8	0.8	1.4	0.7	0.5

Source: WTO Secretariat calculations, based on UN Comtrade database and information from the General Administration of Customs.

Table A1.4 China's merchandise exports by destination, 2015-20

	2015	2016	2017	2018	2019	2020
Total exports (USD billion)	2,273.5	2,097.6	2,263.4	2,494.2	2,499.0	2,590.6
	(% of total)					
Americas	25.1	25.1	26.2	26.6	24.3	24.9
United States	18.0	18.4	19.0	19.2	16.8	17.5
Other America	7.1	6.7	7.1	7.4	7.5	7.4
Mexico	1.5	1.5	1.6	1.8	1.9	1.7
Canada	1.3	1.3	1.4	1.4	1.5	1.6
Brazil	1.2	1.0	1.3	1.4	1.4	1.3
Europe	17.0	17.5	17.8	17.8	18.6	19.4
EU-27	13.1	13.5	13.9	14.2	14.7	15.1
Germany	3.0	3.1	3.1	3.1	3.2	3.4
Netherlands	2.6	2.7	3.0	2.9	3.0	3.0
Italy	1.2	1.3	1.3	1.3	1.3	1.3
EFTA	0.3	0.3	0.3	0.3	0.3	0.3
Other Europe	3.6	3.7	3.6	3.3	3.6	4.0
United Kingdom	2.6	2.7	2.5	2.3	2.5	2.8
CIS[a]	2.4	2.7	2.9	3.0	3.2	2.9
Russian Federation	1.5	1.8	1.9	1.9	2.0	2.0
Africa	4.7	4.3	4.1	4.1	4.4	4.3
Middle East	4.9	4.6	4.4	3.9	4.3	4.2
United Arab Emirates	1.6	1.4	1.3	1.2	1.3	1.2
Asia	45.9	45.6	44.6	44.5	45.2	44.2
Japan	6.0	6.2	6.1	5.9	5.7	5.5
Other Asia	39.9	39.5	38.5	38.6	39.4	38.6
Hong Kong, China	14.5	13.7	12.3	12.1	11.2	10.5
Korea, Republic of	4.5	4.5	4.5	4.4	4.4	4.3
Viet Nam	2.9	2.9	3.2	3.4	3.9	4.4
India	2.6	2.8	3.0	3.1	3.0	2.6
Chinese Taipei	2.0	1.9	1.9	2.0	2.2	2.3
Singapore	2.3	2.1	2.0	2.0	2.2	2.2
Malaysia	1.9	1.8	1.8	1.8	2.1	2.2
Australia	1.8	1.8	1.8	1.9	1.9	2.1
Indonesia	1.5	1.5	1.5	1.7	1.8	1.6
Thailand	1.7	1.8	1.7	1.7	1.8	2.0
Philippines	1.2	1.4	1.4	1.4	1.6	1.6
Other	0.0	0.1	0.0	0.0	0.0	0.0
Memorandum:						
APEC	63.7	63.8	63.5	64.0	62.3	62.7
ASEAN	12.2	12.2	12.3	12.9	14.4	14.8
EU-28	15.7	16.2	16.5	16.5	17.2	17.9

a Commonwealth of Independent States, including certain associate and former member states.

Source: WTO Secretariat calculations, based on UN Comtrade database and information from the General Administration of Customs.

Table A1.5 China's merchandise imports by origin, 2015-20

	2015	2016	2017	2018	2019	2020
Total imports (USD billion)	1,679.6	1,587.9	1,843.8	2,135.0	2,069.0	2,055.6
	(% of total)					
Americas	16.5	16.1	16.4	16.0	15.2	15.7
United States	8.9	8.5	8.4	7.3	6.0	6.6
Other America	7.7	7.6	8.0	8.7	9.3	9.1
Brazil	2.6	2.9	3.2	3.6	3.8	4.1
Chile	1.1	1.2	1.1	1.3	1.3	1.4
Canada	1.6	1.2	1.1	1.3	1.4	1.1
Europe	15.6	16.2	15.6	15.1	15.1	15.4
EU-27	11.3	11.9	12.1	11.7	12.2	12.6
Germany	5.2	5.4	5.3	5.0	5.1	5.1
France	1.5	1.4	1.5	1.5	1.6	1.4
Italy	1.0	1.1	1.1	1.0	1.0	1.1
EFTA	2.7	2.7	2.0	2.0	1.5	1.2
Other Europe	1.5	1.5	1.6	1.4	1.4	1.6
United Kingdom	1.1	1.2	1.2	1.1	1.2	1.0
CIS[a]	3.0	2.9	3.1	3.7	4.2	3.7
Russian Federation	2.0	2.0	2.2	2.8	2.9	2.8
Africa	4.1	3.5	4.1	4.6	4.6	3.5
South Africa	1.8	1.4	1.3	1.3	1.3	1.0
Middle East	6.0	5.4	6.0	7.2	7.5	6.0
Saudi Arabia, Kingdom of	1.8	1.5	1.7	2.1	2.6	1.9
Asia	46.1	47.8	47.6	46.4	47.0	49.4
Japan	8.5	9.2	9.0	8.4	8.3	8.5
Other Asia	37.6	38.6	38.6	37.9	38.8	40.9
Chinese Taipei	8.5	8.7	8.5	8.3	8.4	9.8
Korea, Republic of	10.4	10.0	9.6	9.6	8.4	8.4
Australia	4.4	4.5	5.2	4.9	5.8	5.6
Viet Nam	1.8	2.3	2.7	3.0	3.1	3.8
Malaysia	3.2	3.1	3.0	3.0	3.5	3.6
Thailand	2.2	2.4	2.3	2.1	2.2	2.3
Indonesia	1.2	1.3	1.5	1.6	1.6	1.8
Singapore	1.6	1.6	1.9	1.6	1.7	1.5
India	0.8	0.7	0.9	0.9	0.9	1.0
Philippines	1.1	1.1	1.0	1.0	1.0	0.9
Other	8.6	8.2	7.2	6.9	6.3	6.2
Free Zone China[b]	8.5	8.1	7.2	6.9	6.2	6.1
Memorandum:						
APEC	67.3	63.6	67.1	65.4	64.3	66.9
ASEAN	11.6	12.4	12.8	12.6	13.6	14.6
EU-28	12.4	13.1	13.3	12.8	13.4	13.5

a Commonwealth of Independent States, including certain associate and former member states.

b Includes goods that have been exported from China and thereafter re-imported into China.

Source: WTO Secretariat calculations, based on UN Comtrade database and information from the General Administration of Customs.

Table A2.1 Main notifications under WTO Agreements, 1 January 2018-13 April 2021

WTO Agreement	Description	Latest document symbol and date
Agreement on Agriculture		
Articles 10 & 18.2 – ES:1	Export subsidies	G/AG/N/CHN/53, 7 December 2020
Articles 10 & 18.2 – ES:2	Export subsidies – total exports	G/AG/N/CHN/54, 7 December 2020
Article 18.2 – MA:2	Tariff quotas – imports	G/AG/N/CHN/55, 7 December 2020
Article 18.2 – DS:1	Domestic support	G/AG/N/CHN/47, 14 December 2018
Article 18.3 – DS:2	New or modified domestic support	G/AG/N/CHN/49, 14 December 2018
Agreement on the Application of Sanitary and Phytosanitary Measures		
Article 7, Annex B	Regulations:	
	54 in 2018	G/SPS/N/CHN/1062-1115
	33 in 2019	G/SPS/N/CHN/1116-1148
	45 in 2020	G/SPS/N/CHN/1149-1193
	24 in 2021	G/SPS/N/CHN/1194-1217
Agreement on Import Licensing Procedures		
Article 7.3	Replies to the questionnaire	G/LIC/N/3/CHN/18, 30 January 2020
Agreement on Preshipment Inspection		
Article 5 – first time	Laws and regulations	G/PSI/N/1/Rev.4, 16 October 2019
Agreement on Rules of Origin		
Article 5, paragraph 4 of Annex II – *ad hoc*	China-Georgia FTA	G/RO/N/171, 24 May 2018
	China-Macao, China CEPA	G/RO/N/187, 20 September 2019
	China-Chile FTA	G/RO/N/191, 20 January 2020
	China-Mauritius FTA	G/RO/N/212, 4 February 2021
Agreement on Safeguards		
Articles 12.5 & 8.2	Proposed suspension of concessions and other obligations	G/L/1218; G/SG/N/12/CHN/1, 3 April 2018 G/L/1220; G/SG/N/12/CHN/2, 5 April 2018 G/L/1221; G/SG/N/12/CHN/3, 5 April 2018
Agreement on Subsidies and Countervailing Measures		
Article 25.1 & GATT 1994 Article XVI:1	Subsidies	G/SCM/N/343/CHN, 19 July 2019
Article 25.11 – *ad hoc*	Countervailing measures	G/SCM/N/346, 20 March 2019 G/SCM/N/360/Rev.1, 5 May 2020 G/SCM/N/375, 11 March 2021
Article 25.11 – semi-annual	Countervailing duty actions:	
	1 January-30 June 2018	G/SCM/N/334/CHN, 22 October 2018
	1 July-31 December 2018	G/SCM/N/342/CHN, 9 April 2019
	1 January-30 June 2019	G/SCM/N/349/CHN, 23 October 2019
	1 July-31 December 2019	G/SCM/N/356/CHN, 13 March 2020
	1 January-30 June 2020	G/SCM/N/363/CHN, 16 October 2020
	1 July-31 December 2020	G/SCM/N/371/CHN, 26 February 2021
Agreement on Technical Barriers to Trade		
Article 2.10	Technical regulations – urgent	G/TBT/N/CHN/1577, 31 March 2021
Article 2.9	Technical regulations:	
	49 in 2018	G/TBT/N/CHN/1247-1252, 1258, 1262-1270, 1272-1273, 1276-1299, 1303-1309
	84 in 2019	G/TBT/N/CHN/1312, 1314-1330, 1332-1341, 1344-1399
	107 in 2020	G/TBT/N/CHN/1402-1413, 1415-1425, 1429, 1435-1452, 1455-1458, 1461-1514, 1516-1521, 1523
	58 in 2021	G/TBT/N/CHN/1528-1538, 1540-1576, 1578-1587
Articles 2.9 & 5.6	Technical regulations and conformity assessment procedures (proposed):	
	6 in 2018	G/TBT/N/CHN/1254, 1259, 1300-1302, 1310
	2 in 2019	G/TBT/N/CHN/1313, G/TBT/N/CHN/1342
	1 in 2020	G/TBT/N/CHN/1434
Article 5.6	Conformity assessment procedures (proposed):	
	10 in 2018	G/TBT/CHN/1246, 1253, 1255-1257, 1260-1261, 1272, 1274-1275
	2 in 2019	G/TBT/CHN/1311, 1331
	18 in 2020	G/TBT/CHN/1414, 1426-1428, 1430-1433, 1453, 1454, 1459, 1460, 1515, 1522, 1524-1527
	1 in 2021	G/TBT/CHN/1539
Article 5.7	Conformity assessment procedures (urgent)	G/TBT/CHN/1400, 1401

WTO Agreement	Description	Latest document symbol and date
Agreement on Trade-Related Aspects of Intellectual Property Rights		
Article 63.2	Replacement or consolidation of the Anti-Unfair Competition Law	IP/N/1/CHN/10; IP/N/1/CHN/U/1, 30 January 2020
	Replacement or consolidation of the Trademark Law	IP/N/1/CHN/11; IP/N/1/CHN/T/5, 30 January 2020
Agreement on Trade Facilitation		
Articles 1.4, 10.4.3, 10.6.2, 12.2.2	Contact information	G/TFA/N/CHN/4, 10 January 2020; G/TFA/N/CHN/2/Rev.3, 30 April 2020
Articles 22.1 & 22.2	Technical assistance, information and contact points	G/TFA/N/CHN/3, 18 October 2019
Agreement on Trade-Related Aspects of Intellectual Property Rights		
Article 63.2	Replacement or consolidation of the Anti-Unfair Competition Law	IP/N/1/CHN/10; IP/N/1/CHN/U/1, 30 January 2020
	Replacement or consolidation of the Trademark Law	IP/N/1/CHN/11; IP/N/1/CHN/T/5, 30 January 2020
Decision on Notification Procedures for Quantitative Restrictions		
G/L/59/Rev.1 – biennial – complete notification	Market access – quantitative restrictions	G/MA/QR/N/CHN/5/Rev.1, 15 February 2019
GATT 1994		
Article XVII:4(a) & paragraph 1 of the interpretation of Article XVII	State trading	G/STR/N/16/CHN; G/STR/N/17/CHN, 27 July 2018
Article XXIV:7(a) of the GATT 1994 & Article V:7(a) of the GATS	China-Mauritius FTA	WT/REG442/N/1-S/C/N/1037, 7 January 2021
Article XXIV:7(a) of the GATT 1994 & Article V:7(a) of the GATS	China-Georgia FTA	WT/REG391/N/1-S/C/N/900, 5 April 2018
Agreement on Implementation of Article VI of the GATT 1994		
Article 16.4 – *ad hoc*	Anti-dumping actions	G/ADP/N/311, 26 March 2018; G/ADP/N/320, 29 November 2018; G/ADP/N/325, 1 April 2019; G/ADP/N/334, 15 November 2019; G/ADP/N/339/Rev.1, 5 May 2020 G/ADP/N/353, 10 March 2021
Article 16.4 – semi-annual	Anti-dumping actions	G/ADP/N/294/CHN, 15 March 2017; G/ADP/N/308/CHN, 18 April 2018; G/ADP/N/314/CHN, 23 October 2018; G/ADP/N/322/CHN, 12 April 2019; G/ADP/N/328/CHN, 23 October 2019; G/ADP/N/335/CHN, 21 April 2020 G/ADP/N/350/CHN, 9 March 2021
Agreement on Implementation of Article VII of the GATT 1994		
Article 22.2	Customs valuation	G/VAL/N/1/CHN6, 12 April 2018

Source: WTO Secretariat.

Table A2.2 WTO dispute settlement cases involving China, 1 January 2018-13 April 2021

Subject	Respondent/ complainant	Request for consultation received	Status (as at 13 April 2021)	WTO document series
China as respondent				
Anti-dumping and countervailing duty measures on barley	China/ Australia	16/12/2020	In consultations	WT/DS598
Measures concerning the importation of canola seed from Canada	China/ Canada	09/09/2019	In consultations	WT/DS589
Certain measures concerning imports of sugar	China/ Brazil	16/10/2018	In consultations	WT/DS568
Additional duties on certain products from the United States	China/ United States	16/07/2018	Panel composed	WT/DS558
Certain measures of transfer of technology	China/ European Union	20/06/2018	In consultations	WT/DS549
Certain measures concerning the protection of intellectual property rights II	China/ United States	23/03/2018	Panel composed	WT/DS542
Subsidies to producers of primary aluminium	China/ United States	12/01/2017	In consultations	WT/DS519
Tariff rate quotas for certain agricultural products	China/ United States	15/12/2016	Report(s) adopted with recommendation to bring measures into conformity	WT/DS517
Domestic support for agricultural producers	China/ United States	13/09/2016	Authorization to retaliate requested (including 22.6 arbitration)	WT/DS511
Anti-dumping measures on imports of cellulose pulp from Canada	China/ Canada	15/10/2014	Implementation notified by respondent	WT/DS483
Anti-dumping and countervailing duty measures on broiler products from the United States	China/ United States	20/09/2011	Compliance proceedings completed with finding(s) of non-compliance	WT/DS427
China as complainant				
Tariff measures on certain goods from China – III	United States/ China	02/09/2019	In consultations	WT/DS587
Tariff measures on certain goods from China – II	United States/ China	23/08/2018	In consultations	WT/DS565
Certain measures related to renewable energy	United States/ China	14/08/2018	In consultations	WT/DS563
Safeguard measure on imports of crystalline silicon photovoltaic products	United States/ China	14/08/2018	Panel composed Delayed	WT/DS562
Certain measures on steel and aluminium products	United States/ China	05/04/2018	Panel composed	WT/DS544
Tariff measures on certain goods from China	United States/ China	04/04/2018	Panel report under appeal	WT/DS543
Measures related to price comparison methodologies	European Union/ China	12/12/2016	Authority for panel lapsed	WT/DS516
Measures affecting tariff concessions on certain poultry meat products	European Union/ China	08/04/2015	Settled or terminated/ Mutually agreed solution	WT/DS492
Certain methodologies and their application to anti-dumping proceedings involving China	United States/ China	03/12/2013	Authorization to retaliate requested	WT/DS471
Countervailing duty measures on certain products from China	United States/ China	25/05/2012	Authorization to retaliate requested	WT/DS437

Source: WTO Secretariat.

Table A2.3 Industries in which FDI was/is restricted, 2019 and 2020

2019	2020
Agricultural, forestry, livestock, and fishery industries	
Selection and seed production of new varieties of wheat and corn: the Chinese parties as the controlling shareholders.	Selection of new wheat varieties and seed production: the Chinese parties holding no less than 34%; and selection of new corn varieties and seed production: controlled by the Chinese parties.
Manufacturing industries	
Printing of publications: the Chinese parties as the controlling shareholders.	Same as in 2019
Except for special vehicles and new energy vehicles, the Chinese parties in vehicle manufacturing shall hold no less than 50% of the shares; a foreign investor may establish two or fewer equity joint ventures in China to manufacture the same type of vehicle products.	Manufacturing of complete automobiles, excluding special purpose vehicles, new energy vehicles, and commercial vehicles: the Chinese parties holding no less than 50% of the shares; a foreign investor may establish two or fewer equity joint ventures in China to manufacture the same type of complete automobile products.
Industries of production and supply of electricity, heat, gas, and water	
Construction and operation of nuclear power plants: the Chinese parties as the controlling shareholders.	Same as in 2019
Construction and operation of urban water supply and drainage network for cities with a population of more than 500,000: the Chinese parties as the controlling shareholders.	Not listed
Transportation, warehousing, and postal services industries	
Domestic water transport companies: the Chinese parties as the controlling shareholders.	Same as in 2019
Public air transport companies: the Chinese parties as the controlling shareholders, the investment ratio of a foreign investor and its affiliates shall not exceed 25%, and the legal representative shall be a Chinese citizen.	Same as in 2019
General aviation enterprises: the legal representative shall be a Chinese citizen. General aviation enterprises for the agricultural, forestry, and fishery industries: limited to equity joint ventures. Other general aviation enterprises: the Chinese parties as the controlling shareholders.	Same as in 2019
Construction and operation of civil airports: the Chinese parties as the controlling shareholders.	Construction and operation of civil airports: the Chinese parties as the controlling shareholders, and foreign parties may not participate in the construction and operation of the airport tower.
Information transmission, software, and IT service industries	
Telecommunications companies: limited to China's WTO commitment to open telecommunications services, value-added telecommunications business of no more than 50% of the foreign share ratio (except e-commerce, domestic multi-party communications, storage and forwarding categories, and call centres). Basic telecommunications services: the Chinese parties as the controlling shareholders.	Same as in 2019
Finance industries	
Securities companies: foreign investment shall not exceed 51%. Securities investment fund management companies: foreign investment shall not exceed 51%. (Elimination of the foreign-equity ratio limit will occur in 2021.)	Not listed
Futures companies: foreign investment shall not exceed 51%. (Elimination of the foreign-equity ratio limit will occur in 2021.)	Not listed
Life insurance companies: foreign investment shall not exceed 51%. (Elimination of the foreign-equity ratio limit will occur in 2021.)	Not listed
Leasing and commercial services industries	
Market surveys: limited to equity or cooperative joint ventures; radio and television ratings surveys therein: the Chinese parties as the controlling shareholders.	Market surveys: limited to equity joint ventures; radio and television ratings surveys therein: the Chinese parties as the controlling shareholders.

2019	2020
Education	
Pre-school education, ordinary high school, and higher education institutions: subject to Sino-foreign cooperative education, and led by the Chinese parties (the principal or principal administrative officer shall be a Chinese national, and the Chinese parties shall comprise not less than half of the council, board, or joint administrative committee).	Same as in 2019
Health and social work	
Medical institutions: limited to joint ventures and cooperation.	Medical institutions: limited to equity joint ventures.

Source: NDRC and MOFCOM, *The Special Administrative Measures on Access to Foreign Investment* (2019 and 2020 editions), 2019 and 2020 National Negative Lists; and information provided by the authorities.

Table A2.4 Industries in which FDI was/is prohibited, 2019 and 2020

2019	2020
Agricultural, forestry, livestock, and fishery industries	
Development, breeding, cultivation, and production of the precious and fine varieties that are rare and special in China, or the production of the relevant reproductive materials thereof (including high-quality genes in the industries of crop production, livestock, and aquaculture).	Development, breeding, cultivation, and production of related reproductive materials (including good genes of cultivation, husbandry, and aquaculture) of China's rare and unique varieties.
Selection and breeding of transgenic varieties of agricultural crops, livestock, and breeding poultry and aquatic fry, or the production of their transgenic seeds (sprouts).	Breeding genetically modified varieties of crop seeds, livestock, and poultry breeds and aquatic breeds, as well as manufacturing of genetically modified seeds (seedlings) thereof.
Fishing of aquatic products in sea area under Chinese jurisdiction and within Chinese territorial waters.	Same as in 2019
Mining industries	
Rare earths, radioactive minerals, tungsten exploration, mining, and mineral processing.	Same as in 2019
Manufacturing industries	
Smelting, processing, and production of nuclear fuel in radioactive minerals.	Not listed
Application of steaming, stir-frying, moxibustion, or calcination of Chinese herbal medicines and other processing techniques, as well as the production of confidential prescription products of proprietary Chinese medicines.	Same as in 2019
Satellite TV broadcast ground receiving facilities and key parts production.	Same as in 2019
Wholesale and retail industries	
Wholesale and retail of tobacco leaves, cigarettes, re-dried tobacco leaves, and other tobacco products.	Same as in 2019
Transportation, storage and warehousing, and postal services industries	
Air traffic control.	Not listed
Postal companies, and domestic express delivery mail business.	Same as in 2019
Information transmission, software, and information technology services	
Internet news information services, online publishing services, Internet audio-visual programme services, Internet cultural operations (except music), and Internet public distribution of information services (except content already opened in China's WTO accession commitments).	Same as in 2019
Leasing and commercial services industries	
Chinese legal matters (except provision of information on impact on Chinese legal environment), and no foreign investor appointed as a partner of a domestic law firm.	Same as in 2019
Social surveys.	Social surveys.
Scientific research and technological services industries	
Human stem cell, gene diagnosis, and therapeutic technology development and application.	Same as in 2019
Humanities and social science research institutions.	Same as in 2019
Geodetic surveying, marine surveying and mapping, aerial photography for surveying and mapping, ground motion surveying, and surveying and mapping of administrative boundaries. Preparation of topographic maps, world administrative area maps, national administrative area maps, maps of administrative areas at or below the provincial level, national teaching maps, local teaching maps, true three-dimensional maps and electronic navigation maps; and regional geological mapping, mineral geology, geophysics, geochemistry, hydrogeology, environmental geology, geological disasters, remote sensing geology, and other surveys.	Geodetic surveying, marine surveying and mapping, aerial photography for surveying and mapping, ground motion surveying, and surveying and mapping of administrative boundaries. Preparation of topographic maps, world administrative area maps, national administrative area maps, maps of administrative areas at or below the provincial level, national teaching maps, local teaching maps, true three-dimensional maps and electronic navigation maps; and regional geological mapping, mineral geology, geophysics, geochemistry, hydrogeology, environmental geology, geological disasters, remote sensing geology and other surveys. (The mining right holders are not subject to the Special Administrative Measures when carrying out work within the scope of their mining rights.)

2019	2020
Education	
Compulsory education institutions and religious education institutions.	Same as in 2019
Cultural, sports, and entertainment industries	
News organizations (including but not limited to news agencies).	Same as in 2019
Editing, publishing, and production of books, newspapers, periodicals, audio-visual products, and electronic publications.	Same as in 2019
Radio stations, TV stations, radio and TV channels (frequencies), radio and TV transmission network (transmitter stations, relay stations, radio and TV satellites, satellite uplink stations, satellite receiving stations, microwave stations, surveillance stations, and cable radio and TV transmission networks, etc.). Business of video broadcasting by order of radio and TV, and installation services of ground receiving facilities for satellite TV broadcasting.	Same as in 2019
Companies producing and operating radio and TV programmes (including introduction of business).	Same as in 2019
Film production companies, distribution companies, cinema companies, and film importation business.	Same as in 2019
Auction companies for heritage auction, heritage stores, and state-owned heritage museums.	Same as in 2019
Performing arts groups.	Same as in 2019

Source: NDRC and MOFCOM, *The Special Administrative Measures on Access to Foreign Investment* (2019 and 2020 editions), 2019 and 2020 National Negative Lists; and information provided by the authorities.

Table A3.1 MFN applied tariff summary, 2021

	Number of lines	Average (%)	Range (%)		Standard deviation	Duty free (%)
			MFN applied	Bound		
Total	**8,580**	**7.1**	**0-65**	**0-65**	**6.1**	**12.6**
HS 01-24	1,418	11.2	0-65	0-65	10.1	9.4
HS 25-97	7,162	6.3	0-50	0-50	4.6	13.2
By WTO category						
WTO agricultural products	1,175	12.7	0-65	0-65	11.0	8.9
Animals and products thereof	170	11.4	0-25	0-25	7.9	18.2
Dairy products	21	11.2	2-20	6-20	4.1	0.0
Fruit, vegetables, and plants	390	10.7	0-30	0-30	6.6	6.2
Coffee and tea	33	13.0	2-30	8-32	4.7	0.0
Cereals and preparations	129	19.7	0-65	0-65	20.4	7.8
Oils seeds, fats, oil and their products	108	10.1	0-30	0-30	7.4	20.4
Sugars and confectionery	21	30.6	5-50	8-50	16.2	0.0
Beverages, spirits and tobacco	66	14.9	0-65	0-65	15.8	1.5
Cotton	5	22.0	10-40	10-40	14.7	0.0
Other agricultural products, n.e.s.	232	11.9	0-38	0-38	7.9	6.9
WTO non-agricultural products	7,405	6.2	0-50	0-50	4.3	13.2
Fish and fishery products	352	6.8	0-15	0-23	2.9	8.2
Minerals and metals	1,260	6.1	0-50	0-50	4.3	8.5
Chemicals and photographic supplies	1,431	5.7	0-47	0-47	3.9	9.2
Wood, pulp, paper and furniture	421	2.1	0-12	0-20	2.5	41.3
Textiles	851	6.9	2-38	2-38	2.4	0.0
Clothing	299	6.7	5-12	14-25	1.4	0.0
Leather, rubber, footwear and travel goods	226	10.1	0-25	0-25	4.8	0.4
Non-electric machinery	1,042	6.2	0-25	0-35	3.6	16.4
Electric machinery	468	5.1	0-20	0-35	4.4	37.0
Transport equipment	424	10.6	0-45	0-45	7.2	0.2
Non-agricultural products, n.e.s.	611	5.7	0-20	0-35	4.8	30.4
Petroleum	20	4.8	0-9	0-9	3.0	15.0
By ISIC sector						
ISIC 1 – Agriculture, hunting and fishing	670	9.7	0-65	0-65	9.7	22.1
ISIC 2 – Mining	123	1.7	0-6	0-8	1.7	41.5
ISIC 3 – Manufacturing	7,786	7.0	0-65	0-65	5.7	11.3
Manufacturing excluding food processing	6,956	6.4	0-50	0-50	4.5	12.3
ISIC 4 – Electrical energy	1	0.0	0	0	0.0	100.0
By stage of processing						
First stage of processing	1,190	8.4	0-65	0-65	9.2	20.6
Semi-processed products	2,627	6.3	0-65	0-65	5.4	5.4
Fully processed products	4,763	7.3	0-65	0-65	5.5	14.5
By HS section						
01 Live animals and products	533	9.3	0-25	0-25	6.1	12.4
02 Vegetable products	514	13.7	0-65	0-65	12.5	10.9
03 Fats and oils	56	12.6	2-30	5-30	5.9	0.0
04 Prepared food, beverages and tobacco	315	9.9	0-65	0-65	11.1	3.5
05 Mineral products	201	2.9	0-9	0-12	2.5	27.9
06 Chemicals and products thereof	1,354	5.8	0-50	0-50	4.8	9.7
07 Plastics, rubber, and articles thereof	280	8.9	0-25	0-25	4.2	0.4
08 Raw hides and skins, leather, and its products	106	9.7	3-20	5-23	4.3	0.0
09 Wood and articles of wood	235	1.6	0-12	0-20	2.4	42.6
10 Pulp of wood, paper and paperboard	161	3.8	0-7.5	0-7.5	2.3	21.7
11 Textiles and textile articles	1,147	7.1	1-40	3-40	3.4	0.0
12 Footwear, headgear, etc.	73	8.1	4-14	10-25	2.3	0.0
13 Articles of stone, plaster, cement	205	10.4	0-20	0-28	3.5	0.5
14 Precious stones and metals, pearls	90	5.0	0-21	0-35	5.8	38.9
15 Base metals and articles thereof	773	5.8	0-9	0-30	2.3	2.5
16 Machinery, electrical equipment, etc.	1,545	5.7	0-25	0-35	4.0	24.9
17 Transport equipment	439	10.4	0-45	0-45	7.2	0.7
18 Precision equipment	336	5.5	0-20	0-30	5.2	34.2
19 Arms and ammunition	21	13.0	13-13	13-15	0.0	0.0
20 Miscellaneous manufactured articles	186	5.2	0-20	0-25	4.4	34.4
21 Works of art, etc.	10	3.1	0-6	0-14	2.6	20.0

Note: Calculations are based on national tariff line level (8-digit), excluding in-quota rates and including AVEs for non-*ad valorem* rates provided by the authorities.
Interim duty rates are used for the calculations when fully applied at the 8-digit level.

Source: WTO Secretariat calculations, based on data provided by the authorities.

Table A3.2 Active central subsidy programmes notified in 2019

Sector (number of programmes)	Programme number and name		Duration	Budget (CNY million)
Agriculture (7)	33	Projects of agricultural, forestry, animal and fishery	2000-present	..
	35	Imported products for the purpose of replacing the planting of poppies	2000-present	..
	36[a]	Imports of seeds (seedlings)	2016-2020	..
	50	Fund for water resources development	1983-present	2017: 30,787.72 2018: 20,684.76
	52[a]	Fund for agricultural resources and ecological protection	2011-present	2017: 22,036; 2018: 24,536
	53	Subsidy for a new round of returning cultivated land to forests and grassland	2014-present	2017: 9,197; 2018: 12,789
	65[a]	Agricultural production (excluding large-scale farming)	2008-present	..
Technology (5)	5[a]	High or new technology enterprises	2008-present	..
	6	Additional calculation and deduction of R&D expenses	2017-2020	..
	7	Enterprises transferring technology	2008-present	..
	10[a]	Service enterprises with advanced technology	2016-present	..
	41	Integrated circuit industry	2008-present	..
Fishery (5)	74	Enterprises engaged in projects of agricultural, forestry, animal and fishery	2008-present	..
	75	Fishery stocks enhancement and fish fries releasing	2009-present	Since 2017, statistical breakdown for this programme is not available. The estimated size of the funds is CNY 398.5 million.
	76	Subsidy for the prevention of aquatic animal diseases	2017-present	2017: 44; 2018: 60
	78	Improved aquatic breed	2014-present	2017: 100; 2018: 100
	79	Reform in tax and fee on refined oil (for fisheries)	2015-present	In varying amounts
Energy (5)	12[a]	Projects for environmental protection, water and energy conservation	2008-present	..
	54[a]	Fund for energy conservation and emission reduction	2015-present	2017: 34,066; 2018: 33,230
	61	Special fund for development of renewable energies	2016-2020	2017: 5,400; 2018: 6,887.44
	62[a]	Subsidy fund for surcharge of electricity price of renewable energies	2012-present	2017: 75,000; 2018: 83,900
	64[a]	Shale gas	2018-March 2021	..
Disability support (5)	27[a]	Enterprises that employ disabled people	2016-present	..
	28[a]	Enterprises employing disabled people	2007-present	..
	29[a]	Imported products exclusively used by disabled people	1997-present	..
	30	Products for the disabled people	1994-present	..
	31[a]	Enterprises producing goods exclusively used by the disabled people	2004-2020	..
Chemical & material (5)	13[a]	Building materials products produced with integrated utilization of resources	2008-present	..
	14[a]	Integrated utilization of resources	2015-present	..
	15[a]	New-type wall materials	2015-present	..
	16	Petroleum products produced with comprehensive utilization of resources	1) and 2) 2009-present; 3) 2013-2023	..
	40	Refined oil	2011-present	..

Sector (number of programmes)	Programme number and name		Duration	Budget (CNY million)
Infrastructure (4)	1	Chinese-foreign joint ventures engaged in port and dock construction	Five years of tax exemption and five years of reduction by half	..
	2	Enterprises with foreign investment established in Special Economic Zones (excluding Shanghai Pudong area)	Five years of tax exemption and five years of reduction by half	..
	3	Enterprises with foreign investment established in Pudong area of Shanghai	Five years of tax exemption and five years of reduction by half.	..
	11[a]	Public infrastructure projects	2008-present	..
Waste management (3)	67	Sites of centralized treatment of urban and rural sewage and centralized treatment of domestic garbage	2018-present	..
	68	Comprehensive utilization of solid wastes	2018-present	..
	69	Enterprises that are below pollutant discharge standards prescribed by the state and local governments	2018-present	..
Financing (3)	45	Accelerating depreciation of fixed assets	1)-4) 2014-present; 5)-6) 2015-present; 7) 2018-December 2020	..
	63[a]	Reward and subsidy for fee reduction of the financing guarantee provided for small and micro enterprises	2018-2020	2018: 3,000
	71	Financing	2018-December 2020	..
Environment (3)	22[a]	Clean Development Mechanism	2007-present	..
	55[a]	Fund for air pollution prevention and control	2016-present	2017: 16,000; 2018: 20,000
	70	Enterprises involving the reduction of excessive capacities and structural adjustment	Tax exemption of up to two years	..
Automobile and transportation (3)	20	Urban public transportation enterprises that purchase buses and trolleybuses	2012-December 2020	..
	46	Vehicle purchase tax for trailers	2018-June 2021	..
	66	Specific mobile sources of pollution	2018-present	..
SME (2)	23	Small and micro enterprises	2008-present	..
	26	Governmental funds	2016-present	..
Poverty reduction (2)	47	Fund for poverty alleviation	1980-present	2017: 86,095; 2018: 106,095
	73	Poverty alleviation migration	2018-December 2020	..
Pharmaceutical (2)	32	Anti-HIV-AIDS medicine	1) 2016-December 2020; 2) 2016-2018	..
	72	Anti-cancer drugs	2018-present	..
Economic development (2)	4	The Western Regions	1) 2001-2020; 2) two years of tax exemption and three years of reduction by half; 3) 2001-present.	..
	57[a]	Fund for development of international economic relations and trade	2014-present	2017: 11,976; 2018: 11,378
Oil & gas (1)	39	Urban land use of oil and gas production enterprises	2015-present	..
Mining (1)	37[a]	Filling mining and mining resources in exhaustion stage	2016-present	..
FDI (1)	38[a]	Import of equipment	1998-present	..

.. Not available.

a Programme eligibility tied to specific information that is not provided in the notification.

Source: WTO documents G/SCM/N/343/CHN, 19 July 2019; and G/SCM/N/343/CHN/Corr.1, 31 July 2019.

Table A3.3 Summary of IPR legislation, as at late-January 2021

Form	Main legislation	Coverage	Period of protection	Notification to the TRIPS Council
Copyrights and related rights	Copyright Law (last amended in 2020)	Works of literature, art and sciences, which are expressible in some form and created in writing; orally; musically, theatrically, *quyi*, choreographic and/or acrobatically; fine arts and architecture; photography; audio-visual works and works created by a process analogous to cinematography; graphic works such as drawings of engineering designs and product designs, maps and sketches, and model works; computer software; and other intellectual creations with the characteristics of works.	For natural persons, works are protected for life plus 50 years. For legal persons, cinematographic and photographic works are protected for 50 years. Software copyright exists from the date on which its development is completed. For legal persons, audio-visual and photographic works are protected for 50 years, and typographical designs are protected for 10 years.	IP/N/1/CHN/C/1, 8 July 2002
Trademarks	Trademark Law (last amended in 2019)	Applications to register as a trademark any word, device, letter of the alphabet, number, three-dimensional symbol, colour combination, sound or any combination thereof that identifies and distinguishes the goods of a natural person, legal person or other organization from those of others. The Law has been amended four times since 1982. The latest amendment aims to strengthen trademark protection, promote a fair business environment, effectively curb bad-faith trademark registrations, and increase compensation for infringement of trademark rights.	10 years from the day the registration is granted, renewable indefinitely.	IP/N/1/CHN/T/5, 30 January 2020
Patents	Patent Law (last amended in 2008)	Inventions and utility models for which patent rights are to be granted shall be ones which are novel, creative and of practical use.	20 years from the date of filing the application. The term of protection for utility models is 10 years, and the term for designs is 15 years, from the date of application.	IP/N/1/CHN/P/2, 21 December 2010
Layout-designs of integrated circuits	Regulations on the Protection of Layout-Designs of Integrated Circuits (promulgated in 2001)	Any layout-design which is original in the sense that the layout-design is the result of the creator's own intellectual effort and is not commonplace among creators of layout-designs and manufacturers of integrated circuits at the time of its creation.	10 years from the date of filing an application for registration of the layout-design or from the date on which it was first commercially exploited anywhere in the world, whichever expires earlier. No matter whether it has been registered or commercially exploited, a layout-design shall no longer be protected 15 years after the date of the completion of its creation.	..
New plant varieties	Regulations on the Protection of New Varieties of Plants (last amended in 2014)	Artificially cultivated plant varieties, or ones developed from discovered wild plants, which possess novelty, distinctness, uniformity and stability, and which are duly named.	20 years from the date of authorization in the case of vines, forest trees, and ornamental trees, and 15 years for other plants.	..
Anti-Unfair Competition	Anti-Unfair Competition Law of the People's Republic of China (last amended in 2019)	Protection of trade secrets. Improves the definition and expands the scope of infringement, enhances legal liability for infringing trade secret and transfers the burden of proof in civil trial procedures that infringe trade secrets.		IP/N/1/CHN/10, IP/N/1/CHN/U/1, 30 January 2020

Form	Main legislation	Coverage	Period of protection	Notification to the TRIPS Council
Criminal Law	Criminal Law (last amendment in 2020)	Criminal penalties for IPR infringements, raising the maximum prison term for trademark and copyright infringements from 7 to 10 years, adding the protection of service marks, supplementing the types of criminal acts that infringe on trade secrets, and adding "industrial espionage crime". In December 2020, the NPC Standing Committee passed the Criminal Law Amendment (XI), which increased the criminal penalties for infringement of IPRs. It increased the maximum sentence for infringement of trademark rights, copyrights, and trade secrets from 7 to 10 years, and increased the minimum penalty from control or criminal detention to fixed-term imprisonment. In addition, the Amendment enhanced the protection of service trademarks, added the types of criminal acts that infringed on trade secrets including the crime of commercial espionage, and added the types of acts of copyright infringement including the crime of infringement of performer's rights.		..

.. Not available.

Source: Information provided by the authorities; and notifications to the TRIPS Council.[1]

[1] Notifications to the TRIPS Council: WTO documents IP/N/1/CHN/P/2, 21 December 2010; IP/N/1/CHN/P/3, 26 August 2011; IP/N/1/CHN/C/1 (2001 Version), 8 July 2002; IP/N/1/CHN/L/1/Rev.1, 13 October 2003; IP/N/1/CHN/9 (2013 Amendment), 19 October 2017; and IP/N/1/CHN/T/5 (2019 Amendment), 30 January 2020. Viewed at: https://e-trips.wto.org/.

Table A3.4 Membership in International IPR Conventions, as at January 2021

International organization	International instrument	Status	Date of accession (or signature, ratification)
WIPO	Beijing Treaty	In force	28 April 2020
	WIPO Copyright Treaty	In force	9 June 2007
	WIPO Performances and Phonograms Treaty (WPPT)	In force	9 June 2007
	Strasbourg Agreement	In force	19 June 1997
	Locarno Agreement	In force	19 September 1996
	Madrid Protocol	In force	1 December 1995
	Budapest Treaty	In force	1 July 1995
	Nice Agreement	In force	9 August 1994
	Patent Cooperation Treaty (PCT)	In force	1 January 1994
	Phonograms Convention	In force	30 April 1993
	Berne Convention	In force	15 October 1992
	Madrid Agreement (Marks)	In force	4 October 1989
	Paris Convention	In force	19 March 1985
	WIPO Convention	In force	3 June 1980
	Marrakesh VIP Treaty	Signed	(signed 28 June 2013)
	Singapore Treaty	Signed	(signed 29 January 2007)
	Trademark Law Treaty (TLT)	Signed	(signed 28 October 1994)
	Washington Treaty	Signed	(signed 1 May 1990)
UPOV	UPOV Convention	In force	23 April 1999
UNESCO	Universal Copyright Convention	In force	30 October 1992

Source: WIPO IP Portal, *WIPO-Administered Treaties: Contracting Parties: China*. Viewed at: https://wipolex.wipo.int/en/treaties/ShowResults?country_id=38C.

Table A3.5 General regulatory framework of new plant varieties protection

Laws/regulations	Issuing authority	Latest amendment
Regulations on the Protection of New Varieties of Plants	State Council	29 July 2014
Implementing Rules for the Regulations of the Protection of New Varieties of Plants (Agriculture Part)	Ministry of Agriculture	25 April 2014
Implementing Rules for the Regulations of the Protection of New Varieties of Plants (Forestry Part)	Ministry of Forestry	25 January 2011
Administrative Execution Measures of the Protection of New Varieties of Forestry Plants	Ministry of Forestry	30 December 2015
Rules for the Review Board on New Plant Varieties	Ministry of Agriculture	13 February 2001
Interpretation of the Supreme People's Court concerning Some Issues on Disputes of Trial of Cases over New Plant Verities	Supreme People's Court	5 February 2001
Interpretation of the Supreme People's Court on Some Issues Concerning the Application of Law in the Trial of Cases Involving the Disputes over Infringement upon the Rights of New Plant Varieties	Supreme People's Court	12 January 2007
Seed Law	National People's Congress Standing Committee	4 November 2015
Provisions on Infringement Cases of New Plant Varieties in Agriculture	Ministry of Agriculture	12 December 2002

Source: Information provided by the authorities.

Table A4.1 Central Government support to fisheries as notified to the WTO

Title *Legal basis*	Objective	Subsidy and beneficiaries	Start date	Revenue forgone/ budgetary allocation in 2018 (CNY million)
Projects of agricultural, forestry, animal and fishery *Law of the People's Republic of China on Enterprise Income Tax (2007); Regulations for the Implementation of the Law of the People's Republic of China on Enterprise Income Tax (2007); MOF Circular Cai Shui No. 149, 2008; MOF Circular Cai Shui No. 26, 2011; MOF Circular Cai Shui No. 73, 2016*	Support the development of fishery preliminary processing, among others.	Enterprise income tax exemption/reduction from income derived by an enterprise from stipulated projects of preliminary processing related to farming, forestry, animal husbandry, and fisheries.	2008	No data on revenue forgone
Fishery stocks enhancement and fish fries releasing *MOF Circular Cai Nong No. 42, 2017*	Enhance natural fishery resources, increase fishermen's income, and improve fishery performance.	Funds are provided through local governments to fishermen, relevant scientific research institutions, and social groups involved in stocks enhancement and fish fries releasing.	2009	Budgetary allocation: 2018: estimated to be 398.5[a]
Public subsidy for the prevention of aquatic animal diseases *NDRC Circular Fa Gai Nong Jing No. 913, 2017*	Promote sustainable development of aquaculture industry, and support prevention and control of aquatic animal diseases.	Investment funds are provided to aquatic animal disease prevention, control and monitoring centres, and regional centres.	2017	Budgetary allocation: 2018: 60
Subsidy for scrapping and dismantling vessels and for ship type standardization; subsidy fund for fishery development and the scrapping, dismantling, and renovating of vessels *MOF Circular Cai Jian No. 977, 2015; MOF Circular Cai Jian No. 418, 2016*	Reduce intensity of marine fishing and promote the reduction in fishing vessels; rehabilitate ecological environment; improve fishing vessels safety; optimize and adjust the industrial structure; promote the sustainable development of distant water fishing; and phase out vessels with high-energy consumption, high emissions, and poor safety performances.	Provided to/for fishermen for reducing the number of fishing vessels and quitting marine fishing; scrapping, dismantling, and renovating fishing vessels, with an emphasis on certain vessels; construction of fishery equipment and facilities; conservation and utilization of international fishery resources; scrapping and renovation of seagoing transport vessels ahead of schedule; dismantling of inland vessels; and renovating and building new model vessels.	2015	Budgetary allocation: 2018: 7,927.15
Subsidy for improved aquatic breed *Fishery Law of the People's Republic of China, 2013*	Improve the quality of aquaculture species.	Provided to eligible aquatic breed improving farms.	2014	Budgetary allocation: 2018: 100
Subsidy for reform in tax and fee on refined oil (for fisheries) *MOF Circular Cai Jian No. 499, 2015; MOA Circular Nong Ban Yu No. 65, 2015*	Protect fisheries resources and facilitate fishery industrial restructuring; reduce fishing intensity; promote the sustainable development of fisheries; maintain the livelihood of fishermen; increase the incomes of fishermen; maintain the stability of fishing areas; and ensure the safety of the fishermen's lives and property.	Support takes the form of Central Government funds distributed through local governments to fishermen and enterprises involved in the reduction of the number of fishing vessels and no longer engaging in fishing, and whose fishing vessels are dismantled or transformed into artificial reefs. Some support is provided to fisheries resource conservation, and for a closed fishing season, fishery and fishery administration informatization construction, navigation sign-post construction in fishing ports, etc.	2015	No data provided

a This is one part of a bigger programme. Disaggregated figures for this single programme are not available; they have been estimated.

Source: WTO documents G/SCM/N/343/CHN, 19 July 2019; and G/SCM/N/343/CHN/Corr.1, 31 July 2019.

Table A4.2 Local government support to fisheries as notified to the WTO

Title *Legal basis*	Objective	Subsidy and beneficiaries	Start date	Budgetary allocation (CNY 10,000)
Hebei Province				
Subsidy for improving aquatic breeds *Ji Neng Ye Yu Fa No. 4, 2017*	Promote aquaculture industry upgrade and protect key aquaculture species resources.	Provided to eligible aquatic breeding production enterprises.	2017	2018: 500
Jiangsu Province				
Grant for fishermen during the Yangtze River fishing closed seasons (Nanjing City) *Ning Nong Cai No. 16, 2017*	Alleviate the hard-living conditions of fishermen during the fishing closed seasons, and secure smooth implementation of closed fishing for the Yangtze River.	Grant scheme. Provided to fishermen during the fishing closed seasons.	2017	No data provided
Grant for fishermen during the Yangtze River fishing closed seasons (Zhenjiang City) *Su Zheng Ban Fa No. 18, 2003*	Safeguard the livelihood of fishermen during the fishing closed seasons.	Grant scheme. Provided to fishermen on the Yangtze River.	2003	2018: 48.6
Grant for fishermen on the Yangtze River during the spring fishing closed season (Changzhou City) *Chang Xin Nong No. 16, 2017; Chang Xin Nong No. 73, 2018*	Provide grant for fishermen during the fishing closed period to ensure smooth implementation of the fishing closure.	Grant scheme. Provided to fishermen during the spring fishing closed seasons.	2017	2018: 45
Zhejiang Province				
Grant for policy-based fishery mutual insurance *Zhe Cai Nong No. 55, 2012*	Improve fishermen's capacity to withstand natural disasters, and ensure social stability in the fishing areas.	Grant scheme. Provided to eligible individuals/organizations engaged in fishing production/operation.	2005	2018: 6,550
Fund for marine and fishery comprehensive management and industry development *Zhe Cai Nong No. 47, 2015*	Promote healthy, sustainable development of marine fisheries and recovery of fishery resources. Promote eco-friendly and safe aquaculture models and improve marine management and public services.	Grant scheme. Provided for: (i) fisheries recovery, fishery stocks enhancement, and fishermen quitting marine fishing; (ii) eco-friendly renovation in the fishery industry and promotion of eco-friendly, circular, and safe aquaculture models; (iii) monitoring of marine environment and economics and development of the marine protected areas; (iv) development or standardized fishing ports; and (v) quarantine inspection of aquatic animals and safeguarding of the quality of aquatic products.	2015	2018: 49,506.5
Grant for supporting fishing boat standardization projects (Hangzhou City) *Cai Jian No. 499, 2015; Cai Jian No. 977, 2015; Zhe Cai Jian No. 14, 2016*	Control the intensity of fishing; eliminate old, wooden, polluting capture and aquaculture boats that are highly destructive to resources; and realize sustainable fisheries development goals, including well-ordered production, scientific utilization of resources, a good ecological environment, and continuous improvement of people's livelihoods.	Grant. Provided to fishing boat owners operating legally.	2017	2018: 392
Fund for policy-based fishery insurance (Ningbo City) *Yong Hai Ban No. 141, 2018*	Make fishermen better able to withstand natural disasters and risks, and maintain the stability of the fishing community.	Grant to contribute to insurance premiums. Provided to fishing vessels and owners of fishing vessels that engage in or provide services for fishery production and management in Ningbo.	2005	2018: 19

Title *Legal basis*	Objective	Subsidy and beneficiaries	Start date	Budgetary allocation (CNY 10,000)
Fujian Province				
Funds for marine economic development *Min Cai Nong No. 30, 2017*	Promote the healthy and sustainable development of the marine economy, and encourage innovation in marine technologies, such as marine biomedicine, marine aquaculture equipment, marine renewable energy, etc.	Grant and reward (among others). Provided to eligible enterprises.	2017	2018: 12,003.6
Fund for marine and fishery structural adjustment *Min Cai Nong No. 62, 2014*	Promote the safety of production, increase the quality of aquaculture, and promote the transformation of the development mode of fishery economy.	Grant. Provided to aquaculture enterprises, farms, cooperatives, and scientific research institutes.	2017	2018: 2,800
Fund for aquatic products processing (Fuzhou City) *Rong Hai Yu No. 407, 2017; Rong Hai Yu No 431, 2018*	Promote high-quality development of aquatic products processing industry.	Reward. Provided to eligible aquatic products processing enterprises.	2017	2018: 414
Fund for aquaculture (Fuzhou City) *Rong Hai Yu No. 406, 2017; Rong Hai Yu No. 432, 2018*	Encourage comprehensive farming of rice and fish, factory fish farming, etc.	Reward. Provided to eligible aquaculture enterprises.	2017	2018: 421.3
Fund for marine and fishery development (Xiamen City) *Xia Hai Yu No. 16, 2018*	Promote marine scientific and technological innovation, aquaculture breeding techniques, recreational fishery, and distant water fisheries.	Grant and reward. Provided to eligible enterprises that comply with domestic law and international fishery management rules.	2018	No data provided
Shandong Province				
Fund for distant water fishery development (Rizhao City) *Ri Zheng Zi No. 100, 2017*	Promote the healthy and sustainable development of distant water fisheries, and improve the stability, safety, resistance to pollution, and habitability of distant water fishing vessels.	Grant. Provided to eligible approved distant water fishing enterprises that comply with domestic law and international fishery management rules.	2017	No data provided
Fund for distant water fishery (Qingdao City) *Qing Zheng Zi No. 88, 2012*	Promote healthy and sustainable development of the fishery industry, and make fishing vessels more energy-saving and environmentally friendly.	Grant. Provided to eligible distant water fishery enterprises that comply with domestic law and international fishery management rules.	2013	No data provided
Guangdong Province				
Fund for developing the deep water cage aquaculture *Yue Hai Yu Han No. 6, 2015*	Optimize the fishery industry structure, and protect marine resources.	Grant. Provided to eligible aquaculture enterprises.	2015	No data provided
Production and living allowances for fishermen during closed seasons (Zhuhai City) *Zhu Hai Non Shui No. 192, 2017*	Protect fishery resources, promote sustainable development of the fishery industry, and address the livelihood problem of fishermen during closed fishing periods to maintain social stability in fishing areas.	Grant. Provided to fishermen subject to fishing closure practice.	2017	2018: 12.3
Fund for aquaculture (Zhongshan City) *Zhong Hai Yu No. 73, 2017* *Zhong Hai Yu No. 74, 2017*	Improve aquaculture breeding, enhance the quality management of aquaculture breeds. and realize sustainable development of the fishery industry.	Fund support. Granted to enterprises holding valid farming permits and breed production permits.	2013	2018: 108
Living allowances for fishermen during fishing closed seasons. (Zhongshan City) *Yue Hai Yu No. 25, 2018*	Protect fishery resources, promote sustainable development of the fishery industry, and address the livelihood problem of fishermen during closed fishing periods to maintain social stability in the fishing area.	Allowances. Provided to crew members of the fishing boats subject to the fishing closure.	2009	2018: 208.6
Guangzhou Province				
Fund supporting the policy-based aquaculture insurance *Hui Nong No. 179, 2017*	Build the risk resistance capacity of aquaculture, reduce the loss resulting from natural disasters, and promote sustainable development of the aquaculture industry.	Fund support. Provided to farmers and enterprises engaged in legal aquaculture activities and have participated in the insurance scheme.	2017	2018: 462

Title *Legal basis*	Objective	Subsidy and beneficiaries	Start date	Budgetary allocation (CNY 10,000)
Liaoning Province				
Subsidy for scrapping and dismantling vessels and for ship type standardization (Dalian City) *Cai Jian No. 977, 2015*	Reduce the intensity of marine fishing, and increase grant on top of Central Government funds to fishermen quitting marine capture.	Grant. Provided to fishermen or enterprises that volunteer to quit marine capture and/or scrap dismantle, and dispose of their ships with no harm done.	2017	No data provided
Fund for marine and fishery development (Dalian City) *Da Cai Nong No. 431, 2017*	Protect the marine environment, and promote healthy and sustainable development of the fishery industry.	Grant. Provided for aquatic product safety detection, marine environment monitoring and forecasting, fishery safety management, stock enhancement, fisherman personal accident insurance, and purchase of standard aquaculture fishing vessels.	2017	No data provided

Source: WTO documents G/SCM/N/343/CHN, 19 July 2019; and G/SCM/N/343/CHN/Corr.1, 31 July 2019.

Table A4.3 Tariff lines and rates as per the Resource Tax Law

Tariff lines			Tariff objects	Tariff rates
Energy minerals	Crude oil		Raw ore	6%
	Natural gas, shale gas, natural gas hydrate		Raw ore	6%
	Coal		Raw ore or mineral dressing	2%-10%
	Coal-derived (bed) gas		Raw ore	1%-2%
	Uranium, thorium		Raw ore	4%
	Oil shale, oil sand, natural asphalt, stone coal		Raw ore or mineral dressing	1%-4%
	Terrestrial heat		Raw ore	1%-20% or CNY 1-30 per cubic metre
Metallic minerals	Ferrous metals	Iron, manganese, chromium, vanadium, titanium	Raw ore or mineral dressing	1%-9%
	Non-ferrous metals	Copper, lead, zinc, tin, nickel, antimony, magnesium, cobalt, bismuth, mercury	Raw ore or mineral dressing	2%-10%
		Bauxite	Raw ore or mineral dressing	2%-9%
		Tungsten	Mineral dressing	6.5%
		Molybdenum	Mineral dressing	8%
		Gold, silver	Raw ore or mineral dressing	2%-6%
		Platinum, palladium, ruthenium, osmium, iridium, rhodium	Raw ore or mineral dressing	5%-10%
		Light rare earths	Mineral dressing	7%-12%
		Medium and heavy rare earths	Mineral dressing	20%
		Beryllium, lithium, zirconium, strontium, rubidium, caesium, niobium, tantalum, germanium, gallium, indium, thallium, hafnium, rhenium, cadmium, selenium, tellurium	Raw ore or mineral dressing	2%-10%
Non-metallic minerals	Minerals	Kaolin	Raw ore or mineral dressing	1%-6%
		Limestone	Raw ore or mineral dressing	1%-6% or CNY 1-CNY 10 per tonne (or per cubic metre)
		Phosphorus	Raw ore or mineral dressing	3%-8%
		Graphite	Raw ore or mineral dressing	3%-12%
		Fluorite, pyrite, natural sulphur	Raw ore or mineral dressing	1%-8%
		Natural quartz sand, vein quartz, powder quartz, crystal, industrial diamond, Iceland stone, kyanite, sillimanite (sillimanite), feldspar, talc, corundum, magnesite, pigment minerals, trona, Glauber's salt, sodium saltpetre, alunite, arsenic, boron, iodine, bromine, bentonite, diatomaceous earth, ceramic clay, refractory clay, bauxite, attapulgite clay, sepiolite clay, illite clay, rectorite clay	Raw ore or mineral dressing	1%-12%
		Pyrophyllite, wollastonite, diopside, perlite, mica, zeolite, barite, toxoid, calcite, vermiculite, tremolite, industrial tourmaline, chalk, asbestos, blue asbestos, andalusite, garnet, gypsum	Raw ore or mineral dressing	2%-12%
		Other clays (casting clay, brick clay, ceramsite clay, cement batching clay, cement batching red clay, cement batching loess, cement batching mudstone, clay for insulation materials)	Raw ore or mineral dressing	1%-5% or CNY 0.1-CNY 5 per tonne (or per cubic metre)
	Stones	Marble, granite, dolomite, quartzite, sandstone, diabase, andesite, diorite, slate, basalt, gneiss, amphibolite, shale, pumice, tuff, obsidian, nepheline, feldspar, serpentinite, medical stone, marl, potassium-bearing rock, potassium-bearing sand shale, natural oilstone, peridotite, turpentine, trachyte, gabbro, pyroxenite, syenite, volcanic ash, volcanic slag, peat	Raw ore or mineral dressing	1%-10%

Tariff lines			Tariff objects	Tariff rates
		Gravel	Raw ore or mineral dressing	1%-5% or CNY 0.1-CNY 5 per tonne (or per cubic metre)
	Precious stones	Gem, jade, gem-grade diamond, agate, topaz, tourmaline	Raw ore or mineral dressing	4%-20%
Water and gas minerals	Carbon dioxide, hydrogen sulphide, helium, radon		Raw ore	2%-5%
	Mineral water		Raw ore	1%-20% or CNY 1-CNY 30 per cubic metre
Salts	Sodium salt, potassium salt, magnesium salt, lithium salt		Mineral dressing	3%-15%
	Natural brines		Raw ore	3%-15% or CNY 1-CNY 10 per tonne (or per cubic metre)
	Sea salt			2%-5%

Source: Information provided by the authorities.

Table A4.4 Tariff lines and tariff rate range before the implementation of the Resource Tax Law

No.	Tariff lines		Tariff object	Tariff rate range
1	Crude oil, natural gas		Raw ore	6%
2	Coal		Raw ore	2%-10%
3	Metallic ores	Iron ore	Mineral concentrate	1%-6%
4		Gold ore	Gold ingots	1%-4%
5		Cooper ore	Mineral concentrate	2%-8%
6		Bauxite	Raw ore	3%-9%
7		Lead-zinc ore	Mineral concentrate	2%-6%
8		Nickel ore	Mineral concentrate	2%-6%
9		Tin ore	Mineral concentrate	2%-6%
10		Tungsten ore	Mineral concentrate	6.5%
11		Molybdenum ore	Mineral concentrate	11%
12		Light rare earths	Mineral concentrate	11.5%, 9.5%, 7.5%. Applicable tariff rates are different among regions in China. For example, 11.5% in Inner Mongolia, 9.5% in Sichuan, and 7.5% in Shandong.
13		Medium and heavy rare earths	Mineral concentrate	27%
14		Other metallic ore products not elsewhere classified	Raw ore or mineral concentrate	No more than 20%
15	Non-metallic ores	Graphite	Mineral concentrate	3%-10%
16		Diatomite	Mineral concentrate	1%-6%
17		Kaolin	Raw ore	1%-6%
18		Fluorite	Mineral concentrate	1%-6%
19		Limestone	Raw ore	1%-6%
20		Pyrite ore	Mineral concentrate	1%-6%
21		Phosphate ore	Raw ore	3%-8%
22		Potassium chloride	Mineral concentrate	3%-8%
23		Potassium sulphate	Mineral concentrate	6%-12%
24		Well salt	Sodium chloride primary products	1%-6%
25		Lake salt	Sodium chloride primary products	1%-6%
26		Salt extracted from underground brines	Sodium chloride primary products	3%-15%
27		Coal seam (formed) gas	Raw ore	1%-2%
28		Clay, gravel	Raw ore	CNY 0.1-5 per tonne or cubic metre
29		Other non-metallic ore products not elsewhere classified	Raw ore or mineral concentrate	No more than CNY 30 per tonne or cubic metre for specific tariff rate; no more than 20% for *ad valorem* tariff rate
30	Sea salt		Sodium chloride primary products	1%-5%

Source: Information provided by the authorities.

EXHIBIT 37

Catalogue for Guiding Industry Restructuring (2019 Version)

Order of the National Development and Reform Commission of the People's Republic of China

中华人民共和国国家发展和改革委员会令

(No. 29)

（第 29 号）

The Catalogue for Guiding Industry Restructuring (2019 Version), as deliberated and approved at the 2nd executive meeting on August 27, 2019, is hereby issued and shall come into force on January 1, 2020, upon which the Catalogue for Guiding Industry Restructuring (2011 Version) (Amendment) is repealed.

《产业结构调整指导目录（2019 年本）》已经 2019 年 8 月 27 日第 2 次委务会议审议通过，现予公布，自 2020 年 1 月 1 日起施行。《产业结构调整指导目录（2011 年本）（修正）》同时废止。

Annex: Catalogue for Guiding Industry Restructuring (2019 Version)

附件：产业结构调整指导目录（2019 年本）

Chairman: He Lifeng

主任：何立峰

October 30, 2019

2019 年 10 月 30 日

Catalogue for Guiding Industry Restructuring

产业结构调整指导目录

(2019 Version)

（2019 年本）

Category I Encouragement

第一类　鼓励类

I. Agriculture and Forestry

一、农林业

1. Farmland construction and protection projects (including well-facilitated farmland construction, farmland irrigation and drainage construction, efficient water-saving irrigation and farmland consolidation and rehabilitation) and comprehensive land consolidation and rehabilitation	1、农田建设与保护工程（含高标准农田建设、农田水利建设、高效节水灌溉、农田整治等），土地综合整治
2. Construction of agricultural product and crop seed bases	2、农产品及农作物种子基地建设
3. Development and application of advanced protected cultivation technologies for vegetables, melons, fruits, and flowers (including soilless cultivation) and development and application of high-quality, high-yield, efficient, and standardized cultivation technologies	3、蔬菜、瓜果、花卉设施栽培（含无土栽培）先进技术开发与应用，优质、高产、高效标准化栽培技术开发与应用
4. Development and application of technologies for the standardized breeding of livestock and poultry on a certain scale	4、畜禽标准化规模养殖技术开发与应用
5. Prevention and control of serious plant diseases, insect pests, and animal diseases	5、重大病虫害及动物疫病防治
6. Selection, breeding, breed conservation, and development of the fine varieties of animals and plants (including wild animals and plants); biological breeding; and development and application of seed (seedling) production, processing, packaging, inspection and authentication technology as well as storage and transportation equipment	6、动植物（含野生）优良品种选育、繁育、保种和开发，生物育种，种子（种苗）生产、加工、包装、检验、鉴定技术和仓储、运输设备的开发与应用
7. Development and application of technologies for dry land water-saving agriculture, protective cultivation, ecological agricultural construction, arable land quality construction,	7、旱作节水农业、保护性耕作、生态农业建设、耕地质量建设、新开耕地快速培肥、水肥一体化技术开发与应用

rapid fertilization of new arable land, and water and fertilizer integration	
8. Development and application of ecological planting (or breeding)	8、生态种（养）技术开发与应用
9. Demonstration and application of fully biodegradable plastic mulches on farmland and risk management and remediation of contaminated farmland	9、全生物降解地膜农田示范与应用及受污染耕地风险管控与修复
10. Development of feed, feed additives, fertilizers, pesticides, veterinary drugs, and other high-quality, safe and environment-friendly agricultural inputs permitted to bear marks of production materials for green food and food additives permitted to be used for green food production	10、获得绿色食品生产资料标志的饲料、饲料添加剂、肥料、农药、兽药等优质安全环保农业投入品及绿色食品生产允许使用的食品添加剂开发
11. Resource multiplication and protection projects of large inland lake basins	11、内陆流域性大湖资源增殖保护工程
12. Distant fishery, artificial reefs and projects of fishery administration and fishing ports	12、远洋渔业、人工鱼礁、渔政渔港工程
13. Industrialized production of embryo (in vivo) and semen of cattle and sheep	13、牛羊胚胎（体内）及精液工厂化生产
14. Development and application of agricultural biotechnology	14、农业生物技术开发与应用
15. Arable land maintenance management and development and application of fast testing technologies for soil, fertilizer and water	15、耕地保养管理与土、肥、水速测技术开发与应用

16. Construction of conservation lands and conservation zones of germ plasm resources of agricultural, forestry, poultry, livestock and fishery species; collection, conservation, appraisal, development, and application of germ plasm resources of animals and plants

16、农、林作物、畜禽和渔业种质资源保护地、保护区建设；动植物种质资源收集、保存、鉴定、开发与应用

17. Comprehensive utilization of crop straw (utilization of straw as fertilizer, feed, energy, substrate and raw materials, among others)

17、农作物秸秆综合利用（秸秆肥料化利用，秸秆饲料化利用，秸秆能源化利用，秸秆基料化利用，秸秆原料化利用等）

18. Projects of comprehensive utilization and development of rural renewable resources (including biogas projects, bio-natural gas project, comprehensive utilization of "biogas, biogas slurry, and biogas residue," biogas-fired power generation, clean biomass heating, straw gasification and clean energy utilization projects, utilization of waste mushroom substrate bags, and solar energy utilization)

18、农村可再生资源综合利用开发工程（沼气工程、生物天然气工程、“三沼”综合利用、沼气发电，生物质能清洁供热，秸秆气化清洁能源利用工程，废弃菌棒利用，太阳能利用）

19. Comprehensive harnessing projects for grassland and forest disasters

19、草原、森林灾害综合治理工程

20. Restoration of farmland to forest and grassland, restoration of pasture to grassland and natural grassland vegetation restoration projects and growing and processing of high-quality and high-yield hay

20、退耕还林还草、退牧还草及天然草原植被恢复工程，优质高产牧草人工种植与加工

21. Development and application of new techniques and technologies for new diagnosis reagents and vaccines for animal epidemics and veterinary drugs with low toxin and low residue (including biological products for animals)

21、动物疫病新型诊断试剂、疫苗及低毒低残留兽药（含兽用生物制品）新工艺、新技术开发与应用

22. Planting and production of natural rubber and eucommia

22、天然橡胶及杜仲种植生产

23. Pollution-free agricultural products and development and application of technologies for monitoring harmful elements in the environment of producing areas

23、无公害农产品及其产地环境的有害元素监测技术开发与应用

24. Development and application of technologies for the innocuous disposal of organic waste and the industrialization of organic fertilizer

24、有机废弃物无害化处理及有机肥料产业化技术开发与应用

25. Development and application of production technologies for pollution-free and green agricultural, husbandry, and fishery products

25、农牧渔产品无公害、绿色生产技术开发与应用

26. Storage, transportation, freshness maintenance, processing, and comprehensive utilization of agricultural, forestry, husbandry, and fishery products

26、农林牧渔产品储运、保鲜、加工与综合利用

27. Protection forest projects, protection projects of natural forest and other natural resources, and forest tending and low-quality and low-efficiency forest improvement projects

27、防护林工程，天然林等自然资源保护工程，森林抚育、低质低效林改造工程

28. Construction of national reserve forests, construction of characteristic economic forests, construction of carbon sequestration forests, tree and grass planting projects and forest and grass seedling projects, construction of camellia oleifera, oil palm and other woody grain and oil bases, and targeted cultivation and industrialization of biomass forests

28、国家储备林建设、特色经济林建设，碳汇林建设、植树种草工程及林草种苗工程，油茶、油棕等木本粮油基地建设，生物质能源林定向培育与产业化

29. Projects of comprehensive management of soil erosion and desertification and rocky desertification prevention and control

29、水土流失综合治理工程，荒漠化、石漠化防治及防沙

and sand prevention and control projects	治沙工程
30. Construction of natural reserves including but not limited to ocean, forest, wildlife, wetland, desert and grassland and eco-demonstration projects	30、海洋、森林、野生动植物、湿地、荒漠、草原等自然保护区建设及生态示范工程
31. Production of new materials for sand stabilization, water conservation, and soil improvement	31、固沙、保水、改土新材料生产
32. Cultivation of salt-tolerance and drought-enduring plants	32、抗盐与耐旱植物培植
33. Construction of bamboo, rattan and flower bases, product development and intensive and deep processing	33、竹藤、花卉基地建设、产品开发及精深加工
34. Forest and grassland genetic resource protection projects and protection, improvement, development, and utilization of wild economic forest species	34、林木、草原基因资源保护工程，野生经济林树种保护、改良及开发利用
35. Conservation projects of rare and endangered species of wild animals and plants as well as ancient trees and famous trees	35、珍稀濒危野生动植物和古树名木保护工程
36. Deep processing and product development of inferior and small firewood, shrubs grown in sand, and “three residues” (felling residue, forest planting residue, and processing residue)	36、次小薪材、沙生灌木及三剩物深加工与产品开发
37. Construction of cultivation, taming and breeding bases of wild animals and plants and development of a monitoring and early warning system of epidemic sources and diseases	37、野生动植物培植、驯养繁育基地及疫源疫病监测预警体系建设

38. Planting (breeding) of fine traditional Chinese medicine and high-quality, high-yield, endangered, or rare animal and plant medicinal materials and artificial cultivation and development of underwood species including but not limited to spices and wild flowers	38、道地中药材及优质、丰产、濒危或紧缺动植物药材的种植（养殖），香料、野生花卉等林下资源人工培育与开发
39. Development and application of engineered wood made from wood, bamboo, and grass (including straw) and its composite materials technology	39、木、竹、草（包括秸秆）人造板及其复合材料技术开发及应用
40. Construction of turpentine orchards and deep processing of forest chemicals	40、松脂林建设、林产化学品深加工
41. Development and application of artificial rainfall and hail suppression and other weather modification technologies	41、人工增雨防雹等人工影响天气技术开发与应用
42. Development and application of digital (information-based) agricultural, forest and grass technologies	42、数字（信息）农业、林草技术开发与应用
43. Development and application of agricultural and rural environment and improvement technologies	43、农业农村环境保护与治理技术开发与应用
44. Healthy freshwater and marine aquaculture and deep processing of products, multiplication and protection of marine fishery resources, and marine ranching	44、淡水与海水健康养殖及产品深加工，淡水与海水渔业资源增殖与保护，海洋牧场
45. Construction of ecologically-clean small watersheds and prevention and control of non-point source pollution	45、生态清洁型小流域建设及面源污染防治
46. Popularization and application of energy-saving grain and oil drying equipment, green grain storage technologies for	46、粮油干燥节能设备、农户绿色储粮生物技术、驱鼠技

farmers, deratization technologies, new barns for farmers (including but not limited to color plate mixing barns, rectangle barns with a steel skeleton, steel mesh drying barns, and hot-dip zinc-coated steel barns)

术、农户新型储粮仓（彩钢板组合仓、钢骨架矩形仓、钢网式干燥仓、热浸镀锌钢板仓等）推广应用

47. Development and application of automatic pest density monitoring technologies for crops and forests

47、农作物、林木害虫密度自动监测技术开发与应用

48. Meteorological satellite projects (including but not limited to satellite research, development and manufacturing, supporting software systems, ground receiving and processing equipment and satellite remote sensing application technology) and meteorological information services

48、气象卫星工程（卫星研制、生产及配套软件系统、地面接收处理设备、卫星遥感应用技术）和气象信息服务

49. Digital transformation of agricultural production and smart agriculture projects

49、农业生产数字化改造和智慧农业工程

50. Collection and treatment of rural toilet solid waste and wastewater and kitchen solid waste and wastewater and ecological agriculture joint ventures

50、乡村厕所废物废水以及餐厨废物废水的收集处理与生态农业联合经营

51. Resource-oriented coordinated comprehensive management of rural domestic wastewater, domestic waste, livestock and poultry manure, agricultural waste and non-point source pollution on farmland

51、面向资源化的乡村生活废水、生活废物、畜禽粪便、农业废弃物与农田面源污染协同综合治理

52. Premium leisure agriculture and rural tourism projects

52、休闲农业和乡村旅游精品工程

53. Treatment and resource-oriented utilization of livestock and poultry farming waste (utilization of livestock and poultry manure as fertilizer, energy, substrate and bedding and

53、畜禽养殖废弃物处理和资源化利用（畜禽粪污肥料化、能源化、基料化和垫料化利用，病死畜禽无害化处

harmless treatment of sick and dead animals)	理）
54. Digital rural area construction and accessibility of information to villages and rural households projects	54、数字农村建设和信息进村入户工程
55. Projects of the "Internet plus" movement of agricultural products from rural areas to urban areas	55、“互联网+”农产品出村进城工程
56. Development and utilization of technologies for the energy-saving, material-saving and environmental protection processing of timber and wood (bamboo) materials	56、木材及木（竹）质材料节能、节材、环保加工技术开发与利用
57. Application of wet distillers grains with solubles ("WDGS") and application of biomass liquid organic fertilizer	57、湿态酒精糟（WDGS）的应用、生物质液体有机肥的应用
II. Water Conservancy	二、水利
1. River, lake and sea dyke construction and river course harnessing projects	1、江河湖海堤防建设及河道治理工程
2. Cross-basin water diversion projects	2、跨流域调水工程
3. Water supply source projects for urban and rural areas	3、城乡供水水源工程
4. Rural drinking water safety projects	4、农村饮水安全工程
5. Construction of flood storage and retention areas	5、蓄滞洪区建设
6. Projects of silt clean-up in rivers, lakes, and reservoirs	6、江河湖库清淤疏浚工程

7. Risk elimination and reinforcement projects for defective and dangerous reservoirs and water gates	7、病险水库、水闸除险加固工程
8. Development and application of technologies for the monitoring and elimination of hidden risks in dykes and dams	8、堤坝隐患监测与修复技术开发与应用
9. Urban water logging early warning and flood prevention projects	9、城市积涝预警和防洪工程
10. Improvement projects of outlets to sea	10、出海口门整治工程
11. Key water harnessing projects for comprehensive utilization	11、综合利用水利枢纽工程
12. Warp land dam projects	12、淤地坝工程
13. Development and manufacturing of geosynthetic materials and new materials for water conservancy projects	13、水利工程用土工合成材料及新型材料开发制造
14. Construction and improvement of irrigation areas and supporting facilities	14、灌区及配套设施建设、改造
15. Popularization and application of efficient water delivery and distribution and water-saving irrigation technologies	15、高效输配水、节水灌溉技术推广应用
16. Projects of renovation and improvement of irrigation and drainage pump stations	16、灌溉排水泵站更新改造工程
17. Water conservancy projects for bilharziasis prevention and control	17、水利血吸虫病防治工程

18. Projects of prevention and control of geological disasters from mountain torrents (construction of the monitoring, forecasting, and early warning system for mountain torrent geological disaster prevention and control areas and control of mountain torrent ditches, debris flow gullies, and landslide)

18、山洪地质灾害防治工程（山洪地质灾害防治区监测预报预警体系建设及山洪沟、泥石流沟和滑坡治理等）

19. Protection and restoration projects of the aquatic ecosystem and underground water

19、水生态系统及地下水保护与修复工程

20. Water source conservation projects (zoning of water source conservation areas, isolated protection, conservation of water and soil, protection of water resources, water ecological restoration, and development and popularization of relevant technologies)

20、水源地保护工程（水源地保护区划分、隔离防护、水土保持、水资源保护、水生态环境修复及有关技术开发推广）

21. Development and application of automated system for monitoring and forecasting soil erosion

21、水土流失监测预报自动化系统开发与应用

22. Development of automated systems for flood control scheduling and flood risk mapping technologies and their application (thematic maps of flood information in specific areas such as middle and lower reaches of great rivers, major flood control areas, and protected areas of flood control)

22、防洪调动自动化系统开发、洪水风险图编制技术及应用（大江大河中下游及重点防洪区、防洪保护区等特定地区洪涝灾害信息专题地图）

23. Construction of water resources management information system

23、水资源管理信息系统建设

24. Building of hydrological station and network infrastructure and capacity for monitoring hydrological and water resources

24、水文站网基础设施以及水文水资源监测能力建设

25. Development and utilization of unconventional water sources	25、非常规水源开发利用
III. Coal	三、煤炭
1. Coalfield geological and geophysical exploration	1、煤田地质及地球物理勘探
2. Prevention and control of mine disasters (including but not limited to gas, coal dust, mine water, fire, wall rock, earth temperature, and rock burst)	2、矿井灾害（瓦斯、煤尘、矿井水、火、围岩、地温、冲击地压等）防治
3. Development and application of briquette coal and coal water slurry technologies	3、型煤及水煤浆技术开发与应用
4. Processing and comprehensive utilization of resources co-existing and associated with coal	4、煤炭共伴生资源加工与综合利用
5. Exploration, development and utilization of coal-bed methane and extraction and utilization of coal mine gas	5、煤层气勘探、开发、利用和煤矿瓦斯抽采、利用
6. Comprehensive utilization of fuels with low heat value, such as coal gangue, coal slurry, and middling	6、煤矸石、煤泥、洗中煤等低热值燃料综合利用
7. Coal conveyance through pipelines	7、管道输煤
8. Development and application of clean and efficient coal washing technology	8、煤炭清洁高效洗选技术开发与应用
9. Control of land subsidence areas and protection and utilization of water resources in mine	9、地面沉陷区治理、矿井水资源保护与利用

10. Coal and electricity integration construction	10、煤电一体化建设
11. Development and application of coal mining methods and techniques for improving resources recovery rate	11、提高资源回收率的采煤方法、工艺开发与应用
12. Development and application of technologies for coal mining with coal gangue and other materials as backfill in mine void areas and under buildings, railways and other infrastructure, and water bodies	12、矿井采空区、建筑物下、铁路等基础设施下、水体下采用煤矸石等物质填充采煤技术开发与应用
13. Development and application of underground rescue technologies and special equipment	13、井下救援技术及特种装备开发与应用
14. Development and application of comprehensive monitoring technologies and equipment for the process of coal mine production	14、煤矿生产过程综合监控技术、装备开发与应用
15. Construction of large-scale coal storage and transportation centers and coal trading markets and environmental protection transformation of coal storage sites	15、大型煤炭储运中心、煤炭交易市场建设及储煤场地环保改造
16. Development and application of new equipment for risk avoidance and self-rescue of miners	16、新型矿工避险自救器材开发与应用
17. Intelligent mining technologies for coal mines and research, development and application of coal mine robots	17、煤矿智能化开采技术及煤矿机器人研发应用
18. Technologies for clean and efficient coal utilization	18、煤炭清洁高效利用技术

IV. Electric Power

1. Medium and large-sized hydroelectric power generation and pumped storage plants

2. Construction of ultra-supercritical power plants with a unit generating capacity of not less than 600,000 kW

3. A backpressure (extraction back-pressure) heat and electricity cogeneration unit, a heat, electricity and cooling multi-generation unit, and a (ultra-)supercritical heat and electricity cogeneration unit with a generating capacity of not less than 300,000 kW

4. Construction of a large-scale air-cool power plant with a unit capacity of not less than 600,000 kW in a water-shortage area

5. Natural gas peak-shaving power generation projects in key power load centers in areas with sufficient natural gas

6. Clean coal power generation, such as power generation by circulating fluidized bed, pressurized fluidized bed, or integrated gasification combined cycle, with a generating capacity of not less than 300,000 kW

7. Power generation with a unit generating capacity of not less than 300,000 kW by using fluidized bed boilers and utilizing gangue, middling and coal slurry, among others.

四、电力

1、大中型水力发电及抽水蓄能电站

2、单机 60 万千瓦及以上超超临界机组电站建设

3、采用背压（抽背）型热电联产、热电冷多联产、30 万千瓦及以上超（超）临界热电联产机组

4、缺水地区单机 60 万千瓦及以上大型空冷机组电站建设

5、重要用电负荷中心且天然气充足地区天然气调峰发电项目

6、30 万千瓦及以上循环流化床、增压流化床、整体煤气化联合循环发电等洁净煤发电

7、单机 30 万千瓦及以上采用流化床锅炉并利用煤矸石、中煤、煤泥等发电

8. Direct or alternate current transmission and transformation with a capacity of not less than 500 kV	8、500 千伏及以上交、直流输变电
9. Ultra-low emission technologies for coal-fired generating units	9、燃煤发电机组超低排放技术
10. Improvement and construction of grids and construction of incremental power distribution networks	10、电网改造与建设，增量配电网建设
11. Development and application of relay protection technologies and grid operation safety monitoring information technologies	11、继电保护技术、电网运行安全监控信息技术开发与应用
12. Intensive design of large-scale power plants and large grid transformers and development and application of automation technologies	12、大型电站及大电网变电站集约化设计和自动化技术开发与应用
13. Development and application of inter-regional grid interconnection engineering technologies	13、跨区电网互联工程技术开发与应用
14. Popularization and application of energy-saving and environmental protection technologies for power transmission and transformation	14、输变电节能、环保技术推广应用
15. Development and application of technologies for the reduction of electric loss in the process of power transmission, transformation and distribution	15、降低输、变、配电损耗技术开发与应用
16. Popularization and application of distributed power supply and grid (including micro-grid) connection technologies	16、分布式供电及并网（含微电网）技术推广应用

17. Coordinated management of multiple pollutants for coal-fired power generating units	17、燃煤发电机组多污染物协同治理
18. Regeneration of catalysts for waste flue gas denitration in thermal power generation and development and production of low-temperature catalysts	18、火力发电废烟气脱硝催化剂再生及低温催化剂开发生产
19. Development and application of engineering technologies for low and medium temperature water recovery measures and fish passage measures in hydropower generation	19、水力发电中低温水恢复措施工程、过鱼措施工程技术开发与应用
20. Development and application of large-capacity electricity storage technologies	20、大容量电能储存技术开发与应用
21. Charging facilities for electric automobiles	21、电动汽车充电设施
22. Power generation technologies utilizing ventilation air methane (VAM) and development and utilization	22、乏风瓦斯发电技术及开发利用
23. Complete equipment for power generation through waste incineration	23、垃圾焚烧发电成套设备
24. Distributed energy	24、分布式能源
25. High-efficiency electricity substitution technology and equipment	25、高效电能替代技术及设备
26. Coal and biomass co-firing power generation	26、燃煤耦合生物质发电
27. Flexibility improvement of thermal power generating units	27、火力发电机组灵活性改造

28. Smart energy systems	28、智慧能源系统
V. New Energy	五、新能源
1. Development and application of integrated technologies for solar thermal heating power generation systems and solar photovoltaic power generation systems and development and manufacturing of inverting control systems	1、太阳能热发电集热系统、太阳能光伏发电系统集成技术开发应用、逆变控制系统开发制造
2. Development and application of technologies for hydrogen energy, wind and photovoltaic hybrid power generation systems	2、氢能、风电与光伏发电互补系统技术开发与应用
3. Design and manufacturing of components for integration of solar energy and buildings	3、太阳能建筑一体化组件设计与制造
4. Efficient solar water heaters and solar hot water projects, development of medium and high temperature utilization technologies for solar energy, and equipment manufacturing	4、高效太阳能热水器及热水工程，太阳能中高温利用技术开发与设备制造
5. Development and application of production technologies of non-cereal biomass fuels, such as biomass cellulose ethanol and biofuel (diesel, gasoline and aviation kerosene)	5、生物质纤维素乙醇、生物燃油（柴油、汽油、航空煤油）等非粮生物质燃料生产技术开发与应用
6. Development of power generation technologies by direct combustion or gasification of biomass and equipment manufacturing	6、生物质直燃、气化发电技术开发与设备制造
7. Development of collection, transportation and storage technologies for agricultural and forestry biomass resources	7、农林生物质资源收集、运输、储存技术开发与设备制

and equipment manufacturing; and manufacturing of processing equipment of agricultural and forestry biomass briquette fuels, boilers, and furnaces	造；农林生物质成型燃料加工设备、锅炉和炉具制造
8. Large biogas and bio-natural gas production equipment in complete sets using crop straw, livestock and poultry manure, domestic waste, industrial organic waste, organic sewage and sludge and other urban and rural organic waste as raw materials	8、以农作物秸秆、畜禽粪便、生活垃圾、工业有机废弃物、有机污水污泥等各类城乡有机废弃物为原料的大型沼气和生物天然气生产成套设备
9. Manufacturing of biogas power generating sets, biogas purification equipment, and complete equipment for biogas supply in pipelines and biogas filling in cylinders	9、沼气发电机组、沼气净化设备、沼气管道供气、装罐成套设备制造
10. Development of marine energy and geothermal energy utilization technologies and equipment manufacturing	10、海洋能、地热能利用技术开发与设备制造
11. Development of technologies for offshore wind turbines of 5MW and above and equipment manufacturing	11、5MW 及以上海上风电机组技术开发与设备制造
12. Construction and equipment of offshore wind farms and manufacturing of submarine cables	12、海上风电场建设与设备及海底电缆制造
13. Energy routing, energy trading and other energy Internet technologies and equipment	13、能源路由、能源交易等能源互联网技术与设备
14. Development and application of high-efficiency hydrogen production, hydrogen transportation and high-density hydrogen storage technologies and equipment manufacturing; and hydrogen fueling stations and clean alternative fueling stations for vehicles	14、高效制氢、运氢及高密度储氢技术开发应用及设备制造，加氢站及车用清洁替代燃料加注站

15. Development and application of mobile new energy technologies	15、移动新能源技术开发及应用
16. Development and application of technologies for hybrid power generation combining traditional energy and new energy	16、传统能源与新能源发电互补技术开发及应用
VI. Nuclear Energy	**六、**核能
1. Geological exploration of uranium mine, uranium mining and metallurgy, uranium purification, and uranium conversion	1、铀矿地质勘查和铀矿采冶、铀精制、铀转化
2. Construction of advanced nuclear reactors and multi-purpose small modular reactors and technology development	2、先进核反应堆及多用途模块化小型堆建造与技术开发
3. Construction of nuclear power plants	3、核电站建设
4. Manufacturing of high-performance nuclear fuel components, MOX components and metal components	4、高性能核燃料元件、MOX 元件、金属元件制造
5. Post-processing of spent fuels	5、乏燃料后处理
6. Development of applied technologies of isotope, accelerator and irradiation	6、同位素、加速器及辐照应用技术开发
7. Development of advanced uranium isotope separation technologies and equipment manufacturing	7、先进的铀同位素分离技术开发与设备制造
8. Development of radiation protection technologies and	8、辐射防护技术开发与监测设备制造

manufacturing of monitoring equipment

9. Nuclear security key system development and equipment manufacturing

9、核安保关键系统开发与设备制造

10. Decommissioning of nuclear facilities and control of radioactive waste

10、核设施退役及放射性废物治理

11. Technologies and equipment for life extension and decommissioning of nuclear power plants

11、核电站延寿及退役技术和设备

12. Technologies and equipment for emergency response and rescue of nuclear power plants

12、核电站应急抢险技术和设备

13. Comprehensive utilization of nuclear energy (heating, steam supply and seawater desalination, among others)

13、核能综合利用（供暖、供汽、海水淡化等）

VII. Oil and Natural Gas

七、石油、天然气

1. Exploration and exploitation of conventional oil and natural gas

1、常规石油、天然气勘探与开采

2. Exploration and development of unconventional resources, such as shale gas, shale oil, tight oil, oil sand, and natural gas hydrate

2、页岩气、页岩油、致密油、油砂、天然气水合物等非常规资源勘探开发

3. Storage and transportation of crude oil, natural gas, liquefied natural gas, and product oil and construction of pipeline transportation facilities, networks and liquefied natural gas fueling facilities

3、原油、天然气、液化天然气、成品油的储运和管道输送设施、网络和液化天然气加注设施建设

4. Comprehensive utilization of resources associated with oil and gas	4、油气伴生资源综合利用
5. Development and application of technologies for improving the recovery ratio of oil-gas fields, technologies for guaranteeing work safety, and technologies for restoring ecological environment and preventing and controlling pollution	5、油气田提高采收率技术、安全生产保障技术、生态环境恢复与污染防治工程技术开发利用
6. Recycling of dumped natural gas and device manufacturing	6、放空天然气回收利用与装置制造
7. Development and application of natural gas distributed energy technologies	7、天然气分布式能源技术开发与应用
8. Development and application of volatile oil and gas recovery technologies for oil storage and transportation facilities	8、石油储运设施挥发油气回收技术开发与应用
9. Development and application of liquefied natural gas technology and equipment	9、液化天然气技术、装备开发与应用
10. Automated monitoring equipment for oil and gas recovery	10、油气回收自动监控设备
VIII. Iron and Steel	八、钢铁
1. Exploration of substitute resources for ferrous metal mines and development of key exploration technologies, technologies for comprehensive selection and utilization of low-grade refractory ores, and technologies and equipment for green, efficient and intelligent production of high-quality iron	1、黑色金属矿山接替资源勘探及关键勘探技术开发，低品位难选矿综合选别和利用技术，高品质铁精矿绿色高效智能化生产技术与装备

concentrate.

2. Research, development and application of precision control of coke oven heating, utilization of coke oven flue gas desulfurization and denitrification byproducts as resources, utilization of desulfurization waste liquid as resources, advanced treatment and reuse of coking wastewater, coal tar carbon-based materials, needle coke made from coal-tar pitch, high value-added utilization of coke oven gas, recovery of waste heat from waste gas and circulating ammonia, among others, integration of drying, forming and destructive distillation of low-rank pulverized coal and other advanced technologies and research, development and application of comprehensive advanced treatment and reuse of sewage, advanced treatment and reuse of cold rolling wastewater, treatment and reuse of sintering flue gas desulfurization wastewater and other technologies

2、焦炉加热精准控制、焦炉烟气脱硫脱硝副产物资源化利用、脱硫废液资源化利用、焦化废水深度处理回用、煤焦油炭基材料、煤沥青制针状焦、焦炉煤气高附加值利用、荒煤气和循环氨水等余热回收、低阶粉煤干燥成型-干馏一体化等先进技术的研发和应用、综合污水深度处理回用、冷轧废水深度处理回用、烧结烟气脱硫废水处理回用等技术研发和应用

3. Non-blast furnace ironmaking technologies

3、非高炉炼铁技术

4. High-performance bearing steel, high-performance gear steel, high-performance cold heading steel, high-performance alloy spring steel, steel for advanced rail transport equipment, steel for energy-saving and new energy vehicles, low-iron loss high-magnetic strength oriented electrical steel, high-performance tool steel, high-strength earthquake-resistant steel bar, steel plate and section steel for building structure, ultra-high-strength bridge cable steel, high-performance pipeline steel, high-performance wear-resistant steel, high-performance corrosion-resistant steel, high-strength high-toughness steel for construction machinery, steel for marine engineering

4、高性能轴承钢，高性能齿轮用钢，高性能冷镦钢，高性能合金弹簧钢，先进轨道交通装备用钢，节能与新能源汽车用钢，低铁损高磁感取向电工钢，高性能工模具钢，建筑结构用高强度抗震钢筋、钢板及型钢，超高强度桥梁缆索用钢，高性能管线钢，高性能耐磨钢，高性能耐蚀钢，高强度高韧性工程机械用钢，海洋工程装备及高技术船舶用钢，电力装备用特殊钢，油气钻采集输用高品质特殊钢，高性能不锈钢，高温合金，高延性冷轧带肋钢筋，非调质钢，汽车等机械行业用高强钢，高纯度、高品质合金粉末，复合钢材，半导体用高纯高性能钢

equipment and high-tech ships, special steel for power equipment, high-quality special steel for drilling, exploitation, gathering and transportation of oil and gas, high-performance stainless steel, high-temperature alloy, high-ductility cold-rolled ribbed steel bar, non-quenched and tempered steel, high-strength steel for vehicle and other machinery industries, high-purity and high-quality alloy powder, composite steel, and high-purity high-performance steel for semiconductors

5. Application of new-generation thermal machinery control processing (TMCP) technologies with online heat treatment, online performance control, and online forced cooling, direct rolling of casting billets, endless rolling, ultra-rapid cooling, energy-saving and efficient rolling, subsequent processing and other technologies

5、在线热处理、在线性能控制、在线强制冷却的新一代热机械控制加工（TMCP）工艺、铸坯直接轧制、无头轧制、超快速冷却、节能高效轧制及后续处理等技术应用

6. Development and production of ultra-high power electrode with a diameter of not less than 600 mm, micropore and ultra-micropore carbon bricks for blast furnaces, special graphite (with high strength, high density, high purity, and high modulus), graphitized (graphitiferous) cathode, lengthwise graphitization furnaces and development and production and application of environment-friendly homogenization cooling equipment

6、直径 600 毫米及以上超高功率电极、高炉用微孔和超微孔碳砖、特种石墨（高强、高密、高纯、高模量）、石墨（质）化阴极、内串石墨化炉开发与生产，环保均质化凉料设备开发与生产应用

7. Production techniques of long-life, energy-saving, environment-friendly, and fireproof materials for coke furnaces, blast furnaces, and hot blast furnaces; and production techniques of low-carbon or carbon-free fireproof materials and thermal insulation materials for refined steel and functional, environment-friendly, and fireproof materials for

7、焦炉、高炉、热风炉用长寿节能环保耐火材料生产工艺，精炼钢用低碳、无碳耐火材料、保温材料和高效连铸用功能环保性耐火材料生产工艺

efficient continuous casting

8. Quality control technology for steel products throughout the process

8、钢铁产品全流程质量管控技术

9. Disposal of waste discharged to the public by utilizing iron and steel production facilities (excluding hazardous waste)

9、利用钢铁生产设备处理社会废弃物（不含危险废物）

10. Ultra-low emission technology in the iron and steel industry and by-product recycling and reutilization technologies

10、钢铁行业超低排放技术，以及副产物资源化、再利用化技术

11. Advanced techniques and technologies for the comprehensive utilization of metallurgical solid waste (including but not limited to waste rocks and tailings in metallurgical mining and various dust, mud, residues, and iron sheets generated by steelworks); and techniques, technologies and equipment for recycling metallurgical effluent (including wastewater, waste acid and waste oil)

11、冶金固体废弃物（含冶金矿山废石、尾矿，钢铁厂产生的各类尘、泥、渣、铁皮等）综合利用先进工艺技术；冶金废液（含废水、废酸、废油等）循环利用工艺技术与设备

12. Development and application of recycling processes, techniques and technology between steel and related industries

12、钢铁与相关产业间可循环流程工艺技术开发与应用

13. Straight grate and other high-efficiency pelletization techniques and technology and techniques and technology for blast-furnace smelting with a high proportion of pellets

13、带式焙烧等高效球团矿生产工艺技术，高炉高比例球团冶炼工艺技术

IX. Nonferrous Metals

九、有色金属

1. Exploration and development of substitute resources for

1、有色金属现有矿山接替资源勘探开发，紧缺资源的深部

existing nonferrous mines and exploitation of deep and difficult-to-mine deposits of scarce resources

及难采矿床开采

2. Development of efficient, low-consumption, low-pollution, and new smelting technologies

2、高效、低耗、低污染、新型冶炼技术开发

3. Recovery and comprehensive utilization on a certain scale of efficient, energy-saving, and low-pollution renewable resources. (1) Recovery and utilization of waste nonferrous metals. (2) Comprehensive utilization of valuable elements. (3) Comprehensive utilization of red mud and other smelting waste residues. (4) Extraction of alumina from high-alumina fly ash. (5) Reduction-based, resource-oriented and harmless utilization and disposal of tungsten smelting slag

3、高效、节能、低污染、规模化再生资源回收与综合利用。（1）废杂有色金属回收利用。（2）有价元素的综合利用。（3）赤泥及其它冶炼废渣综合利用。（4）高铝粉煤灰提取氧化铝。（5）钨冶炼废渣的减量化、资源化和无害化利用处置

4. Production of new nonferrous materials for information and new energy. (1) Information: silicon single crystal and polished section with a diameter of 200 mm or more, compound semiconductor with a diameter of 125 mm or more in LEC method or a diameter of 50 mm or more than in horizontal growth method, large-sized and high-purity targets of rare-earth aluminum, copper, silicon, tungsten, and molybdenum, ultra-high-purity rare metals and targets, high-end electronic grade polysilicon, Cu-Ni-Si and Cu-Cr-Zr lead frame materials and electronic solders, among others, for ultra-large-scale integrated circuits. (2) New energy: nuclear-grade sponge zirconium and zirconium materials and high-capacity, long-life, and secondary cell electrode materials and precursor materials

4、信息、新能源有色金属新材料生产。（1）信息：直径200㎜以上的硅单晶及抛光片、直径125㎜以上直拉或直径50㎜以上水平生长化合物半导体材料、铝铜硅钨钼稀土等大规格高纯靶材、超高纯稀有金属及靶材、高端电子级多晶硅、超大规模集成电路铜镍硅和铜铬锆引线框架材料、电子焊料等。（2）新能源：核级海绵锆及锆材、高容量长寿命二次电池电极材料、前驱体材料

5. New nonferrous materials for transportation, high-end

5、交通运输、高端制造及其他领域有色金属新材料。

manufacturing, and other fields. (1) Transportation: high-strength and high-conductivity copper alloys, such as copper alloy precision strip and ultra-long wire products with compressive strength not less than 500 MPa and electric conductivity not less than 80% IACS, new high-strength, high-tenacity, corrosion-resistance alloy materials and large-sized products for key bearing structures of means of transportation (the compressive strength of aluminum alloy is not less than 650 MPa for aviation and not less than 500 MPa for high-speed trains) and high-performance magnesium alloy and its products. (2) High-end manufacturing and other fields: high-performance tungsten materials and tungsten-based composite materials for aerospace, nuclear industry, medical care and other fields, high-performance ultra-thin, ultra-thick, composite structure cemented carbide materials and deep-processed products, honeycomb-ceramic supports and rare-earth catalytic materials, biomedical materials including low-modulus titanium alloy materials and memory alloys, copper alloy and titanium alloy materials for corrosion-resistant heat exchangers, high-end metal powder materials for 3D printing, and high-quality rare-earth magnetic materials, hydrogen storage materials, optical function materials, alloy materials, special ceramic materials, additives and high-end applications

（1）交通运输：抗压强度不低于 500MPa、导电率不低于 80%IACS 的铜合金精密带材和超长线材制品等高强高导铜合金、交通运输工具主承力结构用的新型高强、高韧、耐蚀铝合金材料及大尺寸制品（航空用铝合金抗压强度不低于 650MPa，高速列车用铝合金抗压强度不低于 500MPa）、高性能镁合金及其制品。（2）高端制造及其他领域：用于航空航天、核工业、医疗等领域高性能钨材料及钨基复合材料，高性能超细、超粗、复合结构硬质合金材料及深加工产品，蜂窝陶瓷载体及稀土催化材料，低模量钛合金材料及记忆合金等生物医用材料，耐腐蚀热交换器用铜合金及钛合金材料，3D 打印用高端金属粉末材料，高品质稀土磁性材料、储氢材料、光功能材料、合金材料、特种陶瓷材料、助剂及高端应用

6. Continuous metal coils, vacuum coating materials and high-performance copper foil materials for new energy, semiconductor lighting, and electronics fields

6、新能源、半导体照明、电子领域用连续性金属卷材、真空镀膜材料、高性能铜箔材料

X. Gold

十、黄金

1. Deep exploration and exploitation of gold (1,000 meters or deeper)

1、黄金深部（1000 米及以下）探矿与开采

2. Recovery of gold from tailings and waste rocks

2、从尾矿及废石中回收黄金

3. Efficient and comprehensive utilization of useful elements in gold smelting (dressing and smelting recovery rate of refractory ore is ≥75%; dressing and smelting recovery rate of low-grade ore is ≥65% (excluding heap leaching); when gold coexists with other minerals, comprehensive utilization rate is ≥70%; and when gold is associated with other minerals, comprehensive utilization rate is ≥50%)

3、黄金冶炼有价元素高效综合利用（难处理矿石选冶回收率≥75%；低品位矿石选冶回收率≥65%（不含堆浸）；当黄金与其他矿物共生时，综合利用率≥70%；当黄金与其他矿物伴生时，综合利用率≥50%）

XI. Petrochemistry

十一、石化化工

1. Development and application of production technologies for high-standard oil products; and coal to p-Xylene

1、高标准油品生产技术开发与应用，煤经甲醇制对二甲苯

2. Exploration, development, and comprehensive utilization of scarce chemical mineral resources such as sulfur, kalium, boron, lithium and bromine; development and application of technology for comprehensive utilization of phosphate ore dressing tailings; selection and utilization of low- and medium-grade phosphorite and fluorite ore; and comprehensive utilization of resources associated with phosphorite and fluorite ore

2、硫、钾、硼、锂、溴等短缺化工矿产资源勘探开发及综合利用，磷矿选矿尾矿综合利用技术开发与应用，中低品位磷矿、萤石矿采选与利用，磷矿、萤石矿伴生资源综合利用

3. Energy-saving technologies for zero-electrode-distance, oxygen-cathode and other ion membrane caustic soda electrolytic cells; comprehensive utilization technologies such

3、零极距、氧阴极等离子膜烧碱电解槽节能技术、废盐酸制氯气等综合利用技术、铬盐清洁生产新工艺的开发和应用，全封闭高压水淬渣及无二次污染磷泥处理黄磷生产工

as production of chlorine by utilizing waste hydrochloric acid; development and application of new techniques for clean production of chromium salt; yellow phosphorus production process with fully enclosed high-pressure quenched slag and treatment of phosphorus sludge not creating secondary pollution; production of potassium permanganate by utilizing pneumatic fluidization tower; production of phosphoric acid in total heat recovery method; and large-scale production device of defluorinated calcium phosphate

艺，气动流化塔生产高锰酸钾，全热能回收热法磷酸生产，大型脱氟磷酸钙生产装置

4. Production devices for bisphenol A of not less than 100,000 ton per year in ion exchange method, propylene oxide of not less than 150,000 ton per year in direct oxidation method, propylene oxide of not less than 200,000 ton per year in common oxidation method, and adiponitrile of not less than 10,000 ton per year in butadiene method; and development and application of production technologies for ten-thousand-ton aliphatic isocyanate

4、10 万吨/年及以上离子交换法双酚 A、15 万吨/年及以上直接氧化法环氧丙烷、20 万吨/年及以上共氧化法环氧丙烷、万吨级己二腈生产装置，万吨级脂肪族异氰酸酯生产技术开发与应用

5. Production of high-quality potassium fertilizer and various special fertilizer, water soluble fertilizer, liquid fertilizer, medium and trace element fertilizer, nitro fertilizer and slow and controlled release fertilizers and development and application of comprehensive utilization technologies for phosphogypsum

5、优质钾肥及各种专用肥、水溶肥、液体肥、中微量元素肥、硝基肥、缓控释肥的生产，磷石膏综合利用技术开发与应用

6. Development and production of efficient, safe, and environment-friendly pesticides of new types and formulations, special-purpose intermediates and assistants, production of chirality and three-dimensional-structure pesticides in directional synthesis method; and development of

6、高效、安全、环境友好的农药新品种、新剂型、专用中间体、助剂的开发与生产，定向合成法手性和立体结构农药生产，生物农药新产品、新技术的开发与生产

new biological pesticide products and technologies and production

7. Production of water-based wood, industrial and marine paint, high-solids, solvent-free and radiation curable paint, environment-friendly and resource-saving low-VOC paint, and high-performance decay-resistant paint for large aircrafts, high-speed rail and other key fields; and production of titanium white chloridization with a single capacity of not less than 30,000 ton per year

7、水性木器、工业、船舶用涂料，高固体分、无溶剂、辐射固化涂料，低 VOCs 含量的环境友好、资源节约型涂料，用于大飞机、高铁等重点领域的高性能防腐涂料生产；单线产能 3 万吨/年及以上氯化法钛白粉生产

8. Reactive dyes with high fixation rate, high color fastness, high upgrading, high dyeing levelness, high reproducibility, low pollution, low salt, low temperature, dyeing with small bath ratio and dyeing with a wet short steaming pad; disperse dyes with high and superfine denier polyester fiber, high fastness to chemical washing, high dyeing, high fastness and low staining (nylon and spandex), high alkali resistance, low toxicity, minor harm, environmental protection, and dyeing with small bath ratio; acid dyes of great wash fastness, fastness to chlorine bleaching, high dyeing levelness and high covering power for polyamide fiber, wool and leather; functional vat dyes of great color fastness; organic pigments of great color fastness, functional, low in aromatic amines, without heavy metals, easy to disperse, for dope dyeing; and aqueous liquid colorants made from the above dyes and pigments

8、高固着率、高色牢度、高提升性、高匀染性、高重现性、低沾污性以及低盐、低温、小浴比染色用和湿短蒸轧染用的活性染料，高超细旦聚酯纤维染色性、高洗涤牢度、高染着率、高光牢度和低沾污性（尼龙、氨纶）、高耐碱性、低毒低害环保型、小浴比染色用的分散染料，聚酰胺纤维、羊毛和皮革染色用高耐洗、高氯漂、高匀染、高遮盖力的酸性染料，高色牢度、功能性还原染料，高色牢度、功能性、低芳胺、无重金属、易分散、原浆着色的有机颜料，采用上述染料、颜料生产的水性液态着色剂

9. Development and application of new technologies for clean production of dyes, organic pigments and their intermediates and intrinsic safety (including continuous sulfonation of fuming sulfuric acid, continuous nitrification, continuous

9、染料、有机颜料及其中间体清洁生产、本质安全的新技术（包括发烟硫酸连续磺化、连续硝化、连续酰化、连续萃取、连续加氢还原、连续重氮偶合等连续化工艺，催

acylation, continuous extraction, continuous hydrogenation reduction, continuous diazo coupling, and other continuous processes; catalysis, trioxide sulfonation, adiabatic nitration, directional chloride, synergistic combination, solvent reaction, hydrogen peroxide oxidation, cyclic utilization and other technologies; appropriate technologies in which such highly-toxic raw materials as phosgene are replaced; and technologies of membrane filtration and primary pulp drying)

化、三氧化硫磺化、绝热硝化、定向氯化、组合增效、溶剂反应、双氧水氧化、循环利用等技术，以及取代光气等剧毒原料的适用技术，膜过滤和原浆干燥技术）的开发和应用

10. Development and production of ethylene-vinyl alcohol copolymer resin, polyvinylidene chloride and other high-performance barrier resins, polyisobutylene, ethylene-octene copolymer, metallocene polyethylene and other special polyolefins, and high-carbon alpha olefins and other key materials; production and development and application of technologies for blending modification and alloying of engineering plastics such as liquid crystal polymer, polyphenylene sulfide, polyphenylene ether, aromatic ketone polymer and polyaryl ether ether nitrile; development and production of water-absorbent resin, conductive epoxy and degradable polymer; and development and production of new polyamides such as long carbon chain nylon and high temperature-resistant nylon

10、乙烯-乙烯醇共聚树脂、聚偏氯乙烯等高性能阻隔树脂，聚异丁烯、乙烯-辛烯共聚物、茂金属聚乙烯等特种聚烯烃，高碳 α 烯烃等关键原料的开发与生产，液晶聚合物、聚苯硫醚、聚苯醚、芳族酮聚合物、聚芳醚醚腈等工程塑料生产以及共混改性、合金化技术开发和应用，高吸水性树脂、导电性树脂和可降解聚合物的开发与生产，长碳链尼龙、耐高温尼龙等新型聚酰胺开发与生产

11. Development and production of bromobutyl rubber, polystyrene butadiene rubber and rare earth cis-butadiene rubber of 50,000 tons per year and above, acrylate rubber, and styrene-butadiene latex and isoprene latex with solid content greater than 60%; development and application of chemical modification technologies of synthetic rubber; and development and production of polypropylene thermoplastic

11、5 万吨/年及以上溴化丁基橡胶、溶聚丁苯橡胶、稀土顺丁橡胶，丙烯酸酯橡胶，固含量大于 60%的丁苯胶乳、异戊二烯胶乳开发与生产；合成橡胶化学改性技术开发与应用；聚丙烯热塑性弹性体（PTPE）、热塑性聚酯弹性体（TPEE）、氢化苯乙烯-异戊二烯热塑性弹性体（SEPS）、动态全硫化热塑性弹性体（TPV）、有机硅改性热塑性聚氨

elastomer ("PTPE"), thermoplastic polyester elastomer ("TPEE"), hydrogenated styrene-ethylene-propylene-styrene thermoplastic elastomer ("SEPS"), thermoplastic vulcanizates ("TPV"), silicone modified thermoplastic polyurethane elastomer and other thermoplastic elastomer materials

酯弹性体等热塑性弹性体材料开发与生产

12. Development and production of modified or water-based adhesives and new hot melt glue, environment-friendly water absorbents and water treatment chemicals, efficient and environment-friendly new catalysts and assistants such as molecular sieve solid mercury and mercury-free catalysts and assistants, nanometer materials, functional membrane materials, and new and fine chemicals such as ultra-clean and high-purity reagents, photoresist, electron gas, and high-performance liquid crystal materials

12、改性型、水基型胶粘剂和新型热熔胶，环保型吸水剂、水处理剂，分子筛固汞、无汞等新型高效、环保催化剂和助剂，纳米材料，功能性膜材料，超净高纯试剂、光刻胶、电子气、高性能液晶材料等新型精细化学品的开发与生产

13. New organosilicone monomers such as phenyl chlorosilane and vinyl chlorosilane; phenyl silicone oil, amino silicon oil, polyether modified silicone oil, and others; high-performance silicone rubbers and hybrid materials such as phenyl siloxane rubber and phenylene silicone rubber; high-performance resins such as methylphenyl silicone resin; and efficient coupling reagents such as triethoxysilane

13、苯基氯硅烷、乙烯基氯硅烷等新型有机硅单体，苯基硅油、氨基硅油、聚醚改性型硅油等，苯基硅橡胶、苯撑硅橡胶等高性能硅橡胶及杂化材料，甲基苯基硅树脂等高性能树脂，三乙氧基硅烷等高效偶联剂

14. Development and application of special fluoride monomers such as perfluorinated ene ether; high-quality fluororesins such as FEP, PVDF, PTFCE, and ETFE; high-performance fluorous rubbers such as fluoroether rubber, fluorinated silicone rubber, AFLAS FEPM, and 246 high fluoride fluorine rubber; fluoride lubricating grease; substitutes of Ozone Depleting Substances (ODS) with zero Ozone-depleting Potentials (ODP) and low

14、全氟烯醚等特种含氟单体，聚全氟乙丙烯、聚偏氟乙烯、聚三氟氯乙烯、乙烯-四氟乙烯共聚物等高品质氟树脂，氟醚橡胶、氟硅橡胶、四丙氟橡胶、高含氟量 246 氟橡胶等高性能氟橡胶，含氟润滑油脂，消耗臭氧潜能值（ODP）为零、全球变暖潜能值（GWP）低的消耗臭氧层物质（ODS）替代品，全氟辛基磺酰化合物（PFOS）和全氟辛

Global Warming Potentials (GWP); PFOS and PFOA and their salt substitutes and substitution technologies; fine chemicals containing fluorine and high-quality inorganic salt containing fluorine

酸（PFOA）及其盐类的替代品和替代技术开发和应用，含氟精细化学品和高品质含氟无机盐

15. High-performance radial tires (including tubeless radial tires and giant engineering radial tires (49 inches or more), low profile and aspect ratio (lower than 55)) and intelligent manufacturing technology and equipment; production of aviation tires, agricultural radial tires, ancillary special materials and equipment; and development and application of new natural rubber

15、高性能子午线轮胎（包括无内胎载重子午胎、巨型工程子午胎（49 吋以上），低断面和扁平化（低于 55 系列））及智能制造技术与装备，航空轮胎、农用子午胎及配套专用材料和设备生产，新型天然橡胶开发与应用

16. Development and production of biopolymer materials, padding, reagents, chips, interferon, sensors and cellulose biochemical products

16、生物高分子材料、填料、试剂、芯片、干扰素、传感器、纤维素生化产品开发与生产

17. Comprehensive utilization of by-products such as carbon tetrachloride, silicon tetrachloride, methyltrichlorosilane and trimethylchlorosilane; and capture and application of carbon dioxide

17、四氯化碳、四氯化硅、甲基三氯硅烷、三甲基氯硅烷等副产物的综合利用，二氧化碳的捕获与应用

XII. Building Materials

十二、建材

1. Use of a new dry process cement kiln having capacity of not less than 2000 tons per day (inclusive) or a new sintered brick and tile production line having capacity of not less than 60 million pieces per year (inclusive) for coordinated disposal of waste and desalination pretreatment by water washing process of incineration fly ash from the coordinated disposal of waste by cement kilns; research, development and application of

1、利用不低于 2000 吨/日（含）新型干法水泥窑或不低于 6000 万块/年（含）新型烧结砖瓦生产线协同处置废弃物，水泥窑协同处置垃圾焚烧飞灰使用水洗工艺脱盐预处理；新型干法水泥窑生产硫（铁）铝酸盐水泥、铝酸盐水泥、白色硅酸盐水泥等特种水泥工艺技术及产品的研发与应用；新型静态水泥熟料煅烧工艺技术的研发与应用；新型

processes, technologies and products for production of sulfur (iron) aluminate cement, aluminate cement, white portland cement and other special cement in new dry process cement kilns; research, development and application of new static cement clinker calcination processes and technologies; research, development and application of alternative fuel technologies for new dry process cement kilns and capture and purification technologies for flue gas carbon dioxide; development and application of cement admixture; energy-saving improvement of grinding systems (cement vertical mills and final grinders of roller press for raw materials, among others); and development and application of automated bag-inserting machine for cement packaging, packaging machine and loading machine

干法水泥窑替代燃料技术、烟气二氧化碳捕集纯化技术的研发与应用；水泥外加剂的开发与应用；粉磨系统节能改造（水泥立磨、生料辊压机终粉磨等）；水泥包装自动插袋机、包装机、装车机开发与应用

2. Production lines with a capacity not exceeding 150 tons per day for ultra-thin substrate glass, touch glass, high-aluminum cover glass, carrier glass, and light guide glass for the electronic information industry, technical equipment and products; high borosilicate glass and glass-ceramics; aluminosilicate glass for means of transportation and solar equipment; glass for back electrode of large-size (1 square meter or larger) copper indium gallium selenide, cadmium telluride and other thin film photovoltaic cells; energy saving, safety, display, intelligent control and other functional glass products and technical equipment; continuous automated vacuum glass production lines; full oxygen/oxygen-enriched combustion technology for glass melting furnaces; technologies and equipment for multiple plate glass production lines in one furnace; and low-conductivity fused cast zirconium corundum and long-life (12 years or above)

2、规模不超过 150 吨/日（含）的电子信息产业用超薄基板玻璃、触控玻璃、高铝盖板玻璃、载板玻璃、导光板玻璃生产线、技术装备和产品；高硼硅玻璃，微晶玻璃；交通工具和太阳能装备用铝硅酸盐玻璃；大尺寸（1 平方米及以上）铜铟镓硒和碲化镉等薄膜光伏电池背电极玻璃；节能、安全、显示、智能调控等功能玻璃产品及技术装备；连续自动化真空玻璃生产线；玻璃熔窑用全氧/富氧燃烧技术；一窑多线平板玻璃生产技术与装备；玻璃熔窑用低导热熔铸锆刚玉、长寿命（12 年及以上）无铬碱性高档耐火材料

chromium-free alkaline high-grade refractories for glass melting furnaces

3. Parts construction material products suitable for prefabricated buildings; low-cost phase-change energy storage wall materials and wall parts; parts and units of buildings integrated photovoltaic; rock-wool composite material products/parts; energy-saving aerogel materials; Class-A flame-retardant insulation materials, vacuum insulation composite materials for construction, composite boards with integrated thermal insulation, decoration and other functions, long-life, waterproofing, decay-resistant and flame-retardant composite materials for bridges and tunnels, underground pipe corridors, island and reef facilities, marine engineering facilities, and other fields, and new waterproofing materials for buildings such as modified asphalt waterproofing membranes, polymeric waterproofing membranes, and water-based or high-solid content waterproofing paint; and functional decorative and remodeling materials and products and development and application in production of technologies for green formaldehyde-free engineered wood and pavement bricks (board), permeable pavement bricks (board), permeable bricks (board) for squares, decorative bricks (block), period bricks, ecological revetment bricks (blocks), ecological grass bricks (blocks) and other green construction material products

3、适用于装配式建筑的部品化建材产品；低成本相变储能墙体材料及墙体部件；光伏建筑一体化部品部件；岩棉复合材料制品/部品；气凝胶节能材料；A 级阻燃保温材料制品，建筑用复合真空绝热保温材料，保温、装饰等功能一体化复合板材，桥梁隧道、地下管廊、岛礁设施、海工设施等领域用长寿命防水防腐阻燃复合材料，改性沥青防水卷材、高分子防水卷材、水性或高固含量防水涂料等新型建筑防水材料；功能型装饰装修材料及制品，绿色无醛人造板以及路面砖（板）、路面透水砖（板）、广场透水砖（板）、装饰砖（砌块）、仿古砖、护坡生态砖（砌块）、水工生态砖（砌块）等绿色建材产品技术开发与生产应用

4. Development and application of production technology for centralized ceramic powdering and clean coal gasification in ceramic parks; development and application of production lines, processes, equipment and technology for ceramic board a single piece of which is 1.62 square meters or larger in extent;

4、陶瓷集中制粉、陶瓷园区清洁煤制气生产技术开发与应用；单块面积大于 1.62 平方米（含）的陶瓷板生产线和工艺装备技术开发与应用；利用尾矿、废弃物等生产的轻质发泡陶瓷隔墙板及保温板材生产线和工艺装备技术开发与

and development and application of production lines, processes, equipment and technology for lightweight foam ceramic partition wall board and insulation board made from tailings and waste, among others

应用

5. Development and production of sitting and squatting toilet pans using 6 liters or less of water per flush, water-saving household water appliances and water saving equipment, intelligent sitting toilet pans and bath ware integration systems, and integrated bath ware parts which meet the requirements for prefabrication

5、一次冲洗用水量 6 升及以下的坐便器、蹲便器，节水型生活用水器具及节水控制设备，智能坐便器、卫浴集成系统，满足装配式要求的整体卫浴部品开发与生产

6. Pool kiln drawing technology for thick alkali-free glass fiber (monofilament diameter > 9 microns) with a capacity of 80,000 tons per year or more, pool kiln drawing technology for thin alkali-free glass fiber (monofilament diameter ≤ 9 microns) with a capacity of 50,000 tons per year or more, and development of technology for and production of ultra-thin, high-strength and high-modulus, alkali-resistant, low-κ dielectric, high-silica, degradable, odd-shaped-profile and other high-performance glass fiber and glass fiber products; pool kiln drawing technology for basalt fiber; silicon carbide fiber and composite fiber; thermoplastic and thermosetting composite material products for aerospace, environmental protection, marine engineering, electrical engineering and electronics, transportation, energy, construction, Internet of Things, animal husbandry and other fields and their efficient molding preparation processes and equipment; recycling technologies and equipment for waste resin-based composite materials; and mineral raw material powder processing production lines with a capacity of 200,000 tons per year or

6、8 万吨/年及以上无碱玻璃纤维粗纱（单丝直径＞9 微米）池窑拉丝技术，5 万吨/年及以上无碱玻璃纤维细纱（单丝直径≤9 微米）池窑拉丝技术，超细、高强高模、耐碱、低介电、高硅氧、可降解、异形截面等高性能玻璃纤维及玻纤制品技术开发与生产；玄武岩纤维池窑拉丝技术；碳化硅纤维、复合纤维；航空航天、环保、海工、电工电子、交通、能源、建筑、物联网、畜牧养殖等领域用热塑性、热固性复合材料产品及其高效成型制备工艺和装备；树脂基复合材料废弃物回收利用技术与装备；20 万吨/年及以上矿物原料粉体加工生产线

more

7. Development and production of new technologies and new products of asbestos-free friction and sealing materials using synthetic mineral fiber or aramid fiber as reinforcing material	7、使用合成矿物纤维、芳纶纤维等作为增强材料的无石棉摩擦、密封材料新工艺、新产品开发与生产
8. Production equipment technology development of high-quality artificial crystalline materials, products, and parts for fields such as information, new energy, national defense, and aerospace aviation and functional artificial diamond materials; development of manufacturing technology for and production of high-purity quartz raw materials (purity greater than or equal to 99.999%), high-end quartz crucibles for semiconductors, and chemical vapor synthesis quartz glass, among others; development of manufacturing technologies for and production of special glass required for aerospace and other fields; and production and application of high-purity nanometer-scale spherical silicon powder and high-purity industrial silicon and development and application of their technical equipment	8、信息、新能源、国防、航天航空等领域用高品质人工晶体材料、制品和器件，功能性人造金刚石材料生产装备技术开发；高纯石英原料（纯度大于等于 99.999%）、半导体用高端石英坩埚、化学气相合成石英玻璃等制造技术开发与生产；航天航空等领域所需的特种玻璃制造技术开发与生产；高纯纳米级球形硅微粉与高纯工业硅的生产、应用及其技术装备开发与应用
9. Production, application and development of graphene materials; production of non-metallic functional mineral materials for environmental governance, energy conservation and storage, electronic information, thermal insulation, and agriculture and development and application of their technical equipment; online testing and production lines under intelligent control for superfine mineral material processing; and development of technology for and construction of non-metallic ore exploitation, processing, trade, application, investment and other industry big data platforms	9、石墨烯材料生产及应用开发；环境治理、节能储能、电子信息、保温隔热、农业用等非金属矿物功能材料生产及其技术装备开发应用；矿物超细材料加工在线检测与控制智能化生产线；非金属矿开采、加工、贸易、应用、投资等产业大数据平台技术开发和建设

10. Production of ultra-thin composite stone with an annual yield of 300,000 square meters or more; mining of mechanized stone mines; mechanized quarrying; and production for the comprehensive utilization of ore and sheet scraps and stone powder and development of technical equipment; and production of inorganic artificial stone and production of resin-based artificial stone using non-toxic or low-toxic resins

10、30 万平方米/年及以上超薄复合石材生产；机械化石材矿山开采；矿石碎料和板材边角料、石粉综合利用生产及工艺装备开发；无机人造石的生产，采用无毒或低毒树脂的树脂基人造石的生产

11. Production of construction materials by utilizing mine tailings, construction waste, industrial waste, river, lake, (canal) and sea silt, agricultural and forestry residues and other secondary resources and development of their techniques and technical equipment

11、利用矿山尾矿、建筑废弃物、工业废弃物、江河湖（渠）海淤泥以及农林剩余物等二次资源生产建材及其工艺技术装备开发

12. Fine ceramic powder as well as ceramic precursors suitable and chopped ceramic fiber for additive manufacturing; ceramic balls, ceramic valves, ceramic screws and other precision-molded ceramic parts; ceramic membranes, honeycomb ceramics, and foam ceramics; ceramic substrates, ceramic insulating parts, and electronic ceramic materials and parts; continuous ceramic fiber and fiber-reinforced ceramic matrix composite materials; medical fine ceramic materials and parts; ceramic ink materials; development and application in production of technology for ceramic materials and other industrial ceramics for precision grinding and polishing; and development of manufacturing technologies for and production of high-performance ceramics for information, new energy, defense, aerospace and other fields

12、精细陶瓷粉体、适用于增材制造的陶瓷前驱体及陶瓷短切纤维；陶瓷球、陶瓷阀门、陶瓷螺杆等精密成型的陶瓷部件；陶瓷膜、蜂窝陶瓷、泡沫陶瓷；陶瓷基板、陶瓷绝缘部件、电子陶瓷材料及部件；连续陶瓷纤维及纤维增强陶瓷基复合材料；医用精细陶瓷材料及部件；陶瓷墨水材料；精密研磨及抛光用陶瓷材料等工业陶瓷技术开发与生产应用；信息、新能源、国防、航空航天等领域用高性能陶瓷的制造技术开发与生产

13. Achieving the full enclosure of main production areas such

13、储料区、主机搅拌楼、物料输送系统等主要生产区域

as storage area, host mixing building and material conveying system, assigning active dust collection and reduction equipment, using informatized integrated management system for operation and management, and having an intelligent ready-mixed concrete production line capable of consuming urban solid waste; and development and application of concrete for marine projects, lightweight and high-strength concrete, ultra-high performance concrete and self-healing concrete materials

实现全封闭，并配置主动式收尘、降尘设备，采用信息化集成管理系统进行运营管理，具备消纳城市固废能力的智能化预拌混凝土生产线；海洋工程用混凝土、轻质高强混凝土、超高性能混凝土、混凝土自修复材料的开发和应用

14. Development and application of product quality traceability system for construction materials for projects or equipment

14、用于工程或装备的建材产品质量追溯体系开发与应用

XIII. Medicine

十三、医药

1. Development and production of new medicine with independent intellectual property right, development and production of natural medicine, initial development and production of generic medicine that meets China's demand for prevention and control of grave and frequent diseases, development and production of new formulations, new inactive ingredients, drugs for children and drugs in short supply, development and application of technologies in the process of medicine production such as membrane separation, supercritical extraction, new crystallization, chiral synthesis, enzymatic synthesis, continuous reaction and system control, improvement of basic drug quality and production technology and cost reduction, and development and application of energy-saving and consumption-reduction technologies in the production of Active Pharmaceutical Ingredients (APIs) and

1、拥有自主知识产权的新药开发和生产，天然药物开发和生产，满足我国重大、多发性疾病防治需求的通用名药物首次开发和生产，药物新剂型、新辅料、儿童药、短缺药的开发和生产，药物生产过程中的膜分离、超临界萃取、新型结晶、手性合成、酶促合成、连续反应、系统控制等技术开发与应用，基本药物质量和生产技术水平提升及降低成本，原料药生产节能降耗减排技术、新型药物制剂技术开发与应用

new pharmaceutical preparation technologies

2. Critical disease prevention vaccines, antibody drugs, gene therapy drugs, cellular therapy drugs, recombinant protein drugs, and nucleic acid drugs; development and application of large-scale cell culture and purification technologies as well as large-scale therapeutic peptide and nucleic acid synthesis, antibody coupling, and serum-free and protein-free media culture, fermentation, purification technologies; cellulase, alkaline protease, diagnostic enzymes, and other enzyme preparations; and using modern biotechnology to improve traditional production techniques

2、重大疾病防治疫苗、抗体药物、基因治疗药物、细胞治疗药物、重组蛋白质药物、核酸药物，大规模细胞培养和纯化技术、大规模药用多肽和核酸合成、抗体偶联、无血清无蛋白培养基培养、发酵、纯化技术开发和应用，纤维素酶、碱性蛋白酶、诊断用酶等酶制剂，采用现代生物技术改造传统生产工艺

3. Development and production of new pharmaceutical packaging materials and technologies (neutral borosilicate glass for pharmaceutical use, functional materials with good chemical stability, degradability, and high barrier properties, and aerosol, powder aerosol, self-administration , prefillable, automatic drug mixing and other new drug containment and delivery systems and drug delivery devices)

3、新型药用包装材料与技术的开发和生产（中性硼硅药用玻璃，化学稳定性好、可降解、具有高阻隔性的功能性材料，气雾剂、粉雾剂、自我给药、预灌封、自动混药等新型包装给药系统及给药装置）

4. Development of artificial breeding technology for endangered and scarce medicinal animals and plants, standardized breeding of laboratory animals and animal experiment services, application of advanced agricultural technologies in the standardized planting and breeding of Chinese medicinal materials, development and application of new technology for quality control of Chinese medicine, modern formulation techniques and technologies of Chinese medicine, inheritance of and innovation in processing technology for Chinese medicinal herb slices, development and

4、濒危稀缺药用动植物人工繁育技术开发，实验动物标准化养殖及动物实验服务，先进农业技术在中药材规范化种植、养殖中的应用，中药质量控制新技术开发和应用，中药现代剂型的工艺技术，中药饮片炮制技术传承与创新，中药经典名方的开发与生产，中药创新药物的研发与生产，中成药二次开发和生产，民族药物开发和生产

production of classical and famous Chinese medicine prescriptions, research and development and production of innovative Chinese medicine, secondary development and production of Chinese patent medicine, and development and production of ethnic drugs

5. New medical diagnostic equipment and reagents and digital medical imaging equipment; artificial intelligence-assisted medical equipment; high-end radiotherapy equipment; electronic endoscopes, surgical robots, and other high-end surgical equipment; development and application of new stents, prostheses, and other high-end implanted intervention equipment and materials as well as additive manufacturing technology; life support equipment for critically ill patients; mobile and remote diagnostic equipment; and new gene, protein, and cell diagnostic equipment

5、新型医用诊断设备和试剂、数字化医学影像设备，人工智能辅助医疗设备，高端放射治疗设备，电子内窥镜、手术机器人等高端外科设备，新型支架、假体等高端植入介入设备与材料及增材制造技术开发与应用，危重病用生命支持设备，移动与远程诊疗设备，新型基因、蛋白和细胞诊断设备

6. Development and production of high-end pharmaceutical equipment, production equipment for transdermal absorption, powder aerosol, and other new preparations, large-scale bioreactors and auxiliary systems, high-efficiency protein separation and purification equipment, high-efficiency extraction equipment for Chinese medicine, and continuous drug production technology and equipment

6、高端制药设备开发与生产，透皮吸收、粉雾剂等新型制剂生产设备，大规模生物反应器及附属系统，蛋白质高效分离和纯化设备，中药高效提取设备，药品连续化生产技术及装备

XIV. Machinery

十四、机械

1. High-end CNC machine tools and supporting CNC systems: CNC machine tools operated on five or more axes, CNC systems, high-precision and high-performance cutting tools, measuring instruments, and abrasives

1、高档数控机床及配套数控系统：五轴及以上联动数控机床，数控系统，高精密、高性能的切削刀具、量具量仪和磨料磨具

2. Distributed control systems (DCS), fieldbus control systems (FCS), and new energy power generation control systems used for major technical equipment, such as large generating sets, large petrochemical installations, and large complete metallurgical equipment

2、大型发电机组、大型石油化工装置、大型冶金成套设备等重大技术装备用分散型控制系统（DCS），现场总线控制系统（FCS），新能源发电控制系统

3. Programmable logic controllers (PLC) with the functionality of motion control and remote I/O, with more than 512 inputs and outputs, an independent software system, and an independent communication protocol, compatible with multiple common communication protocols, supporting real-time multitasking, with diverse programming languages and a customizable instruction set, among others.

3、具备运动控制功能和远程 IO 的可编程控制系统（PLC），输入输出点数 512 个以上，拥有独立的软件系统、独立的通讯协议、兼容多种通用通讯协议、支持实时多任务、拥有多样化编程语言、拥有可定制化指令集等

4. Digital, intelligent, and networked industrial automated detection meters, in-situ online component analysis instruments, electromagnetic compatibility testing devices, intelligent ammeters used for intelligent grids (with functions of sending and receiving signals, self-diagnosis, and data processing), various low-power smart sensors with wireless communication function, encrypted sensors, and nuclear-level monitoring instruments and sensors

4、数字化、智能化、网络化工业自动检测仪表，原位在线成份分析仪器，电磁兼容检测设备，智能电网用智能电表（具有发送和接收信号、自诊断、数据处理功能），具有无线通信功能的低功耗各类智能传感器，可加密传感器，核级监测仪表和传感器

5. Instruments and meters used for the detection and analysis of radiation, toxicity, flammables, explosives, heavy metals, and dioxins, among others, testing instruments for water quality, flue gas and air; and high-end mass spectrometers for drug, food, and biochemical testing, chromatographs, spectrometers, X-ray instrument, nuclear magnetic resonance spectrometers, automatic biochemical detection systems,

5、用于辐射、有毒、可燃、易爆、重金属、二噁英等检测分析的仪器仪表，水质、烟气、空气检测仪器；药品、食品、生化检验用高端质谱仪、色谱仪、光谱仪、X 射线仪、核磁共振波谱仪、自动生化检测系统及自动取样系统和样品处理系统

automatic sampling systems, and sample processing systems

6. Multi-dimensional geometric parameter measuring instruments used for scientific research, intelligent manufacturing, and testing qualifications with a measurement precision of micron or a more precise measurement, automated, intelligent and multi-functional material mechanics performance testing equipment, non-destructive testing equipment such as industrial CT and three-dimensional ultrasonic flaw detector, and electron microscopes used for nanometer observation and measurement with a resolution higher than 3.0 nm

6、科学研究、智能制造、测试认证用测量精度达到微米以上的多维几何尺寸测量仪器，自动化、智能化、多功能材料力学性能测试仪器，工业 CT、三维超声波探伤仪等无损检测设备，用于纳米观察测量的分辨率高于 3.0 纳米的电子显微镜

7. Technical equipment for urban intelligent visual surveillance, video analysis, and video-assisted criminal investigation

7、城市智能视觉监控、视频分析、视频辅助刑事侦察技术设备

8. Monitoring instruments and meters and safety alarm systems for mine disasters (gas, coal dust, mine water, fire, and wall rock noise, vibration, among others)

8、矿井灾害（瓦斯、煤尘、矿井水、火、围岩噪声、振动等）监测仪器仪表和安全报警系统

9. Comprehensive meteorological observation instruments and equipment (ground, high altitude, and marine meteorological observation instruments and equipment, professional meteorological observation and atmospheric composition observation instruments and equipment, weather radars, and consumables, among others), mobile emergency meteorological observation systems, mobile emergency meteorological command systems, meteorological measurement checking equipment, and operation monitoring systems of meteorological observation instruments and

9、综合气象观测仪器装备（地面、高空、海洋气象观测仪器装备，专业气象观测、大气成分观测仪器装备，气象雷达及耗材等）、移动应急气象观测系统、移动应急气象指挥系统、气象计量检定设备、气象观测仪器装备运行监控系统

equipment

10. Hydrological data collection instruments and equipment and hydrological instrument measurement checking equipment

10、水文数据采集仪器及设备、水文仪器计量检定设备

11. Instruments and meters for the monitoring of earthquakes and geological disasters

11、地震、地质灾害监测仪器仪表

12. Ocean observation, detection, and monitoring technical systems, instruments, and equipment

12、海洋观测、探测、监测技术系统及仪器设备

13. Digital multifunctional integrated office equipment (copying, printing, fax, and scanning), digital cameras, digital cinema projectors, and other modern cultural and office equipment

13、数字多功能一体化办公设备（复印、打印、传真、扫描）、数字照相机、数字电影放映机等现代文化办公设备

14. Bearings of China Railway High-Speed (CRH) trains with a speed of 200 kilometers per hour or higher, bearings of heavy haul railway wagons with an axle load of 30 tons or more, bearings for high-power electric/diesel locomotives, bearings of new urban rail transit with a service life of 2.4 million kilometers or more, light-weight and low-friction torque automotive bearings and units with a service life of 250,000 kilometers or more, high temperature-resistant (400℃ or above) automobile turbines, supercharger bearings, numerically-controlled machine tool bearings of Classes P4 and P2, all kinds of precision bearings used for wind turbines of two megawatts (MW) or higher, bearings of large construction machinery such as shield machines with a service life of more than 5,000 hours, high-speed and precision metallurgical rolling mill bearings of Classes P5 and P4,

14、时速 200 公里以上动车组轴承，轴重 23 吨及以上大轴重重载铁路货车轴承，大功率电力/内燃机车轴承，使用寿命 240 万公里以上的新型城市轨道交通轴承，使用寿命 25 万公里以上轻量化、低摩擦力矩汽车轴承及单元，耐高温（400℃以上）汽车涡轮、机械增压器轴承，P4、P2 级数控机床轴承，2 兆瓦（MW）及以上风电机组用各类精密轴承，使用寿命大于 5000 小时盾构机等大型施工机械轴承，P5 级、P4 级高速精密冶金轧机轴承，飞机发动机轴承及其他航空轴承，医疗 CT 机轴承，深井超深井石油钻机轴承，海洋工程轴承，电动汽车驱动电机系统高速轴承（转速≥1.2 万转/分钟），工业机器人 RV 减速机谐波减速机轴承，以及上述轴承的零件

aircraft engine bearings and other aircraft bearings, medical CT machine bearings, bearings for deep well and ultra-deep well oil rigs, marine engineering bearings, high-speed bearings for the electric motor systems of electric vehicles (speed ≥ 12,000 rpm), bearings for the RV reducers and harmonic reducers of industrial robots, and parts of the above bearings

15. Francis hydroelectric equipment with a unit capacity of 800,000 kilowatts or above (water turbines, generators, governors, excitation, and other ancillary equipment), pumped-storage hydroelectric equipment with an unit capacity of 350,000 kilowatts or above, tubular hydroelectric equipment with a unit capacity of 50,000 kilowatts or above, pelton hydroelectric equipment with a unit capacity of 100,000 kilowatts or above, and their key supporting auxiliary engines

15、单机容量 80 万千瓦及以上混流式水力发电设备（水轮机、发电机及调速器、励磁等附属设备），单机容量 35 万千瓦及以上抽水蓄能、5 万千瓦及以上贯流式和 10 万千瓦及以上冲击式水力发电设备及其关键配套辅机

16. Generator circuit breakers, pumps, valves, and other key ancillary engines and parts used for supercritical and ultra-supercritical thermal power units of 600,000 kilowatts or above

16、60 万千瓦及以上超临界、超超临界火电机组用发电机保护断路器、泵、阀等关键配套辅机、部件

17. Supercritical parameters circulating fluidized bed boilers of 600,000 kilowatts or above

17、60 万千瓦及以上超临界参数循环流化床锅炉

18. Gas turbine high temperature components (rotor body forgings for heavy-duty gas turbines of more than 300MW, large high-temperature alloy discs, cylinders, and blades, among others) and control systems

18、燃气轮机高温部件（300MW 以上重型燃机用转子体锻件、大型高温合金轮盘、缸体、叶片等）及控制系统

19. Rotors (forging or welding), runners, blades, pumps, valves, spindle rings, and other key castings and forgings used

19、60 万千瓦及以上发电设备用转子（锻造、焊接）、转轮、叶片、泵、阀、主轴护环等关键铸件、锻件

for power generation equipment of 600,000 kilowatts or above

20. High-strength and high-plasticity ductile iron castings; high-performance vermicular graphite iron castings; high-precision, high-pressure, and large-flow castings for hydraulic use; nonferrous alloy castings made by special casting techniques; high-strength steel forgings; high temperature-resistant, low temperature-resistant, corrosion-resistant, wear-resistant, and other high-performance and lightweight new material castings and forgings; high-precision and low-stress castings and forgings for machine tools; and key castings and forgings for vehicles, energy equipment, rail transit equipment, aerospace, arms, and marine engineering equipment

20、高强度、高塑性球墨铸铁件；高性能蠕墨铸铁件；高精度、高压、大流量液压铸件；有色合金特种铸造工艺铸件；高强钢锻件；耐高温、耐低温、耐腐蚀、耐磨损等高性能，轻量化新材料铸件、锻件；高精度、低应力机床铸件、锻件；汽车、能源装备、轨道交通装备、航空航天、军工、海洋工程装备关键铸件、锻件

21. Extra-high-voltage and ultra-high-voltage alternating current and direct current power transmission equipment of 500 kilovolt (kV) and above and key parts: transformer (outlet devices, casing, and pressure switches), switching devices (arc-control devices, hydraulic operating mechanism, and large basin insulators), high-intensity post insulators and hollow insulators, suspension composite insulators, molded insulation, ultra-high voltage arresters, direct current arresters, electric control and light control thyristors, converter valves (flat wave reactors and cooling equipment), control and protection equipment, and direct current field outfits, among others

21、500 千伏（kV）及以上超高压、特高压交直流输电设备及关键部件：变压器（出线装置、套管、调压开关），开关设备（灭弧装置、液压操作机构、大型盆式绝缘子），高强度支柱绝缘子和空心绝缘子，悬式复合绝缘子，绝缘成型件，特高压避雷器、直流避雷器，电控、光控晶闸管，换流阀（平波电抗器、水冷设备），控制和保护设备，直流场成套设备等

22. High-voltage vacuum components and switchgears, intelligent medium-voltage switch components and outfits, insulated switch cabinets using environment-friendly medium-voltage gas, intelligent (communicable) low-voltage electrical appliances, and amorphous alloy, roll-core, and other energy-

22、高压真空元件及开关设备，智能化中压开关元件及成套设备，使用环保型中压气体的绝缘开关柜，智能型（可通信）低压电器，非晶合金、卷铁芯等节能配电变压器

saving distribution transformers

23. The second-generation improved, third-generation, and fourth-generation nuclear power equipment and key parts; multi-purpose small modular reactor equipment and key parts; complete wind power machines of 2.5 megawatts or above, and control systems, converters and other key components and parts of wind power equipment of 2.0 megawatts or above; production equipment of various types of crystalline silicon and thin film solar photovoltaic cells; power generation equipment using ocean energy (tide, wave, and ocean current)

23、二代改进型、三代、四代核电设备及关键部件，多用途模块化小型堆设备及关键部件；2.5 兆瓦以上风电设备整机及 2.0 兆瓦以上风电设备控制系统、变流器等关键零部件；各类晶体硅和薄膜太阳能光伏电池生产设备；海洋能（潮汐、海浪、洋流）发电设备

24. Short-process molten techniques and equipment directly using blast furnace melted iron to manufacture iron castings; central smelting and short-process casting techniques and equipment for aluminum alloy; production techniques and equipment for high-purity pig iron for casting and ultra-high-purity pig iron for casting; high-tightness clay modeling automatic production lines and supporting clay processing systems; high-efficiency complete equipment for self-hardening sand and supporting sand processing system; complete technology and equipment for lost foam/V-process/full mold casting; external heat blast water-cooled cupolas with a long service life and large tonnage (10 tons or more per hour); waste heat utilization technology and equipment for external heat blast cupolas; large die-casting machines (with clamping force of 3,500 tons or above); automatic intelligent core making centers; shell-mold casting, precision core package molding, silica sol investment casting, die casting, semi-solid metal casting, squeeze casting, counter-pressure casting, adjusted pressure casting, and other special

24、直接利用高炉铁液生产铸铁件的短流程熔化工艺与装备；铝合金集中熔炼短流程铸造工艺与装备；铸造用高纯生铁、铸造用超高纯生铁生产工艺与装备；粘土砂高紧实度造型自动生产线及配套砂处理系统；自硬砂高效成套设备及配套砂处理系统；消失模/V 法/实型成套技术与装备；外热送风水冷长炉龄大吨位（10 吨/小时以上）冲天炉；外热风冲天炉余热利用技术与装备；大型压铸机（合模力 3500 吨以上）；自动化智能制芯中心；壳型、精密组芯造型、硅溶胶熔模、压铸、半固态、挤压、差压、调压等特种铸造技术与装备；应用于铸造生产的 3D 打印和砂型切削快速成型技术与装备；自动浇注机；铸件在线检测技术与装备；铸件高效自动化清理成套设备；铸造专用机器人的制造与应用

casting technology and equipment; 3D printing and sand mold cutting and rapid prototyping technology and equipment applied in casting; automatic pouring machine; technology and equipment for online casting testing; complete automatic equipment for efficient casting cleaning; and manufacture and application of special robots used for casting

25. Application of technologies of reclamation and reuse of casting resin sand and clay sand, among others; and application of environmental protection resin, inorganic binder molding and core making technology

25、铸造用树脂砂、粘土砂等干（热）法再生回用技术应用；环保树脂、无机粘结剂造型和制芯技术的应用

26. High-speed precision presses (180 to 2,500 kN, and 2,000 to 750 beats/min), ferrous metal hydraulic extruders (150 mm/sec or more), light alloy hydraulic extruders (10 mm/sec or less), high-speed precision shearing machines (2,000 kN or more, 70 to 80 beats/min, and with cross slope of less than 1.50), internal high-pressure molding machines (10,000 kN or more), large bending machines (60,000 kN or more), digital sheet metal processing centers (flexible manufacturing centers/flexible manufacturing systems), high-speed power spinning machines (radial rotation pressure per round: 1,000 kN, axial rotation pressure per round: 800 kN, spindle torque: 240 kN/m, maximum spindle speed: 95 rev/min), numerically-controlled multi-station punching machines (replaced by servo multi-station presses), large nominal pressure cold/warm forging presses (with effective nominal pressure stroke of 25 mm or more and nominal pressure of 10,000 kN or more), and automatically warm/hot forging presses with four or more stations (with nominal pressure of 16,000 kN or more); servo multi-station presses (12,000 to 30,000 kN), large servo

26、高速精密压力机（180～2500kN，2000～750 次/分钟）、黑色金属液压挤压机（150 毫米/秒以上）、轻合金液压挤压机（10 毫米/秒以下）、高速精密剪切机（2000kN 以上，70～80 次/分钟，断面斜度 1.5° 以下）、内高压成形机（10000kN 以上）、大型折弯机（60000kN 以上）、数字化钣金加工中心（柔性制造中心/柔性制造系统）、高速强力旋压机（径向旋压力/每轮：1000kN，轴向旋压力/每轮：800kN，主轴转矩：240kN.m，主轴最高转速：95 转/分钟）、数控多工位冲压机（替换为伺服多工位压力机）、大公称压力冷/温锻压力机（有效公称力行程 25mm 以上，公称力 10000kN 以上）、4 工位以上自动温/热锻造压力机（公称力 16000kN 以上）；伺服多工位压力机（12000～30000kN）、大型伺服压力机（8000～25000kN）、级进模压力机（6000～16000kN）、复合驱动热成型压力机（公称力≥12000kN，对称连杆增力机构，行程次数 14～18 次/分钟，滑块行程 1100mm，滑块调节量 500mm，下行最大速度 1000mm/s，回程最大速度 1000mm/s，连杆增力系数≥6）、

presses (8,000 to 25,000kN), progressive die presses (6,000 to 16,000kN), compound driven hot forming presses (nominal pressure ≥12,000 kN, symmetry linkage for force amplification, stroke number of 14 to 18 strokes per minute, slide stroke of 1,100 mm, slide adjustment of 500 mm, maximum downward speed of 1,000mm per second, maximum return speed of 1,000mm per second, and force amplification coefficient of the linkage ≥6), high-speed compound driven presses and intelligent press lines (nominal pressure ≥30,600 kN, compound fuel cylinder driven symmetry linkage for force amplification, single machine continuous stroke number ≥12 times per minute, production line beats of 6-8 beats per minute), research and development and manufacturing of new-generation intelligent complete equipment for the comprehensive stretch-forming of aircraft skin (ultimate tensile strength ≥15 MN, sheet thickness ≤10 mm, jaw opening ≤80mm, jaw limit load (ultimate tensile strength per unit width) ≥63 kN/mm, synchronous accuracy of main cylinder stretching position of ± 0.5 mm, and extension control accuracy ≤0.2%); perfusion forming techniques and equipment for large and super-large aerospace sheet metal parts (manufacturing technology for the integral intake lips of high-bypass-ratio engines): (nominal pressure of 200 MN, stretching tonnage of 16,000 tons, edge pressing tonnage of 4,000 tons, slide stroke of 3,000 mm, the size of the worktable of 5,000 mm × 5,000 mm, the pressure of the liquid chamber of 10 MPa, the volume of the liquid chamber of 6,000 L, and displacement of 4,300L); radial forging machines (precision forging machine) and rotary forging machines (630 to 22,000 kN); and pulsating extruders (vibration extruders) (630 to 22,000 kN), and high-speed upsetters (100 pieces per minute,

高速复合传动压力机智能化冲压线（公称力≥30600kN，复合油缸驱动对称连杆增力机构，单机连续行程次数≥12 次/分钟，生产线节拍 6～8 件/分钟）、新一代飞机蒙皮综合拉形智能化成套装备研发与制造（最大拉伸力≥15MN，板料厚度≤10mm，钳口最大开口度≤80mm，钳口极限负载系数（单位宽度最大拉伸力）≥63kN/mm，主缸拉伸位置同步精度±0.5mm，延伸量控制精度≤0.2%）；航空航天大型及超大型钣金零件充液成形工艺及装备（大涵道比发动机进气道整体唇口制造技术）：（设备公称力 200MN，拉深吨位 16000T，压边吨位 4000T，滑块行程 3000mm，工作台面尺寸 5000mm×5000mm，液室压力 10MPa，液室容积 6000L，排水量 4300L）；径向锻造机（精锻机）和旋锻机（630～22000kN）；脉动挤压机（振动挤压机）（630～22000kN），高速镦锻机（100 件/分钟，锻件重量 1.6kg 以上）

and weight of a forged part of 1.6 kg or more)

27. Cracked gas compressors, propylene compressors, and ethylene compressors, 400,000-ton (polypropylene, among others) extrusion granulation units, 500,000-ton synthesis gas, ammonia, and oxygen compressors, and other key equipment

27、乙烯裂解三机，40 万吨级（聚丙烯等）挤压造粒机组，50 万吨级合成气、氨、氧压缩机等关键设备

28. Large wind power generation seals (with a service life of seven years or more and a working temperature from -45 to 100); nuclear main pump mechanical seals (applicable pressure ≥ 17 MPa and working temperature from 26.7 to 73.9); shield machine main bearing seals (with a service life of 5,000 hours); rotating seals for automobile power train systems and transmission systems; oil well drilling and logging equipment seals (applicable pressure ≥ 105 MPa); hydraulic support seals; high PV value rotary dynamic seals; mechanical seals with oversized diameter (≥ 2 m); seals for aerospace use (working temperature from -54 to 275 and line speed ≥ 150 m/s); high-pressure seals for hydraulic components (applicable pressure ≥ 31.5 MPa); high-precision hydraulic castings (runner size precision ≤ 0.25 mm and fatigue performance test ≥ 2 million times)

28、大型风力发电密封件（使用寿命 7 年以上，工作温度-45℃～100℃）；核电站主泵机械密封（适用压力≥17 兆帕，工作温度 26.7℃～73.9℃）；盾构机主轴承密封（使用寿命 5000 小时）；轿车动力总成系统以及传动系统旋转密封；石油钻井、测井设备密封（适用压力≥105 兆帕）；液压支架密封件；高 PV 值旋转动密封件；超大直径（≥2 米）机械密封；航天用密封件（工作温度-54℃～275℃，线速度≥150 米/秒）；高压液压元件密封件（适用压力≥31.5 兆帕）；高精密液压铸件（流道尺寸精度≤0.25 毫米，疲劳性能测试≥200 万次）

29. High-performance non-asbestos sealing materials (with a heat-resistant temperature of 500 and a tensile strength ≥ 20 MPa); high-performance carbon graphite sealing materials (with a heat-resistant temperature of 350 and a compressive strength ≥ 270 MPa); high-performance pressureless sintered silicon carbide materials (with a flexural strength ≥ 200 MPa and a thermal conductivity ≥ 130 W/mK)

29、高性能无石棉密封材料（耐热温度 500℃，抗拉强度≥20 兆帕）；高性能碳石墨密封材料（耐热温度 350℃，抗压强度≥270 兆帕）；高性能无压烧结碳化硅材料（弯曲强度≥200 兆帕，热导率≥130 瓦/米·开尔文（W/m·K））

30. Intelligent welding equipment; laser welding and cutting, electron beam welding, and other high-energy beam welding and cutting equipment; friction stir, composite heat sources, and other welding equipment; and digital and large capacity inverter welding power sources

30、智能焊接设备，激光焊接和切割、电子束焊接等高能束流焊割设备，搅拌摩擦、复合热源等焊接设备，数字化、大容量逆变焊接电源

31. Large dies (lower plate half cycle length of the stamping die > 2,500 mm, and lower plate half cycle length of the cavity die > 1,400 mm), precision dies (precision of stamping dies ≤ 0.02 mm and precision of cavity dies ≤ 0.05 mm), multi-station automatic deep stretching dies, and multi-station automatic fine blanking dies

31、大型模具（下底板半周长度冲压模＞2500 毫米，下底板半周长度型腔模＞1400 毫米）、精密模具（冲压模精度≤0.02 毫米，型腔模精度≤0.05 毫米）、多工位自动深拉伸模具、多工位自动精冲模具

32. Large (with a furnace capacity of one ton or more) multifunctional controlled atmosphere heat treatment equipment, program-controlled chemical heat treatment equipment, program-controlled multifunctional vacuum heat treatment equipment and vacuum heat treatment equipment with a furnace capacity of 500 kg or more, and heat treatment heating furnaces with full fiber lining

32、大型（装炉量 1 吨以上）多功能可控气氛热处理设备、程控化学热处理设备、程控多功能真空热处理设备及装炉量 500 公斤以上真空热处理设备、全纤维炉衬热处理加热炉

33. High-strength alloy steel, stainless steel, and weathering steel fasteners, titanium alloy and aluminum alloy fasteners, and precision fasteners; springs for aviation, aerospace, high-speed rail, and engines, among others; high-precision transmission junction pieces, and coupling shaft for heavy mills; new types of powder metallurgical parts: high-density (≥ 7.0 g/cc), high-precision, and complex-shaped structural parts; friction devices for high-speed trains and airplanes; oil bearings; speed-changing gearboxes for China Railway High-Speed(CRH) trains, gear transmission agents with adjustable

33、合金钢、不锈钢、耐候钢高强度紧固件、钛合金、铝合金紧固件和精密紧固件；航空、航天、高铁、发动机等用弹簧；高精度传动联结件，大型轧机联结轴；新型粉末冶金零件：高密度（≥7.0 克/立方厘米）、高精度、形状复杂结构件；高速列车、飞机摩擦装置；含油轴承；动车组用齿轮变速箱，船用可变桨齿轮传动系统、2.0 兆瓦以上风电用变速箱、冶金矿山机械用变速箱；汽车动力总成、工程机械、大型农机用链条；重大装备和重点工程配套基础零部件

blades used for vessels, gearboxes used for wind power of 2.0 megawatts and above, and gearboxes for metallurgical and mining machinery; automobile powertrain, engineering machinery, and chains used for large agricultural machinery; and basic supporting parts of major equipment and key projects

34. Sea water desalting equipment

34、海水淡化设备

35. Robots and integrated systems: special service robots, medical rehabilitation robots, public service robots, personal service robots, human-machine collaboration robots, dual-arm robots, arc welding robots, heavy-duty AGVs, and special testing and assembly robot integration systems, among others. Key parts for robots: high-precision speed reducers, high-performance servo motors and drives, fully autonomous programming and other high-performance controllers, sensors, and end effectors. Common robotic technology: inspection, testing and assessment certification, intelligent robot operating systems, and intelligent robot cloud service platforms

35、机器人及集成系统：特种服务机器人、医疗康复机器人、公共服务机器人、个人服务机器人、人机协作机器人、双臂机器人、弧焊机器人、重载 AGV、专用检测与装配机器人集成系统等。机器人用关键零部件：高精密减速器、高性能伺服电机和驱动器、全自主编程等高性能控制器、传感器、末端执行器等。机器人共性技术：检验检测与评定认证、智能机器人操作系统、智能机器人云服务平台

36. Integrated excavation equipment for a mine or a thin seam with an annual yield of five million tons or more and key equipment for a large-scale surface mine with an annual yield of 10 million tons or more

36、500 万吨/年及以上矿井、薄煤层综合采掘设备，1000 万吨级/年及以上大型露天矿关键装备

37. Integrated compressor units of 18MW or above, supporting compressors, gas turbines, valves, and other key equipment for natural gas transmission lines with a diameter of 1,200 mm or above; supporting compressors, driven machinery, and cryogenic equipment, among others, for liquefaction of natural

37、18MW 及以上集成式压缩机组、直径 1200 毫米及以上的天然气输气管线配套压缩机、燃气轮机、阀门等关键设备；单线 260 万吨/年及以上天然气液化配套的压缩机及驱动机械、低温设备等；大型输油管线配套的 3000 立方米/

gas with an annual yield of 2.6 million tons or more per line; supporting oil pumps of 3,000 cubic meters or more per hour and other key equipment for large-scale oil pipelines

小时及以上输油泵等关键设备

38.Sheet-fed and multi-color offset presses (width ≥ 750 mm; printing speed: single-sided and multicolor ≥ 16,000 sheets/hour, and two-sided and multicolor ≥ 13,000 sheets/hour); commercial web offset presses (width ≥ 787 mm, printing speed ≥ 7 m/s, and overprinter precision ≤ 0.1 mm); newspaper web offset presses (printing speed: single-paper path and single-width machine ≥ 75,000 sheets/hour, double-paper path and double-width machine ≥ 150,000 sheets/hour, and overprinter precision ≤ 0.1 mm); multicolor wide flexographic presses (printing width ≥ 1,300 mm and printing speed ≥ 400 m/min); unit flexographic presses (printing speed ≥ 250 m/min); environment-friendly multicolor web photogravure presses (printing speed ≥ 300 m/min and overprinter precision ≤ 0.1 mm); inkjet digital presses (used for publication: printing speed ≥ 150 m/min and resolution ≥ 600 dpi; used for packaging: printing speed ≥ 30 m/min and resolution ≥ 1,000 dpi; used for variable data: printing speed ≥ 100 m/min and resolution ≥ 300 dpi); computer-to-plate (1000dpi) (imaging speed ≥ 35 sheets/hour, plate width ≥ 750 mm, repeatability of 0.01 mm, and resolution of 3,000 dpi); and shaftless numerically-controlled platen hot stamping machines (stamping speed ≥ 10,000 sheets/hour and machining precision of 0.05 mm)

38、单张纸多色胶印机（幅宽≥750 毫米，印刷速度：单面多色≥16000 张/小时，双面多色≥13000 张/小时）；商业卷筒纸胶印机（幅宽≥787 毫米，印刷速度≥7 米/秒，套印精度≤0.1 毫米）；报纸卷筒纸胶印机（印刷速度：单纸路单幅机≥75000 张/小时，双纸路双幅机≥150000 张/小时，套印精度≤0.1 毫米）；多色宽幅柔性版印刷机（印刷宽度≥1300 毫米，印刷速度≥400 米/分钟）；机组式柔性版印刷机（印刷速度≥250 米/分钟）；环保多色卷筒料凹版印刷机（印刷速度≥300 米/分钟，套印精度≤0.1 毫米）；喷墨数字印刷机（出版用：印刷速度≥150 米/分钟，分辨率≥600dpi；包装用：印刷速度≥30 米/分，分辨率≥1000dpi；可变数据用：印刷速度≥100 米/分钟，分辨率≥300dpi）；CTP 直接制版机（成像速度≥35 张/小时，版材幅宽≥750 毫米，重复精度 0.01 毫米，分辨率≥3000dpi）；无轴数控平压平烫印机（烫印速度≥10000 张/小时，加工精度 0.05 毫米）

39. Two- or four-wheel drive wheeled tractors and crawler tractors of 100 horsepower or above and equipped with a power shift transmission or continuously variable transmission,

39、100 马力以上、配备有动力换挡变速箱或无级变速箱、总线控制系统、安全驾驶室、动力输出轴有 2 个以上转速、液压输出点不少于 3 组的两轮或四轮驱动的轮式拖拉

a bus control system, a safety cab, a power output shaft with two or more rotate speed, and hydraulic output points of not less than three groups Intertillage tractors, tractors used for orchards, and high-clearance (minimum terrain clearance of 40 cm or more) tractors, with matched power of 50 horsepower or above

机、履带式拖拉机。配套动力 50 马力以上的中耕型拖拉机、果园用拖拉机、高地隙拖拉机（最低离地高度 40 厘米以上）

40. Supporting farm machinery of tractors of 100 horsepower or above: subsoilers, combined soil preparation machines, and combined machines for soil preparation and sowing, among others, required for conservation tillage and moldboard plows with a width of share ≥ 40 cm, round disc harrows, grain drills, precision planters for cultivated crops, cultivators, non-tillage planters, and large sprayers (dusters), among others, required for conventional agricultural operations

40、100 马力以上拖拉机配套农机具：保护性耕作所需要的深松机、联合整地机和整地播种联合作业机等，常规农业作业所需要的单体幅宽≥40 厘米的铧式犁、圆盘耙、谷物条播机、中耕作物精密播种机、中耕机、免耕播种机、大型喷雾（喷粉）机等

41. Key parts and components of tractors of 100 horsepower or above: power shift transmissions, hydraulic mechanical continuously variable transmissions, integrated pump motors, front drive axles with rim brakes and limited slip differential locks used for wheeled tractors, anti-lock braking systems, batteries, motors and control systems of electric tractors, clutches, hydraulic pumps, hydraulic cylinders, various valves and hydraulic delivery valves, and other closed hydraulic systems; closed-core and load-sensing electronically-controlled hydraulic lifters, rims, spokes, and hydraulic steering mechanism, among others

41、100 马力以上拖拉机关键零部件：动力换挡变速箱，液压机械无级变速箱、一体式泵马达、轮式拖拉机用带轮边制动和限滑式差速锁的前驱动桥，ABS 制动系统，电动拖拉机电池、电机及其控制系统，离合器，液压泵、液压油缸、各种阀及液压输出阀等封闭式液压系统，闭心变量、负载传感的电控液压提升器，电控系统，液压转向机构等

42. Crop transplanting machines: ride-on plate-soil motor high-speed rice transplanters (350 times or more per minute, 3 to 5 plants per hole, applicable line spacing of 20 to 30 cm,

42、农作物移栽机械：乘坐式盘土机动高速水稻插秧机（每分钟插次 350 次以上，每穴 3～5 株，适应行距 20～30 厘米，株距可调，适应株距 12～22 厘米）；盘土式机动水

adjustable row spacing, and applicable row spacing of 12 to 22 cm); and plate-soil motor rice seedling transplanters (ride-on or walk-behind, applicable line spacing of 20 to 30 cm, adjustable row spacing, and applicable row spacing of 12 to 22 cm), among others

稻摆秧机（乘坐式或手扶式，适应行距为 20～30 厘米，株距可调，适应株距为 12～22 厘米）等

43. Agricultural harvesting machinery: self-propelled grain combine harvesters (feed rate of 6 kg/sec or more); self-propelled semi-feed rice combine harvesters (four lines or more and a supporting engine of 44 kilowatts or more); self-propelled corn combine harvesters (three to six lines, snapping type, and with a peeling device and a device of crushing stalks and returning them to field or a device of chopping and collecting stalks); ear, stalk and corn harvester (ear snapping and peeling as well as stalk shredding and recovery), self-propelled corn grain combine harvester (four lines or more, direct grain harvesting type); self-propelled harvesters of silages such as barley, grass alfalfa, corn, and sorghum (with matched power of 147 kilowatts or more, a length of chopped stems of 10 to 60 mm, and a device to detect metal and stone and the functionality of grain grinding); cotton picking machines (three lines or more, self-propelled or tractor backpack, cotton picking device of a mechanical or pneumatic style, an applicable height of cotton plant from 35 to 160 cm, with seed cotton containers and an automatic cotton unloading device); potato harvesters (self-propelled or tractor-drawn, two lines or more, adjustable line spacing, with a soil-removing device and a collection device, and a maximum digging depth of 35 cm); sugarcane harvesters (self-propelled or tractor knapsack, with matched power of 58 kilowatts or more, a perennial root broken rate ≤ 18%, and a loss rate ≤ 7%);

43、农业收获机械：自走式谷物联合收割机（喂入量 6 千克/秒以上）；自走式半喂入水稻联合收割机（4 行以上，配套发动机 44 千瓦以上）；自走式玉米联合收割机（3～6 行，摘穗型，带有剥皮装置，以及茎秆粉碎还田装置或茎秆切碎收集装置）；穗茎兼收玉米收获机（摘穗剥皮、茎秆切碎回收），自走式玉米籽粒联合收获机（4 行以上，籽粒直收型）；自走式大麦、草苜蓿、玉米、高粱等青贮饲料收获机（配套动力 147 千瓦以上，茎秆切碎长度 10～60 毫米，“具有金属探测、石块探测安全装置及籽粒破碎功能”）；棉花采摘机（3 行以上，自走式或拖拉机背负式，摘花装置为机械式或气力式，适应棉珠高度 35～160 厘米，装有籽棉集装箱和自动卸棉装置）；马铃薯收获机（自走式或拖拉机牵引式，2 行以上，行距可调，带有去土装置和收集装置，最大挖掘深度 35 厘米），甘蔗收获机（自走式或拖拉机背负式，配套功率 58 千瓦以上，宿根破碎率≤18%，损失率≤7%）；残膜回收与茎秆粉碎联合作业机；牧草收获机械（自走式牧草收割机、悬挂式割草压扁机、指盘式牧草搂草机、牧草捡拾压捆机等）；自走式薯类收获机械；杂交构树联合收获机械

combined operation machine for residual film recovery and stalk crushing; hay harvesting machinery (self-propelled hay harvesters, pull-type mower-conditioners, wheel hay rakes, and hay balers, among others); self-propelled potato harvesters; hybrid paper mulberry combine harvesting machines

44. Water-saving irrigation equipment: all kinds of large and medium irrigation machines, and various types of micro-drip irrigation equipment, among others; flood control and drainage equipment (with displacement of 1,500 cubic meters/hour or more, lift of 5 to 20 meters, power of 1,500 kW or above, efficiency of 60% or above, and removable)

44、节水灌溉设备：各种大中型喷灌机、各种类型微滴灌设备等；抗洪排涝设备（排水量 1500 立方米/小时以上，扬程 5～20 米，功率 1500 千瓦以上，效率 60%以上，可移动）

45. Biogas generation equipment: integration of biogas fermentation and storage (series of products with biogas storage capacity of 300 to 2,000 cubic meters) and equipment of pumping slag from biogas slurry (a pumping capacity of one cubic meter or more per minute), among others

45、沼气发生设备：沼气发酵及储气一体化（储气容积 300～2000 立方米系列产品）、沼液抽渣设备（抽吸量 1 立方米/分钟以上）等

46. Large construction machinery: hydraulic excavators of 30 tons or above, tunnel boring machines (TBM) of six meters or above, crawler dozers of 320 horsepower or above, loaders of six tons or above, bridging equipment of 600 tons or above (including bridge girder erection machines, girder transporting vehicles, and girder cranes), crawler cranes of 400 tons or above, all-terrain cranes of 100 tons or above, reach stackers of 25 tons or above, tower cranes of 1,000 tons/m or above, drill jumbos with a drill hole of 100 mm or above, planers one meter wide or above, mining vehicles of 75 tons or above, graders of 220 horsepower or above, vibratory hydraulic rollers of 18 tons or above, pavers of nine meters or above,

46、大型施工机械：30 吨以上液压挖掘机、6 米及以上全断面掘进机、320 马力及以上履带推土机、6 吨及以上装载机、600 吨及以上架桥设备（含架桥机、运梁车、提梁机）、400 吨及以上履带起重机、100 吨及以上全地面起重机、25 吨及以上集装箱正面吊、1000 吨/米及以上塔式起重机、钻孔 100 毫米以上凿岩台车、1 米宽及以上铣刨机、75 吨及以上矿用车、220 马力及以上平地机、18 吨及以上振动液压式压路机、9 米及以上摊铺机、1 米及以上铣刨机、20 吨及以上集装箱叉车、8 吨及以上内燃叉车、3 吨及以上电瓶叉车、40 米及以上砼泵车、8 立方米及以上砼搅拌车、90 立方米/时及以上砼搅拌站、400 千瓦及以上砼冷

planers of one meter or above, container handlers of 20 tons or above, diesel forklift trucks of eight tons or above, electric forklift trucks of three tons or above, concrete pumps of 40 meters or above, concrete mixer trucks of eight cubic meters or above, concrete mixing stations of 90 cubic meters/hour or above, concrete cold and hot recycling equipment of 400 kilowatts or above, rotary drilling rigs of 2,000 mm or above, slurry wall excavation equipment of 400 mm or above; and key components: power shift transmissions, wet drive axles, slewing bearings, torque converters, and supporting electric machines, electronic control, hydraulic motors with pressure of 25 MPa or more, pumps, and control valves for electric forklifts

热再生设备、2000 毫米及以上旋挖钻机、400 毫米及以上地下连续墙开挖设备；关键零部件：动力换挡变速箱、湿式驱动桥、回转支承、液力变矩器、为电动叉车配套的电机、电控、压力 25 兆帕以上液压马达、泵、控制阀

47. Intelligent logistics and warehousing equipment, information systems, intelligent material handling equipment, intelligent port handling equipment, and intelligent logistics equipment for agricultural products among others

47、智能物流与仓储装备、信息系统，智能物料搬运装备，智能港口装卸设备，农产品智能物流装备等

48. Combustion engines with high reliability, low emissions and low power used for non-road mobile machinery: life indicators: 8,000 to 12,000 hours for heavy type, 5,000 to 7,000 hours for medium type, and 3,000 to 4,000 hours for light type, emission indicators: meeting the requirements of emission indicators in Euro IIIB, Euro IV, Euro V, China III, and China IV; and the fuel system, pressurization system, and exhaust aftertreatment system (all including electronic control system) affecting the power, economic, and environmental protection performances of combustion engines used for non-road mobile machinery

48、非道路移动机械用高可靠性、低排放、低能耗的内燃机：寿命指标（重型 8000～12000 小时，中型 5000～7000 小时，轻型 3000～4000 小时）、排放指标（符合欧IIIB、欧Ⅳ、欧Ⅴ、国三、国四排放指标要求）；影响非道路移动机械用内燃机动力性、经济性、环保性的燃油系统、增压系统、排气后处理系统（均包括电子控制系统）

49. Refrigeration and air-conditioning equipment and key components: heat pumps, composite heat source (air source and solar) heat pump water heaters, refrigeration and air-conditioning compressors with energy efficiency of level 2 or above, micro-channel and falling film heat transfer technologies and equipment, electronic expansion valves, and two-phase flow ejectors and their key components; and refrigeration and air-conditioning compressors using environment-friendly refrigerants (ODP is 0 and GWP value is lower)

49、制冷空调设备及关键零部件：热泵、复合热源（空气源与太阳能）热泵热水机、二级能效及以上制冷空调压缩机、微通道和降膜换热技术与设备、电子膨胀阀和两相流喷射器及其关键零部件；使用环保制冷剂（ODP 为 0、GWP 值较低）的制冷空调压缩机

50. Complete drilling machines such as deep drilling rigs with a depth of 12,000 m or more, polar drilling rigs, high displacement deep-well and desert drilling rigs, drilling rigs used in swamp areas difficult to enter, offshore rigs, truck-mounted drilling rigs, and drilling rigs used for special drilling techniques

50、12000 米及以上深井钻机、极地钻机、高位移性深井沙漠钻机、沼泽难进入区域用钻机、海洋钻机、车装钻机、特种钻井工艺用钻机等钻机成套设备

51. Centralized processing equipment for hazardous waste (including medical waste)

51、危险废物（含医疗废物）集中处理设备

52. Large efficient two-plate injection molding machines (with a mold clamping force of 1,000 tons or more), all-electric plastic injection molding machines (with an injection volume of less than 1,000 g), energy-saving plastics and rubber injection molding machines (with energy consumption of less than 0.4 kwh/kg), high-speed energy-saving plastic extrusion units (production capacity: 30 to 3,000 kg/hour, and energy consumption: less than 0.35 kwh/kg), microcellular foam plastic injection molding machines (mold clamping force: 60 to 1,000 tons, injection volume: 30 to 5,000 g, and energy

52、大型高效二板注塑机（合模力 1000 吨以上）、全电动塑料注射成型机（注射量 1000 克以下）、节能型塑料橡胶注射成型机（能耗 0.4 千瓦时/千克以下）、高速节能塑料挤出机组（生产能力 30～3000 公斤/小时，能耗 0.35 千瓦时/千克以下）、微孔发泡塑料注射成型机（合模力 60～1000 吨，注射量 30～5000 克，能耗 0.4 千瓦时/千克以下）、大型双螺杆挤出造粒机组（生产能力 30～60 万吨/年）、大型对位芳纶反应挤出机组（生产能力 1.4 万吨/年以上）、碳纤维预浸胶机组（生产能力 60 万米/年以上；

consumption of less than 0.4 kwh/kg), large twin-screw extrusion granulation units (production capacity: 300,000 to 600,000 tons/year), large para-aramid reactive extrusion units (production capacity of 14,000 tons/year or above), carbon fiber pre-impregnated units (a production capacity of 600,000 m/year or above; and a width of 1.2 m or more), and injection molding compounding equipment for fiber reinforced composites (clamping force of 200 to 6,800 tons, and shot weight of 600 to 85,000 grams)

幅宽 1.2 米以上）、纤维增强复合材料在线混炼注塑成型设备（合模力 200～6800 吨，注射量 600～85000 克）

53. Nanofiltration membrane and reverse osmosis membrane pure water equipment

53、纳滤膜和反渗透膜纯水装备

54. Safe drinking water equipment: combined-type integrated water purifiers (with a processing capacity of 100 to 2,500 tons/hour)

54、安全饮水设备：组合式一体化净水器（处理量 100～2500 吨/小时）

55. Air pollution control equipment: desulfurization, denitrification, dust collection, and other ultra-low emission complete technical equipment such as coal-fired generating units; pre-charging bag dust collection technical equipment for fine particles in flue gas from steel furnaces and kilns; SDA desulfurization plus SCR denitration technical equipment for coke oven flue gas; alumina defluorination and dust collection technical equipment for electrolytic aluminum flue gas; dry desulfurization and dust collection equipment for steel sintering flue gas; bag dust collectors; electric-bag composite dust collection technical equipment (particulate matter emission concentration<10 mg/m3);="" catalytic="" cracking="" regeneration="" flue="" gas="" dust="" collection="" and="" desulfurization="" technical=""

55、大气污染治理装备：燃煤发电机组脱硫、脱硝、除尘等超低排放成套技术装备；钢铁炉窑烟气细颗粒物预荷电袋式除尘技术装备；焦炉烟气 SDA 脱硫+SCR 脱硝技术装备；电解铝烟气氧化铝脱氟除尘技术装备；钢铁烧结烟气干法脱硫除尘成套装备；袋式除尘器；电袋复合除尘技术装备（颗粒物排放浓度<10 毫克>

equipment;="" vocs="" adsorption="" and="" recovery="" devices;="" vocs="" incineration="" devices;="" fugitive="" emission="" control="" technical="" equipment="" for="" furnaces,="" kilns,="" and="" stockyards;="" and="" cooking="" fume="" purification="" equipment="" for="" the="" catering="">

56. Sewage prevention and control technical equipment: urban sewage treatment outfits (phosphorus and nitrogen removal); sludge hydrolysis and anaerobic digestion technical equipment; sludge drying and incineration technical equipment (slag removal quantity of 90% or above); immersed membrane bioreactors (COD removal efficiency of 90 % or more); ceramic vacuum filters (vacuum degree: 0.09 to 0.098 MPa, and porosity: 0.2 microns to 20 microns); technical equipment for the treatment of high concentration organic wastewater by ultrasonic coupling and biofilm processes; and oily sewage and chemical tank cleaning water treatment technical equipment

56、污水防治技术设备：城镇污水处理成套装备（除磷脱氮）；污泥水解厌氧消化技术装备；污泥干燥焚烧技术装备（减渣量 90%以上）；浸没式膜生物反应器（COD 去除率 90%以上）；陶瓷真空过滤机（真空度：0.09~0.098 兆帕，孔隙：0.2 微米~20 微米）；超生耦合法和生物膜法处理高浓度有机废水技术装备；油污水、化学品洗舱水处置技术装备

57. Solid waste prevention and control technical equipment: domestic garbage clean incineration technical equipment (with the amount of combustion-supporting coal of less than 20%); technical equipment for concentrated decontamination of kitchen waste (with a utilization rate of 95%); technical equipment for landfill leachate and odor treatment (with a handling capacity of 50 tons/day or above); technical equipment for domestic garbage automated sorting (with a sorting rate of 80% or more); construction waste treatment and recycling technical equipment (with a handling capacity of 100 tons/hour or more); technical equipment for industrial hazardous waste disposal and treatment (with a treatment rate

57、固体废物防治技术设备：生活垃圾清洁焚烧技术装备（助燃煤量 20%以下）；厨余垃圾集中无害化处理技术装备（利用率 95%以上）；垃圾填埋渗滤液和臭气处理技术装备（处理量 50 吨/天以上）；生活垃圾自动化分选技术装备（分选率 80%以上）；建筑垃圾处理和再利用工艺技术装备（处理量 100 吨/小时以上）；工业危险废弃物处置处理技术装备（处理率 90%以上）；油田钻井废弃物处理处置技术与成套装备（减容 50%以上，处理率 70%以上）；医疗废物清洁焚烧、高温蒸煮无害化处理技术装备（处理量 150 千克/小时以上，燃烧效率 70%以上）以及医疗废物微波、化学消毒处理技术装备；畜禽粪污集中处理技术装备（处理

of 90% or more); technologies and outfits for oilfield drilling waste disposal and treatment (with a volume reduction of 50% or more and a treatment rate of 70% or more); and technical equipment for medical waste clean incineration and thermophilic digestion decontamination (with a handling capacity of 150 kg/hour or more and combustion efficiency of 70% or more) and microwave and chemical disinfection treatment technical equipment for medical wastes; and centralized treatment technical equipment for livestock and poultry manure (a processing capacity of more than 20 tons/day)

量 20 吨/天以上）

58. Soil remediation technical equipment: integrated crushing and screening machine, odor suppression equipment, direct thermal desorption equipment, indirect thermal desorption equipment, soil leaching equipment, soil improvement machine, and direct push drilling and sampling equipment

58、土壤修复技术装备：破碎筛分一体机、气味抑制设备、直接热解吸设备、间接热解吸设备、土壤淋洗设备、土壤改良机、直推式钻探与采样设备

59. Underground scalers, raise boring rigs, multi-functional crushing and block-clearing machines, dual-system brake and hydrostatic four-wheel drive underground multi-functional service vehicles, mining portable gas detectors, technology for underground curtain grouting near ore body, underground mining electric locomotive remote control technology, paste and high-concentration tailings backfill technology and equipment, and boxhole boring machines

59、撬毛台车、天井钻机钻、多功能破碎清塞机、双系统制动静液压四驱地下矿用多功能服务车、矿用便携式气体检测仪、井下近矿体帷幕注浆技术、井下电机车远程操控技术、膏体及高浓度尾矿充填技术与装备、切割井钻机

60. Technology development and equipment manufacturing for (ground-source, water-source, air-source, and other) heat pumps

60、热泵（地源、水源、空气源等）技术开发与装备制造

61. Development of technology for and production of power electronic transformers for core equipment for intelligent distribution networks	61、智能配电网核心设备电力电子变压器技术开发与生产
62. Noise and vibration pollution control equipment: acoustic barriers, mufflers, and spring vibration dampers	62、噪声与振动污染控制设备：声屏障、消声器、阻尼弹簧隔振器
63. Equipment and special materials for additive manufacturing	63、增材制造装备和专用材料
XV. Urban Rail Transit Equipment	十五、城市轨道交通装备
1. Application of urban rail transit damping and noise reduction technologies	1、城市轨道交通减震、降噪技术应用
2. Automatic fare collection systems (AFC) and systems of vehicle doors, platform screen doors, and vehicle couplers, windshield systems, and fire alarm and automatic fire extinguishing systems	2、自动售检票系统（AFC），车门、站台屏蔽门、车钩系统、风挡系统，火灾报警和自动灭火系统
3. Wireless communication-based signaling systems [including automatic train supervision system (ATS), automatic train protection (ATP) devices, and automatic train operation (ATO) devices]	3、以无线通信为基础的信号系统[含自动列车监控系统（ATS）、列车自动保护装置（ATP）、自动列车运行装置（ATO）]
4. Railway vehicle alternating current traction drive systems, brake systems, and core components (including IGCT, IGBT, and SiC components), network control systems, permanent-magnet traction motors, DC high-speed switches, gas-insulated switchgear (GIS), and new intelligent switchgear	4、轨道车辆交流牵引传动系统、制动系统及核心元器件（含 IGCT、IGBT、SiC 元器件），网络控制系统，永磁牵引电机，直流高速开关、真空断路器（GIS）、新型智能开关器件

5. Lightweight application of vehicle body, bogie, gearbox, and interior decoration materials

5、车体、转向架、齿轮箱及车内装饰材料轻量化应用

6. Urban rail train regenerative braking absorption devices, energy feedback, energy storage systems

6、城轨列车再生制动吸收装置、能量回馈、能量储存系统

7. Testing instruments and monitoring systems for rail transit

7、轨道交通用检测试验仪器和监控系统

8. Fully automatic operation (FAO), train autonomous circumambulate system (TACS) based on train-to-train communication, and intelligent operation and maintenance systems

8、全自动运行系统（FAO），基于车车通信的列车自主运行系统（TACS），智能运维系统

9. Traction power supply systems for urban rail transit (urban rail transit lines based on the 25kV AC traction power supply system)

9、城市轨道交通牵引供电系统（基于 25kV 交流牵引供电制式的城轨线路）

10. Magnetic levitation trains and rubber wheel rail transit technical equipment

10、磁悬浮列车，胶轮轨道交通技术装备

XVI. Automobiles

十六、汽车

1. Key components of automobiles: gasoline engine turbochargers, eddy current retarders, hydraulic retarder, servo headlamp systems, LED headlamps, digital instrumentation, solenoid valves used for electrical control system actuators, axles exclusively used for large low-floor buses, air suspension, energy-absorbing steering systems, inverter air conditioners for large and medium-sized passenger cars, high-strength steel wheels, disc brakes for commercial vehicles,

1、汽车关键零部件：汽油机增压器、电涡流缓速器、液力缓速器、随动前照灯系统、LED 前照灯、数字化仪表、电控系统执行机构用电磁阀、低地板大型客车专用车桥、空气悬架、吸能式转向系统、大中型客车变频空调、高强度钢车轮、商用车盘式制动器、商用车轮胎爆胎应急防护装置、转向轴式电动助力转向系统（C-EPS）、转向齿条式电动助力转向系统（R-EPS）、怠速启停系统、高效高可靠性

emergency protection devices for tire punctures in commercial vehicles, column type electric power steering (C-EPS), rack assist type electric power steering (R-EPS), start-stop systems, high-efficiency and high-reliability electromechanical coupling systems; dual-clutch transmissions (DCT), automatic mechanical transmissions (AMT), automatic transmissions with seven speeds or more (AT with seven speeds or more), and continuously variable transmissions (CVT); efficient diesel particulate filters; electronically controlled high-pressure common rail injection systems and its fuel injectors; high-efficiency booster systems (maximum comprehensive efficiency ≥ 55%); exhaust gas recirculation systems; and electric braking, electric steering, and their key components

机电耦合系统；双离合器变速器（DCT）、电控机械变速器（AMT）、7 挡及以上自动变速器（7 挡及以上 AT）、无级自动变速器（CVT）；高效柴油发动机颗粒捕捉器；电控高压共轨喷射系统及其喷油器；高效增压系统（最高综合效率≥55%）；废气再循环系统；电制动、电动转向及其关键零部件

2. Application of lightweight materials: high-strength steels (in line with the GB/T 20564 Continuously Cold Rolled High Strength Steel Sheet and Strip for Automobile or the GB/T 34566 Hot Stamping Steel Sheet and Strip for Automobile), aluminum alloy, magnesium alloys, composite plastics, powder metallurgy, and high-strength composite fibers, among others; application of advanced forming technologies: 3D printing forming, expanded application of laser tailor-welded blanks, hydroforming, ultra-high strength steel hot forming (strength ≥980MPa, and the product of tensile strength and elongation of 20 to 50GPa%), and flexible roll forming, among others; and application of environment-friendly materials: water-based paints and lead-free solders, among others

2、轻量化材料应用：高强度钢（符合 GB/T 20564《汽车用高强度冷连轧钢板及钢带》标准或 GB/T 34566《汽车用热冲压钢板及钢带》标准）、铝合金、镁合金、复合塑料、粉末冶金、高强度复合纤维等；先进成形技术应用：3D 打印成型、激光拼焊板的扩大应用、内高压成形、超高强度钢板（强度≥980MPa、强塑积 20～50GPa%）热成形、柔性滚压成形等；环保材料应用：水性涂料、无铅焊料等

3. Key parts and components of new energy vehicles: high-security energy-type power battery cells (energy density ≥300Wh/kg, and cycle life ≥1800 times); battery anode

3、新能源汽车关键零部件：高安全性能量型动力电池单体（能量密度≥300Wh/kg，循环寿命≥1800 次）；电池正极材料（比容量≥180mAh/g，循环寿命 2000 次不低于初始放

materials (specific capacity ≥ 180mAh/g and a cycle life of 2,000 times without lowering than 80% of the initial discharge capacity), battery cathode materials (specific capacity ≥500 mAh/g and a cycle life of 2,000 times without lowering than 80% of the initial discharge capacity), battery separators (thickness ≤12μm, porosity of 35% -60%, tensile strength MD ≥800 kgf/cm2, and TD≥800 kgf/cm2); battery management systems, motor controllers, and electronic control integration of electric vehicles; driving motor systems of electric vehicles (high-efficiency area: 85% and efficiency in working area ≥ 80%), vehicle DC/DC (input voltage of 100V to 400V), high-power electronic devices (IGBT, voltage class ≥ 750V, and current ≥ 300A); and plug-in hybrid electromechanical coupling drive systems; fuel cell engines (power-to-mass ratio ≥350 W/kg), fuel cell stacks (power density ≥3 kW/L), membrane electrodes (platinum usage ≤0.3 g/kW), proton exchange membranes (proton conductivity ≥0.08 S/cm), bipolar plates (thickness of metal bipolar plates ≤1.2mm and thickness of other bipolar plates≤1.6mm), low-platinum catalysts, carbon paper (resistivity ≤3 MΩ · cm), air compressors, hydrogen circulation pumps, hydrogen ejectors, humidifiers, fuel cell control systems, boost DC/DC, 70 MPa hydrogen tanks, and on-board hydrogen concentration sensors; heat pump air conditioners for electric vehicles; chips 32-bit or above specially for motor drive control (with not less than two hardware cores, a main frequency of not less than 180 MHz, and hardware encryption, and other functions, whose design meets ASIL C or higher functional safety requirements); integrated electric drive systems (power density ≥2.5 kW/kg); and high-speed reducers (maximum input speed ≥12,000 rpm and noise<75>

电容量的 80%），电池负极材料（比容量≥500mAh/g，循环寿命 2000 次不低于初始放电容量的 80%），电池隔膜（厚度≤12μm，孔隙率 35%～60%，拉伸强度 MD≥800kgf/cm2,TD≥800kgf/cm2）；电池管理系统，电机控制器，电动汽车电控集成；电动汽车驱动电机系统（高效区：85%工作区效率≥80%），车用 DC/DC（输入电压 100V～400V），大功率电子器件（IGBT，电压等级≥750V，电流≥300A）；插电式混合动力机电耦合驱动系统；燃料电池发动机（质量比功率≥350W/kg）、燃料电池堆（体积比功率≥3kW/L）、膜电极(铂用量≤0.3g/kW)、质子交换膜(质子电导率≥0.08S/cm）、双极板（金属双极板厚度≤1.2mm，其他双极板厚度≤1.6mm）、低铂催化剂、碳纸（电阻率≤3MΩ·cm）、空气压缩机、氢气循环泵、氢气引射器、增湿器、燃料电池控制系统、升压 DC/DC、70MPa 氢瓶、车载氢气浓度传感器；电动汽车用热泵空调；电机驱动控制专用 32 位及以上芯片（不少于 2 个硬件内核，主频不低于 180MHz，具备硬件加密等功能，芯片设计符合功能安全 ASIL C 以上要求）；一体化电驱动总成（功率密度≥2.5kW/kg）；高速减速器（最高输入转速≥12000rpm，噪声＜75dB）

4. On-board chargers (efficiency under full-load output conditions ≥95%), bidirectional on-board chargers, and non-on-board charging equipment (output voltage of 250V to 950V and efficiency within voltage range ≥88%); and high-power density, high-conversion efficiency, and high-applicability wireless charging and mobile charging technology and equipment as well as fast charging and battery swap facilities

4、车载充电机（满载输出工况下效率≥95%）、双向车载充电机、非车载充电设备（输出电压 250V～950V，电压范围内效率≥88%）；高功率密度、高转换效率、高适用性无线充电、移动充电技术及装备，快速充电及换电设施

5. Automotive electronic control systems: the engine control unit (ECU), transmission control unit (TCU), anti-lock braking system (ABS), acceleration slip regulation (ASR), electronic stability control (ESC), network bus control, on-board diagnostics (OBD), electronically-controlled intelligent suspensions, electronic parking system, electronic throttle, lane keeping assist systems (LKA), automatic emergency braking systems (AEBS), electric braking systems (EBS), and axle load automatic measurement systems for trucks, among others.

5、汽车电子控制系统：发动机控制系统（ECU）、变速箱控制系统（TCU）、制动防抱死系统（ABS）、牵引力控制（ASR）、电子稳定控制（ESC）、网络总线控制、车载故障诊断仪（OBD）、电控智能悬架、电子驻车系统、电子油门、车道保持辅助系统（LKA）、自动紧急制动系统（AEBS）、电控制动系统（EBS）、载货汽车用轴荷自动测量系统等

6. Capacity building for the research and development of intelligent vehicles, new energy vehicles and key components, and high-efficiency internal combustion engines

6、智能汽车、新能源汽车及关键零部件、高效车用内燃机研发能力建设

7. Key components and technologies for intelligent vehicles: sensors, on-board chips, central processors, on-board operating systems and information control systems, equipment for the vehicle network communication system, visual recognition systems, high-precision positioning devices, drive-by-wire chassis systems, and smart automotive safety glass; new intelligent terminal modules, multi-core heterogeneous intelligent computing platform technology, all-weather

7、智能汽车关键零部件及技术：传感器、车载芯片、中央处理器、车载操作系统和信息控制系统、车网通信系统设备、视觉识别系统、高精度定位装置、线控底盘系统、智能车用安全玻璃；新型智能终端模块、多核异构智能计算平台技术、全天候复杂交通场景高精度定位和地图技术、传感器融合感知技术、车用无线通信关键技术、基础云控平台技术；新型安全隔离架构技术、软硬件协同攻击识别

complex traffic scenario high-precision positioning and mapping technology, sensor fusion technology, key technology for wireless vehicle-to-everything communication, and basic cloud control platform technology; new security isolation architecture technology, software and hardware-coordinated attack recognition technology, terminal chip security encryption and application software security protection technology, wireless communication security encryption technology, secure communication, authentication and authorization technology, and data encryption technology; and research and development of the architecture of the test and assessment system, virtual reality, real vehicle road testing, and other technology and verification tools, vehicle-level and system-level testing and assessment methods, and establishment of basic databases for testing

技术、终端芯片安全加密和应用软件安全防护技术、无线通信安全加密技术、安全通讯及认证授权技术、数据加密技术；测试评价体系架构研发，虚拟仿真、实车道路测试等技术和验证工具，整车级和系统级测试评价方法，测试基础数据库建设

XVII. Vessels

十七、船舶

1. Optimization and upgrading of bulk carriers, oil tankers, and container ships to meet the requirements of environmental protection and safety; and development and construction of ships of types meeting the new international shipbuilding specifications and standards

1、散货船、油船、集装箱船适应绿色、环保、安全要求的优化升级，以及满足国际造船新规范、新标准的船型开发建造

2. Liquefied natural gas carriers with a capacity of 100,000 cubic meters or more, liquefied petroleum gas vessels with a capacity of 15,000 cubic meters or more, container ships with 10,000 containers or more, car carriers with 5,000 parking spaces or more, luxury ro-ro passenger ships, chemical tankers of IMO Tier II or above, medium and large luxury cruise ships, ro-ro cargo ships with more than 2,000 parking spaces, ro-ro

2、10 万立方米以上液化天然气运输船、1.5 万立方米以上液化石油气船、万箱以上集装箱船、5000 车位及以上汽车运输船、豪华客滚船、IMO Ⅱ型以上化学品船、大中型豪华邮轮、2000 车位以上汽车滚装船、3000 米车道以上的货物滚装船、LNG 加注船、牲畜运输船、甲醇（乙烷）运输船、油电混合动力船、电池驱动船及多用途船、极地邮

cargo ships with more than 3,000 meters of lanes, LNG bunkering ships, livestock carriers, methanol (ethane) carriers, oil-electric hybrid ships, battery-powered ships and multi-purpose ships, polar cruise ships, polar transport ships, polar multi-purpose ships, polar seismic research vessels, and other high-tech and high value-added ships

轮、极地运输船舶、极地多用途船、极地物探船等高技术、高附加值船舶

3. Large distant fishing and processing vessels, trailing suction hopper dredgers with a capacity of 10,000 cubic meters or more, train ferries, scientific research ships, icebreakers, oceanographic research ships, marine supervision vessels, deck cargo ships, and other special ships as well as their dedicated equipment

3、大型远洋捕捞加工渔船、1 万立方米以上耙吸式挖泥船、火车渡轮、科学考察船、破冰船、海洋调查船、甲板运输船、海洋监管船等特种船舶及其专用设备

4. Small waterplane area twin-hull ships, hydrofoils, ground effect ships, hovercrafts, wave-piercing ships, and other high-performance vessels

4、小水线面双体船、水翼船、地效应船、气垫船、穿浪船等高性能船舶

5. Self-elevating drilling platforms for a water depth of 120 meters or more, deep drilling ships for a water depth of 1,500 meters or more, semi-submersible drilling platforms for a water depth of 1,500 meters or more, and other mainstream mobile marine drilling platforms (vessels); floating production storage and offloading (FPSO) of 150,000 tons or above, 1,500-meter semi-submersible production platforms, spar platforms (SPAR), tension leg platforms (TLP), LNG-FPSO, marginal field floating production storage units, and other floating production systems; deep-water anchor handling towing supply vessels with horsepower of 10,000, 1,500-meter large lifting pipe-laying vessels, 1,500-meter surveying vessels, high-performance seismic vessels, semi-submersible

5、120 米及以上水深自升式钻井平台、1500 米及以上深钻井船、1500 米及以上水深半潜式钻井平台等主流海洋移动钻井平台（船舶）；15 万吨及以上浮式生产储卸装置（FPSO）、1500 米水深半潜式生产平台、立柱式生产平台（SPAR）、张力腿平台（TLP）、LNG-FPSO、边际油田型浮式生产储油装置等浮式生产系统；万马力水级深水三用工作船、1500 米水深大型起重铺管船、1500 米水深工程勘察船、高性能物探船、5 万吨及以上半潜运输船、海上风车安装船、浮式储存及再气化装置（FSRU）、深水动力定位原油输送装置、超深水海工作业船、深远海大型养殖装备、起重能力 10000 吨以上的重吊船、天然气水合物钻采船装

transport ships of 50,000 tons or above, offshore wind turbine installation vessels, floating storage and regasification units (FSRU), deep-water dynamic positioning crude oil transportation devices, ultra-deep-water marine engineering workboats, large deep-sea breeding equipment, heavy project vessels with a lifting capacity of more than 10,000 tons, natural gas hydrate drilling and mining ship equipment, deep-sea metal minerals exploration and development equipment, island and reef heavy-load construction platforms, offshore oilfield facility dismantling devices and other marine engineering workboats and auxiliary vessels

备、海底金属矿产资源勘探开发装备、岛礁重载建设平台、海上油田设施拆解装置等海洋工程作业船和辅助船

6. Dynamic positioning systems, FPSO single-point mooring systems, large-scale offshore platform power plants integrated systems, active power and transmission systems, drilling platform lifting systems, underwater oil and gas production systems, and other general and special marine engineering support equipment

6、动力定位系统、FPSO 单点系泊系统、大型海洋平台电站集成系统、主动力及传动系统、钻井平台升降系统、水下油气生产系统等通用和专用海洋工程配套设备

7. Development and manufacturing of yachts and supporting industries

7、游艇开发制造及配套产业

8. Intelligent environment-friendly low- and medium-speed marine diesel engines and their key parts and components, large deck machinery, marine boilers, oil-water separators, desalination plants, ballast water treatment systems, shore power technologies and equipment used for vessels, liquefied natural gas marine dual fuel engines, pod propulsions, cycloidal rudder propellers, large efficient pump-jets, high-power medium- and high-voltage generators, marine communication, navigation and automation systems, integrated

8、智能环保型船用中低速柴油机及其关键零部件、大型甲板机械、船用锅炉、油水分离机、海水淡化装置、压载水处理系统、船舶使用岸电技术及设备、液化天然气船用双燃料发动机、吊舱推进器、直翼舵桨推进装置、大型高效喷水推进装置、大功率中高压发电机、船舶通讯导航及自动化系统、综合电力推进系统及关键设备、船舶尾气处理装置、余热回收系统、双金属气阀、大型船用垃圾焚烧炉、生活污水处理系统、货油系统等关键船用配套设备

electric propulsion systems and key equipment, ship exhaust gas treatment devices, waste heat recovery systems, bimetallic valves, large shipboard incinerators, domestic sewage treatment systems, cargo oil systems, and other key supporting marine equipment

9. Seabed mining robots, seabed trenchers and other seabed mineral resource development equipment and deep-sea mining systems, deep sea riser-related supporting systems and equipment, underwater vehicles, robots, and detection and observation equipment

9、海底采矿机器人、海底挖沟机等海底矿产资源开发装备及深海采矿系统、深海立管相关配套系统和设备，水下潜器、机器人及探测观测设备

10. Application of precision management control, digital shipbuilding, unit assembly, advanced outfitting and modularization, advanced coating, and efficient welding technologies, ultra-high pressure water descaling devices, laser welding robots, intelligent segmented assembly lines, ship sub-assembly welding production lines, ship unit-assembly welding stations, intelligent ship block coating robots, ship piping processing production lines, and small hull parts free edge grinding production lines

10、精度管理控制、数字化造船、单元组装、预舾装和模块化、先进涂装、高效焊接技术应用、超高压水除锈装置、激光焊接机器人、智能化分段流水线、船舶小组立焊接生产线、船舶中组立焊接工作站、船舶分段智能涂装机器人、船舶管子加工生产线、船舶船体小构件自由边打磨生产线

11. Repair and modification of high-tech and high value-added vessels and marine engineering equipment as well as the application of green and environment-friendly ship repair technologies such as wall climbing robots and intelligent high-pressure cleaning robots

11、高技术高附加值船舶、海洋工程装备的修理与改装以及爬壁机器人、高压智能清洗机器人等绿色环保修船技术应用

12. Development of intelligent ships and unmanned ships, development of related intelligent systems and equipment, and development of technical equipment for the monitoring of the

12、智能船舶、无人船艇开发和相关智能系统及设备开发，船舶全寿命安全运行监管技术装备开发

safe operation of ships throughout their useful life

13. Development and manufacturing of safe, energy saving, and environmental-friendly inland river, river-sea combined transportation, and coastal ships

13、安全节能环保内河、江海联运及沿海船舶开发制造

14. Manufacturing of "cracked connecting rods"

14、“胀断连杆”生产制造

15. Pure electric and natural gas ships; alternative fuel, hybrid, pure electric, fuel cell, and other motor vehicle and ship technologies; and hybrid and plug-in hybrid special engines and optimizing powertrain system matching

15、纯电动和天然气船舶；替代燃料、混合动力、纯电动、燃料电池等机动车船技术；混合动力、插电式混合动力专用发动机，优化动力总成系统匹配

XVIII. Aviation and Aerospace

十八、航空航天

1. Development and manufacturing of aircrafts for trunk lines, regional aircrafts, and utility aircrafts and their parts and components

1、干线、支线、通用飞机及零部件开发制造

2. Development and manufacturing of aircraft engines

2、航空发动机开发制造

3. Development and manufacturing of airborne equipment, mission equipment, air traffic control equipment, and ground support equipment systems

3、机载设备、任务设备、空管设备和地面保障设备系统开发制造

4. Development and manufacturing of helicopters, rotor systems, and drive systems

4、直升机总体、旋翼系统、传动系统开发制造

5. Development and production of new materials for aviation and aerospace use

5、航空航天用新型材料开发生产

6. Manufacturing of gas turbines for aviation and aerospace use	6、航空航天用燃气轮机制造
7. Manufacturing of satellites and launch vehicles and their parts and components	7、卫星、运载火箭及零部件制造
8. Application of aviation and aerospace technologies and development and production of system software and hardware products and terminal products	8、航空、航天技术应用及系统软硬件产品、终端产品开发生产
9. Development and manufacturing of aircraft ground-based simulation training systems and test systems	9、航空器地面模拟训练系统、试验系统开发制造
10. Development and manufacturing of aircraft ground repair, maintenance, and testing equipment	10、航空器地面维修、维护、检测设备开发制造
11. Satellite ground and application system construction and equipment manufacturing	11、卫星地面和应用系统建设及设备制造
12. Development and application of emergency rescue equipment exclusively used for aircrafts	12、航空器专用应急救援装备开发与应用
13. Repair of aircrafts, equipment, and parts	13、航空器、设备及零件维修
14. Development and production of advanced satellite payloads	14、先进卫星载荷研制及生产
15. Development and manufacturing of unmanned aerial vehicles, materials, communications, and control systems, among others.	15、无人机总体、材料、通信、控制系统等开发制造

16. Design of civil aircrafts and helicopters

16、民用飞机、直升机的设计

17. Development and production of solar cells for aerospace

17、航空航天用太阳能电池开发生产

XIX. Light Industry

十九、轻工

1. Construction of forest-paper integration production lines each with an annual production capacity of 300,000 tons or more of chemical wood pulp, an annual production capacity of 100,000 tons or more of chemi-mechanical wood pulp, or an annual production capacity of 100,000 tons or more of chemical bamboo pulp, and corresponding paper and paperboard production lines (excluding newsprint and art paper); construction of paper pulp production lines adopting cleaner production techniques and using non-wood fiber as raw materials each with an annual production capacity of 100,000 tons or more; development and manufacturing of advanced pulping and papermaking equipment; and development and application of elemental chlorine free (ECF) totally chlorine free (TCF) chemical pulp bleaching techniques

1、单条化学木浆 30 万吨/年及以上、化学机械木浆 10 万吨/年及以上、化学竹浆 10 万吨/年及以上的林纸一体化生产线及相应配套的纸及纸板生产线（新闻纸、铜版纸除外）建设；采用清洁生产工艺、以非木纤维为原料、单条 10 万吨/年及以上的纸浆生产线建设；先进制浆、造纸设备开发与制造；无元素氯（ECF）和全无氯（TCF）化学纸浆漂白工艺开发及应用

2. Design and manufacturing of precision molds for metalloid products

2、非金属制品精密模具设计、制造

3. Development, production, and application of biodegradable plastics and a series of products thereof as well as development and production of agricultural plastic water-saving equipment and functional agricultural films with a long life (three years or more)

3、生物可降解塑料及其系列产品开发、生产与应用，农用塑料节水器材和长寿命（三年及以上）功能性农用薄膜的开发、生产

4. Production of new plastic building materials (highly airtight and energy-saving plastic windows, large-diameter drainage and sewage pipes, impact-resistant modified PVC pipes, polyethylene pipes used for ground-source heat pump systems, trenchless plastic pipes, composite plastic pipes, and plastic inspection wells); impermeable geomembrane; wood plastic composites and ultra-high molecular weight polyethylene pipes and sheets with molecular weight ≥ 2,000,000

4、新型塑料建材（高气密性节能塑料窗、大口径排水排污管道、抗冲击改性聚氯乙烯管、地源热泵系统用聚乙烯管、非开挖用塑料管材、复合塑料管材、塑料检查井）；防渗土工膜；塑木复合材料和分子量≥200 万的超高分子量聚乙烯管材及板材生产

5. Dynamic plasticizing and plastic extensional rheology plasticizing technology application and equipment manufacturing; and plastics processing equipment adopting electromagnetic induction heating and servo drive systems

5、动态塑化和塑料拉伸流变塑化的技术应用及装备制造；应用电磁感应加热和伺服驱动系统的塑料加工装备

6. Production of special ceramics used in industry, medical science, electronics, aviation and aerospace and other fields and the development of relevant technologies and equipment; and development of ceramics cleaner production and comprehensive utilization technologies

6、应用于工业、医学、电子、航空航天等领域的特种陶瓷生产及技术、装备开发；陶瓷清洁生产及综合利用技术开发

7. Development and manufacturing of energy efficient sewing machinery (adopting embedded digital control, oil-free or micro-oil lubrication, and other advanced technologies) and their key parts and components

7、高效节能缝制机械（采用嵌入式数字控制、无油或微油润滑等先进技术）及关键零部件开发制造

8. Research, development, and manufacturing of multiple station modular machine tools used in industries such as manufacturing of writing instruments and clocks and watches

8、用于制笔、钟表等行业的多工位组合机床研发与制造

9. Development and application of high-tech digital, and intelligent printing technologies and high-definition

9、高新、数字、智能印刷技术及高清晰度制版系统开发与应用

platemaking systems

10. Manufacturing of supplies specially for ethnic minorities

10、少数民族特需用品制造

11. Vacuum aluminizing, spraying silicon oxide, and polyvinyl alcohol (PVA) coating-type films, functional polyester (PET) film, oriented polystyrene (OPS) film, paper-based multi-layer co-extruded or composite packaging materials, and other new packaging materials

11、真空镀铝、喷镀氧化硅、聚乙烯醇（PVA）涂布型薄膜、功能性聚酯（PET）薄膜、定向聚苯乙烯（OPS）薄膜及纸塑基多层共挤或复合等新型包装材料

12. Manufacturing of equipment of metal plate printing in two or more colors, matching UV curing equipment, laminating equipment, and high-speed food and beverage cans processing equipment, as well as their ancillary equipment

12、二色及二色以上金属板印刷、配套光固化（UV）、薄板覆膜和高速食品饮料罐加工及配套设备制造

13. Lithium iron disulfide, lithium thionyl chloride, and other new lithium primary batteries; lithium-ion batteries, nickel hydrogen batteries, new-structure (bipolar, plumbic acid horizon, coiled, tubular, and other) sealed lead-acid batteries, lead-carbon batteries, super batteries, fuel cells, lithium/carbon fluoride batteries, and other new batteries and super capacitors

13、锂二硫化铁、锂亚硫酰氯等新型锂原电池；锂离子电池、氢镍电池、新型结构（双极性、铅布水平、卷绕式、管式等）密封铅蓄电池、铅碳电池、超级电池、燃料电池、锂/氟化碳电池等新型电池和超级电容器

14. Ternary and multiple lithium iron phosphate and other anode materials for lithium ion batteries, mesocarbon microbeads (MCMB), silicon carbide and other anode materials, single-layer and three-layer composite lithium-ion battery separators, fluorinated ethylene carbonate (FEC), and other electrolytes and additives; and waste battery recycling and green circular production techniques and equipment manufacturing

14、锂离子电池用三元和多元、磷酸铁锂等正极材料、中间相炭微球和硅碳等负极材料、单层与三层复合锂离子电池隔膜、氟代碳酸乙烯酯（FEC）等电解质与添加剂；废旧电池资源化和绿色循环生产工艺及其装备制造

15. Automated and intelligent production lines for lead storage batteries; automated and intelligent complete manufacturing equipment for lithium ion batteries; and automated and intelligent complete manufacturing equipment with a production capacity of 600 alkaline zinc-manganese batteries/min or more

15、铅蓄电池自动化、智能化生产线；锂离子电池自动化、智能化生产成套制造装备；碱性锌锰电池 600 只/分钟以上自动化、智能化生产成套制造装备

16. Tanning and fur processing cleaner production, development of new technologies of leather post-finishing, manufacturing of key equipment, and comprehensive utilization of chrome-containing leather solid waste; recycling of leather and fur processing liquid waste and comprehensive utilization of trivalent chromium sludge; development, production, and application of functional chemical products such as ashless expansion (assistant) agents, ammonia-free deliming (assistant) agents, salt-free pickling (assistant) agents, high-exhaustion chrome tanning (assistant) agents, natural vegetable tanning agents, and water-based finishing (assistant) agents used for top grade leather

16、制革及毛皮加工清洁生产、皮革后整饰新技术开发及关键设备制造、含铬皮革固体废弃物综合利用；皮革及毛皮加工废液的循环利用，三价铬污泥综合利用；无灰膨胀（助）剂、无氨脱灰（助）剂、无盐浸酸（助）剂、高吸收铬鞣（助）剂、天然植物鞣剂、水性涂饰（助）剂等高档皮革用功能性化工产品开发、生产与应用

17. Development of technologies of energy-efficient electric light sources (high and low-pressure discharge lamps and solid state lighting products), production of relevant products, and application of solid mercury production techniques; and recycling and reusing of waste and used lamps

17、高效节能电光源（高、低气压放电灯和固态照明产品）技术开发、产品生产及固汞生产工艺应用；废旧灯管回收再利用

18. Development and production of household appliances of National Class-1 or -2 Energy Efficiency

18、符合国家 1 级能效或 2 级能效家用电器开发与生产

19. Development and production of multiple-effect, energy-saving, water-saving, and environment-friendly surfactants,

19、多效、节能、节水、环保型表面活性剂、助剂和洗涤剂的开发与生产

additives and concentrated synthetic detergents

20. Development and manufacturing of air conditioners using new refrigerants to replace hydrochloroflurocarbon-22 (HCFC-22 or R22), production of household appliances using new blowing agents to replace hydrochloroflurocarbon-141b (HCFC-141b), and production and application of rigid polyurethane foam using new blowing agents to replace hydrochloroflurocarbon-141b (HCFC-141b)

20、采用新型制冷剂替代氢氯氟烃-22（HCFC-22 或 R22）的空调器开发、制造，采用新型发泡剂替代氢氯氟烃-141b（HCFC-141b）的家用电器生产，采用新型发泡剂替代氢氯氟烃-141b（HCFC-141b）的硬质聚氨酯泡沫的生产与应用

21. Design and application of energy-saving and environment-friendly glass furnaces (including all-electric melting, electric boosting, and oxygen-fuel combustion technologies, and low-nitrogen combustion technology with NOx production concentration ≤1200 mg/m3); and DCS energy-saving automatic control technology for glass furnaces

21、节能环保型玻璃窑炉（含全电熔、电助熔、全氧燃烧技术、NOx 产生浓度≤1200mg/m3 的低氮燃烧技术）的设计、应用；玻璃熔窑 DCS 节能自动控制技术

22. Development of techniques and technologies and production of lightweight glass containers (lightweight degree ≤ 1.0) and development and production of key equipment

22、轻量化玻璃瓶罐（轻量化度≤1.0）工艺技术和关键装备的开发与生产

23. Production of water-based inks, UV-curable inks, vegetable oil inks, and other energy-saving and environment-friendly inks

23、水性油墨、紫外光固化油墨、植物油油墨等节能环保型油墨生产

24. Development of new technologies and production of natural food additives and natural flavors

24、天然食品添加剂、天然香料新技术开发与生产

25. Research, development, and manufacturing of advanced food production equipment; and research, development, and production of food quality and safety monitoring (testing)

25、先进的食品生产设备研发与制造；食品质量与安全监测（检测）仪器、设备的研发与生产

instruments and equipment

26. Development and production of tropical fruit juice, berry juice, cereal beverages, herbal drinks, tea concentrates, tea powder, vegetable protein drinks, and other high value-added botanical beverages and construction of raw material processing bases; and comprehensive development and utilization of pomace and tea leaves, among others

26、热带果汁、浆果果汁、谷物饮料、本草饮料、茶浓缩液、茶粉、植物蛋白饮料等高附加价值植物饮料的开发生产与加工原料基地建设；果渣、茶渣等的综合开发与利用

27. Development and production of nutritional and healthy rice, wheat flour (tailored food rice, germinated brown rice, rice with remained germ, tailored food flour, whole wheat flour, and nutrient fortified products, among others) and their products; industrialized production of traditional staple food; development and production of special equipment for grain processing; and development and application of key technologies for the comprehensive utilization of by-products of grain and oil processing (rice husks, rice bran, wheat bran, germs, and dregs, among others)

27、营养健康型大米、小麦粉（食品专用米、发芽糙米、留胚米、食品专用粉、全麦粉及营养强化产品等）及制品的开发生产；传统主食工业化生产；杂粮加工专用设备开发与生产；粮油加工副产物（稻壳、米糠、麸皮、胚芽、饼粕等）综合利用关键技术开发应用

28. Rapeseed oil production lines: adopting puffing, vacuum evaporation, thermal self-balancing utilization, low-consumption steam vacuum systems and other technologies, with a daily rapeseed processing capacity in the main rapeseed producing areas being 400 tons or more and with solvent consumption of less than 1.5 kg per ton (in particular, the daily rapeseed processing capacity in middle and western China is 200 tons or more, with solvent consumption of less than 2 kg per ton); peanut oil production lines: with a daily peanut processing capacity in the main peanut producing areas being 200 tons or more and with solvent consumption of less than 2

28、菜籽油生产线：采用膨化、负压蒸发、热能自平衡利用、低消耗蒸汽真空系统等技术，油菜籽主产区日处理油菜籽 400 吨及以上、吨料溶剂消耗 1.5 公斤以下（其中西部地区日处理油菜籽 200 吨及以上、吨料溶剂消耗 2 公斤以下）；花生油生产线：花生主产区日处理花生 200 吨及以上，吨料溶剂消耗 2 公斤以下；棉籽油生产线：棉籽产区日处理棉籽 300 吨及以上，吨料溶剂消耗 2 公斤以下；米糠油生产线：采用分散快速膨化，集中制油、精炼技术；玉米胚芽油生产线；油茶籽、核桃等木本油料和胡麻、芝麻、葵花籽、牡丹籽等小品种油料加工生产线以及

kg per ton; cottonseed oil production lines: with a daily cottonseed processing capacity in the cottonseed producing areas being 300 tons or more and with solvent consumption of less than 2 kg per ton; rice bran oil production lines: adopting decentralized rapid expansion and centralized oil making and refining technologies; corn germ oil production lines; and processing and production lines of camellia seed, walnut, and other woody oil plants and flax, sesame, sunflower seed, peony seed and other small species of oil plants and other small varieties and the use of supercritical carbon dioxide extraction techniques to produce vegetable oil

利用超临界二氧化碳萃取工艺技术生产植物油

29. Production of small species of amino acids (excluding lysine, glutamic acid, and threonine), production of 8,000 tons or more of yeast products and yeast derived products by using molasses as raw materials, and the development, production, and application of new enzyme preparations and complex enzyme preparations, sugar alcohols and biochemical technique-produced chemical polyol, and functional fermented products (functional sugars, functional red yeast, antioxidant and composite functional ingredients produced by the fermentation process, active peptides, and probiotics), among others. Enzyme production techniques and technology development and industrialized and standardized production

29、采用发酵法工艺生产小品种氨基酸（赖氨酸、谷氨酸、苏氨酸除外），以糖蜜为原料年产 8000 吨及以上酵母制品及酵母衍生制品，新型酶制剂和复合型酶制剂、多元糖醇及生物法化工多元醇、功能性发酵制品（功能性糖类、功能性红曲、发酵法抗氧化和复合功能配料、活性肽、微生态制剂）等开发、生产、应用。酵素生产工艺技术开发及工业化、规范化生产

30. Comprehensive utilization and decontamination of bones, blood, feathers and offal of livestock and poultry and other by-products

30、畜禽骨、血、羽毛及内脏等副产物综合利用与无害化处理

31. Technology development for and production of electrostatic enamel powder and pre-ground enamel powder

31、搪瓷静电粉、搪瓷预磨粉的技术研发和生产

32. Development and manufacturing of condensing gas water heaters, gas cookers using energy-gathered combustion technologies, and other energy-efficient and environment-friendly gas equipment

32、冷凝式燃气热水器、使用聚能燃烧技术的燃气灶具等高效节能环保型燃气具的开发与制造

XX. Textile

二十、纺织

1. Continuous copolymerization modification of differentiated and functional polyester (PET) [cationic dyeable polyester (CDP, ECDP), alkali-soluble polyester (COPET), high-shrinkage polyester (HSPET), flame-retardant polyester, and low-melting-point polyester, among others]; production of differentiated and functional fibers (anti-static, anti-UV, and colored fiber); efficient and flexible preparation technologies for flame-retardant, anti-static, anti-ultraviolet, anti-bacterial, phase-change, photochromic, stock solution coloring, and other differentiated and functional chemical fibers; production of intelligent, ultra-simulation, and other functional chemical fibers; and the original development of green, efficient and environment-friendly oil for high-speed spinning processing

1、差别化、功能性聚酯（PET）的连续共聚改性[阳离子染料可染聚酯（CDP、ECDP）、碱溶性聚酯（COPET）、高收缩聚酯（HSPET）、阻燃聚酯、低熔点聚酯、非结晶聚酯、生物可降解聚酯、采用绿色催化剂生产的聚酯等]；阻燃、抗静电、抗紫外、抗菌、相变储能、光致变色、原液着色等差别化、功能性化学纤维的高效柔性化制备技术；智能化、超仿真等功能性化学纤维生产；原创性开发高速纺丝加工用绿色高效环保油剂

2. Development, production, and application of polyethylene terephthalate (PTT), polyethylene naphthalene (PEN), polybutylene terephthalate (PBT), poly butylenes succinate (PBS), polyethylene terephthalate cyclohexane (PCT), bio-based polyamide, bio-based furan ring, and other new-type polyester and fibers

2、聚对苯二甲酸丙二醇酯（PTT）、聚萘二甲酸乙二醇酯（PEN）、聚对苯二甲酸丁二醇酯（PBT）、聚丁二酸丁二酯（PBS）、聚对苯二甲酸环己烷二甲醇酯（PCT）、生物基聚酰胺、生物基呋喃环等新型聚酯和纤维的开发、生产与应用

3. With green and environment-friendly techniques and equipment, production of new solvent-spun cellulose (Lyocell)

3、采用绿色、环保工艺与装备生产新溶剂法纤维素纤维（Lyocell）、细菌纤维素纤维、以竹、麻等新型可再生资

fiber, bacterial cellulose fiber, regenerated cellulose fibers using bamboo, hemp, and other new-type renewable resources as raw materials, polylactic acid (PLA) fiber, alginate fiber, chitosan fiber, polyhydroxyalkanoates (PHA) fiber, and animal and plant protein fibers

源为原料的再生纤维素纤维、聚乳酸纤维（PLA）、海藻纤维、壳聚糖纤维、聚羟基脂肪酸酯纤维（PHA）、动植物蛋白纤维

4. Development, production, and application of high-performance fibers and products (carbon fiber (CF) (tensile strength ≥ 4,200 MPa, elasticity modulus ≥ 240GPa), aramid (AF), polysulfonamide (PSA), ultra-high-molecular-weight polyethylene fiber (UHMWPE) (with single thread output capacity of spinning production equipment ≥ 300 tons/year, breaking strength ≥40 cN/dtex, initial modulus ≥1,800 cN/dtex), polyphenylene sulfide (PPS) fiber, polyimide (PI) fiber, polytetrafluoroethylene (PTFE) fiber, polybenzobisoxazole (PBO) fibers, polyarylate oxadiazole (POD) fibers, basalt fibers (BF), silicon carbide fibers (SiCF), polyether ether ketone fiber (PEEK), and high-strength glass fiber (HT-AR), among others)

4、高性能纤维及制品的开发、生产、应用[碳纤维（CF）（拉伸强度≥4200MPa，弹性模量≥230GPa）、芳纶（AF）、芳砜纶（PSA）、超高分子量聚乙烯纤维（UHMWPE）（纺丝生产装置单线能力≥300 吨/年，断裂强度≥40cN/dtex，初始模量≥1800cN/dtex）、聚苯硫醚纤维（PPS）、聚酰亚胺纤维（PI）、聚四氟乙烯纤维（PTFE）、聚苯并双噁唑纤维（PBO）、聚芳噁二唑纤维（POD）、玄武岩纤维（BF）、碳化硅纤维（SiCF）、聚醚醚酮纤维（PEEK）、高强型玻璃纤维（HT-AR）、聚 2,5-二羟基-1,4-苯撑吡啶并二咪唑（PIPD）纤维等]

5. Processing technology and products of natural fibers that meet the environmental protection requirements: special animal fiber, hemp fiber, mulberry cocoon silk, colored cotton, and colored mulberry cocoon silk

5、符合环保要求的特种动物纤维、麻纤维、桑柞茧丝、彩色棉花、彩色桑茧丝类天然纤维的加工技术与产品

6. Establishing intelligent spinning factories and using intelligent and continuous spinning complete equipment (cleaner-carding machine link, roving frame-ring spinning machine link, ring spinning machine-winding machine link, numerically-controlled stand-alone machines as well as murata vortex spinning, high-speed rotor spinning, and other short-

6、建立智能化纺纱工厂，采用智能化、连续化纺纱成套装备（清梳联、粗细联、细络联及数控单机及喷气涡流纺、高速转杯纺等短流程先进纺纱设备），生产高品质纱线；采用高速数控无梭织机、自动穿经机、全成形电脑横机、高速电脑横机、高速经编机等新型数控装备，生产高支、

process advanced spinning equipment) to produce high-quality yarn; and production of high-count, high-density, jacquard weave, and other top grade weaved and knitted textiles by using high-speed numerically-controlled shuttleless looms, automatic drawing-in machines, fully-formed computerized flat knitting machines, high-speed computerized flat knitting machines, high-speed warp knitting machine, and other new numerically-controlled equipment

高密、提花等高档机织、针织纺织品

7. Production of high-grade textile fabrics by using digital and intelligent printing and dyeing technical equipment and dyeing and finishing cleaner production technology (enzyme treatment, efficient short-process pretreatment, knitted fabric continuous open-width pre-treatment, low-temperature pre-treatment and dyeing, low-salt or salt-free dyeing, low-urea printing, small bath ratio airflow or gas-liquid dyeing, digital inkjet printing, foam finishing, among others), functional finishing technology, new dyeing processing technology, and composite fabric processing technology; and development and application of intelligent package dyeing technical equipment

7、采用数字化智能化印染技术装备、染整清洁生产技术（酶处理、高效短流程前处理、针织物连续平幅前处理、低温前处理及染色、低盐或无盐染色、低尿素印花、小浴比气流或气液染色、数码喷墨印花、泡沫整理等）、功能性整理技术、新型染色加工技术、复合面料加工技术，生产高档纺织面料；智能化筒子纱染色技术装备开发与应用

8. Production of functional industrial textiles by using non-weaving, machine-weaving, knitting, weaving and other new techniques and new technologies such as compounding various techniques and long-term finishing

8、采用非织造、机织、针织、编织等工艺及多种工艺复合、长效整理等新技术，生产功能性产业用纺织品

9. Development and manufacturing of intelligent, high-efficiency, and low-energy consumption textile machinery and key special basic components, measurement, testing instruments and test equipment

9、智能化、高效率、低能耗纺织机械，关键专用基础件、计量、检测仪器及试验装备开发与制造

10. Production of top-grade carpets, drawnwork, and embroidery products

10、高档地毯、抽纱、刺绣产品生产

11. Development and application of digital, networked, and intelligent clothing production technology and equipment

11、数字化、网络化、智能化服装生产技术和装备开发、应用

12. Popularization and application of technologies in the textile industry for biological degumming, sizing of agent without polyvinyl alcohol (PVA), less-water or no-water and energy-saving dyeing and processing, and efficient control of "three wastes" (waste water, waste gas and waste residues) and resource recycling

12、纺织行业生物脱胶、无聚乙烯醇（PVA）浆料上浆、少水无水节能印染加工、“三废”高效治理与资源回收再利用技术的推广与应用

13. Research and development and application of waste textile recycling technology and equipment and production of polyester industrial yarn, differentiated and functional polyester filament, non-woven materials, and other high value-added products by using recycled polyester materials

13、废旧纺织品回收再利用技术、设备的研发和应用，利用聚酯回收材料生产涤纶工业丝、差别化和功能性涤纶长丝、非织造材料等高附加值产品

XXI. Architecture

二十一、建筑

1. Research, development, and popularization of building shock insulation and absorption structural systems and products

1、建筑隔震减震结构体系及产品研发与推广

2. Production and manufacture of intelligent construction products and equipment and research of integration technologies

2、智能建筑产品与设备的生产制造与集成技术研究

3. Research, development, and popularization of central

3、集中供热系统计量与调控技术、产品的研发与推广

heating system metering and control technologies and products

4. Application of high-strength and high-performance structural materials and systems

4、高强、高性能结构材料与体系的应用

5. Buildings integrating solar thermal utilization and photovoltaic power generation applications

5、太阳能热利用及光伏发电应用一体化建筑

6. Research, development, and popularization of advanced and applicable packaged technologies, products and housing parts of buildings

6、先进适用的建筑成套技术、产品和住宅部品研发与推广

7. Research, development, and popularization of steel housing integration systems and technologies

7、钢结构住宅集成体系及技术研发与推广

8. Research and development and promotion of energy-saving buildings, green buildings, prefabricated building technologies and products

8、节能建筑、绿色建筑、装配式建筑技术、产品的研发与推广

9. Popularization of factory-like full decoration technologies

9、工厂化全装修技术推广

10. Development and application of mobile emergency domestic water supply systems

10、移动式应急生活供水系统开发与应用

11. Development and application of technologies related to building information modeling (BIM)

11、建筑信息模型（BIM）相关技术开发与应用

12. Research and development and engineering application of seismic strengthening technology for existing buildings

12、既有房屋建筑抗震加固技术研发与工程应用

13. Research and development and promotion of a prefabricated green steel building technology system

13、装配式钢结构绿色建筑技术体系的研发及推广

XXII. Urban Infrastructure

二十二、城镇基础设施

1. City high-precision navigation, high-precision remote sensing image, 3D data production, and key technology development

1、城市高精度导航、高精度遥感影像和三维数据生产及关键技术开发

2. Urban three-dimensional management information systems based on the fundamental geographic information resources

2、依托基础地理信息资源的城市立体管理信息系统

3. Construction of urban public transport

3、城市公共交通建设

4. Construction of urban road and intelligent transportation systems

4、城市道路及智能交通体系建设

5. Technological development and equipment manufacture of urban traffic control systems

5、城市交通管制系统技术开发及设备制造

6. Construction of rail transit new lines in cities and city territories (including light rail transit and trams)

6、城市及市域轨道交通新线建设（含轻轨、有轨电车）

7. Urban safe drinking water projects and water supply source and water treatment plant projects in cities and towns

7、城镇安全饮水工程、供水水源及净水厂工程

8. Construction of common ditches of urban underground tunnels and geographic information systems for underground piping

8、城镇地下管道共同沟建设，地下管网地理信息系统

9. Urban water supply and discharge pipe network projects, piping inspection, detection, repair and improvement projects, trenchless construction and repair technology, ground microphone and leak detection equipment for water supply piping, and related technology development and equipment production	9、城镇供排水管网工程、管网排查、检测及修复与改造工程、非开挖施工与修复技术，供水管网听漏检漏设备、相关技术开发和设备生产
10. Urban gas engineering	10、城市燃气工程
11. Central heating supply construction and reconstruction projects in cities and towns	11、城镇集中供热建设和改造工程
12. Urban rainwater collection and utilization projects	12、城市雨水收集利用工程
13. Landscaping and ecological community construction in cities and towns	13、城镇园林绿化及生态小区建设
14. Improvement of existing parking facilities; construction of intensive parking facilities such as parking buildings, underground parking lots, and mechanical three-dimensional parking garages; and building ancillary electric vehicle charging facilities at parking lots	14、既有停车设施改造；停车楼、地下停车场、机械式立体停车库等集约化的停车设施建设；停车场配建电动车充电设施
15. Application of urban construction management information technologies	15、城市建设管理信息化技术应用
16. Application of key urban ecological system technologies	16、城市生态系统关键技术应用
17. Development and application of urban water-saving technologies	17、城市节水技术开发与应用

18. Development and application of technologies for urban intelligent and green illumination products and systems

18、城市照明智能化、绿色照明产品及系统技术开发与应用

19. Recycled water utilization technologies and projects

19、再生水利用技术与工程

20. Urban water supply, drainage, and gas plastic pipelines application projects

20、城市供水、排水、燃气塑料管道应用工程

21. Urban emergency and back-up water source construction projects

21、城市应急与后备水源建设工程

22. Seawater supply network and seawater desalination plant projects in coastal cities and towns

22、沿海城镇海水供水管网及海水淡化工程

23. Development and application of urban waterlogging monitoring and early warning technologies and urban drainage and waterlogging prevention projects

23、城市积涝监测预警技术开发与应用，城市排水防涝工程

24. Development and application of key technical products for sponge city construction

24、海绵城市建设关键技术产品开发与应用

25. Rapid purification equipment and decentralized purification facilities for combined sewer overflows pollution and first flush, among others.

25、合流制溢流污染、初期雨水等快速净化装备、分散净化设施

26. Development and application of city information modeling (CIM)-related technologies based on big data, the Internet of Things, and GIS, among others.

26、基于大数据、物联网、GIS 等为基础的城市信息模型（CIM）相关技术开发与应用

XXIII. Railway

二十三、铁路

1. Construction of new railway lines	1、铁路新线建设
2. Reconstruction or expansion of existing railways and construction of special railways	2、既有铁路改扩建及铁路专用线建设
3. Technological development and construction of passenger dedicated line (PDL) and high-speed railway systems	3、客运专线、高速铁路系统技术开发与建设
4. Technologies and equipment for railway operations and passenger and freight transportation safety protection systems and development and construction of railway train operation control and vehicle control systems	4、铁路行车及客运、货运安全保障系统技术与装备，铁路列车运行控制与车辆控制系统开发建设
5. Development and construction of railway transportation information systems	5、铁路运输信息系统开发与建设
6. AC drive electric locomotives with 7,200 kW or more, AC drive internal combustion locomotives with 6,000 kW or more, China Railway High-Speed (CRH) trains with a speed of 200 kilometers per hour or more, plateau locomotives three kilometers or more above sea level, highland high-speed trains, large dedicated trucks, and special rescue equipment for locomotives	6、7200 千瓦及以上交流传动电力机车、6000 马力及以上交流传动内燃机车、时速 200 公里以上动车组、海拔 3000 米以上高原机车、高原动车组、大型专用货车、机车车辆特种救援设备
7. AC traction drive systems, brake systems, and core components (including IGCT and IGBT components) of trunk railway vehicles	7、干线轨道车辆交流牵引传动系统、制动系统及核心元器件（含 IGCT、IGBT 元器件）
8. Railway contact nets, turnouts and switches, fastenings and fittings, and traction power supply equipment for trains with a	8、时速 200 公里及以上铁路接触网、道岔、扣配件、牵引供电设备

speed of 200 kilometers per hour or more

9. Application of power factor compensation technologies for electrified railway traction power supply

9、电气化铁路牵引供电功率因数补偿技术应用

10. Large road maintenance machinery, railway engineering construction machinery, and line, bridge, and tunnel inspection equipment

10、大型养路机械、铁路工程建设机械装备、线桥隧检测设备

11. Development of automated railway traffic control technologies

11、行车调度指挥自动化技术开发

12. Development of automated railway traffic control technologies

12、混凝土结构物修补和提高耐久性技术、材料开发

13. Railway passenger train toilet wastewater collectors and ground receiving and treatment projects

13、铁路旅客列车集便器及污物地面接收、处理工程

14. Railway GSM-R communication signal systems

14、铁路 GSM-R 通信信号系统

15. Development and construction of LTE-R and other railway broadband communication systems

15、LTE-R 等铁路宽带通信系统开发与建设

16. Development and construction of digital railway and intelligent transportation

16、数字铁路与智能运输开发与建设

17. Application of shock absorption and noise reduction technologies for high-speed railway or passenger dedicated lines (PDL) with a speed of 300 kilometers per hour or more

17、时速在 300 公里及以上高速铁路或客运专线减震降噪技术应用

18. Intercity and intracity (suburban) railways

18、城际、市域（郊）铁路

XXIV. Highway and Road Transport (including Urban Passenger Transport)

二十四、公路及道路运输（含城市客运）

1. Construction of national expressway network projects

1、国家高速公路网项目建设

2. Improvement and upgrading of national and provincial trunk highways

2、国省干线改造升级

3. Passenger and freight coach stations and urban bus stations

3、汽车客货运站、城市公交站

4. Development and application of technologies related to electronic toll collection systems for expressway

4、高速公路不停车收费系统相关技术开发与应用

5. Development and construction of highway intelligent transport, speedy passenger and freight transport, and highway drop and pull transport systems

5、公路智能运输、快速客货运输、公路甩挂运输系统开发与建设

6. Development and construction of highway management service and emergency security systems

6、公路管理服务、应急保障系统开发与建设

7. Development and production of new materials for highway engineering

7、公路工程新材料开发与生产

8. Highway container transport and van transport

8、公路集装箱和厢式运输

9. Application of extra-long-span bridge construction and maintenance technologies

9、特大跨径桥梁修筑和养护维修技术应用

10. Application of long and large tunnel construction and maintenance technologies	10、长大隧道修筑和维护技术应用
11. Development and construction of rural passenger and freight transport networks	11、农村客货运输网络开发与建设
12. Rural highway construction	12、农村公路建设
13. Development and construction of inter-city speedy transit systems	13、城际快速系统开发与建设
14. Development and construction of taxi service scheduling information systems	14、出租汽车服务调度信息系统开发与建设
15. Construction of emergency evacuation passages for expressway vehicles	15、高速公路车辆应急疏散通道建设
16. Development of low noise road surface technologies	16、低噪音路面技术开发
17. Development and application of technologies and materials for the rapid construction and maintenance of expressway	17、高速公路快速修筑与维护技术和材料开发与应用
18. Urban public transport	18、城市公交
19. Development and application of safety monitoring and recording systems for operating vehicles	19、运营车辆安全监控记录系统开发与应用
20. Development and application of arterial highway traffic safety and public security management and control equipment and technology	20、公路主干线交通安全和治安管控装备及技术开发和应用

XXV. Water Transport

二十五、水运

1. Construction of deep-water berths (ten thousand tons for coastal areas or a thousand tons for inland rivers and above)

1、深水泊位（沿海万吨级、内河千吨级及以上）建设

2. Construction of coastal deep-water channels, inland river high-level waterways, and navigation structures and construction of inland waterways in western China and poverty-stricken regions

2、沿海深水航道和内河高等级航道及通航建筑物建设，西部地区、贫困地区内河航道建设

3. Construction of coastal mainland-island traffic wharfs

3、沿海陆岛交通运输码头建设

4. Large-scale port loading and unloading automation projects

4、大型港口装卸自动化工程

5. Application of electronic data interchange (EDI) systems for ocean shipping

5、海运电子数据交换系统应用

6. Construction of water traffic safety supervision and rescue systems

6、水上交通安全监管和救助系统建设

7. Inland ship type standardization

7、内河船型标准化

8. Old port area technical improvement projects

8、老港区技术改造工程

9. Construction of port reception and disposal facilities and equipment manufacturing for pollution from ships and construction of emergency facilities for hazardous chemicals and oil at ports and equipment manufacturing

9、船舶污染物港口接收处置设施建设及设备制造，港口危险化学品、油品应急设施建设及设备制造

10. Inland river self-discharging container ship transport systems

10、内河自卸式集装箱船运输系统

11. Waterway high-speed passenger transport

11、水上高速客运

12. Port gantry crane oil-to-electricity conversion fuel-efficient reconstruction projects

12、港口龙门吊油改电节油改造工程

13. Water roll-roll shipment multimodal transport

13、水上滚装多式联运

14. Construction of water transport information systems

14、水运行业信息系统建设

15. International cruise transport and cruise home port construction

15、国际邮轮运输及邮轮母港建设

XXVI. Air Transport

二十六、航空运输

1. Construction and operation of airports and supporting facilities

1、机场及配套设施建设与运营

2. Public air transport

2、公共航空运输

3. General aviation

3、通用航空

4. Construction of air traffic control, communication, navigation, and monitoring systems

4、空中交通管制和通信导航监视系统建设

5. Development and construction of aviation computer management and network systems

5、航空计算机管理及其网络系统开发与建设

6. Aviation fuel refueling service and facility construction

6、航空油料加油服务及设施建设

7. Marine air supervision and patrol as well as salvage services and facility construction and construction of emergency take-off and landing sites for small aircrafts

7、海上空中监督巡逻和搜救服务及设施建设，小型航空器应急起降场地建设

XXVII. Integrated Transportation

二十七、综合交通运输

1. Construction and improvement of integrated transportation hubs

1、综合交通枢纽建设与改造

2. Construction of convenient passenger transfer and speedy baggage transport systems of integrated transportation hubs

2、综合交通枢纽便捷换乘及行李捷运系统建设

3. Construction and application of operation management information systems of integrated transportation hubs

3、综合交通枢纽运营管理信息系统建设与应用

4. Construction of guidance systems of integrated transportation hubs

4、综合交通枢纽诱导系统建设

5. Construction of integrated service facilities of integrated transportation hubs

5、综合交通枢纽一体化服务设施建设

6. Disaster prevention and relief and emergency evacuation systems of integrated transportation hubs

6、综合交通枢纽防灾救灾及应急疏散系统

7. Construction of convenient freight transshipment systems of integrated transportation hubs

7、综合交通枢纽便捷货运换装系统建设

8. Research and development, promotion, and application of

8、旅客联程运输设施设备、票务一体化、联运产品的研发

passenger intermodal transportation facilities and equipment, ticketing integration, and intermodal products	推广应用
XXVIII. Information Industry	二十八、信息产业
1. Construction of optical synchronized transmission systems with a speed of 2.5GB/S or more	1、2.5GB/s 及以上光同步传输系统建设
2. Manufacture of digital microwave synchronized transmission equipment with a speed of 155MB/S or more and system construction	2、155MB/s 及以上数字微波同步传输设备制造及系统建设
3. Equipment manufacture and construction of satellite communication systems and earth stations	3、卫星通信系统、地球站设备制造及建设
4. Construction of webmaster monitoring, synchronous clock, billing, and other communication support networks	4、网管监控、时钟同步、计费等通信支撑网建设
5. Equipment manufacture and construction of Narrowband Internet of Things (NB-IoT), enhanced machine-type communication, and other Internet of Things (sensor network), intelligent networks, and other new business networks.	5、窄带物联网（NB-IoT）、宽带物联网（eMTC）等物联网（传感网）、智能网等新业务网设备制造与建设
6. Equipment manufacture and construction of Internet of Things (sensor network) and other new business networks	6、物联网（传感网）等新业务网设备制造与建设
7. Equipment manufacture and construction of broadband networks	7、宽带网络设备制造与建设
8. Construction of digital cellular mobile communication	8、数字蜂窝移动通信网建设

networks

9. IP service network construction	9、IP 业务网络建设
10. Research and development and services of next-generation Internet technology based on IPv6 and Research, development, and production of next-generation Internet network equipment, chips, systems, and relevant testing equipment	10、基于 IPv6 的下一代互联网技术研发及服务，网络设备、芯片、系统以及相关测试设备的研发和生产
11. Construction of digital satellite TV broadcasting systems	11、卫星数字电视广播系统建设
12. Construction of value-added telecommunication service platforms	12、增值电信业务平台建设
13. Equipment manufacture of wavelength division multiplexing (WDM) optical fiber transmission systems with a speed of 32 waves or more	13、32 波及以上光纤波分复用传输系统设备制造
14. Equipment manufacture of digital synchronization series optical fiber communication systems with a speed of 10GB/S or more	14、10GB/s 及以上数字同步系列光纤通信系统设备制造
15. Router, switch, base station, and other equipment of communication support networks	15、支撑通信网的路由器、交换机、基站等设备
16. Equipment manufacture of stratosphere communication systems	16、同温层通信系统设备制造
17. Equipment manufacture of digital mobile communication, mobile ad hoc networks, access network systems and digital	17、数字移动通信、移动自组网、接入网系统、数字集群通信系统及路由器、网关等网络设备制造

cluster communication systems, as well as manufacture of network equipment such as router and gateway

18. Manufacture of large- and medium-sized electronic computers, high-performance computers with a computing capacity of 100 trillion calculations per second, portable microcomputers, high-class servers executing a trillion or more instructions per second, large-scale analog simulation systems, and large-scale industrial computers and controllers

18、大中型电子计算机、百万亿次高性能计算机、便携式微型计算机、每秒一万亿次及以上高档服务器、大型模拟仿真系统、大型工业控制机及控制器制造

19. Design of integrated circuits; manufacture of integrated circuits with a line width of 0.8 microns or less; and ball grid array (BGA) package, pin grid array (PGA) package, chip scale package (CSP), multi-chip package (MCM), land grid array (LGA), system-in-package (SIP), flip-chip packaging (FC), wafer-level packaging (WLP), micro-electro-mechanical systems (MEMS), and other advanced packaging and testing

19、集成电路设计，线宽 0.8 微米以下集成电路制造，及球栅阵列封装（BGA）、插针网格阵列封装（PGA）、芯片规模封装（CSP）、多芯片封装（MCM）、栅格阵列封装（LGA）、系统级封装（SIP）、倒装封装（FC）、晶圆级封装（WLP）、传感器封装（MEMS）等先进封装与测试

20. Manufacture of integrated circuit equipment

20、集成电路装备制造

21. Manufacture of new-type electronic components (including chip components, frequency components, hybrid integrated circuits, power electronic devices, optoelectronic devices, sensitive components and sensors, new-type electromechanical components, high-density printed circuit boards, and flexible circuit boards, among others)

21、新型电子元器件（片式元器件、频率元器件、混合集成电路、电力电子器件、光电子器件、敏感元器件及传感器、新型机电元件、高密度印刷电路板和柔性电路板等）制造

22. Semiconductors, optoelectronic devices, new-type electronic components (SMT components, power electronic devices, optoelectronic components, sensitive components and sensors, new electromechanical components, high-frequency

22、半导体、光电子器件、新型电子元器件（片式元器件、电力电子器件、光电子器件、敏感元器件及传感器、新型机电元件、高频微波印制电路板、高速通信电路板、

microwave printed circuit boards, high-speed communication circuit boards, flexible circuit boards, and high-performance copper clad laminate, among others), and other materials for electronic products

柔性电路板、高性能覆铜板等）等电子产品用材料

23. Software development and production (including research, popularization, and application of ethnic language information technology standards)

23、软件开发生产（含民族语言信息化标准研究与推广应用）

24. Development and application of digital systems (software): embedded software for intelligent equipment, distributed control systems (DCS), programmable logic controllers (PLC), supervisory control and data acquisition (SCADA), advanced process control (APC), and other industry control systems; manufacturing execution systems (MES), computer-aided design (CAD), computer-aided engineering (CAE), computer-aided process planning (CAPP), product life-cycle management (PLM), industrial cloud platforms, industrial apps, and other industrial software; and energy management systems (EMS), building information modeling (BIM) systems, and other special systems

24、数字化系统（软件）开发及应用：智能设备嵌入式软件、集散式控制系统（DCS）、可编程逻辑控制器（PLC）、数据采集与监控（SCADA）、先进控制系统（APC）等工业控制系统；制造执行系统（MES），计算机辅助设计（CAD）、辅助工程（CAE）、工艺规划（CAPP）、产品全生命周期管理（PLM）、工业云平台、工业 APP 等工业软件；能源管理系统（EMS）、建筑信息模型（BIM）系统等专用系统

25. Semiconductor lighting equipment, photovoltaic solar equipment, chip components equipment, new power battery devices, and surface mounted devices (including steel mesh printing presses, automatic chip mounters, lead-free reflow soldering, and automatic photoelectric inspection instruments), among others

25、半导体照明设备，光伏太阳能设备，片式元器件设备，新型动力电池设备，表面贴装设备（含钢网印刷机、自动贴片机、无铅回流焊、光电自动检查仪）等

26. Printers (including high-speed barcode printers), mass memories, and other computer peripheral equipment

26、打印机（含高速条码打印机）和海量存储器等计算机外部设备

27. Thin film transistor LCD (TFT-LCD), organic light-emitting diode (OLED), electronic paper display, laser display, 3D display, and other new-type panel display components, glass substrates for the liquid crystal panel industry, cover glass for the electronics and information industry, and other key components and materials	27、薄膜场效应晶体管 LCD（TFT-LCD）、有机发光二极管（OLED）、电子纸显示、激光显示、3D 显示等新型平板显示器件、液晶面板产业用玻璃基板、电子及信息产业用盖板玻璃等关键部件及关键材料
28. Manufacture of new (non-dispersive) single-mode fiber and optical fiber preforms	28、新型（非色散）单模光纤及光纤预制棒制造
29. Manufacture of high-density digital laser optical player discs	29、高密度数字激光视盘播放机盘片制造
30. Reproduction of CD-ROMs and recordable CDs	30、只读光盘和可记录光盘复制生产
31. Audio/video encoding and decoding equipment, audio/video broadcasting transmission equipment, digital TV studio equipment, digital TV system equipment, digital TV broadcast single frequency network equipment, digital TV receivers, digital camcorders, digital video recorders, and digital TV products	31、音视频编解码设备、音视频广播发射设备、数字电视演播室设备、数字电视系统设备、数字电视广播单频网设备、数字电视接收设备、数字摄录机、数字录放机、数字电视产品
32. Development and manufacture of cybersecurity products, data security products, and dedicated network monitoring equipment	32、网络安全产品、数据安全产品，网络监察专用设备开发制造
33. Technology development and manufacturing of intelligent mobile terminal products and key components	33、智能移动终端产品及关键零部件的技术开发和制造
34. Doppler radar technology and its equipment manufacture	34、多普勒雷达技术及设备制造

35. Manufacture of medical electronic, health electronics, bioelectronic, automotive electronic, financial, electronic, aerospace and aviation instrument and meter electronic, image sensors, and sensor electronic products, among others	35、医疗电子、健康电子、生物电子、汽车电子、电力电子、金融电子、航空航天仪器仪表电子、图像传感器、传感器电子等产品制造
36. Technological development and equipment manufacture for wireless local area networks	36、无线局域网技术开发、设备制造
37. Development and application services for E-commerce and e-government systems	37、电子商务和电子政务系统开发与应用服务
38. Technological development and equipment manufacture for satellite navigation chip and systems	38、卫星导航芯片、系统技术开发与设备制造
39. Construction of emergency radio and television systems	39、应急广播电视系统建设
40. Quantum communication equipment	40、量子通信设备
41. Special equipment for the production of thin-film-transistor liquid-crystal displays (TFT-LCD), light-emitting diodes (LED), organic light-emitting diode displays (OLED), electronic paper displays, laser displays, 3D displays, and other new displays	41、薄膜晶体管液晶显示（TFT-LCD）、发光二极管（LED）及有机发光二极管显示（OLED）、电子纸显示、激光显示、3D 显示等新型显示器件生产专用设备
42. Semiconductor lighting substrate, epitaxy, chip, packaging, and materials (including high-efficiency heat dissipation copper clad laminates, thermally conductive adhesives, thermally conductive silicone sheets), among others	42、半导体照明衬底、外延、芯片、封装及材料（含高效散热覆铜板、导热胶、导热硅胶片）等
43. Development systems for digital music, mobile media,	43、数字音乐、手机媒体、动漫游戏等数字内容产品的开

animations, games, and other digital content products	发系统
44. Development and application of anti-counterfeiting technologies	44、防伪技术开发与运用
45. Core chips for nuclear power instrument control systems and related software	45、核电仪控系统核心芯片及相关软件
46. Big data, cloud computing, information technology services and blockchain information services allowed by the state	46、大数据、云计算、信息技术服务及国家允许范围内的区块链信息服务
47. Manufacturing of industrial Internet networks, platforms, security hardware equipment and development and integrated and innovative application of software systems, research and development and application of technical products related to industrial Internet equipment security, control security, cybersecurity, platform security, and data security, construction and improvement of industrial Internet networks, construction and promotion of identifier resolution systems, and construction and application of industrial cloud service platforms	47、工业互联网网络、平台、安全硬件设备制造与软件系统开发及集成创新应用，工业互联网设备安全、控制安全、网络安全、平台安全和数据安全相关技术产品研发及应用，工业互联网网络建设与改造，标识解析体系建设与推广，工业云服务平台建设及应用
48. Broadband digital trunking equipment, 230-MHz band wireless broadband data transmission equipment of carrier aggregation by means of time-division duplex (TDD), and other next-generation private network communication equipment as well as communication equipment directly connected to the Internet of Vehicles based on the LTE-V2X wireless communication technology and other Internet of Vehicles wireless communication equipment	48、宽带数字集群设备、采用时分双工（TDD）方式载波聚合的 230MHz 频段宽带无线数据传输设备等下一代专网通信设备，基于 LTE-V2X 无线通信技术的车联网直连通信设备等车联网无线通信设备

49. Research on and integrated application of air-ground integrated on-site disaster information acquisition technology

49、灾害现场信息空地一体化获取技术研究与集成应用

50. Research on and manufacturing of quantum, brain-inspired, and new-mechanism computer systems

50、量子、类脑等新机理计算机系统的研究与制造

51. Various advanced solar photovoltaic cells and high-purity crystalline silicon materials (the comprehensive power consumption of polycrystalline silicon is less than 65 kWh/kg, the energy conversion efficiency of monocrystalline silicon photovoltaic cells is greater than 22.5%, the energy conversion efficiency of polycrystalline silicon cells is greater than 21.5%, the energy conversion efficiency of cadmium telluride solar cells is greater than 17%, and the energy conversion efficiency of copper indium gallium selenide solar cells is greater than 18%)

51、先进的各类太阳能光伏电池及高纯晶体硅材料（多晶硅的综合电耗低于 65kWh/kg，单晶硅光伏电池的转换效率大于 22.5%，多晶硅电池的转化效率大于 21.5%，碲化镉电池的转化效率大于 17%，铜铟镓硒电池转化效率大于 18%）

XXIX. Modern Logistics Industry

二十九、现代物流业

1. Construction of modern logistic facilities for important commodities such as coal, grain, cotton, iron ore, fertilizer, and petroleum

1、煤炭、粮食、棉花、铁矿石、化肥、石油等重要商品现代化物流设施建设

2. Construction of agricultural product logistics and distribution facilities, cold chain logistics for agricultural products, food, and drug products, and quality safety control technical services for food and drug product logistics

2、农产品物流配送设施建设，农产品、食品、药品冷链物流，食品、药品物流质量安全控制技术服务

3. Innovation in and application of modern supply chain

3、现代供应链创新与应用

4. Construction of multimodal transport facilities and research and development, promotion, and application of rapid transit and transshipment equipment for multimodal transport and standardized loading units

4、多式联运转运设施建设，多式联运快速转运换装设备、标准化运载单元的研发推广应用

5. Promotion and application of standard pallets and the 600 mm × 400 mm basic packaging module and the manufacturing and use of pallets made of environment-friendly and recyclable materials

5、标准托盘和 600mm×400mm 包装基础模数推广应用，环保型、可循环利用型材质托盘的制造和使用

6. Research and development and application of logistics information service technology, cargo tracking, identification, and positioning technology, intelligent warehousing, sorting, and distribution technology, and logistics information security technology

6、物流信息服务技术、货物跟踪识别定位技术、智能仓储分拣配送技术、物流信息安全技术的研发与应用

7. Construction and operation of emergency logistics, reverse logistics, and green logistics facilities

7、应急物流、逆向物流、绿色物流设施建设和运营

8. Development and construction of logistics public information platforms

8、物流公共信息平台开发及建设

9. Construction and operation of logistics hubs

9、物流枢纽建设与运营

10. Construction of public storage necessary for urban logistics and vehicle parking, loading and unloading, charging, and other supporting facilities

10、城市物流所需的公共仓储，车辆停靠、装卸、充电等配套设施建设

XXX. Financial Service Industry

三十、金融服务业

1. Construction of rural financial service systems	1、农村金融服务体系建设
2. Construction of bond issuance and trading service systems	2、债券发行、交易服务体系建设
3. Agricultural insurance, liability insurance, and credit insurance, commercial health insurance, and property insurance	3、农业保险、责任保险、信用保险、商业健康保险、财产保险
4. Research, development, and application of inclusive financial products	4、普惠金融产品研发和应用
5. Development of loan business with pledge of intellectual property, right to receive income, and other intangible assets	5、知识产权、收益权等无形资产贷款质押业务开发
6. Credit card and network services	6、信用卡及网络服务
7. Construction of RMB cross-border settlement and clearing systems	7、人民币跨境结算、清算体系建设
8. Development and application of financial supervision technologies	8、金融监管技术开发与应用
9. Venture capital investment	9、创业投资
10. Research and development and application of financial technology products and service trade of financial institutions	10、金融机构的金融科技产品研发、应用和服务输出
11. Construction of a green financial service system	11、绿色金融服务体系建设
12. Security protection of the open banking system	12、开放银行体系安全防护

13. Financing guarantee services and finance leasing service

13、融资担保服务、融资租赁服务

14. Development and application of asset securitization, real estate investment trust funds (REITs), and financial instruments and financial products that revitalize stock assets

14、资产证券化、不动产投资信托基金（REITs）等盘活存量资产的金融工具和金融产品开发应用

XXXI. Science and Technology Service Industry

三十一、科技服务业

1. Professional science and technology services for industrial design, meteorology, biology, new materials, new energy, energy conservation, environmental protection, mapping, and ocean, standardization services, measurement and testing, quality certification and inspection and testing services, and popularization of science and technology

1、工业设计、气象、生物、新材料、新能源、节能、环保、测绘、海洋等专业科技服务，标准化服务、计量测试、质量认证和检验检测服务、科技普及

2. Online data and transaction processing, IT facilities management, and data center services; mobile Internet services; Internet video conference and image; and other telecommunications value-added services

2、在线数据与交易处理、IT 设施管理和数据中心服务，移动互联网服务，因特网会议电视及图像等电信增值服务

3. Development of industry (enterprise) management and information technology solutions, web-based software service platforms, software development and testing services, information system integration, consulting, operation and maintenance, and data mining, and other services

3、行业（企业）管理和信息化解决方案开发、基于网络的软件服务平台、软件开发和测试服务、信息系统集成、咨询、运营维护和数据挖掘等服务业务

4. Digital music, mobile media, web publishing, and other digital content services; and information resources development services in geography, international trade, and other fields

4、数字音乐、手机媒体、网络出版等数字内容服务，地理、国际贸易等领域信息资源开发服务

5. Development of digital technology, high-fidelity simulation technology, high-speed computing technology, and other emerging cultural and technological support technologies and services	5、数字化技术、高拟真技术、高速计算技术等新兴文化科技支撑技术建设及服务
6. Analysis, experiment, testing, and relevant technical consultation, research, and development services; and overall intelligent product plans, ergonomic design, system simulation, and other design services	6、分析、试验、测试以及相关技术咨询与研发服务，智能产品整体方案、人机工程设计、系统仿真等设计服务
7. Online data processing and data security services, data recovery and disaster recovery services, information security protection and network security emergency support services, cloud computing security services, big data security services, information security risk assessment and consultation services, information equipment and software security evaluation services, password technical product testing and certification services, and security solution design services for the classified protection of information systems	7、在线数据处理和数据安全服务，数据恢复和灾备服务，信息安全防护、网络安全应急支援服务，云计算安全服务，大数据安全服务，信息安全风险评估、认证与咨询服务，信息装备和软件安全评测服务，密码技术产品测试认证服务，信息系统等级保护安全方案设计服务
8. Science and technology information exchange, documental information retrieval, technical consultation, technology incubation, technology achievements assessment, scientific and technological achievements transfer and commercialization services, science and technology attestation, and other services	8、科技信息交流、文献信息检索、技术咨询、技术孵化、科技成果评估、科技成果转移转化服务和科技鉴证等服务
9. Intellectual property agency, transfer, registration, identification, retrieval, analysis, evaluation, operation, certification, consulting, and relevant investment and financing	9、知识产权代理、转让、登记、鉴定、检索、分析、评估、运营、认证、咨询和相关投融资服务

services

10. Construction of national engineering (technology) research centers, national industry innovation centers, national agricultural high-tech industry demonstration, national agricultural science and technology parks, enterprise technology centers determined by the state, national laboratories, national key laboratories, national major scientific and technological infrastructure, high-tech entrepreneurial service centers, green technology innovation base platforms, new product development and design centers, science education infrastructure, comprehensive public service platforms for industry clusters, pilot-scale experiment bases, and experiment bases

10、国家级工程（技术）研究中心、国家产业创新中心、国家农业高新技术产业示范、国家农业科技园区、国家认定的企业技术中心、国家实验室、国家重点实验室、国家重大科技基础设施、高新技术创业服务中心、绿色技术创新基地平台、新产品开发设计中心、科教基础设施、产业集群综合公共服务平台、中试基地、实验基地建设

11. Information technology outsourcing, business process outsourcing, knowledge process outsourcing, and other advanced technology services

11、信息技术外包、业务流程外包、知识流程外包等技术先进型服务

12. Experience and verification services for the integrated application of intelligent manufacturing systems

12、智能制造系统集成应用体验验证服务

13. Industrial services: maintenance and repair of modern high-end equipment, transformation and integration of digital production lines, industrial service network platforms, industrial e-commerce, remote operation, maintenance, and management systems of intelligent equipment, smart factory equipment monitoring and diagnosis platforms, predictive maintenance systems, professional maintenance services and supply chain services, industrial management services (including consulting about the operation, maintenance, and

13、工业服务：现代高端装备的维护与维修、数字化生产线改造与集成、工业服务网络平台、工业电商、智能装备远程运维管理系统、智慧工厂设备监测诊断平台、预测性维护系统、专业维修服务和供应链服务、工业管理服务（包括设备运维管理咨询、设备运维与管理服务、工业 APP 和设备管理软件(SaaS)）、数据及数字化服务（PaaS、IaaS、数据分析服务和其它创新数据服务）

management of equipment, operation, maintenance, and management services or equipment, industrial apps, and software as a service (SaaS)), and data and digital services (PaaS, IaaS, data analysis services, and other innovative data services)

14. Cybersecurity integration, security maintenance, secure operation, risk assessment, education and training, consulting, emergency response, and other security services

14、网络安全集成、安全维护、安全运营、风险评估、教育培训、咨询、应急响应等安全服务

15. Construction, maintenance, and leasing, among others, of cloud computing data centers

15、云计算数据中心的建设、维护、租赁等

16. Information system integration and Internet of Things technical services, operation and maintenance services, information processing and storage support services, information technology consulting services, digital content services, and other information technology services

16、信息系统集成和物联网技术服务、运营维护服务、信息处理和存储支持服务、信息技术咨询服务、数字内容服务及其他信息技术服务

XXXII. Commercial Service Industry

三十二、商务服务业

1. Economy, management, information, accounting, taxation, audit, legal, energy conservation, environmental protection, and other consultation and services

1、经济、管理、信息、会计、税务、审计、法律、节能、环保等咨询与服务

2. Engineering consulting services (including planning consulting, project consulting, assessment consulting, and full-process engineering consulting)

2、工程咨询服务（包括规划咨询、项目咨询、评估咨询、全过程工程咨询）

3. Construction of credit investigation and rating and other

3、资信调查与评级等信用服务体系建设

credit service systems

4. Asset appraisal, calibration, testing, inspection, and other services

4、资产评估、校准、检测、检验等服务

5. Property right transaction service platforms

5、产权交易服务平台

6. Advertising services such as advertisement creativity, planning, design, production, agency, and publishing

6、广告创意、策划、设计、制作、代理、发布等广告服务

7. Exhibition services (excluding construction of exhibition venues)

7、会展服务（不含会展场馆建设）

8. Supply chain management services (meaning services to design, plan, control, and optimize logistics, produce flow, information flow, and capital flow in the supply chain based on modern information technology and to integrate separate and decentralized order management, procurement execution, customs declaration and tax refund, logistics management, finance, data management, trade and business, and settlement, among others)

8、供应链管理服务（指基于现代信息技术对供应链中的物流、商流、信息流和资金流进行设计、规划控制和优化，将单一、分散的订单管理、采购执行、报关退税、物流管理、资金融通、数据管理、贸易商务、结算等进行一体化整合的服务）

XXXIII. Commerce and Trade Service Industry

三十三、商贸服务业

1. Construction of modern market circulation facilities for agricultural products and production materials

1、现代化的农产品、生产资料市场流通设施建设

2. Chain operations of agricultural materials, such as seeds, seedlings, breeding livestock and poultry, fish fries (species), fertilizers, pesticides, farm machinery, and agricultural films

2、种子、种苗、种畜禽和鱼苗（种）、化肥、农药、农机具、农膜等农资连锁经营及综合服务

and comprehensive services

3. Chain operations of rural-orientated daily supplies, such as daily necessities, medicines, and publications

3、面向农村的日用品、药品、出版物等生活用品连锁经营

4. Agricultural product auction services

4、农产品拍卖服务

5. Construction of uniform allocation and distribution networks for commercial and trade enterprises

5、商贸企业的统一配送和分销网络建设

6. Transformation and improvement of traditional commodity trading markets by using information technologies

6、利用信息技术改造提升传统商品交易市场

7. Flea market construction

7、旧货市场建设

8. Construction of modern used car trading service systems

8、现代化二手车交易服务体系建设

9. Construction of new rural modern circulation service network projects and construction of Internet of Things application and demonstration projects for agricultural materials

9、新农村现代流通服务网络工程建设，农资物联网应用与示范项目建设

XXXIV. Tourism Industry

三十四、旅游业

1. Development of and marketing services for tourist purchases, tourist souvenirs, tourist equipment, leisure, mountain climbing, skiing, scuba diving, expedition, and other outdoor activity supplies

1、旅游商品、旅游纪念品、旅游装备设备，以及休闲、登山、滑雪、潜水、探险等各类户外活动用品开发与营销服务

2. Comprehensive development, infrastructure construction,

2、文化旅游、健康旅游、乡村旅游、生态旅游、海洋旅

information, and other services for cultural tourism, health tourism, rural tourism, eco-tourism, marine tourism, forest tourism, grassland tourism, industrial tourism, sports tourism, historic revolution site tourism, ethnic customs, and other tourism resources

游、森林旅游、草原旅游、工业旅游、体育旅游、红色旅游、民族风情游及其他旅游资源综合开发、基础设施建设及信息等服务

XXXV. Postal Industry

三十五、邮政业

1. Postal savings network construction

1、邮政储蓄网络建设

2. Integrated postal service network construction

2、邮政综合业务网建设

3. Mail processing automation engineering

3、邮件处理自动化工程

4. Construction of postal public service information platforms including security supervision of delivery channels, ordinary and express mail time limit monitoring, consumer complaints, satisfaction survey and publicity, zip code and postage inquiry, and other public services and market regulatory functions

4、寄递渠道安全监管、邮件快件时限监测、消费者申诉、满意度调查与公示、邮编及行业资费查询等公共服务和市场监管功能等邮政业公共服务信息平台建设

5. Construction of urban and rural express delivery service outlets and stores and other express service outlets as well as smart express mail (parcel) boxes and express delivery-end comprehensive service sites

5、城乡快递营业网点、门店等快递服务网点和智能快件（信包）箱、快递末端综合服务场所建设

6. Construction of express mail sorting centers, transfer centers, collecting and distributing centers, processing hubs, and other express mail processing facilities in cities, within regions, and between regions.

6、城市、区域内和区域间的快件分拣中心、转运中心、集散中心、处理枢纽等快递处理设施建设

7. Development and application of express mail tracking and inquiry, automatic sorting, delivery scheduling, express delivery customer service call centers, and other express delivery information systems

7、快件跟踪查询、自动分拣、运递调度、快递客服呼叫中心等快递信息系统开发与应用

8. Research and development and application of data collection, container, intelligent terminals, intelligent warehousing, automatic sorting, mechanized loading and unloading, cold chain express delivery, AGV, unmanned aerial vehicles, unmanned vehicles, green packaging, and other express delivery technical equipment

8、数据采集、集装容器、智能终端、智能化仓储、自动分拣、机械化装卸、冷链快递、AGV、无人机、无人车和绿色包装等快递技术装备的研发与应用

9. Development of technologies for integration of mail and express delivery transportation and transportation networks as well as multimodal transport and operation platforms, among others

9、邮件快件运输与交通运输网络融合及多式联运、运营平台等技术开发与应用

XXXVI. Education

三十六、教育

1. Preschool education

1、学前教育

2. Special education

2、特殊教育

3. Vocational education

3、职业教育

4. Internet plus education and distance education

4、“互联网+教育”，远程教育

XXXVII. Health

三十七、卫生健康

1. Construction of prevention and healthcare, health emergency response, and health surveillance service facilities	1、预防保健、卫生应急、卫生监督服务设施建设
2. Family planning, prenatal and postnatal care, and reproductive health consultation and services	2、计划生育、优生优育、生殖健康咨询与服务
3. Internet plus medical care and health services and application of medical big data	3、“互联网+医疗健康服务”、医疗大数据应用
4. Health consultation, medical knowledge, and other medical information services and health management services	4、卫生咨询、医疗知识等医疗信息服务和健康管理服务
5. Construction of medical and health service facilities	5、医疗卫生服务设施建设
6. Facility construction and services of specialized hospitals for infectious diseases, children, and mental health, rehabilitation hospitals (centers), nursing homes (centers and stations), hospice care centers, and general practice facilities	6、传染病、儿童、精神卫生专科医院和康复医院（中心）、护理院（中心、站）、安宁疗护中心、全科医疗设施建设与服务
7. Psychological counseling services	7、心理咨询服务
8. Chinese medicine fitness and health maintenance services	8、中医养生保健服务
XXXVIII. Culture	三十八、文化
1. Public culture, culture and art, press and publication, radio, television, and films, network audiovisual programs, cultural heritage protection and utilization, and facility construction	1、公共文化、文化艺术、新闻出版、广播电视电影、网络视听、文化遗产保护利用及设施建设
2. Cultural creative design services; digital cultural creativity	2、文化创意设计服务，数字文化创意（含数字文化创意技

(including digital cultural creativity technical equipment, digital cultural creativity software, digital cultural creative content production, new media services, digital cultural creative content application services); and creation, production, dissemination, and publishing of animations and development of derivatives

术装备、数字文化创意软件、数字文化创意内容制作、新型媒体服务、数字文化创意内容应用服务），动漫创作、制作、传播、出版、衍生产品开发

3. Production, distribution, trading, broadcasting, and publishing of radio programs, films, and television programs and development of derivatives; and technical services for and development of network audiovisual programs

3、广播影视制作、发行、交易、播映、出版、衍生品开发，网络视听节目技术服务、开发

4. Development and application of news and publication supervision technology, copyright protection technology, publication production technology, and publication distribution technology as well as technology development, application, and industrialization of electronic paper, readers, and other new vehicles for the press and publication

4、新闻出版内容监管技术、版权保护技术、出版物的生产技术、出版物发行技术开发与应用，电子纸、阅读器等新闻出版新载体的技术开发、应用和产业化

5. Development and application of film digitalization services and supervision technology

5、电影数字化服务和监管技术开发及应用

6. Protection and revitalization of intangible cultural heritage, protection and development of ethnic and folk arts as well as traditional arts and crafts, protection of famous national historical and cultural cities (towns, villages) and cultural blocks as well as the characteristic villages and towns of Chinese ethnic minorities, protection and development of well-known time-honored Chinese brands, and international marketing and promotion of select ethnic art and culture

6、非物质文化遗产保护与振兴，民族和民间艺术、传统工艺美术保护与发展，国家历史文化名城（镇、村）和文化街区、中国少数民族特色村镇保护，中华老字号的保护与发展，民族文化艺术精品的国际营销与推广

7. Cultural information resource sharing projects, construction of smart museums, integrated development of traditional and emerging media, construction of smart radio and television, mobile multimedia radio and television, digitalization of radio and television, intelligent and coordinated coverage of cable and wireless satellite radio and television networks, intelligent construction of national cable television networks, and construction of interconnection platforms

7、文化信息资源共享工程，智慧博物馆建设，传统媒体和新兴媒体融合发展、智慧广电建设、移动多媒体广播电视、广播电视数字化、有线无线卫星广播电视网智能协同覆盖、全国有线电视网络智能化建设和互联互通平台建设

8. Development and application of spoken and written language technologies

8、语言文字技术开发与应用

9. Performing arts sector

9、演艺业

XXXIX. Sports

三十九、体育

1. Sports management activities

1、体育管理活动

2. Sports competition performance activities

2、体育竞赛表演活动

3. Sports, fitness, and leisure activities

3、体育健身休闲活动

4. Management of sports sites and facilities

4、体育场地和设施管理

5. Sports brokerage and agency, advertising and exhibition, and performance and design services

5、体育经纪与代理、广告与会展、表演与设计服务

6. Physical education and training

6、体育教育与培训

7. Sports media and information services	7、体育传媒与信息服务
8. Sports tourism, health and rehabilitation, finance, and asset management services	8、体育旅游、健康与康复、金融与资产管理服务
9. Research and development and manufacturing of sporting goods and related products	9、体育用品及相关产品研发及制造
10. Sale, leasing, and trade agency of sporting goods and related products	10、体育用品及相关产品销售、出租与贸易代理
11. Construction of sports sites and facilities	11、体育场地设施建设
XL. Elderly and child care services	四十、养老与托育服务
1. Long-term care service institutions (including residential care homes, elderly nursing homes, and rural elderly care facilities, among others)	1、长期照护服务机构（包括养老院、老年养护院、农村养老设施等）
2. Backbone networks of community elderly care services	2、社区养老服务骨干网
3. Financial product and service industry for elderly care	3、养老金融产品服务业
4. Meal and travel assistance	4、助餐助行
5. Senior education	5、老年教育
6. Health and elderly care tourism and accommodation	6、康养旅居

7. Elderly care service training and education	7、养老服务实训教育
8. Convalescent aids configuration service (leasing) institutions	8、康复辅助器具配置服务（租赁）机构
9. Elderly-friendly home construction and improvement projects	9、居家适老化建设及改造工程
10. Development of elderly human resources	10、老年人力资源开发
11. Health management, sports and fitness for the elderly	11、老年人健康管理和体育健身
12. Smart health and elderly care	12、智慧健康和养老
13. Early childhood development (intellectual development, dietary nutrition, and mental health)	13、儿童早期发展（智力开发、膳食营养、心理健康）
14. Infant and child care, education, and training	14、婴幼儿保育教育培训
15. Infant and child care service institutions (centers)	15、婴幼儿照护服务机构（中心）
16. Infant and child health management	16、婴幼儿健康管理
17. Family and parenting support and parenting guidance	17、家庭养育支援及育儿指导
XLI. Domestic services	四十一、家政
1. Community domestic services	1、社区家政服务

2. Staffing domestic services	2、员工制家政服务
3. Domestic service vocational education and skill training	3、家政职业教育和技能培训
4. Comprehensive domestic service information services	4、家政综合信息服务
5. Construction, operation, and management of domestic service facilities (domestic service establishments)	5、家政服务措施（家政服务网点）建设与运营管理
6. Standardization of domestic services	6、家政服务标准化建设
XLII. Other service industries	四十二、其他服务业
1. Construction and management of indemnificatory housing	1、保障性住房建设与管理
2. Property management services	2、物业服务
3. Activity places for the elderly and minors	3、老年人、未成年人活动场所
4. Construction of basic service facilities and integrated service networks for urban and rural communities	4、城乡社区基础服务设施及综合服务网点建设
5. Construction and services of supporting public service platforms for development zones and industry cluster districts	5、开发区、产业集聚区配套公共服务平台建设与服务
6. Community care services	6、社区照料服务
7. Construction of reclaimed resources recycling network systems	7、再生资源回收利用网络体系建设

8. Wedding celebration services	8、婚庆服务业
9. Construction of basic-level employment and social security service facilities	9、基层就业和社会保障服务设施建设
10. Construction of service facilities for unattended dependents of rural migrant workers	10、农民工留守家属服务设施建设
11. Social security “all-in-one-card” projects	11、社会保障一卡通工程
12. Construction of work-related injury rehabilitation centers	12、工伤康复中心建设
13. Construction, operation, and management of rental dwellings	13、租赁住房建设、运营和管理
14. Consumer rights and interests protection services	14、消费者权益保护服务
XLIII. Environmental Protection and Energy-Saving Comprehensive Utilization	四十三、环境保护与资源节约综合利用
1. Ecological restoration projects for mines	1、矿山生态环境恢复工程
2. Marine environmental protection and scientific development as well as marine ecological restoration	2、海洋环境保护及科学开发、海洋生态修复
3. Development and utilization of brackish water, alkaline water, inferior water, and seawater; and seawater desalination and comprehensive utilization projects	3、微咸水、苦咸水、劣质水、海水的开发利用及海水淡化综合利用工程

4. Development and utilization of substitutes for ozone depleting substances (ODS)	4、消耗臭氧层物质替代品开发与利用
5. Construction of regional resources recycling bases for scrapped and used cars, waste and used electrical and electronic products, scrapped vessels, scrapped steel, scrapped wood, and waste rubber, among others	5、区域性废旧汽车、废旧电器电子产品、废旧船舶、废钢铁、废旧木材、废旧橡胶等资源循环利用基地建设
6. Effluent radiation environment monitoring technology projects	6、流出物辐射环境监测技术工程
7. Environmental monitoring system projects	7、环境监测体系工程
8. Development and manufacturing of safe disposal technical equipment and construction and operation of disposal centers for hazardous waste (medical waste) and heavy metal-containing waste; and development and manufacturing of safe disposal technical equipment and construction and operation of disposal centers for radioactive waste and nuclear facility decommissioning projects	8、危险废物（医疗废物）及含重金属废物安全处置技术设备开发制造及处置中心建设及运营；放射性废物、核设施退役工程安全处置技术设备开发制造及处置中心建设
9. Mobile pollution source (locomotives, ships, and cars, among others) monitoring, prevention, and control technologies	9、流动污染源（机车、船舶、汽车等）监测与防治技术
10. Application of urban traffic noise and vibration control technologies	10、城市交通噪声与振动控制技术应用
11. Development and application of power grid and information system electromagnetic radiation control technologies	11、电网、信息系统电磁辐射控制技术开发与应用

12. Development and application of dioxin emission reduction and control technologies	12、削减和控制二噁英排放的技术开发与应用
13. Development and application of substitutes for persistent organic pollutant products	13、持久性有机污染物类产品的替代品开发与应用
14. Development and application of disposal technologies for abandoned persistent organic pollutant products	14、废弃持久性有机污染物类产品处置技术开发与应用
15. Comprehensive utilization, treatment technology, equipment, and projects for waste water, waste gas, and solid waste	15、“三废”综合利用与治理技术、装备和工程
16. Development and production of biological bacteria and additives for the treatment of “three wastes” (waste water, waste gas, and waste residues)	16、“三废”处理用生物菌种和添加剂开发与生产
17. Development and application of mercury recycling and treatment technologies for mercury-containing waste and of substitutes for mercury-containing products	17、含汞废物的汞回收处理技术、含汞产品的替代品开发与应用
18. Zero discharge of waste water and application of water recycling technologies	18、废水零排放，重复用水技术应用
19. Development of efficient and low-energy sewage treatment and recycling technologies	19、高效、低能耗污水处理与再生技术开发
20. Reduction, recycling, harmless treatment, and comprehensive utilization projects for urban garbage, rural consumer waste, rural domestic sewage, sludge, and other	20、城镇垃圾、农村生活垃圾、农村生活污水、污泥及其他固体废弃物减量化、资源化、无害化处理和综合利用工程

solid waste

21. Anti-seepage technologies and materials for waste landfill	21、废物填埋防渗技术与材料
22. Development and application of energy-saving, water-saving, and material-saving technologies for environmental protection and comprehensive utilization of resources; and equipment manufacture; providing users with energy-saving, environmental protection, consultation about comprehensive utilization of resources, design, assessment, testing, audit, certification, diagnosis, financing, improvement, operation and management, and other services	22、节能、节水、节材环保及资源综合利用等技术开发、应用及设备制造；为用户提供节能、环保、资源综合利用咨询、设计、评估、检测、审计、认证、诊断、融资、改造、运行管理等服务
23. High-efficiency, energy-saving, and environment-friendly mining and beneficiation technology (reagents); and technology and equipment for the development and comprehensive utilization of low-grade, complicated, and intractable mines	23、高效、节能、环保采矿、选矿技术（药剂）；低品位、复杂、难处理矿开发及综合利用技术与设备
24. Comprehensive utilization technology for intergrown and associated mineral resources and extraction of valuable elements	24、共生、伴生矿产资源综合利用技术及有价元素提取
25. Comprehensive utilization of tailings, waste residues, and other resources and manufacturing of supporting equipment	25、尾矿、废渣等资源综合利用及配套装备制造
26. Projects and industrialization of reclaimed resources and construction wastes recycling	26、再生资源、建筑垃圾资源化回收利用工程和产业化
27. Development and application of recycling technologies and equipment for waste wood, waste and used electrical and	27、废旧木材、废旧电器电子产品、废印刷电路板、废旧

electronic products, waste printed circuit boards, used batteries, scrapped ships, scrapped agricultural machinery, waste plastics, waste textiles and textile waste and scrap, waste (broken) glass, waste rubber, waste oil and fat, and other waste materials

电池、废旧船舶、废旧农机、废塑料、废旧纺织品及纺织废料和边角料、废（碎）玻璃、废橡胶、废弃油脂等废旧物资等资源循环再利用技术、设备开发及应用

28. Recycling and remanufacture of scraped vehicles, engineering machinery, mining machinery, machine tool products, agricultural machinery, and ships and other waste and used mechanical and electrical products and their components and parts; remanufacture (refill) of ink cartridges and organic photoconductive drums; and disassembly, reuse, and remanufacture of retired large civil aircrafts, engines, and parts

28、废旧汽车、工程机械、矿山机械、机床产品、农业机械、船舶等废旧机电产品及零部件再利用、再制造，墨盒、有机光导鼓的再制造（再填充），退役民用大型飞机及发动机、零部件拆解、再利用、再制造

29. Comprehensive utilization technologies and equipment: steel scrap crushing production lines with 4,000 Hp or more; waste plastic composite material recovery and processing outfits (with a recovery rate of 95% or more); technical equipment for the comprehensive utilization of light hydrocarbon petrochemical byproducts; biomass energy technical equipment (power generation, oil manufacture, and biogas); and sulfur recovery equipment (Cryogenic Claus process)

29、综合利用技术设备：4000 马力以上废钢破碎生产线；废塑料复合材料回收处理成套装备（回收率 95%以上）；轻烃类石化副产物综合利用技术装备；生物质能技术装备（发电、制油、沼气）；硫回收装备（低温克劳斯法）

30. Research, development, and application of remediation technologies for soil containing persistent organic pollutants

30、含持久性有机污染物土壤修复技术的研发与应用

31. Development and application of heavy metal emission reduction and control technologies

31、削减和控制重金属排放的技术开发与应用

32. Industrial degradation-resistant organic wastewater treatment technologies	32、工业难降解有机废水处理技术
33. High-efficiency toxic and organic waste gas and foul odor treatment technologies	33、有毒、有机废气、恶臭高效处理技术
34. Development of kitchen waste resources utilization technologies and infrastructure construction	34、餐厨废弃物资源化利用技术开发及设施建设
35. Carbon capture, utilization, and storage technical equipment	35、碳捕集、利用与封存技术装备
36. Ice storage technology and outfit manufacture	36、冰蓄冷技术及其成套设备制造
37. Recycling of waste traction batteries of electric vehicles: cascade utilization and reclamation, among others, and waste traction battery recycling technical equipment: automated disassembly technical equipment; automated rapid sorting and grouping technical equipment; battery remaining useful life and conformity assessment technical equipment; technical equipment for residual value assessment; technical equipment for cascade utilization; and technical equipment for efficient reclamation and harmless treatment of anodes, cathodes, separators, and electrolytes	37、电动汽车废旧动力蓄电池回收利用：梯级利用、再生利用等，废旧动力蓄电池回收利用技术装备；自动化拆解技术装备；自动化快速分选成组技术装备；电池剩余寿命及一致性评估技术装备；残余价值评估技术装备；梯次利用技术装备；正极、负极、隔膜、电解液高效再生利用及无害化处理技术装备
38. Waste wooden material recovery projects	38、废弃木质材料回收工程
39. Waste sorting technology, equipment, and facilities	39、垃圾分类技术、设备、设施
40. Third-party remediation of environmental pollution	40、环境污染第三方治理

41. Volatile organic compound reduction, recycling, end treatment, and monitoring technology

41、挥发性有机物减量化、资源化和末端治理及监测技术

42. Waste sulfuric acid pyrolysis and recovery technology

42、废硫酸裂解回收技术

43. Recycling of industrial by-product salt

43、工业副产盐资源化利用

44. Green high-efficiency leaching and extraction integration technology for raw ionic rare earth ore

44、离子型稀土原矿绿色高效浸萃一体化技术

45. Advanced techniques, technology, and equipment for recovery and utilization of waste heat

45、余热回收利用先进工艺技术与设备

XLIV. Public Safety and Emergency Response Products

四十四、公共安全与应急产品

1. Development and application of meteorological, earthquake, earthquake, geological, marine, flood and drought, and urban and forest fire disaster monitoring and early warning technologies

1、气象、地震、地质、海洋、水旱灾害、城市及森林火灾灾害监测预警技术开发与应用

2. Development and application of biological disaster and animal epidemic monitoring and early warning technologies

2、生物灾害、动物疫情监测预警技术开发与应用

3. Development and application of automatic safety monitoring and alarm technologies for dams and tailing ponds

3、堤坝、尾矿库安全自动监测报警技术开发与应用

4. Development and application of coal, mine, and other work safety monitoring and alarm technologies

4、煤炭、矿山等安全生产监测报警技术开发与应用

5. Development and application of accident early warning technologies for means of public transport	5、公共交通工具事故预警技术开发与应用
6. Technologies and products for the rapid detection of water, soil, and air pollutants	6、水、土壤、空气污染物快速监测技术与产品
7. Development and application of rapid detection technology, instruments, and equipment for food and drug safety	7、食品药品安全快速检验技术、仪器设备开发及应用
8. Testing reagents and instruments for major epidemics and newly-discovered infectious diseases	8、重大流行病、新发传染病检测试剂和仪器
9. Rapid screening equipment for persons with abnormal body temperatures in public places	9、公共场所体温异常人员快速筛查设备
10. Development and application of surveillance, monitoring, and early warning systems, products, and technology for traffic safety, urban public security, security against terrorist attacks, cybersecurity and information system security, police safety, special equipment safety, engineering construction safety, fire, and major hazard source safety	10、交通安全、城市公共安全、恐怖袭击安全、网络与信息系统安全、警用安全、特种设备安全、工程施工安全、火灾、重大危险源安全监控监测预警系统、产品技术开发与应用
11. Technology and products for rapid detection and testing of radioactive substances, drugs, and other contraband as well as nuclear and biochemical terrorist sources and other dangerous items	11、放射性、毒品等违禁品、核生化恐怖源等危险物品快速探测检测技术与产品
12. Development and application of hazardous chemical safety monitoring technology	12、危险化学品安全监测技术开发与应用
13. Development and application of protective equipment for	13、应急抢险救援人员防护用品开发与应用

emergency relief and rescue personnel

14. Household emergency protective products

14、家用应急防护产品

15. Development and application of new-type lightning disaster protection technologies

15、雷电灾害新型防护技术开发与应用

16. Shelter products and facilities for mines, projects, and safe production of hazardous chemicals

16、矿山、工程和危险化学品安全生产避险产品及设施

17. Technology and products for rapid surveying, mapping, storage, and transmission of the sites of emergencies

17、突发事件现场信息快速测绘、存储、传输等技术及产品

18. Life detection equipment

18、生命探测装备

19. Intelligent, large, special, unmanned, and high-performance fire protection, fire extinguishing, and rescue equipment

19、智能化、大型、特种、无人化、高性能消防灭火救援装备

20. All-terrain rescue equipment for building (structure) ruins

20、建（构）筑物全地形废墟救援设备

21. Emergency communications, emergency command, emergency power generation and power restoration, logistics support, and other all-terrain, high-mobility, and multi-functional emergency rescue special vehicles and equipment

21、应急通信、应急指挥、应急发电与电力恢复、后勤保障等全地形高机动性多功能应急救援特种车辆及设备

22. Detection, dismantling, life-saving, lighting, smoke exhaust, leakage-blocking, transmission, decontamination, lifting, delivery, and other efficient rescue products

22、侦检、破拆、救生、照明、排烟、堵漏、输转、洗消、提升、投送等高效救援产品

23. Emergency air rescue instruments and equipment	23、航空应急救援器材及装备
24. Emergency road clearing equipment and facilities	24、道路应急抢通装备及设施
25. Development and application of ice and snow removal machinery and environment-friendly snowmelt agents for public transport facilities	25、公共交通设施除冰雪机械及环保型除雪剂开发与应用
26. Water (underwater and deep sea) emergency rescue technology and equipment	26、水上（水下及深海）应急救援技术与装备
27. Construction of emergency facilities and equipment for hazardous chemicals and oil products on board and at ports, among others	27、车载、港口等危险化学品、油品应急设施建设及设备
28. Technology and equipment for emergency disposal of oil spill and toxic and hazardous substance leakage at sea	28、海上溢油及有毒有害物质泄漏应急处置技术和装备
29. Technical equipment for rapid absorption and treatment of toxic and hazardous liquid, mobile rapid treatment equipment for medical waste, special equipment for identifying characteristics of hazardous waste, and other technical equipment for emergency environmental protection against sudden environmental disasters	29、有毒有害液体快速吸纳处理技术装备、移动式医疗废物快速处理装置、危险废物特性鉴别专用仪器等突发环境灾难应急环保技术装备
30. Emergency air medical systems, mobile medical rescue systems, health emergency disinfection supply equipment, and first-aid and evacuation platforms integrating life support, treatment, and care	30、航空应急医疗系统，机动医疗救护系统，卫生应急消毒供应装备，生命支持、治疗、监护一体化急救与后送平台

31. Vaccines and medicines for the prevention and control of public health and biological emergencies	31、防控突发公共卫生和生物事件疫苗和药品
32. Technical equipment and investigation and control technology for anti-terrorism operations; and technology for comprehensive anti-terrorism combat platforms, anti-nuclear terrorism robots, emergency riot vehicles, medium-sized anti-terrorism explosive ordnance disposal robots, mobile blast containment vessels, and explosive destruction systems, among others	32、反恐行动技术装备与侦控技术；反恐综合作战平台技术，反核恐怖机器人，应急防爆车，中型反恐排爆机器人，防爆拖车，爆炸物销毁器等
33. Emergency medical care, traffic rescue, engineering rescue, safe production, air rescue, network and information security, and other socialized emergency rescue services	33、紧急医疗、交通救援、工程抢险、安全生产、航空救援、网络与信息安全等应急救援社会化服务
34. Emergency logistics facilities and services	34、应急物流设施及服务
35. Emergency consultation, assessment, training, leasing, and insurance services	35、应急咨询、评估、培训、租赁和保险服务
36. Emergency supplies reserve infrastructure construction	36、应急物资储备基础设施建设
37. Construction of emergency rescue bases and public emergency experience infrastructure	37、应急救援基地、公众应急体验基础设施建设
38. New fireproof paint, fireproof materials, flame arresting and explosion suppression devices, and fire-resistant building components	38、新型防火涂料、防火材料、阻火抑爆装置、建筑耐火构件
39. Development and application of automatic fire monitoring	39、森林、草原火灾自动监测报警技术开发与应用

and alarming technologies for forests and grasslands

40. Safety monitoring systems based on Beidou navigation satellites	40、基于北斗导航卫星的安全监测系统
41. Development and application of digital mine technology, development and application of training simulation technology for safe production, and safety technology for establishment of fine tailings dams by using mold geobags	41、矿山数字化技术开发与应用，安全生产模拟实训技术开发与应用，细粒尾矿模袋法堆坝安全技术
42. Development and application of technology for rapid acquisition of earthquake disaster information and development and application of fault detection technology for seismic activity	42、地震灾害信息快速获取技术开发与应用，地震活动断层探测技术开发及应用
43. Development and application of technology for rapidly identifying sources of coal mine water inrush	43、煤矿突水水源快速判别技术开发与应用
44. Rapid testing equipment for fire protection product quality	44、消防产品质量快速检测设备
45. Development and application of harmful element monitoring technology for agricultural products and the environment in their production places	45、农产品及其产地环境的有害元素监测技术开发与应用
46. Rapid and safe monitoring equipment for business and domestic water use	46、生产生活用水快速安全监测设备
47. Protection products for special jobs	47、特殊工种保护产品
48. Development and application of important infrastructure	48、重要基础设施安全、社会公共安全、农林气象、生物

safety, social and public security, agricultural and forestry meteorology, biological disaster prevention and protection technology	灾害防范防护技术开发及应用
49. Complete technology and equipment for emergency rescue in coal mine gas, thermal power, water hazards, and other major disasters as well as risk monitoring, safety prevention and control, and emergency disposal of hazardous chemicals	49、煤矿瓦斯、热动力、水害等重大灾害应急救援及危险化学品风险监测、安全防控和应急处置成套技术与装备
50. Large and multi-functional engineering rescue equipment	50、大型、多功能型工程抢险装备
51. Special equipment for flood prevention and rescue	51、防汛抢险专用器材和装备
52. Weather modification operations systems	52、人工影响天气作业系统
53. Emergency disposal technology and equipment for nuclear accidents	53、核事故应急处置技术及装备
54. Quarantine and disposal technology and equipment for epidemics and diseases	54、疫情疫病检疫处置技术及装备
55. Rescue technology and equipment for special equipment accidents	55、特种设备事故救援技术与装备
56. Technical equipment for emergency monitoring of flood and drought disasters	56、水旱灾害应急监测技术装备
57. Technical equipment for intelligent identification of flood and drought disaster risks	57、洪水干旱灾害风险智能辨识技术装备

58. Technical equipment for ad hoc network trunked emergency communications for flood control and disaster relief	58、防汛抢险自组网集群应急通讯技术装备
59. Technical equipment for emergency water detection and well drilling for drought relief	59、抗旱应急找水打井技术装备
60. Technology for preparing typhoon risk zoning maps and its application	60、台风风险区划图编制技术及应用
61. Key technical equipment for base logistics support for emergency disaster relief in major disasters and accidents	61、重大灾害事故应急救援基地化后勤保障重点技术装备
62. Key technical equipment for intelligent unmanned emergency rescue in major accidents and disasters	62、重大事故灾害智能无人应急救援关键技术装备
63. Research on and application of key technologies for disaster relief shelter equipment in highland regions and high and cold regions and research on and application of such equipment	63、高原高寒地区灾害现场安置装备关键技术与装备研究应用
64. High-efficiency intelligent deicing and snow removal equipment for rain, snow, and cold weather disasters	64、雨雪冰冻灾害高效智能除冰除雪装备
65. Light modular rescue engineering equipment in complex environments	65、复杂环境轻型模块工程抢险装备
66. Research on and demonstration of application of key technologies for prevention and control of large-scale tailings dam failure	66、大型高尾矿库溃坝灾害防控关键技术研究及应用示范

67. Construction of emergency response facilities for preventing and controlling flood and drought

67、防洪抗旱应急设施建设

68. Development and application of new technologies and new products for flood control and drought relief

68、防汛抗旱新技术新产品开发与应用

69. Development and application of production of signs by using thermal transfer printers

69、热转印标识牌生产开发与应用

XLV. Industrial Explosive Products

四十五、民爆产品

1. Safe, environmental-friendly, and energy-saving industrial explosives and detonator-insensitive bulk industrial explosives; on-site mixing and production method; on-site mixing and production method by centralized preparation and remote delivery of emulsion matrix; application of on-site explosive blending technology by underground mines, large chambers, highway and railway tunnels, and other projects; model of integration of scientific research on industrial explosives, production, and blasting services; and application of decommissioned gunpowder (explosives) in industrial explosives and special-purpose explosives

1、安全环保节能型工业炸药及无雷管感度的散装工业炸药；现场混装生产方式；采用乳胶基质集中制备、远程配送的现场混装生产方式；地下矿山、大型硐室、公路铁路隧道等工程应用现场混装炸药技术；民爆科研、生产、爆破服务“一体化”模式；退役火（炸）药在工业炸药中的应用，特殊用途炸药

2. Intelligent production techniques, technology and equipment for industrial explosives and unmanned industrial explosives workshop; online monitoring of production lines and fault self-diagnosis technology; high-precision charge measurement technology and online parameter detection technology for on-site mixing and production method; whole-process intelligent management and control platforms for on-site mixing and production method; information-based and visualized

2、工业炸药智能化生产工艺技术及装备，工业炸药无人化车间；生产线在线监测、故障自诊断技术；现场混装生产方式的高精度装药计量技术、在线参数检测技术；现场混装生产方式全流程智能化管控平台；生产、销售（包括仓储）的信息化、可视化智能网络监管平台；废危险物料及不合格品安全、环保回收再利用的工艺技术及装备

intelligent network supervision platforms for production and sales (including warehousing); and techniques, technology, and equipment for the safety and environmental-friendly recycling of hazardous waste materials and nonconforming products,

3. New detonating equipment; digital electronic detonators; safety technology for the prevention of sympathetic detonation of finished industrial detonator products and methods for intensive production of base detonators and safe packaging for remote delivery; model for the centralized production and remote delivery of electronic ignition element (including electronic control module and ignition element) of digital electronic detonators; and industrial detonating cord with serialized charge

3、新型起爆器材；数码电子雷管；工业雷管成品防殉爆安全技术和基础雷管集约化生产、远程配送安全包装方式；数码电子雷管的电子引火元件（含电子控制模块和点火元件）集中生产远程配送模式；装药量系列化的工业导爆索

4. Modular, automated, and continuous equipment for high-risk production processes and safe and environment-friendly waste product (material) destruction and treatment equipment; intelligent production techniques and equipment for pyrotechnic compositions and products and unmanned workshops for industrial detonator production lines; automatic collection, storage, and traceability analysis systems of data on technique parameters, man, machine, materials, and environment at production process quality control points; occupational hazards-free, safe and environmental-friendly, and highly-information-based product performance testing methods; and automated equipment for charging explosives, stowing line, coiling, sealing, and packaging during the production of industrial detonating cord

4、高危生产工序的模块化、自动化、连续化设备，安全环保型的废品（料）销毁处理装备；火工药剂、产品的智能化生产工艺和装备，工业雷管生产线无人化车间；生产过程质量控制点工艺参数、人、机、料、环等数据的自动采集、存储和溯源分析系统；无职业危害、安全环保、信息化程度高的产品性能检测方法；工业导爆索生产过程炸药添加药、收线、盘卷、封尾、包装的自动化装备

5. The automation of primer production techniques; stable and

5、起爆具生产工艺自动化；可定期失效的稳定可控的震源

controllable seismic charge products of planned obsolescence and the application of water-containing explosives, among others, in seismic charges; serialized and generalized charge products; reliable, diverse, high-efficiency, and environmental-friendly explosive equipment for weather modification; and the application of decommissioned gunpowder (explosives) in industrial explosive products

药柱产品，含水炸药等在震源药柱中的应用；系列化、通用化的射孔弹产品；可靠、多样、高效、环保的人工影响天气用燃爆器材；退役火（炸）药在工业炸药制品中的应用

6. The production techniques of industrial explosive products with visualized technique and process data, online collection of production data, and automatic detection of safety parameters; technique equipment for continuous and intelligent melting, mixing explosives, pouring, mold release, and other operations of high-level intrinsic safety during the manufacturing of primers; technique equipment for automatic charging and automatic assembly of seismic charge; and technique equipment for automatic charging and automatic extrusion of charges

6、工艺流程数据可视、生产数据在线采集、安全参数自动检测的工业炸药制品生产工艺；起爆具制造中，本质安全水平高，连续化、智能化的熔化、混药、浇注、退模等工序的工艺装备；震源药柱自动装药、自动装配的工艺装备；射孔弹自动装药、自动压制的工艺装备

7. Industrial explosive production lines with a total of not more than three dangerous workshop operators; production lines achieving intelligent primer production, with no permanent operators in the melting, mixing, and pouring workshops, with a total of not more than five operators in a single mold release inspection and packaging workshop; production lines with continuous, automated, information-based, and flexible intelligent manufacturing achieved in the production of seismic charges, with not more than five operators in a single Class 1.1 dangerous workshop; production lines achieving automated and intelligent charge production, with not more than six operators in a dangerous workshop; production lines achieving

7、危险工房操作人员总人数不大于 3 人的工业炸药生产线；起爆具生产实现智能化，熔混注工房无固定作业人员，单个退模检验包装工房操作人员总人数不大于 5 人（含）的生产线；震源药柱生产实现连续化、自动化、信息化、柔性化的智能制造，1.1 级单个危险工房操作人员人数不大于 5 人的生产线；射孔弹生产实现自动化、智能化，危险工房操作人员人数不大于 6 人的生产线；人工影响天气用燃爆器材生产实现自动化、智能化，危险工房操作人员人数不大于 5 人的生产线；海上救生烟火信号等烟火信息弹制造实现药剂制备、装药工序的自动化，装配工序的机械化，人机隔离，危险工房操作人员人数不大于 5

automated and intelligent production of explosive equipment for weather modification, with not more than five operators in a dangerous workshop; and production lines with the automation of composition preparation and charging operations, mechanization of assembly operations, and man-machine isolation achieved in the manufacturing of flares such as maritime distress flares, with not more than five operators in a dangerous workshop

人的生产线

XLVI. Human Resources and Human Capital Services

四十六、人力资源和人力资本服务业

1. Informatization of human resources and human capital

1、人力资源与人力资本信息化建设

2. Construction of industrial parks and platforms for human resources services and human capital services

2、人力资源服务与人力资本服务产业园和平台建设

3. Guidance on human resources recruitment, employment and entrepreneurship; human resources and social security matter agencies; and human resources training, staffing, human resources assessment, human resources management consulting, human resources service outsourcing, senior talent search, human resources information software services, and other human resources services

3、人力资源招聘、就业和创业指导，人力资源和社会保障事务代理，人力资源培训、劳务派遣、人力资源测评、人力资源管理咨询、人力资源服务外包、高级人才寻访、人力资源信息软件服务等人力资源服务业

4. Valuation, assessment, and trading of human capital; survey, analysis and application of human capital value; and investment activities in the process of human capital generation

4、人力资本价值评估、评测和交易，人力资本价值统计、分析和应用，人力资本形成过程中的投资活动

5. Construction of financial innovation platforms for human

5、人力资本金融创新平台建设

capital

6. Construction of human resources and human capital markets and supporting service facilities

6、人力资源与人力资本市场及配套服务设施建设

7. Construction of movement and employment service platforms for rural labor forces

7、农村劳动力转移就业服务平台建设

XLVII. Artificial Intelligence

四十七、人工智能

1. Artificial intelligence chips

1、人工智能芯片

2. Technology for the integration of industrial Internet, public systems, digital software, and intelligent equipment systems and its application

2、工业互联网、公共系统、数字化软件、智能装备系统集成化技术及应用

3. Intelligent infrastructure such as network infrastructure, big data infrastructure, and high-performance computing infrastructure

3、网络基础设施、大数据基础设施、高效能计算基础设施等智能化基础设施

4. Research and development and application of technologies such as virtual reality (VR), augmented reality (AR), speech, semantic, and image recognition, and multi-sensor information fusion

4、虚拟现实（VR）、增强现实（AR）、语音语义图像识别、多传感器信息融合等技术的研发与应用

5. Typical industry application systems such as unmanned autonomous systems

5、无人自主系统等典型行业应用系统

6. Artificial intelligence standards testing and intellectual property rights service platforms

6、人工智能标准测试及知识产权服务平台

7. Key technical equipment for intelligent manufacturing and improvement of intelligent manufacturing factories and parks	7、智能制造关键技术装备，智能制造工厂、园区改造
8. Intelligent man-computer interaction systems	8、智能人机交互系统
9. Wearable devices, intelligent robots, and smart homes	9、可穿戴设备、智能机器人、智能家居
10. Intelligent medical care and medical image-assisted diagnosis systems	10、智能医疗，医疗影像辅助诊断系统
11. Intelligent security and video and image identification systems	11、智能安防，视频图像身份识别系统
12. Intelligent transport and intelligent conveyances	12、智能交通，智能运载工具
13. Smart education	13、智能教育
14. Smart cities	14、智慧城市
15. Smart agriculture	15、智能农业
Category II Restriction	第二类　限制类
I. Agriculture and Forestry	一、农林业
1. Overgrazing in natural grassland	1、天然草场超载放牧
2. Production equipment of ordinary particleboard and high- or	2、单线 5 万立方米/年以下的普通刨花板、高中密度纤维

medium-density fiberboard, with a single-line annual output of less than 50,000 cubic meters	板生产装置
3. Production equipment of wood particleboard with a single-line annual output of less than 30,000 cubic meters	3、单线 3 万立方米/年以下的木质刨花板生产装置
4. Rosin production projects with an annual output of less than 1,000 tons	4、1000 吨/年以下的松香生产项目
5. Veterinary powder/pulvis/premix production line projects (excluding varieties with a new veterinary drug certificate and automated, closed and efficient mixture production techniques)	5、兽用粉剂/散剂/预混剂生产线项目（持有新兽药证书的品种和自动化密闭式高效率混合生产工艺除外）
6. Veterinary cell vaccine production line projects in the production mode of roller bottle (excluding varieties with a new veterinary drug certificate and projects using new technology)	6、转瓶培养生产方式的兽用细胞苗生产线项目（持有新兽药证书的品种和采用新技术的除外）
7. Preliminary processing projects of turpentine	7、松脂初加工项目
8. Production and use of disposable wood products and wood packaging with high-quality wood as raw materials, as well as wood and bamboo processing projects with a low comprehensive utilization rate in wood and bamboo processing	8、以优质林木为原料的一次性木制品与木制包装的生产和使用以及木竹加工综合利用率偏低的木竹加工项目
9. Plywood and block board production lines with an annual output of less than 10,000 cubic meters	9、1 万立方米/年以下的胶合板和细木工板生产线
10. Root carving manufacture with rare plants and ancient trees	10、珍稀植物和古树的根雕制造业

11. Processing of rare and endangered wild animals and plants with wild resources as raw materials	11、以野外资源为原料的珍贵濒危野生动植物加工
12. Feeding cage culture in lakes or reservoirs that does not meet the requirements for ecological farming	12、不符合生态养殖要求的湖泊、水库投饵网箱养殖
13. Agricultural development projects in wastelands adverse to ecological protection	13、不利于生态环境保护的开荒性农业开发项目
14. Construction of pulpwood forest bases in water-stressed areas or national ecologically-vulnerable areas	14、缺水地区、国家生态脆弱区纸浆原料林基地建设
15 Projects of conversion of grain into ethanol and edible vegetable oil into bio-fuel that do not conform to national plans or industry policies	15、不符合国家规划及产业政策的粮食转化乙醇、食用植物油料转化生物燃料项目
16. Development projects that destroy woodland, wetland, and grassland	16、破坏林地、湿地、草地的开发项目
II. Coal	二、煤炭
1. Coal mines with an output of less than 300,000 tons/year (or less than 1.2 million tons/year as in the case of Shanxi, Inner Mongolia and Shaanxi, or less than 600,000 tons/year as in the case of Ningxia) and coal and gas outburst mine shafts with an output of less than 900,000 tons/year	1、低于 30 万吨/年的煤矿（其中山西、内蒙古、陕西低于 120 万吨/年，宁夏低于 60 万吨/年），低于 90 万吨/年的煤与瓦斯突出矿井
2. Coal mine projects using non-mechanical mining techniques	2、采用非机械化开采工艺的煤矿项目
3. Coal mine projects with the recovery rate of coal resources	3、煤炭资源回收率达不到国家规定要求的煤矿项目

failing to meet the requirements of the state

4. Coal mine projects failing to undergo the reporting procedure for approval of overall mining area plans as required by the state

4、未按国家规定程序报批矿区总体规划的煤矿项目

5. Coal mine projects with more than two underground stopes

5、井下回采工作面超过 2 个的煤矿项目

6. Coal mines with a mining depth greater than that specified in the Coal Mine Safety Rules, coal mines producing products of which the quality does not meet the requirements of the Interim Measures for the Administration of Commercial Coal Quality, and coal mines of which mining technology and equipment are included in restriction catalog of the Coal Production Technology and Equipment Policy Orientation (2014 Version), which are unable to perform technological improvement

6、开采深度超过《煤矿安全规程》规定的煤矿、产品质量达不到《商品煤质量管理暂行办法》要求的煤矿、开采技术和装备列入《煤炭生产技术与装备政策导向（2014 年版）》限制目录且无法实施技术改造的煤矿

III. Electric Power

三、电力

1. Water-cooled generating sets with coal consumption of over 300g standard coal per kWh, and air-cooled generating sets with coal consumption of over 305g standard coal per kWh, within the coverage of large power grids

1、大电网覆盖范围内，发电煤耗高于 300 克标准煤/千瓦时的湿冷发电机组，发电煤耗高于 305 克标准煤/千瓦时的空冷发电机组

2. Diversion-type hydropower generation without let-down ecological flow

2、无下泄生态流量的引水式水力发电

IV. Petrochemistry

四、石化化工

1. New construction of atmospheric and vacuum distillation units with an annual output of less than 10 million tons, catalytic cracking units with an annual output of less than 1.5 million tons, continuous reforming units (including aromatics extraction) with an annual output of less than 1 million tons, and hydrocracking units with an annual output of 1.5 less than million tons

1、新建 1000 万吨/年以下常减压、150 万吨/年以下催化裂化、100 万吨/年以下连续重整（含芳烃抽提）、150 万吨/年以下加氢裂化生产装置

2. New construction of production units (excluding comprehensive utilization) of ethylene by naphtha cracking with an annual output of less than 800,000 tons, acrylonitrile with an annual output of less than 130,000 tons, purified terephthalic acid with an annual output of less than 1 million tons, ethylene with an annual output of less than 200,000 tons, styrene (excluding ethylbenzene by dry gas process) with an annual output of less than 200,000 tons, caprolactam or ethylene acetic acid with an annual output of less than 100,000 tons, acetic acid by oxo synthesis or methanol by natural gas (other than natural gas containing 20% carbon monoxide) with an annual output of less than 300,000 tons, and coal methanol with an annual output of less than 1 million tons; production units of methyl methacrylate by acetone cyanohydrin process, acetone/butanol by food process, epichlorohydrin by chorohydrin process, and epichlorohydrin by saponification process; and production units of saponin (including hydrolysate) with an annual output of less than 300 tons

2、新建 80 万吨/年以下石脑油裂解制乙烯、13 万吨/年以下丙烯腈、100 万吨/年以下精对苯二甲酸、20 万吨/年以下乙二醇、20 万吨/年以下苯乙烯（干气制乙苯工艺除外）、10 万吨/年以下己内酰胺、乙烯法醋酸、30 万吨/年以下羰基合成法醋酸、天然气制甲醇（CO2 含量 20%以上的天然气除外），100 万吨/年以下煤制甲醇生产装置，丙酮氰醇法甲基丙烯酸甲酯、粮食法丙酮/丁醇、氯醇法环氧丙烷和皂化法环氧氯丙烷生产装置，300 吨/年以下皂素（含水解物）生产装置

3. New construction of production units of polypropylene with an annual output of less than 70,000 tons, polyethylene or polyvinyl chloride by acetylene process with an annual output of less than 200,000 tons, polyvinyl chloride by ethylene

3、新建 7 万吨/年以下聚丙烯、20 万吨/年以下聚乙烯、乙炔法聚氯乙烯、起始规模小于 30 万吨/年的乙烯氧氯化法聚氯乙烯、10 万吨/年以下聚苯乙烯、20 万吨/年以下丙烯

oxychlorination process with an initial scale of less than 300,000 tons, polystyrene with an annual output of less than 100,000 tons, acrylonitrile/butadiene/styrenecopolymer (ABS) with an annual output of less than 200,000 tons, and ordinary synthetic latex-carboxy butadiene-styrene rubber (containing styrene-butadiene latex) with an annual output of less than 30,000 tons; and new construction, reconstruction or expansion of production units of neoprene rubber, styrene-butadiene thermoplastic rubber, polyurethane, and polyacrylate general-purpose solvent based adhesives

腈-丁二烯-苯乙烯共聚物（ABS）、3 万吨/年以下普通合成胶乳-羧基丁苯胶（含丁苯胶乳）生产装置，新建、改扩建氯丁橡胶类、丁苯热塑性橡胶类、聚氨酯类和聚丙烯酸酯类中溶剂型通用胶粘剂生产装置

4. New construction of production units of soda ash (except underground circular production of soda ash and trona), caustic soda (except ion-exchange membrane caustic soda equipment for comprehensive utilization of waste salt), sulfuric acid (other than electronic grade sulfuric acid with a single metal ion ≤100 ppb) with an annual output of less than 300,000 tons, acid with an annual output of less than 200,000 tons made from iron pyrite, nitric acid by atmospheric process and comprehensive process, calcium carbide (except using large advanced process equipment for equivalent replacement), and potassium hydroxide with a single-line production capacity of less than 50,000 tons per year

4、新建纯碱（井下循环制碱、天然碱除外）、烧碱（废盐综合利用的离子膜烧碱装置除外）、30 万吨/年以下硫磺制酸（单项金属离子≤100ppb 的电子级硫酸除外）、20 万吨/年以下硫铁矿制酸、常压法及综合法硝酸、电石（以大型先进工艺设备进行等量替换的除外）、单线产能 5 万吨/年以下氢氧化钾生产装置

5. New construction of production units of sodium tripolyphosphate, sodium hexametaphosphate, phosphorus trichloride, phosphorus pentasulfide, dicalcium phosphate, sodium chlorate, sodium dichromate with low calcium through roasting process, electrolytic manganese dioxide, calcium carbonate, anhydrous sodium sulfate (excluding salt co-production and by-products), barium carbonate, barium sulfate,

5、新建三聚磷酸钠、六偏磷酸钠、三氯化磷、五硫化二磷、磷酸氢钙、氯酸钠、少钙焙烧工艺重铬酸钠、电解二氧化锰、碳酸钙、无水硫酸钠（盐业联产及副产除外）、碳酸钡、硫酸钡、氢氧化钡、氯化钡、硝酸钡、碳酸锶、白炭黑（气相法除外）、氯化胆碱生产装置

barium hydroxide, barium chloride, barium nitrate, strontium carbonate, white carbon black (excluding fumed silica), and choline chloride

6. New construction of production units of yellow phosphorus, sodium cyanide (100%) with an initial scale of less than 30,000 tons per year and with a single-line capacity of less than 10,000 tons per year, lithium carbonate or lithium hydroxide with a single-line production capacity of less than 5,000 tons per year, aluminum fluoride by dry process, and anhydrous aluminum fluoride or cryolite at a medium or low molecular ratio with a single-line production capacity of less than 20,000 tons per year

6、新建黄磷，起始规模小于 3 万吨/年、单线产能小于 1 万吨/年氰化钠（折 100%），单线产能 5 千吨/年以下碳酸锂、氢氧化锂，干法氟化铝及单线产能 2 万吨/年以下无水氟化铝或中低分子比冰晶石生产装置

7. New construction of production units of nitrogen fertilizer with petroleum or natural gas as raw material, ammonia synthetized by fixed layer intermittent gasification technology, and ammonium phosphate; and the purification process of feed gas from synthetic ammonia by copper washing process

7、新建以石油、天然气为原料的氮肥，采用固定层间歇气化技术合成氨，磷铵生产装置，铜洗法氨合成原料气净化工艺

8. New construction of production units of pesticides with high toxicity, high residues or a significant impact on environment (including but not limited to omethoate isocarbophos, isofenphos methyl, phorate, terbufos, methidathion, methyl bromide, methomyl, aldicarb, carbofuran, diphacinone sodium, diphacinone ketones, warfarin, coumatetralyl, bromadiolone, brodifacoum, botulinum toxin, bisultap, ethoprophos, endosulfan, phosphate aluminum, dicofol, organochlorine or organotin insecticides, thiram fungicides, compound sodium nitrophenolate (potassium), chlorsulfuron, ethametsulfuron-methyl, and metsulfuron-methyl)

8、新建高毒、高残留以及对环境影响大的农药原药（包括氧乐果、水胺硫磷、甲基异柳磷、甲拌磷、特丁磷、杀扑磷、溴甲烷、灭多威、涕灭威、克百威、敌鼠钠、敌鼠酮、杀鼠灵、杀鼠醚、溴敌隆、溴鼠灵、肉毒素、杀虫双、灭线磷、磷化铝，有机氯类、有机锡类杀虫剂，福美类杀菌剂，复硝酚钠（钾）、氯磺隆、胺苯磺隆、甲磺隆等）生产装置

9. New construction of production units of glyphosate, chlorpyrifos (except for aqueous phase method), triazophos, paraquat, chlorothalonil, avermectin, imidacloprid, acetochlor (except for the methylene method), and chloropicrin

9、新建草甘膦、毒死蜱（水相法工艺除外）、三唑磷、百草枯、百菌清、阿维菌素、吡虫啉、乙草胺（甲叉法工艺除外）、氯化苦生产装置

10. New construction of production units of titanium dioxide by sulfuric acid process, lead chromate yellow, iron oxide pigments with an annual output of less than 10,000 tons, solvent coating (except coating varieties and production processes in the Encouragement Category), and powder coating containing triglycidyl isocyanurate (TGIC)

10、新建硫酸法钛白粉、铅铬黄、1 万吨/年以下氧化铁系颜料、溶剂型涂料（鼓励类的涂料品种和生产工艺除外）、含异氰脲酸三缩水甘油酯（TGIC）的粉末涂料生产装置

11. New construction of production units of dyes, dye intermediates, organic pigments, and printing and dyeing auxiliaries (except in the Encouragement Category or using technology in the Encouragement Category)

11、新建染料、染料中间体、有机颜料、印染助剂生产装置（鼓励类及采用鼓励类技术的除外）

12. New construction of production units of hydrogen fluoride (HF, excluding those in support of downstream enterprises' processing products for their own use and those in support of phosphoric acid at the electronic grade or by wet process); and new construction of production units of methyl chlorosilane monomer with an initial scale of less than 200,000 tons per year and a single-set scale of less than 100,000 tons per year, production units of methane chloride with an annual output of less than 100,000 tons (excluding those in support of organosilicone) or with an annual output of 100,000 tons or more but without supporting disposal facilities for by-product carbon tetrachoride, production units of chlorodifluoromethane without supporting disposal facilities for by-product

12、新建氟化氢（HF，企业下游深加工产品配套自用、电子级及湿法磷酸配套除外），新建初始规模小于 20 万吨/年、单套规模小于 10 万吨/年的甲基氯硅烷单体生产装置，10 万吨/年以下（有机硅配套除外）和 10 万吨/年及以上、没有副产四氯化碳配套处置设施的甲烷氯化物生产装置，没有副产三氟甲烷配套处置设施的二氟一氯甲烷生产装置，可接受用途的全氟辛基磺酸及其盐类和全氟辛基磺酰氟（其余为淘汰类）、全氟辛酸（PFOA），六氟化硫（SF6，高纯级除外），特定豁免用途的六溴环十二烷（其余为淘汰类）生产装置

fluoroform, and production units of perfluorooctanesulfonic acid for an acceptable use and its salt as well as perfluoro-1-octanesulfonyl fluoride (that other than which is in the Elimination), perfluorooctanoic acid (PFOA), sulfur hexafluoride (SF6) (except for the high-purity grade), and hexabromocyclododecane for a specific exempted use (that other than which is in the Elimination)

13. New construction of production units of diagonal tires and hard cart tires (including barrow tires), nylon cord, steel cord with an annual output of less than 30,000 tons, reclaimed rubber (except ordinary-pressure continuous desulfurization process), pentachlorothiophenol in rubber peptizer, and tetramethylthiuram disulfide (TMTD) in rubber accelerator

13、新建斜交轮胎和力车胎（含手推车胎）、锦纶帘线、3万吨/年以下钢丝帘线、再生胶（常压连续脱硫工艺除外）、橡胶塑解剂五氯硫酚、橡胶促进剂二硫化四甲基秋兰姆（TMTD）生产装置

V. Information industry

五、信息产业

1. Laser disc player production lines (a series of VCD player assembled products)

1、激光视盘机生产线（VCD 系列整机产品）

VI. Iron and Steel

六、钢铁

1. Coking projects without synchronized construction of supporting units for dry quenching coke, coaling, coke pushing, and dust collection by iron and steel associated enterprises; and coking projects without synchronized construction of supporting units for coaling, coke pushing, and dust collection by independent coking enterprises

1、钢铁联合企业未同步配套建设干熄焦、装煤、推焦除尘装置的炼焦项目；独立焦化企业未同步配套建设装煤、推焦除尘装置的炼焦项目

2. Sintering machine (excluding ferroalloy sintering machine

2、180 平方米以下烧结机（铁合金烧结机、铸造用生铁烧

and cast iron sintering machine for casting) of less than 180 square meters

结机除外）

3. Pig iron blast furnaces for steel making with an effective volume of not less than 400 cubic meters nor more than 1,200 cubic meters; and pig iron blast furnaces for steel making with an effective volume of 1,200 cubic meters or more which fail to meet the mandatory standards for environmental protection, energy consumption, and safety, among others

3、有效容积 400 立方米以上 1200 立方米以下炼钢用生铁高炉；1200 立方米及以上但达不到环保、能耗、安全等强制性标准的炼钢用生铁高炉

4. Steelmaking converters with a nominal capacity of more than 30 tons but less than 100 tons; and steelmaking converters with a nominal capacity of 100 tons or more which fail to meet the mandatory standards for environmental protection, energy consumption, and safety, among others

4、公称容量 30 吨以上 100 吨以下炼钢转炉；公称容量 100 吨及以上但达不到环保、能耗、安全等强制性标准的炼钢转炉

5. Electric arc furnaces with a nominal capacity of 30 tons or more but less than 100 tons (50 tons for alloy steel); and electric arc furnaces with a nominal capacity of 100 tons (50 tons for alloy steel) or more which fail to meet the mandatory standards for environmental protection, energy consumption, and safety, among others

5、公称容量 30 吨以上 100 吨（合金钢 50 吨）以下电弧炉；公称容量 100 吨（合金钢 50 吨）及以上但达不到环保、能耗、安全等强制性标准的电弧炉

6. Hot rolling strip steel projects (excluding special steel) of less than 1,450 mm

6、1450 毫米以下热轧带钢（不含特殊钢）项目

7. Hot-galvanized coil projects with an annual output of 300,000 tons or less

7、30 万吨/年及以下热镀锌板卷项目

8. Color coated coil projects with an annual output of 200,000 tons or less

8、20 万吨/年及以下彩色涂层板卷项目

9. Chromite-containing refractories

9、含铬质耐火材料

10. Tamping equipment and baking equipment of common-power and high-power graphite electrodes as well as production lines

10、普通功率和高功率石墨电极压型设备、焙烧设备和生产线

11. Ultra-high-power graphite electrode production lines with a diameter of less than 600 mm or with an annual output of less than 20,000 tons

11、直径 600 毫米以下或 2 万吨/年以下的超高功率石墨电极生产线

12. Production lines of prebaked anode (carbon blocks) with an annual output of less than 80,000 tons, ordinary cathode blocks with an annual output of less than 20,000 tons, and carbon electrodes with an annual output of less than 40,000 tons

12、8 万吨/年以下预焙阳极（炭块）、2 万吨/年以下普通阴极炭块、4 万吨/年以下炭电极生产线

13. Pelletizing equipment with an annual unit output of less than 1.2 million tons (excluding ferroalloy pellets and cast iron pellets for casting)

13、单机 120 万吨/年以下的球团设备（铁合金、铸造用生铁球团除外）

14. Coking projects with the height of a top-loading coke carbonization chamber lower than 6.0 meters, the height of tamping coke carbonization chamber lower than 5.5 meters, and an annual output of less than 1 million tons; coking projects with a heat recovery coke oven processing stamped briquette < 35="" cubic="" meters="" in="" volume="" and="" an="" enterprise=""><1 million="" tons/year="" (casting="" coke=""><600,000 tons/year);="" and="" coking="" projects="" with="" semi-coke="" ovens="" each="" having="" an="" output=""><100,000 tons/year="" and="" an="" enterprise="" output=""><1 million="">

14、顶装焦炉炭化室高度<><5.5 米，100 万吨><><100 万吨><60 万吨><10 万吨><100 万吨>

15. Refining furnaces of medium- or low-carbon ferromanganese, electric manganese metal, and medium-, low- or micro-carbon ferrochrome of 3,000 kva or above not by hot charging and hot exchange processes

15、3000 千伏安及以上，未采用热装热兑工艺的中低碳锰铁、电炉金属锰和中低微碳铬铁精炼电炉

16. Ferromanganese blast furnaces of less than 300 cubic meters; ferromanganese blast furnaces of 300 cubic meters or more with a coke ratio higher than 1,320kg per ton; ferromanganese blast furnace enterprises with a scale of less than 100,000 tons per year

16、300 立方米以下锰铁高炉；300 立方米及以上，但焦比高于 1320 千克/吨的锰铁高炉；规模小于 10 万吨/年的锰铁高炉企业

17. Ore-smelting electric furnaces of calcium alloys and calcium-barium-aluminum alloys of less than 12,500 kva; and ore-smelting electric furnaces of 12,500 kva or more with calcium-silicon alloy power consumption higher than 11,000 kWh per ton

17、1.25 万千伏安以下的硅钙合金和硅钙钡铝合金矿热电炉；1.25 万千伏安及以上，但硅钙合金电耗高于 11000 千瓦时/吨的矿热电炉

18. Silumin smelting electric furnaces of less than 16,500 kva; and ore-smelting electric furnaces of 16,500 kva or more with silumin power consumption higher than 9,000 kWh per ton

18、1.65 万千伏安以下硅铝合金矿热电炉；1.65 万千伏安及以上，但硅铝合金电耗高于 9000 千瓦时/吨的矿热电炉

19. Ordinary ferroalloy smelting electric furnaces of less than 2 × 25,000 kva (capacity of smelting electric furnaces; 2 × 12,500 kva in key poverty-stricken areas of central and western China as determined by the state, where small-scale hydropower stations operate independently and mineral resources are rich); and ordinary ferroalloy smelting electric furnaces of 2 × 25,000 kva or more but with transformers not using motor-driven, multi-stage regulating three-phase or three single-phase energy-saving equipment, without mechanized

19、2×2.5 万千伏安以下普通铁合金矿热电炉（中西部具有独立运行的小水电及矿产资源优势的国家确定的重点贫困地区，矿热电炉容量<2×1.25 万千伏安）；2×2.5 万千伏安及以上，但变压器未选用有载电动多级调压的三相或三个单相节能型设备，未实现工艺操作机械化和控制自动化，硅铁电耗高于 8500 千瓦时>

process operation and automated process control, or with ferrosilicon power consumption higher than 8,500 kWh per ton, industrial silicon power consumption higher than 12,000 kWh per ton, electric furnace ferromanganese power consumption higher than 2,600 kWh per ton, manganese alloy power consumption higher than 4,200 kWh per ton, high-carbon ferrochrome power consumption higher than 3,200 kWh per ton, or silicochromium power consumption higher than 4,800 kWh per ton

20. Electric manganese metal leaching process with intermittent leaching and intermittent liquid feeding; enterprises with a single-line (transformer) annual output of less than 10,000 tons and with the total annual electric manganese metal output of less than 30,000 tons

20、间断浸出、间断送液的电解金属锰浸出工艺；10000 吨/年以下电解金属锰单条生产线（一台变压器），电解金属锰生产总规模为 30000 吨/年以下的企业

21. Independent hot rolling production lines without supporting steelmaking operations in the factory area

21、厂区内无配套炼钢工序的独立热轧生产线

VII. Nonferrous Metals

七、有色金属

1. New construction and expansion of tungsten mining projects with tungsten metal reserves of less than 10,000 tons and an annual mining scale of less than 300,000 tons of ore (except for expansion projects for the mining of deep and edge resources in existing tungsten mines), tungsten, molybdenum, tin, and antimony smelting projects (except those that meet the requirements of national laws and regulations on environmental protection and energy conservation, among others) and antimony oxide and lead-tin solder production projects, and rare earth mining, dressing, smelting, and

1、新建、扩建钨金属储量小于 1 万吨、年开采规模小于 30 万吨矿石量的钨矿开采项目（现有钨矿山的深部和边部资源开采扩建项目除外），钨、钼、锡、锑冶炼项目（符合国家环保节能等法律法规要求的项目除外）以及氧化锑、铅锡焊料生产项目，稀土采选、冶炼分离项目（符合稀土开采、冶炼分离总量控制指标要求的稀土企业集团项目除外）

separation projects (except rare earth enterprise group projects that meet the total quantity control requirements for rare earth mining, smelting, and separation)

2. Blister copper smelting projects with a single-series annual output of less than 100,000 tons (except reclaimed copper projects and oxidized ore direct leaching project)

2、单系列 10 万吨/年规模以下粗铜冶炼项目（再生铜项目及氧化矿直接浸出项目除外）

3. Electrolytic aluminum projects (except capacity replacement projects)

3、电解铝项目（产能置换项目除外）

4. Lead smelting projects with a single-series annual output of less than 50,000 tons (excluding technical improvement and environmental protection transformation projects without increase in production capacity)

4、单系列 5 万吨/年规模以下铅冶炼项目（不新增产能的技改和环保改造项目除外）

5. Zinc smelting projects with a single-series annual output of less than 100,000 tons (excluding direct leaching)

5、单系列 10 万吨/年规模以下锌冶炼项目（直接浸出除外）

6. Magnesium smelting projects (excluding comprehensive utilization projects and advanced energy-saving and environmental-friendly technique and technology improvement projects)

6、镁冶炼项目（综合利用项目和先进节能环保工艺技术改造项目除外）

7. Independent aluminum carbon projects with an annual output of less than 100,000 tons

7、10 万吨/年以下的独立铝用炭素项目

8. New construction of secondary lead projects with a single-series production capacity of less than 50,000 tons per year, reconstruction or expansion of secondary lead projects with a

8、新建单系列生产能力 5 万吨/年及以下、改扩建单系列生产能力 2 万吨/年及以下，以及资源利用、能源消耗、环境保护等指标达不到行业准入条件要求的再生铅项目

single-series production capacity of less than 20,000 tons per year, and secondary lead projects failing to meet the industry access conditions in indicators such as resource use, energy consumption, and environmental protection

9. New construction and expansion of primary mercury mining projects

9、新建、扩建原生汞矿开采项目

VIII. Gold

八、黄金

1. Independent cyanidation projects with a daily gold concentrate processing capacity of less than 200 tons and a raw material self-supply ability of less than 50% (except for bio-gold cyanidation process)

1、日处理金精矿 200 吨（不含）以下的原料自供能力不足 50%（不含）的独立氰化项目（生物氰化提金工艺除外）

2. Independent gold concentration plant projects with a daily ore processing capacity of less than 300 tons and without a supporting mining system

2、日处理矿石 300 吨（不含）以下的无配套采矿系统的独立黄金选矿厂项目

3. Pyrometallurgical process projects of independent gold smelters without a supporting mining system with a daily gold concentrate processing capacity of less than 200 tons

3、日处理金精矿 200 吨（不含）以下的无配套采矿系统的独立黄金冶炼厂火法冶炼项目

4. Independent heap leaching field projects without a supporting mining system with a processing capacity of less than 1500 tons/day

4、1500 吨/日（不含）以下的无配套采矿系统的独立堆浸场项目

5. Surface mining and dressing projects with a daily rock gold ore processing capacity of less than 300 tons and underground mining and dressing projects with a daily rock gold ore

5、日处理岩金矿石 300 吨（不含）以下的露天采选项目、100 吨（不含）以下的地下采选项目

processing capacity of less than 100 tons

6. Gulch gold mining projects with an annual gulch gold ore processing capacity of less than 300,000 cubic meters

6、年处理砂金矿砂 30 万（不含）立方米以下的砂金开采项目

7. Gulch gold mining projects in forests, basic farmland, and river courses

7、在林区、基本农田、河道中开采砂金项目

IX. Building Materials

九、建材

1. New-type clinker cement production lines by dry process with a daily output of less than 2,000 tons (except special cement production lines) and cement grinding stations with an annual output of less than 600,000 tons

1、2000 吨/日（不含）以下新型干法水泥熟料生产线（特种水泥生产线除外），60 万吨/年（不含）以下水泥粉磨站

2. Architectural ceramics (excluding architectural glazed products) production lines with an annual output of 1.5 million square meters or less

2、150 万平方米/年及以下的建筑陶瓷（不包括建筑琉璃制品）生产线

3. Tunnel kiln sanitary ceramics production lines with an annual output of less than 600,000 pieces

3、60 万件/年（不含）以下的隧道窑卫生陶瓷生产线

4. Paper-faced gypsum board production lines with an annual output of less than 30 million square meters (except in Tibet)

4、3000 万平方米/年（不含）以下的纸面石膏板生产线（西藏除外）

5. Medium-alkali glass fiber drawing production lines by tank furnace process; alkali-free glass fiber roving tank furnace drawing production lines with a single tank furnace output of less than 80,000 tons/year; medium-alkali, alkali-free, and alkali-resistant glass ball furnace production lines; and

5、中碱玻璃纤维池窑法拉丝生产线；单窑规模小于 8 万吨/年（不含）的无碱玻璃纤维粗纱池窑拉丝生产线；中碱、无碱、耐碱玻璃球窑生产线；中碱、无碱玻璃纤维代铂坩埚拉丝生产线

medium-alkali and alkali-free glass fiber platinum-substitute crucible drawing production lines

6. Hollow clay brick production lines (excluding Shaanxi, Qinghai, Gansu, Xinjiang, Tibet, and Ningxia)

6、粘土空心砖生产线（陕西、青海、甘肃、新疆、西藏、宁夏除外）

7. Gypsum (hollow) building block production lines with an annual output of less than 150,000 square meters, fixed production lines of small concrete hollow bricks with a single-shift annual output of less than 50,000 cubic meters and concrete floor bricks with a single-shift annual output of less than 150,000 square meters, and artificial lightweight aggregate (ceramic aggregate) production lines with an annual output of less than 50,000 cubic meters

7、15 万平方米/年（不含）以下的石膏（空心）砌块生产线、单班 5 万立方米/年（不含）以下的混凝土小型空心砌块以及单班 15 万平方米/年（不含）以下的混凝土铺地砖固定式生产线、5 万立方米/年（不含）以下的人造轻集料（陶粒）生产线

8. Aerated concrete production lines with an annual output of less than 150,000 cubic meters

8、15 万立方米/年（不含）以下的加气混凝土生产线

9. Sintered brick and sintered hollow block production lines with an output of less than 60 million standard bricks/year

9、6000 万标砖/年（不含）以下的烧结砖及烧结空心砌块生产线

10. Rock (mineral) wool production lines with an annual output of less than 30000 tons and glass wool product production lines with an annual output of less than 8,000 tons

10、30000 吨/年以下岩（矿）棉制品生产线和 8000 吨/年以下玻璃棉制品生产线

11. Production lines of prestressed high-strength concrete centrifugal piles with an annual output of 1 million meters or less

11、100 万米/年及以下预应力高强混凝土离心桩生产线

12. Production lines of prestressed concrete cylinder pipe

12、预应力钢筒混凝土管（简称 PCCP 管）生产线（PCCP-L

(PCCP): PCCP-L type: annual designed production capacity ≤ 50 kilometers, PCCP-E-type: annual designed production capacity ≤ 30 kilometers

型：年设计生产能力≤50 千米；PCCP-E 型：年设计生产能力≤30 千米）

X. Medicine

十、医药

1. New construction or expansion of production units of gulonic acid and vitamin C powder (for drug, food, feed, and cosmetic uses) and new construction of raw material production units of vitamin B1, vitamin B2, vitamin B12 and vitamin E for drug, food, feed, cosmetic and other uses

1、新建、扩建古龙酸和维生素 C 原粉（包括药用、食品用、饲料用、化妆品用）生产装置，新建药品、食品、饲料、化妆品等用途的维生素 B1、维生素 B2、维生素 B12、维生素 E 原料生产装置

2. New construction of production units of penicillin industrial salt, 6-aminopenicillanic acid (6-APA), 7-aminocephalosporanic acid (7-ACA) produced by chemical method, 7-amino-3-desacetoxycephalos cephalosporin acid (7-ADCA) by chemical method, penicillin V, ampicillin, amoxicillin, cephalosporins C fermentation, oxytetracycline, tetracycline, chloramphenicol, dipyrone, paracetamol, lincomycin, gentamicin, dihydrostreptomycin, amikacin, midecamycin, leucomycin, ciprofloxacin, norfloxacin, ofloxacin, rifampin, caffeine, and theobromine

2、新建青霉素工业盐、6-氨基青霉烷酸（6-APA）、化学法生产 7-氨基头孢烷酸（7-ACA）、化学法生产 7-氨基-3-去乙酰氧基头孢烷酸（7-ADCA）、青霉素 V、氨苄青霉素、羟氨苄青霉素、头孢菌素 c 发酵、土霉素、四环素、氯霉素、安乃近、扑热息痛、林可霉素、庆大霉素、双氢链霉素、丁胺卡那霉素、麦迪霉素、柱晶白霉素、环丙氟哌酸、氟哌酸、氟嗪酸、利福平、咖啡因、柯柯豆碱生产装置

3. New construction of production units of paclitaxel (excluding ancillary taxus chinensis planting) and berberine by phytoextraction method (excluding ancillary berberine planting)

3、新建紫杉醇（配套红豆杉种植除外）、植物提取法黄连素（配套黄连种植除外）生产装置

4. New construction, reconstruction, and expansion of production units of medicinal butyl rubber stoppers and plastic bottles for transfusion by two-step method

4、新建、改扩建药用丁基橡胶塞、二步法生产输液用塑料瓶生产装置

5. New construction, reconstruction, and expansion of production units of products containing endangered animals or plants as medicinal materials which have not been bred or planted on a large scale	5、新建及改扩建原料含有尚未规模化种植或养殖的濒危动植物药材的产品生产装置
6. New construction, reconstruction, and expansion of production units of mercury-filled glass thermometers, sphygmomanometers and silver amalgam dental materials; and new construction of production units of disposable syringes, blood transfusion apparatus, or infusion apparatus with an annual output of less than 200 million pieces	6、新建、改扩建充汞式玻璃体温计、血压计生产装置、银汞齐齿科材料，新建 2 亿支/年以下一次性注射器、输血器、输液器生产装置
XI. Machinery	十一、机械
1. Manufacturing projects of drill jambos with two arms or less	1、2 臂及以下凿岩台车制造项目
2. Manufacturing projects of rock loaders (excluding vertical claw rock loaders)	2、装岩机（立爪装岩机除外）制造项目
3. Manufacturing projects of small mining cars of 3 cubic meters or less	3、3 立方米及以下小矿车制造项目
4. Winch manufacturing projects with a diameter of 2.5 meters or less	4、直径 2.5 米及以下绞车制造项目
5. Manufacturing projects of mine hoisters with a diameter of 3.5 meters or less	5、直径 3.5 米及以下矿井提升机制造项目
6. Manufacturing projects of screening machines of 40 square meters or less	6、40 平方米及以下筛分机制造项目

7. Manufacturing projects of hydrocyclones with a diameter of 700 mm or less	7、直径 700 毫米及以下旋流器制造项目
8. Manufacturing projects of coal cutters of 800 kW or less	8、800 千瓦及以下采煤机制造项目
9. Manufacturing projects of mining excavators with a bucket capacity of 3.5 cubic meters or less	9、斗容 3.5 立方米及以下矿用挖掘机制造项目
10. Manufacturing projects of mining agitation, concentration and filtration equipment (excluding pressurization type)	10、矿用搅拌、浓缩、过滤设备（加压式除外）制造项目
11. Enterprise projects for special vehicles for ordinary transport and trailers for ordinary transport such as stake vehicles, side-wall vehicles, dump vehicles, ordinary box vans; and three-wheeled vehicles and low-speed electric vehicles	11、仓栅车、栏板车、自卸车和普通厢式车等普通运输类专用汽车和普通运输类挂车企业项目；三轮汽车、低速电动车
12. Manufacturing projects of single cylinder diesels	12、单缸柴油机制造项目
13. Small belt-driven four-wheel tractors with single-cylinder diesels, walking tractors with single-cylinder diesels, and wheeled tractors of less than 50 hp with sliding gear transmission and failing to meet emission requirements	13、配套单缸柴油机的皮带传动小四轮拖拉机，配套单缸柴油机的手扶拖拉机，滑动齿轮换档、排放达不到要求的 50 马力以下轮式拖拉机
14. Manufacturing projects of conventional coal-fired thermal power equipment of 300,000-kW grade or lower (except comprehensive utilization units)	14、30 万千瓦级及以下常规燃煤火力发电设备制造项目（综合利用机组除外）
15. Manufacturing projects of crosslinking power cables by dry method of 6 kV or more (for land use)	15、6 千伏及以上（陆上用）干法交联电力电缆制造项目

16. Manufacturing projects of non-CNC metal-cutting machine tools	16、非数控金属切削机床制造项目
17. Manufacturing projects of standard mechanical presses of 6,300 kn or less	17、6300 千牛及以下普通机械压力机制造项目
18. Manufacturing projects of non-CNC shearing machines, bending machines, and tube bending machines	18、非数控剪板机、折弯机、弯管机制造项目
19. Projects of ordinary high-speed steel drills, milling cutters, saw blades, screw taps, and screw dies	19、普通高速钢钻头、铣刀、锯片、丝锥、板牙项目
20. Manufacturing projects of brown corundum, green silicon carbide, black silicon carbide, and other agglomerate blocks	20、棕刚玉、绿碳化硅、黑碳化硅等烧结块项目
21. Various bonded grinding wheels with a diameter of less than 450 mm and a grinding speed of less than 40 m/s (excluding rail grinding wheels)	21、直径 450 毫米以下且磨削速度 40 米/秒以下的各种结合剂砂轮（钢轨打磨砂轮除外）
22. Manufacturing projects of synthetic diamond cutting blades with a diameter of 400 mm or less	22、直径 400 毫米及以下人造金刚石切割锯片制造项目
23. Manufacturing projects pf ordinary microminiature bearings at the P0 level and with a diameter of less than 60 mm	23、P0 级、直径 60 毫米以下普通微小型轴承制造项目
24. Power transformers of 220 kV or less (excluding amorphous alloy, wound core, and other energy-saving distribution transformers)	24、220 千伏及以下电力变压器（非晶合金、卷铁芯等节能配电变压器除外）
25. Manufacturing projects of high-, medium- and low-voltage switchgears of 220 kV or less (excluding disconnect	25、220 千伏及以下高、中、低压开关柜制造项目（使用环

switchgears using environment-friendly medium voltage gas and explosion-proof switchgears for use in an explosive environment)	保型中压气体的绝缘开关柜以及用于爆炸性环境的防爆型开关柜除外）
26. Manufacturing projects of acidic carbon steel electrodes	26、酸性碳钢焊条制造项目
27. Manufacturing projects of civil ordinary watt hour meters	27、民用普通电度表制造项目
28. Manufacturing projects of ordinary low-grade standard fasteners lower than grade 8.8	28、8.8 级以下普通低档标准紧固件制造项目
29. Manufacturing projects of general-purpose fixed reciprocating piston air compressors) with a drive motor power of 560 kW or less and a rated discharge pressure of 1.25 MPa or less)	29、一般用途固定往复活塞空气压缩机（驱动电动机功率 560 千瓦及以下、额定排气压力 1.25 兆帕及以下）制造项目
30. General transport dry container projects	30、普通运输集装干箱项目
31. Manufacturing projects of single-stage axially split pumps of 56 inches or less	31、56 英寸及以下单级中开泵制造项目
32. Manufacturing projects of universal middle- and low-pressure carbon steel valves of 10 MPa or less	32、通用类 10 兆帕及以下中低压碳钢阀门制造项目
33. Cupolas of 5 tons per hour or less with a short furnace life	33、5 吨/小时及以下短炉龄冲天炉
34. Hexachloroethane refining of nonferrous alloys and SF6 protection of magnesium alloys	34、有色合金六氯乙烷精炼、镁合金 SF6 保护
35. Cupola melting using metallurgical coke	35、冲天炉熔化采用冶金焦

36. Coremaking technology by used sand reclamation-free sodium silicate-bonded sand molding	36、无旧砂再生的水玻璃砂造型制芯工艺
37. Salt bath nitrocarburizing or sulphonitrocarburizing furnaces and salt	37、盐浴氮碳、硫氮碳共渗炉及盐
38. Electronic-tube high-frequency induction heating equipment	38、电子管高频感应加热设备
39. Nitrite corrosion inhibitors and preservatives	39、亚硝盐缓蚀、防腐剂
40. Oil-fired heating furnaces for casting/forging	40、铸/锻造用燃油加热炉
41. Coal-fired heating furnaces for forging	41、锻造用燃煤加热炉
42. Manual gas forging furnaces	42、手动燃气锻造炉
43. Steam hammers	43、蒸汽锤
44. Arc welding transformers	44、弧焊变压器
45. Brazing filler metal containing lead or cadmium	45、含铅和含镉钎料
46. Assembly projects of tunnel boring machines	46、全断面掘进机整机组装项目
47. Free forging hydraulic machine projects of 10,000 tons or more	47、万吨级以上自由锻造液压机项目
48. Castings and forgings produced using equipment and	48、使用淘汰类和限制类设备及工艺生产的铸件、锻件；

techniques in the Elimination Category and Restriction Category; and clay sand casting projects not adopting automatic molding equipment, sodium silicate investment precision casting projects, centrifugal ductile iron pipe projects with an output of less than 200,000 tons/year, and centrifugal gray cast iron pipe projects with an output of less than 30,000 tons/year

不采用自动化造型设备的粘土砂型铸造项目、水玻璃熔模精密铸造项目、规模小于 20 万吨/年的离心球墨铸铁管项目、规模小于 3 万吨/年的离心灰铸铁管项目

49. Moving-coil and tapped manual electrode welding machines

49、动圈式和抽头式手工焊条弧焊机

50. Y series (IP44) of three-phase asynchronous motors (frame size: 80 through 355) and its derivative series; and Y2 series (IP54) three-phase asynchronous motors (frame size 63 through 355)

50、Y 系列（IP44）三相异步电动机（机座号 80～355）及其派生系列，Y2 系列（IP54）三相异步电动机（机座号 63～355）

51. Backpack-type manual compression sprayers

51、背负式手动压缩式喷雾器

52. Backpack-type mobile sprayer-dusters

52、背负式机动喷雾喷粉机

53. Manual transplanters

53、手动插秧机

54. Tea processing machines made of bronze

54、青铜制品的茶叶加工机械

55. Double-disc friction screw presses

55、双盘摩擦压力机

56. Powder metallurgy components containing lead

56、含铅粉末冶金件

57. Segmented construction projects of exported ships

57、出口船舶分段建造项目

XII. Light Industry

十二、轻工

1. Production lines of PVC common artificial leather

1、聚氯乙烯普通人造革生产线

2. Production lines with an annual raw hide processing capacity of less than 200,000 standard cowhide pieces and production lines with an annual wet blue hide processing capacity of less than 100,000 standard cowhide pieces

2、年加工生皮能力 20 万标张牛皮以下的生产线，年加工蓝湿皮能力 10 万标张牛皮以下的生产线

3. polyurethane foam production lines with hydrochloroflurocarbon (HCFCs) as refrigerants, foaming agents, fire extinguishing agents, solvents, cleaning agents, or processing aids, or for other controlled uses, extruded polystyrene foam (XPS) production lines, and production lines for refrigerators, freezers, automotive air conditioners, and industrial and commercial cold storage and refrigeration equipment

3、以含氢氯氟烃（HCFCs）为制冷剂、发泡剂、灭火剂、溶剂、清洗剂、加工助剂等受控用途的聚氨酯泡沫塑料生产线、连续挤出聚苯乙烯泡沫塑料（XPS）生产线以及冰箱、冰柜、汽车空调器、工业商业用冷藏、制冷设备生产线

4. Polyvinyl chloride (PVC) food packaging films

4、聚氯乙烯（PVC）食品保鲜包装膜

5. General lighting incandescent lamps

5、普通照明白炽灯

6. Sewing machines with a maximum speed of less than 4,000 stitches/min (excluding thick material sewing machine) and overlock machines with a maximum speed of less than 5,000 stitches/min

6、最高转速低于 4000 针/分钟的平缝机（不含厚料平缝机）和最高转速低于 5000 针/分钟的包缝机

7. Electronic price computing scales (with accuracy less than 1/3,000 of the maximum weight and with a weighing range not more than 15kg), electronic belt conveyor scales (with

7、电子计价秤（准确度低于最大称量的 1/3000，称量≤15 千克）、电子皮带秤（准确度低于最大称量的 5/1000）、电子吊秤（准确度低于最大称量的 1/1000，称量≤50

accuracy less than 5/1,000 of the maximum weight), electronic crane scales (with accuracy less than 1/1,000 of the maximum weight and with a weighting range not more than 50 tons), and spring scales (with accuracy less than 1/400 of the maximum weight and with a weighting range not more than 8kg)

吨）、弹簧度盘秤（准确度低于最大称量的 1/400，称量≤8 千克）

8. Electronic motor truck scales (with accuracy less than 1/3,000 of the maximum weight and with a weighting range not more than 300 tons), electronic static rail weighbridges (with accuracy less than 1/3,000 of the maximum weight and with a weighting range not more than 150 tons), and electronic dynamic rail weighbridges (with accuracy less than 1/500 of the maximum weight and with a weighting range not more than 150 tons)

8、电子汽车衡（准确度低于最大称量的 1/3000，称量≤300 吨）、电子静态轨道衡（准确度低于最大称量的 1/3000，称量≤150 吨）、电子动态轨道衡（准确度低于最大称量的 1/500，称量≤150 吨）

9. Glass vacuum flask production lines

9、玻璃保温瓶胆生产线

10. Glass container production lines with an annual output of 30,000 tons or less

10、3 万吨/年及以下的玻璃瓶罐生产线

11. Preparation and weighing of glass batch in manual mode

11、以人工操作方式制备玻璃配合料及秤量

12. Glass furnaces failing the indicators set out in the cleaner production evaluation index system for daily use glass industry

12、未达到日用玻璃行业清洁生产评价指标体系规定指标的玻璃窑炉

13. Fatty alcohol products produced by oxo synthesis and Ziegler process

13、羰基合成法及齐格勒法生产的脂肪醇产品

14. Sodium tripolyphosphate production lines by hot method

14、热法生产三聚磷酸钠生产线

15. Production techniques and equipment of monolayer spray gun detergents and sulfonation units with a scale of less than 1.6 tons/hour

15、单层喷枪洗衣粉生产工艺及装备、1.6 吨/小时以下规模磺化装置

16. Northern seasalt projects with an annual output of less than 1 million tons; southern seasalt field projects; mine (well) salt projects with an annual output of less than 600,000 tons

16、100 万吨/年以下北方海盐项目；南方海盐盐场项目；60 万吨/年以下矿（井）盐项目

17. Monochrome metal plate offset presses

17、单色金属板胶印机

18. A production line of chemical wood pulp with an annual output of less than 300,000 tons, chemi-mechanical wood pulp with an annual output of less than 100,000 tons, or chemical bamboo pulp with an annual output of less than 100,000 tons

18、单条化学木浆 30 万吨/年以下、化学机械木浆 10 万吨/年以下、化学竹浆 10 万吨/年以下的生产线

19. Raw sugar processing projects and projects with a daily processing capacity of 5,000 tons of sugarcanes (3,000 tons in Yunnan) or a daily processing capacity of 3,000 tons of sugar beets

19、原糖加工项目及日处理甘蔗 5000 吨（云南地区 3000 吨）、日处理甜菜 3000 吨以下的项目

20. Alcohol production lines

20、酒精生产线

21. Production lines of saccharin and other synthetic sweeteners

21、糖精等化学合成甜味剂生产线

22. Soybean crushing and leaching projects (excluding main soybean producing areas of Heilongjiang, Jilin and Inner Mongolia); oil processing projects with a single-line daily processing capacity of less than 200 tons of rapeseed or cottonseed or less than 100 tons of peanuts in eastern and

22、大豆压榨及浸出项目（黑龙江、吉林、内蒙古大豆主产区除外）；东、中部地区单线日处理油菜籽、棉籽 200 吨及以下，花生 100 吨及以下的油料加工项目；西部地区单线日处理油菜籽、棉籽、花生等油料 100 吨及以下的加工项目

central China; and processing projects with a single-line daily processing capacity of less than 100 tons of rapeseed, cottonseed, peanuts, or any other oil plant in western regions

23. Corn starch production lines with an annual processing capacity of less than 450,000 tons (or less than 10,000 tons, in the case of waxy corn, high-amylose corn or other special corn) and an absolute dry extraction rate of less than 98%

23、年加工玉米 45 万吨以下、绝干收率在 98%以下玉米淀粉（蜡质玉米、高直链玉米等特种玉米年加工规模 1 万吨以下）

24. Slaughter construction projects with an annual slaughtering capacity of 150,000 pigs or less, 10,000 beef cattle or less, 150,000 meat sheep or less, or 10 million poultry or less (excluding minority areas)

24、年屠宰生猪 15 万头及以下、肉牛 1 万头及以下、肉羊 15 万只及以下、活禽 1000 万只及以下的屠宰建设项目（少数民族地区除外）

25. Western-style meat processing projects with an annual output of 3,000 tons or less

25、3000 吨/年及以下的西式肉制品加工项目

26. An annual output of 2,000 tons (dry) or less of yeast products

26、年产 2000 吨（折干）及以下酵母制品

27. Production lines of frozen sea surimi

27、冷冻海水鱼糜生产线

28. Grid casting, powdering, powder feeding, powder filling, mixing, plate pasting, plate brushing, acid preparation and filling, tank formation, weighing plate, plate wrapping, and other manual operations in the production of lead-acid batteries

28、铅酸蓄电池生产中铸板、制粉、输粉、灌粉、和膏、涂板、刷板、配酸灌酸、外化成、称板、包板等人工作业工艺

29. Production of lead-acid batteries using the tank formation technique

29、采用外化成工艺生产铅酸蓄电池

30. Citric acid production lines with an annual output of less than 50,000 tons

30、年产 5 万吨以下柠檬酸生产线

31. Lysine and threonine production lines with an output of 100,000 tons/year or less; and glutamic acid production lines with an output of 200,000 tons/year or less

31、10 万吨/年及以下赖氨酸、苏氨酸生产线；20 万吨/年及以下谷氨酸生产线

XIII. Textile

十三、纺织

1. Continuous polymerization production units of conventional polyester (PET) with a single-line annual production capacity of less than 200,000 tons

1、单线产能小于 20 万吨/年的常规聚酯（PET）连续聚合生产装置

2. Manufacturing techniques of conventional polyester by dimethyl terephthalate (DMT) process

2、常规聚酯的对苯二甲酸二甲酯（DMT）法生产工艺

3. Production lines of semi-continuously spinning viscose filament yarns

3、半连续纺粘胶长丝生产线

4. Intermittent spandex polymer production units

4、间歇式氨纶聚合生产装置

5. Semi-automatic winding equipment for conventional chemical fiber filaments with a spindle axial length of 1,200 mm or less

5、常规化纤长丝用锭轴长 1200 毫米及以下的半自动卷绕设备

6. Viscose plate-and-frame filter separators

6、粘胶板框式过滤机

7. Production lines of conventional polypropylene spunbonded non-woven fabrics with a single-line annual production capacity of 1,000 tons or less and with a breadth of 2 meters or

7、单线产能≤1000 吨/年、幅宽≤2 米的常规丙纶纺粘法非织造布生产线

less

8. Carding machines of less than 25 kg/hour	8、25 公斤/小时以下梳棉机
9. Cotton combers of less than 200 nips/min	9、200 钳次/分钟以下的棉精梳机
10. Automatic rotor spinning equipment of less than 50,000 rpm	10、5 万转/分钟以下自排杂气流纺设备
11. FA502 and FA503 spinning frames	11、FA502、FA503 细纱机
12. Rapier looms with a weft insertion rate of less than 600 meters/min, air-jet looms with a weft insertion rate of less than 700 meters/min, and water jet looms with a weft insertion rate of less than 900 meters/min	12、入纬率小于 600 米/分钟的剑杆织机，入纬率小于 700 米/分钟的喷气织机，入纬率小于 900 米/分钟的喷水织机
13. Sizing process and products using polyvinyl alcohol slurry (PVA) (excluding polyester cotton products and high-count and high-density pure cotton products)	13、采用聚乙烯醇浆料（PVA）上浆工艺及产品（涤棉产品，纯棉的高支高密产品除外）
14. Wool scouring techniques and equipment using more than 20 tons of raw wool scouring water	14、吨原毛洗毛用水超过 20 吨的洗毛工艺与设备
15. Vertical-type silk reeling techniques and equipment of dupioni silk and tussah silk	15、双宫丝和柞蚕丝的立式缫丝工艺与设备
16. Skein dyeing techniques	16、绞纱染色工艺
17. Sodium chlorite bleaching equipment	17、亚氯酸钠漂白设备

18. Carrier dyeing of ordinary polyester	18、普通涤纶载体染色
XIV. Tobacco	**十四、**烟草
1. Tobacco product processing projects	1、烟草制品加工项目
XV. Industrial Explosive Products	**十五、**民爆产品
1. Non-man-machine-separation and non-continuous and automated detonator assembly lines	1、非人机隔离的非连续化、自动化雷管装配生产线
2. Non-continuous and automated explosive production lines	2、非连续化、自动化炸药生产线
3. Initiating explosive production lines with high pollution	3、高污染的起爆药生产线
4. Industrial powder explosive production lines with high energy consumption, high pollution, and low performance	4、高能耗、高污染、低性能工业粉状炸药生产线
5. Explosive production lines with a total of more than five on-site operators at a Class 1.1 dangerous goods workshop	5、危险等级为 1.1 级的危险品生产厂房现场操作人员总人数大于 5 人的炸药生产线
6. Explosive product production lines with more than nine on-site operators at a Class 1.1 dangerous goods workshop	6、危险等级为 1.1 级的危险品生产厂房现场操作人员人数大于 9 人的炸药制品生产线
7. Basic detonator charging production lines with more than five operators in close contact with detonators (including operators handling raw materials and semi-finished products, excluding finished product delivery personnel)	7、与雷管近距离接触的作业人员数量（含原材料和半成品作业人员，不含成品运送人员）大于 5 人的基础雷管装填生产线

XVI. Miscellaneous

十六、其他

1. Urban trunk road projects with a red line width (including green belt) beyond the following standards: 40 meters for small cities and important towns, 55 meters for medium-sized cities, and 70 meters for large cities (where it is really necessary for a trunk road of a metropolis with a population of 2 million or more to exceed 70 meters, there shall be a special explanation in the overall urban zoning plan)

1、用地红线宽度（包括绿化带）超过下列标准的城市主干道路项目：小城市和重点镇 40 米，中等城市 55 米，大城市 70 米（200 万人口以上特大城市主干道路确需超过 70 米的，城市总体规划中应有专项说明）

2. Recreational and gathering square projects with land used exceeding the following standards: 1 hectare for small cities and important towns, 2 hectares for medium-sized cities, 3 hectares for large cities, and 5 hectares for a metropolis with a population of 2 million or more

2、用地面积超过下列标准的城市游憩集会广场项目：小城市和重点镇 1 公顷，中等城市 2 公顷，大城市 3 公顷，200 万人口以上特大城市 5 公顷

3. Villa-type real estate development projects

3、别墅类房地产开发项目

4. Golf course projects

4、高尔夫球场项目

5. Racecourse projects

5、赛马场项目

6. Mechanical automatic transmission (AT) of 4-speed or less for vehicles

6、4 档及以下机械式车用自动变速箱（AT）

7. Motor vehicle engines meeting the national third class emission standard or below

7、排放标准国三及以下的机动车用发动机

8. Techniques, technologies, products, and equipment that do not conform with the Atmospheric Pollution Prevention and

8、不符合《大气污染防治法》《水污染防治法》《固体废物污染环境防治法》《节约能源法》《安全生产法》《产

Control Law, the Water Pollution Prevention and Control Law, the Law on the Prevention and Control of Environment Pollution Caused by Solid Wastes, the Energy Conservation Law, the Work Safety Law, the Product Quality Law, the Land Administration Law, the Law on the Prevention and Control of Occupational Diseases, and other national laws and regulations, national mandatory standards in the aspects of safety, environmental protection, energy consumption, and quality, and the requirements of international environmental conventions

品质量法》《土地管理法》《职业病防治法》等国家法律法规，不符合国家安全、环保、能耗、质量方面强制性标准，不符合国际环境公约等要求的工艺、技术、产品、装备

Category III Elimination

第三类　淘汰类

Note: The year in the bracket in an item means the elimination time limit. For example, the elimination time limit of December 31, 2020 means elimination before the end of December 31, 2020. If there is an elimination plan, elimination shall be made as planned. In the absence of an elimination time limit or an elimination plan, elimination has been explicitly ordered or shall be immediately made in accordance with the national industry policies

注：条目后括号内年份为淘汰期限，淘汰期限为 2020 年 12 月 31 日是指应于 2020 年 12 月 31 日前淘汰，其余类推；有淘汰计划的条目，根据计划进行淘汰；未标淘汰期限或淘汰计划的条目为国家产业政策已明令淘汰或立即淘汰。

I. Outdated Production Techniques and Equipment

一、落后生产工艺装备

(I) Agriculture and Forestry

（一）农林业

1. Wet-process fiberboard manufacturing techniques

1、湿法纤维板生产工艺

2. Water-dripping method rosin manufacturing techniques

2、滴水法松香生产工艺

3. Rural traditional old-fashioned stove brick beds

3、农村传统老式炉灶炕

4. Activated carbon production with wood and stumps as main raw materials by indigenous method

4、以木材、伐根为主要原料的土法活性炭生产

5. Tourist activities and collection of medicinal materials and other forest products beyond the ecological bearing capacity

5、超过生态承载力的旅游活动和药材等林产品采集

6. Construction of irrigation-type paper raw material forest bases in areas greatly short of water resources

6、严重缺水地区建设灌溉型造纸原料林基地

7. Pre-planting Methyl bromide soil fumigation techniques

7、种植前溴甲烷土壤熏蒸工艺

(II) Coal

（二）煤炭

1. A small coal mine that overlaps with the plane of projection of a large coal mine

1、与大型煤矿井田平面投影重叠的小煤矿

2. Coal mines with an output of less than 300,000 tons/year, if in Shanxi, Inner Mongolia, Shaanxi, or Ningxia, or of less than 150,000 tons/year, if in Hebei, Liaoning, Jilin, Heilongjiang, Jiangsu, Anhui, Shandong, Henan, Gansu, Qinghai, or Xinjiang, or of 90,000 tons/year or less, if in any other region; "zombie enterprise" coal mines with an output of less than 300,000 tons/year which have not engaged in production or construction for a long time; and coal mines with an output of less than 300,000 tons/year sustaining serious disasters such as rockburst and coal and gas outburst. A coal mine intended to meet the household coal demand of residents in any forest area or remote mountainous area, or which undertakes any special

2、山西、内蒙古、陕西、宁夏 30 万吨/年以下（不含 30 万吨/年），河北、辽宁、吉林、黑龙江、江苏、安徽、山东、河南、甘肃、青海、新疆 15 万吨/年以下（不含 15 万吨/年），其他地区 9 万吨/年及以下（含 9 万吨/年）的煤矿；长期停产停建的 30 万吨/年以下（不含 30 万吨/年）“僵尸企业”煤矿；30 万吨/年以下（不含 30 万吨/年）冲击地压、煤与瓦斯突出等灾害严重煤矿。属于满足林区、边远山区居民生活用煤需要或承担特殊供应任务且符合资源、环保、安全、技术、能耗等标准的煤矿，经省级人民政府批准，可以暂时保留或推迟退出

supply task and meets resources, environmental protection, safety, technology, energy consumption, and other standards, may, with the approval of the provincial people's government, be temporarily retained or postpone its withdrawal

3. High-sulfur production mines (with sulfur content higher than 3%) without taking sulfur reduction measures and meeting discharge standards, high-ash coal production mines (with ash content higher than 40%) without local use, and active high-arsenic coal (with an arsenic content exceeding 80 μg/g, in the case of thermal coal, or an arsenic content exceeding 35 μg/g, in the case of coking coal) mines.

3、既无降硫措施又无达标排放用户的高硫煤炭（含硫高于3%）生产矿井，不能就地使用的高灰煤炭（灰分高于 40%）生产矿井以及高砷煤炭（动力用煤中砷含量超过 80μg/g，炼焦用煤中砷含量超过 35μg/g）生产煤矿

4. 6AM, φ M-2.5, and PA-3 coal flotation machines

4、6AM、ΦM-2.5、PA-3 型煤用浮选机

5. PB2, PB3, and PB4 mining flameproof high-voltage switchgears

5、PB2、PB3、PB4 型矿用隔爆高压开关

6. PG-27 vacuum filters

6、PG-27 型真空过滤机

7. X-1 recessed plate filter presses

7、X-1 型箱式压滤机

8. ZYZ and ZY3 hydraulic supports

8、ZYZ、ZY3 型液压支架

9. Coal preparation technique without a closed circuit of coal washing wastewater and dry coal preparation equipment without meeting dust emission standards

9、不能实现洗煤废水闭路循环的选煤工艺、不能实现粉尘达标排放的干法选煤设备

10. A coal mine of which the mining scope overlaps a nature reserve, scenic spot, or drinking water source protection zone

10、开采范围与自然保护区、风景名胜区、饮用水水源保护区重叠的煤矿（根据法律法规及国家有关文件要求进行

(to be eliminated according to the laws and regulations and relevant national documents)

淘汰）

(III) Electric Power

（三）电力

1. Nonconforming conventional coal-fired electric generating units with a stand-alone capacity of 300,000-kilowatts class or below (except comprehensive utilization units) and oil-fired boilers mainly for power generation and generating sets

1、不达标的单机容量 30 万千瓦级及以下的常规燃煤火电机组（综合利用机组除外）、以发电为主的燃油锅炉及发电机组

(IV) Petrochemistry

（四）石化化工

1. Atmospheric and vacuum distillation units with an annual output of 200 tons or less (excluding those in Golmud, Qinghai, and Zep, Xinjiang), pot distillation devices for producing oil products using open flame for high-temperature heating, oil refining techniques by indigenous method from waste rubber and plastic, production of asphalt by tar batch process, single-set coarse (light) benzene refining unit with an annual output of 25,000 tons or less, and single-set coal tar processing unit with an annual output of 50,000 tons or less

1、200 万吨/年及以下常减压装置（青海格尔木、新疆泽普装置除外），采用明火高温加热方式生产油品的釜式蒸馏装置，废旧橡胶和塑料土法炼油工艺，焦油间歇法生产沥青，2.5 万吨/年及以下的单套粗（轻）苯精制装置，5 万吨/年及以下的单套煤焦油加工装置

2. Production units of sulfuric acid from iron pyrite or sulfur with an annual output of less than 100,000 tons (excluding remote areas), potassium permanganate by open-hearth furnace oxidation method, and caustic soda by diaphragm method (which may be retained, if for comprehensive utilization of waste salt); and sodium alkali production techniques by open-hearth method and cauldron evaporation method, production techniques of sodium silicate (sodium silicate) by glauber method, and carbon disulfide technique by intermittent coke

2、10 万吨/年以下的硫铁矿制酸和硫磺制酸（边远地区除外），平炉氧化法高锰酸钾，隔膜法烧碱生产装置（作为废盐综合利用的可以保留），平炉法和大锅蒸发法硫化碱生产工艺，芒硝法硅酸钠（泡花碱）生产工艺，间歇焦炭法二硫化碳工艺

method

3. Yellow phosphorus production units with an annual unit output of less than 5,000 tons or without meeting the access conditions, chromium compound production units with calcium roasting, production units of common-level barium sulfate, barium hydroxide, barium chloride, or barium nitrate with a single-line production capacity of less than 3,000 tons per year, sodium chlorate production units with an annual output of less than 10,000 tons, calcium carbide furnaces and open-type calcium carbide furnaces with a unit capacity of less than 12,500 kva, production units of high-mercury catalysts (with mercuric chloride content higher than 6.5%) and polyvinyl chloride by acetylene method using high-mercury catalysts, sodium methoxide, potassium methoxide, sodium ethoxide, potassium ethoxide, polyurethane, acetaldehyde, caustic soda, biological insecticide, and local antibacterial agent production devices using mercury or mercury compounds, and production techniques of sodium cyanide by ammonia sodium method or from cyanide fusant

3、单台产能 5000 吨/年以下和不符合准入条件的黄磷生产装置，有钙焙烧铬化合物生产装置，单线产能 3000 吨/年以下普通级硫酸钡、氢氧化钡、氯化钡、硝酸钡生产装置，产能 1 万吨/年以下氯酸钠生产装置，单台炉容量小于 12500 千伏安的电石炉及开放式电石炉，高汞催化剂（氯化汞含量 6.5%以上）和使用高汞催化剂的乙炔法聚氯乙烯生产装置，使用汞或汞化合物的甲醇钠、甲醇钾、乙醇钠、乙醇钾、聚氨酯、乙醛、烧碱、生物杀虫剂和局部抗菌剂生产装置，氨钠法及氰熔体氰化钠生产工艺

4. Production units of sodium tripolyphosphate with a single-line production capacity of less than 10,000 tons per year, sodium hexametaphosphate with a single-line production capacity of less than 5,000 tons per year, phosphorus trichloride with a single-line production capacity of less than 5,000 tons per year, calcium hydrophosphate for feed use with a single-line production capacity of less than 30,000 tons per year, hydrofluoric acid with a single-line production capacity of less than 5,000 tons per year using outdated and high-pollution techniques and technologies, and wet-process

4、单线产能 1 万吨/年以下三聚磷酸钠、0.5 万吨/年以下六偏磷酸钠、0.5 万吨/年以下三氯化磷、3 万吨/年以下饲料磷酸氢钙、5000 吨/年以下工艺技术落后和污染严重的氢氟酸、5000 吨/年以下湿法氟化铝及敞开式结晶氟盐生产装置

aluminum fluoride and open-type crystalline fluoride salt with a single-line production capacity of less than 5,000 tons per year

5. Production units of sodium cyanide (100% sodium cyanide) with a single-line production capacity of less than 3,000 tons per year, potassium hydroxide with a single-line production capacity of less than 10,000 tons per year, common-level white carbon black with a single-line production capacity of less than 15,000 tons per year, common-level calcium carbonate with a single-line production capacity of less than 20,000 tons per year, common-level anhydrous sodium sulfate (excluding salt co-production and by-products) with a single-line production capacity of less than 100,000 tons per year, lithium carbonate and lithium hydroxide with a single-line production capacity of less than 3,000 tons per year, common-level barium carbonate with a single-line production capacity of less than 20,000 tons per year, and common-level strontium carbonate with a single-line production capacity of less than 15,000 tons per year

5、单线产能 0.3 万吨/年以下氰化钠（100%氰化钠）、1 万吨/年以下氢氧化钾、1.5 万吨/年以下普通级白炭黑、2 万吨/年以下普通级碳酸钙、10 万吨/年以下普通级无水硫酸钠（盐业联产及副产除外）、0.3 万吨/年以下碳酸锂和氢氧化锂、2 万吨/年以下普通级碳酸钡、1.5 万吨/年以下普通级碳酸锶生产装置

6. Production techniques of synthetic ammonia by desulfurization of semi-water gas by liquid ammonia phase or natural gas atmospheric intermittent conversion process, techniques of carbon monoxide atmospheric change and whole middle temperature shift (high temperature shift), wet desulfurization techniques without supporting sulfur recovery devices, fixed-layer intermittent coal gasification units without construction of supporting devices of waste heat recovery of blown air and comprehensive utilization of gas-making slags, and urea production facilities without supporting process condensate hydrolysis units

6、半水煤气氨水液相脱硫、天然气常压间歇转化工艺制合成氨、一氧化碳常压变化及全中温变换（高温变换）工艺、没有配套硫磺回收装置的湿法脱硫工艺，没有配套建设吹风气余热回收、造气炉渣综合利用装置的固定层间歇式煤气化装置，没有配套工艺冷凝液水解解析装置的尿素生产设施

7. Production techniques of paraquat by sodium process, production techniques of trichlorfon by alkali process, manual packaging (filling) techniques and equipment for small packages of pesticide products (1kg or below), production of pesticide powder by Ramon machine method, and production units of pentachlorophenol (Na) with hexachlorobenzene as raw material

7、钠法百草枯生产工艺，敌百虫碱法敌敌畏生产工艺，小包装（1 公斤及以下）农药产品手工包（灌）装工艺及设备，雷蒙机法生产农药粉剂，以六氯苯为原料生产五氯酚（钠）装置

8. Production techniques of chlorinated rubber using coating resins by direct fire heating or by carbon tetrachloride solvent method, production units of saponin (including hydrolysate) with an annual output of less than 100 tons, production techniques of saponin by hydrochloric acid solution process and saponin production units failing pollutant emission standards, iron power reduction techniques (elimination suspended for three products: 4, 4,4-diamino stilbene-disulfonic acid [DSD acid]; 2-amino-4-methyl-5-chloro sulfonic acid [CLT acid]; and 1-amino-8-naphthol-3, -3,6-disulfonic acid [H acid])

8、用火直接加热的涂料用树脂、四氯化碳溶剂法制取氯化橡胶生产工艺，100 吨/年以下皂素（含水解物）生产装置，盐酸酸解法皂素生产工艺及污染物排放不能达标的皂素生产装置，铁粉还原法工艺（4,4-二氨基二苯乙烯-二磺酸[DSD 酸]、2-氨基-4-甲基-5-氯苯磺酸[CLT 酸]、1-氨基-8-萘酚-3,6-二磺酸[H 酸]三种产品暂缓执行）

9. Production units of diagonal tires with an annual output of 500,000 or less and tires with natural cotton cord fabrics as skeleton, dry granulating carbon black (excluding special carbon black and semi-reinforcing carbon black) with an annual output of 15,000 tons or less, natural rubber latex condoms with an annual output of less than 300 million, rubber vulcanization accelerator N-oxydialkylene (1, 1,2 - Asia ethyl) -2 -benzothiazole sulfenamide (NOBS), and rubber antioxidant D

9、50 万条/年及以下的斜交轮胎和以天然棉帘子布为骨架的轮胎、1.5 万吨/年及以下的干法造粒炭黑（特种炭黑和半补强炭黑除外）、3 亿只/年以下的天然胶乳安全套，橡胶硫化促进剂 N-氧联二（1,2-亚乙基）-2-苯并噻唑次磺酰胺（NOBS）和橡胶防老剂 D 生产装置

10. Production units of chlorofluorocarbons (CFCs), hydro chlorofluorocarbons (HCFCs, except as raw materials for producers' own downstream chemical products and not for sale), 1,1,1-trichloroethane (methyl chloroform) used for cleaning, carbon tetrachloride (CTC) as main products, all products with carbon tetrachloride (CTC) as a process agent, fluoropolymer production techniques with PFOA as a process agent, DDT-containing paints, and dicofol using DDT as raw material for non-closed production (eliminated as required by the overall plan of the state to execute international conventions)

10、氯氟烃（CFCs）、含氢氯氟烃（HCFCs，作为自身下游化工产品的原料且不对外销售的除外），用于清洗的1,1,1-三氯乙烷（甲基氯仿），主产四氯化碳（CTC）、以四氯化碳（CTC）为加工助剂的所有产品，以 PFOA 为加工助剂的含氟聚合物生产工艺，含滴滴涕的涂料、采用滴滴涕为原料非封闭生产三氯杀螨醇生产装置（根据国家履行国际公约总体计划要求进行淘汰）

(V) Iron and Steel

（五）钢铁

1. Indigenous coking (including improved coke oven); production units of semicoke (ferroalloy coke) with an annual output of less than 75,000 tons per oven or without gas or tar recycling and not meeting the access conditions for the coking industry in terms of sewage treatment

1、土法炼焦（含改良焦炉）；单炉产能 7.5 万吨/年以下或无煤气、焦油回收利用和污水处理达不到焦化行业准入条件的半焦（兰炭）生产装置

2. Coke ovens with the height of carbonization chamber lower than 4.3 meters (except tamping ovens at 3.8 meters or higher); and coke ovens of iron and steel enterprises without coke dry quenching units

2、炭化室高度小于 4.3 米焦炉（3.8 米及以上捣固焦炉除外）；未配套干熄焦装置的钢铁企业焦炉

3. Earth sinter

3、土烧结矿

4. Heat sinter

4、热烧结矿

5. Ring sintering machines for steel and iron production,

5、钢铁生产用环形烧结机、90 平方米以下烧结机、8 平方

sintering machines of less than 90 square meters, and pelletizing shaft furnaces of less than 8 square meters; and belt manganese ore or chrome ore sintering machine for production of ferroalloy of less than 24 square meters

米以下球团竖炉；铁合金生产用 24 平方米以下带式锰矿、铬矿烧结机

6. Pig iron blast furnaces for steel making of 400 cubic meters or less (pig iron blast furnaces for steel making of 450 cubic meters or less shall be eliminated in Hebei before the end of 2020), blast furnaces for ferroalloy production of 200 cubic meters or less (ferromanganese blast furnaces of 100 cubic meters or less), and pig iron blast furnaces for casting of 200 cubic meters or less (or 100 cubic meters or less, if with the supporting "short process" casting technique)

6、400 立方米及以下炼钢用生铁高炉（河北 2020 年底前淘汰 450 立方米及以下炼钢用生铁高炉），200 立方米及以下铁合金生产用高炉（其中锰铁高炉为 100 立方米及以下），200 立方米及以下铸造用生铁高炉（其中配套“短流程”铸造工艺的铸造用生铁高炉为 100 立方米及以下）

7. Utility-frequency and intermediate-frequency induction furnaces for melting scrap steel (eliminated according to the laws, regulations, and the relevant requirements of the state to ban "bar steel")

7、用于熔化废钢的工频和中频感应炉（根据法律法规和国家取缔“地条钢”有关要求淘汰）

8. Steelmaking converters of 30 tons or less (excluding ferroalloy converters) (steelmaking converters of 40 tons or less shall be eliminated in Hebei before the end of 2020, except converters producing alloy steel of special quality)

8、30 吨及以下炼钢转炉（不含铁合金转炉）（河北 2020 年底前淘汰 40 吨及以下炼钢转炉，其中生产特殊质量合金钢的转炉除外）

9. Steelmaking electric arc furnaces of 30 tons or less (excluding electric arc furnaces for mechanical casting, alloy steel of special quality, high-temperature alloys, precision alloys, and other special alloy materials)

9、30 吨及以下炼钢电弧炉（不含机械铸造，特殊质量合金钢，高温合金、精密合金等特殊合金材料用电弧炉）

10. Steelmaking through iron melting

10、化铁炼钢

11. Double duo wire mill	11、复二重线材轧机
12. Open-train wire mill	12、横列式线材轧机
13. Open-train bar and shape mills (excluding rolling mills for the production of high-temperature alloys)	13、横列式棒材及型材轧机（不含生产高温合金的轧机）
14. Pack-rolled sheet mill	14、叠轧薄板轧机
15. Common steel blooming mill and medium-sized rolling mill for cogging	15、普钢初轧机及开坯用中型轧机
16. Hot rolled narrow strip steel mill	16、热轧窄带钢轧机
17. Three-roll medium plate Laut rolling mill	17、三辊劳特式中板轧机
18. Hot-rolled seamless tube unit with a diameter of less than 76 mm	18、直径 76 毫米以下热轧无缝管机组
19. Three-roll wire mill (except for production of special steel)	19、三辊式型线材轧机（不含特殊钢生产）
20. Metallurgical furnaces failing to meet environmental protection standards	20、环保不达标的冶金炉窑
21. Manual bitumen tar impregnation devices, naturally ventilated and manually operated vertical shaft earth kilns burning a mixture of ore materials and solid raw materials, and down-draft kilns directly consuming coal and failing to meet smoke purification standards	21、手工操作的土沥青焦油浸渍装置，矿石原料与固体原料混烧、自然通风、手工操作的土竖窑，以煤直接为燃料、烟尘净化不能达标的倒焰窑

22. Electric ferroalloy smelting furnace of 6,300 kva or less and semi-closed direct current electric ferroalloy furnace or electric ferroalloy refining furnace of less than 3,000 kva (except electric furnaces of ferrotungsten, ferrovanadium and other special varieties)

22、6300 千伏安及以下铁合金矿热电炉，3000 千伏安以下铁合金半封闭直流电炉、铁合金精炼电炉（钨铁、钒铁等特殊品种的电炉除外）

23. Steam heating mixing down-draft roasting furnace, Acheson AC graphitization furnace, three-phase bridge rectifier Acheson DC graphitization furnace of 10,000 kva or less, and parallel units

23、蒸汽加热混捏、倒焰式焙烧炉、艾奇逊交流石墨化炉、10000 千伏安及以下三相桥式整流艾奇逊直流石墨化炉及其并联机组

24. Cold-rolled ribbed steel bar production equipment with an output of 10,000 tons or less per machine (except high-ductility cold-rolled ribbed steel bar production equipment)

24、单机产能 1 万吨及以下的冷轧带肋钢筋生产装备（高延性冷轧带肋钢筋生产装备除外）

25. Single-tank wire drawing machine for production of prestressed steel wire

25、生产预应力钢丝的单罐拉丝机生产装备

26. Patenting technique to eliminate stress in production of prestressed steel

26、预应力钢材生产消除应力处理的铅淬火工艺

27. Calcined lime earth kilns

27、煅烧石灰土窑

28. Titanium iron smelting furnace with a unit output of less than 5 tons, ferro-molybdenum production lines using reverberatory furnace to roast molybdenum concrete, and chromium metal production lines using reverberatory furnace to reduce and calcine sodium dichromate and chromic anhydride

28、每炉单产 5 吨以下的钛铁熔炼炉、用反射炉焙烧钼精矿的钼铁生产线及用反射炉还原、煅烧红矾钠、铬酐生产金属铬的生产线

29. Production lines for refractories and raw material products for coal-fired down-draft kilns

29、燃煤倒焰窑耐火材料及原料制品生产线

30. Single-section fixed gas generator projects for the iron and steel industry (excluding pulverized coal gasification furnace)

30、钢铁行业用一段式固定煤气发生炉项目（不含粉煤气化炉）

31. Rectifier transformers of 6,000 kva or less for electrolytic manganese metal use and compound slots with effective volume of 170 cubic meters or less

31、电解金属锰用 6000 千伏安及以下的整流变压器、有效容积 170 立方米及以下的化合槽

32. Heat recovery coke ovens of enterprises with a production capacity of less than 400,000 tons/year; and coke ovens without the concurrent construction of supporting heat recovery devices

32、企业生产能力＜40 万吨/年热回收焦炉；未同步配套建设热能回收装置的焦炉

33. Reverberatory furnaces for reduction of manganese dioxide (including but not limited to reverberatory furnaces used in manganese sulphate plants and mineral powder factories)

33、还原二氧化锰用反射炉（包括硫酸锰厂用反射炉、矿粉厂用反射炉等）

34. Plate and frame filter presses or chamber filter presses for EMM single filter, except high-pressure diaphragm filter presses

34、电解金属锰一次压滤用除高压隔膜压滤机以外的板框、箱式压滤机

35. Light burning reverberatory kiln of 18 cubic meters or less in effective volume

35、有效容积 18 立方米及以下轻烧反射窑

36. Shaft kiln for dead burned magnesia of 30 cubic meters or less in effective volume

36、有效容积 30 立方米及以下重烧镁砂竖窑

(VI) Nonferrous Metals

（六）有色金属

1. Techniques and equipment for zinc smelting by outdated means such as baking with muffle furnaces, manger furnaces, horizontal tanks, or small vertical tanks and dust collection with simple condensation facilities and for zinc oxide production	1、采用马弗炉、马槽炉、横罐、小竖罐等进行焙烧、简易冷凝设施进行收尘等落后方式炼锌或生产氧化锌工艺装备
2. Mercury smelting by outdated means such as using iron pots, clay stoves, distillation retorts, crucible furnaces, and simple condensation dust collection facilities	2、采用铁锅和土灶、蒸馏罐、坩埚炉及简易冷凝收尘设施等落后方式炼汞
3. Arsenic trioxide or metallic arsenic refining techniques and equipment by outdated means such as using pit furnaces or crucible furnaces for baking and simple condensation facilities for dust collection	3、采用土坑炉或坩埚炉焙烧、简易冷凝设施收尘等落后方式炼制氧化砷或金属砷工艺装备
4. Aluminum Soderberg electrolytic cell; and prebake cell of less than 160kA	4、铝自焙电解槽及 160kA 以下预焙槽
5. Copper smelting techniques and equipment using blast furnace, electric furnace, or reverberatory furnace	5、鼓风炉、电炉、反射炉炼铜工艺及设备
6. Dry scrubbing technology for acid making with fume and hot concentrated acid washing technology	6、烟气制酸干法净化和热浓酸洗涤技术
7. Antimony smelting by outdated means such as using pit furnaces, crucible furnaces, or Hatch furnaces	7、采用地坑炉、坩埚炉、赫氏炉等落后方式炼锑
8. Lead smelting techniques and equipment by outdated means such as using sintering pots, sintering plates, or simple blast furnaces	8、采用烧结锅、烧结盘、简易高炉等落后方式炼铅工艺及设备

9. Recycled aluminum alloy and recycled lead smelting techniques and equipment using crucible furnaces	9、利用坩埚炉熔炼再生铝合金、再生铅的工艺及设备
10. Projects of wet fluoridated salt for aluminum	10、铝用湿法氟化盐项目
11. Projects of recycled aluminum or recycled lead with an annual output of less than 10,000 tons	11、1 万吨/年以下的再生铝、再生铅项目
12. Projects of directly coal-fired reverberatory furnaces used in the production of recycled nonferrous metals	12、再生有色金属生产中采用直接燃煤的反射炉项目
13. Production techniques of copper rods (black)	13、铜线杆（黑杆）生产工艺
14. Lead smelting techniques using sintering machines without supporting acid making and exhaust gas absorption systems	14、未配套制酸及尾气吸收系统的烧结机炼铅工艺
15. Lead smelting techniques with sintering-blast furnaces	15、烧结-鼓风炉炼铅工艺
16. Recycled copper incineration techniques and equipment without smoke control measures	16、无烟气治理措施的再生铜焚烧工艺及设备
17. Recycled copper production techniques and equipment with traditional fixed reverberatory furnaces of less than 50 tons	17、50 吨以下传统固定式反射炉再生铜生产工艺及设备
18. Recycled copper production techniques and equipment with reverberatory furnaces of less than 4 tons	18、4 吨以下反射炉再生铝生产工艺及设备
19. Heap leaching and pool leaching techniques for ionic rare earth mines	19、离子型稀土矿堆浸和池浸工艺

20. Monazite single-mineral development projects	20、独居石单一矿种开发项目
21. Projects of metal production techniques of rare earth chloride electrolysis	21、稀土氯化物电解制备金属工艺项目
22. Production techniques of wet rare earth fluoride for electrolysis	22、湿法生产电解用氟化稀土生产工艺
23. Development projects of mixed rare earth mines with an output of less than 20,000 tons/year (REO); development projects of bastnaesite rare earth mines with an output of less than 5,000 tons (REO)/year; and development projects of ionic rare earth mines with an output of less than 500 tons (REO)/year	23、20000 吨（REO）/年以下混合型稀土矿山开发项目；5000 吨（REO）/年以下的氟碳铈矿稀土矿山开发项目；500 吨（REO）/年以下的离子型稀土矿山开发项目
24. Rare earth separation project of less than 2,000 tons (REO) per year	24、2000 吨（REO）/年以下的稀土分离项目
25. Light rare earth metal smelting project with an annual output of less than 1,500 tons, current of electrolyzer below 5,000A, and current efficiency lower than 85%	25、1500 吨/年以下、电解槽电流小于 5000A、电流效率低于 85%的轻稀土金属冶炼项目
26. Primary mercury mining (August 16, 2032)	26、原生汞矿开采（2032 年 8 月 16 日）
(VII) Gold	（七）黄金
1. Amalgamation gold extraction technique	1、混汞提金工艺
2. Small cyanide pool leaching technique and indigenous	2、小氰化池浸工艺、土法冶炼工艺

smelting technique

3. Extraction of gold, silver, palladium, and other precious metals in circuit boards without environmental protection measures

3、无环保措施提取线路板中金、银、钯等贵重金属

4. Mining and dressing project with a daily processing capacity of less than 50 tons

4、日处理能力 50 吨（不含）以下采选项目

5. Whole ore amalgamation; open burning of amalgam or processed amalgam; burning of amalgam in residential areas; cyanide leaching in sediment, ore or tailings to which mercury has been added without first removing the mercury.

5、整体矿石汞齐化；露天焚烧汞合金或经过加工的汞合金；在居民区焚烧汞合金；在没有首先去除汞的情况下，对添加了汞的沉积物、矿石或尾矿石进行氰化物浸出

(VIII) Building Materials

（八）建材

1. Dry hollow kiln (except for the production of aluminate cement and other special cement), cement mechanical vertical shaft kiln, Lepol kiln, and wet-process kiln

1、干法中空窑（生产铝酸盐水泥等特种水泥除外），水泥机立窑，立波尔窑、湿法窑

2. Cement powder grinding equipment of less than 3 meters in diameter (except for the production of special cement)

2、直径 3 米（不含）以下水泥粉磨设备（生产特种水泥除外）

3. Production lines of plastic woven cement bags without lamination

3、无覆膜塑编水泥包装袋生产线

4. Sheet glass production lines by Colburn process (including Glaverbel process)

4、平拉工艺平板玻璃生产线（含格法）

5. Architectural ceramic tile production lines with an annual

5、100 万平方米/年（不含）以下的建筑陶瓷砖、20 万件/

output of less than 1 million cubic meters and sanitary ceramic production lines with an annual output of less than 200,000 pieces

年（不含）以下卫生陶瓷生产线

6. Earth kiln, down draft kiln, porous kiln, coal-fired open flame tunnel kiln, and muffle tunnel kiln for architectural sanitary ceramics (excluding architectural glazed products); and sagger-loading sanitary ceramic tunnel kiln

6、建筑卫生陶瓷（不包括建筑琉璃制品）土窑、倒焰窑、多孔窑、煤烧明焰隧道窑、隔焰隧道窑、匣钵装卫生陶瓷隧道窑

7. Friction brick press for molding of architectural ceramic bricks

7、建筑陶瓷砖成型用的摩擦压砖机

8. Clay crucible glass fiber wire drawing production techniques and equipment

8、玻璃纤维陶土坩埚拉丝生产工艺与装备

9. Thistle board production line with an annual output of less than 10 million cubic meters

9、1000 万平方米/年（不含）以下的纸面石膏板生产线

10. Modified asphalt waterproof coil production line with an annual output of less than 5 million cubic meters; asphalt compound base flexible waterproof coil production line with an annual output of less than 5 million cubic meters; and asphalt paper base linoleum production line with an annual output less than 1 million rolls

10、500 万平方米/年（不含）以下的改性沥青类防水卷材生产线；500 万平方米/年（不含）以下沥青复合胎柔性防水卷材生产线；100 万卷/年（不含）以下沥青纸胎油毡生产线

11. Vertical shaft lime earth kiln

11、石灰土立窑

12. Brick and tile annular shaft kiln (December 31, 2020), vertical shaft kiln, roofless annular shaft kiln, horseshoe kiln, and other earth kilns

12、砖瓦轮窑（2020 年 12 月 31 日）以及立窑、无顶轮窑、马蹄窑等土窑

13. Common brick extruder machines	13、普通挤砖机
14. SJ1580-3000 double- or single-shaft brick mixer	14、SJ1580-3000 双轴、单轴制砖搅拌机
15. SQP400500-700500 double-roll crusher	15、SQP400500-700500 双辊破碎机
16. 1000 common slitter	16、1000 型普通切条机
17. Rotary disc brick press machine of less than 100 tons	17、100 吨以下盘转式压砖机
18. Manual production lines of wallboards	18、手工制作墙板生产线
19. Simple mobile concrete block molding machines and attached vibration molding stations	19、简易移动式砼砌块成型机、附着式振动成型台
20. Fixed concrete block molding machine with an annual single-shift output of less than 10,000 cubic meters and concrete paving brick molding machine with an annual single-shift output of less than 100,000 square meters	20、单班 1 万立方米/年以下的混凝土砌块固定式成型机、单班 10 万平方米/年以下的混凝土铺地砖固定式成型机
21. Hand-pouring and non-machinery molding gypsum block (hollow) production techniques	21、人工浇筑、非机械成型的石膏（空心）砌块生产工艺
22. Quartz glass production techniques and equipment by vacuum compression method or one-step gas refining method	22、真空加压法和气炼一步法石英玻璃生产工艺装备
23. 6 × 6 million Newton small hexahedron press production of synthetic diamonds	23、生产人造金刚石用 6×6 兆牛顿六面顶小型压机
24. Hand cutting and aerating concrete production lines and	24、手工切割加气混凝土生产线、非蒸压养护加气混凝土

non-steam autoclaving maintenance and aeration concrete production lines

生产线

25. Non-sintering and non-steam autoclaving fly ash brick production lines

25、非烧结、非蒸压粉煤灰砖生产线

26. Chamber blast mining techniques for decorative stone mines; and sling-type marble drag saws, and small mobile circular saws

26、装饰石材矿山硐室爆破开采技术、吊索式大理石土拉锯、移动式小型圆盘锯

(IX) Medicine

（九）医药

1. Manual capsule filling techniques

1、手工胶囊填充工艺

2. Drug packaging techniques using wax to seal corks

2、软木塞烫腊包装药品工艺

3. Ampoule wire-drawing filling and sealing machines failing to meet GMP requirements

3、不符合 GMP 要求的安瓿拉丝灌封机

4. Tower-type heavy water distilling equipment

4、塔式重蒸馏水器

5. Hot air drying ovens without purification facilities

5、无净化设施的热风干燥箱

6. Active pharmaceutical ingredient (API) manufacturing units failing to meet national environmental and occupational health and safety standards

6、环境、职业健康和安全不能达到国家标准的原料药生产装置

7. Acetaminophen (paracetamol) or caffeine units by direct-reduced iron method

7、铁粉还原法对乙酰氨基酚（扑热息痛）、咖啡因装置

8. Medical supplies production techniques using CFCs as aerosol, propellant, aerosol propellant, or dispersing agent (eliminated as required under the overall plan of the state to execute international conventions)	8、使用氯氟烃（CFCs）作为气雾剂、推进剂、抛射剂或分散剂的医药用品生产工艺（根据国家履行国际公约总体计划要求进行淘汰）
(X) Machinery	（十）机械
1. Heat treatment lead bath furnaces (except for online heat treatment lead bath production lines with lead liquid covering agents and negative-pressure extraction and dust collection environmental protection facilities for metal wire rope and its products)	1、热处理铅浴炉（用于金属丝绳及其制品的有铅液覆盖剂和负压抽风除尘环保设施的在线热处理铅浴生产线除外）
2. Heat treatment bath furnace for chlorinated barium salt (elimination suspended for high temperature bath furnace for chlorinated barium salt)	2、热处理氯化钡盐浴炉（高温氯化钡盐浴炉暂缓淘汰）
3. TQ60 and TQ80 tower cranes	3、TQ60、TQ80 塔式起重机
4. QT16, QT20 and QT25 simple derrick tower cranes	4、QT16、QT20、QT25 井架简易塔式起重机
5. KJ1600/1220 single-cylinder lifting winch	5、KJ1600/1220 单筒提升绞机
6. Common corundum smelting furnace of less than 3,000 kva	6、3000 千伏安以下普通棕刚玉冶炼炉
7. Fixed corundum smelting furnace of less than 4,000 kva	7、4000 千伏安以下固定式棕刚玉冶炼炉
8. Silicon carbide smelting furnace of less than 3,000 kva	8、3000 千伏安以下碳化硅冶炼炉
8. Silicon carbide smelting furnace of less than 3,000 kva	9、强制驱动式简易电梯

10. Production lines of tobacco expansion equipment using CFCs as expansion agent	10、以氯氟烃（CFCs）作为膨胀剂的烟丝膨胀设备生产线
11. Sand mold and mold core for clay drying in sand casting	11、砂型铸造粘土烘干砂型及型芯
12. Coke furnace for melting nonferrous metals	12、焦炭炉熔化有色金属
13. Oil sand core for sand casting	13、砂型铸造油砂制芯
14. Trolley furnace with heavy brick lining	14、重质砖炉衬台车炉
15. Induction heating power supply for medium frequency power generators	15、中频发电机感应加热电源
16. Coal-fired flame reverberatory heating furnaces	16、燃煤火焰反射加热炉
17. Pickling process for castings/forgings	17、铸/锻件酸洗工艺
18. Bit AC contactor temperature control cabinets	18、位式交流接触器温度控制柜
19. Salt bath furnaces with electrodes inserted	19、插入电极式盐浴炉
20. Moving coil or tapped silicon rectifier arc welding machine	20、动圈式和抽头式硅整流弧焊机
21. Magnetic amplifier arc welding machine	21、磁放大器式弧焊机
22. Punches for which safety protection devices cannot be installed	22、无法安装安全保护装置的冲床

23. Aluminum shell medium frequency electric induction furnace without magnet yokes (≥ 0.25 ton)	23、无磁轭（≥0.25 吨）铝壳中频感应电炉
24. Coreless power frequency electric induction furnace	24、无芯工频感应电炉
(XI) Vessels	（十一）船舶
1. Beach dismantling techniques for retired and used ships	1、废旧船舶滩涂拆解工艺
2. Integral ship building techniques for seagoing steel vessels more than 90 meters in length and river ships more than 120 meters in length	2、船长大于 90 米的海洋钢质船舶以及船长大于 120 米的内河钢质船舶的整体建造工艺
(XII) Light Industry	（十二）轻工
1. Vacuum salt production units with an annual unit output of less than 100,000 tons, lake salt production facility with an annual unit output of less than 200,000 tons, and northern sea salt production facility with an annual unit output of less than 30,000 tons	1、单套 10 万吨/年以下的真空制盐装置、20 万吨/年以下的湖盐和 30 万吨/年以下的北方海盐生产设施
2. Open pan or solar salt production techniques and units using mineral sale brine or oil-field water	2、利用矿盐卤水、油气田水且采用平锅、滩晒制盐的生产工艺与装置
3. Southern sea salt production units with an annual output of 20,000 tons or less	3、2 万吨/年及以下的南方海盐生产装置
4. Production of extra-thin (less than 0.025 mm in thickness) shopping bags	4、超薄型（厚度低于 0.025 毫米）塑料购物袋生产

5. Tanning production line with an annual raw hide processing capacity of less than 50,000 standard cowhide pieces or with an annual wet blue hide processing capacity of less than 30,000 standard cowhide pieces	5、年加工生皮能力 5 万标张牛皮、年加工蓝湿皮能力 3 万标张牛皮以下的制革生产线
6. Printing ink total production units with an annual output of less than 300 tons (except those using high and new technology or without pollution)	6、300 吨/年以下的油墨生产总装置（利用高新技术、无污染的除外）
7. Printing ink production using benzene-containing solvents	7、含苯类溶剂型油墨生产
8. Ground pool pulp manufacturing equipment using lime (except Chinese art paper)	8、石灰法地池制浆设备（宣纸除外）
9. Chemical wood pulp production line with an annual output of less than 51,000 tons	9、5.1 万吨/年以下的化学木浆生产线
10. Non-wood pulp production lines with a single-line output of less than 34,000 tons per year	10、单条 3.4 万吨/年以下的非木浆生产线
11. Pulp production lines using waste paper with a single-line output of 10,000 tons or less per year	11、单条 1 万吨/年及以下、以废纸为原料的制浆生产线
12. Cultural paper production line with a fabric width of 1.76 meters or less and a speed of less than 120 meters per minute	12、幅宽在 1.76 米及以下并且车速为 120 米/分以下的文化纸生产线
13. Whiteboard, cardboard, or corrugated paper production line with a fabric width of 2 meters or less and a speed of less than 80 meters per minute	13、幅宽在 2 米及以下并且车速为 80 米/分以下的白板纸、箱板纸及瓦楞纸生产线

14. Production lines of refrigerators, freezers, automobile air conditioners, and cold storage and refrigeration equipment using CFCs as refrigerant and foaming agent

14、以氯氟烃（CFCs）为制冷剂和发泡剂的冰箱、冰柜、汽车空调器、工业商业用冷藏、制冷设备生产线

15. Polyurethane, polyethylene, or polystyrene foam plastic production using CFCs as foaming agent

15、以氯氟烃（CFCs）为发泡剂的聚氨酯、聚乙烯、聚苯乙烯泡沫塑料生产

16. Production techniques using CTC as detergent

16、以四氯化碳（CTC）为清洗剂的生产工艺

17. Production techniques using CFC-113 and TCA as detergent and solvent

17、以三氟三氯乙烷（CFC-113）和甲基氯仿（TCA）为清洗剂和溶剂的生产工艺

18. Tertiary amine manufacturing technique by fatty acid method, oleum sulfonation technique, and stirred tank ethoxylation technique

18、脂肪酸法制叔胺工艺，发烟硫酸磺化工艺，搅拌釜式乙氧基化工艺

19. Tin soldering technique in lithographed metal can-making industry

19、印铁制罐行业中的锡焊工艺

20. Coal-fired or producer gas-fired crucible glass furnace and annealing furnace with a direct vent but without hot air circulation

20、燃煤和燃发生炉煤气的坩埚玻璃窑，直火式、无热风循环的玻璃退火炉

21. Timed mechanical paratactic bottle making machines

21、机械定时行列式制瓶机

22. Carbonated drink production line with an output of less than 150 bottles per minute (bottle volume of 250 ml or less)

22、生产能力 150 瓶/分钟以下（瓶容在 250 毫升及以下）的碳酸饮料生产线

23. Condensation, spray drying, or other facility with a daily raw milk processing capacity of less than 20 tons (two shifts);

23、日处理原料乳能力（两班）20 吨以下浓缩、喷雾干燥

manual or semi-automatic liquid milk filling equipment with an output of less than 200 kg per hour	等设施；200 千克/小时以下的手动及半自动液体乳灌装设备
24. Ethyl alcohol (except ethyl alcohol made from waste molasses) production line with an annual output of 30,000 tons or less	24、3 万吨/年以下酒精生产线（废糖蜜制酒精除外）
25. Glutamic acid production lines using the ion exchange technique and monosodium glutamate production units with an annual output of less than 50,000 tons	25、等电离交工艺的谷氨酸生产线，5 万吨/年以下味精生产装置
26. Citric acid production units using traditional calcium salt methods	26、传统钙盐法柠檬酸生产装置
27. Corn starch wet-process production line with an annual processing capacity of less than 150,000 tons and a total absolute dry extraction rate of lower than 97% (except special corn starch production line)	27、年处理 15 万吨以下、总干物收率 97%以下的湿法玉米淀粉生产线（特种玉米淀粉生产线除外）
28. Bridge-type splitting saw, non-sealed hog scalding machine, and other pig slaughtering equipment	28、桥式劈半锯、敞式生猪烫毛机等生猪屠宰设备
29. Manual slaughtering techniques for pigs, cattle, sheep, and poultry	29、猪、牛、羊、禽手工屠宰工艺
30. Techniques of adding whitening agents (benzoyl peroxide or calcium peroxide) to wheat flour	30、小麦粉增白剂（过氧化苯甲酰、过氧化钙）的添加工艺
31. Elemental chlorine bleaching pulping process	31、元素氯漂白制浆工艺

32. Open lead melting pots and open lead oxide mills for lead storage battery production	32、铅蓄电池生产用开放式熔铅锅、开口式铅粉机
33. Dry filling techniques for tubular lead storage batteries	33、管式铅蓄电池干式灌粉工艺
34. Glass batch with added white arsenic, antimony trioxide, or harmful raw and auxiliary materials containing lead, fluoride (except in all-electric melting furnaces), or chromium slag, among others	34、添加白砒、三氧化二锑、含铅、含氟（全电熔窑除外）、铬矿渣及其他有害原辅材料的玻璃配合料
(XIII) Textile	（十三）纺织
1. Cotton spinning, wool spinning, and linen spinning equipment and weaving equipment which have been in service for 30 years	1、使用时间达到 30 年的棉纺、毛纺、麻纺设备、机织设备
2. Roller cotton gin of less than 1,000 mm in length of rollers, saw tooth cotton gin with less than 80 saw blades, and lint bailing press with a pressure tonnage of less than 400 tons (excluding 160-ton and 200-ton short-staple cotton baling presses)	2、辊长 1000 毫米以下的皮辊轧花机，锯片片数在 80 以下的锯齿轧花机，压力吨位在 400 吨以下的皮棉打包机（不含 160 吨、200 吨短绒棉花打包机）
3. ZD647 and ZD721 automatic silk reeling machines, D101A automatic silk reeling machine, ZD681 vertical reeling machine, DJ561 tough silk spinning machine, K251 and K251A silk looms, and other silk processing equipment	3、ZD647、ZD721 型自动缫丝机，D101A 型自动缫丝机，ZD681 型立缫机，DJ561 型绢精纺机，K251、K251A 型丝织机等丝绸加工设备
4. Z114 small jacquard	4、Z114 型小提花机
5. GE186 jacquard terry-looping machine	5、GE186 型提花毛圈机

6. Z261 artificial fur machine	6、Z261 型人造毛皮机
7. Non-improved 74 dyeing and finishing equipment	7、未经改造的 74 型染整设备
8. Steam heated open non-sealed dip-dye flat wash tank	8、蒸汽加热敞开无密闭的印染平洗槽
9. R531 acid viscose spinning machine	9、R531 型酸性粘胶纺丝机
10. Viscose conventional short fiber production line with an annual output of 40,000 tons or less	10、4 万吨/年及以下粘胶常规短纤维生产线
11. Wet-process spandex production technique	11、湿法氨纶生产工艺
12. Spandex and acrylic fiber production techniques using DMF solvent	12、二甲基甲酰胺（DMF）溶剂法氨纶及腈纶生产工艺
13. Common acrylic fiber production technique and device using nitric acid	13、硝酸法腈纶常规纤维生产工艺及装置
14. Conventional PET intermittent polymerization techniques and equipment	14、常规聚酯（PET）间歇法聚合生产工艺及设备
15. Semi-automatic winding equipment for conventional polyester filament with a spindle of 900 mm or less	15、常规涤纶长丝锭轴长 900 毫米及以下的半自动卷绕设备
16. Pre-treatment equipment for dip dyeing, tentering and setting equipment, round screen and flat screen printing machine, and continuous dyeing machine, in use for 15 years if made in China or in use for over 20 years if imported	16、使用年限超过 15 年的国产和使用年限超过 20 年的进口印染前处理设备、拉幅和定形设备、圆网和平网印花机、连续染色机

17. Intermittent dyeing equipment for cotton and synthetic fiber with a bath ratio greater than 1:10 in use for over 15 years

17、使用年限超过 15 年的浴比大于 1：10 的棉及化纤间歇式染色设备

18. Dip-dyeing production line powered by a DC motor

18、使用直流电机驱动的印染生产线

19. Cast iron steam box and washing equipment for dip dyeing, bottomless cast iron wallboard steamer, and L-shape belt steam box for scouring and bleaching with a short steaming preheating section

19、印染用铸铁结构的蒸箱和水洗设备，铸铁墙板无底蒸化机，汽蒸预热区短的 L 型退煮漂履带汽蒸箱

20. Regenerated polyester short fiber production units with a screw extruder of not more than 90 mm in diameter and an annual output of less than 2,000 tons

20、螺杆挤出机直径小于或等于 90mm，2000 吨/年以下的涤纶再生纺短纤维生产装置

(XIV) Printing

（十四）印刷

1. All lead line and letterpress printing techniques

1、全部铅排、铅印工艺

2. All letterpresses and relevant auxiliary machines

2、全部铅印机及相关辅机

3. Photo engraving machine

3、照相制版机

4. ZD201 and ZD301 monotype casters

4、ZD201、ZD301 型系列单字铸字机

4. ZD201 and ZD301 monotype casters

5、TH1 型自动铸条机、ZT102 型系列铸条机

6. ZDK101 matrix cutting machine

6、ZDK101 型字模雕刻机

7. KMD101 matrix cutter grinder

7、KMD101 型字模刻刀磨床

8. AZP502 semi-automatic hand typesetting machine for Chinese characters, ZSY101 semi-automatic typesetting machine for Chinese characters, TZP101 linotype typesetting machine for foreign languages, and ZZP101 automatic typesetting machine for Chinese characters

8、AZP502 型半自动汉文手选铸排机、ZSY101 型半自动汉文铸排机、TZP101 型外文条字铸排机、ZZP101 型汉文自动铸排机

9. QY401 and 2QY404 series electric letterpress printing proofers and QYSH401, 2QY401 and DY401 manual letterpress printing proofers

9、QY401、2QY404 型系列电动铅印打样机，QYSH401、2QY401、DY401 型手动式铅印打样机

10. YX01, YX02, and YX03 series matrix molding machines and HX01, HX02, HX03, and HX04 series matrix dryer

10、YX01、YX02、YX03 型系列压纸型机，HX01、HX02、HX03、HX04 型系列烘纸型机

11. PZB401 flat stereotype caster and YZB02, YZB03, YZB04, YZB05, YZB06, and YZB07 series stereotype casters

11、PZB401 型平铅版铸版机，YZB02、YZB03、YZB04、YZB05、YZB06、YZB07 型系列铅版铸版机

12. JB01 flat plate stereotyping machine

12、JB01 型平铅版浇版机

13. RQ02, RQ03, and RQ04 series lead pump lead melting furnaces

13、RQ02、RQ03、RQ04 型系列铅泵熔铅炉

14. BB01 planer, YGB02, YGB03, YGB04, and YGB05 round stereotype scraping machines, YTB01 round stereotype boring machine, YJB02 round stereotype sawing machine, and YXB04, YXB05, and YXB302 round stereotype retouching machines

14、BB01 型刨版机，YGB02、YGB03、YGB04、YGB05 型圆铅版刮版机，YTB01 型圆铅版镗版机，YJB02 型圆铅版锯版机，YXB04、YXB05、YXB302 型系列圆铅版修版机

15. P401 and P402 series quarto platen presses and P801,

15、P401、P402 型系列四开平压印刷机，P801、P802、

P802, P803, and P804 series octavo platen presses	P803、P804 型系列八开平压印刷机
16. PE802 double hinge printing press	16、PE802 型双合页印刷机
17. TE102, TE105, and TE108 series automatic whole-sheet double rotary platform printing presses	17、TE102、TE105、TE108 型系列全张自动二回转平台印刷机
18. TY201 folio monochromatic single rotary platform printing press and TY401 quarto monochromatic single rotary platform printing press	18、TY201 型对开单色一回转平台印刷机，TY401 型四开单色一回转平台印刷机
19. TY4201 quarto double-color single rotary printing press	19、TY4201 型四开一回转双色印刷机
20. TT201, TZ201, and DT201 folio printing presses with rotary platform stopped by manually feeding paper	20、TT201、TZ201、DT201 型对开手动续纸停回转平台印刷机
21. TT202 folio printing press with rotary platform automatically stopped, TT402, TT403, TT405, and DT402 quarto printing presses with rotary platform automatically stopped, TZ202 folio printing press with rotary platform semi-automatically stopped, and TZ401, TZS401, and DT401 quarto printing presses with rotary platform semi-automatically stopped	21、TT202 型对开自动停回转平台印刷机，TT402、TT403、TT405、DT402 型四开自动停回转平台印刷机，TZ202 型对开半自动停回转平台印刷机，TZ401、TZS401、DT401 型四开半自动停回转平台印刷机
22. TR801 vertical platform printing press	22、TR801 型系列立式平台印刷机
23. LP1101 and LP1103 series whole-sheet one-sided flat paper rotary printing presses, LP1201 whole-sheet two-sided flat paper rotary printing press, and LP4201 quarto double-color flat paper rotary printing press	23、LP1101、LP1103 型系列平板纸全张单面轮转印刷机，LP1201 型平板纸全张双面轮转印刷机，LP4201 型平板纸四开双色轮转印刷机

24. LSB201 (880x1,230 mm) and LS201 and LS204 (787x1,092 mm) series web rotary printing presses for books and periodicals

24、LSB201（880×1230 毫米）及 LS201、LS204（787×1092 毫米）型系列卷筒纸书刊转轮印刷机

25. LB203, LB205, and LB403 web rotary printing presses for newspapers, LB2405 and LB4405 double-layer double-group web rotary printing presses for newspapers, and LBS201 dual-use rotary printing press for books and newspapers

25、LB203、LB205、LB403 型卷筒纸报版轮转印刷机，LB2405、LB4405 型卷筒纸双层二组报版轮转印刷机，LBS201 型卷筒纸书、报二用轮转印刷机

26. K.M.T automatic hot-metal typesetting machine and PH-5 typesetter for Chinese characters

26、K.M.T 型自动铸字排版机，PH-5 型汉字排字机

27. Cronapress proofing plate making machine (DIA PRESS cleaning machine)

27、球震打样制版机（DIA PRESS 清刷机）

28. Manual phototypesetter made before 1985 and process camera made in China before 1985

28、1985 年前生产的手动照排机、国产制版照相机

29. Centrifugal coating machines

29、离心涂布机

30. J1101 series whole-sheet monochromatic offset press (printing rate of 5,000 pages per hour or less)

30、J1101 系列全张单色胶印机（印刷速度每小时 5000 张及以下）

31. J2101 and PZ1920 series folio monochromatic offset presses (printing rate of 4,000 pages per hour or less), PZ1615 series quarto monochromatic offset press (printing rate of 4,000 pages per hour or less), and YPS1920 series two-sided monochromatic offset press (printing rate of 4,000 pages per hour or less)

31、J2101、PZ1920 系列对开单色胶印机（印刷速度每小时 4000 张及以下），PZ1615 系列四开单色胶印机（印刷速度每小时 4000 张及以下），YPS1920 系列双面单色胶印机（印刷速度每小时 4000 张及以下）

32. W1101 whole-sheet automatic gravure printing machine and AJ401 one-sided four-color web gravure printing machine	32、W1101 型全张自动凹版印刷机、AJ401 型卷筒纸单面四色凹版印刷机
33. DJ01 paperback glue binding machine, PRD-01 and PRD-02 paperback glue binding machines, and DBT-01 paperback thread binding-packaging-ironing machine	33、DJ01 型平装胶订联动机，PRD-01、PRD-02 型平装胶订联动机，DBT-01 型平装有线订、包、烫联动机
34. Solvent-based coating and laminating machines and various laminating machines without substrate degradation or recycling	34、溶剂型即涂覆膜机、承印物无法降解和回收的各类覆膜机
35. QZ101, QZ201, QZ301, and QZ401 paper cutters	35、QZ101、QZ201、QZ301、QZ401 型切纸机
36. MD103A grinder	36、MD103A 型磨刀机
(XV) Industrial Explosive Products	（十五）民爆产品
1. Sealed packaged emulsion explosive substrate cooling machine	1、密闭式包装型乳化炸药基质冷却机
2. Sealed packaged emulsion explosive low-temperature sensitization machine	2、密闭式包装型乳化炸药低温敏化机
3. Small diameter manual single-head explosive loading machine	3、小直径手工单头炸药装药机
4. Mixing, transporting, and other explosive equipment with bearings buried in compositions	4、轴承包覆在药剂中的混药、输送等炸药设备
5. Steam chamber drying technique used in initiating explosive	5、起爆药干燥工序采用蒸汽烘房干燥的工艺

drying process

6. Techniques using manual loading of explosives in the delay element manufacturing process

6、延期元件（体）制造工序采用手工装药的工艺

7. Techniques without reliable anti-sympathetic detonation measures for detonator loading process, detonator assembly process, or transmission between processes

7、雷管装填、装配工序及工序间的传输无可靠防殉爆措施的工艺

8. Production lines without reliable anti-explosion measures for explosive loading devices in the shock-conducting tube manufacturing process

8、导爆管制造工序加药装置无可靠防爆设施的生产线

9. Industrial explosive and industrial detonator production lines without remote video surveillance for hazardous workplaces

9、危险作业场所未实现远程视频监视的工业炸药和工业雷管生产线

10. Detonating cord production lines without remote video surveillance for hazardous workplaces

10、危险作业场所未实现远程视频监视的导爆索生产线

11. Explosive production techniques by traditional wheel grinding method

11、采用传统轮碾方式的炸药制药工艺

12. Production techniques with discharge of wastewater from production of initiating explosives failing to meet requirements of the Discharge Standard for Water Pollutants from Ordnance Industry – Initiating Explosive Material and Relative Composition (GB14470.2)

12、起爆药生产废水达不到《兵器工业水污染排放标准火工药剂》（GB14470.2）要求排放的生产工艺

13. Emulsion technique with an emulsifier temperature greater than 130℃

13、乳化器出药温度大于 130℃的乳化工艺

14. Explosive loading machines with a loading rate of less than 1,200 kg/h for small diameter aqueous explosives or less than 800 kg/h for small diameter powder explosives

14、小直径含水炸药装药效率低于 1200kg/h、小直径粉状炸药装药效率低于 800kg/h 的装药机

15. Explosive equipment with noise over 85 decibels in a facility with regular operators

15、有固定操作人员的场所，噪声超过 85 分贝以上的炸药设备

16. Production technologies of electric detonator (2 m in length of steel-reinforced skirting) with a total resistance greater than 1.5Ω

16、全电阻极差大于 1.5Ω 的电雷管（钢芯脚线长度 2m）生产技术

17. Production lines without online collection or timely transmission of production data for packaged products off lines

17、装箱产品下线未实现生产数据在线采集、及时传输的生产线

18. Production techniques of electric detonator (2 m in length of steel-reinforced skirting) with a total resistance greater than 1.0Ω

18、全电阻极差大于 1.0Ω 的电雷管（钢芯脚线长度 2m）生产工艺

19. Detonating cord production lines without reliable anti-train explosion transmission measures between different processes

19、工序间无可靠防传爆措施的导爆索生产线

20. Detonating cord production lines without online testing of explosive amount or automatic interlock protection devices in the cord production process

20、制索工序无药量在线检测、自动联锁保护装置的导爆索生产线

21. Production techniques of regular electric detonators with maximum non-spark current of less than 0.25A

21、最大不发火电流小于 0.25A 的普通型电雷管生产工艺

22. Production techniques failing to achieve separation of men and machines in the detonator filling process

22、雷管装填工序未实现人机隔离的生产工艺

23. Production techniques relying on manual delivery of products in the detonator crimping and inspection processes	23、雷管卡口、检查工序间需人工传送产品的生产工艺
24. Low-level industrial explosives production lines with an annual output of 10,000 tons or less	24、年产 10000 吨及以下的低水平工业炸药生产线
(XVI) Fire Protection	（十六）消防
1. Manual plug welding production techniques of electronic components of fire detectors	1、火灾探测器手工插焊电子元器件生产工艺
(XVII) Mining	（十七）采矿
1. Manual loading and unloading of mineral rock during concentrated shovel loading	1、集中铲装作业时人工装卸矿岩
2. Dry rock drilling operations without a dust collector	2、未安装捕尘装置的干式凿岩作业
3. Human-powered or animal-powered transport of ore rock in main trackless transport tunnels and surface mines	3、主要无轨运输巷道及露天采场采用人力或畜力运输矿岩
4. Use of non-flame-retardant cables, ventilation pipes, and conveyor belts in underground mines	4、地下矿山使用非阻燃电缆、风筒和输送带
5. Use of timber supports in the main shafts and tunnels of underground mines	5、地下矿山主要井巷使用木支护
6. Manual loading and unloading operations in underground mines by open stoping (unsupported methods).	6、地下矿山采用空场法采矿（无底柱采矿法）采场内人工装运作业

7. Underground mines using stull stoping	7、地下矿山采用横撑支柱采矿法
8. Surface mines using springing blasting	8、露天矿山采用扩壶爆破
9. Surface mines removing lower layers to cause a slide of upper layers, digging, and using "one-wall" mining without steps	9、露天矿山采用掏底崩落、掏挖开采、不分层的“一面墙”开采
10. Surface mines secondarily breaking large pieces of ore rock by means of blasting	10、露天矿山使用爆破方式对大块矿岩进行二次破碎
(XVIII) Miscellaneous	（十八）其他
1. Electroplating process containing toxic and harmful cyanide (except for bottom process with electroplating gold, silver- or copper-based alloys or pre-plated copper)	1、含有毒有害氰化物电镀工艺（电镀金、银、铜基合金及予镀铜打底工艺除外）
2. Cyanide zinc precipitation process	2、含氰沉锌工艺
3. Tombolo technology for dams	3、实体坝连岛技术
4. Tourist activities and collection of medicinal materials and other forest products beyond the ecological bearing capacity	4、超过生态承载力的旅游活动和药材等林产品采集
5. Small incinerators failing to meet current national pollution control standards, engineering standards, and equipment standards for burning urban domestic garbage, medical waste, and industrial waste.	5、不符合国家现行城市生活垃圾、医疗废物和工业废物焚烧相关污染控制标准、工程技术标准以及设备标准的小型焚烧炉
6. Techniques, technologies, products, and equipment that do	6、不符合《大气污染防治法》《水污染防治法》《固体废

not conform with the Atmospheric Pollution Prevention and Control Law, the Water Pollution Prevention and Control Law, the Law on the Prevention and Control of Environment Pollution Caused by Solid Wastes, the Energy Conservation Law, the Work Safety Law, the Product Quality Law, the Land Administration Law, the Law on the Prevention and Control of Occupational Diseases, and other national laws and regulations, national mandatory standards in the aspects of safety, environmental protection, energy consumption, and quality, and the requirements of international environmental conventions

物污染环境防治法》《节约能源法》《安全生产法》《产品质量法》《土地管理法》《职业病防治法》等国家法律法规，不符合国家安全、环保、能耗、质量方面强制性标准，不符合国际环境公约等要求的工艺、技术、产品、装备

II. Outdated Products

二、落后产品

(I) Petrochemistry

（一）石化化工

1. Modified starch paint, modified fiber paint, multi-color interior wall paint (O/W paint with nitrocellulose as the primary ingredient in resin and xylene as the primary ingredient in solvent), vinyl chloride-vinylidene chloride copolymer emulsion exterior wall paint, tar polyurethane waterproof paint, water-based PVC tar waterproof paint, PVC and acetal interior and exterior wall paint (106 paint and 107 paint, among others), and polyvinyl acetate emulsion (including ethylene/vinyl acetate copolymer emulsion) exterior wall paint

1、改性淀粉、改性纤维、多彩内墙（树脂以硝化纤维素为主，溶剂以二甲苯为主的 O/W 型涂料）、氯乙烯-偏氯乙烯共聚乳液外墙、焦油型聚氨酯防水、水性聚氯乙烯焦油防水、聚乙烯醇及其缩醛类内外墙（106、107 涂料等）、聚醋酸乙烯乳液类（含乙烯/醋酸乙烯酯共聚物乳液）外墙涂料

2. Paint for interior walls, solvent-based carpentry, toys, cars, and exterior walls with the level of toxic substance exceeding prescribed standards; and paint containing DDT, tributyltin,

2、有害物质含量超标准的内墙、溶剂型木器、玩具、汽车、外墙涂料，含双对氯苯基三氯乙烷、三丁基锡、全氟辛酸及其盐类、全氟辛烷磺酸、红丹等有害物质的涂料

PFOA and its salts, PFOS, red lead, or other toxic substance

3. Azo dye producing 24 toxic aromatic amines from splitting decomposition during reduction (elimination suspended if not used for textiles) and 9 carcinogenic dyes (elimination suspended if not in direct contact with human body)

3、在还原条件下会裂解产生 24 种有害芳香胺的偶氮染料（非纺织品用的领域暂缓）、九种致癌性染料（用于与人体不直接接触的领域暂缓）

4. Paint remover containing benzene, phenol, benzaldehyde, dichloromethane or chloroform, lithopone, waterproof PVC caulking building material (tar type), 107 glue, clenbuterol, and PCBs (transformer oil)

4、含苯类、苯酚、苯甲醛和二（三）氯甲烷的脱漆剂，立德粉，聚氯乙烯建筑防水接缝材料（焦油型），107 胶，瘦肉精，多氯联苯（变压器油）

5. Highly toxic pesticide products: hexachlorocyclohexane, ethylene dibromide, daminozide, bis-A-TDA, nitrofen, chlordimeform, tetramethylenedisulfotetramine, fluoroacetamide, sodium fluoroacetate, nemagon nematam, sulfotep, phosphamidon, glyftor, atrane, methamidophos, parathion, methyl parathion, monocrotophos, sulfur cyclophosphamide (ethylthiapentalene cyclophosphamide), asomate, urbacid and all arsenicpreparations, mercurypreparations, lead preparations, glyphosate aqueous solution (10%), posfolan-methyl, calcium phosphide, zinc phosphide, fenamiphos, fonofos, magnesium phosphide, cadusafos, coumaphos, sulfotep, terbufos, and dicofol

5、高毒农药产品：六六六、二溴乙烷、丁酰肼、敌枯双、除草醚、杀虫脒、毒鼠强、氟乙酰胺、氟乙酸钠、二溴氯丙烷、治螟磷（苏化 203）、磷胺、甘氟、毒鼠硅、甲胺磷、对硫磷、甲基对硫磷、久效磷、硫环磷（乙基硫环磷）、福美胂、福美甲胂及所有砷制剂、汞制剂、铅制剂、10%草甘膦水剂，甲基硫环磷、磷化钙、磷化锌、苯线磷、地虫硫磷、磷化镁、硫线磷、蝇毒磷、治螟磷、特丁硫磷、三氯杀螨醇

6. Products eliminated as required under the overall plan of the state to execute international conventions: chlordane, heptachlor, bromomethane, dichlorodiphenyltrichloroethane, hexachlorobenzene, mirex, lindane, toxaphene, aldrin, dieldrin, endrin, endosulfan, sulfluramid, chlordecone, α-HCH, β-HCH, polychlorinated biphenyl, pentachlorobenzene,

6、根据国家履行国际公约总体计划要求进行淘汰的产品：氯丹、七氯、溴甲烷、滴滴涕、六氯苯、灭蚁灵、林丹、毒杀芬、艾氏剂、狄氏剂、异狄氏剂、硫丹、氟虫胺、十氯酮、α-六氯环己烷、β-六氯环己烷、多氯联苯、五氯苯、六溴联苯、四溴二苯醚和五溴二苯醚、六溴二苯醚和

hexabromobiphenyl, tetrabromodiphenyl ether and pentabromodiphenyl ether, hexabromodiphenyl ether and heptabromodiphenyl ether, hexabromocyclododecane (specific exempted uses are in the Restriction Category), perfluorooctanesulfonic acid and its salt and perfluoro-1-octanesulfonyl fluoride (acceptable uses are in the Restriction Category)

七溴二苯醚、六溴环十二烷（特定豁免用途为限制类）、全氟辛基磺酸及其盐类和全氟辛基磺酰氟（可接受用途为限制类）

7. Soft-edge bicycle tire, ordinary conveyor with cotton cords as framework material, ordinary V-belt with nylon cords as framework material, and hand carved vulcanization molds for tires, bicycle tires, and motorcycle tires

7、软边结构自行车胎，以棉帘线为骨架材料的普通输送带和以尼龙帘线为骨架材料的普通 V 带，轮胎、自行车胎、摩托车胎手工刻花硫化模具

(II) Railway

（二）铁路

1. G60 and G17 tank cars

1、G60 型、G17 型罐车

2. P62 boxcar

2、P62 型棚车

3. K13 ore car

3、K13 型矿石车

4. U60 cement car

4、U60 型水泥车

5. N16 and N17 flatcars

5、N16 型、N17 型平车

6. L17 grain car

6、L17 型粮食车

7. C62A and C62B open freight cars

7、C62A 型、C62B 型敞车

8. Rail flatcar (40 tons or less in carrying capacity)	8、轨道平车（载重 40 吨及以下）
(III) Iron and Steel	（三）钢铁
1. Hot-rolled silicon steel sheet	1、热轧硅钢片
2. Steel wire and steel strand with a general relaxation level	2、普通松弛级别的钢丝、钢绞线
3. Hot-rolled reinforcing steel bar: grade HRB335 and HPB235	3、热轧钢筋：牌号 HRB335、HPB235
4. Steel billets (ingots) produced with scrap steel melted by utility-frequency and intermediate-frequency induction furnaces and steel products produced using the foregoing as raw materials (eliminated in accordance with the national laws and regulations and the relevant requirements of the state to ban "bar steel")	4、使用工频或中频感应炉熔化废钢生产的钢坯（锭），及以其为原料生产的钢材产品（根据国家法律法规和国家取缔“地条钢”有关要求淘汰）
(IV) Nonferrous Metals	（四）有色金属
1. Copper rod (black)	1、铜线杆（黑杆）
(V) Building Materials	（五）建材
1. GRC hollow slats made from non-alkali-resistance fiberglass and non-low-alkali cement	1、使用非耐碱玻纤或非低碱水泥生产的玻纤增强水泥（GRC）空心条板
2. Clay crucible wire-drawing glass fiber and its products as well as its reinforced plastic (fiber-reinforced plastic) products	2、陶土坩埚拉丝玻璃纤维和制品及其增强塑料（玻璃钢）制品

3. 25A hollow steel window

3、25A 空腹钢窗

4. S-2 concrete sleeper

4、S-2 型混凝土轨枕

5. Sitting toilet using more than 8 liters of water maximum in a single flush

5、一次冲洗最大用水量 8 升以上的坐便器

6. Amphibole asbestos (blue asbestos)

6、角闪石石棉（即蓝石棉）

7. Hollow glass in non-machinery production, various double-layer double-frame doors and windows, and single-chamber plastic doors and windows

7、非机械生产的中空玻璃、双层双框各类门窗及单腔结构型的塑料门窗

8. Polyethylene polypropylene fiber-type composite waterproof coiled material produced by double-heating composite molding process and polyethylene polypropylene fiber composite waterproof coiled material (polyethylene core material less than 0.5mm in thickness); cotton polyester glass fiber (high alkali) grid composite tire base material and PVC waterproof coiled material (S-shape)

8、采用二次加热复合成型工艺生产的聚乙烯丙纶类复合防水卷材、聚乙烯丙纶复合防水卷材（聚乙烯芯材厚度在 0.5㎜以下）；棉涤玻纤（高碱）网格复合胎基材料、聚氯乙烯防水卷材（S 型）

9. Asbestos fiber-quality clutch facing, synthetic train brake shoe, and asbestos wet-type cork clutch facing

9、石棉绒质离合器面片、合成火车闸瓦，石棉软木湿式离合器面片

(VI) Medicine

（六）医药

1. Pewter ointment tube or single layer polyolefin ointment tube (except for application to anorectum or a body cavity)

1、铅锡软膏管、单层聚烯烃软膏管（肛肠、腔道给药除外）

2. Sterile powder for ampoule filling injections	2、安瓿灌装注射用无菌粉末
3. Natural rubber stopper for medical use	3、药用天然胶塞
4. Non-frangible ampoule	4、非易折安瓿
5. Soft PVC bags for transfusion (excluding those for peritoneal dialysis solution and irrigation solution)	5、输液用聚氯乙烯（PVC）软袋（不包括腹膜透析液、冲洗液用）
(VII) Machinery	（七）机械
1. T100 and T100A bulldozers	1、T100、T100A 推土机
2. ZP-II and ZP-III dry-mix shotcrete machines	2、ZP-II、ZP-III 干式喷浆机
3. WP-3 excavator	3、WP-3 挖掘机
4. Pneumatic rock grab of less than 0.35 cubic meter	4、0.35 立方米以下的气动抓岩机
5. Wire rope mining impact drill	5、矿用钢丝绳冲击式钻机
6. БУ-40 oil rig	6、БУ-40 石油钻机
7. Water gas furnace with a diameter of 1.98 meters	7、直径 1.98 米水煤气发生炉
8. CER diaphragm series	8、CER 膜盒系列
9. Thermocouple (grade division LL-2, LB-3, EU-2, EA-2, and CK)	9、热电偶（分度号 LL-2、LB-3、EU-2、EA-2、CK）

10. Thermal resistor (grade division BA, BA2, and G)

10、热电阻（分度号 BA、BA2、G）

11. DDZ-I electronic control system

11、DDZ-I 型电动单元组合仪表

12. GGP-01A belt weigher

12、GGP-01A 型皮带秤

13. BLR-31 weighing sensor

13、BLR-31 型称重传感器

14. WFT-081 radiation sensor

14、WFT-081 辐射感温器

15. WDH-1E and WDH-2E photoelectric thermometers and PY5 digital thermometer

15、WDH-1E、WDH-2E 光电温度计，PY5 型数字温度计

16. BC series single bellow tube differential pressure gauge and LCH-511, YCH-211, LCH-311, YCH-311, LCH-211, and YCH-511 round differential pressure gauges

16、BC 系列单波纹管差压计，LCH-511、YCH-211、LCH-311、YCH-311、LCH-211、YCH-511 型环称式差压计

17. EWC-01A strip-chart electronic potentiometer

17、EWC-01A 型长图电子电位差计

18. XQWA self-balancing strip indicator

18、XQWA 型条形自动平衡指示仪

19. ZL3 X-Y recorder

19、ZL3 型 X-Y 记录仪

20. DBU-521 and DBU-521C liquid level transmitters

20、DBU-521，DBU-521C 型液位变送器

21. YB series (machine number: 63-355 mm, voltage of 600V or less), YBF series (machine number: 63-160mm, voltage of 380V, 660V, or 380/660V), and YBK series (machine number: 100-355 mm, voltage of 380/660V or 660/1140V) flame-proof

21、YB 系列（机座号 63～355mm，额定电压 660V 及以下）、YBF 系列（机座号 63～160mm，额定电压 380、660V 或 380/660V）、YBK 系列（机座号 100～355mm，额定电压

three-phase induction motor	380/660V、660/1140V）隔爆型三相异步电动机
22. DZ10 series molded case circuit breaker and DW10 series frame circuit breaker	22、DZ10 系列塑壳断路器、DW10 系列框架断路器
23. CJ8 series AC contactor	23、CJ8 系列交流接触器
24. QC10, QC12, and QC8 starters	24、QC10、QC12、QC8 系列起动器
25. JR0, JR9, JR14, JR15, JR16-A, JR16-B, JR16-C, and JR16-D series thermal relays	25、JR0、JR9、JR14、JR15、JR16-A、B、C、D 系列热继电器
26. Coke-fueled nonferrous metal melting furnaces	26、以焦炭为燃料的有色金属熔炼炉
27. GGW series medium frequency coreless induction melting furnaces	27、GGW 系列中频无心感应熔炼炉
28. B and BA single-stage single-suction cantilever centrifugal pump series	28、B 型、BA 型单级单吸悬臂式离心泵系列
29. F single-stage single-suction corrosion-resistant pump series	29、F 型单级单吸耐腐蚀泵系列
30. JD long axis deep well pump	30、JD 型长轴深井泵
31. KDON-3200/3200 regenerator low pressure process air separation unit, KDON-1500/1500 regenerator (tube) low pressure process air separation unit, KDON-1500/1500 tube plate low pressure process air separation unit, and KDON-6000/6600 regenerator process air separation unit	31、KDON-3200/3200 型蓄冷器全低压流程空分设备、KDON-1500/1500 型蓄冷器（管式）全低压流程空分设备、KDON-1500/1500 型管板式全低压流程空分设备、KDON-6000/6600 型蓄冷器流程空分设备

32. 3W-0.9/7 (ring valve) air compressor	32、3W-0.9/7（环状阀）空气压缩机
33. C620 and CA630 common lathes	33、C620、CA630 普通车床
34. C616, C618, C630, C640, and C650 common lathes	34、C616、C618、C630、C640、C650 普通车床
35. X920 key seat milling machine	35、X920 键槽铣床
36. B665, B665A, and B665-1 shaping machine	36、B665、B665A、B665-1 牛头刨床
37. D6165 and D6185 EDM shaping machine	37、D6165、D6185 电火花成型机床
38. D5540 electric pulse machine	38、D5540 电脉冲机床
39. J53-400, J53-630, and J53-1000 double-disc friction presses	39、J53-400、J53-630、J53-1000 双盘摩擦压力机
40. Q11-1.6x1,600 shear	40、Q11-1.6×1600 剪板机
41. Q51 truck crane	41、Q51 汽车起重机
42. TD62 fixed belt conveyor	42、TD62 型固定带式输送机
43. 3-ton DC overhead electric trolley locomotive for underground mining	43、3 吨直流架线式井下矿用电机车
44. A571 single-beam crane	44、A571 单梁起重机

45. High speed circuit breakers: DS3-10, DS3-30, DS3-50 (1,000A, 3,000A, or 5,000A), DS10-10, DS10-20, and DS10-30 (1,000A, 2,000A, or 3,000A)

45、快速断路器：DS3-10、DS3-30、DS3-50（1000、3000、5000A）、DS10-10、DS10-20、DS10-30（1000、2000、3000A）

46. SX series chamber electric resistance furnaces

46、SX 系列箱式电阻炉

47. Single-phase watt-hour meters: DD1, DD5, DD5-2, DD5-6, DD9, DD10, DD12, DD14, DD15, DD17, DD20, and DD28

47、单相电度表：DD1、DD5、DD5-2、DD5-6、DD9、DD10、DD12、DD14、DD15、DD17、DD20、DD28

48. SL7-30/10~SL7-1600/10 and S7-30/10~S7-1600/10 distribution transformers

48、SL7-30/10～SL7-1600/10、S7-30/10～S7-1600/10 配电变压器

49. Knife switch: HD6, HD3-100, HD3-200, HD3-400, HD3-600, HD3-1000, and HD3-1500

49、刀开关：HD6、HD3-100、HD3-200、HD3-400、HD3-600、HD3-1000、HD3-1500

50. GC low pressure boiler feed pump and DG270-140, DG500-140, and DG375-185 boiler feed pumps

50、GC 型低压锅炉给水泵，DG270-140、DG500-140、DG375-185 锅炉给水泵

51. Thermodynamic traps: S15H-16, S19-16, S19-16C, S49H-16, S49-16C, S19H-40, S49H-40, S19H-64, and S49H-64

51、热动力式疏水阀：S15H-16、S19-16、S19-16C、S49H-16、S49-16C、S19H-40、S49H-40、S19H-64、S49H-64

52. Fixed grate coal-fired boiler (except double-layer fixed grate boiler)

52、固定炉排燃煤锅炉（双层固定炉排锅炉除外）

53. L-10/8 and L-10/7 reciprocating air compressors for power

53、L-10/8、L-10/7 型动力用往复式空气压缩机

54. 8-18 and 9-27 series high pressure centrifugal fans

54、8-18 系列、9-27 系列高压离心通风机

55. X52 and X62W 320x150 knee-and-column milling machines	55、X52、X62W 320×150 升降台铣床
56. J31-250 mechanical press	56、J31-250 机械压力机
57. TD60, TD62, and TD72 fixed belt conveyors	57、TD60、TD62、TD72 型固定带式输送机
58. E135 two-stroke medium speed diesel engine (including three types: 2-cylinder, 4-cylinder, and 6-cylinder) and 4146 diesel engine	58、E135 二冲程中速柴油机（包括 2、4、6 缸三种机型），4146 柴油机
59. TY1100 vertical single-cylinder water-cooled direct injection diesel engine	59、TY1100 型单缸立式水冷直喷式柴油机
60. 165 horizontal single-cylinder evaporative cooling pre-chamber diesel engine	60、165 单缸卧式蒸发水冷、预燃室柴油机
61. Switches and relays containing mercury	61、含汞开关和继电器
62. Fuel-fired mopeds	62、燃油助力车
63. Vehicle engines failing to meet the national stage II emission standards	63、低于国二排放的车用发动机
64. Asbestos brake linings for motor vehicles	64、机动车制动用含石棉材料的摩擦片
65. Non-specific-model mine cages, personnel lifting winches of less than Φ1.2m, KJ mine hoists, JKA mine hoists, XKT mine hoists, JTK mine lifting winches, belt and brake mine winches, electromechanical control devices for TKD winches	65、非定型竖井罐笼，Φ1.2 米以下（不含 Φ1.2 米）用于升降人员的提升绞车，KJ 型矿井提升机，JKA 型矿井提升机，XKT 型矿井提升机，JTK 型矿用提升绞车，带式制动矿

and electromechanical control devices for winches using the relay structure principle, dry brakes of trackless rubber-tired vehicles specially for transporting personnel and fuel, and medium and long-hole drilling equipment without voltage stabilizing devices

用提升绞车，TKD 型提升机电控装置及使用继电器结构原理的提升机电控装置，专门用于运输人员、油料的无轨胶轮车使用的干式制动器，无稳压装置的中深孔凿岩设备

66. Coal-fired boilers of 10 tons per hour or below

66、每小时 10 蒸吨及以下燃煤锅炉

67. Diesel trucks for hire of China III or lower emission standards and old natural gas vehicles using lean-burn technologies, or to which gasoline-powered vehicles are converted

67、国三及以下排放标准营运柴油货车，采用稀薄燃烧技术和“油改气”的老旧燃气车辆

(VIII) Vessels

（八）船舶

1. Steel transport vessel built by the integral shipbuilding method

1、采用整体造船法建造的钢制运输船舶

2. Substandard refitted ships and ships reaching retirement

2、不符合规范的改装船舶和已到报废期限的船舶

3. Single hull oil tanker

3、单壳油船

4. Suspended screw motor boat and its engine

4、挂桨机船及其发动机

(IX) Light Industry

（九）轻工

1. Mercury battery (mercuric oxide primary cells and battery packs and zinc-mercury cells)

1、汞电池（氧化汞原电池及电池组、锌汞电池）

2. Mercury-containing pasted zinc-manganese batteries,

2、含汞糊式锌锰电池、含汞纸板锌锰电池、含汞圆柱型碱

mercury-containing paper-lined zinc-manganese batteries, mercury-containing cylindrical alkaline manganese batteries, and mercury-containing button alkaline manganese batteries	锰电池、含汞扣式碱锰电池
3. Mercury-containing coated paper and mercury-containing zinc powder	3、含汞浆层纸、含汞锌粉
4. Ordinary vented lead storage batteries and dry-charged lead storage batteries	4、开口式普通铅蓄电池、干式荷电铅蓄电池
5. Lead storage battery with over 0.002% cadmium	5、含镉高于 0.002%的铅蓄电池
6. Lead storage batteries with over 0.1% arsenic	6、含砷高于 0.1%的铅蓄电池
7. Consumer nickel-cadmium batteries	7、民用镉镍电池
8. Direct vent gas water heaters	8、直排式燃气热水器
9. Spiral swivel lifting (cast iron) faucets	9、螺旋升降式（铸铁）水嘴
10. Aniline ink for gravure	10、用于凹版印刷的苯胺油墨
11. Water tank fittings for upward-transmitted vertical drop toilets with water inlet lower than overflow port water level	11、进水口低于溢流口水面、上导向直落式便器水箱配件
12. Cast iron globe valves	12、铸铁截止阀
13. Semi-automatic (horizontal) industrial washing machine	13、半自动（卧式）工业用洗衣机

14. Non-sealed tetrachloroethylene dry cleaning machine and regular sealed tetrachloroethylene dry cleaning machine; split petroleum solvent dry cleaning machine and regular sealed petroleum solvent dry cleaning machine

14、开启式四氯乙烯干洗机和普通封闭式四氯乙烯干洗机，分体式石油干洗机和普通封闭式石油干洗机

15. Production and use of alkylphenol ethoxylates (including polyoxy ethylene nonyl phenyl ether, octylphenol ethoxylate, and dodecylphenol polyoxyethylene ether)

15、烷基酚聚氧乙烯醚（包括壬基酚聚氧乙烯醚、辛基酚聚氧乙烯醚和十二烷基酚聚氧乙烯醚等）的生产和使用

16. Disposable foamed plastic tableware and disposable plastic cotton swabs (December 31, 2020); consumer chemical products containing microbeads (of which the production shall be prohibited as from December 31, 2020, and the sale shall be prohibited as from December 31, 2022); and ultra-thin plastic bags with a thickness of less than 0.025 mm and agricultural polyethylene mulch with a thickness of less than 0.01 mm

16、一次性发泡塑料餐具、一次性塑料棉签（2020 年 12 月 31 日）；含塑料微珠的日化用品（到 2020 年 12 月 31 日禁止生产，到 2022 年 12 月 31 日禁止销售）；厚度低于 0.025 毫米的超薄型塑料袋、厚度低于 0.01 毫米的聚乙烯农用地膜

17. Cold cathode fluorescent lamps and external electrode fluorescent lamps for electronic displays: (1) relatively small length (≤500 mm) and single-lamp mercury content exceeding 3.5 mg; (2) medium length (> 500 mm and ≤1500 mm) and single-lamp mercury content exceeding 5 mg; and (3) relatively great length (> 1500 mm) and single-lamp mercury content exceeding 13 mg (December 31, 2020)

17、用于电子显示的冷阴极荧光灯和外置电极荧光灯：（1）长度较短（≤500 毫米）且单支含汞量超过 3.5 毫克；（2）中等长度（＞500 毫米且≤1500 毫米）且单支含汞量超过 5 毫克；（3）长度较长（＞1500 毫米）且单支含汞量超过 13 毫克（2020 年 12 月 31 日）

18. Cosmetics (containing mercury of more than one millionth), including skin lightening soaps and creams, excluding eye cosmetics that use mercury as a preservative to which there is no effective and safe alternative (December 31, 2020)

18、化妆品（含汞量超过百万分之一），包括亮肤肥皂和乳霜，不包括以汞为防腐剂且无有效安全替代防腐剂的眼部化妆品（2020 年 12 月 31 日）

19. Production of non-electronic measuring instruments such as mercury barometers, hygrometers, pressure gages, and thermometers (other than medical thermometers) (unless appropriate mercury-free alternatives are unavailable, or except non-electronic measuring equipment installed in large equipment or used for high-precision measurement) (December 31, 2020)

19、生产含汞的气压计、湿度计、压力表、温度计（体温计除外）等非电子测量仪器（无法获得适当无汞替代品、安装在大型设备中或用于高精度测量的非电子测量设备除外）（2020 年 12 月 31 日）

20. Mercury thermometers and mercury sphygmomanometers (December 31, 2025)

20、含汞体温计和含汞血压计（2025 年 12 月 31 日）

21. Mercury-containing batteries, excluding button silver-oxide batteries containing mercury of less than 2% and button zinc-air batteries containing mercury of less than 2% (December 31, 2020)

21、含汞电池，不包括含汞量低于 2%的扣式锌氧化银电池以及含汞量低于 2%的扣式锌空气电池（2020 年 12 月 31 日）

22. Compact fluorescent lamps for general illumination purposes, of not more than 30 watts, each containing more than 5 mg of mercury (December 31, 2020)

22、用于普通照明用途的不超过 30 瓦且单支含汞量超过 5 毫克的紧凑型荧光灯（2020 年 12 月 31 日）

23. Fluorescent lamp tubes for general illumination purposes: (1) fluorescent lamp tubes of less than 60 watts, each containing more than 5 mg of mercury (using phosphors of three primary colors); (2) fluorescent lamp tubes of 40 watts or less, each containing more than 10 mg of mercury (using halophosphate phosphors) (December 31, 2020)

23、用于普通照明用途的直管型荧光灯：（1）低于 60 瓦且单支含汞量超过 5 毫克的直管型荧光灯（使用三基色荧光粉）；（2）低于 40 瓦（含 40 瓦）且单支含汞量超过 10 毫克的直管型荧光灯（使用卤磷酸盐荧光粉）（2020 年 12 月 31 日）

24. High-pressure mercury lamps for general illumination purposes (December 31, 2020)

24、用于普通照明用途的高压汞灯（2020 年 12 月 31 日）

25. Production of refrigerator and freezer products, refrigerated

25、以一氟二氯乙烷（HCFC-141b）为发泡剂生产冰箱冷柜

container products, and electric water heater products using 1,1-dichloro-1-fluoroethane (HCFC-141b) as a foaming agent	产品、冷藏集装箱产品、电热水器产品
26. Daily essence containing xylene musk	26、含二甲苯麝香的日用香精
(X) Fire Protection	（十）消防
1. Difluoro-chloro bromomethance fire extinguisher (1211 fire extinguisher)	1、二氟一氯一溴甲烷灭火剂（简称 1211 灭火剂）
2. Bromotrifluoromethane fire extinguisher (1301 fire extinguisher) (except for raw materials and essential uses)	2、三氟一溴甲烷灭火剂（简称 1301 灭火剂）（原料及必要用途除外）
3. Simplified 1211 fire extinguisher	3、简易式 1211 灭火器
4. Portable 1211 fire extinguisher	4、手提式 1211 灭火器
5. Wheeled 1211 fire extinguisher	5、推车式 1211 灭火器
6. Portable chemical foam fire extinguisher	6、手提式化学泡沫灭火器
7. Portable soda-acid fire extinguisher	7、手提式酸碱灭火器
8. Simplified 1301 fire extinguisher (exception for essential uses)	8、简易式 1301 灭火器（必要用途除外）
9. Portable 1301 fire extinguisher (except for essential uses)	9、手提式 1301 灭火器（必要用途除外）
10. Wheeled 1301 fire extinguisher (except for essential uses)	10、推车式 1301 灭火器（必要用途除外）

11. Pipe network 1211 fire extinguishing system	11、管网式 1211 灭火系统
12. Hanged 1211 fire extinguishing system	12、悬挂式 1211 灭火系统
13. Cabinet 1211 fire extinguishing system	13、柜式 1211 灭火系统
14. Pipe network 1301 fire extinguishing system (except for essential uses)	14、管网式 1301 灭火系统（必要用途除外）
15. Hanged 1301 fire extinguishing system (except for essential uses)	15、悬挂式 1301 灭火系统（必要用途除外）
16. Cabinet 1301 fire extinguishing system (except for essential uses)	16、柜式 1301 灭火系统（必要用途除外）
17. PVC lined fire hose	17、PVC 衬里消防水带
(XI) Industrial Explosive Products	（十一）民爆产品
1. Industrial detonators that do not meet the requirements of domestic public safety full-life-cycle control standards	1、不满足国内公共安全全生命周期管控标准要求的工业雷管
2. Fuse	2、导火索
3. Ammonite	3、铵梯炸药
4. Cardboard detonator	4、纸壳雷管

(XII) Miscellaneous

1. 59, 69, 72, and TF-3 gas masks

2. ZH15 self-contained chemical oxygen self-rescuers and carbon monoxide filtering self-rescuers

3. Techniques, technologies, products, and equipment that do not conform with the Atmospheric Pollution Prevention and Control Law, the Water Pollution Prevention and Control Law, the Law on the Prevention and Control of Environment Pollution Caused by Solid Wastes, the Energy Conservation Law, the Work Safety Law, the Product Quality Law, the Land Administration Law, the Law on the Prevention and Control of Occupational Diseases, and other national laws and regulations, national mandatory standards in the aspects of safety, environmental protection, energy consumption, and quality, and the requirements of international environmental conventions

（十二）其他

1、59、69、72、TF-3 型防毒面具

2、ZH15 隔绝式化学氧自救器，一氧化碳过滤式自救器

3、不符合《大气污染防治法》《水污染防治法》《固体废物污染环境防治法》《节约能源法》《安全生产法》《产品质量法》《土地管理法》《职业病防治法》等国家法律法规，不符合国家安全、环保、能耗、质量方面强制性标准，不符合国际环境公约等要求的工艺、技术、产品、装备

Decision of the National Development and Reform Commission to Amend the Catalogue for Guiding Industry Restructuring (2019)

Order of the National Development and Reform Commission of the People's Republic of China

中华人民共和国国家发展和改革委员会令

(N0. 49)

（第 49 号）

The Decision of the National Development and Reform Commission to Amend the Catalogue for Guiding Industry Restructuring (2019), as adopted at the 20th executive meeting of the National Development and Reform Commission on December 27, 2021, is hereby issued and shall come into force on the date of issuance.

《国家发展改革委关于修改＜产业结构调整指导目录（201（2019 年本）＞的决定》已经 2021 年 12 月 27 日第 20 次委务会议审议通过，现予公布，自发布之日起施行。

Director: He Lifeng

主任 何立峰

December 30, 2021

2021 年 12 月 30 日

Decision of the National Development and Reform Commission to Amend the Catalogue for Guiding Industry Restructuring (2019)

国家发展改革委关于修改《产业结构调整指导目录（2019 年本）》的决定

Subparagraph (7), “virtual currency mining operations,” is added to “18. Miscellaneous” of “I. Outdated Production Techniques and Equipment” in the eliminated category in the Catalogue for Guiding Industry Restructuring.

在《产业结构调整指导目录（2019 年本）》淘汰类“一、落后生产工艺装备”、“（十八）其他”中增加第 7 项，内容为“虚拟货币‘挖矿’活动”。

EXHIBIT 38

The Central Committee of the Communist Party of China and the State Council Issued the "Outline for Building a Powerful Transportation Nation"

Xinhua News Agency, Beijing, September 19th: Recently, the Central Committee of the Communist Party of China and the State Council issued the "Outline for Building a Powerful Transportation Nation" and issued a notice requiring all regions and departments to conscientiously implement it based on actual conditions.

The full text of the "Outline for Building a Powerful Transportation Nation" is as follows.

Building a powerful transportation country is a major strategic decision made by the Party Central Committee with Comrade Xi Jinping as the core based on national conditions, focusing on the overall situation, and facing the future. It is the leading field in building a modern economic system, an important support for building a modern and powerful socialist country in an all-round way, and an important step in the new era. The general starting point for good transportation work. This outline is formulated in order to coordinate and promote the construction of a powerful transportation country.

1. Overall requirements

(1) Guiding ideology. Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, we will thoroughly implement the spirit of the 19th National Congress of the Communist Party of China, closely focus on coordinating and advancing the "five-in-one" overall layout and coordinate the advancement of the "four comprehensives" strategic layout, and persist in seeking progress while maintaining stability. The general tone is to adhere to the new development concept, insist on promoting high-quality development, adhere to the supply-side structural reform as the main line, adhere to the people-centered development idea, firmly grasp the position of "pioneer officer" in transportation, be appropriately ahead of the curve, further emancipate the mind and pioneer Enterprising, promote the transformation of transportation development from pursuing speed and scale to paying more attention to quality and efficiency, from the relatively independent development of various transportation modes to paying more attention to integrated development, from relying on traditional factors to focusing

more on innovation, and building a safe, convenient, and Efficient, green, and economical modern comprehensive transportation system, build first-class facilities, first-class technology, first-class management, and first-class services, build a transportation power that satisfies the people, has strong guarantees, and ranks among the top in the world, and contributes to building a modern and powerful socialist country in an all-round way and realizing the great rejuvenation of the Chinese nation The Chinese Dream provides strong support.

(2) Development goals

By 2020, we will complete the transportation construction tasks of building a moderately prosperous society in all respects and the tasks of the "13th Five-Year Plan" modern comprehensive transportation system development plan, laying a solid foundation for building a transportation power.

From 2021 to the middle of this century, the construction of a transportation power will be promoted in two stages.

By 2035, China will basically become a transportation powerhouse. A modern comprehensive transportation system has been basically formed, people's satisfaction has been significantly improved, and the ability to support the country's modernization construction has been significantly enhanced; with a developed express network, a complete trunk network, and an extensive basic network, the coordinated development of urban and rural regional transportation has reached a new height; a " "National 123 travel transportation circle" (1-hour commute in urban areas, 2-hour access to urban agglomerations, 3-hour coverage of major cities across the country) and "Global 123 Express Cargo Logistics Circle" (1-day domestic delivery, 2-day delivery to surrounding countries, global 3-day delivery in major cities), passenger intermodal transportation is convenient and smooth, and multimodal transportation of goods is efficient and economical; the development level of smart, safe, green, and shared transportation has been significantly improved, urban traffic congestion has been basically alleviated, and the barrier-free travel service system has been basically improved; transportation The scientific and technological innovation system has been basically established, the key transportation equipment is advanced and safe, the talent team is excellent, and the market environment is excellent; the transportation governance system and governance capabilities have been basically modernized; the international competitiveness and influence of transportation have been significantly improved.

By the middle of this century, we will fully build a transportation power that satisfies the people, has strong security, and ranks among the top in the world. The scale and quality of infrastructure, technical equipment, scientific and technological innovation capabilities, intelligence and greening levels rank among the best in the world. Traffic safety levels, governance capabilities, civilized levels, international competitiveness and influence have reached internationally advanced levels, and comprehensive services and guarantees for socialism have been achieved. To build a modern and powerful country, the people enjoy good transportation services.

2. Complete infrastructure layout and three-dimensional interconnection

(1) Build a modern, high-quality comprehensive three-dimensional transportation network. Based on the national development plan, give full play to the guiding and restrictive role of territorial spatial planning, coordinate the planning and construction of infrastructure such as railways, highways, water transportation, civil aviation, pipelines, and postal services, and improve the multi-level network layout with multi-center and network-based forms. , optimize the allocation of existing resources, expand high-quality incremental supply, achieve three-dimensional interconnection, and enhance system flexibility. Strengthen the western region to make up for its shortcomings, promote the quality improvement and transformation of the northeastern region, promote the construction of major corridors and hubs in the central region, accelerate the optimization and upgrading of the eastern region, and form a new pattern of coordinated regional transportation development.

(2) Build a convenient and smooth urban (cluster) transportation network. Build an integrated transportation network for urban agglomerations, promote the integrated development of trunk railways, intercity railways, urban (suburban) railways, and urban rail transit, improve the urban agglomeration express highway network, and strengthen the connection between highways and urban roads. Respect the laws of urban development, promote the integrity, systematicness, and growth of the city, coordinate urban functions and land layout, and scientifically formulate and implement comprehensive urban transportation system planning. Promote the construction of urban public transportation facilities, strengthen the connection between urban rail transit and other modes of transportation, improve the gradation of expressways, primary and secondary trunk roads, branch roads and a rationally structured urban road network, open up road microcirculation, improve road accessibility, and improve the city

Pedestrian and non-motor vehicle transportation systems will improve the quality of walking, cycling and other travel, and improve barrier-free facilities. Scientifically plan and construct urban parking facilities, and strengthen the construction of facilities such as charging, hydrogenation, gas refueling, and bus stations. Comprehensively improve the intelligent level of urban transportation infrastructure.

(3) Form a wide-covering rural transportation infrastructure network. Comprehensively promote the construction of "four good rural roads", accelerate the construction of hardened roads leading to villages, and establish a standardized and sustainable management and protection mechanism. Promote the organic integration of transportation construction with resource development and industrial development in rural areas, and strengthen transportation construction in areas with advantageous agricultural products and areas rich in tourism resources. Vigorously promote the development of transportation in old revolutionary base areas, ethnic minority areas, border areas, poverty-stricken areas, reclamation and forest areas, and achieve poverty alleviation through transportation convenience. Transportation construction projects in deeply impoverished areas will try to focus on villages and households. Promote the construction of developmental railways in resource-rich and relatively densely populated poor areas, promote the construction of general airports with functions such as tourism, agricultural operations, and emergency rescue in areas where conditions permit, and strengthen the construction of rural postal and other infrastructure.

(4) Build a multi-level, integrated comprehensive transportation hub system. Relying on world-class urban agglomerations such as the Beijing-Tianjin-Hebei region, the Yangtze River Delta, and the Guangdong-Hong Kong-Macao Greater Bay Area, we will create globally competitive international seaport hubs, aviation hubs, and core postal express hubs, build a number of national and regional transportation hubs, and promote comprehensive Integrate the planning and construction of transportation hubs, improve the level of transfers and equipment, and improve the collection and distribution system. Vigorously develop hub economy.

3. Transportation equipment is advanced, applicable, complete and controllable

(1) Strengthen the research and development of new transportation vehicles. Achieve major breakthroughs in 30,000-ton heavy-duty trains and 250 kilometers per hour high-speed wheel-rail freight trains. Strengthen the research and development of intelligent connected vehicles (smart cars, autonomous driving, vehicle-road collaboration) to form an independent,

controllable and complete industrial chain. Strengthen independent design and construction capabilities of large and medium-sized cruise ships, large liquefied natural gas ships, polar sailing ships, smart ships, and new energy ships. Improve the product spectrum of civil aircraft and make significant progress in large civil aircraft, heavy helicopters, general aircraft, etc.

(2) Strengthen the research and development of special equipment. Promote the research and development of engineering machinery and equipment such as tunnel projects and whole-span lifting and installation equipment. Research and develop new equipment such as underwater robots, deep diving equipment, large oil spill recovery ships, and large deep sea multi-functional rescue ships.

(3) Promote equipment and technology upgrades. Promote new energy, clean energy, intelligent, digital, lightweight, environmentally friendly transportation equipment and complete sets of technical equipment. Extensively apply new equipment and facilities such as smart high-speed rail, smart roads, smart shipping, automated terminals, digital pipe networks, smart warehousing and sorting systems, and develop a new generation of smart traffic management systems. Improve the technical level of domestic aircraft and engines, and strengthen the development, manufacturing and airworthiness certification system of civil aircraft and engines. Promote the application of intelligent detection, monitoring and operation and maintenance technology for transportation equipment. Accelerate the elimination of backward technologies and high-consumption and inefficient transportation equipment.

4. Transportation services are convenient, comfortable, cost-effective and efficient

(1) Promote rapid and convenient travel services. Build a large-capacity, high-efficiency inter-regional rapid passenger transport service with high-speed rail and aviation as the main body, and improve the passenger transport capacity of major corridors. Improve the aviation service network, gradually intensify the construction of the airport network, vigorously develop regional aviation, promote the effective connection of trunk and branch lines, and improve aviation service capabilities and quality. Improve the commuting level of rail transit within urban agglomerations, promote the bus-based operation mode of intercity road passenger transportation, and create a passenger intermodal transportation system. Strengthen the comprehensive management of urban traffic congestion, give priority to the development of urban public transportation, encourage and guide green bus travel, and reasonably guide individual motorized travel. Promote the integration of urban and rural passenger transport

services, improve the level of equalization of public services, and ensure that urban and rural residents have everything they need.

(2) Create a green and efficient modern logistics system. Optimize the transportation structure, accelerate the construction of key "road-to-rail" projects such as port collection and distribution railways, logistics parks, and dedicated railway lines for large industrial and mining enterprises, and promote the orderly transfer of bulk cargo and medium- and long-distance cargo transportation to railways and water transport. Promote the development of intermodal transport such as iron and water, road and rail, public water, air and land, promote cross-modal rapid change and transfer standardized facilities and equipment, and form unified multimodal transport standards and rules. Give full play to the advantages of "door-to-door" road freight transportation. Improve the air logistics network and improve air cargo efficiency. Promote the development of specialized logistics such as e-commerce logistics, cold chain logistics, bulk transportation, and dangerous goods logistics, promote the organic connection between intercity trunk transportation and urban terminal distribution, and encourage the development of intensive distribution models. Comprehensively utilize a variety of resources to improve rural distribution networks and promote two-way circulation between urban and rural areas. Implement tax reduction and fee reduction policies, optimize logistics organization models, improve logistics efficiency, and reduce logistics costs.

(3) Accelerate the development of new business formats and new models. Deepen the integrated development of transportation and tourism, promote the development of tourist trains, tourist scenic routes, tourist waterways, self-driving RV campsites, yacht tourism, low-altitude flight tourism, etc., and improve the tourism service functions of transportation facilities such as passenger transport hubs and highway service areas. Vigorously develop shared transportation, create a service system based on mobile intelligent terminal technology, and realize travel as a service. Develop "Internet +" efficient logistics and innovate smart logistics operation models. Cultivate a vibrant general aviation and urban (suburban) railway market, improve government purchase service policies, and steadily expand the market scale of short-distance transportation, public welfare services, aviation consumption, etc. Establish a global mailing and delivery service system and promote the upgrading of universal postal services. Accelerate the expansion of express delivery capacity and efficiency and digital transformation, strengthen new business formats and models such as supply chain services, cold chain express delivery, and

instant direct delivery, and promote the construction of intelligent collection and investment terminals and terminal public service platforms. Actively develop drone (vehicle) logistics delivery, urban underground logistics distribution, etc.

5. Technological innovation is full of vitality and led by wisdom

(1) Strengthen research and development of cutting-edge key technologies. Aim at the world's technological frontiers such as new generation information technology, artificial intelligence, intelligent manufacturing, new materials, and new energy, and strengthen research on forward-looking and disruptive technologies that may trigger changes in the transportation industry. Strengthen the research and development of power transmission systems for automobiles, civil aircraft, ships and other equipment, and break through key technologies for high-efficiency, high-thrust/high-power engine equipment. Strengthen the research and development of regional comprehensive transportation network coordinated operation and service technology, urban comprehensive transportation collaborative management and control technology, inland waterway shipping safety management and control and emergency search and rescue technology based on ship-shore collaboration. Properly coordinate and arrange the research and development of technical reserves for high-speed maglev systems with a speed of 600 kilometers per hour, high-speed wheel-rail (including variable gauge) passenger train systems with a speed of 400 kilometers per hour, and low-vacuum tube (tunnel) high-speed trains.

(2) Vigorously develop smart transportation. Promote the deep integration of new technologies such as big data, the Internet, artificial intelligence, blockchain, and supercomputing with the transportation industry. Promote data resources to empower transportation development, accelerate the integrated development of transportation infrastructure networks, transportation service networks, energy networks and information networks, and build ubiquitous advanced transportation information infrastructure. Build a comprehensive transportation big data center system and deepen the development of transportation public services and e-government affairs. Promote the application of Beidou satellite navigation system.

(3) Improve the scientific and technological innovation mechanism. Establish a technological innovation mechanism with enterprises as the main body and deep integration of industry, academia, and research, encourage various innovative entities in the transportation

industry to establish innovation alliances, and establish a key core technology research mechanism. Build a number of internationally influential laboratories, test bases, technological innovation centers and other innovation platforms, increase resource openness and sharing, and optimize the scientific research fund investment mechanism. Build a standards system that adapts to the high-quality development of transportation and strengthen the effective supply of standards in key areas.

6. Complete and reliable safety guarantee and quick response

(1) Improve intrinsic safety level. Improve the technical standards and specifications for transportation infrastructure safety, continue to increase investment in infrastructure safety protection, and enhance the safety protection capabilities of key infrastructure. Establish a modern engineering construction quality management system and promote high-quality construction and refined management. Strengthen the maintenance of transportation infrastructure, strengthen the monitoring and testing of infrastructure operation, improve the professionalization and informatization level of maintenance, and enhance the durability and reliability of facilities. Strengthen the quality management of transportation vehicles and ensure the safety of transportation equipment.

(2) Improve the traffic safety production system. Improve the legal governance system and improve traffic safety production regulations and standards. Improve the safety responsibility system, strengthen the main responsibilities of enterprises, and clarify departmental supervision responsibilities. Improve the prevention and control system, effectively prevent and control systemic risks, and establish a third-party certification system for transportation equipment and projects. Strengthen investigation and evaluation of production safety accidents. Improve the network security system, enhance technological security capabilities, and strengthen the security protection of transportation information infrastructure. Improve the support system and strengthen the construction of safety facilities. Establish a traffic prevention and control system for natural disasters and improve traffic disaster prevention and resilience capabilities. Strengthen comprehensive management of traffic safety and effectively improve traffic safety levels.

(3) Strengthen traffic emergency rescue capabilities. Establish and improve comprehensive traffic emergency management mechanisms, laws and regulations, and plan systems, strengthen the construction of emergency rescue professional equipment, facilities, and

teams, and actively participate in international emergency rescue cooperation. Strengthen social coordination capabilities for emergency rescue and improve the expropriation compensation mechanism.

7. Green development is frugal, intensive, low-carbon and environmentally friendly

(1) Promote conservation and intensive utilization of resources. Strengthen the conservation and intensive use of land, sea areas, uninhabited islands, coastlines, airspace and other resources to improve the efficiency of land, sea and island use. Strengthen the renewal and utilization of old facilities, promote the recycling and comprehensive utilization of construction materials and waste materials, promote the green and reduction of express mail packaging, improve the level of resource reuse and recycling, and promote the development of the transportation resource recycling industry.

(2) Strengthen energy conservation, emission reduction and pollution prevention. Optimize the transportation energy structure, promote the application of new energy and clean energy, promote energy conservation and emission reduction of road freight, and promote the electrification, new energy and cleanliness of urban public transportation and urban logistics distribution vehicles. We will fight hard to control pollution from diesel trucks, coordinate oil, road and vehicle management, and effectively prevent and control air pollution from road transportation. Strictly implement national and local pollutant control standards and ship emission area requirements, and promote the prevention and control of pollution from ships and ports. Reduce noise and vibration along traffic lines, and properly handle the noise impact of large airports. Carry out green travel actions and advocate the concept of green and low-carbon travel.

(3) Strengthen the protection and restoration of the transportation ecological environment. Strictly abide by ecological protection red lines, strictly implement ecological protection and soil and water conservation measures, strictly implement ecological restoration, geological environment restoration and land reclamation, and integrate ecological and environmental protection concepts throughout the entire process of transportation infrastructure planning, construction, operation and maintenance. Promote ecological route selection and site selection, strengthen ecological and environmental protection design, and avoid land spaces with important ecological functions such as cultivated land, forestland, and wetlands. Build green transportation corridors.

8. Open cooperation is global, mutually beneficial and win-win

(1) Build an interconnected and globally oriented transportation network. Taking the six international economic cooperation corridors of the Silk Road Economic Belt as the main body, we will promote the interconnection of infrastructure such as railways, highways, waterways, and oil and gas pipelines in neighboring countries. Improve the global connectivity of shipping and civil aviation, build a world-class international shipping center, and promote the construction of the 21st Century Maritime Silk Road. Expand international shipping logistics, develop international railway trains, promote the facilitation of cross-border road transportation, vigorously develop aviation logistics hubs, build an international delivery logistics supply chain system, and create new land-sea channels. Maintain the safety and smoothness of important international shipping channels.

(2) Increase efforts to open up to the outside world. Attract foreign investment into the transportation sector and fully implement the pre-establishment national treatment plus negative list management system. Collaboratively promote the construction of free trade pilot zones and free trade ports with Chinese characteristics. Domestic transportation companies are encouraged to actively participate in transportation infrastructure construction along the “Belt and Road” and international transportation market cooperation to build world-class transportation companies.

(3) Deepen international cooperation in transportation. Enhance the depth and breadth of international cooperation and form multi-level cooperation channels among countries, society and enterprises. Expand international cooperation platforms, actively create new transportation platforms, and attract important international transportation organizations to settle in China. Actively promote the construction and reform of the global transportation governance system, promote the "introduction" and "going out" of transportation policies, rules, systems, technologies, and standards, and actively participate in the formulation and revision of rules and standards under the framework of international transportation organizations. Enhance the international voice and influence of transportation.

9. Excellent, professional, innovative and dedicated talent team

(1) Cultivate high-level transportation science and technology talents. Adhere to the orientation of high-quality, high-quality and high-tech talents, cultivate a group of strategic scientific and technological talents, scientific and technological leaders, young scientific and technological talents and innovation teams with international standards, cultivate front-line

innovative talents in transportation, and support talents in various fields and disciplines to enter transportation-related industries. Promote the construction of high-end transportation think tanks and improve the expert work system.

(2) Create an army of high-quality transportation workers. Carry forward the spirit of model workers and craftsmanship, and create an army of high-quality knowledge-based, skilled and innovative workers. Vigorously cultivate a team of transportation technical skills that support Made in China and Created in China, and build a modern vocational education system that meets the needs of transportation development.

(3) Build a team of high-quality professional traffic cadres. Implement the requirements for building a high-quality professional cadre team and create a high-quality cadre team that is loyal, clean and responsible. Pay attention to the cultivation of professional abilities and enhance the ability of cadres to adapt to the requirements of modern comprehensive transportation development. Strengthen the construction of a team of outstanding young cadres and strengthen the training of talents in international transportation organizations.

10. Improve the governance system and enhance governance capabilities

(1) Deepen industry reform. Adhere to the guidance of the rule of law, improve the comprehensive traffic regulations system, and promote the formulation and revision of laws and regulations in key areas. Continue to deepen the reform of the management system of railways, highways, waterways, and airspace, and establish and improve systems and mechanisms that adapt to the integrated development of comprehensive transportation. Promote the shareholding reform of national railway enterprises and the mixed ownership reform of postal enterprises, and support the healthy development of private enterprises. Coordinate and formulate transportation development strategies, plans and policies, and accelerate the construction of a modern comprehensive transportation system. Strengthen planning coordination and achieve "multiple regulations into one" and "multiple regulations integration."

(2) Optimize the business environment. Improve market governance rules, further promote administrative streamlining and decentralization, break down regional barriers, prevent market monopoly, improve transportation price formation mechanisms, and build a modern transportation market system that is unified, open, competitive and orderly. Comprehensively implement the negative list system for market access and build a new credit-based regulatory mechanism.

(3) Expand social participation. Improve the public decision-making mechanism and implement legal and democratic decision-making. Encourage transportation industry organizations to actively participate in industry governance, guide social organizations to govern themselves in accordance with the law, standardize and self-discipline, and expand channels for the public to participate in transportation governance. Promote government information disclosure and establish and improve public supervision mechanisms.

(4) Cultivate traffic civilization. Promote the inheritance and innovation of excellent transportation culture, strengthen the protection, utilization and spiritual excavation of important transportation relics and major modern transportation projects, and tell the story of China's transportation well. Carry forward the transportation spirit represented by the "Two Roads" spirit, the Qinghai-Tibet Railway spirit, and the heroic civil aviation crew, and enhance the cohesion and combat effectiveness of the industry. Comprehensively improve the civilized literacy of traffic participants, guide civilized travel, create a civilized traffic environment, and promote a significant improvement in the level of traffic civilization in the entire society.

11. Safeguard measures

(1) Strengthen the leadership of the party. Adhere to the overall leadership of the party and give full play to the role of the party in overseeing the overall situation and coordinating all parties. Establish an overall and coordinated implementation working mechanism for building a strong transportation nation, strengthen departmental coordination, upper and lower linkages, and military-civilian interaction, and advance the work of building a strong transportation nation in an overall and orderly manner.

(2) Strengthen financial security. Deepen the reform of transportation investment and financing, enhance sustainable development capabilities, and improve the fund guarantee and operation management system led by the government, hierarchical responsibilities, diversified financing, and controllable risks. Establish and improve the financial investment guarantee system at the central and local levels, encourage the use of diversified market financing methods to broaden financing channels, actively guide social capital to participate in the construction of a strong transportation country, and strengthen the construction of risk prevention and control mechanisms.

(3) Strengthen implementation management. All regions and departments must raise awareness of the significance of building a transportation power, scientifically formulate

supporting policies and allocate public resources, promote the coordination of natural resources, environmental protection, taxation, finance, investment, industry, trade and other policies with policies related to the construction of a transportation power, and deploy A number of major projects and major projects are planned to rationally plan the process of building a transportation power. Encourage qualified localities and enterprises to take the lead in building a transportation powerhouse. The Ministry of Transport must work with relevant departments to strengthen tracking, analysis, supervision and guidance, establish an evaluation indicator system for a strong transportation country, and report major matters to the Party Central Committee and the State Council in a timely manner.

中共中央 国务院印发《交通强国建设纲要》

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新华社北京9月19日电 近日，中共中央、国务院印发了《交通强国建设纲要》，并发出通知，要求各地区各部门结合实际认真贯彻落实。

《交通强国建设纲要》全文如下。

建设交通强国是以习近平同志为核心的党中央立足国情、着眼全局、面向未来作出的重大战略决策，是建设现代化经济体系的先行领域，是全面建成社会主义现代化强国的重要支撑，是新时代做好交通工作的总抓手。为统筹推进交通强国建设，制定本纲要。

一、总体要求

（一）指导思想。以习近平新时代中国特色社会主义思想为指导，深入贯彻党的十九大精神，紧紧围绕统筹推进“五位一体”总体布局和协调推进“四个全面”战略布局，坚持稳中求进工作总基调，坚持新发展理念，坚持推动高质量发展，坚持以供给侧结构性改革为主线，坚持以人民为中心的发展思想，牢牢把握交通“先行官”定位，适度超前，进一步解放思想、开拓进取，推动交通发展由追求速度规模向更加注重质量效益转变，由各种交通方式相对独立发展向更加注重一体化融合发展转变，由依靠传统要素驱动向更加注重创新驱动转变，构建安全、便捷、高效、绿色、经济的现代化综合交通体系，打造一流设施、一流技术、一流管理、一流服务，建成人民满意、保障有力、世界前列的交通强国，为全面建成社会主义现代化强国、实现中华民族伟大复兴中国梦提供坚强支撑。

（二）发展目标

到2020年，完成决胜全面建成小康社会交通建设任务和“十三五”现代综合交通运输体系发展规划各项任务，为交通强国建设奠定坚实基础。

从2021年到本世纪中叶，分两个阶段推进交通强国建设。

到2035年，基本建成交通强国。现代化综合交通体系基本形成，人民满意度明显提高，支撑国家现代化建设能力显著增强；拥有发达的快速网、完善的干线网、广泛的基础网，城乡区域交通协调发展达到新高度；基本形成“全国123出行交通圈”（都市区1小时通勤、城市群2小时通达、全国主要城市3小时覆盖）和“全球123快货物流圈”（国内1天送达、周边国家2天送达、全球主要城市3天送达），旅客联程运输便捷顺畅，货物多式联运高效经济；智能、平安、绿色、共享交通发展水平明显提高，城市交通拥堵基本缓解，无障碍出行服务体系基本完善；交通科技创新体系基本建成，交通关键装备先进安全，人才队伍精良，市场环境优良；基本实现交通治理体系和治理能力现代化；交通国际竞争力和影响力显著提升。

到本世纪中叶，全面建成人民满意、保障有力、世界前列的交通强国。基础设施规模质量、技术装备、科技创新能力、智能化与绿色化水平位居世界前列，交通安全水平、治理能力、文明程度、国际竞争力及影响力达到国际先进水平，全面服务和保障社会主义现代化强国建设，人民享有美好交通服务。

二、基础设施布局完善、立体互联

（一）建设现代化高质量综合立体交通网络。以国家发展规划为依据，发挥国土空间规划的指导和约束作用，统筹铁路、公路、水运、民航、管道、邮政等基础设施规划建设，以多中心、网络化为主形态，完善多层次网络布局，优化存量资源配置，扩大优质增量供给，实现立体互联，增强系统弹性。强化西部地区补短板，推进东北地区提质改造，推动中部地区大通道大枢纽建设，加速东部地区优化升级，形成区域交通协调发展新格局。

（二）构建便捷顺畅的城市（群）交通网。建设城市群一体化交通网，推进干线铁路、城际铁路、市域（郊）铁路、城市轨道交通融合发展，完善城市群快速公路网络，加强公路与城市道路衔接。尊重城市发展规律，立足促进城市的整体性、系统性、生长性，统筹安排城市功能和用地布局，科学制定和实施城市综合交通体系规划。推进城市公共交通设施建设，强化城市轨道交通与其他交通方式衔接，完善快速路、主次干路、支路级配和结构合理的城市道路网，打通道路微循环，提高道路通达性，完善城市步行和非机动车交通系统，提升步行、自行车等出行品质，完善无障碍设施。科学规划建设城市停车设施，加强充电、加氢、加气和公交站点等设施建设。全面提升城市交通基础设施智能化水平。

（三）形成广覆盖的农村交通基础设施网。全面推进“四好农村路”建设，加快实施通村组硬化路建设，建立规范化可持续管护机制。促进交通建设与农村地区资源开发、产业发展有机融合，加强特色农产品优势区与旅游资源富集区交通建设。大力推进革命老区、民族地区、边疆地区、贫困地区、垦区林区交通发展，实现以交通便利带动脱贫减贫，深度贫困地区交通建设项目尽量向进村入户倾斜。推动资源丰富和人口相对密集贫困地区开发性铁路建设，在有条件的地区推进具备旅游、农业作业、应急救援等功能的通用机场建设，加强农村邮政等基础设施建设。

（四）构筑多层级、一体化的综合交通枢纽体系。依托京津冀、长三角、粤港澳大湾区等世界级城市群，打造具有全球竞争力的国际海港枢纽、航空枢纽和邮政快递核心枢纽，建设一批全国性、区域性交通枢纽，推进综合交通枢纽一体化规划建设，提高换乘换装水平，完善集疏运体系。大力发展枢纽经济。

三、交通装备先进适用、完备可控

（一）加强新型载运工具研发。实现3万吨级重载列车、时速250公里级高速轮轨货运列车等方面的重大突破。加强智能网联汽车（智能汽车、自动驾驶、车路协同）研发，形成自主可控完整的产业链。强化大中型邮轮、大型液化天然气船、极地航行船舶、智能船舶、新能源船舶等自主设计建造能力。完善民用飞机产品谱系，在大型民用飞机、重型直升机、通用航空器等方面取得显著进展。

（二）加强特种装备研发。推进隧道工程、整跨吊运安装设备等工程机械装备研发。研发水下机器人、深潜水装备、大型溢油回收船、大型深远海多功能救助船等新型装备。

（三）推进装备技术升级。推广新能源、清洁能源、智能化、数字化、轻量化、环保型交通装备及成套技术装备。广泛应用智能高铁、智能道路、智能航运、自动化码头、数字管网、智能仓储和分拣系统等新型装备设施，开发新一代智能交通管理系统。提升国产飞机和发动机技术水平，加强民用航空器、发动机研发制造和适航审定体系建设。推广应用交通装备的智能检测监测和运维技术。加速淘汰落后技术和高耗低效交通装备。

四、运输服务便捷舒适、经济高效

（一）推进出行服务快速化、便捷化。构筑以高铁、航空为主体的大容量、高效率区际快速客运服务，提升主要通道旅客运输能力。完善航空服务网络，逐步加密机场网建设，大力发展支线航空，推进干支有效衔接，提高航空服务能力和品质。提高城市群内轨道交通通勤化水平，推广城际道路客运公交化运行模式，打造旅客联程运输系统。加强城市交通拥堵综合治理，优先发展城市公共交通，鼓励引导绿色公交出行，合理引导个体机动化出行。推进城乡客运服务一体化，提升公共服务均等化水平，保障城乡居民行有所乘。

（二）打造绿色高效的现代物流系统。优化运输结构，加快推进港口集疏运铁路、物流园区及大型工矿企业铁路专用线等“公转铁”重点项目建设，推进大宗货物及中长距离货物运输向铁路和水运有序转移。推动铁水、公铁、公水、空陆等联运发展，推广跨方式快速换装转运标准化设施设备，形成统一的多式联运标准和规则。发挥公路货运“门到门”优势。完善航空物流网络，提升航空货运效率。推进电商物流、冷链物流、大件运输、危险品物流等专业化物流发展，促进城际干线运输和城市末端配送有机衔接，鼓励发展集约化配送模式。综合利用多种资源，完善农村配送网络，促进城乡双向流通。落实减税降费政策，优化物流组织模式，提高物流效率，降低物流成本。

（三）加速新业态新模式发展。深化交通运输与旅游融合发展，推动旅游专列、旅游风景道、旅游航道、自驾车房车营地、游艇旅游、低空飞行旅游等发展，完善客运枢纽、高速公路服务区等交通设施旅游服务功能。大力发展共享交通，打造基于移动智能终端技术的服务系统，实现出行即服务。发展“互联网+”高效物流，创新智慧物流营运模式。培育充满活力的通用航空及市域（郊）铁路市场，完善政府购买服务政策，稳步扩大短途运输、公益服务、航空消费等市场规模。建立通达全球的寄递服务体系，推动邮政普遍服务升级换代。加快快递扩容增效和数字化转型，壮大供应链服务、冷链快递、即时直递等新业态新模式，推进智能收投终端和末端公共服务平台建设。积极发展无人机（车）物流递送、城市地下物流配送等。

五、科技创新富有活力、智慧引领

（一）强化前沿关键科技研发。瞄准新一代信息技术、人工智能、智能制造、新材料、新能源等世界科技前沿，加强对可能引发交通产业变革的前瞻性、颠覆性技术研究。强化汽车、民用飞行器、船舶等装备动力传动系统研发，突破高效率、大推力/大功率发动机装备设备关键技术。加强区域综合交通网络协调运营与服务技术、城市综合交通协同管控技术、基于船岸协同的内河航运安全管控与应急搜救技术等研发。合理统筹安排时速600公里级高速磁悬浮系统、时速400公里级高速轮轨（含可变轨距）客运列车系统、低真空管（隧）道高速列车等技术储备研发。

（二）大力发展智慧交通。推动大数据、互联网、人工智能、区块链、超级计算等新技术与交通行业深度融合。推进数据资源赋能交通发展，加速交通基础设施网、运输服务网、能源网与信息网络融合发展，构建泛在先进的交通信息基础设施。构建综合交通大数据中心体系，深化交通公共服务和电子政务发展。推进北斗卫星导航系统应用。

（三）完善科技创新机制。建立以企业为主体、产学研用深度融合的技术创新机制，鼓励交通行业各类创新主体建立创新联盟，建立关键核心技术攻关机制。建设一批具有国际影响力的实验室、试验基地、技术创新中心等创新平台，加大资源开放共享力度，优化科研资金投入机制。构建适应交通高质量发展的标准体系，加强重点领域标准有效供给。

六、安全保障完善可靠、反应快速

（一）提升本质安全水平。完善交通基础设施安全技术标准规范，持续加大基础设施安全防护投入，提升关键基础设施安全防护能力。构建现代化工程建设质量管理体系，推进精品建造和精细管理。强化交通基础设施养护，加强基础设施运行监测检测，提高养护专业化、信息化水平，增强设施耐久性和可靠性。强化载运工具质量治理，保障运输装备安全。

（二）完善交通安全生产体系。完善依法治理体系，健全交通安全生产法规制度和标准规范。完善安全责任体系，强化企业主体责任，明确部门监管责任。完善预防控制体系，有效防控系统性风险，建立交通装备、工程第三方认证制度。强化安全生产事故调查评估。完善网络安全保障体系，增强科技兴安能力，加强交通信息基础设施安全保护。完善支撑保障体系，加强安全设施建设。建立自然灾害交通防治体系，提高交通防灾抗灾能力。加强交通安全综合治理，切实提高交通安全水平。

（三）强化交通应急救援能力。建立健全综合交通应急管理体制机制、法规制度和预案体系，加强应急救援专业装备、设施、队伍建设，积极参与国际应急救援合作。强化应急救援社会协同能力，完善征用补偿机制。

七、绿色发展节约集约、低碳环保

（一）促进资源节约集约利用。加强土地、海域、无居民海岛、岸线、空域等资源节约集约利用，提升用地用海岛效率。加强老旧设施更新利用，推广施工材料、废旧材料再生和综合利用，推进邮件快件包装绿色化、减量化，提高资源再利用和循环利用水平，推进交通资源循环利用产业发展。

（二）强化节能减排和污染防治。优化交通能源结构，推进新能源、清洁能源应用，促进公路货运节能减排，推动城市公共交通工具和城市物流配送车辆全部实现电动化、新能源化和清洁化。打好柴油货车污染治理攻坚战，统筹油、路、车治理，有效防治公路运输

大气污染。严格执行国家和地方污染物控制标准及船舶排放区要求，推进船舶、港口污染防治。降低交通沿线噪声、振动，妥善处理好大型机场噪声影响。开展绿色出行行动，倡导绿色低碳出行理念。

（三）强化交通生态环境保护修复。严守生态保护红线，严格落实生态保护和水土保持措施，严格实施生态修复、地质环境治理恢复与土地复垦，将生态环保理念贯穿交通基础设施规划、建设、运营和养护全过程。推进生态选线选址，强化生态环保设计，避让耕地、林地、湿地等具有重要生态功能的国土空间。建设绿色交通廊道。

八、开放合作面向全球、互利共赢

（一）构建互联互通、面向全球的交通网络。以丝绸之路经济带六大国际经济合作走廊为主体，推进与周边国家铁路、公路、航道、油气管道等基础设施互联互通。提高海运、民航的全球连接度，建设世界一流的国际航运中心，推进21世纪海上丝绸之路建设。拓展国际航运物流，发展铁路国际班列，推进跨境道路运输便利化，大力发展航空物流枢纽，构建国际寄递物流供应链体系，打造陆海新通道。维护国际海运重要通道安全与畅通。

（二）加大对外开放力度。吸引外资进入交通领域，全面落实准入前国民待遇加负面清单管理制度。协同推进自由贸易试验区、中国特色自由贸易港建设。鼓励国内交通企业积极参与“一带一路”沿线交通基础设施建设和国际运输市场合作，打造世界一流交通企业。

（三）深化交通国际合作。提升国际合作深度与广度，形成国家、社会、企业多层次合作渠道。拓展国际合作平台，积极打造交通新平台，吸引重要交通国际组织来华落驻。积极推动全球交通治理体系建设与变革，促进交通运输政策、规则、制度、技术、标准“引进来”和“走出去”，积极参与交通国际组织事务框架下规则、标准制定修订。提升交通国际话语权和影响力。

九、人才队伍精良专业、创新奉献

（一）培育高水平交通科技人才。坚持高精尖缺导向，培养一批具有国际水平的战略科技人才、科技领军人才、青年科技人才和创新团队，培养交通一线创新人才，支持各领域各学科人才进入交通相关产业行业。推进交通高端智库建设，完善专家工作体系。

（二）打造素质优良的交通劳动者大军。弘扬劳模精神和工匠精神，造就一支素质优良的知识型、技能型、创新型劳动者大军。大力培养支撑中国制造、中国创造的交通技术技能人才队伍，构建适应交通发展需要的现代职业教育体系。

（三）建设高素质专业化交通干部队伍。落实建设高素质专业化干部队伍要求，打造一支忠诚干净担当的高素质干部队伍。注重专业能力培养，增强干部队伍适应现代综合交通运输发展要求的能力。加强优秀年轻干部队伍建设，加强国际交通组织人才培养。

十、完善治理体系，提升治理能力

（一）深化行业改革。坚持法治引领，完善综合交通法规体系，推动重点领域法律法规制定修订。不断深化铁路、公路、航道、空域管理体制改革，建立健全适应综合交通一体化发展的体制机制。推动国家铁路企业股份制改造、邮政企业混合所有制改革，支持民营企业健康发展。统筹制定交通发展战略、规划和政策，加快建设现代化综合交通体系。强化规划协同，实现“多规合一”、“多规融合”。

（二）优化营商环境。健全市场治理规则，深入推进简政放权，破除区域壁垒，防止市场垄断，完善运输价格形成机制，构建统一开放、竞争有序的现代交通市场体系。全面实施市场准入负面清单制度，构建以信用为基础的新型监管机制。

（三）扩大社会参与。健全公共决策机制，实行依法决策、民主决策。鼓励交通行业组织积极参与行业治理，引导社会组织依法自治、规范自律，拓宽公众参与交通治理渠道。推动政府信息公开，建立健全公共监督机制。

（四）培育交通文明。推进优秀交通文化传承创新，加强重要交通遗迹遗存、现代交通重大工程的保护利用和精神挖掘，讲好中国交通故事。弘扬以“两路”精神、青藏铁路精神、民航英雄机组等为代表的交通精神，增强行业凝聚力和战斗力。全方位提升交通参与者文明素养，引导文明出行，营造文明交通环境，推动全社会交通文明程度大幅提升。

十一、保障措施

（一）加强党的领导。坚持党的全面领导，充分发挥党总揽全局、协调各方的作用。建立统筹协调的交通强国建设实施工作机制，强化部门协同、上下联动、军地互动，整体有序推进交通强国建设工作。

（二）加强资金保障。深化交通投融资改革，增强可持续发展能力，完善政府主导、分级负责、多元筹资、风险可控的资金保障和运行管理体制。建立健全中央和地方各级财政投入保障制度，鼓励采用多元化市场融资方式拓宽融资渠道，积极引导社会资本参与交通强国建设，强化风险防控机制建设。

（三）加强实施管理。各地区各部门要提高对交通强国建设重大意义的认识，科学制定配套政策和配置公共资源，促进自然资源、环保、财税、金融、投资、产业、贸易等政策与交通强国建设相关政策协同，部署若干重大工程、重大项目，合理规划交通强国建设进程。鼓励有条件的地方和企业在交通强国建设中先行先试。交通运输部要会同有关部门加强跟踪分析和督促指导，建立交通强国评价指标体系，重大事项及时向党中央、国务院报告。

相关稿件

- 十八部门联合印发实施意见 鼓励规范新业态健康发展 加快建设交通强国邮政篇
- 国家统计局报告显示——我国从“交通大国”迈向“交通强国”
- 为建设交通强国当好先行——访全国人大代表、中国铁路总公司总经理陆东福

EXHIBIT 39

“13th Five-Year Plan” Development Plan for the Shipbuilding and Ocean Engineering Equipment Industry in Jiangsu Province

The shipbuilding and marine engineering equipment industry is a modern comprehensive industry that is capital, technology, labor, and information intensive. It plays a significant role in supporting economic development and is an important part of the advanced equipment manufacturing industry. The "Thirteenth Five-Year Plan" period is an important period for our province's shipbuilding and offshore engineering equipment industry to accelerate its transformation and upgrading and achieve a transformation from large to strong. Based on "Made in China 2025", "Medium and Long-term Development Plan for the Shipbuilding Industry", "Innovative Development Strategy for the Marine Engineering Equipment Industry (2011-2020)", "Made in China 2025 Jiangsu Action Outline", etc., combined with the shipbuilding and marine engineering equipment industry in our province Develop reality and formulate this plan. The planning period is from 2016 to 2020.

1. Development situation

(1) Development foundation

Our province’s shipbuilding and marine engineering equipment industry leapfrogged during the “Twelfth Five-Year Plan” period, becoming China’s largest shipbuilding province and an important industrial base in the world. A comprehensive shipbuilding industry system has been initially established in R&D, design, shipbuilding, marine engineering equipment, ship repair, shipbreaking, supporting facilities and services. It is in the stage of leapfrogging from a major shipbuilding industry province to a strong province, and the industry's international status and market influence continue to grow.

1. Market share remains at the forefront. During the "Twelfth Five-Year Plan" period, our province's three major shipbuilding indicators continued to rank first in the country, accounting for an average annual market share of more than 10% in the world. In 2015, the completion volume of ocean-going shipbuilding was 16.58 million deadweight tons, new orders were received at 12.13 million deadweight tons, and orders on hand were 56.66 million deadweight tons, accounting for 39.6%, 38.9%, and 46% of the national share respectively, and 16.8% and 12.3% of the world share. ,18.9%. The completion volume of the three major shipbuilding bases

in Nantong, Taizhou and Yangzhou accounts for 77.2% of the province's total, and the industry agglomeration is obvious. Some key enterprises rank among the top in the country in terms of scale, technical level, economic benefits and other indicators. The development momentum of inland river ships is good. In 2015, the completion volume of inland river ships reached 5.16 million gross tons.

2. Innovation capabilities have been significantly enhanced. Our province has the ability to build all ship types except ocean-going luxury cruise ships, and has successfully delivered the country's first 13,000-TEU ultra-large container ship, a 400,000-ton ultra-large ore ship, a 19,296-dwt ro-ro ship, and the world's first jointly built Products such as the 156,000-ton Suezmax crude oil tanker and the world's first natural gas-powered multi-functional ocean carrier manufactured in accordance with structural specifications. The structure of products under construction continues to be optimized. In 2015, the share of bulk carriers among the ships delivered in the province was 68.5%, a decrease of 5.2 percentage points from the end of the "Eleventh Five-Year Plan"; the share of container ships has averaged 13.6% over the past five years, which is lower than the national average. The value is 2.4 percentage points higher; the proportion of special types of ships such as chemical tankers, liquefied gas ships, liquefied petroleum gas ships, heavy lift ships, offshore engineering auxiliary ships, and engineering ships continues to increase.

3. The emerging industry of offshore engineering equipment has experienced strong growth. In 2012, the Provincial Party Committee and the Provincial Government strategically promoted the offshore engineering equipment industry as one of the province's top ten strategic emerging industries, and the emerging offshore engineering equipment industry entered a rapid development track. Backbone enterprises have significant advantages as pillars. Five companies have entered the field of offshore engineering platform assembly and received orders for offshore engineering platforms. At present, the total output value of offshore engineering products accounts for more than 1/3 of the national offshore engineering market share, and the delivered products basically cover all types from offshore to deep sea. "The key design and manufacturing technology of deep-sea high-stability cylindrical drilling and oil storage platform" won the first prize of the National Science and Technology Progress Award and the successful sea trial of the "Jiaolong" 7000-meter manned submersible, indicating that our province has advanced in deep-sea products and mainstream products advantages are gradually taking shape.

4. Supporting industries have accelerated their development. Our province is one of the areas with the most intensive development of the ship supporting industry in the country, forming four major ship supporting bases in Nanjing, Zhenjiang, Taizhou and Nantong. There are many varieties and complete categories of ship supporting products. The number of ship supporting enterprises above designated size accounts for 40.5% of the country's total. Some brands such as anchor chains and propellers have strong international influence. Energy-saving and environmental protection equipment has developed rapidly. Some key offshore equipment has obtained breakthrough.

At present, there are still many serious challenges and deep-seated problems in our province's shipbuilding and offshore equipment industry.

First, the external environment continues to deteriorate. Difficulties in delivering ships, receiving orders, and financing are still prominent, and private enterprises in particular are under great pressure in production and operation.

Second, the pace of industrial transformation needs to be accelerated. There are few core technology reserves and weak design and R&D capabilities, which are not suitable for the scale of our province's shipbuilding industry. 70% of the core components and key supporting equipment of high-tech ships need to be imported, and the development of high-end supporting industries is still lagging behind.

Third, the economies of scale of offshore engineering equipment have not yet emerged. Constrained by factors such as high market thresholds, strict technical standards, and large capital requirements, the offshore engineering equipment industry has not yet formed serial and mass production. The offshore engineering equipment is weak and difficult to adapt to the development needs of final assembly.

Fourth, the industrial service guarantee system is not perfect enough. There is a lack of global marketing and service networks, there are few industrial technology research and development institutions in the province, and the construction of public platforms such as industry-university-research cooperation, education and training, and talent services needs to be further improved.

Fifth, the inland river shipbuilding industry is uneven. Inland river shipbuilding enterprises are small and scattered, with overall extensive management, weak technical strength,

and lack of effective integration of shipbuilding capabilities. There has been no significant improvement.

(2) Development trends

At present, the international financial crisis has far-reaching impact. The world economy is growing at a low speed, the economic structure is undergoing deep adjustment, economic globalization is developing in depth, regional economic cooperation is booming, super-large free trade areas are being nurtured, and global competition around markets, capital and industrial transfers is becoming more intense.

The "13th Five-Year Plan" is an important period for Jiangsu to move from a major shipbuilding and marine engineering equipment manufacturing province to a strong province. There are both challenges and opportunities on the road to development.

First, the fundamental advantages of industrial development continue to be maintained. The "13th Five-Year Plan" is a critical period for my country's shipbuilding industry to adjust and improve and achieve the goal of developing a shipbuilding power. The general trend of the world's shipbuilding center shifting to my country has not changed. At the same time, it is also a strategic opportunity period for the development, transformation and upgrading of Jiangsu's shipbuilding industry. Jiangsu is located in the economically developed region of the Yangtze River Delta. It has superior natural conditions along the river and coast, a good cultural environment, abundant labor resources, a solid shipbuilding foundation, strong advantages in the industrial development environment and basic conditions, and good conditions for the development of the shipbuilding and marine engineering equipment industry. conditions and foundations.

Second, the competitive landscape of world shipbuilding has undergone profound adjustments. The downturn in the world economy has an increasingly profound impact on ships and offshore engineering equipment. A series of potential factors and risks such as cyclical fluctuations in the international ship market, rising raw material prices and labor costs, and exchange rate changes will continue to trouble and affect the development of the shipbuilding industry. The comprehensive competitiveness of countries such as South Korea, Japan, and Singapore is still relatively high. In future competition, our province's shipbuilding industry will always face unprecedented pressures and challenges such as accelerating the pace of industrial upgrading and accelerating the improvement of comprehensive capabilities.

Third, there are overlapping development opportunities for our province’s shipbuilding industry. Facing the situation that our country's economy is in a period of growth change, structural adjustment and policy transformation, Jiangsu's shipbuilding industry must adapt to the new normal, embrace new opportunities, and seize the strong equipment demand brought by the maritime power strategy and the "Belt and Road" strategy. opportunities, accelerate structural adjustment, promote international production capacity cooperation, increase the international market share of high-end products for shipbuilding and offshore engineering equipment, accelerate the substitution of imported supporting equipment by domestically produced equipment, and seek new economic growth points and driving forces.

2. Overall requirements

(1) Guiding ideology

Comprehensively implement the strategy of becoming a maritime power and a manufacturing power, seize the opportunity of the Made in China 2025 construction, follow a new industrial development path, focus on transforming the industrial development model, seize new opportunities for marine economic development, actively resolve excess production capacity, and accelerate the pace of transformation and upgrading; Taking innovation and development as the core, keeping up with the new trend of green development, comprehensively improving the core competitiveness and sustainable development capabilities of the industry; using digitalization, informatization, and intelligent manufacturing as breakthroughs, accelerating the leap from a large shipbuilding and offshore manufacturing province to a strong province , to build Jiangsu into a world-class shipbuilding and offshore engineering equipment base.

(2) Development principles

adhere to transformation and upgrading to achieve quality and efficiency improvement. Further optimize the layout of the province's shipbuilding and offshore engineering industries, continue to promote industrial restructuring, promote the entire industrial chain to climb to the high end, promote the transformation of supporting industries to system integration, promote the improvement of enterprise product quality and production efficiency, and continuously improve the level and efficiency of industrial development, to cultivate a world-class large-scale enterprise group with core competitiveness.

Adhere to innovation-driven and achieve brand improvement. Further enhance the core competitiveness of the industry, vigorously promote the construction of independent innovation capabilities of enterprises, vigorously cultivate original innovation capabilities, strengthen the collaborative innovation of "government, industry, learning, research and application", accelerate the construction of the province's shipbuilding and marine engineering research and development system, and enhance independent innovation and R&D and design capabilities, realizing the transformation of Jiangsu's shipbuilding and offshore engineering industry from manufacturing to creation. Continue to improve the construction quality and level of the three main ship types and create a world-class ship type brand.

Adhere to green environmental protection and achieve sustainable development. Further promote the green manufacturing model, actively promote the green, informatization, and intelligence of ships and offshore products, create construction methods that consume the lowest social resources, strengthen the promotion and application of energy-saving and environmentally friendly technologies, processes, and equipment, improve the comprehensive utilization rate of resources, and reduce Emission of major pollutants, comprehensive implementation of clean production, realization of low-carbon shipbuilding, and development path of resource conservation and environmental friendliness.

(3) Development Goals:

By 2020, our province’s shipbuilding and offshore engineering equipment industry structure will become more reasonable, its innovation capabilities and comprehensive industrial quality will be significantly improved, its market share will rank first in the country, and it will become an important shipbuilding and offshore engineering equipment industry base in the world.

1. Industrial scale. By 2020, the industry's sales revenue and economic benefits will continue to rank first in the country. Shipbuilding completion volume, ship orders in hand, and new orders will maintain a national market share of more than 35%, accounting for more than 15% of the world market. The offshore engineering equipment industry accounts for more than 30% of the national market share and more than 20% of the international market share, further consolidating its status as the country's largest shipbuilding province.

2. Leading enterprises. By 2020, three shipbuilding companies will be cultivated to enter the top 20 in the world, and their brand awareness in the international market will be further

enhanced; five key offshore engineering companies will have final assembly capabilities; and more than 20 companies in the supporting industry will have an annual output value of more than 1 billion yuan.

3. product structure. Continue to maintain the market share of the three mainstream ship types of container ships, bulk carriers and oil tankers, especially ultra-large ships, and form brand influence; in large liquefied natural gas (LNG) ships, large liquefied gas carriers (VLGC), large automobile roll Further breakthroughs have been made in shipping and other fields; an offshore product structure has been formed led by special offshore engineering vessels, jack-up drilling platforms, semi-submersible platforms, and natural gas equipment.

4. Technology research and development capabilities. Build a number of provincial-level independent design and R&D platforms for high-tech ships and marine engineering equipment; develop a number of internationally leading specialty products, and obtain a number of domestically leading results in common technologies and basic research; actively promote the integration of informatization and informatization, Vigorously enhance the depth and breadth of the application of modern shipbuilding models, continue to promote the lean shipbuilding model, and comprehensively implement the production management system (MIS); focus on conducting research on intelligent manufacturing technology and forming a number of intelligent manufacturing demonstration enterprises.

5. Key supporting industries. Ship supporting equipment continues to rank first in the country, mastering the core technologies of ship power, deck machinery, cabin equipment, communication and intelligent systems and equipment, and possessing brand products with strong international competitiveness; leading enterprises have developed in a large-scale and professional manner, becoming A relatively strong equipment system integration supplier; its supporting capabilities have been significantly improved. The average loading rate of localized marine equipment for the three major ship types has reached more than 80%, and the average loading rate of localized marine equipment for high-tech ships has reached more than 60%. The local matching rate of key equipment parts reaches 80%.

6. Development quality. The shipbuilding efficiency of key backbone shipbuilding enterprises is close to the world's advanced level. The working hours per corrected gross ton of key enterprises has been reduced to less than 22 hours. The numerical control rate of key process

flows is more than 80%. The comprehensive energy consumption of shipbuilding is 0.2 tons of standard coal/10,000 yuan. The average steel is used once. The rate reaches over 92%.

3. Key directions

(1) In the field of common technologies in design and manufacturing

focus on the accumulation and improvement of key technologies in the fields of ship type development, green equipment and intelligent manufacturing, and focus on breakthroughs in key areas such as ship performance optimization, smart ships, energy conservation and environmental protection, and comprehensive utilization. Core and common technologies.

1. Overall ship optimization and intelligent ship design technology. Carry out research on overall ship design, comprehensive performance optimization and digital design technology, master overall multi-disciplinary optimization design technology for ships, and improve overall performance. In response to the intelligent needs of ship engine rooms, ship driving, attitude adjustment, equipment monitoring, loading and unloading management, etc., carry out research on the application of automation technology, computer technology, network communication technology, Internet of Things technology, etc. on ships, and realize the application of intelligent ship design technology. breakthrough.

2. Ship type optimization and hydrodynamic analysis technology. In response to the development needs of excellent ship types, master parametric modeling technology, break through the technology of computational fluid dynamics (CFD) analysis and prediction of hull hydrodynamic performance, and have the ability to use digital pool technology to develop hydrodynamic energy-saving devices, high-performance propellers, seek and optimize low resistance and high sea resistance Sexual ship type ability.

3. Structural optimization design and shock and noise reduction technology. Carry out research on hull structure optimization, finite element strength and fatigue analysis technology, and master key technologies for lightweight structural design; master key technologies for hull girder vibration characteristics, vibration response prediction of residential areas, and hull structure vibration and safety analysis. Master the key technologies of noise analysis and forecasting.

4. Digital and lean construction techniques. Carry out research on the refined engineering decomposition standard system based on product-oriented work decomposition (PWBS), and promote lean production design based on task packages; with the goal of forming big data

covering design and construction information, carry out design data such as construction process information and Research on seamless docking and real-time correlation technology of production, procurement, warehousing, finance and other systems, build and improve real-time feedback and tracking information systems, further promote R&D and design informatization, production and manufacturing digitization and design and manufacturing management integration, and improve shipbuilding big data Sharing, control, accuracy and planning.

5. Smart manufacturing technology. Support the development of advanced ship manufacturing process technology and intelligent manufacturing equipment technology, master automated and intelligent production technologies such as painting, pipe fitting processing, steel blanking, and small group vertical welding, and carry out research on intelligent manufacturing system solutions.

(2) High-tech ships

Aim at the direction of green, intelligent, and high-end products, vigorously promotes and applies advanced green and environmentally friendly technologies such as low-resistance ship design technology, clean energy application technology, and forms a new generation of green, energy-saving, and intelligent bulk ships. Independent brands for the three mainstream ship types of cargo ships, container ships and oil tankers; rapidly improving the construction level of liquefied gas (LNG) ships, ultra-large container ships, large ro-ro ships, ultra-large ore ships and other products to create high-end brands; actively developing polar ships, develop high-tech ship types such as clean energy ships and special engineering ships to improve construction levels.

1. Very large container ship. Focus on the research on low-resistance ship type, longitudinal and fatigue strength, extremely thick plate/high-strength steel welding and other technologies for ultra-large container ships of 18,000-22,000 TEU, to form a system with large packing capacity, low fuel consumption, strong cargo adaptability, safety, reliability, and green A 20,000-unit ultra-large container ship with environmental protection and other characteristics.

2. LNG powered (dual fuel) ships. Carry out research on risk assessment, gas supply and injection, and control system application technologies for LNG-powered (dual-fuel) ships, and vigorously carry out the design and development of green and environmentally friendly oil tankers, bulk carriers, container ships and other international routes and river and sea

ships. Focus on the development and construction of LNG fuel-powered ships, and actively promote the promotion of clean energy ships on inland rivers.

3. Polar ships. Increase research on key technologies for ships in polar waters, master the icebreaking performance of the ship's bow and stern, anti-icing lines, general layout and stability, structural strength, power plant and propulsion system, antifreeze in polar environments and other technologies, and develop and undertake anti-icing performance Polar ships reaching PC6 level and above.

4. Large (medium) LNG carriers. Carry out technical research on large (medium) LNG carriers, including insulation technology, safety protection technology, construction technology, welding, cold tightness testing and other technologies, and develop large (medium) LNG carriers that are easy to operate and maintain. Liquid cargo containment system, forming the design and construction capabilities of membrane type or prismatic tank and spherical tank type LNG carriers.

5. Car (cargo) ro-ro ship. Focus on breakthroughs in key technologies such as the overall performance, damage stability, structural design, ro-ro channel system and application of energy-saving and environmentally friendly technologies for car ro-ro ships and passenger ro-ro ships with more than 4,000 parking spaces, and new cargo ro-ro ships with a load capacity of more than 20,000 tons. Safe, energy-saving and environmentally friendly large car ro-ro ships, ro-ro passenger ships and new cargo ro-ro ships.

(3) Ocean engineering equipment

Comprehensively improve the level of research and development, construction and project management of marine engineering equipment, master the unique design, construction, installation and commissioning technologies of marine engineering equipment, and establish a modern modernization system that is compatible with the characteristics of marine engineering equipment projects and in line with international standards. Project management model and production organization method.

1. Marine engineering equipment technology. It mainly includes the independent research and development of the latest generation of green, environmentally friendly and economical offshore products, final assembly and construction and key construction technology, precision control technology, refined weight control technology, project management and information technology, modular manufacturing technology, comprehensive debugging technology, etc. .

2. Offshore oil and gas resource development equipment. Focus on the development of semi-submersible drilling (production) platforms, support platforms, offshore service and accommodation platforms, drill ships, jack-up drilling platforms, jack-up offshore multi-functional service platforms, tension leg platforms (TLP), deepwater column platforms (SPAR), floating production storage and offloading units (FPSO, FLNG), pipe-laying vessels and other offshore equipment, gradually formed brand products with independent intellectual property rights.

3. Marine floating structures. Strengthen the research and development of key technologies for the design and construction of large offshore floating structures (VLFS), ultra-large floating support bases, deep-sea workstations, and offshore floating power stations, and accelerate the implementation of engineering research.

4. Other marine resource development equipment. Carry out the design and construction of heavy-duty underwater operation equipment for seabed mineral mining and transportation as well as marine renewable energy equipment, focus on improving the R&D, design, and construction general contracting capabilities of offshore wind power equipment and wind power installation, transportation and maintenance ships, and achieve industrialization, serialization, Mass production.

(4) High-end supporting field

promote the integrated, intelligent and modular development of advantageous supporting products, master key system supporting technologies for marine engineering equipment, and accelerate the development and industrialization of independent brand products for ships and offshore engineering supporting products.

1. Power system. Focus on the development of small and medium-bore low-speed diesel engines, medium-speed diesel engines and their accessories, make breakthroughs in key diesel engine components and systems such as high-pressure common rail fuel injection systems, intelligent electronic control systems, and exhaust gas denitration and desulfurization devices, and promote new propulsion devices and high-end marine The development of generators, medium- and high-voltage ship power stations, electric propulsion devices and other equipment will form complete supply capabilities and promote the use of high-voltage shore power.

2. Communication navigation and electromechanical control equipment. Carry out technical upgrades in the aspects of lightweight, intelligent, large-scale, system integration,

vibration and noise reduction, and reliability of supporting electromechanical equipment. Improve the standardization and versatility of supporting electromechanical equipment, realize intelligent control and maintenance of equipment, automated operation, etc., provide systematic solutions, and achieve integrated supporting. Focus on the development of electronic chart systems, integrated bridge systems, gyrocompasses, radars and other ship communication and navigation automation products to achieve full-ship networking and ship-to-shore networking.

3. Green environmental protection equipment. Focus on the development of clean energy application equipment such as LNG storage tanks, high-efficiency regasification core equipment, and gas treatment systems, and break through key technologies in the application of inert gas systems, ventilation systems, safety systems, and automatic control systems. Develop high-efficiency treatment systems for ballast water and sewage oil and water, environmentally friendly fire extinguishing agents and fire-fighting systems, integrated renewable energy and fresh water supply devices for small islands and reefs, and support independent research and development of energy-saving and environmentally friendly treatment equipment and other products.

4. Special equipment for offshore engineering equipment. Focus on the development of deep-water anchoring positioning and dynamic positioning systems, large positioning winches, self-elevating platform lifting systems, single-point mooring systems, underwater pipe laying systems, and wave-compensated offshore equipment to form industrialization capabilities. Accelerate the industrialization scale of high-power offshore platform power stations, large and medium-sized offshore platform cranes, floating storage unit (FRUS) modules, drilling package modules, large and medium-sized topside modules, and jacket modules. Make breakthroughs in key products and control system technologies for underwater production systems such as underwater wellheads, Christmas trees, manifolds, unmanned remotely operated vehicles (ROVs) and opening tools, and achieve industrial application.

4. Key tasks

(1) Improve R&D capabilities and optimize the innovation system

1. Promote key enterprises to increase R&D capacity building. Highlight the dominant position of enterprises in technological innovation, further promote enterprises to increase the

construction of R&D platforms, and accelerate the guidance and support of key enterprises in building national and provincial R&D centers for ships, marine engineering equipment, and marine equipment. Promote enterprises to increase investment in research and development, comprehensively improve the level of enterprise research and development and design, and expand design capabilities forward on the basis of continuously deepening production and design, forming ship type development and design capabilities, occupying the technological frontier, and mastering key technologies.

2. Support the development of shipbuilding and offshore engineering design institutions. Strengthen the innovation foundation, improve the innovation system, vigorously support the construction of the province's ship and ocean engineering research and development system, make full use of social forces such as universities, scientific research institutions and enterprises, build professional ship design enterprises, and form a Jiangsu ship and marine engineering equipment R&D system with backbone enterprises as the main body and serving the province and the whole country. We vigorously advocate combination of "government, industry, learning, research and application" to carry out technical research and create a research and development platform, focusing on improving the province's preliminary ship design product research and development capabilities. Actively cultivate and attract high-level ship research and development institutions and teams within the province, and support capable companies in acquiring foreign design companies. Support the construction of technical service outsourcing enterprises specializing in ship and offshore product design, focusing on providing product design, technical consulting and other services to small and medium-sized ship and offshore engineering companies.

3. Deepen the construction of public R&D platforms. Vigorously promote the construction of public service platforms for ship and marine engineering equipment technology, accelerate the formation of technological innovation alliances between industries and regions, and build a new carrier for industry innovative technology sharing services. Make full use of the innovative capabilities of universities and military research institutions, vigorously support research and development institutions such as ship and ocean engineering equipment-related units and joint engineering technology research centers with domestic and foreign research institutes, and accelerate the promotion and application of military-to-civilian technology.

Accelerate the construction of industrial, academic and research bases, strengthen the construction of basic technical capabilities, enrich technical reserves, and strive to build Jiangsu Province into an important national ship and marine engineering equipment technology innovation base.

(2) Promote intelligent manufacturing and optimize the manufacturing system

1. Comprehensively accelerate the establishment of a modern shipbuilding model. Accelerate the establishment of a final assembly shipbuilding model that integrates "shell, outfitting, and coating" and "design, production, and management" and strive to improve the level of final assembly shipbuilding. Vigorously improve the level of three-dimensional digital integrity modeling design and three-dimensional process digital design of shipbuilding, and comprehensively promote digital shipbuilding; improve the shipbuilding lean management system, refine the decomposition of work tasks, fully realize pull-type engineering plan management, and fully implement precision shipbuilding; vigorously promote applications Manufacturing technologies such as energy saving, high efficiency, clean production, circular economy and comprehensive utilization are used to achieve green shipbuilding.

2. Cultivate and build smart factories. Steadily promote the application of automated and intelligent production, testing, and inspection equipment such as intelligent processing of key components, automated production lines, welding robot production lines, and robot painting operations, and improve the level of automation and intelligence in the manufacturing process; accelerate the key to virtual manufacturing technology and database management systems technology, information integration technology, production system integration technology, etc., research and develop intelligent ship manufacturing equipment technology, strengthen the informatization transformation of process processes, rely on key shipbuilding enterprises to build demonstration intelligent workshops, advance the construction of intelligent factories in an orderly manner, and comprehensively upgrade manufacturing system.

3. Vigorously cultivate core capabilities in offshore engineering equipment manufacturing. Relying on key enterprises, we will improve the final assembly and integration capabilities of large offshore engineering equipment and build a specialized final assembly manufacturing enterprise with general contracting capabilities and strong international competitiveness. Taking general contracting as the traction, we will drive and guide a group of small and medium-sized enterprises to take a professional and characteristic development path,

and gradually develop into professional branches in the fields of engineering design, module design and manufacturing, equipment supply, system installation and commissioning, and technical consulting services. contractor. Improve the construction level, master the unique construction technology, installation and commissioning technology of offshore engineering equipment, and establish a modern engineering management model and production organization method that is compatible with the characteristics of offshore engineering equipment projects and in line with international standards.

(3) Gather high-quality resources and optimize industrial layout

1. Strengthen and optimize the three major ocean-going shipbuilding bases. Focus on supporting the three ocean-going shipbuilding bases of Nantong, Taizhou and Yangzhou with "industrial agglomeration, enterprise clusters, outstanding main businesses, distinctive characteristics, and strong driving force", strictly control the construction of new shipbuilding capabilities, and eliminate low-end and backward production capacity. Guide advantageous shipbuilding companies to optimize production capacity by tapping internal potential. Encourage superior forces inside and outside the province and within the industry to implement mergers and reorganizations and optimize resource allocation. Support key enterprises in developing the official ship market, and actively encourage leading enterprises to participate in military ship construction.

2. Build a manufacturing base for marine engineering equipment. In the central Jiangsu region, mainly Nantong, build a 100-billion-level marine engineering equipment manufacturing base integrating R&D, design, and high-end manufacturing. Promote the simultaneous development of key supporting capabilities for offshore engineering equipment, and accelerate the construction of offshore engineering technology and service system bases mainly in Wuxi and offshore engineering supporting equipment bases mainly in Zhenjiang and Nantong.

3. Create a distinctive supporting industrial base. Focus on the development of the four major ship supporting bases in Nanjing, Taizhou, Zhenjiang and Nantong, guide small and medium-sized ship supporting companies to gather in ship supporting parks, and promote strategic cooperation between shipbuilding and marine engineering equipment companies and supporting companies. Support the Zhenjiang, Taizhou, and Nantong regions in accelerating the development of supporting equipment such as marine power systems, generator sets,

communications and navigation, and accelerate the construction of advanced productive service systems such as steel distribution and logistics services.

4. Promote the upgrading and upgrading of inland river ship manufacturing. Accelerate the pace of inland river shipbuilding enterprises entering the park and zone, focusing on the construction of Taizhou Hailing and Subei Guanhekou inland watership manufacturing parks to further increase industrial concentration. Accelerate the promotion and use of new technologies such as environmental protection, safety, energy conservation and emission reduction for inland river ships, encourage the development of energy-saving and environmentally friendly inland river ships, direct river-sea container ships, waterway river-sea combined transport ship types, inland river standardized ship types, inland river yachts, etc., and accelerate the upgrading of the inland river ship industry.

(4) Improve competitiveness and optimize organizational structure

1. Cultivate and strengthen leading and key enterprises. Improve the high-end product manufacturing capabilities of key enterprises, support leading shipbuilding enterprises to become bigger and stronger, promote the accelerated development of key offshore engineering equipment companies, and form general contract manufacturing capabilities. Actively promote the merger and reorganization of shipbuilding enterprises in the three major bases across regions, industries, and ownership systems, and increase the degree of industrial concentration. Encourage upstream and downstream enterprises in the shipbuilding and offshore engineering equipment industry to integrate the industry chain, achieve strategic alliances, and enhance the overall competitiveness of the industry.

2. Accelerate the characteristic development of small and medium-sized enterprises. In accordance with the requirements of the modern assembly production model, we will actively develop a specialized division of labor and collaboration system oriented to intermediate products. Encourage small and medium-sized enterprises to implement differentiated competition in market segments, develop in the direction of "specialization, precision, specialness, innovation and excellence", form characteristics and brands, and form large and strong, small and refined, large and medium-sized enterprises with complementary advantages and characteristics A clear and dynamic corporate competitive landscape. Implement the national “Belt and Road” strategy, promote international production capacity cooperation, cultivate a

group of small and medium-sized shipbuilding companies with good quality and reputation, and explore the Southeast Asian ship export market.

3. Actively cultivate ship and marine engineering equipment production service enterprises. Accelerate the construction of productive service platforms for ships and offshore engineering equipment. Accelerate the development of the logistics service industry, build a trading market for supporting products, and establish a distribution center for bulk materials such as steel, pipes, and cables. Accelerate the construction of global marketing service networks for key enterprises and further improve corporate marketing capabilities. Efforts will be made to improve the level of professional division of labor and collaboration within the three major shipbuilding bases, establish and improve a professional processing and distribution system, and strive to achieve the supply of materials to specified specifications, on time and in sequence.

(5) Breakthrough in high-end ship types and optimize product structure

1. Promote the advancement of leading products. Strengthen the research and development and upgrading of the three mainstream ship types, build internationally renowned brands in all fields, and form a series of products with excellent technical economy and environmental coordination. With the main goals of technological advancement, cost economy, efficient construction and excellent quality, we will comprehensively improve the quality, technical economy and environmental coordination of ship products, improve the quality credibility among mainstream international ship owners, and strive to increase the proportion of high-tech ships. Create a brand effect.

2. Build a pillar position in the offshore engineering equipment manufacturing industry. Adapt to the new trends in the development of the world's offshore engineering equipment industry, vigorously develop the offshore engineering equipment manufacturing industry, and effectively improve the core competitiveness of the industry. Accelerate the development of professional offshore products and further expand the scale of the offshore equipment industry. Focusing on leading enterprises, we will strengthen the cultivation of general contracting integration capabilities, accelerate the development of general assembly integration capabilities, realize general engineering contracting, and enhance the added value of the offshore engineering equipment business.

3. Break through the bottleneck in the development of supporting industries. In accordance with the direction of "large projects, industrial chains, industrial clusters, and

industrial bases", efforts will be made to lengthen the industrial chain, promote integration, and expand new space for the supporting industry. Encourage key supporting enterprises to accelerate the transformation from single equipment to system integration; promote the clustered development and differentiated development of the ship supporting industry, greatly enhance industrial concentration and comprehensive competitiveness, and gradually build a complete supporting industry chain system. Vigorously promote the construction of a global service system, encourage qualified supporting enterprises to actively carry out international cooperation, establish outlets abroad, and build a global service network; strengthen cooperation with large state-owned enterprise groups and rely on their foreign service systems to build global services for our province's supporting products platform.

5. Safeguard measures

(1) Strengthening government guidance

Improve consensus, strengthen top-level planning, and continuously support the development of the shipbuilding industry. Provide key support to key technological transformation and key product research and development projects included in the "Thirteenth Five-Year Plan" industrial development plan. Limit the construction of unplanned projects, optimize industrial layout, optimize production capacity structure, optimize industrial structure, guide the staggered development of key products among regions, focus on the coordination of product structures, achieve complementary regional functional divisions, and accelerate transformation and upgrading. Strengthen provincial and municipal linkage to jointly promote the innovative development of Nantong marine engineering equipment, Taizhou high-tech ships and related ships and offshore engineering supporting characteristic industrial bases, and promote the development of marine engineering equipment and high-tech shipbuilding industries in terms of major project promotion and special fund arrangements. Provide guidance and support to promote the industrial structure to move towards the mid-to-high end and achieve sustainable development.

(2) Increase financial support

Conscientiously implement policies such as the "Guiding Opinions on Financial Support to Accelerate Structural Adjustment and Promote Transformation and Upgrading of the Shipbuilding Industry" by nine ministries and commissions including the People's Bank of China, and encourage financial institutions to adjust credit structure, innovate financial products

and services, and improve approval efficiency , on the premise of risk controllability and business sustainability, give priority to credit support for major projects in the fields of enterprise technological transformation, intelligent manufacturing, etc., and give preference in terms of loan amount, loan term and loan interest rate. Actively expand the scale of buyer's credit and further explore the international market. Deeply implement the "Pilot Measures for Ship Mortgage Financing During Construction in Jiangsu Province" and further expand the scope of financing enterprises. Promote the listing and financing of key enterprises and enhance their development potential. Actively strive to establish a shipbuilding and marine engineering equipment industry development fund to guide social capital to focus on support, mainly for key industrial construction projects and supporting capabilities, independent innovation capacity building, etc.

(3) Strengthen talent support.

Focusing on the needs of transformation and upgrading of the shipbuilding and offshore engineering industry, relying on colleges and universities in our province and focusing on the construction of high-level and highly-skilled talent teams, we will strengthen the introduction, training and use of talents. Rely on the "Thousand Talents Plan" to attract high-level entrepreneurial and innovative talents at home and abroad and create a talent gathering highland. Efforts will be made to cultivate a group of leading talents and teams with outstanding contributions in the industrialization of key core technologies, research and development of major products, and innovative business management models. Accelerate the establishment and improvement of entrepreneurial training, selection, incentive, supervision and service mechanisms that meet the requirements of the market economy, and create a team of entrepreneurs with modern business concepts and global vision. Rely on universities, technical schools and training institutions to cultivate a new type of skilled labor force.

(4) Create a development environment and improve the economic operation analysis and monitoring mechanism of the shipbuilding and offshore engineering equipment industry, timely grasp the development quality of the industry, and comprehensively guide the healthy development of the industry. Support shipbuilding and offshore engineering equipment companies to actively participate in international cooperation and exchanges and enhance the overall international influence of the industry. Strengthen industry services, give full play to the guidance and coordination role of industry associations and other organizations, establish a joint

coordination mechanism for maritime affairs, safety supervision, ship inspection, classification societies, finance and other departments to jointly promote Jiangsu's shipbuilding and offshore engineering equipment industry to achieve sound and rapid development develop. Each key development area must strengthen planning guidance, strengthen organizational leadership and industry supervision, formulate relevant development plans and policy measures, and increase planning implementation and policy guarantees.

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《江苏省船舶与海洋工程装备产业“十三五”发展规划》

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江苏省船舶与海洋工程装备产业“十三五”发展规划

江苏省经信委 www.jseic.gov.cn 日期：2016-10-08 来源：办公室

关于印发《江苏省船舶与海洋工程装备产业“十三五”发展规划》的通知
苏经信国防〔2016〕471号

各设区市经信委，昆山市、泰兴市、沭阳县经信委（局），船舶与海洋工程装备行业协会、学会，各有关船舶办：
船舶与海洋工程装备产业是我省先进装备制造业的重要组成部分，为进一步加快我省船舶与海洋工程装备产业转型升级，依据《中国制造2025》、《船舶工业中长期发展规划》、《中国制造2025江苏行动纲要》等，结合我省船舶与海洋工程装备产业发展实际，制定了《江苏省船舶与海洋工程装备产业“十三五”发展规划》。现印发你们，请结合实际，认真贯彻实施。

江苏省经济和信息化委员会
2016年8月3日

江苏省船舶与海洋工程装备产业“十三五”发展规划

船舶与海洋工程装备产业是资金、技术、劳动、信息密集型现代综合性产业，对经济发展支撑作用显著，是先进装备制造业的重要组成部分。“十三五”时期是我省船舶与海洋工程装备产业加快转型升级、实现由大到强转变的重要时期。依据《中国制造2025》、《船舶工业中长期发展规划》、《海洋工程装备产业创新发展战略（2011 - 2020）》、《中国制造2025江苏行动纲要》等，结合我省船舶与海洋工程装备产业发展实际，制定本规划。规划期2016年至2020年。

一、发展形势

（一）发展基础

我省船舶与海洋工程装备产业“十二五”期间实现了跨越式发展，成为我国第一造船大省和世界重要的产业基地。初步建立了研发、设计、造船、海洋工程装备、修船、拆船、配套及服务等门类齐全的船舶产业体系，正处于船舶工业大省向强省跨越阶段，产业国际地位和市场影响力不断增强。

1．市场份额稳居前列。“十二五”期间，我省三大造船指标持续位居全国第一，占世界市场份额年均达到10%以上。2015年远洋船舶造船完工量1658万载重吨、新接订单1213万载重吨、手持订单5666万载重吨，分别占全国份额的39.6%、38.9%、46%，占世界份额的16.8%、12.3%、18.9%。南通、泰州、扬州三大造船基地完工量占全省的77.2%，产业集聚明显。部分骨干企业规模、技术水平、经济效益等指标居全国前列。内河船舶发展势头良好，2015年内河船舶完工量达到了516万总吨。

2．创新能力显著增强。我省已具备了建造除远洋豪华游轮以外所有船型的能力，成功交付国内首制1.3万标箱超大型集装箱船、40万吨超大型矿砂船、19296载重吨滚装船、全球首艘按共同结构规范标准制造的15.6万吨苏伊士型原油轮和全球首艘天然气动力多功能远洋运输船等产品。在建产品结构持续优化，2015年全省交付船舶中散货船所占份额为68.5%，较“十一五”末下降5.2个百分点；集装箱船的份额5年来平均达到13.6%，比全国平均值高出2.4个百分点；化学品船、液化气船、液化石油气船、重吊船、海工辅助船、工程船等特种类型船舶比重持续上升。

3．海工装备新兴产业增幅强劲。2012年省委、省政府从战略高度把海洋工程装备产业作为全省十大战略性新兴产业重点推进，海工装备新兴产业步入快速发展轨道。骨干企业支柱作用优势显著，已有5家企业进入海工平台总装领域，并接获了海工平台订单。目前海工产品总产值占全国海工市场份额的1/3强，交付产品基本覆盖从近海到深海的所有种类。“深海高稳性圆筒型钻探储油平台的关键设计与制造技术”荣获国家科技进步一等奖和“蛟龙号”7000米载人潜水器成功海试，表明我省在深海产品和主流产品的优势正逐步形成。

4．配套产业加速发展。我省是全国船舶配套产业发展最密集的地区之一，形成了南京、镇江、泰州、南通四大船舶配套基地。船舶配套产品品种繁多、门类齐全，规模以上船舶配套企业数占全国的40.5%，锚链、螺旋桨等部分品牌已有较强的国际影响力，节能环保设备发展迅速，部分海工配套关键装备取得突破。

当前，我省船舶与海工装备产业仍存在不少严峻挑战和深层次问题。一是外部环境继续恶化。交船难、接单难、融资难现象依然突出，特别是民营企业生产经营压力大。二是产业转型步伐有待加快。核心技术储备少，设计研发能力弱，与我省船舶产业规模不相适应，高技术船舶70%的核心零部件和关键配套设备需要进口，高端配套产业发展仍显滞后。三是海工装备规模经济效益尚未显现。海工装备产业在市场门槛高、技术标准严、资金需求大等因素的制约下，尚未形成系列化、批量化生产，海工配套薄弱，难以适应总装发展需求。四是产业服务保障体系不够完善。全球性的营销及服务网络缺乏，全省产业技术研发机构较少，产学研合作、教育培训、人才服务等公共平台建设有待进一步健全。五是内河造船业参差不齐。内河造船企业规模小而散，管理整体粗放、技术力量薄弱、造船能力未得到有效整合的情况没有明显改观。

（二）发展趋势

当前，国际金融危机影响深远，世界经济低速增长，经济结构深度调整，经济全球化深入发展，区域经济合作蓬勃兴起，超大自由贸易区正在孕育，全球范围内围绕市场、资本和产业转移的竞争更为激烈。“十三五”是江苏由船舶与海洋工程装备制造大省向强省目标迈进的重要时期，在发展的道路上既有挑战，也有机遇。一是产业发展基本面优势继续保持。“十三五”是我国船舶工业调整提高、实现造船强国发展目标的关键时期，世界造船中心向我国转移的大趋势没有改变，同时，也是江苏船舶工业发展转型升级的战略机遇期。江苏地处长三角经济发达地区，沿江、沿海自然条件优越，人文环境良好，劳动力资源丰富，造船基础

雄厚，产业发展环境和基础条件具有较强优势，具备很好的船舶与海洋工程装备产业发展条件和基础。二是世界造船的竞争格局深度调整。世界经济下滑对船舶及海洋工程装备的影响日益加深，国际船舶市场的周期性波动、原材料价格和劳动力成本上涨、汇率变动等一系列潜在因素和风险也会不断困扰和影响船舶工业的发展，韩国、日本、新加坡等国综合竞争力仍较高，在未来竞争中，我省船舶工业始终面临着加快产业升级步伐、加速提高综合能力等前所未有的压力和挑战。三是我省船舶工业发展机遇叠加。面对我国经济处于增速换档期、结构调整期和政策转型期的态势，江苏船舶工业要适应新常态，拥抱新机遇，抓住海洋强国战略、“一带一路”战略带来的强大装备需求机遇，加快结构调整、推动国际产能合作，提升船舶与海洋工程装备高端产品国际市场份额，加速国产配套设备替代进口，寻求新的经济增长点和驱动力。

二、总体要求

（一）指导思想

全面贯彻海洋强国和制造强国战略，紧抓中国制造2025建设机遇，走新型工业化发展道路，以转变产业发展方式为主线，抢抓海洋经济发展新机遇，积极化解过剩产能，加快推进转型升级步伐；以创新发展为核心，紧跟绿色发展新趋势，全面提升产业核心竞争力和可持续发展能力；以数字化、信息化、智能化制造为突破口，加快由船舶海工制造大省向强省的跨越，把江苏建设成为世界级的船舶海工装备基地。

（二）发展原则

坚持转型升级，实现提质增效。进一步优化全省船舶、海工产业布局，持续推进产业结构调整，促进全产业链向高端攀升，促进配套业向系统集成转变，促进企业产品质量和生产效率的提升，持续提高产业发展层次和效益，培育拥有核心竞争力的国际一流大型企业集团。

坚持创新驱动，实现品牌提升。进一步提升行业核心竞争力，大力推进企业自主创新能力建设，大力培育原始创新能力，强化“政产学研用”协同创新，加快全省船舶与海工研发体系建设，提升自主创新和研发、设计能力，实现江苏船舶海工产业由制造向创造转变。持续提高三大主力船型的建造质量和水平，创建国际一流船型品牌。

坚持绿色环保，实现持续发展。进一步推广绿色制造模式，积极推进船舶与海工产品的绿色化、信息化、智能化，打造耗费最低社会资源的建造方式，加强节能环保技术、工艺、装备推广应用，提高资源综合利用率，降低主要污染物排放，全面推行清洁生产，实现低碳造船，走资源节约、环境友好的内涵发展之路。

（三）发展目标

到2020年，我省船舶与海洋工程装备产业结构更趋合理，创新能力和产业综合素质显著提升，市场份额稳居国内首位，成为世界重要的船舶与海洋工程装备产业基地。

1．产业规模。至2020年，全行业销售收入和经济效益继续保持全国第一，造船完工量、手持船舶订单、新接订单保持全国市场份额35%以上，占世界市场的15%以上。海洋工程装备产业占全国市场份额超过30%、国际市场份额超过20%，进一步巩固全国第一造船大省地位。

2．龙头企业。至2020年，培育3家造船企业进入世界前20强，在国际市场上的品牌知名度进一步提升；骨干海工企业具备总装能力的达到5家；配套业年产值超过10亿元企业20家以上。

3．产品结构。继续保持集装箱船、散货船、油船三大主流船型尤其是超大型船舶的市场份额，并形成品牌影响力；在大型液化天然气（LNG）船、大型液化气体运输船（VLGC）、大型汽车滚装船等领域进一步取得突破；形成以特种海洋工程船、自升式钻井平台、半潜式平台、天然气装备为引领的海工产品结构。

4．科技研发实力。建设一批省级高新技术船舶和海洋工程装备的自主设计研发平台；研发一批具有国际领先水平的特色产品，在共性技术及基础研究方面获得一批国内领先的成果；积极推进两化融合，大力提升现代造船模式应用的深度和广度，持续推进精益造船模式，全面推行生产管理系统（MIS）；重点开展智能制造技术研究，形成一批智能制造示范企业。

5．关键配套产业。船舶配套继续保持全国第一，掌握船舶动力、甲板机械、舱室设备、通导与智能系统和设备的核心技术，拥有具有较强国际竞争力的品牌产品；龙头企业规模化专业化发展，成为具有较强实力的设备系统集成供应商；配套能力显著提升，三大主流船型本土化船用设备平均装船率达到80%以上，高技术船舶本土化船用设备平均装船率达到60%以上，船用设备关键零部件本土配套率达到80%。

6．发展质量。重点骨干造船企业造船效率接近世界先进水平，骨干企业每修正总吨工时降到22小时以内，关键工艺流程数控化率80%以上，造船综合能耗0.2吨标准煤/万元，平均钢材一次利用率达到92%以上。

三、重点方向

（一）设计制造共性技术领域

着力抓好船型开发、绿色装备和智能制造领域的关键技术积累和提升，重点突破船舶性能优化、智能船舶、节能与环保、综合利用等关键领域的核心和共性技术。

1．船舶总体优化及智能船舶设计技术。开展船舶总体设计、性能综合优化和数字化设计技术研究，掌握船舶总体多学科优化设计技术，提高综合性能。针对船舶机舱、船舶驾驶、航姿调整、设备监控、装卸管理等智能化需求，开展自动化技术、计算机技术、网络通信技术、物联网技术等在船舶上应用的研究，实现智能船舶设计应用技术的突破。

2．船型优化及水动力分析技术。针对优良船型开发需求，掌握参数化建模技术，突破计算流体力学（CFD）分析预报船体水动力性能技术，具备运用数字水池技术开发水动力节能装置、高性能螺旋桨、寻求和优化低阻高耐波性船型能力。

3．结构优化设计及减震降噪技术。开展船体结构优化、有限元强度和疲劳分析技术的研究，掌握结构轻量化设计的关键技术；掌握船体梁振动特性以及居住区的振动响应预报、船体结构振动和安全性分析的关键技术。掌握噪声分析预报的关键技术。

4．数字化和精益化建造技术。开展基于产品导向型作业分解（PWBS）的精细化工程分解标准体系研究，推行基于任务包的精益化生产设计；以形成涵盖设计和建造信息的大数据为目标，开展建造工艺信息等设计数据与生产、采购、仓储、财务等系统无缝对接和实时关联技术的研究，构建和完善实时反馈、跟踪信息系统，进一步推进研发设计信息化、生产制造数字化和设计制造管理一体化，提高造船大数据的共享度、控制度、精确性以及计划性。

5．智能制造技术。支持船舶先进制造工艺技术和智能制造装备技术开发，掌握涂装、管件加工、钢材下料、小组立焊接等自动化和智能化生产技术，开展智能制造系统解决方案研究。

（二）高技术船舶领域

瞄准产品绿色化、智能化、高端化方向，大力推广和应用低阻力船型设计技术、清洁能源应用技术等先进绿色环保技术，形成绿色、节能、智能型的新一代散货船、集装箱船、油轮三大主流船型自主品牌；快速提升液化气体（LNG）船、超大型集装箱船、大型滚装船、超大型矿砂船等产品建造水平，打造高端品牌；积极开展极地船舶、清洁能源船舶、特种工程船等高技术船型开发，提高建造水平。

1．超大型集装箱船。重点研究18000-22000箱超大型集装箱船的低阻船型、总纵及疲劳强度、极厚板/高强钢焊接等技术，形成具有装箱量大、油耗低、适货性强、安全可靠、绿色环保等特点的2万箱级超大型集装箱船。

2．LNG动力（双燃料）船舶。开展LNG动力（双燃料）船舶风险评估、供气和喷射、控制系统应用技术的研究，大力开展绿色生态环保型油船、散货船、集装箱船等国际航线及江海船舶的设计、研制。重点开发和建造LNG燃料动力船舶，积极开展内河清洁能源船舶的推广工作。

3．极地船舶。加大极地水域的船舶关键技术研究，掌握船舶首尾部破冰性能、抗冰线型、总布置及稳性、结构强度、动力装置及推进系统、极地环境下防冻等技术，开发和承接抗冰性能达到PC6及以上级的极地船舶。

4．大（中）型LNG运输船。开展大（中）型LNG运输船的技术研究，包括隔热技术、安全保护技术、施工工艺、焊接、冷态密性试验等技术，开发出操作与维护方便的大（中）型LNG运输船液货围护系统，形成薄膜型或棱型罐、球罐型LNG运输船的设计和建造能力。

5．汽车（货物）滚装船。重点突破4000车位以上汽车滚装船和客滚船、20000吨载重量以上新型货物滚装船的总体性能、破舱稳性、结构设计、滚装通道系统以及节能环保技术应用等关键技术，形成安全、节能、环保的大型汽车滚装船、客滚船和新型货物滚装船。

（三）海洋工程装备领域

全面提高海洋工程装备研发、建造和项目管理水平，掌握海洋工程装备特有的设计、建造及安装调试技术，建立与海洋工程装备项目特点相适应的、与国际接轨的现代化项目管理模式和生产组织方式。

1．海洋工程装备技术。主要包括最新一代绿色环保经济型海工产品的自主研发、总装建造及关键建造工法工艺技术，精度控制技术，精细化重量控制技术，项目管理及信息化技术，模块化制造技术，综合调试技术等。

2．海洋油气资源开发装备。重点发展半潜式钻井（生产）平台、支持平台、海上服务及居住平台、钻井船、自升式钻井平台、自升式海上多功能服务平台、张力腿平台（TLP）、深水立柱式平台（SPAR）、浮式生产储卸装置（FPSO、FLNG）、铺管船等海工装备，逐步形成具有自主知识产权的品牌产品。
3．海洋浮体结构物。加强海上大型浮式结构物（VLFS）、超大型浮式保障基地、深海工作站、海上浮动电站的设计建造关键技术研发，加快实施工程化研究。
4．其他海洋资源开发装备。开展海底矿物开采和运载的重载水下作业装备以及海洋可再生能源装备的设计建造，重点提升海上风电装备及风电安装运输维护船的研发设计、建造总包能力，实现产业化、系列化、批量化生产。
（四）高端配套领域
推动优势配套产品集成化、智能化、模块化发展，掌握海洋工程装备关键系统配套技术，加快船舶和海工配套自主品牌产品开发和产业化。
1．动力系统。重点发展中小缸径低速柴油机、中速柴油机及其配件，在高压共轨燃油喷射系统、智能化电控系统、尾气脱硝脱硫装置等柴油机关键部件和系统等方面取得突破，推进新型推进装置、高端船用发电机、中高压船舶电站、电力推进装置等装备的研制，形成成套供应能力，推广高压岸电运用。
2．通讯导航和机电控制设备。开展配套机电装备的轻量化、智能化、大型化、系统集成、减振降噪、可靠性等方面的技术升级。提高配套机电设备的标准化和通用性，实现设备的智能化控制和维护、自动化操作等，提供系统的解决方案，实现集成化配套。重点发展电子海图系统、综合船桥系统、电罗经、雷达等船舶通讯导航自动化产品，实现全船网络化及船岸网络化。
3．绿色环保装备。重点开发LNG存储罐、高效再气化核心装备、气体处理系统等清洁能源应用装备，突破惰气系统、通风系统、安全系统、自动控制系统应用关键技术。开发压载水和污油水高效处理系统、环保型灭火剂和消防系统、小型岛礁集成可再生能源和淡水供应装置，支持自主研发节能环保处理设备等产品。
4．海工装备专用设备。重点开展深水锚泊定位和动力定位系统、大型定位绞车、自升式平台升降系统、单点系泊系统、水下铺管系统、带波浪补偿海工设备的研制，形成产业化能力。加快提升大功率海洋平台电站、大中型海洋平台吊机、浮式储存装置（FRUS）模块、钻井包模块、大中型上部模块、导管架模块的产业化规模。突破水下采油井口、采油树、管汇、无人遥控潜水器（ROV）及开启工具等水下生产系统关键产品及控制系统技术，实现产业化应用。
四、重点任务
（一）提升研发能力，优化创新体系
1．推动骨干企业加大研发能力建设。突出企业在技术创新中的主体地位，进一步推动企业加大研发平台建设力度，加快引导和支持骨干企业建设国家级和省级船舶、海洋工程装备以及船用设备等研发中心。促进企业加大研发投入，全面提升企业研发设计水平，在不断深化生产设计的基础上，将设计能力向前道拓展，形成船型开发设计能力，占领技术前沿，掌握关键技术。
2．扶持船舶与海工设计机构发展。强化创新基础，完善创新体系，大力扶持全省船舶与海洋工程研发体系建设，充分利用高校、科研机构和企业等社会力量，建设专业船舶设计企业，形成以骨干企业为主体、服务全省、辐射全国的江苏船舶与海洋工程装备研发体系。大力提倡“政产学研用”结合，开展技术攻关和创建研发平台，重点提升全省船舶初步设计产品研发能力。在省内积极培育和招引高水平船舶研发机构和团队，支持有能力的企业收购国外设计企业。扶持专业从事船舶、海工产品设计的技术服务外包企业建设，重点为中小船舶海工企业提供产品设计、技术咨询等服务。
3．深化公共研发平台建设。大力推进船舶与海洋工程装备技术公共服务平台建设，加快形成产业之间、地区之间的技术创新联盟，构筑行业创新技术共享服务新载体。充分利用高校和军工科研机构的创新能力，大力支持船舶与海洋工程装备相关单位与国内外科研院所联办工程技术研究中心等研发机构，加快军转民技术推广和应用。加快产业产学研基地建设步伐，加强基础技术能力建设，充实技术储备，努力把江苏打造成为全国重要的船舶与海洋工程装备技术创新基地。
（二）推广智能制造，优化制造体系
1．全面加快建立现代造船模式。加快推进建立“壳、舾、涂”一体化及“设计、生产、管理”一体化的总装造船模式，努力提高总装化造船水平。大力提升造船三维数字完整性建模设计及三维工艺数字化设计水平，全面推广数字化造船；完善造船精益管理体系，精细化作业任务分解，全面实现拉动式工程计划管理，全面实施精度造船；大力推广应用节能、高效、清洁生产、循环经济和综合利用等制造技术，实现绿色造船。
2．培育建设智能工厂。稳步推进关键零部件智能加工、自动化生产线、焊接机器人生产线、机器人涂装作业等自动化、智能化生产、试验、检测设备应用，提高制造过程自动化、智能化水平；加快虚拟制造技术、数据库管理系统关键技术、信息化集成技术、生产系统集成技术等开发与应用，研发船舶智能制造装备技术，加强工艺流程信息化改造，依托重点船舶企业建成示范智能车间，有序推进智能工厂建设工作，全面升级制造体系。
3．大力培育海洋工程装备制造核心能力。依托重点骨干企业，提高大型海工装备的总装集成能力，打造具备总承包能力和较强国际竞争力的专业化总装制造企业。以总承包为牵引，带动和引导一批中小型企业走专业化、特色化发展道路，在工程设计、模块设计制造、设备供应、系统安装调试、技术咨询服务等领域，逐步发展成为专业化分包商。提高建造水平，掌握海工装备特有的建造技术、安装调试技术，建立与海工装备项目特点相适应、与国际接轨的现代工程管理模式和生产组织方式。
（三）聚集优质资源，优化产业布局
1．做强做优三大远洋造船基地。重点支持南通、泰州、扬州三个“产业集聚、企业集群、主业突出、特色鲜明、带动性强”的远洋造船基地，严格控制新的造船能力建设，淘汰低端落后产能。引导优势造船企业以内部挖潜方式实现产能最优化。鼓励省内外、行业内外优势力量，实施兼并重组，优化资源配置。支持重点企业开拓公务船市场，积极鼓励龙头企业参与军船建造。
2．打造海洋工程装备制造基地。在以南通为主的苏中地区，建设集研发设计、高端制造为一体的千亿级海洋工程装备制造基地。推动海工装备关键配套能力同步发展，加快以无锡为主的海洋工程技术及服务体系基地和镇江、南通为主的海洋工程配套设备基地建设。
3．打造特色鲜明的配套产业基地。重点发展南京、泰州、镇江、南通四大船舶配套基地，引导专中小型船舶配套企业向船舶配套园区集聚，促进船舶与海洋工程装备企业与配套企业战略合作。支持镇江、泰州、南通地区加快发展船用动力系统、发电机组、通讯导航等配套设备，加快钢铁集配、物流服务等先进生产性服务体系建设。
4．促进内河船舶制造提档升级。加快推进内河船舶企业入园进区的步伐，重点建设泰州海陵、苏北灌河口内河船舶制造园区，进一步提高产业集中度。加快推广运用内河船舶环保、安全、节能减排等新技术，鼓励发展内河节能环保型船舶、江海直达定线集装箱船、水路江海联运船型、内河标准化船型、内河游艇等，加快推进内河船舶产业升级。
（四）提升竞争能力，优化组织结构
1．培育壮大龙头骨干企业。提升骨干企业高端产品制造能力，支持龙头造船企业做大做强，推进骨干海洋工程装备企业加快发展，形成总承包制造能力。积极推进三大基地内的船舶企业实行跨地区、跨行业、跨所有制的兼并重组，提高产业集中度。鼓励船舶与海洋工程装备产业上下游企业进行产业链整合，实现战略联盟，提升行业整体竞争力。
2．加快中小企业特色化发展。根据现代化总装生产模式要求，积极发展中间产品为导向的专业化分工协作体系。鼓励中小型企业面向细分市场实施差异化竞争，向“专、精、特、新、优”的方向发展，形成特色和品牌，形成大而强、小而精，大中小企业优势互补、特色鲜明，充满活力的企业竞争格局。落实国家“一带一路”战略，推进国际产能合作，培育一批质量信誉好的中小型船企，开拓东南亚船舶出口市场。
3．积极培育船舶与海洋工程装备生产性服务企业。加快推进船舶与海洋工程装备生产性服务平台建设。加快发展物流服务业，建设配套产品交易市场，建立钢材、管材、电缆等大宗材料配送中心。加快骨干企业全球营销服务网络建设，进一步提高企业市场营销能力。着力提升三大造船基地区域内部专业化分工协作水平，建立健全专业化加工配送体系，努力实现材料定规格、按时、按序供应。
（五）突破高端船型，优化产品结构
1．推动主导产品高端化。加强三大主流船型研发和升级换代，全领域打造国际知名品牌，形成技术经济性和环境协调性优良的系列化产品。以技术先进、成本经济、建造高效、质量优良为主要目标，全面提升船舶产品质量、技术经济性和环境协调性，提高在国际主流船东中的质量信誉度，努力提高高技术船舶的比例，形成品牌效应。
2．构建海洋工程装备制造业支柱地位。适应世界海工装备产业发展的新趋势，大力发展海洋工程装备制造

业，切实提高产业核心竞争力。加快发展海工专业产品，进一步壮大海工装备产业规模。以龙头企业为主，加强培育总包集成能力，加快发展总装集成能力，实现工程总承包，提升海工装备业务的附加值。
3．突破配套产业发展瓶颈。按照“大项目、产业链、产业群、产业基地”的方向，在拉长产业链、推进集成化上下功夫，拓展配套业的新空间。鼓励重点配套企业加速实现单一设备向系统集成转变；推动船舶配套产业集聚发展、差别化发展，大幅提升产业集中度、综合竞争能力，逐步构建完备的配套产业链体系。大力推动建设全球服务体系，鼓励有条件的配套企业积极开展国际合作，在国外建立网点，构建全球服务网络；加强与国有大企业集团合作，依托其国外服务体系，为我省配套产品搭建全球服务平台。
五、保障措施
（一）加强政府引导
提高共识，加强顶层规划，持续不断地支持船舶工业的发展。对列入“十三五”产业发展规划的重点技术改造、重点产品研发项目给以重点扶持。限制规划外项目建设，优化产业布局、优化产能结构、优化产业结构，引导地区间实行重点产品错位发展，注重产品结构的协调，实现区域功能分工互补，加快转型升级。加强省市联动，共同推进南通海洋工程装备、泰州高技术船舶及相关船舶和海工配套特色产业基地的创新发展，在重大项目推进、专项资金安排等方面对海洋工程装备及高技术船舶产业发展给予指导和支持，促进产业结构向中高端迈进，实现可持续发展。
（二）加大金融支持
认真落实中国人民银行等九部委《关于金融支持船舶工业加快结构调整促进转型升级的指导意见》等政策，鼓励金融机构调整信贷结构，创新金融产品和服务，提高审批效率，以风险可控、商业可持续为前提，对企业技术改造、智能制造等领域重大项目优先给予信贷支持，并在贷款额度、贷款期限及贷款利率等方面予以倾斜。积极扩大买方信贷规模，进一步开拓国际市场。深入贯彻落实《江苏省建造中船舶抵押融资试点办法》，进一步扩大融资企业范围。推进骨干企业上市融资，增强企业发展后劲。积极争取设立船舶和海洋工程装备产业发展基金，引导社会资本聚焦支持，主要用于产业重点建设项目和配套能力、自主创新能力建设等。
（三）强化人才支撑
围绕船舶海工产业转型升级需要，依托我省高等院校，以高层次和高技能人才队伍建设为重点，加强人才的引进、培养和使用。依托“千人计划”吸引海内外高层次创业创新型人才，打造人才集聚高地。着力培育一批在关键核心技术产业化、重大产品研发、创新经营管理模式等方面具有突出贡献的领军人才和团队。加快建立完善符合市场经济要求的企业家培养、选拔、激励、监督和服务机制，打造一支具有现代经营理念、全球视野的企业家队伍。依托高校、技校和培训机构，培养新型技能型劳动大军。
（四）营造发展环境
完善船舶与海洋工程装备行业经济运行分析、监测机制，及时掌握行业发展质态，全面指导行业健康发展。支持船舶与海洋工程装备企业积极参加国际合作与交流，增强行业整体国际影响力。加强行业服务，充分发挥行业协会等组织的指导、协调作用，建立海事、安监、船检、船级社、金融等部门联动协调机制，共同促进江苏船舶与海洋工程装备产业实现又好又快发展。
各重点发展地区要加强规划指导，加强组织领导和行业监管，制定相关发展规划和政策措施，并加大规划实施和政策保障力度。

EXHIBIT 40

Outline of the 14th Five-Year Plan (2021-2025) for National Economic and Social Development and Vision 2035 of the People's Republic of China

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Outline of the 14th Five-Year Plan (2021-2025) for National Economic and Social Development and Vision 2035 of the People's Republic of China

March 13, 2021

The Outline of the 14th Five-Year Plan (2021-2025) for National Economic and Social Development and Vision 2035 of the People's Republic of China, compiled on the basis of the proposals of the CPC Central Committee for such a plan and vision, clarifies China's strategic intentions and the government's priorities, and guides market participants in their activities. It is a blueprint for China's new journey towards a socialist modern country and a joint action plan of the Chinese people.

Part I A New Journey Towards a Modern Socialist Country

The period covered by the 14th Five-Year Plan will be the first five years during which China begins its march towards the second Centenary Goal of building a modern socialist country by building on the success of achieving the first Centenary Goal of building a moderately well-off society.

Chapter 1 Development Environment

China has now entered a new stage of development on a stronger foundation, though profound changes have taken place in the conditions under which we pursue our development goals. We are facing new opportunities and challenges.

I. A decisive victory in building a moderately well-off society

The 13th Five-Year Plan period was the decisive stage in building a moderately well-off society. In the face of the complicated international situation and formidable domestic issues related to advancing reforms and development while maintaining stability, particularly under the grave impact of the COVID-19 pandemic, the Central Committee of the Communist Party of China (CPC) with Comrade Xi Jinping at the core, has stayed true to the CPC's original aspiration and kept the Party's missions firmly in mind. It has united and led the entire Party and the Chinese people of all ethnic groups to pioneer and forge ahead, and worked hard to advance various undertakings of the Party and the country. China has made major breakthroughs in deepening reforms in all areas, made substantial progress in law-based governance in all respects, and has achieved remarkable results in ensuring full and strict governance over the Party. China's system and capacity for governance have been modernized at an accelerated pace. These achievements comprehensively demonstrate the strong leadership of the CPC and the institutional strengths of socialism with Chinese characteristics.

Overall, China's economy has performed stably and its structure has been consistently improved, with the country's GDP now exceeding RMB 100 trillion. China has accomplished much towards becoming an innovative country and has made major advances in manned spaceflight, lunar exploration, deep-sea engineering, supercomputing, quantum information, "Fuxing" high-speed trains, large aircraft manufacture, and other fields. We have attained a decisive victory in the fight against poverty and the rural poor residents, 55.75 million in total, have been lifted out of poverty. The problem of absolute poverty, which had plagued the Chinese nation for thousands of years has been solved—a miracle in the history of mankind. Agricultural modernization has been steadily advanced, and the annual grain output has surpassed 650 million tons for several years. The goal of granting urban residency to 100 million people from rural areas and other permanent residents without local household registration has also been met. Solid steps have been taken to implement major regional development strategies. Pollution prevention and control efforts have been intensified, the target of reduction in the discharge of major pollutants has been exceeded, resources and energy have been used more efficiently, and there has been a notable improvement in the environment. Important progress has been made in addressing financial risks in this period. China has opened its door wider to the world, and the joint pursuit of the Belt and Road Initiative (BRI) has yielded fruitful results. The living standards of the Chinese people have increased significantly. Considerable headway was made in ensuring the provision of equitable, quality education. Higher education is becoming universal. Over 60 million urban jobs were added, and the world's largest social security system was established. China's basic medical insurance covers 1.3 billion people and its basic old-age insurance covers nearly 1 billion people. More than 23 million housing units in urban shanty towns have now been renovated. The country has had major strategic success in the response to COVID-19, and the preparedness and capacity for coping with emergencies have been substantially improved. The country's public cultural services have been consistently improved, and the cultural sector flourished. Notable advances have been made in the development of national defense and the armed forces, and the organizational structure of the military has undergone major changes. China's national security has been comprehensively strengthened, and social harmony and stability have been maintained across the country.

The goals and tasks of the 13th Five-Year Plan have been successfully completed. China's economic strength, scientific and technological strength, comprehensive national strength, and people's living standards have now reached a new high. The country has made great and historic achievements in building a moderately well-off society and has taken a new and big stride towards the great rejuvenation of the Chinese nation. Today, socialist China stands taller and stronger in the East.

II. Profound changes in China's development environment

China is now in an important period of strategic opportunity for development, and will remain so for some time to come, but the opportunities and challenges it faces are changing. The world today is undergoing major changes unprecedented in a century. The new round of technological revolution and industrial transformation is gaining momentum, and there is a profound shift in the balance of international power. Peace and development remain the themes of the times, and the concept of a community with a shared future for mankind is deeply rooted in people's minds. At the same time, the international environment has become increasingly complex with obviously increased instability and uncertainty. The COVID-19 pandemic is exerting an extensive, far-reaching impact around the world—the global economy is in the doldrums, economic globalization is encountering headwinds, and dramatic changes are taking place in the global energy supply and demand landscape. The international economic and political landscapes are complex and changeable, and the world is entering a period of turbulent changes, with unilateralism, protectionism, and hegemonism posing a threat to world peace and development.

China has moved to a stage of development with a focus on quality improvement. It has significant institutional advantages, improved performance in governance, sound long-term economic fundamentals, a solid material foundation, rich human resources, vast market potential, strong economic resilience, and social stability, thus enjoying favorable conditions and strengths for further development. At the same time, unbalanced and inadequate development is still a prominent problem, and reform in key links and major fields remains a formidable task. China's capacity for innovation cannot yet meet the need of pursuing development with a focus on quality improvement. The foundation of agriculture is not yet solid. There are still disparities in development between urban and rural areas and between regions and in income distribution. We have a long way to go in protecting the environment. In work on public wellbeing and social governance, there are still areas where we fall short.

We must keep in mind both the broad strategic goal of national rejuvenation and the profound changes unseen in a century in the world, and clearly understand the new features and requirements brought about by the changes in the principal contradictions in our society, as well as the new contradictions and challenges arising from the complicated international environment, while enhancing our awareness of opportunities and risks. We must keep in mind the basic fact that China is still in the primary stage of socialism, maintain a strategic resolve, and run our own affairs well. We should fully understand the laws governing development, be ready to fight, build our ability, evaluate worst-case scenarios, accurately perceive changes and scientifically respond to them, take the initiative to seek changes, be good at fostering opportunities amid crises and opening up new vistas in a shifting landscape, seize opportunities and deal with challenges while weighing up pros and cons, and forge ahead with confidence and courage.

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Chapter 2 Guidelines

During the period covered by the 14th Five-Year Plan, economic and social development will be guided by the following guidelines, principles, and strategic direction.

I. Guidelines

We must hold high the banner of socialism with Chinese characteristics; thoroughly implement the guiding principles of the 19th National Congress of the CPC and of the second, third, fourth, and fifth plenary sessions of the 19th CPC Central Committee; and follow the guidance of Marxism-Leninism, Mao Zedong Thought, Deng Xiaoping Theory, the Theory of Three Represents, the Scientific Outlook on Development, and Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era. We must fully act on the Party's basic theory, line, and policy, coordinate efforts to achieve economic, political, cultural, social, and ecological progress, and implement the strategy to make comprehensive efforts to build a great modern socialist country, deepen reform, advance law-based governance, and ensure full and strict governance over the Party. We must be committed to the new development philosophy of innovation, coordination, green development, opening-up, and sharing; uphold the underlying principle of pursuing progress while ensuring stability; pursue development with a focus on quality improvement; promote supply-side structural reforms as the main task; and make reforms and innovation the primary driving force in our endeavor to meet the fundamental goal of satisfying the people's growing needs for a better life. We should ensure coordination in pursuing development and upholding security, accelerate the building of a modern economic system and expedite our efforts to create a new development paradigm with the domestic market as the mainstay and domestic and overseas markets reinforcing each other. We should also modernize China's system and capacity for governance and realize long-term and stable economic development and social stability and harmony. By doing so, we will set the stage for building a modern socialist country in all respects.

II. Principles to follow

—Uphold the overall leadership of the CPC. We will adhere to and improve the Party's institutions and mechanisms for leading economic and social development, adhere to and improve the socialist system with Chinese characteristics, continuously boost our capacity for implementing the new development philosophy and building a new development paradigm, and provide a fundamental guarantee for development with a focus on quality improvement.

—Commit to a people-centered approach. We must ensure the principal position of the people, and work towards common prosperity. We must insist that our development is for the people and depends on the people, and that its fruits are shared by the people. We must safeguard the fundamental interests of the people, stimulate their enthusiasm, initiative, and creativity, promote social equity, improve people's wellbeing, and constantly help realize people's aspiration for a better life.

—Stay true to the new development philosophy. We must ensure the new development philosophy is applied in full, in both letter and spirit and in every stage and aspect of development. We must build a new development paradigm, effectively change the development model, work hard for better quality, higher efficiency, and more robust drivers of economic growth through reform, and strive to achieve higher-quality development that is more efficient, equitable, sustainable and secured.

—Continue to deepen reform and opening-up. We must be fully committed to reform and opening-up and modernize China's governance system and capacity. We must get rid of the institutional ailments that restrict development with a focus on quality improvement and high-quality life, strengthen major reform and opening-up measures that are conducive to improving the efficiency of resource allocation and mobilizing the enthusiasm of the whole society, and continuously enhance the driving force and vitality of development.

—Uphold system-based thinking. We must think ahead, plan the big picture, deploy strategically, and advance in a holistic manner. We must keep in mind both our internal and international imperatives, and balance development and security. By adhering to the national strategy, we need to give full play to the initiative of the central and local governments and people in various sectors, solidify our foundation, foster strengths, and tackle areas of weaknesses. We need to pay attention to preventing and resolving major risks and challenges, and ensure a balance between the quality, structure, scale, speed, efficiency, and security in terms of development.

III. Strategic direction

To promote development with a focus on quality improvement during the 14th Five-Year Plan period, we must ground our efforts in the new stage of development, apply the new development philosophy and create a new development paradigm. Understanding the new development stage is the realistic basis for implementing the new development philosophy and creating the new development paradigm. Implementing the new development philosophy provides a guide for understanding the new development stage and fostering the new development paradigm. Building the new development paradigm is a strategic choice in response to the opportunities and challenges in the new development stage and for implementing the new development philosophy. We must continue to deepening supply-side structural reforms, foster new demand through pursuing innovation-driven development and ensuring high-quality supply, and enhance the resilience of the supply system and its adaptability to domestic demand. We must build an effective system to boost domestic demand, expedite the establishment of a complete demand system, strengthen demand-side management, and build a robust domestic market. We must unswervingly push forward reform, get rid of institutional obstacles to economic circulation, and promote the flows of production factors and the integration at the stages of production, allocation, distribution, and consumption. We must be fully committed to greater opening-up, continue to deepen the opening-up based on the flow of production factors, stably expand the institution-based opening-up, and leverage the flows of the domestic economy to make China a major magnet for global production factors and resources. We must strengthen the leading role of domestic circulation, improve its efficiency and level via international circulation, and realize the mutual reinforcement of domestic and international circulation.

Chapter 3 Main Objectives

In accordance with the strategic arrangement for comprehensively building China into a modern socialist country, Vision 2035 and the main objectives for economic and social development during the 14th Five-Year Plan period are as follows.

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I. Vision 2035

By 2035, China will basically achieve socialist modernization. Our economic and technological strength, and comprehensive national strength will increase significantly. We will make new strides in economic aggregate and the per capita income of urban and rural residents. Making major breakthroughs in core technologies in key areas, we will be a global leader in innovation, and will also achieve new industrialization, enhanced IT application, urbanization, and agricultural modernization, and complete building a modern economic system. We will have modernized the governance system and capacity, and the rights of the people to participate and to develop as equals will be adequately protected. The rule of law for the country, the government, and society will be comprehensively in place. China will become a powerful country in terms of culture, education, human capital, sports, and health. The well-rounded development of the people and social etiquette and civility will be significantly enhanced. China's cultural soft power will grow much stronger. Eco-friendly work and lifestyle will be advanced to cover all areas of society. Carbon dioxide emissions will steadily decline after reaching a peak, and there will be a fundamental improvement in the environment after the goal of building a Beautiful China is met. The opening-up will reach a new stage with substantial growth in the country's capabilities for participating in international economic cooperation and competition. The per capita GDP will reach the level of moderately developed countries and the size of the middle-income group will be significantly expanded. Equitable access to basic public services will be ensured. Disparities in development between urban and rural areas and between regions, and in living standards will be significantly reduced. The Peaceful China initiative will be pursued at a higher level. The modernization of national defense and the military will be achieved. People will lead a better life, and more notable and substantial progress will be achieved in well-rounded human development and in common prosperity for all.

II. Main objectives for economic and social development during the 14th Five-Year Plan period

—China will strive to make new strides in economic development during the period. Development is the foundation and the key for solving all of China's problems. We must be fully committed to the new vision for development and realize sustained and healthy economic development based on a marked improvement in quality and efficiency. We will fully tap China's growth potential, keep the average annual growth of GDP within an appropriate range, set annual targets for GDP growth on the basis of actual conditions, and ensure that overall labor productivity grows faster than GDP. The domestic market will be stronger, the economic structure will be further optimized, and the innovation capacity will be significantly improved. China's R&D spending will increase by more than 7% annually, and is expected to account for a higher percentage of GDP than that during the 13th Five-Year Plan period. The upgrade of the industrial base and modernization of the industrial chains will be significantly improved, and the agricultural foundation will be strengthened. The balance of development between urban and rural areas and between regions will be significantly enhanced. The permanent urban residents will increase to 65% of the population, and significant progress will be made towards a modernized economy.

—New steps will be taken in reform and opening-up. China will further improve its socialist market economy with a high-standard market system in place. Market entities will be increasingly dynamic, and major progress will be achieved in the reform of the property rights system and the market-based allocation of factors of production. A more robust system of fair competition will prevail, and a new system of higher-standard open economy will take shape.

—China's social etiquette and civility will be further enhanced. Core socialist values will be widely embraced, and significant improvement will be made in the intellectual, moral, scientific, cultural, and health standards of Chinese citizens. The systems for public cultural services and cultural industries will be further improved, the intellectual and cultural life of the Chinese people will become richer, the international influence of the Chinese culture will be further increased, and an even stronger bond will be forged among all the people of the Chinese nation.

—New progress will be made in building an ecological civilization. The territorial space will be better developed and protected. Remarkable results will be achieved in a shift towards eco-friendly work and lifestyle. Energy and resources will be more rationally allocated and much more efficiently used. Energy consumption per unit of GDP and carbon dioxide emissions per unit of GDP will be reduced by 13.5% and 18%, respectively. The total discharge of major pollutants will be consistently reduced. The forest coverage will reach 24.1%, and the environment will be consistently improved with a stronger defense for ecological security. The living environment in urban and rural areas will also be significantly improved.

—The well-being of people will be boosted. We will increase employment and create better quality jobs, while maintaining the surveyed urban unemployment rate within 5.5%. Per capita disposable income will grow in line with GDP growth, and the income distribution structure will be significantly improved. The access to basic public services will be much more equitable. All Chinese people will enjoy better education opportunities, with the average years of schooling among the working-age population rising to 11.3. The multi-tiered social security system will be improved, with basic old-age insurance covering 95% of the population. The health care system will be improved, and the average life expectancy will be increased by 1 year. What we have achieved in poverty alleviation will be consolidated and expanded, the rural revitalization strategy will be comprehensively carried forward, and solid strides will be made towards common prosperity for all.

—Further progress will be made in China's governance capacity. Socialist democracy and the rule of law will be enhanced, so will be social fairness and justice. With improvements in the administration system, the government will better exercise its role, and its performance and credibility will be significantly enhanced. Social governance, especially primary-level governance, will be remarkably improved. Systems and mechanisms for forestalling and defusing major risks will be constantly improved, with the capacity to handle public emergencies significantly enhanced. Notable progress will be seen in preventing natural disasters, development security will be more effectively ensured, and major steps will be taken in the modernization of the national defense and armed forces.

Part II Innovation-Driven Development to Build New Strengths

Innovation remains at the heart of China's modernization drive. The development of science and technology has increasingly assumed strategic importance for China's national development. It is crucial to build cutting-edge technologies to spur economic growth, meet the

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country's critical needs, and improve the people's health. Indeed, success in building prosperity hinges on the development of science and education, talent building, and innovation, including institutional support for innovation.

Chapter 4 A Strategic Vision for Building Strength in Science and Technology

An action plan for building prosperity through science and technology will be developed, with a focus on strengthening institutional support on a national level and leveraging the advantages of our socialist market economy. It aims to encourage innovation and breakthroughs in core technologies in key areas and improve the overall efficiency of the innovation chain.

I. More rational allocation of scientific and technological resources

We will promote an optimal combination of innovation systems oriented towards the strategic needs of the country and work faster to enhance our strategic scientific and technological capability based on the development of national laboratories. Focusing on quantum information, photonics, micro and nanoelectronics, network communications, artificial intelligence, biomedicine, modern energy systems, and other major innovation areas, we will establish a group of national laboratories and reorganize national key laboratories, thus establishing a laboratory system with a rational structure and efficient operation. We will optimize and upgrade national engineering research centers and national technology innovation centers among other innovation bases, promote the optimal allocation of research resources and sharing of resources among research institutes, higher-education institutions, and enterprises, and support the development of new forms of innovators such as research universities and R&D institutions. We will promote the diversification of investors, the modernization of management systems, market-based operation mechanisms, and flexible employment mechanisms.

II. Encouraging ground-breaking scientific and technological innovation

We will formulate and implement strategic scientific programs and scientific projects in the basic and core areas concerning national security and development, and carry out pioneering and strategic national projects in artificial intelligence, quantum information, integrated circuits, life and health, brain science, biological breeding, aerospace science and technology, deep earth and deep sea, among other frontier fields. Based on the urgent and long-term needs of the country, we will concentrate our advantageous resources to make breakthroughs in core technologies in the key fields including new and sudden outbreak of infectious diseases, biosafety risk prevention and control, medicine and medical equipment, key components and parts and basic materials, and petroleum and natural gas exploration and development.

III. Strengthening basic research

We will strengthen the role of application-oriented research as a driving force, encourage free exploration, formulate and implement a 10-year action plan for basic research, and give priority to a group of research centers for fundamental disciplines. We will increase funding and improve the composition of spending for basic research, give preferential tax treatment to enterprises engaging in basic research, encourage the private sector to channel more resources to basic research through diverse means such as donations and investment, and form a mechanism for ensuring sustainable and stable funding. The spending on basic research will account for over 8% of total R&D spending. A sound evaluation system and incentive mechanism will be established and improved for long-term evaluation of basic research and for creating an environment conducive to basic research.

IV. Building major platforms for scientific and technological innovation

We will support the initiative of making Beijing, Shanghai, and Guangdong-Hong Kong-Macao Greater Bay Area international centers for science and technology innovation, build comprehensive national science centers in Huairou in Beijing, Zhangjiang in Shanghai, Greater Bay Area, and Hefei in Anhui, and support the building of regional science and technology innovation centers in places where conditions permit. We will strengthen the innovation functions of national innovation demonstration zones, new and high-tech industry development zones, and economic and technological development zones. We will adopt an appropriate forward-thinking plan for major national science and technology infrastructure and ensure that it is better shared and more efficiently utilized. We will intensively build repositories of natural science and technology resources, national workstations (networks) for field observation and research and scientific big data centers; strengthen the R&D and manufacture of high-end research instruments and equipment; and build high-end national exchange platforms for research papers and scientific and technological information.

Chapter 5 Technological Innovation Capability of Enterprises

Market-oriented mechanisms for technological innovation will be in place to boost the role of enterprises in innovation, encourage the flow of resources to enterprises, and enable enterprises to play a major role in innovation with the support of universities, research institutes, and end-users.

I. Encouraging enterprises to increase R&D spending

More efforts will be made to implement inclusive policies such as granting an extra tax deduction on R&D costs and offering preferential tax treatment to high-tech enterprises. We will expand and improve the insurance compensation and incentive policies for the application of newly developed major technical equipment, give play to the leading and demonstrative roles of major projects, and support innovative products and services with government procurement policies. We will enhance the enterprises' motivation for innovation by improving standards, quality, and competition regulations and other measures; build a robust assessment system for encouraging R&D efforts of state-owned enterprises, and establish an R&D reserve system featuring independent accounting, exemption from value increase assessment,

and fault tolerance and error correction, to ensure that the annual growth rate of R&D expenditure of central state-owned industrial enterprises is significantly higher than the national average. At the same time, we will enhance preferential tax policies that encourage innovation in small and medium-sized scientific and technological enterprises.

II. Support for research and development of general-purpose technologies

China will focus on integrating and upgrading key general-purpose technology platforms, support leading enterprises in the industry to work with universities, research institutes, and upstream and downstream industrial enterprises in building national centers for industrial innovation and in undertaking major national science and technology projects. Qualified enterprises will be supported to cooperate with research institutes that have been transformed into enterprises, to establish industry research institutes and provide common technology services for public welfare. China will build new general-purpose technology platforms to tackle key problems encountered in multiple industries and fields. We will give play to the leading and supporting roles of large enterprises, support the growth of innovative micro, small, and medium enterprises into important sources of innovation, and promote collaborative innovation among large, medium, and small enterprises in the upstream, mid-stream, and downstream of the industrial chain. We will also encourage the establishment of mixed-ownership industrial technology research institutes on the basis of industrial clusters in places where conditions permit, to facilitate research and development in key generic technologies.

III. Innovation services for enterprises

China will give enterprises greater access to national research platforms, scientific and technological reports, and research data, innovate the mechanisms for applying scientific and technological achievements, and encourage the licensing of eligible government-financed scientific and technological achievements to small and medium-sized enterprises (SMEs). We will push forward the institutional reform for innovation and entrepreneurship and build specialized and market-oriented institutions for technology transfer and teams of technology managers. We will improve the financial support system for innovation, encourage financial institutions to develop fintech products such as intellectual property pledge financing and technology insurance, and carry out pilot projects of risk compensation for loans related to the application of scientific and technological achievements. We will also provide smooth financing channels for domestic listing of technology-based enterprises, enhance the "hard technology" characteristics of the Science and Technology Innovation Board as well as the function of the ChiNext stock market in serving growth-oriented innovative enterprises and startups, encourage the development of angel investment and venture capital, and give better play to the role of venture capital guide funds and private equity funds.

Chapter 6 Creativity and Talent Development

It is important to foster a culture that respects knowledge, encourages hard work and creativity, and is conducive to talent development. Reform is necessary to improve a full spectrum of talent management practices, including training, recruitment, and placement, thus giving full play to the role of talent, the most essential resource.

I. Building a contingent of high-calibre personnel

China will develop more world-class strategic talents and leading figures in science and technology and innovation teams in accordance with the laws of personnel development and research activities. The country will foster reserves of young scientists and engineers with international competitiveness, pay attention to developing and discovering talents through major scientific and technological tasks and major innovation bases, and support the establishment of post-doctoral innovation posts. The country will strengthen the training of innovative, skilled, and application-oriented personnel, implement knowledge renewal projects and skills upgrade initiatives, and build stronger teams of high-level engineers and highly skilled personnel. Efforts will be made to intensify the training of top students in basic disciplines, and build bases and frontier science centers for mathematics, physics, chemistry, biology, and other basic disciplines. We will implement a more open talent policy and build a research and innovation center that brings together excellent personnel at home and abroad. We will improve the policies for foreign high-calibre personnel and professionals who stay or reside in China for work, research, and exchange, improve the permanent residence system for foreigners in China, and explore the establishment of a skilled migration system. We will also improve the systems concerning salary and welfare, children's education, social security, and tax incentives to provide an internationally competitive and attractive environment for overseas scientists to work in China.

II. Incentives for researchers

We will improve the evaluation and incentive mechanism, build a robust system to evaluate scientists and engineers based on the criteria of innovation ability, quality, effectiveness and contribution, and develop an income distribution mechanism that fully reflects the value of knowledge, technology, and other elements in innovation. We will carefully select leading and top-notch personnel, leverage their expertise and give them a greater say on technological routes and fund use. We will free up more space for researchers in an all-round manner and expand the "green channel" for research management. We will adopt a distribution policy oriented towards rewarding knowledge and improve the mechanism for researchers to share the benefits from their on-the-job inventions, vest in them the ownership or long-term right of use of their research results on a pilot basis, and increase their share of benefits. We will also deepen the reform of the academician system.

III. An ecosystem for innovation, entrepreneurship, and creativity

We will vigorously carry forward the spirit of scientists in the new era, strengthen research integrity, and improve the ethical system in science and technology. We will protect the property rights and innovation income of entrepreneurs according to law and give full play to the important role of entrepreneurs in steering innovation in the right direction, bringing together competent personnel and raising funds. We will promote the in-depth development of innovation, entrepreneurship, and creativity, and optimize the layout of the innovation and entrepreneurship demonstration bases. We will advocate an innovation and entrepreneurship culture of dedication, seeking better from best, concentration and tolerance of failure, and improve the trial-and-error mechanism that allows errors to be tolerated and corrected. To create a social climate that values science and innovation, and improve the scientific literacy of the people, we will uphold the spirit of scientists and craftsmanship, extensively carry out science popularization activities, and foster an interest in science among young people.

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Chapter 7 Mechanisms for Scientific and Technological Innovation

Institutional reforms will proceed at a deeper level to improve the national science and technology governance system and national planning for the development of science and technology, and allow a holistic approach to deploying projects, facilities, personnel, and funds in key sectors.

I. Deeper reforms in the science and technology management system

We will accelerate the transformation of government functions in science and technology management, enhance the guiding role of planning and policies and the creation of an innovative environment, and reduce direct interventions in financial and physical resources and in projects. The government funding system for research will be consolidated, with an increased focus on strategic and key sectors, and the problems of compartmentalization and small and scattered funding will be effectively addressed. The approval, organization, and management of major scientific and technological projects will be reformed to grant more decision-making rights to research institutions and researchers. To this end we will implement a system of chief technology officers assuming responsibilities, implement a ranking system and a strong and open competition mechanism for selecting the best candidates to lead key research projects, and improve the funding mechanism to combine awards and subsidies. We will improve the evaluation mechanism of science and technology and the classified evaluation system for free exploration and task-oriented science and technology projects, establish an evaluation mechanism for science and technology projects on which a consensus is not yet achieved, and optimize science and technology award projects. We will establish and improve the modern research institution system and support the institutions to try out more flexible systems for human resources, post, and salary management. We will establish and improve the mechanism of free and orderly flow of innovation resources among institutions of higher learning, research institutions, and enterprises. In addition to these efforts, we will further promote pilot reforms for comprehensive innovation.

II. Protection of intellectual property rights

We will implement a strategy to make China strong on intellectual property rights, implement a strict intellectual property protection system, improve the related laws and regulations, and accelerate the legislation in emerging fields and new forms of business. We will strengthen judicial protection and administrative enforcement related to intellectual property rights, improve relevant systems of arbitration, mediation, notarization, and assistance in the protection of rights, build a better system of punitive damages for intellectual property infringements, and increase the compensation. We will optimize the patent subsidy and incentive policies and evaluation mechanisms to better protect and encourage high-value patents and develop patent-intensive industries. By reforming the ownership and distribution mechanism of state-owned intellectual property rights, we will give research institutions and institutions of higher learning a greater say in the disposition of intellectual properties. The intangible assets evaluation system will be improved, a management mechanism that combines incentives and supervision will be established, and public service platforms will be built for intellectual property protection and application.

III. Openness and cooperation in the field of science and technology

We will implement a more open, inclusive, mutually beneficial, and shared international strategy for cooperation in science and technology and more actively integrate ourselves into the global innovation network. We will pragmatically promote international cooperation in the fields of global epidemic prevention and control and public health, boost joint research and development with researchers from various countries focusing on climate change, human health, and other issues, take the lead in designing and initiating international big science programs and projects, and give play to the unique role of science funds. We will step up the opening-up of the national science and technology programs, launch a group of major science and technology cooperation projects, explore and establish a global research fund, and implement scientist exchange programs. We will also support the establishment of international scientific and technological organizations in China, and welcome foreign scientists to serve in scientific and technological academic organizations in China.

Part III Industrial Modernization and the Foundation of Real Economy

The focus of economic growth should be on the development of the real economy. Building national strength requires, in particular, strengthening manufacturing and improving product quality. Further integration of advanced manufacturing and modern services is called for. Improving infrastructure provides support and paves the way for new growth. It is important to strengthen institutional support for symbiotic interaction between the real economy, scientific and technological innovation, financial services, and talent development.

Chapter 8 Strengthening Manufacturing

It is crucial to build more secure, resilient, and efficient modern supply chains not subject to disruptions and outside interference. It is also crucial to ensure that the share of manufacturing in the economy remains stable, and to enhance the competitive advantages of the manufacturing sector with a focus on quality improvement.

I. Strengthening basic industrial capacities

We will carry out projects to rebuild industrial foundation and promptly resolve bottlenecks and weaknesses in basic spare parts and components, basic software, basic materials, basic processes, and fundamental industrial technology. Leveraging the leading enterprises in relevant sectors, we will step up efforts to make major breakthroughs in important products and core technologies in key fields and work quickly to make groundbreaking progress in engineering and industrialization. We will ensure the success of projects launched to achieve breakthroughs in key technical equipment, improve the incentive and risk compensation mechanisms, and promote the demonstration and application of newly developed equipment, materials, and software. We will improve the basic industrial infrastructure support system, establish a group of national centers for manufacturing innovation in key sectors, improve national quality infrastructure, build production application demonstration platforms and standard measurement, certification and accreditation, inspection and testing, test verification, and other industrial technology public service platforms, and improve the industrial database for technology and processes.

II. Modernization of industrial chains and supply chains

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To establish more innovative, higher value-added, safer, and more reliable industrial chains and supply chains, we will pursue both economic efficiency and security, shore up our weaknesses, play to our strengths and do a good job in strategically designing supply chains and adopt targeted policies for different sectors. We will consolidate and improve the manufacturing chains, strengthen the support of resources, technology, and equipment, enhance international cooperation in industrial security, and drive the diversification of industrial and supply chains. Leveraging the industrial scale, supporting facilities, and first mover advantages in certain fields, we will consolidate and enhance the competitiveness of the whole industrial chain in sectors such as high-speed railway, electronic equipment, new energy, and shipbuilding, and create an industrial chain of overall strategic importance starting from complete machines that are in line with the direction of future industrial transformation. The plan for the regional industrial chains will be optimized to guide the key links in the chains to remain in China, and further enhance the capacity of the central and western regions and the northeast region as destinations of industrial relocation. We will implement production capacity reserve projects for emergency products and build regional bases for ensuring emergency material production. We will carry out programs to build leading enterprises that possess core competitiveness and can dominate in their respective ecosystems, support small and medium-sized enterprises to enhance their professional advantages, and foster "little giant" enterprises with high growth potential, advanced technology and strong market competitive edge as well as single-product specialists in the manufacturing industry. Technical and economic security assessment will be reinforced, and an industrial competitiveness investigation and evaluation program will be put into practice.

III. Upgrading the manufacturing industry

We will further implement intelligent manufacturing and green manufacturing projects, develop new service-oriented manufacturing models, and promote high-end, intelligent, and green manufacturing. We will foster advanced manufacturing clusters and promote the innovation and development of industries such as integrated circuits, aerospace equipment, high-tech ships and ocean engineering equipment, robots, advanced railway equipment, advanced power equipment, engineering machinery, high-end CNC machine tools, medicine and medical equipment. To transform and upgrade traditional industries, we will improve the layout and adjust the structure of petrochemical, iron and steel, nonferrous metals, building materials, and other raw material industries, expand the supply of high-quality products in light and textile industries, expedite the transformation and upgrade of enterprises in chemical, papermaking, and other key industries, and improve the green manufacturing system. We will continue to implement special projects to enhance the core competitiveness and technological transformation of the manufacturing industry, encourage enterprises to adopt advanced and readily applicable technologies, and strengthen equipment upgrading and large-scale application of new products. In terms of intelligent manufacturing, we will build demonstration factories and a better system of standards. Intensified efforts will be made to enhance quality, and to encourage manufacturers to increase the variety of products, raise their quality, and build the brands.

IV. Policy support for manufacturing cost reduction

We will intensify efforts to ensure the supply of factors of production, provide efficient services, consolidate and expand the results of tax and fee cuts, reduce the production and operating costs of enterprises, and enhance the embeddedness and competitiveness of the manufacturing industry. We will work to increase the plot ratio and use efficiency of industrial land and promote new industrial land use models. We will increase medium- and long-term loans and lines of credit for manufacturing, increase loans for technological transformation, and make sure equity investment and bond financing are more heavily weighted towards manufacturing. We will permit manufacturing enterprises to participate in market-oriented electricity transaction, regulate and reduce logistics charges in port shipping, road and railway transportation, and review and standardize charges related to enterprises. We will establish a mechanism to provide full cycle services for major manufacturing projects and build a system for entrepreneurs to participate in enterprise-related policy making. Support will be given to build comprehensive service platforms for information, technology, import and export, and digital transformation of SMEs.

Chapter 9 Emerging Industries of Strategic Importance

In response to emerging technology trends, it is essential to foster pioneering and pillar industries, and promote the integrated development of emerging technology clusters of strategic importance, so that the contribution of such industries to GDP will exceed 17%.

I. New pillars of the industrial system

China will focus on the new generation of information technology, biotechnology, new energy, new materials, high-end equipment, new energy vehicles, environmental protection, aerospace, marine equipment, and other emerging industries of strategic importance, and accelerate the innovation and application of core technologies in key fields to enhance the country's capacity of ensuring supply of productive factors and foster new drivers for industrial development. We will promote the integration and innovation of biotechnology and information technology, accelerate the development of biomedicine, biological breeding, biomaterials, bioenergy, and other industries, to enhance bioeconomy in size and strength. We will continue to promote and adopt the BeiDou Navigation Satellite System and facilitate its high-quality industrial development. We will further promote projects to develop China's strategic emerging industry clusters, improve the mechanisms for organization, management, and professional promotion of industrial clusters, build public service complexes for innovation, and create growth drivers for emerging industries of strategic importance which have different characteristics, complementary advantages, and a reasonable structure. We will encourage technological innovation and the merger and restructuring of enterprises and avoid low-level replication. We will give full play to the guiding role of industrial investment funds and increase financing guarantee and risk compensation.

II. Forward-looking technology planning

In brain-like intelligence, quantum information, genetic technology, future network, deep-sea and aerospace exploration, hydrogen energy and energy storage, and other areas of cutting-edge technology and industrial transformation, we will organize and implement the plan for incubating and accelerating industries of the future, and plan and create a layout for such industries. In areas where we have prominent advantages in science and education resources and strong industrial foundation, we will establish a number of national research institutes on industrial technology of the future to strengthen multi-path exploration and multidisciplinary integration of cutting-

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edge technology and supply of disruptive technology, implement cross-sector industry integration demonstration projects, create future technology application scenarios, and accelerate the formation of industries of the future.

Chapter 10 Development of the Service Sector

In tandem with industrial transformation, and in response to increased needs of consumers, expansion of the service sector is envisaged, requiring a major increase in service delivery, as well as in the efficiency and quality of services to build a new service sector system that is optimized and competitive.

I. Integrated development of producer services

With the aim of developing high-quality manufacturing, we will promote the specialization of producer services and their movement towards the high-end of the value chain. Focusing on industrial innovation, we will accelerate the development of R&D design, industrial design, business consulting, inspection, testing, and certification services. To allocate factors of production more efficiently, we will promote the innovative development of supply chain finance, information and data, human resources, and other services. We will strengthen the complete industrial chain and improve modern logistics, procurement and distribution, production control, operation management, and after-sales service. We will promote the in-depth integration of modern services with advanced manufacturing and modern agriculture, deepen business connections, chain extension, and technology penetration, support the development of new professional organizations offering services such as intelligent manufacturing system and process re-engineering solutions, and foster internationally competitive service enterprises.

II. Development of consumer services

To enhance convenience and improve the service experience, we will push a shift of consumer services towards higher quality and greater diversity; accelerate the development of health, elderly care, child care, culture, tourism, sports, property management, and other services; strengthen the supply of basic services oriented towards public interests; expand the supply of all kinds of services covering the whole life cycle; and continue to improve the quality and expand the scale of domestic services, to integrate them into the development of smart communities, elderly care, and child care. We will encourage innovation of commercial circulation and business forms and models, promote the upgrade of digital and smart technologies and cross-border integration, and fulfillment of consumer demand through online and offline omni-channel services. We will work faster to improve the standards for elderly care, domestic services, and other services, improve the certification and accreditation system for consumer services and promote the integrity and professional development of the services.

III. Reform and opening-up in the service sector

We will further open the service sector to the domestic and international markets, relax market access, comprehensively reduce unreasonable restrictions and encourage social forces to expand the provision of diversified service at various levels. We will improve the policy system supporting the development of the service sector, and develop new policies on land, taxation, finance, and pricing, which can adapt to the needs of new service business formats and models and industrial integration. We will improve the service quality standards and systems, push the implementation and promotion of the standards, accelerate the development of regulatory catalogs, processes and standards for key service industries, and build an efficient and collaborative regulatory system for the service sector. We will improve the system for appraisal of professional titles for people in the service sector, encourage employees to participate in vocational skills training and appraisal, and push forward the comprehensive pilot reform and opening-up of the service sector.

Chapter 11 Modern Infrastructure

A holistic approach will be adopted to infrastructure development, which covers traditional and new types of infrastructure, so as to build a modern network of infrastructure that is efficient, practical, smart, eco-friendly, safe, and reliable.

I. Construction of new types of infrastructure

With the aim of strengthening the support for digital transformation, intelligent upgrade, and integrated innovation, we will build new types of infrastructure in such areas as information technology, integration, and innovation. We will build high-speed, ubiquitous, secure, and efficient information infrastructure with a space-ground integrated network and integrated interconnection, and enhance the capabilities of data sensing, transmission, storage, and computing. We will accelerate the large-scale deployment of 5G network with the user penetration rate increasing to 56%, promote the upgrade of gigabit optical network, and make arrangement for the 6G network technology reserve with foresight. We will expand the backbone network interconnection nodes, set up new international communication passageways, fully advance the commercial deployment of Internet Protocol version 6 (IPv6), and implement projects for improving basic networks in small and medium-sized cities in the central and western regions. We will promote the all-round development of the Internet of Things (IoT) and build IoT access capability that supports fixed-mobile convergence with a combination of broad and narrow bands. We will accelerate the building of an integrated national system of big data centers, strengthen the overall planning and intelligent scheduling of computing power, build national hub nodes and big data center clusters as well as E-level and 10E-level supercomputing centers. We will dynamically and stably develop the Industrial Internet and Internet of Vehicles; build a highly efficient communications, navigation, and remote sensing space infrastructure network with a global coverage, as well as establish commercial space launch sites. We will accelerate the digital transformation of traditional infrastructure for transportation, energy, and urban utilities, and intensify our efforts in developing ubiquitous sensing, terminal networking, and intelligent scheduling system. We will give full play to the leading role of the market, open up diverse channels for investment, and create a system of standards for new types of infrastructure.

II. Improving transportation

China will build a modern comprehensive transportation system, promote the integrated development of various modes of transportation, and improve the network effect and operational efficiency. We will improve the comprehensive transportation corridors, intensify the construction of strategic trunk corridors with improved access to Xinjiang and Tibet, the central and western regions, and regions along the coast, rivers, and border areas, promote in an orderly manner the upgrade and expansion of corridors in congested sections, and

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strengthen interconnectivity with neighboring countries. We will build a network of expressways, complete the network of "eight vertical and eight horizontal" high-speed railways, improve the quality of the national highway network, and accelerate the construction of world-class port and airport clusters. We will improve the network of trunk railways, accelerate the construction of standard rail lines and the electrification of existing railways, optimize the distribution of passenger and freight railways, make progress in breaking through and upgrading bottleneck sections in normal national and provincial highways, make progress in the expansion and upgrade of high-grade inland waterways, steadily build feeder airports, general airports, and freight airports, and actively develop the general aviation industry. China will strengthen the construction of postal facilities and implement the express delivery project to ensure villages' access to the service, promote the integration between express delivery and manufacturing, and to encourage the development of international delivery service. We will promote the integration of transportation in city clusters and metropolitan areas, accelerate the construction of intercity and suburban railways, build systems of ring expressways, and develop urban rail transit in an orderly manner. We will improve the coverage of transportation services, promote the construction of regional railways and roads along the borders and leading to border areas, continue to ensure that rural roads are well built, managed, maintained, and operated, and improve road safety facilities. China will build a multi-tier and integrated transportation hub system, optimize the hub station layout, promote intensive and comprehensive development, improve the collection and distribution system, develop intermodal passenger and cargo transport, and promote the one-stop and "one bill of lading" services for the entire trip. We will also promote the construction of China-Europe Railway Express assembly centers. In addition, reforms will be thoroughly carried out in railway enterprises, the air traffic control system, and the highway toll system and maintenance mechanism.

III. Building a modern energy system

We will promote the energy revolution and build a clean, low-carbon, safe, and efficient energy system to enhance energy supply capabilities. We will accelerate the development of non-fossil energy by balancing centralization and distribution, vigorously enhance the scale of wind power and photovoltaic power generation, accelerate the development of distributed energy in the central and eastern regions, ensure orderly development of offshore wind power, accelerate the construction of the southwest hydropower base, safely and steadily promote the construction of coastal nuclear power facilities, and build a number of clean energy bases featuring integrated energy development, and increase the proportion of non-fossil energy in total energy consumption to about 20%. We will promote the concentration of coal production in resource rich areas and reasonably control the scale and development pace of coal power projects to promote the replacement of coal with electricity. We will liberalize market access for petroleum and natural gas exploration and development in an orderly manner, accelerate the utilization of deep-sea, deep-seated, and unconventional petroleum and natural gas resources, and promote the increase of petroleum and natural gas reserves and production. We will develop and utilize geothermal energy according to local conditions and improve the utilization rate of UHV power transmission channels. We will accelerate the transformation of power grid infrastructure into smart infrastructure as well as the construction of smart microgrids. We will improve power system complementarity and intelligent regulation capabilities, strengthen the coordination of power source, grid, load and storage, enhance clean energy consumption and storage capabilities, and enhance transmission and distribution capacities to remote areas. We will promote flexible transformation of coal power, and accelerate the construction of pumped storage hydroelectric plants and large-scale application of new energy storage technology. We will improve cross-regional coal transportation channels and collection and distribution systems and accelerate the construction of the main natural gas pipelines and the petroleum and natural gas interconnection network.

Figure 1. Distribution of large-scale clean energy bases in the 14th Five-Year Plan period

IV. Construction of water conservancy infrastructure

Based on the overall and spatially balanced allocation of water resources in the drainage basins, we will strengthen the coordination between administrative divisions in river system management and protection and key project construction, and strengthen the coordination of small, medium, and large water conservancy facilities to enhance the optimal allocation of water resources as well as flood and drought disaster prevention capabilities. By prioritizing water conservation, we will improve the water resources allocation system, build key water resource allocation projects, and strengthen the development of key water sources and urban emergency backup water projects. We will implement flood control improvement projects to solve weak links, accelerate the construction of pivotal flood control projects, enhance the management of small and medium rivers, reinforce dilapidated reservoirs, and fully advance the construction of dikes and flood storage and detention basins. We will strengthen the protection and restoration of water conservation areas and the protection and comprehensive management of key rivers and lakes and restore the water ecosystem to ensure clear waters and green shores.

Part IV A Robust Domestic Market and a New Development Paradigm

Expanding domestic demand is of strategic importance, and should occur in lockstep with supply-side structural reforms, with innovation and quality improvement driving new demand. A new "dual circulation" development paradigm will assign a central role to the domestic market, with domestic and overseas markets complementing each other.

Chapter 12 Greater Domestic Circulation

More reliance on the strong domestic market, and more seamless connection of economic processes, such as production, distribution, circulation, and consumption, will help remove impediments to rational flows of factors of production, and contribute to supply-demand

equilibrium, conducive to creating a virtuous economic circle.

I. Supply chain adaptability

China will deepen the supply-side structural reform and improve the ability of supply to adapt to and lead the creation of new demand. By adapting to the customized, differentiated, and quality consumption demand, and by promoting innovation in production models and industrial organization models, the country will continue to expand the supply of high-quality consumer goods, medium and high-end products, and services in education, medical care, and elderly care, and improve product service quality and customer satisfaction to promote supply and demand coordination and matching. By optimizing and improving the supply structure, we will facilitate the coordinated development of agriculture, manufacturing, services, energy resources, and other industries; accelerate the marketization of competitive links in naturally monopolistic industries and achieve effective convergence of upstream and downstream industries in production, supply, and marketing by completing the industry support system. We will improve the long-term mechanism of marketization and the rule of law to resolve excess capacity, as well as the laws, regulations, and supporting policies for enterprise mergers and acquisitions as well as restructuring; establish and improve the quality classification system, accelerate the upgrade and iteration of standards and transformation and application of international standards; and launch the Chinese brands program, including the protection and development of China Time-Honored Brands, enhance the influence and competitiveness of our own brands, take the lead to foster a number of high-end brands in cosmetics, clothing, home textiles, electronic products, and other consumer goods.

II. Smooth flows of resources

China will remove impediments to the rational flow of the factors of production, rectify the imbalance and mismatch of resource factors, and facilitate the circulation of national economy at the source. We will improve the ability of financial services serving the real economy and the institutional arrangements for medium- and long-term capital supply in the real economy, innovate financial products and services that directly impact the real economy, and enhance the financing function of the multi-tier capital market. We will implement a long-term mechanism for the steady and healthy development of the real estate market and promote the balanced development of real estate and the real economy. We will effectively improve the skills of workers, improve the quality of employment and income level, and form a virtuous circle of human capital promotion and industrial transformation and upgrade. We will improve the mechanism of free flow of factors in urban and rural areas, build a cross-region industrial transfer pattern, and promote positive interaction between urban and rural areas.

III. Strengthening the supporting role of the circulation system

We will deepen the reform of the circulation system, improve the circulation channels of goods and services, increase the circulation efficiency, and reduce the transaction costs of the whole society. We will accelerate the development of a unified domestic market, optimize the market environment according to internationally advanced rules and best practices, promote the coordination and unification of standards, rules, and policies of different regions and industries, and effectively break down local protection, industry monopolies, and market segmentation. We will build a modern logistics system, accelerate the development of cold chain logistics, coordinate the construction of logistics hub facilities, key lines, regional distribution centers, and terminal distribution nodes, improve the facilities of national logistics hubs and key cold chain logistics bases, improve the logistics distribution system at county, township, and village levels, develop high-speed rail express and other railway express freight products, and strengthen the development of international air freight capacity and the competitiveness of international ocean shipping. We will optimize the international logistics channels and accelerate the formation of an interconnected, safe and efficient logistics network. We will improve the modern commercial circulation system, foster globally competitive modern circulation enterprises, support the transformation and upgrade of commercial circulation facilities such as convenience stores and farmers' markets, develop contactless trading services, and strengthen the standardization and green development of commercial circulation. We will accelerate the establishment of a resilient emergency logistics system featuring sufficient reserves and rapid responses.

IV. Policies to facilitate domestic circulation

China will maintain a reasonable level of fiscal expenditure and deficit ratio, improve tax and fee reduction policies, and build a tax system that is conducive to increasing investment by enterprises, increasing R&D investment, adjusting income distribution, and reducing the burden on consumers. We will maintain reasonably adequate liquidity, ensure the increases in money supply and aggregate financing are generally in step with economic growth in nominal terms, innovate structural policy tools to guide financial institutions in increasing support for key areas and weak links, and standardize the development of consumer credit. We will develop more inclusive industry policies with a greater emphasis on functions, strengthen the fundamental role of competition policies, and support technological innovation and structural upgrade. We will improve the systems of income distribution, social security, and public services to be commensurate with the level of economic growth.

Chapter 13 Domestic and International Circulation

Greater domestic circulation creates a dynamic domestic market, spurs trade, attracts global resources, and stimulates internal and external demand, import and export, and inbound and outbound investment. It contributes to international cooperation and helps sharpen China's competitive edge.

I. Import and export

We will improve the integrated regulatory system for internal and external trade, and better coordinate the laws and regulations, regulatory systems, business qualifications, quality standards, inspection and quarantine, certification, and accreditation in both areas. We will ensure that products sold in the home market have been produced on the same production lines, meet the same standards, and are of the same quality as those exported. We will reduce import tariffs and institutional costs, expand imports of high-quality consumer goods, advanced technology, important equipment, and energy resources, and promote the diversification of import sources; and improve export policies, optimize the quality and structure of exports, and steadily increase the added-value of exports. We will optimize the plan for the international market, guide enterprises to better explore traditional export markets, expand their presence in emerging markets and boost trade with neighboring countries, and stabilize their international market share. We will promote the transformation and upgrade of processing trade, enhance the construction of foreign trade transformation and upgrade bases, special customs supervision areas, trade

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promotion platforms, and international marketing service networks, accelerate the development of new models such as cross-border e-commerce and market procurement, and encourage the construction of overseas warehouses to ensure the smooth operation of the industrial and supply chains for foreign trade. We will innovatively develop service trade, promote the pilot creation of an open platform for innovative development of service trade, and improve trade digitization. We will implement trade and investment integration projects, and ensure the success of China International Import Expo, China Import and Export Fair, China International Fair for Trade in Services (CIFTIS), and other exhibitions.

II. International two-way investment

China will continue to place equal emphasis on bringing in foreign investments and going global, make efficient use of global resources and market space with high-level two-way investment, improve the industrial and supply chain support mechanism as well as industry competitiveness, make greater efforts to attract and utilize foreign investment, and promote the opening of related businesses in the fields of telecommunications, internet, education, culture, and medical care in an orderly manner. We will comprehensively optimize foreign investment services, strengthen the promotion and protection of foreign investment, give full play to the demonstration effect of major foreign investment projects, support an increase of foreign capital investment in high-end manufacturing, high-tech, traditional manufacturing transformation and upgrade, modern services, and other fields in the central and western regions, as well as support foreign-funded enterprises to set up R&D centers and participate in national science and technology projects. We will encourage foreign-funded enterprises to reinvest their profits, innovate overseas investment methods, optimize the structure and layout of overseas investment with enterprises as the main players, and improve the risk prevention capacity and income level. We will improve the overseas producer services network and circulation system, accelerate the international development of producer services in finance, consulting, accounting, and law, and promote Chinese products, services, technologies, brands, and standards to go global. We will support enterprises to integrate into the global industrial and supply chain, improve the transnational operation capacity and level, and guide enterprises to strengthen compliance management so they can prevent and resolve overseas political, economic, security, and other risks. We will promote the development of multilateral and bilateral investment cooperation mechanisms and improve policies and service systems for promoting and protecting overseas investments, as well as the legislation on overseas investment.

Chapter 14 Strategies to Boost Domestic Demand

Strategies to expand domestic demand will be implemented to enhance the role of consumption in economic growth and allow investment to play a key role in improving the supply structure. This shift is expected to lead to a stronger domestic market and stronger demand for consumption and investment.

I. Expanding consumption

In line with the public consumption upgrade trend, we will combine the expansion of consumption with the improvement in people's living standards, promote the green, healthy, and safe development of consumption, and steadily improve people's consumption. We will upgrade traditional consumption, accelerate the shift from purchase management to usage management for automobiles and other consumer goods, improve the mandatory end-of-life system and recycling system for used home appliances, consumer electronics, and other durables, and promote the healthy development of housing consumption. We will foster new consumption patterns, develop information consumption, digital consumption, and green consumption, and encourage the development of customization, experience, intelligence, and fashion consumption and other new business formats and models. We will develop service consumption, relax restrictions on market access in the field of service consumption, promote the improvement and expansion of consumption in education and training, medical and health care, elderly care, child care, culture, tourism, and sports, and accelerate the integration and development of online and offline consumption. We will appropriately increase public consumption and improve the efficiency of public service expenditure, and expand holiday consumption, improve the holiday system, and fully implement the paid holiday system. We will foster and build international consumption center cities, create a group of regional consumption centers, improve the integrated urban-rural consumption network, expand the coverage of e-commerce in rural areas, improve the consumption environment in counties, and promote the upgrade of rural consumption. We will improve the policy for duty-free shops in cities and build duty-free shops with Chinese characteristics. We will take measures to increase people's income and alleviate their burdens, to continuously expand the middle-income groups and release their consumption potential. We will better safeguard consumers' rights and interests, improve the quality standards and post evaluation system as well as the systems for defective product recall, product-related injury monitoring, and product quality guarantee, and improve the diversified consumer rights protection mechanism and dispute resolution mechanism.

II. Expanding investment opportunities

We will optimize the investment structure, improve the investment efficiency, and maintain reasonable investment growth. We will move faster to strengthen weak areas in infrastructure, urban utilities, agriculture and rural areas, public safety, ecological and environmental protection, public health, material reserves, disaster prevention and mitigation, people's livelihood, and other fields, promote the upgrade of enterprise equipment and technological transformation, and expand investment in emerging industries of strategic importance. We will promote major projects concerning new infrastructure, new urbanization, transportation, and water conservancy that will not only boost consumption and benefit people's livelihood, but also help adjust the structure to gain more momentum. To serve the major national strategies, we will implement major projects such as the Sichuan-Tibet Railway, the new western land-sea corridor, the national water network, hydropower development in the lower reaches of the Yarlung Zangbo River, interstellar exploration, and the industrial development of BeiDou Navigation Satellite System, and promote major research facilities and projects in the areas of ecosystem protection and restoration, public health emergency response, water diversion, flood control, disaster reduction, power and gas transmission, and transportation along the coast, rivers, and border areas, thereby providing a solid foundation, increased functions, and long-term benefits. We will deepen investment and financing reforms, leverage the government's role in investment to stimulate private investments, and establish a market-oriented endogenous growth mechanism for investment. We will improve project planning, reserve and promotion mechanism, increase the support for capital, land, and other factors of production, and accelerate the implementation of investment projects. We will standardize and promote public-private partnership (PPP) in an orderly manner, promote the healthy development of real estate investment trusts (REITs) in infrastructure, effectively revitalize stock assets, and form a virtuous circle of stock assets and new investment.

Part V An Initiative to Build a Digital China

We will embrace the digital era, unlock the potential of big data, build China's strength in cyberspace, accelerate the development of a digital economy, a digital society, and a digital government, and transform the pattern of production, lifestyle, and governance models through digital transformation.

Chapter 15 Pole Position in the Digital Economy

We cannot afford not to tap into the huge potential big data and its innumerable use cases. Greater integration of digital technology and the real economy will power the transformation and upgrading of traditional industries, and the development of new industries, new forms of business, and new models, which can be new drivers of economic growth.

I. Key digital technologies: innovation and application

Our focus will be on high-end chips, operating systems, key artificial intelligence algorithms, sensors, and other key fields. We will gather pace in making breakthroughs in the research and development of basic theories, basic algorithms and equipment materials and promoting their iterative application. The integrated research and development of general-purpose processors, cloud computing systems, and core software technologies will be pushed forward. Cutting-edge technologies will be developed faster, including quantum computing, quantum communications, neuro-chips, and DNA storage. Innovation will be boosted across information science, life science, materials and other basic disciplines, along with support for the development of innovation consortia including open source communities, improve open source intellectual property rights and legal systems. Enterprises will be encouraged to make available open source codes, hardware design, and application services.

II. Development of digital industries

Emerging digital industries including artificial intelligence, big data, blockchain, cloud computing, and cybersecurity will be grown stronger, and the quality of such industries as communications equipment, core electronic components, and key software will be improved. Efforts will be made to develop 5G-based application scenarios and industrial ecosystems, and carry out pilot and demonstration projects in smart transportation, smart logistics, smart energy, smart medical care, and other key fields. Enterprises will be encouraged to provide open access to search, e-commerce, social, and other data. Third-party big data services will be developed, and the healthy growth of the sharing economy and the platform economy will be boosted.

III. Digital transformation of traditional industries

We will press ahead with cloud-based big data and AI initiatives and promote the data-based collaborative transformation of the entire industrial chain. A number of industrial internet platforms and digital transformation promotion centers up to international standards will be built in key industries and regions. Digital applications will be promoted in R&D and design, manufacturing, operation and management, and market services, new models including customization and flexible manufacturing will developed, and the digital transformation of industrial parks will be accelerated. Digital transformation will be pushed through in the service sector, identify and new sources of growth will be identified, such as crowdsourcing design, smart logistics, and new retail. We will move faster in developing smart agriculture and transform agricultural production, operations, management, and services with digital technologies.

Chapter 16 A Digital Society

Greater integration of digital technologies into social interactions and people's daily life calls for innovation in public services to ensure that the way our society functions better responds to the digital needs of all people.

I. Smart and easily accessible public services

Digital services will be applied widely, especially to education, healthcare, elderly care, childcare, employment, culture and sports, care for people with disabilities, and other key areas, ensuring that people have a growing sense of fulfilment. Resources in schools, hospitals, nursing homes, and other public service institutions will be digitalized to offer easier access to them and boost their application. Online and offline public services will be developed at the same time and their in-depth integration will be promoted. More efforts will be channeled into developing online classrooms, internet-based hospitals, and smart libraries. High-standard public service institutions will be encouraged to reach communities, remote areas, and underdeveloped areas. The coverage of high-quality public service resources will be expanded. Progress will be made in developing smart courts. Non-governmental actors will be encouraged to participate in the "Internet + public services" initiative, and provide innovative service models and products.

II. Smart cities and digital villages

Digital technologies will be used to help develop urban and rural areas and introduce new approaches to governance for better efficiency and livability. New smart cities in different categories will be developed, IoT sensing facilities and communications systems will be incorporated in the overall planning and development of public infrastructure, and municipal utilities and buildings will be transformed with IoT applications. Efforts will be made to improve city information modeling (CIM) platforms and service platforms, and build city data systems to develop city brains. The creation of digital twin cities will be explored and faster progress will be made in the development of digital countryside. A comprehensive information service system will be established for agriculture and rural areas, along with an inclusive agriculture-related information service mechanism, and rural management and services will be digitalized.

III. A new blueprint for digital life

We will promote the digitization of all real-life scenarios such as shopping, home life, tourism, leisure activities, and transportation to create a new digital life based on the sharing of knowledge and co-governance. Smart communities and smart service circles will be developed to benefit the people relying on digital platforms and offline community service institutions, and services online and offline will be integrated,

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such as community life services, community governance and public services, and smart community services. A richer diversity of digital life experiences will be introduced along with more digital homes. Digital skills education and training will be boosted to promote the digital literacy of the general public, and information accessibility will be improved to help the elderly and people with disabilities embrace the digital life.

Chapter 17 Digital Government

Increased integration of digital technologies into government services will help remake governance processes, improve services, and lead to more rational decision-making and greater efficiency.

I. Open access to and sharing of public data

A sound public data resource system will be put in place to ensure the security of public data, and promote the convergence and utilization of data across departments, levels, and regions. The data resource catalogs and responsibility lists will be improved and the functions of national data sharing and exchange platforms upgraded to advance the sharing and utilization of basic information resources including national population, legal person, and geospatial data. Open access to basic public data will be expanded in a safe and orderly way, public data services will be integrated into the public service system, and an open national public data platform will be built, along with dedicated development and utilization ports. Priority will be given to high-value data sets in the fields of enterprise registration and supervision, health, transportation, and meteorology that are open to the public. Pilot projects on authorized operation of government data will be carried out and third parties will be encouraged to advance the mining and utilization of public data.

II. IT-enabled transformation of government services for all

Intensified efforts will be made to develop an IT-enabled government, improve the list of government information projects, and deepen the integration of government information systems. Major information systems will be developed, including those about governance capacity, rule of law, economic governance, market supervision, public security, and the environment. Cross-sector collaboration will be fostered in governance. China's e-government network will be improved, and cloud platforms and data center system will be built to promote the cloud migration of government information systems which will be upgraded rapidly for a greater capacity to expand flexibly.

III. Digitalization and efficient service delivery

We will work to make sure the government functions, and delivers services in a more digital and smarter way. The "Internet + government services" initiative will be advanced to upgrade the functions of integrated online service platforms. Digital technologies will be used to facilitate government decision-making and improve the quality of accurate dynamic monitoring, prediction, and early warning based on high-frequency big data. They will also be applied widely in the response to public health emergencies, natural disasters, accidents, public safety incidents, and other public emergencies to increase the capacity for early warning and emergency response.

Chapter 18 A Healthy Digital Ecosystem

Regulatory overreach should be rolled back where it hurts business dynamism while regulation will be strengthened wherever necessary in our effort to create an open, safe, and healthy rules-based digital ecosystem.

I. Data protection regulation

A balance will be achieved between data development and utilization, privacy protection, and public security, and basic systems and standards concerning data rights, transactions, circulation, cross-border transmission, and security protection will be developed at a faster pace. Sound mechanisms for data rights trading and industry self-regulation will be put in place and well-regulated data trading platforms and business entities will be fostered. The market systems for data asset evaluation, registration and settlement, trading, dispute arbitration, etc. will be developed. The data involving national interests, trade secrets, and personal privacy will be better protected and basic legislation in the fields of data security and personal information protection will be accelerated to strengthen data security protection in the whole life cycle. The classified and multi-level data protection will be improved to adapt to the big data environment. Efforts will be made to strengthen data security assessment and promote the safe and orderly flow of data across borders.

II. An enabling policy environment

Policies and regulations favorable for the digital economy will be introduced, along with better rules for managing the sharing economy, the platform economy, and the new individual economy. Improper items requiring administrative approval and qualifications will be cancelled and platform enterprises will be supported in pursuing innovative development and building their international competitiveness. Activities on internet platforms will be overseen in accordance with laws and regulations, the positioning and regulatory rules of platform enterprises will be clarified, and the legal framework of business monopoly identification will be improved, while business monopolies and unfair competition will be fought. Efforts will also be made to explore the possibility of creating regulatory frameworks for unmanned driving, online medical services, financial technology, smart delivery service, etc., improve relevant laws, regulations and ethical review rules, and foster a better statistical monitoring system for the digital economy.

III. Cybersecurity

Efforts will be made to improve national cybersecurity laws, regulations, and standards, and intensify efforts to protect the security of data resources in important fields, important networks, and important information systems. A sound key information infrastructure protection system will be put in place to increase the capacity for security protection and political security maintenance. Cybersecurity risk assessment and review will be advanced, along with the development of cybersecurity infrastructure, cross-sector cybersecurity information sharing and collaboration, and the capacity for cybersecurity threat detection, monitoring and early warning, emergency command, and cyber attack tracing. Efforts will be stepped up to develop key technologies for cybersecurity, accelerate technological innovation in artificial intelligence for security, build the comprehensive competitiveness of the cybersecurity industry, and promote cybersecurity education and related personnel training.

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IV. A global cybercommunity with a shared future

International exchanges and cooperation in cyberspace will be promoted, along with the formulation of international digital and cyber rules, and the United Nations will be considered the main channel and the Charter of the United Nations the source of basic principles. More will be done to establish a multilateral, democratic, and transparent global internet governance system and create a fairer and more reasonable cyberspace infrastructure and resource governance mechanism. We will actively participate in the development of international rules and digital technology standards including those on data security, digital currencies, and digital taxes; promote the development of global cyberspace security cooperation mechanisms, and build an international coordination and cooperation mechanism to protect data factors, handle cybersecurity incidents, and combat cybercrimes; provide digital assistance including technology, equipment, and services to less developed countries, so that all countries can share the dividends of the digital era; and actively promote cultural exchanges and mutual learning on the internet.

Part VI Comprehensive and In-depth Reform to Develop a Well-functioning Socialist Market Economy

Efforts will be ongoing to improve our socialist economic system to allow the market to play a decisive role in allocating resources while improving government regulation, so as to create synergy between an efficient market and a well-functioning government.

Chapter 19 Market Dynamism

With the public sector as the core of our economy, the government encourages, supports, and guides the development of the non-public sector, and is committed to creating an enabling environment to allow more dynamic, creative, and competitive business entities to thrive.

I. State-owned enterprise reform

To better serve national strategies, we will make plans on where to advance and where to withdraw, what to do and what not to do, accelerate layout improvement, structural adjustment, and strategic restructuring for the state-owned sector and enhance its competitiveness, innovation, control, influence, and risk resistance capacity. We will also work to strengthen, expand, and increase the returns on state capital and enhance the strength, quality, and size of state-owned enterprises. The strategic support of the state-owned sector will be brought into full play, so that it can focus more on helping to ensure strategic security, promote industry leadership, bolster the national economy, raise people's living standards, improve public services, and other functions. We will adjust and revitalize stock assets, improve the allocation of incremental capital, and move towards important industries concerning national security and the lifeline of the national economy, industries that provide public services and concern capacity building for emergency response, public welfare, etc. as well as emerging industries of strategic and progressive significance. For the part of the state-owned sector in fully competitive fields, we will give greater emphasis to capital gains targets and financial constraints, enhance liquidity, and improve the mechanism for optimal allocation of state capital. A long-term mechanism will be created for layout improvement and structural adjustment of the state-owned sector, and guidelines in this regard will be issued dynamically.

II. State-owned enterprise modernization with Chinese characteristics

We will uphold the Party's leadership in all spheres of work of state-owned enterprises, balance the endeavor to strengthen the Party's leadership and that to improve corporate governance, and accelerate the establishment of a corporate governance mechanism featuring statutorily-defined and transparent rights and responsibilities, coordinated operations, and effective checks and balances. Efforts will also be made to facilitate the establishment of boards of directors and clearly define their functions and powers, making them the main bodies of business decision-making. In accordance with the requirements of improving governance, strengthening incentives, highlighting the main business and increasing efficiency, we will push ahead with mixed-ownership reform in state-owned enterprises by radically transforming the operation mechanism, and exploring the introduction of governance mechanism and supervision system for mixed-ownership enterprises that are different from those of solely state-owned and wholly owned companies. We will put in practice a tenure system and contractual management for managers, improve the market-oriented salary distribution mechanism, and flexibly offer medium- and long-term incentives in various forms.

III. State-owned assets oversight to prevent, in particular, illegal diversion of funds

Ongoing efforts will be made to combine authorization and supervision as well as decentralization and management, and promote the transformation of state-owned asset supervision in terms of concept, focus, and modes. We will improve the approach to capital management, practice list-based management and classified authorization and decentralization, lay emphasis on performing duties through the corporate governance structure and strengthen ongoing and ex post oversight. We will deepen the reform of state capital investment and operation companies, and define the scope of rights of the government and state capital regulatory agencies, state capital investment and operation companies, and their subsidiaries in a scientific and reasonable manner. We will also improve the collaborative and efficient supervision mechanism and enforce accountability to prevent the loss of state-owned assets, and accelerate the centralized and unified supervision of for-profit state-owned assets.

IV. A favorable business environment for private enterprises

Enabling legal, policy, and market environments will be fostered for the development of private enterprises and protect their property rights and the rights and interests of entrepreneurs on an equal basis in accordance with the law. We will ensure that private enterprises have equal access to resource factors in accordance with the law, and that they can compete in an open, fair, and just manner, and enjoy equal legal protection. Market access will be expanded for private enterprises and various barriers in bidding and other fields will be broken down. New policy instruments will be developed to provide financial support for private enterprises, improve the financing and credit enhancement system, treat private enterprises as equals in their credit rating and bond issuance, and lower overall financing costs. The policy system will be improved for promoting the development of micro, small, and medium enterprises and self-employed individuals, and

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give more preferential tax treatment and credit support. We will build a cordial and clean relationship between government and business, establish standardized communication channels between government and enterprises, and improve the long-term mechanism for preventing and resolving payment arrears to small and medium enterprises.

V. Policy support for private-sector development with a focus on quality improvement

We will encourage the reform and innovation initiatives of private enterprises to improve their operation and management capacity, and guide qualified private enterprises to adopt a modern enterprise system. Private enterprises will be encouraged to carry out basic research and technological innovation, participate in the research and development of key and core technologies, and undertake key national science and technology projects. A better mechanism will be introduced for private enterprises to participate in the implementation of major national strategies, and they will be encouraged to operate in accordance with laws and regulations, actively fulfill their social responsibilities and participate in charitable initiatives. We will also work to foster entrepreneurship and implement the plan to promote the healthy growth of young entrepreneurs.

Chapter 20 A Unified Market that Adheres to High Standards

Proactive action will be taken to build an efficient, well-regulated, unified domestic market that adheres to high standards, with necessary institutional support in place to ensure equal access, fair competition, impartial oversight, openness, orderliness, good faith conduct, and legal compliance.

I. Protection of property rights

The modern property rights system will be improved to ensure clear ownership, well-defined rights and obligations, strict protection, and smooth transactions. With the civil code put into implementation, we will formulate laws and regulations on property rights, including real rights, creditor's rights and stock rights, and revise them to clarify the ownership of property rights and improve the powers and functions of property rights. We will improve the property rights protection system based on the principle of fairness and give equal protection to the property rights of enterprises under all forms of ownership, including state-owned, private, and foreign-funded enterprises, in accordance with the law. Efforts will be made to improve the judicial protection system for property law enforcement and protection mechanisms such as the appeal, review, and retrial of enterprise-related property rights cases. We will make it a normal practice to screen and correct wrongful cases involving enterprises in accordance with the law and develop smooth channels for the reporting and handling of government-related property rights disputes. We will strengthen the development of the property rights system in the fields of data, knowledge, and the environment, and improve the property rights system and laws and regulations related to natural resource assets.

II. Reforms to facilitate market-based allocation of production factors

A sound unified rural-urban market will be created for land designated for construction purposes, and reforms on rural land expropriation, the marketing of rural collectively-owned land designated for business-related construction, and rural land designated for housing will be pushed forward. Efforts will also be made to reform land-use planning and management practices, grant provincial-level governments more decision-making power over the development of land, and explore the establishment of a nationwide mechanism for cross-regional trading of land for construction and newly-added cropland quotas. A mechanism will be created for the proper conversion of different types of land designated for industrial purposes and increase the supply of land for mixed industries. We will improve the unified and well-regulated human resource market, remove barriers to the flow of workforce and talents between urban and rural areas, between different regions, and between organizations of different types of ownership, and rescind excessive restrictions on personnel file management. Further progress will be made in the efforts to develop technology and data factor markets, improve the operational mechanism of the factor markets as well as trading rules and service system, and deepen the integration and sharing of public resource trading platforms.

III. A pivotal role for competition policies

Continued efforts will be made to encourage competition and guard against monopoly, improve the competition policy framework, and create a competition policy implementation mechanism covering every stage of the whole process. Conduct incremental review and stock clearance will be properly conducted, fair competition reviews will be carried out to strengthen rigid constraints while the detailed rules in this regard will be improved, and more will be done to abolish regulations and practices that impede the development of a unified market and fair competition nationwide. We will improve the market competition evaluation system and establish a complaint filing and handling mechanism. Law enforcement against monopolies and unfair competition will be stepped up and capital expansion will be regulated. We will promote market-oriented reforms in competitive operations in such sectors as energy, railways, telecommunications, and public utilities, expand market access for competitive operations, introduce more market competition mechanisms, and strengthen oversight over natural monopoly industries.

IV. Social credit system

A sound system of credit-related laws, regulations, and standards will be put in place, together with a catalog of public credit information and a list of disciplinary measures for dishonest practices, and the credit repair mechanism for defaulters will be improved. Efforts will be made to promote the credit commitment system, boost the collection, sharing, disclosure, and application of credit information, promote credit products and services that benefit people and enterprises, and establish a mechanism for the sharing and integration of public credit information and financial information. More will be done to foster internationally competitive enterprise credit reference agencies and credit rating agencies, strengthen supervision over credit investigation, and promote the healthy development of the credit service market. Intensified efforts will be made to manage the security of credit information, protect the legitimate rights and interests of entities whose credit information is gathered, and establish a sound accountability system for government administration dishonesty.

Chapter 21 Fiscal Policy, Taxation, and the Financial System

Fiscal policy should play a fundamental role in state governance. Financial services should better serve the real economy. Fiscal policy, taxation, and the financial system should respond to the need for development with a focus on quality improvement.

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I. Fiscal policy

Efforts will be made to deepen reform of the budget management system, strengthen the macro guidance, review, and supervision of budget compilation, promote the overall planning of financial resources, standardization of financial expenditure, budget constraints and performance management. The multi-year budget balancing mechanism will be improved, along with medium-term financial planning management, to bolster financial support for major strategic tasks of the country. We will establish a fiscal relationship between central and local governments built on clearly defined powers and responsibilities, appropriate financial resource allocation, and greater balance between regions; appropriately strengthen the central government's authority over intellectual property protection, pension insurance and cross-regional environmental protection; and reduce and regulate the common authority of central and local governments. We will improve the financial system at and below the provincial level and enhance the capacity to provide public services at the community level; create a better financial transfer payment system and a better transfer payment structure, and regulate the transfer payment items; improve the system for comprehensive government financial reporting based on accrual accounting; and establish a well-regulated government debt financing mechanism.

II. Taxation

We will seek to improve the structure of the tax system and the direct tax system, appropriately increase the proportion of direct taxes, create a better personal income tax system, expand the scope of comprehensive collection, and improve the tax rate structure. More will be done to improve the value-added tax (VAT) system by stabilizing the manufacturing industry and consolidating the industry and supply chains. We will also adjust and improve the scope of excise tax collection and the excise tax rate, make moves towards collecting excise tax at a point further downstream in the production-to-consumption process and hand it over to local governments in a stable way. Progress will be made in the endeavor to regulate and improve tax preferences, step up legislation on real estate taxation, improve local tax systems, and hand over more tax-related administrative powers to local governments step by step. Reforms will be deepened in the administration of tax collection and smart taxation will be developed to modernize the administration of tax collection.

III. Supply-side structural reform in the financial sector

The modern financial system that is adaptive, competitive, and inclusive will be improved and institutions and mechanisms will be put in place for the financial sector to effectively support the real economy. Efforts will be made to build a modern central bank system and improve the money supply regulation mechanism and steadily promote the research and development of digital currency. More will be done to improve the market-based interest rate mechanism and the transmission mechanism, the central bank's policy interest rate system, and give better play to the benchmark role of the loan prime rate (LPR) mechanism. A better structure of the financial system will be defined and the reform of state-owned commercial banks will be deepened. We will move faster to improve the governance structure of small and medium-sized banks and rural credit cooperatives, regulate the development of non-banking financial institutions, and enhance the inclusiveness of financial services. Efforts will be made to reform and improve policy-backed finance, increase its capacity to serve national strategies and planning efforts, deepen the reform of insurance companies and build the ability of commercial insurance to offer protection. We will improve corporate governance in financial institutions and strengthen the oversight of shareholders' equity and related party transactions. We will also improve the underlying systems of the capital market and the system of multi-level capital markets, make a major push to develop institutional investors, and increase the proportion of direct financing, equity financing in particular; fully implement the registration-based IPO system, make delisting a normal practice, and improve the quality of listed companies. We will deepen reform of the New Third Board, improve the market-based bond issuance mechanism, steadily expand the scale of the bond market, enrich bond varieties, and issue long-term government bonds and long-term infrastructure bonds. We will improve the investor protection system and deposit insurance system, as well as the modern financial regulatory system; shore up our weaknesses in the regulatory system; steadily advance financial innovation under the premise of prudential supervision; and improve the regulatory framework with full risk coverage and make financial regulation more transparent and more law-based. We will steadily develop financial technology and accelerate the digital transformation of financial institutions; boost the application of regulatory technology and financial innovation risk assessment; and explore the establishment of an innovative mechanism for product rectification and suspension.

Chapter 22 The Government's Economic Governance Capacity

The transformation of government functions will be accelerated to build a rules-based governance system with clearly defined duties and responsibilities, and improve macro-level regulation and the effectiveness and efficiency of governance.

I. Macroeconomic governance

Guided by the national development plan, we will improve the macroeconomic governance system by taking fiscal and monetary policies as the main instruments, better coordinating policies on employment, industries, investment, consumption, environmental protection, specific regions, etc., setting better-defined objectives, ensuring reasonable division of functions, and boosting efficient collaboration. Efforts will be made to strengthen the role of national development planning in providing macro guidance for and coordinating public budget, land development, resource allocation, and other policies; improve the macro policy formulation and implementation mechanism; attach importance to expectation management and guidance; set proper macro-regulation targets concerning economic growth, employment, prices, balance of payments, etc.; and strengthen targeted, well-timed, and precision regulation on the basis of range-based regulation. We will improve the macro-regulation policy system, appropriately design cross-cyclical policies, improve the capacity for counter-cyclical adjustment, and promote the balance between total supply and demand, structural improvement, and internal and external balance for the economy. We will step up the development of macroeconomic governance databases, enhance the supplementary governance capacity of modern technological means including big data, and modernize the statistical system. We will improve the macroeconomic policy evaluation system as well as major risk identification and early warning mechanisms, keep the channels for participation in policy-making open, and ensure decisions are made in a sound, democratic, and law-based way.

II. A favorable business environment

Reforms will be intensified to streamline administration and delegate power, improve regulation, and upgrade services, promote the system for listing the powers and obligations of government departments across the board, and continue to improve the market-based international business environment that respects the rule of law. We will implement the negative list system across the board for market

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access, remove hidden barriers to market access beyond the list, and further ease access restrictions mainly in the services sector. We will reduce government permits, merge some qualification permits, cancel unnecessary registrations and annual inspections, and regulate enterprise-related inspections. We will fully carry out the reform to separate permits from business licenses and reduce permits after granting licenses, as well as the reform of the construction project approval system. We will reform the production permit system, simplify the approval procedures for industrial products, and practice list-based management for all items related to enterprises that require administrative approval. We will establish a convenient, efficient, and orderly exit system for market entities, simplify ordinary deregistration procedures, and establish a sound bankruptcy system for enterprises and natural persons. We will develop new ways to deliver government services and streamline the approval services for the convenience of the people. We will promote the application of single-window document processing for international trade and improve the business environment assessment system.

III. Better regulation

We will improve the new regulatory mechanism featuring the random selection of both inspectors and inspection targets, the prompt release of results and the Internet Plus Oversight initiative, focusing on key targets and credit supervision to promote the integration of online and offline supervision. We will strengthen market supervision, quality supervision, safety supervision, the supervision of food and drugs, special equipment, online transactions, tourism, advertising, intermediaries, property management, etc., as well as the supervision of factor market transactions, and implement accommodative and prudent regulation of new industries and new forms of business. We will deepen the reform of coordinated law enforcement by government departments in market oversight and improve cross-sector law enforcement and collaborative supervision mechanisms. We will deepen the reform of trade associations, chambers of commerce, and intermediary agencies, and facilitate supervision by the public and the press.

Part VII Agricultural and Rural Development and Rural Revitalization

A uniquely Chinese approach to rural revitalization will be adopted with strategies that encourage the manufacturing sector and urban entities to support agriculture and rural development, a move that will help create industry-agriculture and urban-rural synergies, beneficial to both urban and rural areas and allow coordinated development leading to shared prosperity and accelerated modernization of agriculture and rural areas.

Chapter 23 Quality Issues and Competitiveness in the Agricultural Sector

The fundamental role of agriculture should never be underestimated. Supply-side structural reform in the agricultural sector is necessary to spur the growth of rural industries, with special attention to improving the quality of their products.

I. Boosting the overall agricultural production capacity

We will consolidate the foundation of grain production capacity and ensure the supply of important agricultural products such as grain, cotton, cooking oil, sugar, meat, and milk. We will enforce the strictest possible system for protecting farmland, strengthen the protection of farmland quantity and enhance its quality, ensure the total area of China's farmland stay above the red line of 120 million hectares, prevent the use of farmland for non-agricultural and non-grain purposes, regulate the balance between the occupation and replenishment of farmland, and strictly prohibit the replacement of superior land with inferior land and irrigable land with to non-irrigable land. Focusing on functional zones for grain production and protective areas for the production of major agricultural products, we will build a national food security industrial belt, implement high-quality farmland development projects, and build contiguous high-quality farmland of more than 71.67 million hectares. We will carry out chernozem soil conservation projects and strengthen the conservation of chernozem soils and restoration of soil fertility in northeast China. We will promote water-saving transformation and lean management in large and medium-sized irrigation areas and build key water-saving irrigation projects while promoting comprehensive water pricing reform. We will step up the research, development and application of large and medium-sized, smart and multifunctional agricultural machinery so that the overall level of mechanization in plowing, sowing, and harvesting can be increased to 75%. We will boost the protection and utilization of germplasm resources and the development of seed banks to ensure the security of seed sources; step up efforts to break bottlenecks in developing technology to improve agricultural varieties; steadily advance the industrial application of biological breeding; and foster leading enterprises in the seed industry with international competitiveness. We will improve the agricultural science and technology innovation system, employ new ways to promote agricultural technologies, and develop smart agriculture. We will channel more efforts into animal epidemic prevention and control of crop diseases and insect pests, as well as agrometeorological services.

Figure 2. Layout of functional zones for grain production and protective areas for the production of major agricultural products

II. Structural adjustment in the agricultural sector

We will improve the distribution of agricultural production, and build industrial belts for advantageous agricultural products and advantageous areas of featured agricultural products. We will promote the overall planning of grain, cash crops, and feed, as well as the coordination of agriculture, forestry, animal husbandry, and fishery; improve the farming structure; vigorously develop modern animal husbandry and healthy aquaculture; and actively develop protected agriculture as well as forestry and fruit industry according to local conditions. We will further promote high-quality grain projects, drive the green transformation of agriculture, boost environmental protection in production areas, develop water-saving and dry-farming techniques, advance the initiative of reducing pesticides and fertilizers, control agricultural film pollution by improving its recovery and utilization rate, and promote the comprehensive utilization of straw and the utilization of livestock manure as resources. We will improve the green agriculture standard system and the certification of green food, organic agricultural products, and agricultural products with geographical indications; intensify whole-process quality and safety supervision over agricultural products and improve the traceability system; and build industrial parks of modern agriculture and agricultural modernization demonstration zones.

III. Diversification of the rural economy

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We will develop county economy, promote the integrated development of primary, secondary, and tertiary industries in rural areas, extend the agricultural industrial chain, and develop featured modern industries to ensure rural prosperity. We will boost the combination of farming, breeding, and processing and the reengineering of industrial chain, advance the development of agricultural products processing industry and agricultural producer service industry, and expand characteristic industries such as leisure agriculture, rural tourism, and homestay economy. We will step up the development of storage and preservation as well as cold chain logistics facilities for agricultural products, improve rural property rights trading, commercial circulation, inspection, testing, and certification platforms, as well as smart standard plants and other facilities, and encourage the development of clusters in rural secondary and tertiary industries. We will improve the interest linkage mechanism, and ensure farmers share more benefits from the growth of industries by "turning resources into assets, funds into shares, and farmers into shareholders".

Chapter 24 Rural Development Initiatives

Rural development is high on our socialist modernization agenda. Rural development initiatives aim to increase production, conserve and protect ecosystems, and improve the living environment.

I. Rural development planning

We will coordinate the planning and development of towns and villages in counties while considering all relevant factors, including land use, industrial development, development of residential areas, improvement of the living environment, ecological conservation, disaster prevention and reduction, and conservation of cultural heritage. We will design sound layout plans for villages in counties, develop villages of different categories according to different local conditions, regulate the comprehensive improvement of land in the whole region, protect traditional villages, ethnic villages, and rural styles and features, and strictly prohibit the willful removal and merger of villages to build large communities or large-scale demolition and construction against the wishes of farmers. We will improve the layout of rural living spaces, strictly preserve the spaces for agricultural production and rural ecological conservation, and delineate suitable, restrained, and forbidden areas for breeding industry. We will also encourage areas to draw up practical village plans, where conditions permit.

II. Upgrading infrastructure and public services in rural areas

We will drive the integrated development of urban and rural areas by taking counties as the basic units, and enhance counties' capacity to provide comprehensive services and townships' functions to serve farmers. We will improve the mechanism for unified planning, development, management, and protection of urban and rural infrastructure, promote the extension of municipal utilities to suburban villages and large-scale central towns, improve rural infrastructure relating to water, electricity, roads, gas, postal communications, radio and television, and logistics, as well as the quality of rural housing construction. We will promote the adoption of the same standards for basic public services and the same systems in urban and rural areas; increase the provision of services in education, healthcare, old-age care, culture, and other fields in rural areas; promote the exchange and job rotation of teachers and doctors in counties; and encourage non-governmental actors to launch charitable initiatives in rural areas. We will improve farmers' literacy in science, technology, and culture, and promote the revitalization of rural talents.

III. Better living environment in rural areas

We will work on redeveloping the rural living environment, and steadily resolve outstanding environmental issues such as the "villages surrounded by garbage" and dirty and odorous water bodies in rural areas. We will promote the on-site sorting and recycling of household waste and steadily advance household sewage treatment in rural areas, while focusing on seats of township governments and central villages. We will promote the toilet revolution in line with local conditions, boost comprehensive improvement of rural water systems, and organize in-depth village cleaning and greening activities to make public spaces, courtyards, and houses in villages, as well as their surrounding areas clean and tidy.

Chapter 25 Integrated Urban-Rural Development

Favorable policies will be rolled out to facilitate two-way flows of urban and rural production factors, and encourage, in particular, channeling more resources towards rural areas to boost rural dynamism.

I. Agricultural and rural reforms

We will consolidate and improve the basic rural management system, implement the policy of extending the second round of land contracts for another 30 years upon expiration, improve the system of separating the ownership right, contract right, and management right of rural contracted land, and further reduce restrictions on the management right. We will develop various types of appropriately scaled agribusiness operations, accelerate the fostering of new agricultural business entities such as family farms and farmers' cooperatives, improve the system of specialized and commercial services for agriculture, and introduce small rural households to modern agriculture. We will further carry out trial reforms on rural land designated for housing, accelerate the confirmation and certification of both land and house rights, and explore the approach to achieving the separation of ownership, entitlement, and right to use of rural land designated for housing. We will vigorously explore and implement a system for putting rural collective land for development purposes on the market, allow rural collectives to convert idled land designated for housing that has been recovered after paying compensation, and disused collective land designated for public good into collective land for development purposes and put the land on the market according to law based on the premise of farmers' willingness. We will establish a mechanism for determining public interests in rural land requisition and narrow the scope of requisitioned land. We will deepen the reform of the rural collective property rights system, improve the powers and functions of property rights, quantify for-profit assets for the members of the collective economic organizations, and develop a new rural collective economy to effectively alleviate the burden of village-level organizations. We will give play to the exemplary role of national pilot zones for integrated urban-rural development and rural reform pilot zones.

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II. Supply of production factors for agricultural and rural development

We will improve the system for guaranteeing government funding for agriculture and rural areas and increase support to them from the central government's financial transfer payments, proceeds from sale of land-use rights, and local government bonds. We will improve the agricultural support and protection system, as well as the interest compensation mechanism for major grain-producing areas, develop a new system of agricultural subsidy policies, and refine the policy for setting minimum prices for state grain purchases. We will deepen the reform of supply and marketing cooperatives and improve the support mechanism for rural land use, to ensure that the reasonable land-use needs in developing protected agriculture and rural industries are met. We will improve the rural financial service system and the incentive mechanism of financial support to agriculture, expand the scope of financing guaranteed by rural asset collateral, and develop agricultural insurance. We will allow people who seek employment or who want to start businesses in the countryside to register their household and enjoy relevant rights and interests in their native places or the locations of their jobs or businesses, and establish a system for scientific researchers to engage in secondary jobs and off-post entrepreneurship in rural areas.

Chapter 26 Rural Revitalization to Be Pursued by Building on Success in Poverty Alleviation

Support will continue to be provided to rural low-income groups and underdeveloped areas. The level of government funding for this purpose will stay stable and assistance programs will continue to be implemented even after the target communities have been lifted out of poverty, a move that is intended to keep the momentum going and prevent the vulnerable from slipping back into poverty.

I. Building on poverty alleviation achievements

We will work to meet the requirements of "continuing poverty alleviation responsibility, policies, and assistance and oversight for areas that have been removed from the poverty list", and establish a robust long-term mechanism for consolidating and expanding poverty alleviation achievements. We will improve the dynamic monitoring and targeted assistance mechanisms for preventing people from falling back into poverty, regularly monitor groups who are liable to return to or fall into poverty, establish a sound mechanism for rapid detection and response, and bring people who can potentially return to poverty into the scope of assistance policies in a timely manner, considering different types at different levels. We will improve the social security and assistance system in rural areas, and improve the mechanism for regular assistance of low-income rural residents. For areas that have been lifted out of poverty, we will continue to implement the policy for intra-provincial trading of the surplus quotas under the policy of linking newly-added cropland quotas with the amount of land used for urban and rural construction, and adjust and improve the policy of inter-provincial trading of the same. We will step up the management and supervision of funds and assets in poverty alleviation projects, and promote the sustainable development of characteristic industries. By rolling out work-relief programs, we will drive low-income population to get jobs locally or in nearby regions. We will effectively provide follow-up support for people relocated from inhospitable areas, and promote a new type of urbanization in large-scale resettlement areas.

II. A continued upward trajectory for communities recently out of poverty

We will encourage the areas that have got rid of poverty to develop featured farming and breeding industries, extensively organize activities to ensure better linkage between production and sales of agricultural products, and expand the assistance by boosting the consumption of goods produced by the areas lifted out of poverty. A number of counties lifted out of poverty in western China will be designated as key counties for receiving assistance for rural revitalization and receive focused support in terms of government funding, financial services, land, manpower, infrastructure, and public services, so as to increase their capacity to consolidate their achievements in poverty alleviation and boost internal forces driving development. We will carry on and improve the mechanisms for collaboration between the eastern and western regions, for providing paired assistance, for designated assistance by central departments and organizations, and for the participation of non-governmental entities. We will adjust and improve the collaboration between eastern and western regions in offering paired assistance and the way of offering such assistance and give greater emphasis to industrial and labor service cooperation.

Part VIII New Urbanization Strategy with a Focus on Quality Development

A uniquely Chinese approach to urbanization will continue to guide the new urbanization process. The process should be people-centered. It aims to promote coordinated development of large, medium-sized, and small cities and small towns that make up urban clusters and metropolitan areas, while helping local cultural traditions and industries and services with local characteristics thrive. The goal is to allow more people to enjoy better city life.

Chapter 27 Urban Residency Status for Rural Residents

The household registration system will undergo an overhaul to ensure full access to basic urban public services for all urban residents, and allow rural residents who have moved to urban areas, especially those who have been living for a long time in cities to gain urban residency, so as to facilitate their integration into city life.

I. Reform of the household registration system

We will lift or reduce the restrictions on household registration, except in certain mega cities, and pilot the household registration system based on places of one's habitual residence. We will lift all restrictions on household registration in cities with a permanent urban population of less than 3 million, and ensure that the people who have moved from other and local rural areas enjoy equal treatment with respect to urban household registration. For Type-I large cities with a permanent urban population of 3 to 5 million, we will fully relax the conditions for granting urban residency. For mega cities with a permanent urban population of more than 5 million, we will improve the points-based household registration policy by streamlining the points categories, to ensure that the number of years of social insurance payment and the number of years of residence carry the most weight, and we will encourage the cancellation of the annual quota for household registration. We will improve the mechanism for providing basic public services based on the residence permit and linked to the length of residence and other conditions, encourage local governments to provide more basic public services and more convenient access to government services, and improve the urban compulsory education, housing, and other services actually enjoyed by residence permit holders.

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II. Urban residency status for rural migrants

We will improve the policies related to the linkage between the fiscal transfer payments and the granting of urban residency to the people with rural household registration living in urban areas, raise the conversion ratio of the permanent population in the balanced distribution of the transfer payments, and determine the distribution of the central fiscal incentive funds for urban residency primarily based on the number of the people who have moved from other provinces. For cities that have taken in a large number of people who have relocated from rural areas, we will set up a mechanism for subsidizing their infrastructure construction with part of fiscal construction funds, and increase central funding budgetary support. We will adjust the basis for the annual allotment of land designated for construction in urban areas, and establish a mechanism to link the allotment with the number of people with rural household registration living in urban areas granted with urban residency and the scale of government-subsidized housing. We will adjust the quota of teachers and doctors and the layout of basic public service facilities for areas with inflow and outflow population according to the actual population flow. We will protect the rights of rural migrants who have settled in cities in accordance with the law with respect to farmland contracting, residential land use, and proceeds from rural collective undertakings, establish a market system for transferring rural property rights, and improve the mechanism and supporting policies for market-based abdication from the abovementioned "three rights" of rural households.

Chapter 28 Spatial Distribution of Urban Centers

With the expansion of urban clusters and metropolitan areas, better coordination is essential for the development of large, medium-sized, and small cities that make up clusters, each with its own priorities and areas of focus, taking into account the need for proper density, coordination in service delivery, and rational distribution of services and amenities.

I. Integrated development of urban clusters

We will take promoting the development of urban clusters as the starting point to all-roundly form a strategic pattern of urbanization featuring "two horizontal and three vertical axes", by upgrading the urban clusters of the Beijing-Tianjin-Hebei region, Yangtze River Delta, Pearl River Delta, Chengdu-Chongqing region, and the middle reaches of Yangtze River; developing the urban clusters of Shandong Peninsula, the coastal areas of Guangdong, Fujian, and Zhejiang, the Central Plains, the Guanzhong Plain, and the Beibu Gulf; and fostering the urban clusters of Harbin-Changchun, Central and Southern Liaoning, Central Shanxi, Central Guizhou, Central Yunnan, Huhhot-Baotou-Ordos-Yulin, Lanzhou-Xining, Ningxia along the Yellow River, and the north slope of Tianshan Mountains. We will establish and improve the mechanisms for integrated and coordinated development of urban clusters and for cost and benefit sharing, and comprehensively promote the coordinated layout of infrastructure, industrial division of labor and cooperation, public service sharing, ecological co-construction, and environmental co-governance. We will also optimize the internal spatial structure of urban clusters and build them into a multi-center, multi-level, and multi-nodal network with improved ecological and security shields.

II. Modern metropolitan areas

We will improve the coordinated development of one-hour commute circles by relying on the central cities with strong capacity to facilitate the development of surrounding areas, and foster several modern metropolitan areas with a high degree of urban integration. With intercity railways, suburban railways, and other rail transits as the backbone, we will eliminate all kinds of "dead end roads" and "bottleneck roads", promote effective connection of intra-city and inter-city traffic and integration of "the four networks" - trunk, intercity, suburban, and urban railways, and improve the connectivity of infrastructure in metropolitan areas. We will encourage mutual recognition of social security and household registration points, sharing of educational and medical resources in metropolitan areas, and promote the exchange and circulation of scientific and technological innovation coupons as well as the co-construction of industrial parks and scientific research platforms. Where conditions permit, metropolitan areas will be encouraged to establish unified planning committees to achieve unified formulation and implementation of plans, and ways will be sought to promote unified management of land and population.

III. Functions of the central areas in mega cities reimagined

We will take into account the multiple needs of economy, life, ecology, and security to transform the development model of mega cities, and strengthen their risk prevention and control in terms of governance, so as to promote their high-quality and sustainable development. In order to appropriately reduce the development intensity and population density in central urban areas of mega cities, we will relieve in an orderly manner the areas of general manufacturing industries, regional logistics bases and professional markets as well as related functions and facilities, and avoid excessive concentration of public service resources including medical services and higher education. We will enhance the roles of mega cities in global resource allocation, in driving scientific and technological innovation, and in leading the development of high-end industries, ensure that mega cities take the lead in forming an industrial structure with modern service industry as the mainstay and advanced manufacturing as the prop, and enhance their overall capacity and international competitiveness. We will continue the integration of urban areas and industries and improve the functions of new suburban cities to realize multi-center and cluster development.

IV. Livability and better working conditions in large and medium-sized cities

We will make full use of the relatively low comprehensive cost advantages of large and medium-sized cities, and actively undertake the transfer of industries and functions of mega cities, to lay a solid foundation for the development of the real economy. Based on these cities' featured resources and industrial foundation, we will have differentiated positioning in manufacturing to promote the development of the manufacturing sector on a large scale or in clusters, and build advanced manufacturing bases, commercial and trading logistics centers, and regional professional service centers according to local conditions. We will improve the layout and functions of municipal public facilities, support the presence of tertiary hospitals and universities in large and medium-sized cities, increase the supply of cultural and sports resources, and create a modern and fashionable consumption environment, to make cities better places for living.

V. County-level urbanization

We will step up efforts to shore up weak links in counties, upgrade and expand their public services, environmental sanitation, municipal utilities, and industrial supporting facilities, and enhance their overall carrying capacity and governance capacity. We will support the development of the counties with a good foundation in the eastern regions, focus on the development of counties in the urbanized areas of central and western regions as well as northeastern regions, and appropriately support the development of counties in major production areas of agricultural products and key eco-function zones. We will improve the funding and financing mechanism for development of

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counties, to give better play to the role of fiscal funds, and guide financial and non-governmental capital to increase funding. We will steadily and in an orderly manner promote the conversion of qualified counties and super-large towns with a permanent population of over 200,000 into cities, develop small towns according to the local conditions, resource endowment and development basis, and promote the standardized and healthy development of characteristic towns.

Figure 3. Schematic diagram of the urbanization spatial layout

Chapter 29 Quality of Urban Living

A paradigm shift in urban development is necessary to better coordinate urban planning and city development management, including initiatives for urban renewal and for more rational use of urban space, with a view to improving the quality of urban living.

I. A paradigm shift in urban development

We will logically determine the scale and spatial structure of cities in accordance with the carrying capacity of resources and the environment and make overall arrangements for urban construction, industrial development, ecological conservation, infrastructure, and public services. We will adopt an intensive and compact development model that enables multi-functional, three-dimensional, and transit-oriented development, coordinate the utilization of above-ground and underground space, increase greening nodes and public open space, and promote the block system for new residential buildings. We will promote management and control of urban design and landscape, put into effect guidelines for building applicable, economic, green, and beautiful cityscape in the new era, and strengthen control over new high-rise buildings. We will accelerate urban renewal by redeveloping and upgrading the functions of old residential areas, old factory areas, old blocks and urban villages among other idle zones, promote the renovation of old buildings, and actively expand new parking lots and charging piles.

II. New city centers

In line with the new vision and trend of urban development, we will carry out pilot and demonstration projects to modernize cities, and make them livable, innovative, smart, green, civil, and resilient. We will build smarter cities and practice the "one map" digital management of urban buildings, public space, and underground pipe network as well as the unified network management of urban operations. We will make sound plans for developing the green ring, green corridor, green wedge, and green lane in urban areas, promote ecological restoration and functional improvement, prioritize the development of urban transit, develop a slow-traffic network of bicycle lanes and pedestrian paths, develop smart construction, and build low-carbon cities by popularizing the use of eco-friendly building materials, prefabricated buildings, and steel structure housing. We will keep cultural heritage alive and put an end to large-scale demolition and construction so that cities can evoke the nostalgia of residents. We will build an urban flood control and drainage system featuring combination of storage and drainage for the source emission reduction, elimination of the waterlogging risk and emergency response, so as to achieve substantial results in promoting urban waterlogging control. We will enhance the ability of public facilities to cope with storms, droughts, and geological disasters, and improve the functions of public facilities and buildings as emergency shelters. We will strengthen the building of an accessible environment, expand the sources of urban construction funds, and establish a financially sustainable financing mechanism that involves appropriate terms and supports diversified channels.

III. Urban governance

We will uphold Party building measures, shift the focus downward, and ensure empowerment by science and technology, continue to make urban governance more effective, meticulous, and intelligent, and promote the modernization of social governance in urban areas. We will reform and improve the urban management system, promote the experience of community-level management mechanisms as represented by "all departments responding to the call of the sub-district and township governments to process public complaints without delay", channel more resources, management, and services down to sub-districts and communities, and accelerate the building of modern communities. We will promote innovation in urban management methodology, model, and concept with digital technology and meet the exact needs of the people with high efficiency. We will strengthen property service oversight and improve the coverage, quality, and standardization of property services.

IV. Housing market and housing support

We will uphold the principle that housing is for living rather than for speculation, and accelerate the establishment of a housing system with diverse suppliers, multiple channels of support, and combined renting and purchase, to ensure access to housing and balanced job and housing provisions for all people. We will implement a host of measures based on local conditions and ensure that urban governments have the primary responsibility for keeping land and housing prices and expectations stable. We will establish a linkage mechanism between housing and land, strengthen financial regulation of real estate, give full play to the regulatory role of housing tax, support reasonable demand for owner-occupied housing, and curb speculative and investment-related demand for housing. We will work faster to foster and develop the housing rental market, effectively revitalize idle housing resources, expand the supply of urban rental housing in an effective and orderly manner, improve the long-term rental housing policy, and gradually endow renters and purchasers of housing with equal rights in terms of access to public services. We will step up the development of housing rental laws and regulations and strengthen the supervision of the rental market to protect the legitimate rights and interests of lessees and lessors. We will effectively increase the supply of government-subsidized housing and improve the basic system and supporting policies for guaranteeing access to housing. We will expand the supply of government-subsidized rental housing with a focus put on cities with large population inflows and high housing prices, and step up efforts to solve the housing problems of people in difficulties and new residents. We will formulate a separate land use plan for rental housing, explore the use of collective construction land and idle land owned by enterprises and public institutions to build rental housing, and support the conversion of non-residential housing into affordable rental housing. We will improve the mechanism for distribution of income from land transfer, and increase fiscal, taxation, and financial support. We will develop shared ownership housing in line with local conditions, properly handle the relationship between basic guarantee and non-basic guarantee and improve the way of housing guarantee and the policies on the targets, threshold, and exit management concerning housing guarantee. We will reform and improve the housing provident fund system in terms of mechanisms for deposit, use, management, and operation.

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Part IX Improving Regional Economic Structures and Promoting Coordinated Regional Development

A strategic approach to coordinated regional development will guide major initiatives to strengthen coordination at the regional level, rationalize land use planning through functional zoning, and improve institutional support for an integrated regional economic structure conducive to coordinated development with a focus on quality improvement.

Chapter 30 Land Use Planning and Environmental Protection

Land use planning will be based on the carrying capacity of a particular environment in question, the comparative advantages of various regions, and the need for environmental protection, in a way that promotes rational flows and efficient concentration of production factors, conducive to creating synergy by leveraging complementary strengths while enhancing distinctive main functions of each area. The goal of land use planning is to promote development with quality improvement top of mind.

I. Functional zoning

In line with the changing trend of the spatial structure, we will optimize the layout of major infrastructure, major productive forces, and public resources, improve the development of urbanized areas by category, promote the agglomeration of agricultural production to functional zones for grain production, protected areas for the production of major agricultural products, and advantageous areas of featured agricultural products, and optimize the system of defense for ecological security, to gradually form a spatial pattern consisting of three major areas—urbanized zones, main agricultural production zones, and ecosystem service zones. We will classify policies into units according to different functional orientations, and introduce differentiated policies for key development areas, ecologically fragile areas, and areas rich in energy resources, so as to adopt targeted policies for different areas. We will strengthen the overall planning and coordination of space development and ensure the implementation of national major development strategies.

II. Key drivers of quality-oriented development

Focusing on areas that possess economic development advantages, such as central cities and city clusters, we will enhance the economic and population carrying capacity and drive the overall improvement of national economic efficiency. With the focus laid on the Beijing-Tianjin-Hebei region, Yangtze River Delta, and Guangdong-Hong Kong-Macao Greater Bay Area, we will enhance the capacity of driving innovation and allocating resources at a global level, and move faster to build the top echelon to lead high-quality development. In the central and western regions, where conditions permit, we will improve the functions of city clusters, accelerate industrialization and urbanization, and build key areas for high-quality development, with the central cities as the driving force. We will remove the obstacles of resource flow, improve administrative divisions, and enhance the comprehensive carrying capacity and the ability of optimal resource allocation of central cities so as to give better play to their roles in driving regional development.

III. Key functional zones: capacity upgrading

Supported by zones that are undertaking strategic functions, such as the main agricultural production zones, key ecosystem service zones, areas rich in energy resources, and border areas, we will safeguard the national food security, ecological security, energy security, and border security, and work together with areas with impetus for growth to build a power engine driving high-quality development. We will support main agricultural production zones to enhance their agricultural production capacity, eco-functional zones to lay their focus on protecting the ecological environment and providing ecological products, and the population in the eco-functional zones to relocate and settle in urbanized areas in a gradual and orderly manner. We will improve the energy development and transportation layout, strengthen the construction of bases for comprehensive development and utilization of energy resources, and improve domestic energy supply support. We will strengthen the development capacity of border areas, offer them more support in terms of population and economy, and promote national unity and border stability in these areas. We will improve the public resource allocation mechanism and provide effective transfer payments for key eco-functional zones, major agricultural production zones, and border areas.

Chapter 31 Major Regional Development Strategies

Major regional development strategies focus on strategic objectives that are likely to have spillover effects and will spur action or drive growth in neighboring areas or in related fields. These strategies promote regional integration, interaction, connectivity, and complementarity.

I. Coordinated development of the Beijing-Tianjin-Hebei region

We will prioritize relieving Beijing of functions that are non-essential to its role as the capital city, structure a corresponding policy system, and implement several landmark projects to relieve the city of such non-essential functions. We will ensure Xiong'an New Area is developed up to the highest standards, accelerate the construction of the Pilot Area and the Initial Development Zone, and promote innovation of the management system. We will ensure high-quality development of Beijing Municipality's administrative center in Tongzhou and promote integrated development of Tongzhou with Sanhe, Xianghe, and Dachang in Hebei Province. We will promote the high-quality development of Tianjin Binhai New Area and support the development in Zhangjiakou of the water conservation functional zone and the ecological buffer zone for the capital. We will improve the basic research and original innovation capacity of Beijing Science and Technology Innovation Center, give full play to the role of Zhongguancun National Independent Innovation Demonstration Zone in piloting and testing new initiatives, and promote the in-depth integration of the industrial chain and innovation chain in the Beijing-Tianjin-Hebei region. We will ensure the basic completion of the highly connected rail transit in the region and improve the coordination among airport and port clusters. We will enhance the joint efforts for prevention, control, and treatment of air pollution, and strengthen the comprehensive treatment of groundwater overexploitation and land subsidence in North China.

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Figure 4. Map of Beijing-Tianjin-Hebei region rail transit plan

II. The Yangtze River Economic Belt

We will consistently prioritize ecological conservation, boost green development, ensure well-coordinated environmental protection, prevent overdevelopment, and adopt a holistic approach to pursue both ecological and environmental protection and economic development, to create a model of Beautiful China where humanity and nature harmoniously co-exist. We will continue to promote the rectification of prominent problems in the ecological environment, promote meticulous region-specific management and control of the Yangtze River Basin and implement projects for urban sewage and garbage treatment, industrial pollution control, agricultural non-point source pollution control, ship pollution control, tailing pond pollution control, etc. We will carry out demonstrative projects for green development and promote ecological conservation and environmental protection in Chishui River Basin. We will enforce a 10-year fishing ban in the waters of the Yangtze River. Focusing on the construction of the Yangtze River artery, we will design a comprehensive transportation system to ease the bottleneck of the Three Gorges Project and accelerate the construction of high-speed railway and freight railway along the Yangtze River. We will give full play to the overall advantages of industrial coordination and connectivity to build a green industrial system, and make every effort to protect the cultural relics and heritage of the Yangtze River.

III. Guangdong-Hong Kong-Macao Greater Bay Area

We will strengthen collaborative development among enterprises, universities, and research institutions in Guangdong, Hong Kong, and Macao, improve the framework system consisting of "two corridors" (Guangzhou-Shenzhen-Hong Kong and Guangzhou-Zhuhai-Macao) and "two pivots" (Shenzhen-Hong Kong Science and Technology Innovation Cooperation Zone in Hetao and Guangdong-Macao Cooperation Area in Hengqin) for science and technology innovation, to promote the development of comprehensive national science centers and facilitate the cross-border flow of innovation factors. We will accelerate the construction of intercity railways, coordinate the functional layout of ports and airports, and optimize the allocation of shipping and aviation resources. We will deepen the reform of customs clearance models, and promote the convenient and efficient flow of personnel, goods, and vehicles. We will expand the scope of professional qualifications of mutual recognition between the Mainland and Hong Kong and Macao, and further promote the convergence of rules and mechanisms in key areas. We will facilitate the youth from Hong Kong and Macao to study, work, and start business in Mainland cities of the Greater Bay Area (GBA), and create top-notch youth exchange brands among Guangdong, Hong Kong, and Macao.

Figure 5. Guangdong-Hong Kong-Macao Greater Bay Area rail transit plan map

IV. Integrated development in the Yangtze River Delta

With the aim to build internationally advanced scientific and technological innovation capacity and an industrial system, we will accelerate the development of the G60 Science and Technology Innovation Corridor and the industrial innovation belt along Shanghai and Nanjing in the Yangtze River Delta, to improve the Yangtze River Delta's capacity of allocating global resources and driving national development. We will accelerate infrastructure interconnection, achieve full coverage of high-speed rail in the cities at the prefecture level and above in the Yangtze River Delta and promote the integrated governance of port clusters. We will develop the Hongqiao International Airport as an opening hub, strengthen the role of Lingang New Area of the Shanghai Pilot Free Trade Zone (FTZ) in intensive development of an open economy, and deepen the joint development of the pilot FTZs in Shanghai, Jiangsu, Zhejiang, and Anhui. We will accelerate the sharing of public services and optimize the distribution of high-quality education and healthcare resources. We will promote the joint protection and governance of the ecological environment and build a high-level demonstration zone for integrated ecological and green development in the Yangtze River Delta.

Figure 6. Yangtze River Delta rail transit plan map

V. Ecological protection and quality-oriented development in the Yellow River Basin

We will intensify the protection and restoration of key ecosystems in the upper reaches of the Yellow River, take appropriate steps to protect Sanjiangyuan (Source of Yangtze, Yellow, and Lancang rivers) as "China's Water Tower", and enhance the water conservation capacity of Gannan, Ruoergai (Zoige), and other areas. We will seek new methods for addressing soil erosion in the middle reaches of the river in the Loess Plateau, and actively carry out comprehensive management of small watersheds, and construction of dry land terraces and silt dams. In the lower reaches, we will advance efforts to comprehensively address secondary suspended rivers and floodplains, and strengthen the protection and restoration of wetlands in the Yellow River Delta. We will tackle agricultural pollution from non-point sources in the Fen-Wei Plains and Hetao Irrigation Area, check up and rectify industrial enterprises along the Yellow River shoreline, and strengthen the construction of urban sewage treatment facilities and supporting pipe networks along the Yellow River. We will implement intensive water conservation and control initiatives to reduce the intensity of water resource development and utilization, rationally control the intensity of coal development, and promote integrated development and utilization of energy resources and the ecological restoration of mines. We will improve the development pattern of central cities and city clusters, and coordinate the development of counties and villages along the Yellow River. We will also implement systematic conservation projects related to the Yellow River cultural heritage, create an internationally influential Yellow River cultural tourism belt, and build a pilot area for ecological protection and high-quality development in the Yellow River Basin.

Chapter 32 Coordinated Regional Development Strategies

The focus of coordinated regional development is on relative balance and coordination. Development efforts in the western region will be in full swing. Revitalization of the northeast remains an ongoing process. The central region is expected to witness a new takeoff. The

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eastern region will lead the charge. Development support will be provided to areas with special features.

I. A new stage of development in the western region

We will intensify efforts and implement more targeted and effective policies to promote large-scale development in the western region. We will implement several major ecological projects in key areas, actively integrate the regional development into the pursuit of the Belt and Road Initiative, strengthen the development of the large opening-up corridors, and build multi-level platforms for opening up interior areas. We will increase investment in infrastructure construction in the western region, support the development of competitive industries that take advantage of local strengths, pool efforts to consolidate the achievements of poverty alleviation, and shore up the weaknesses in the fields of education, health care, and people's livelihood. We will promote the development of Chengdu-Chongqing economic circle and make it an economic center, a center for science and technology innovation, a new highland of reform and opening-up, and a livable place for high-quality life of national influence. We will upgrade the city clusters in the Central Shaanxi Plain to promote cooperation and interaction between the northwest and southwest regions. We will support Xinjiang in building "three bases and one corridor" (national bases for large-scale oil and gas production and storage, for coal production, thermal power generation and coal chemical industry, and for wind power generation, as well as the national energy and resources corridor) and we will support Tibet in building an important corridor that opens to South Asia. We will promote the protection and development of the areas west of the 400 mm precipitation line.

II. Revitalization of northeast China

From the strategic perspective of safeguarding national defense, food, ecology, energy, and industrial security, we will strengthen efforts to coordinate policies to achieve breakthroughs in prioritized areas. We will quicken our pace in shifting government functions, deepen reform of state-owned enterprises, step up efforts to improve the business environment, and vigorously develop the private economy. We will build Liaoning Coastal Economic Belt and Changchun-Jilin-Tumen Development and Opening-up Pilot Zone and improve Harbin's cooperation with and opening-up to Russia. We will accelerate the development of modern agriculture and make it a "ballast" to ensure national food security. We will intensify the protection of ecological resources and build a strong ecological security shield in northern China. We will transform and upgrade traditionally competitive industries such as equipment manufacturing, foster and develop emerging industries, vigorously develop characteristic industries including ice and snow and eco-tourism in cold regions, and build an internationally influential ice and snow tourism belt, so as to develop a new industrial structure for balanced development and competitive advantages. We will implement measures more attractive to talents, and deepen paired cooperation with the eastern region.

III. The rise of the central region

We will step up efforts to build important and advanced manufacturing bases, improve the ability of independent innovation in key areas, build a highland for opening-up of interior areas, consolidate the ecological and green development model, and promote the rapid growth of central China. We will strive for bigger and stronger advanced manufacturing, build mid-to-high-end industrial clusters along the Yangtze River and along the Beijing-Guangzhou, Lanzhou-Lianyungang, and Beijing-Kowloon railway lines, and actively undertake the deployment and transfer of emerging industries. We will promote the coordinated development of city clusters in the middle reaches of the Yangtze River, accelerate the development of Wuhan and Changsha-Zhuzhou-Xiangtan metropolitan areas, and make them important growth poles in China. We will build up the foundation for grain production, keep up efforts to improve the comprehensive benefits and competitiveness of agriculture, and accelerate the development of modern agriculture. We will enhance joint protection and governance of the ecosystem and environment and strive to build protective barriers for eco-security. We will support the inter-connected development of the upper and lower reaches of the Huaihe River and Hanjiang River ecological economic belts, accelerate the construction of corridors for opening-up, and build high-level platforms for opening up interior areas. We will improve public service support, and especially the ability to respond to public health and other major emergencies.

IV. Accelerated pace of modernization in the eastern region

We will give full play to the advantages of the eastern region in bringing together innovative factors, help the region to make faster breakthroughs in innovation, and push the region to take the lead in achieving high-quality development. We will move faster to foster world-class advanced manufacturing clusters, spearhead the development of emerging industries and modern service sectors, improve the output efficiency of production factors, and take the lead in upgrading industries. We will ensure the region can participate in international economic cooperation and competition at a higher level, create new advantages in opening-up, and take the lead in establishing a system for an all-round open economy. We will support Shenzhen to build a leading demonstration zone of socialism with Chinese characteristics, Pudong to build a leading zone of socialist modernization, and Zhejiang to build a demonstration zone of common prosperity and high-quality development. We will further promote the development of the comprehensive pilot zone to replace the old growth drivers in Shandong Province.

V. Support for development in areas with special features

We will coordinate and promote the revitalization of the old revolutionary base areas, develop characteristic industries according to local conditions, inherit and carry forward the "red" culture, support the demonstration of high-quality development in the former Central Soviet Area of Jiangxi, Fujian, and Guangdong, and promote the green innovation and development of the old revolutionary base areas of Shaanxi-Gansu-Ningxia, Dabie Mountains, Zuoyoujiang, Sichuan-Shaanxi, Yimeng, etc. We will comprehensively address ecologically degraded areas, protect and restore ecologically fragile areas, and support the development of the Bijie pilot area. We will promote the development of demonstration areas for sustainable development and pilot zones for transformation and innovation in resource-based areas, comprehensively address subsidence in coal mining areas, and implement projects to upgrade independent industrial and mining areas. We will reshape the competitive advantages of manufacturing in the old industrial bases and build demonstration areas for industrial transformation and upgrade. We will improve the infrastructure of state-owned forest farms and forest regions and implement multiple measures to solve production and living difficulties faced by the people living in high altitude areas. We will vigorously boost development in border areas, improve the living standards and maintain stability and security in the region; to this end, we will improve the conditions for production and living in border areas and the urban system along the borders, support the construction of border ports, and accelerate the construction of villages and towns on the border and roads leading to border areas. We will promote innovative development of the border trade and increase targeted support for the development of key border areas.

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VI. Coordinated regional development

We will establish and improve mechanisms for regional strategic planning, market-based integrated development, regional cooperation and mutual assistance, and interregional interest compensation, to better boost the common growth of developed and underdeveloped regions, eastern, central, and western regions, and the northeast of the country. We will raise the level and standards of regional cooperation, and support the provincial border areas to establish new cooperation mechanisms characterized by unified planning and management, co-construction, and benefit sharing. We will improve the mechanism of financial transfer payments to support underdeveloped areas, gradually realize equal access to basic public services, and guide talent flow to the western regions and the border and remote areas facing hardships. We will improve the regional cooperation and benefit adjustment mechanism, support various forms of benefit compensation between the upper and lower reaches of the river basins, the main grain producing and marketing areas, and the resource exporting and importing areas, and encourage the exploration of benefit sharing models via co-construction parks and enclave economy. We will foster a strong sense of community for the Chinese nation, increase support for the development of areas with concentrations of ethnic minorities, and carry out comprehensive, in-depth, and sustained publicity and education on ethnic unity and progress, to promote exchanges and interaction among all ethnic groups.

Chapter 33 Development of the Marine Economy

Coordinated development is the key. Coordination is required for activities on land and at sea to protect the health and integrity of marine ecosystems and the harmony between people and the sea while developing the marine economy. International cooperation is important in the search for win-win solutions. We will not falter in our efforts to protect our maritime rights and interests, and to build China into a strong maritime country.

I. Development of marine industries

We will make several breakthroughs in core technologies related to marine engineering, marine resources, and marine environment. We will foster and expand marine engineering equipment and marine biomedical industry, promote seawater desalination and large-scale utilization of marine energy, and enhance the development of marine cultural tourism. We will optimize the distribution of green aquaculture in coastal areas, build marine pastures, and develop sustainable pelagic fisheries. We will build several demonstration zones for high-quality development of marine economy and characteristic marine industrial clusters, and comprehensively boost the development of the three major marine economic circles in the north, east, and south. We will deepen sea-related cooperation with neighboring countries based on coastal economic belts.

II. Sustainability of marine ecosystems and habitats

We will explore the establishment of a coordinated system for comprehensive management that covers coastal areas, river basins, and sea areas. We will impose stricter management and control on sea reclamation, and step up comprehensive management of coastal zones and coastal wetland protection. We will expand the control range of total discharge volume of pollutants into the sea to ensure good water quality of the sections of the rivers flowing into the sea. We will accelerate comprehensive treatment of key sea areas, build a mechanism for coordinated pollution prevention and control of river basins, estuaries, and coastal waters, and promote the protection and construction of beautiful bays. We will guard against major environmental risks such as oil spills and hazardous chemical leakage and improve our ability to cope with maritime natural disasters and environmental emergencies. We will improve the systems for coastline protection and paid use of sea areas and uninhabited islands, and explore the regulation of the retraction line of coastal buildings and compensation for damages to marine ecosystem and environment, to ensure the natural coastline retention rate is no less than 35%.

III. Participation in global marine governance

We will actively develop the blue partnership, fully participate in the formulation and implementation of mechanisms and rules for international maritime governance, and promote the building of a just and equitable international maritime order and development of a marine community with a shared future. We will increase practical cooperation with coastal countries in the fields of marine environmental monitoring and protection, scientific research and maritime search and rescue, and intensify the investigation and evaluation of deep-sea strategic resources and biodiversity. We will join in practical cooperation in the Arctic and build the "Silk Road on Ice". We will enhance our ability to participate in the Antarctic conservation and utilization. We will step up efforts to study and evaluate situations, prevent risks, and handle legal issues, and strengthen maritime judicial system building, to resolutely safeguard China's maritime rights and interests and promote the formulation of the basic marine law in an orderly manner.

Part X Socialist Cultural Development and China's Soft Power

Marxism guides all activities in our ideological space. Reflecting confidence in our culture, cultural development informed by our core socialist values promotes moral ideals, forges cohesion, helps the younger generation grow and thrive, enriches tradition, and shapes our national image. It helps meet the people's cultural needs and provides emotional support. It is therefore essential to enhance socialist cultural development.

Chapter 34 Ethical Behavior

Efforts will be ongoing to promote ethical standards informed by core socialist values in response to the needs in the new era. Character development is especially relevant in this respect to foster a positive ethos, civility, and ethical behavior.

I. Moral education as a regular activity

We will strengthen efforts to carry out education in Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and improve the work system of arming the whole Party and educating people with the Party's innovation theory. We will establish and improve the system and long-term mechanism of "remaining true to our original intention and keeping our mission firmly in mind", strengthen and improve our ideological and political work, continue the publicity and education on socialism with Chinese characteristics and the Chinese

Dream, intensify education on the history of the Party, the history of new China, the history of reform and opening-up, and the history of socialist development, as well as the education on patriotism, collectivism, and socialism. We will strengthen research, interpretation, publicity, and education on revolutionary heritage and carry forward the great spirit of the Party and the people that was formed during various historical struggles. We will improve the legal and policy system for promoting the socialist core values, incorporate the requirements of the socialist core values into the improvement of the rule of law and social governance, and embody them in the whole process of national education, improvement of public civility, as well as the creation and production of cultural products. We will improve the mechanism for coordination and cooperation in the education of young people on ideals and convictions.

II. Philosophical studies and social sciences with Chinese characteristics

We will strengthen comprehensive and systematic research, publication, dissemination, publicity, and interpretation of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, and work to adapt Marxism to China's conditions, keep it up-to-date, and enhance its popular appeal. We will carry out the Marxist Theory Research and Development Project, build centers (institutions) for the study of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the theories of Socialism with Chinese Characteristics, and establish and make good use of learning platforms such as "xuexi.cn". We will build a discipline system, academic system, and discourse system of philosophy and social sciences with Chinese characteristics, further implement philosophy and social science innovation projects, and step up efforts to build new think tanks with Chinese characteristics.

III. Building on fine traditional Chinese culture

We will implement programs to carry on the best of Chinese cultural traditions and heritage, improve the systematic protection of important cultural and natural heritage and intangible cultural heritage, and promote the creative conversion and development of fine traditional Chinese culture. We will strengthen scientific and technological innovation related to cultural relics, implement projects that explore the origin of Chinese civilization and archaeology in China, carry out general surveys of Chinese cultural resources, strengthen the conservation, research, and utilization of cultural relics and ancient books, promote the protection of revolutionary cultural relics and "red" sites, and improve the system of recourse and retrieval of lost cultural relics. We will build national cultural parks themed on the Great Wall, the Grand Canal, the Long March, the Yellow River, and so on, and better conserve world cultural heritage, cultural relics protection units, archaeological site parks, as well as China's renowned historic and cultural cities, towns, and villages. We will improve the system for conservation and inheritance of intangible cultural heritage and better protect and inherit the excellent traditional handicrafts of all ethnic groups.

IV. Ethical values and civility

We will advance civic morality and vigorously promote social morality, professional ethics, family values, and integrity of individuals. We will publicize and learn from the winners of national medals and national honorary titles, models of the times, models of high morality, the most beautiful people, and good people around us. We will implement initiatives to improve public etiquette and ethical standards, build more Chinese cultural centers in the new era, do a good job in the election and commendation of exemplary cities, villages, towns, entities, campuses, and families in a sound and standardized manner, and further raise the intellectual and moral standards of children and the youth. We will improve social norms including civic conventions, village regulations and agreements, student rules and regulations, as well as provisions of organizations, and establish a mechanism for punishing immoral behavior. We will promote the culture of integrity throughout the society; extensively carry out volunteer services campaigns to help those in need; encourage hard work, diligence, and frugality; and carry out publicity and education on the theme of creating happiness through work. We will also improve ethical standards and advance civility in cyberspace and develop a positive and healthy cyberspace culture.

Chapter 35 Public Cultural Services

Culture should serve the needs of the people and contribute to the socialist cause. Through cultural activities, we "let a hundred flowers bloom and a hundred schools of thought contend". Public cultural services and the institutional framework for these services should be strengthened in an innovative manner to better protect the people's cultural rights and interests, help disseminate Chinese cultural products, and facilitate cultural exchanges.

I. Creation, production, and dissemination of quality cultural products

We will take quality improvement as the lifeline of literary and artistic works and improve our ability to create original literature and arts. To this end we will carry out projects to improve the quality of literary and artistic works, improve the planning and organization mechanism for the creation of works on major realistic, revolutionary, and historical themes, strengthen the creation of works on rural and children's themes, and continue to launch high-quality literary and artistic works that reflect the new ethos of the times and eulogize the innovation and creativity of the people. We will establish and improve the incentive mechanism and evaluation system for the conception, production, dissemination, guidance, and promotion of cultural products, and promote the formation of a healthy and clean literary and artistic ecosystem. We will strengthen the building of cultural teams, and train high-level creative talents, and promote eminent figures of moral integrity and outstanding artistic competence.

II. Public cultural services

We will optimize the allocation of urban and rural cultural resources, and promote integrated development of urban and rural public cultural services. We will launch new public cultural projects, improve the functions of community-level multipurpose cultural service centers, and extensively carry out mass cultural activities. We will promote the free admission and digital development of public libraries, cultural centers, art galleries, museums, and other public cultural venues. We will boost the in-depth integration of media and improve new mainstream media. We will improve the emergency broadcast system and implement projects to enhance the functions of smart radio and television in maintaining social order in the border and rural areas. We will develop archiving systems, further promote nationwide reading to build China into a nation of avid readers, and upgrade film screening facilities in rural areas. We will develop new operation mechanisms for public cultural services and encourage social forces to participate in the supply of public cultural services and the construction and operation of relevant facilities.

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III. International appeal of Chinese culture

We will strengthen cultural exchanges with foreign countries and multi-level dialogue with global civilizations, innovate and promote international communication to share China's stories, spread China's voice, and promote people-to-people connectivity through both online and offline channels. We will carry out activities such as "Reading China", "Journey around China", and "See and Hear China", and make every effort to hold the Chinese Culture Year (Festival) and China Tourism Year (Festival). We will establish platforms for Chinese language communication and develop a global communication system for Chinese language and culture and an international standard system for Chinese language education.

Chapter 36 Cultural Industries

Social benefits are always the top consideration. Pursuit of economic returns should be aligned with the delivery of social benefits, a requirement that underpins the development of cultural industries and markets.

I. The supply of high-quality cultural products

We will implement the strategy of digitizing cultural industries, accelerate the development of new types of cultural enterprises, forms of cultural business, and modes of cultural consumption, and strengthen digital creativity, online audio-video, digital publishing, digital entertainment, and online broadcasting industries. We will step up efforts to improve the production and broadcasting capacity of ultra-high-definition TV programs, upgrade TV channels for high-definition broadcasting and promote the application of immersive video and cloud broadcasting. We will implement cultural branding strategies and create influential and representative cultural brands, develop leading cultural enterprises, standardize the development of cultural industrial parks, and promote the construction of regional cultural industrial belts. We will vigorously develop foreign cultural trade, open up overseas cultural markets, encourage excellent traditional cultural products and digital cultural products such as films, TV dramas, and games to "go global", and strengthen the construction of national cultural export bases.

II. Integrated development of culture and tourism

We will offer a unique Chinese cultural tourism experience by shaping tourism through culture and highlighting culture through tourism. We will further develop mass tourism and smart tourism, innovate tourism products, and offer better tourism consumption experience. We will strengthen the integration of regional tourism brands and services and build world-class tourist attractions and resorts with rich cultural connotations as well as national tourism and leisure cities and blocks with distinctive cultural characteristics. We will promote the innovative development of "red" tourism, cultural heritage tourism, and tourism performance, improve the quality of services for holiday recreation and rural tourism, and adopt better policies for the development of cruises, yachts, and low-altitude tourism. We will improve the tourism infrastructure and distribution system, promote a revolution of public toilets in tourist attractions, and construct smart scenic spots. We will establish a system for evaluating the quality of tourism services, and regulate online tourism business services.

III. Reforms in the cultural sector

We will improve the cultural management system and the mechanism of cultural production and operation, as well as the efficiency of cultural governance. We will improve the institutions and mechanisms for managing state-owned cultural assets, deepen reforms of cultural institutions for public benefit, and promote the reform of public cultural institutions' corporate governance structure. We will advance the reform of different types of state-owned cultural enterprises, and promote the reform of state-owned literature and art troupes, as well as cinema reform. We will improve the system of comprehensive law enforcement in cultural markets and formulate laws and regulations for protection of minors when it comes to Internet, online information communication and transmission and other fields.

Part XI Green Development and Harmonious Co-existence between Humanity and Nature

We will stay true to the principle that lucid waters and lush mountains are invaluable assets by respecting nature, conforming to nature, and protecting nature. We will prioritize conservation, protection, and natural recovery, implement the sustainable development strategy, improve the overall coordination mechanism in the field of ecological civilization, build an ecological civilization system, and promote comprehensive transformation towards green economic and social development to build a beautiful China.

Chapter 37 Improving the Ecosystem

We will continue the systematic governance of mountains, rivers, forests, farmland, lakes, and grassland, strive to improve the self-rehabilitation ability and stability of ecosystems, make sure that the red line of ecological security is not crossed, and improve the overall quality of natural ecosystems.

I. Improving the eco-security shield system

We will strengthen the planning of territorial space and control over its use, draw red lines for ecological protection, boundary lines for permanent basic cropland and land for urban development, and protection lines for all types of sea areas, and ensure that these lines are not crossed. Focusing on the national key ecological areas and red lines for ecological protection, national nature reserves, etc., we will implement major projects for the protection and restoration of important ecosystems, and accelerate the construction of protective barriers for eco-security in the Qinghai-Tibet Plateau, the important ecological areas along the Yellow River and the Yangtze River, the northeast forest belts, the sand control belts in the north, the hilly and mountainous areas in the south, and the coastal zones. We will strengthen ecological protection and governance of the Yangtze River, the Yellow River, and other major rivers, as well as important lakes and wetlands, and put more efforts towards building and protecting important ecological corridors. We will comprehensively strengthen the protection of natural forests and wetlands and increase the wetland protection rate to 55%. We will make solid efforts to comprehensively control soil erosion, desertification, and stony desertification, carry out large-scale land afforestation, and introduce the forest-chief system. We will carry out weather modification initiatives based on science; promote the rehabilitation of grasslands, forests,

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rivers, and lakes; improve the rotation and fallow system of cultivated land; and consolidate the achievements of converting cropland to forests and grasslands, converting farmland to lakes and wetlands and embankments into part of beaches and seas.

Figure 7. Layout of major ecosystem protection and restoration projects

II. The nature reserve system

We will appropriately delimit the scope and functional zones of nature reserves, accelerate their integration and optimization, and build a nature reserve system with national parks as the mainstay, nature reserves as the basis, and nature parks as the supplement. We will strictly control non-ecological activities within nature reserves, and steadily promote the orderly withdrawal of residents, cultivated land, and mining rights from the core areas. We will improve the management institutions and operation mechanisms of national parks and integrate and set up several national parks. We will implement major biodiversity conservation projects, build a biodiversity conservation network, strengthen the protection and restoration of species on the national key list of protected wild plants and animals and rare and endangered wildlife as well as their habitats, and intensify the control of alien species. We will improve policies on land and sea use for ecological protection and restoration as well as the regulatory system of nature reserves and ecological protection red lines, and monitor and evaluate the effectiveness of ecosystem protection.

III. The mechanism of compensation for ecological conservation

We will increase transfer payments to key ecological areas, source areas of important rivers, and nature reserves, and encourage horizontal ecological compensation between benefited areas and protected areas, and between the upper and lower reaches of river basins through various forms including financial compensation and business-driven development support. We will improve market-oriented and diversified ecological compensation and encourage all kinds of private capital to participate in ecological conservation and restoration. We will improve the ecological compensation system for forests, grasslands, and wetlands. We will promote the establishment of a basin-wide ecological compensation mechanism along the Yangtze River, the Yellow River, and other important rivers. We will establish a mechanism to realize the value of ecological products, carry out pilot projects in the Yangtze River Basin and Sanjiangyuan National Park, and formulate and implement regulations on compensation for ecological conservation.

Chapter 38 Continuous Environmental Improvement

We will increase efforts to prevent and control pollution, establish and improve the environmental governance system, promote accurate, scientific, law-based and systematic pollution control, work together to reduce pollution and carbon emissions, consistently improve air and water environment quality, and effectively control soil pollution risk.

I. Furthering pollution prevention and control

We will continue to prevent and control pollutants at sources, and adopt a comprehensive approach to strengthen coordinated control of multiple pollutants and coordinated treatment among regions. We will improve the management for meeting required air quality standards in urban areas, promote coordinated control of fine particulate matter (PM2.5) and ozone (O3), reduce the PM2.5 concentration in cities at and above the prefectural level by 10%, effectively curb the increase in O3 concentration, and basically eliminate heavy air pollution. We will continue to improve the air quality in Beijing-Tianjin-Hebei region and its surrounding areas, as well as Fen-Wei Plains and Yangtze River Delta; promote clean heating in northern China based on local conditions, promote industrial furnace treatment and transformation of non-electric industries towards ultra-low emission, and accelerate the comprehensive treatment of volatile organic compound (VOCs) emissions, with the total emissions of nitrogen oxides (NOx) and VOCs reduced by more than 10%. We will improve the coordination mechanism for water pollution prevention and control in river basins, intensify the comprehensive treatment of key river basins, key lakes, urban water bodies, and offshore areas, promote the protection and construction of beautiful rivers and lakes by reducing the total chemical oxygen demand (COD) and ammonia nitrogen emissions by 8%, and basically eliminate substandard Grade V surface water sections controlled at the national level and urban black and malodorous water bodies. We will carry out standardized construction of sources of urban drinking water, and promote the relocation and transformation of heavy pollution enterprises in key river basins. We will promote the control and restoration of contaminated land for farming and for construction, and implement coordinated prevention and control of water and soil environmental risks. We will improve the prevention and control against plastic pollution throughout the chain, better control environmental noise pollution, and at the same time, attach importance to the treatment of new pollutants.

II. Comprehensive improvement of environmental infrastructure

We will build a system of environmental infrastructure that integrates sewage, garbage, solid waste, hazardous waste, and medical waste treatment and disposal facilities and monitoring and supervising capabilities, and form an environmental infrastructure network extending from cities to towns and villages. We will promote complete coverage of the urban sewage pipe network, carry out differential and accurate upgrade of sewage treatment, and promote centralized incineration of sludge for harmless treatment, so that the 90% of urban sludge is harmlessly treated and over 25% of sewage is recycled in water-deficient cities at the prefecture level and above. We will set up a household waste treatment system with separate dumping, collection, transportation, and treatment of different types of waste based on waste sorting. We will deploy facilities for centralized recycling and disposal of hazardous waste with emphasis put on major industrial bases. We will accelerate the construction of centralized treatment facilities for medical waste in cities that are at and above the prefecture level, and improve the system for collection, transportation, and disposal of medical waste in counties.

III. Environmental risk prevention and controls

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We will establish and improve the mechanism for evaluation and early warning of and emergency response to key risk sources. We will comprehensively rectify illegal stockpiling of solid waste and improve the regulation and risk prevention capabilities for hazardous waste. We will strengthen the monitoring and early warning of heavy metal pollution in key areas and industries. We will improve the system for managing environmental risks from toxic and hazardous chemicals and complete the relocation and transformation of hazardous chemical production enterprises in key areas. We will rigorously supervise nuclear and radiation safety and promote the prevention and control of radioactive pollution. In terms of ecological and environmental emergencies, we will establish a post-event assessment mechanism and a public health impact assessment system. In high-risk sectors, we will promote compulsory environmental pollution liability insurance.

V. Coping with climate change

We will make sustained efforts to achieve the objectives of China's Intended Nationally Determined Contributions 2030 and formulate an action plan to reach the peak of carbon emissions by 2030. We will improve the double control system of total energy consumption and intensity with a focus put on controlling fossil energy consumption. We will implement a system that focuses on carbon intensity control supplemented by total carbon emission control, and support the key industries and enterprises in the places where conditions permit to take the lead in reaching the peak of carbon emissions. We will promote clean, low-carbon, safe and efficient use of energy, and further promote the transformation of industries, construction, transportation, and other sectors towards low-carbon development. We will increase efforts to control methane, hydrofluorocarbons, perfluorocarbons, and other greenhouse gases, increase the carbon sink capacity of ecosystems, and anchor efforts to achieve carbon neutrality by 2060 by adopting even more robust policies and measures. We will intensify the observation and assessment of the impact of global warming on vulnerable areas in China, and enhance the capacity of urban and rural construction, agricultural production, and infrastructure, to adapt to climate change. We will exert more efforts on comprehensive scientific research on the Qinghai-Tibet Plateau. On the basis of equity and in accordance with the common but differentiated responsibilities and respective capabilities of all countries, we will play a constructive role and lead international cooperation in responding to climate change, promote the implementation of the United Nations Framework Convention on Climate Change and its Paris Agreement, and actively carry out South-South cooperation on climate change.

V. Modern environmental governance system

We will establish a system for coordinated above-ground and underground ecological and environmental governance on land and at sea. We will implement the emission permit system across the board, ensure that emission permits cover all fixed pollution sources, ensure industrial polluters comply with emission standards within a specified time limit, and facilitate market-based trading of emission rights, energy consumption rights, water use rights, and carbon emission rights. We will improve the management of obligatory targets for environmental protection, energy conservation, and emission reduction, improve the management and protection mechanism of rivers and lakes, and strengthen the river-chief and lake-chief system. We will strengthen audit of natural resource assets at the end of the tenure of leading officials. We will improve the central supervision system for ecological environment protection, as well as the vertical management system for monitoring, supervision, and law enforcement of eco-environmental institutions that are at and below the provincial level, promote the reform of comprehensive law enforcement with respect to eco-environmental protection, and improve the system of eco-environmental public interest litigation. We will increase environmental protection information publicity, step up efforts to build up the environmental governance corporate responsibility system, and improve the mechanisms for public supervision and feedback on complaints, to guide non-governmental organizations and the public to participate in environmental governance. (To be continued)

(Note: PM2.5 refers to PM2.5 and O3 refers to O3)

Chapter 39 Faster Transformation for Green Development

We will prioritize the ecology and pursue green development, promote overall resource management, scientific allocation, comprehensive conservation, and recycling, and coordinate efforts to drive high-quality economic development and high-level ecological environment protection.

I. Higher resource utilization efficiency

We will prioritize and pursue the policy of energy conservation to improve energy conservation in industry, construction, transportation, and public institutions; raise energy use efficiency in emerging fields such as 5G and big data centers; strengthen energy-saving management of key energy users; implement energy system optimization and energy-saving technology transformation and other key projects; and accelerate the formulation and revision of mandatory national standards for energy consumption quota and energy efficiency of products and equipment. By implementing a national water-saving initiative, establishing a rigid constraint system for water resources, strengthening agricultural water conservation for greater use efficiency, industrial water conservation, emission reduction, urban water conservation, and loss reduction, and encouraging the use of recycled water, we will reduce water consumption per unit of GDP by about 16%. We will pursue more economical and intensive use of land, increase efforts to handle the unused and idle land, put inefficiently used land in cities and towns to good use, support the recovery and utilization of abandoned industrial and mining land, improve the policies to support composite use and multi-dimensional development of land, and control the increase of land designated for construction by less than 1.97 million hectares, to drive the steady decline of construction land use area per unit GDP. We will enhance the development and protection of mineral resources, develop green mining, and build green mines.

II. The resource recycling system

We will comprehensively implement the concept of a circular economy and build a multi-tiered system for efficient resource recycling. We will further promote the transformation of industrial parks towards recycling, improve and extend the industrial chain, and boost the graded utilization of energy and resources, waste recycling, and concentrated disposal of pollutants. We will strengthen the comprehensive utilization of bulk solid waste and standardize the development of remanufacturing industry. We will accelerate the development of circular agriculture that organically combines planting and breeding, enhance the planning and construction of waste recycling facilities, and improve the urban waste recycling and sorting system. We will put in practice "reverse recovery" and other measures for production enterprises, and establish and improve an online-offline integrated resource recovery system where the flow of resources can be controlled. We will expand the coverage of the system for extending producers' responsibilities; and drive the minimization, standardization, and recycling of delivery packaging.

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III. Vigorously developing green economy

We will resolutely curb blind development of high energy consumption and high emission projects, and boost transformation towards green development, to achieve positive growth. We will expand the industries covering energy conservation and environmental protection, clean production, clean energy, ecological environment, infrastructure upgrade towards eco-friendliness, and green services, and promote service models such as contract-based energy management, contract-based water conservation, and the third-party treatment of environmental pollution. We will drive the clean and efficient use of fossil fuels such as coal, promote the transformation of industries such as iron and steel, petrochemical, and building materials towards green development, and accelerate the shift in the transportation of bulk goods and medium and long-distance freight transportation, from highways to railways and waterways. We will boost the electrification of urban public transit and logistics distribution vehicles. We will build a system for market-oriented innovation in green technology, implement initiatives to make breakthroughs in green technology innovation, and carry out benchmarking campaigns to improve the resource use efficiency of key industries and key products. We will establish a unified set of standards for the green product certification and identification system, improve the mechanism for promotion of energy-saving household appliances, efficient lighting products, and water-saving appliances and intensify efforts to promote green living.

IV. A policy system for green development

We will enhance the law and policy support for green development, and implement tax policies conducive to energy conservation, environmental protection, and comprehensive utilization of resources. We will vigorously develop green finance; improve the system of paid use of natural resources; and innovate and improve pricing mechanisms in the fields of natural resources, sewage and garbage treatment, and water and energy use. We will strengthen energy-saving review and supervision over fixed asset investment projects and promote reform of the management system for key energy users, improve the "pacesetter" system for energy and water efficiency, and intensify the water quota management in high water consumption industries. We will further develop ecological civilization experimental sites, and further promote the construction of a national pilot area of comprehensive reform for the transformation of resource-based economy in Shanxi and the pilot project for the comprehensive reform of the energy revolution.

Part XII Further Opening-up for Win-Win Cooperation

We will continue to open up more sectors, increase the breadth and depth of opening-up, leverage the ultra-large-scale domestic market to promote international cooperation for mutual benefit and win-win outcome, and advance the stable and sustained joint pursuit of the Belt and Road Initiative and the co-building of a community with a shared future for mankind.

Chapter 40 A New Open Economy System

We will comprehensively improve the level of opening to the outside world, promote liberalization and facilitation of trade and investment, continue to deepen opening-up based on the flow of goods and production factors, and steadily expand institutional opening-up based on rules, regulations, management, and standards.

I. Accelerating institutional opening-up

We will build an institutional system and supervision model in line with the general practice of international trade. We will improve the management system for pre-access national treatment plus a negative list, further shorten the negative list for foreign investment, and implement post-access national treatment, to promote fair competition between domestic and foreign-funded enterprises. We will establish and improve the negative list management system for cross-border trade in services and improve the technology trade promotion system. We will steadily promote the opening of banking, securities, insurance, funds, futures, and other financial sectors, deepen the interconnection of domestic and foreign capital markets, and improve the system of qualified foreign investors. We will steadily promote the internationalization of RMB in a prudent manner, adhere to market-driven operation and independent choice of enterprises, and create a new type of mutually beneficial cooperative relationship based on the free use of RMB. We will improve the management of entry-exit, customs, foreign exchange, tax revenue, and other regulations and services.

II. Upgrading the opening-up platforms

We will promote the development of various open platforms across the board and create a new highland of opening-up with a higher level of opening, better business environment, and stronger impact. We will improve the structure of pilot free trade zones, grant them greater decision making power for reforms, further explore innovative, integrated, and differentiated reform, and proactively replicate and promote the results of institutional innovation. We will steadily promote the development of Hainan Free Trade Port, and liberalize and facilitate trade in the direction of "zero tariff" for trade in goods and "allow firms in and let them do business" for trade in services. We will greatly ease market access; comprehensively implement the minimum approval investment administration system; carry out pilot projects for reforms in cross-border securities investment and financing and security management of cross-border data transmission; adopt more open polices for talents, entry-exit, and transportation; formulate and promulgate Hainan Free Trade Port law; and basically establish policies and systems of free trade ports with Chinese characteristics. We will make innovations to upgrade state-level new areas and development zones, promote high-standard opening-up of comprehensive bonded zones, improve the functions of key pilot zones for development and opening-up along border areas, border economic cooperation zones, and cross-border economic cooperation zones, and support the efforts of Ningxia, Guizhou, and Jiangxi in developing inland opening-up pilot economic zones.

III. Improving the regional opening-up structure

We will encourage all regions to expand opening-up to the outside world based on their comparative advantages; boost inter-regional connectivity in opening-up; and bring about a new pattern of all-round two-way opening-up with links running eastward and westward over land and sea. We will consolidate the leading position of the eastern coastal areas and mega cities in opening-up, so that they can

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take the lead in promoting all-round and high-standard opening-up. We will accelerate the pace of opening-up in the central and western regions and the northeast, support them to undertake domestic and foreign industrial transfer, foster major global processing and manufacturing bases and new growth poles, and consider the establishment of national first-class ports in inland areas, to fuel the development of inland areas and push them to the forefront of opening-up. We will promote high-quality border development and opening-up, accelerate the innovative development of border trade and give better play to the role of key ports and border cities as links between domestic and foreign areas. We will support Guangxi in developing itself into a highland of opening-up and cooperation with ASEAN, and Yunnan into a center of opening-up towards South and Southeast Asia and the Indian Ocean Rim.

IV. Improving the opening-up security system

We will build a regulatory and risk resistance system in line with a higher standard of openness, properly cope with economic and trade frictions by improving the early warning system for industrial damage, and enrich policy instruments covering trade adjustment assistance and trade relief. We will improve the foreign investment national security review system, anti-monopoly review system, national technical security list management, and unreliable entity list. We will establish an early warning system for global supply chain risk for important resources and products and strengthen cooperation in international supply chain support. We will intensify the monitoring of the international balance of payments to maintain its basic equilibrium and the basic stability of foreign exchange reserves. We will intensify the monitoring of external assets and liabilities and establish and improve the system of unified supervision of external debts. We will improve the classified and graded supervision system for overseas investment and build a system for overseas interest protection, risk early warning, and risk resistance. We will enhance the infrastructure support capacity of overseas diplomatic agencies and improve the institutions and mechanisms for consular protection, to safeguard the security and legitimate rights and interests of Chinese citizens and institutions overseas.

Chapter 41 Joint Pursuit of the Belt and Road Initiative

We will follow the principle of extensive consultation, joint contributions, and shared benefits, adhere to a vision of green development, openness, and clean governance, and step up efforts for practical cooperation, security assurance, and common development.

I. Development strategy and policy alignment

We will promote alignment between strategies, plans, and mechanisms, as well as connectivity between policies, rules, and standards. We will explore new alignment methods, promote the effective implementation of signed documents and negotiate and sign agreements on investment protection, double taxation avoidance, and other affairs with more countries, enhance cooperation in customs, taxation, and regulation, and promote the implementation of a higher-standard integrated customs clearance. We will expand the areas of policy connectivity and strengthen cooperation for policy alignment in financing, trade, energy, digital information, agriculture, and other sectors. We will enhance complementarity and synergy between the BRI and regional and international development agendas.

II. Infrastructure interconnectivity

We will promote integrated connectivity that comprises land, sea, air, and cyber links, build a connectivity framework featuring "six corridors, six routes, and multiple countries and ports", and on this basis, develop a connectivity network dominated by the New Eurasian Land Bridge and other economic corridors, propped up by the China-Europe Railway Express, the new land-sea corridor, and other large corridors and information highways, and supported by railways, ports, and pipe networks, and we will create a new international land-sea trade corridor. Focusing on key corridors and cities, we will promote the construction of major cooperation projects in an orderly manner, and comprehensively integrate high quality, sustainability, risk-resistance, reasonable pricing, inclusiveness, and accessibility goals into the projects. We will improve the operation of China-Europe Railway Express and promote the formulation of rules on international land transportation and trade. We will expand the influence of the "Maritime Silk Road" as a brand, advance the building of Fujian and Xinjiang into the core areas of the Belt and Road, develop the space information corridor of the BRI, and build the "Air Silk Road".

III. Further practical cooperation in economy, trade, and investment

We will enhance trade and investment cooperation with countries within the framework of the BRI and actively develop Silk Road e-commerce. We will deepen international cooperation on production capacity, expand the third-party market cooperation, build a system for win-win cooperation on industry and supply chains, and expand two-way trade and investment. We will continue the enterprise-based and market-oriented development and follow international practices and the principle of debt sustainability to improve a diversified investment and financing system. We will explore a new framework for financing cooperation and leverage the roles of special loans and Silk Road Fund for the joint pursuit of the BRI. We will establish and improve the BRI financial cooperation network, promote the interconnectivity of financial infrastructure, and support multilateral and international financial institutions to participate in investment and financing. We will improve the risk resistance and security support system of the BRI and enhance legal service support to effectively prevent and defuse various risks.

IV. Building a bridge for exchanges and mutual learning among civilizations

We will deepen cultural and people-to-people exchanges in public health, digital economy, green development, science and technology, education, culture and arts, and other fields. We will enhance exchanges among parliaments, political parties, and non-governmental organizations, bring about close communication among women, the youth, people with disabilities, and other groups, to form a pattern of multi-dimensional and interactive people-to-people exchanges. We will advance the implementation of the BRI Science, Technology, and Innovation Cooperation Action Plan, and build the digital Silk Road and the innovative Silk Road. We will strengthen exchanges and cooperation in addressing climate change, marine cooperation, wildlife protection, and desertification control, and develop the green Silk Road. We will vigorously cooperate with countries in the framework of the BRI in healthcare and the prevention and control of infectious diseases and build a healthy Silk Road.

Chapter 42 Participating in the Reform and Development of the Global Governance System

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We will uphold the principles of peace, development, cooperation, and mutual benefit, remain firm in pursuing an independent foreign policy of peace, promote the development of a new type of international relations, and make the global governance system more just and reasonable.

I. Multilateral economic governance mechanism

We will maintain the multilateral trade system, actively participate in the reform of the World Trade Organization (WTO), and resolutely safeguard the status of the would-be members of the organizations. We will push the G20 to play its role in international economic cooperation, and we will play a constructive role in cooperation on economic governance among APEC, BRICS, and other mechanisms, and put forward more China initiatives and China programs. We will promote the deepening of governance reform in major multilateral financial institutions, support the Asian Infrastructure Investment Bank and the New Development Bank to play a better role, and enhance their ability to participate in international financial governance. We will promote communication and coordination of international macroeconomic policies, build a platform for international cooperation, work together to maintain the stability of global industry and supply chains and global financial markets, and join forces to promote world economic growth. We will promote the formulation of rules on economic governance in emerging sectors.

II. A network of high-standard free trade zones

We will implement the strategy of upgrading free trade zones and build a global network of high-standard free trade zones. We will optimize the layout of the FTZs, promote the implementation of the Regional Comprehensive Economic Partnership (RCEP) Agreement, accelerate the negotiation process of the Free Trade Agreement (FTA) between China, Japan, and ROK, and steadily promote the building of the Free Trade Area of the Asia-Pacific (FTAAP). We will raise the standards of the development of FTZs, consider joining the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and promote the negotiation and signing of agreements on even more high-level FTAs and regional trade.

III. A sound external environment

We will proactively develop global partnership, promote coordination and cooperation among major countries, strengthen relations with neighboring countries, and advance unity and cooperation with developing countries. We will adhere to multilateralism and the principle of extensive consultation, joint contributions and shared benefits, and safeguard the international system with the United Nations as the core and the international order based on international law, to jointly cope with global challenges. We will actively participate in international cooperation in the prevention and control of major infectious diseases and promote the building of a global health community. We will expand efforts to reform the institutions and mechanisms of foreign aid, improve the distribution of foreign aid, do our best to aid developing countries, especially the least developed countries, and strengthen foreign cooperation and assistance in the fields of healthcare, science, technology, education, green development, poverty alleviation, human resource development, and emergency humanitarian assistance. We will actively implement the 2030 Agenda for Sustainable Development of the United Nations.

Part XIII Promotion of Human Development

Promoting human development is a top priority. To this end, it is crucial to improve the quality of education and healthcare for all. Also important is how to guide the evolvement of the population structure with the aim of maximizing the human development dividend and boosting human capital in an overall effort to improve the people's wellbeing.

Chapter 43 Quality Education for All

Guided by the Party's education policy, development of education remains high on our agenda. Education includes character education and civil education that cultivates a sense of social responsibility in addition to practical skills to pave the way for moral, intellectual, and physical growth, so that our students will grow into effective contributors to socialist prosperity.

I. Equitable access to basic public education

Building on what has been achieved in balanced compulsory education is an imperative, which calls for improving education standards, with a focus on developing high-quality, well-balanced, and integrated compulsory education in both urban and rural areas. Urban schools need to expand capacity to ensure access to basic public education for children who have moved with their parents from rural to urban areas. Efforts will be ongoing to improve conditions in small rural schools and boarding schools in towns and townships, build a large team of competent rural teachers dedicated to helping rural children move ahead, and continue to reduce dropout rates. Universal access to high-school education is another area of focus. Special attention will be paid to the need to diversify education at the high-school level and to raise the gross enrollment ratio to over 92%. Regulation of after-school academic programs will be strengthened. More support will be provided to publicly accessible preschool education, and a goal of raising the gross preschool enrollment ratio to over 90% is envisaged. Support will also be provided to special education and special programs for children who have run-ins with the law. Efforts will be stepped up to improve the quality and effectiveness of education in ethnic minority areas to enhance the mastery of the national official language.

II. Adaptable vocational and technical education

Reform and innovation are needed to improve different types of vocational and technical education by leveraging the special strengths of each program and better structuring the vocational and technical education services and through more rational deployment of resources in this field with a view to better training technicians and skilled workers. Revision of national standards for vocational and technical education is necessary to complement academic certification with vocational certification. Innovative approaches should be explored to better align classroom education with real world needs, expand cooperation between businesses and education institutions, encourage involvement of businesses in providing high-quality vocational and technical education, and develop apprenticeship programs that suit China's needs. Improving the quality of modern vocational and technical education will be an ongoing focus with plans to build a group of top-notch vocational and technical colleges and programs and steadily develop career-focused undergraduate education in a

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move to further integrate vocational and general education, encourage mutual recognition of vocational qualifications and academic degrees, and provide opportunities for students in vocational education to receive general education.

III. Quality higher education

Category-based management is needed for higher education and comprehensive reform is needed for higher education institutions, so as to diversify the higher education system with an aim of seeing the gross enrollment ratio rise to 60%. First-class universities and academic disciplines will be built on a categorized basis. Support will be provided for developing top-notch research universities. Quality of undergraduate education will be improved by encouraging a number of regular undergraduate institutions to become applied colleges. Reform of high-level talent training in basic academic disciplines will be facilitated by adjusting academic disciplines and programs that suit the needs and giving play to their strengths to provide more targeted disciplines, so that the gaps in scientific, engineering, agricultural, and medical personnel can be filled. Efforts will be made to better manage and improve postgraduate program, as well as admit more applicants for professional postgraduate degrees. Higher education in the central and western regions will be revived by optimizing the distribution of higher education resources.

IV. Teacher competencies

A high-standard modern teachers education system is needed, focusing on strengthening the professional ethics and competence of teachers, improving the policies for teacher management and development, and enhancing teachers' capacity to impart knowledge and cultivate students. Priority will be given to establish a batch of teachers education bases, support quality comprehensive universities to carry out teachers education programs, improve the government-paid education for normal school students, and exempt graduate students of education programs and government-funded normal school students from applying teacher certificates through examinations. Support will be provided to top-notch engineering universities to train teachers for vocational and technical education. And universities, vocational schools, and enterprises will be encouraged to jointly train teachers qualified both in delivering theoretical knowledge and guiding practice. Measures will be taken to deepen the management of teachers in primary and secondary schools and kindergartens, including making plans for the overall and regional distribution of budgeted posts, ensure that teachers working in compulsory education are regulated by county-level authorities and employed by schools, and appropriately raise the proportion of middle-ranking and senior teachers.

V. Education reform

To enhance students' well-rounded development, with a focus on patriotism, sense of innovation, and healthy personality, it is needed to deepen education evaluation reform in the new era by establishing sound education evaluation systems and mechanisms. Remained as a not-for-profit cause, education will see more funds, an improved system for fund management and fund use, and an increase in fund use efficiency. Action related to school running include ensuring that schools have a greater say, improving internal governance structure, and guiding the private sector to participate running school in an orderly manner. Comprehensive reform is needed for examination and enrollment, with the focus on supporting and regulating private education and encouraging high-standard learning institutions and programs jointly run by Chinese and overseas institutions. The advantageous online education will be integrated into the lifelong learning system, and help build a learning society. Other education related measures include encouraging top-notch universities to provide open access to their educational resources, providing opportunities for registered learning and flexible learning, and smoothing the channels of mutual recognition and conversion of different types of learning achievements.

Chapter 44 A Healthy China

In a strategic move to improve health and wellbeing for all, the Healthy China Initiative has been rolled out with an emphasis on prevention. As a national health policy, it aims to strengthen national public health network and provide healthcare for all.

I. A robust public health system

Healthcare reform aims to improve disease prevention and control and strengthen, in particular, a system for health monitoring and early warning, risk assessment, epidemiological investigation, inspection and detection, and emergency response. More predictable public funding for healthcare is envisaged to enhance essential disease control measures and community-level public healthcare. Public accountability for medical institutions will also be enhanced. Innovative approaches to integrating prevention and treatment are encouraged. Efforts to strengthen public health emergency monitoring, early warning, and response mechanisms are ongoing, including measures to build a robust laboratory testing network, and improve patient care, technological support, and logistics support. A tired, multi-level, and referral-based infectious disease treatment network will be built, so will a unified national system of reserves of essential supplies for public health emergencies. Modifications to large public buildings are underway to better accommodate the needs for epidemic control. Infectious disease screening at ports of entry has been stepped up. Other measures in this connection include more support for public health colleges and talent development; expansion of national vaccination plans; chronic disease prevention, early screening, and comprehensive intervention; and mental health services and psychosocial support.

II. Healthcare reform

Efforts will be made to continue to provide non-for-profit healthcare. With a focus on improving medical treatment quality and efficiency, more resources will flow to medical services, mainly in public medical institutions followed by non-public ones. A modern hospital management system is imperative for public medical institutions, which calls for reform in governance structure, staffing and remuneration, budgeted posts management, and performance appraisal. National and regional medical centers will be built to accelerate the expansion and balanced regional distribution of quality medical resources. Special attention will be paid to developing community-level healthcare workforce, especially in urban and rural communities, border and port cities, and county-level hospitals to improve the medical services network in urban and rural areas. Medical consortia are needed for tired diagnosis and treatment, as well as ensuring the coordination of prevention, treatment, nursing, and rehabilitation. Reform will be rolled out in state-organized centralized procurement and

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use of medicines and medical consumables, in particular high-end medical equipment. The rapid evaluation and approval mechanism will be improved for innovative medicines, vaccines, medical devices, and targeting medicines and medical devices in urgent need for clinical use and for treating rare diseases, allowing for as quickly as possible the domestic marketing of those that are already available in overseas markets. Measures will be taken to improve the quality and scale of healthcare personnel, including addressing the gaps in pediatricians, general physicians, and other physicians; increasing the number of registered nurses per 1,000 people to 3.8; implementing a regional registration system for physicians which can make it convenient for them to provide services in multiple institutions; expanding the coverage and improving the quality of contracted family doctor services in urban and rural areas; supporting private hospitals and encouraging experienced physicians to run clinics.

III. Universal medical insurance

Efforts will continue to ensure stable and sustainable funding for basic medical insurance and adjust medical benefits by revising payment policies for medical insurance premiums and developing lists for medical benefits. Overall planning of basic medical insurance shall be made at the municipal and provincial levels. Improvement measures are needed for the general support mechanism for covering outpatient medical bills under employee basic medical insurance and the system of medical insurance and aid for treating serious diseases. It is necessary to make timely adjustments to the catalogue of medicines covered by medical insurance. A diversified, compound medical insurance payment model based on disease-related payment is under way. Qualified internet-based medical services will be made reimbursable under the medical insurance plan. Medical bills incurred in any locality will be settled through basic insurance accounts. Solid progress will be made in setting standards for medical insurance and applying information technology, so as to improve insurance services. Efforts are ongoing to better supervise medical insurance funds to ensure a long-term care insurance system. Commercial medical insurance will be encouraged.

IV. Development of and innovation in traditional Chinese medicine

Equal importance will be attached to traditional Chinese medicine (TCM) and Western medicine. While making good use of their complementary advantages, special support will be provided to TCM. A sound TCM service system is needed to give full play to TCM's unique strengths in disease prevention, treatment, and rehabilitation. TCM and Western medicine will be better integrated. And efforts will be made to develop medicine of ethnic minority groups. In this regard, measures aiming to develop and protect new medicines include conducting research on the essence of Chinese medical classics, building scientific and technological support platforms for TCM, reforming and revising the TCM evaluation and approval mechanisms. A stronger supervision system is important for quality Chinese medicines. Efforts are ongoing to foster specialists in TCM to better inherit and innovate TCM culture. With all these endeavors, TCM will go global.

V. A country strong in sports

The nationwide fitness-for-all campaign is needed to improve the people's health. Efforts on health maintenance and disease prevention will be initiated at earlier stages through integrating sports and education, sports and healthcare, and sports and tourism. A sound public service system for fitness and sports requires more publicly accessible sports venues and facilities as well as school stadiums, for example, more fitness trails and other easily accessible fitness facilities, sports parks that suit local conditions, and public sports facilities on river fronts that do not affect flood control. A national physique monitoring and intervention program is underway, particularly among teenagers to ensure physical education classes on campus and extracurricular exercise hours. Regarding competitive sports, equal emphasis will be put on both academic education and professional training, and efforts will be made to increase the talent reserve for competitive sports, improve the competitive strength of athletes in key events, and maintain China's dominance in sports it traditionally does well in. Other measures in this connection include exploring pathways for the development of football, basketball, and volleyball with Chinese characteristics, continuing to promote winter sports, and organizing internationally influential professional sports events. Fitness, recreation, outdoor sports, and other sports industries will be developed to encourage sports consumption. Works will be done to ensure the success of the 2022 Winter Olympics and Paralympics in Beijing, and the 19th Asian Games in Hangzhou.

VI. Patriotic health campaigns

More diversified patriotic health campaigns will be carried out to encourage the public to lead a positive and healthy lifestyle. More support will be provided for infrastructure construction to ensure a good public health environment in urban and rural areas that meets hygiene standards and vector control requirements. Efforts will be ongoing to foster healthy towns. Health education and health knowledge will be more accessible, with a focus on encouraging good eating habits, opposing food and beverage waste, facilitating tobacco and alcohol control, putting an end to bad habits such as eating wild animals, and promoting the practice to order single portions of food in restaurants, use serving chopsticks, and conduct garbage sorting.

Chapter 45 A National Strategy in Response to Population Aging

A long-term population strategy will be developed, including revised childbirth policies, to promote long-term and balanced population development and improve population services with a focus on elderly care and child care.

I. An appropriate birth rate

Revised childbirth policies are more inclusive and will be implemented in tandem with economic and social policies to reduce the burden of child bearing, upbringing, and education on families, with potential spillover benefits. At the same time, efforts will continue to improve infant care, youth development, support for the elderly, and care for the sick and disabled, implement the maternity leave policy, and explore the possibility of mandating parental leave. A full range of services for maternal care, including preconception and postnatal care, and child development will be made available and easily accessible, to improve the health and wellbeing of the newborn population. Support will be provided to families facing special difficulties for the loss or disability of their only children. Related actions include improving population data collection and analysis, monitoring population trends, especially birth rate changes, and conducting research on population issues from a strategic perspective to inform decision-making with regard to population and development.

II. Infant development policies

Child care services will be made publicly accessible relying on improved policies for infant and child care services and childhood education. More support and guidance will be provided to at-home care and community services, with an aim to enhance scientific parenting. Supporting kindergartens will be set up in urban communities, as part of the effort to diversify infant and child care service institutions. Other measures include encouraging capable employers to provide infant and child care services, supporting enterprises, public institutions, social organizations, and other non-governmental forces to provide public accessible child care services, and encouraging kindergartens to incorporate child care services into their service system. Also important is to provide professional and standardized infant and child care services so as to ensure the quality and competence of care and education.

III. Elderly care

Efforts will be made to coordinate elderly care programs and elderly care industries, improve the basic elderly care service system, make elderly care services more publicly accessible, and support at-home elderly care, so as to build an elderly care service system that coordinates home care and community services and integrates medical care and health care. The network of community-based, at-home elderly care services will be improved, supported by elderly-friendly public facilities, services from professional institutions, and idle resources for community-embedded elderly care. Subsistence allowances will be provided for disabled and partially disabled elderly people in extreme poverty. Rural happiness homes and other forms of mutual-aid elderly care will be developed. Reform will be rolled out in state-run elderly care institutions to improve their service capacity and quality. The government-enterprise joint campaign for public accessible elderly care will be launched, among which the private sector are encouraged to run government-funded elderly care institutions, training and recuperation institutions are welcomed to reorient to offer elderly care services, and policy support will provided for private nursing care institutions for the elderly. Medical care and health care will be better integrated to improve health services for the elderly. Talent training for elderly nursing will be intensified. The supply of nursing beds in elderly care institutions will be increased, with an aim to raise the proportion to 55%, so as to better meet the nursing service needs of the elderly with disability and dementia. Steadily, the welfare of the elderly will be improved, with a sound subsidy system for the disabled elderly with financial difficulties, and the visit and care system for the disabled elderly with special difficulties left behind in rural areas. The comprehensive regulatory system for elderly care services is needed for a social environment in which the elderly are respected and cared for, and live happily, and in which their rights and interests are ensured. By taking into account the increase in life expectancy per capita, the accelerated population aging trend, the increased education years, the change of labor force structure, and other factors, and in accordance with the principles of implementing flexible, tailored policies for different groups, considering all factors, and making overall plans, the statutory retirement age will be raised in a phased manner to give full play to the potential of human resources. The silver economy is emerging, requiring elderly-friendly technologies and products and smart elderly care services and other new business models.

Part XIV A Focus on the People's Wellbeing: a Participatory Approach

Basic public services are essential to improving the wellbeing of our people. Best efforts will be made within the limits of the available resources to upgrade and expand these services to ensure universal access and inclusiveness, so that the people's essential needs are met and no one is left behind. Public participation in governance will be encouraged to promote collaboration and synergy in building shared prosperity. An action plan for shared prosperity will focus on narrowing the development gap between different regions and between urban and rural areas, as well as the income gap between rich and poor households, so that development gains will benefit everyone in a fair manner, and help create a greater sense of fulfillment, happiness, and security.

Chapter 46 National Public Services

It is crucial to improve the quality and standards of public services by addressing weaknesses in both basic and non-basic public services.

I. Equitable access to basic public services

Efforts will be made to ensure that comparable quality basic public services are provided in both urban and rural areas and across regions. National standards and benchmarks will be developed and/or readjusted, wherever and whenever necessary, against which provision of public services, including public education, employment and entrepreneurship development services, social insurance, healthcare, social services, housing, culture and sports, veteran services, and disability services, among others, is evaluated to ensure the uniformity of standards being applied and equity in service delivery in urban and rural areas and across different regions. Deployment of basic public services will be based on the area and number of residents to be covered. More resources will be made available at the community level and deployed to rural areas and remote areas to help, in particular, disadvantaged groups and individuals.

II. Innovative public service delivery

By distinguishing basic public services from non-basic public services, it is crucial to highlight the government's dominant role in guaranteeing the supply of basic public services and welcome diverse providers and methods of non-basic public services. In child care, elderly care, and other services that see the prominent imbalance between supply and demand, support will be provided for the private sector to supply more public accessible and standardized services by various means, including running government-funded institutions, government procurement of services, and public-private partnership, and ensure that all providers of such services enjoy equal preferential policies. Deepened reform is needed for public institutions to provide public services, so they could compete in the market with the private sector in a fair manner.

III. Policies to support public services

An optimized structure of government spending will give priority to the funding for addressing weaknesses in basic public services. In the field of public services, the respective fiscal powers and expenditure responsibilities of central and local governments will be defined, with

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increasing financial support from the central and provincial governments to local governments in providing basic public services. More public service programs will be included in the list that guides government procurement of services, to encourage an increase in government procurement and improved preferential policies on fiscal funding, financing, and land use. Private and public institutions will enjoy fair treatment in qualification access, professional title appraisal, land supply, financial support, government procurement, and supervision and management, among other aspects.

Chapter 47 An Employment-First Strategy

Effective measures will be taken to create more employment opportunities, especially high-quality jobs, and overcome any structural barriers to job creation.

I. Policies to encourage employment creation

Economic development must be employment-oriented. Mechanisms will be established to assess whether employment targets are met and how employment is impacted. Employment support for college graduates, veterans, migrant workers, and other key groups will remain a priority. Policies will be devised to encourage businesses to create employment opportunities, provide support for businesses that employ a large number of people, such as service industries, MSMEs, and labor-intensive enterprises, and expand job opportunities in community supermarkets, convenience stores, and community services. Measures will be taken to promote equal employment, increase high-quality employment, support the growth of skill-intensive industries and the development of new forms of employment, expand government procurement in areas such as primary-level education, medical care, and specialized social services, encourage entrepreneurship as a way to create jobs, bolster flexible employment through multiple channels, remove any restrictive policies that hinder job creation, and make the labor market more inclusive. Urban and rural employment policies will be better aligned to ensure mutual complementarity, and more support will be available to rural workers in their search for jobs. More public welfare jobs will be created and special support will be provided to people having difficulty finding employment, especially people with disabilities and members of families without a single bread earner.

II. Public employment services

More support will be provided to the community-level public employment and entrepreneurship service platforms which offer free policy consultation, job introduction, and employment guidance for employees and enterprises, so as to improve the public employment service system covering both urban and rural areas. A regular mechanism assisting enterprises to stabilize employment will be established by making good use of employment subsidies and unemployment insurance funds. Efforts will be made to coordinate both ends of labor transfer to realize cross-regional connectivity. Measures to protect labor rights and interests include improving the labor contract system, the labor relations coordination mechanism, the long-term mechanism for controlling arrears of wages, and the labor dispute mediation and arbitration system, and exploring ways to protect the labor rights and interests of employees under new business models. Progress will be made in the employment demand survey and unemployment monitoring and early warning mechanism.

III. Development of employability skills and entrepreneurship

As part of the effort of the lifelong skills training system, continuous vocational skills training will be carried out on a large scale, including campaigns to improve vocational skills, targeted training programs for key groups, extensive skills training for employees working in new forms and models of business, with a focus on improving training quality. Funds will be coordinated and used in innovative ways for vocational skills training programs at all levels and of all types, with the aim to ensure that training subsidies are channeled directly to enterprises and participants. Through improved policy on pre-tax deductions for training funds, enterprises will be encouraged to launch training programs to improve the skills of their employees. Other measures in this connection include supporting demand-based and customized training, establishing a batch of public training bases and bases that align classroom education with real world needs to promote the contribution and sharing of training resources, and ensuring the success of national competitions on vocational skills.

Chapter 48 Improving the Income Distribution Structure

It is important to ensure that personal income grows in step with economic growth and that workers' compensation rises in tandem with the increase in labor productivity. It is also important to continue to increase the income of low-income groups while expanding the size of the middle-income group in an effort to bring prosperity to all.

I. More opportunities to increase income

The system in which distribution according to work is dominant and a variety of modes of distribution coexist will see an increase in the proportion of labor remuneration in the primary distribution. To better decide and increase wages, as well as secure the payment, it is needed to improve the mechanism for developing the minimum wage standard and wage guidelines, and determining wages through collective discussion. Efforts will be made to improve the mechanism whereby remuneration for various factors of production is determined by the market, and explore ways to increase the income of low-and-middle-income groups through their rights to use and benefit from land, capital, and other production factors, so as to improve distribution policies and systems based on production factors. In state-owned enterprises, the market-oriented salary distribution mechanism will be improved, and the performance-based evaluation system of employees will be implemented across the board. In public institutions, reform aims to improve the salary system to reflect job performance, position level, and job category. Standards will be set for labor dispatch and employment to ensure equal pay for equal work. More channels will be opened to increase the property income of urban and rural residents, including raising the proportion of farmers' share in land value-added revenue, improving the dividend system of listed companies, and developing more innovative financial products to meet the needs of family wealth management. The system by which state capital gains are turned over to public finance will be improved so as to increase public spending in people's wellbeing.

II. Expanding the rank of middle-income earners

An initiative to expand the rank of the middle-income earners and consistently increase its proportion will be launched, with the focus on graduates from regular universities and vocational schools, skilled workers, and migrant workers. Support will be provided for graduates

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from universities and vocational schools to help them find jobs, in particular those suiting their academic background. Efforts will be made to offer more opportunities for skilled workers, especially those in non-public economic organizations, social organizations, and freelance professionals and technicians, to apply for professional titles and qualification certificates for promotion, raising their benefits and social status. A program to develop competent farmers will be launched to help them use agricultural and rural resources and modern operation methods to increase their income. Policies will be devised to support small and micro startups, and support groups such as self-employed individuals and workers in flexible employment, to embark on the journey of prosperity through hard work.

III. A more rational wealth and income redistribution mechanism

The distribution pattern of income and wealth will be improved, benefiting from more intense and accurate adjustments to taxation, social security, and transfer payments, and the role of charity in the third distribution. Measures will be taken to advance the direct tax system by improving the system for taxing personal income on the basis of both adjusted gross income and specific types of income, and strengthening tax regulation and supervision of high-income individuals. With dynamically adjusted standards in response to the basic needs, social security benefits and services will become fairer and more accessible. The income distribution order will be well-regulated to protect legitimate income, regulate excessive income in a reasonable manner, ban illegal income, and curb income obtained by means of monopoly and unfair competition. A sound system of information on personal income and property will be established and the modern payment and income monitoring system will be perfected.

Chapter 49 A Multi-Tiered Social Security System

Our bottom line is to protect the most vulnerable, expand social security coverage, and improve protection mechanisms to prevent anyone from being left behind. To this end, it is essential to build a sustainable, multi-tiered universal social security system with integrated urban and rural coverage, and with clearly defined rights and responsibilities for all actors involved.

I. Social insurance

The old-age insurance system will be improved to ensure the long-term balance of basic insurance funds. The coordinated national management of basic old-age insurance funds will be achieved. Restrictions preventing workers in flexible employment from participating in the insurance system will be reduced. Social insurance will cover the entire legally eligible population. The system for transferring state capital to increase social security funds will be improved to upgrade and strengthen social security strategic reserve fund. Adjustments to the basic pension for urban workers will be more reasonable, leading to a raising pension standard for urban and rural residents. A multi-tiered and multi-pillar old-age insurance system will take shape, which will see an increase in the coverage ratio of enterprise annuity, and the well-regulated private pensions as the third pillar. The coverage of unemployment insurance and work-related injury insurance for professional workers will be expanded, and relevant plans will be made at the provincial level. Efforts will be made to promote the transfer and continuation of social security and improve the unified national platform on social insurance public services.

II. Social assistance and charity

The tiered and classified social assistance system will be perfected, with the focus on urban and rural recipients of minimum subsistence allowances, people in special difficulties, and low-income families, so as to form a comprehensive pattern of assistance. A sound basic living assistance system and the special assistance system for medical treatment, education, housing, employment, and disaster victims, will be established, based on dynamic adjustments to criteria for assistance and the list of aid recipients. Temporary relief policies and measures will be taken to strengthen the functions of emergency social relief. We will coordinate the urban and rural relief systems, gradually allowing applicants to apply for and receive relief from the local governments of their permanent residence. Active actions will be taken to provide service-oriented social assistance and boost the government procurement of social assistance services. Philanthropy will be encouraged. Fiscal and taxation incentive policies will be improved, and standards will be set for online charity platforms to better management lottery and public welfare funds.

III. Veteran services and support

Regarding veteran affairs, efforts will be made to improve the organization and management system, work operation system, and policy system, so as to enhance the service and support for veterans. Further reform will be rolled out in the employment service system for veterans to help them find better jobs by providing greater support in terms of education, training, and employment assistance as well as by offering job opportunities in more diversified sectors. A new type of system for ensuring benefits to eligible groups will be established to improve and implement preferential treatment policies, appropriately raise the standards of benefits for veterans and other entitled groups, and make great efforts in job arrangement, household registration and education of their spouses and children. Measures will be taken to improve transfer, resettlement, treatment, and recuperation of veterans and disabled veterans, including developing service centers (stations) for demobilized veterans and improving the services and facilities of special care hospitals, glory hospitals, and military supply stations. Other related actions include strengthening convergence of the insurance system for ex-service members, carrying forward the spirit of martyrs, enhancing the construction, management, protecting memorial facilities for martyrs, building military cemeteries, and forming model cities (counties) of mutual support between the civilians and the military.

Chapter 50 Basic Rights and Interests of Women, Children, and People with Disabilities

Gender equality, child development, and disability care, among others, are key components of our national policy to protect the rights of disadvantaged groups, including women, children, and people with disabilities, and give them opportunities to thrive.

I. Gender equality and development of women

The Program for the Development of Chinese Women will be implemented for a continuously improved environment for women's development, in which women are able to exercise their rights, participate in economic and social development, and benefit from the development outcomes on an equal basis in accordance with the law. Women's access to health services will be ensured, in particular to comprehensive prevention and treatment of cervical and breast cancers and relevant relief policies. Women will be guaranteed to have equal right to education and see an increase in their number of years of schooling as well as their overall ability and quality. Women will be

guaranteed to enjoy equal economic rights and interests, be free from gender discrimination in employment, and enjoy law-based maternity leave and maternity allowance. Rural women's land rights and interests will be protected. Women will be guaranteed to enjoy equal political rights and largely participate in social affairs and democratic management. Mechanisms for assessing gender equality in laws and policies will be implemented. And the gender-specific data collection system will be improved. Efforts will be made to ensure quality care services for women left behind in rural areas, and crack down on illegal and criminal acts infringing upon the personal rights of women and girls.

II. Child development services and support

The China National Program for Child Development will be implemented for an enabling environment for children's development, ensuring children's rights to survival, development, protection, and participation. Improvements will be made to the children's health service system, so as to prevent and control children's diseases, reduce the incidence of children's death and serious birth defects, control children's obesity and myopia, and implement the nutrition improvement plan for preschool children. Measures will be taken to safeguard children's right to equal access to education and strengthen education and services for children's psychological health. Children suffering from difficulties will be under protection on a categorized basis, among whom the left behind children in rural areas will be under the care service system, and orphans and de facto unattended children under another protection mechanism. Other measures include implementing and improving the guardianship system for children, combating illegal and criminal acts that infringe on the rights and interests of children, and improving the comprehensive children protection system. With regard to the youth, the Youth Development Program will be implemented to promote the all-round development of young people, and build a platform for their growth and success to release their potential in innovation and starting businesses.

III. Family support services

The Happy Family program will be implemented, focusing on building civilized families, implementing scientific tutoring, and inheriting good family traditions. A legal and policy system to support family development will be built to promote the process of family education legislation, strengthen the implementation of the Anti-Domestic Violence Law, improve marriage and family counseling services, and prevent and resolve marriage and family conflicts and disputes. Family education guidance will be provided in urban and rural areas, and the mechanism of school-family-community cooperative education will be improved. Diversified family services will be provided. The role of families, family education, and family traditions in social governance at the community level will be given full play.

IV. Support for people with disabilities

The assistance system for people with disabilities will be improved to help them participate in the system of basic medical care and basic old-age insurance, and make dynamic adjustments to the standards of living allowances for the disabled in need and nursing subsidies for the severely disabled. Employment support will be offered to the disabled, including better protecting their labor rights and interests, prioritizing vocational skills training, and supporting them to start their own businesses. Full coverage of education for school-age disabled children and adolescents will be achieved with higher education quality. With regard to rehabilitation, efforts will be made to build universities, promote the market-oriented development of rehabilitation services, raise the application rate of rehabilitation assistive devices, and improve the quality of rehabilitation services. Care services will be offered for the severely disabled. Measures will be taken to provide the disabled with quality services and service facilities, including improving the policy system for the building and maintenance of accessible environment, and equipping families with disabled people with accessible facilities.

Chapter 51 Community-Level Participatory Governance

Community-level participatory governance will continue to be improved in urban and rural areas under the leadership of Party organizations with an emphasis on self-governance, rule of law, and ethical standards to facilitate public participation and community-level democratic consultation, so as to empower everyone to take ownership to contribute to the common good.

I. A framework for community-level participatory governance

The framework of community-level participatory governance will continue to be improved under the leadership of Party organizations, with village (neighborhood) committees playing the leading role and the people as the main participants. Efforts will be made to reduce the burden on the community-level, especially village-level organizations, i.e., clarifying the powers and responsibilities of local governments and community-level self-governing organizations in accordance with the law and including the clarified powers and responsibilities in urban and rural community governance in a list for functional departments of counties (districts) and townships (sub-districts) so that they can have a better idea of what they need or need not to do. The community-level self-governing organizations will be better regulated with reasonably defined functions, scale, and responsibilities. Mechanisms of community-level self-governance will be enhanced by improving the vehicles for self-governance such as village (neighborhood) people's meetings, councils, and oversight committees to better organize and provide institutional channels for village (neighborhood) people to participate in the governance.

II. Community development and services

Efforts will be made to realize the downward shift of focus of participatory governance and services and channel resources down to the community level to provide well-targeted and refined services for the urban and rural community development. The community level will be allowed to have approval authority and address public service items, thus giving rise to an open and information-based system providing a gridded management model and better services for everyone. The system will achieve the integration and connectivity of the service scenarios for the convenience of residents, including employment and social security, elderly care, child care, disability assistance, health care, domestic services, logistics, supermarkets, public security and law enforcement, dispute mediation, and psychological assistance. With regard to building a team of full-time, professional community workers in urban and rural areas, the functions of neighborhood committees in urban communities will be improved, and owner committees and property service enterprises will be urged to perform their duties, so as to improve community property services and management.

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III. Participation of non-governmental actors in community-level governance

The role of people's organizations and social organizations, including market entities, new social strata, social workers, and volunteers in participatory governance will be given full play, through more smooth and well-regulated participatory channels. In this way, the vitality of community-level participatory governance is released across the board. Standards will be set for industry associations, chambers of commerce, public welfare organizations, and social organizations in urban and rural communities, accompanied with policy support and on-going and ex-post oversight on financial subsidies, service procurement, tax incentives, and talent protection. Support will be given to develop social work service institutions and volunteering organizations to expand the volunteer teams, build more platforms for voluntary services, and improve the voluntary service system.

Part XV An Integrated Approach to Development and Security

A holistic approach to national security calls for the integration of national security imperatives into every aspect of national development, so as to be better able to implement our national security strategy, safeguard national security, respond effectively to both traditional and non-traditional threats, and forestall any challenges to China's modernization.

Chapter 52 National Security and Capacity-building

As part of the effort to protect our national interests, strengthening national security requires a holistic look at a full spectrum of security issues, ranging from political security, which is of overarching importance, the security of the people, which is the ultimate concern, and economic security, which underpins all other considerations, to military, scientific and technological, cultural, and social perspectives, which reinforce efforts in other areas. A centralized, unified, efficient, and authoritative leadership structure is indispensable in this connection, based on applicable laws, and supported by related strategies and policies, including those on talent development, as well as implementation mechanisms. National security legislation, systems and policies in key areas have to be strengthened. It is also important to strengthen the people's line of defense against threats to national security, raise public awareness of national security issues, and improve mechanisms for assessing national security risks, and coordinating efforts to prevent, control, forestall, and fend off these risks. National security oversight will be enhanced, so will law enforcement in related areas. Challenges to state power, our political system, and our values will be confronted resolutely. Cyber security and capacity building in this field are a top priority. Robust measures will be taken to prevent and respond to infiltration, sabotage, and subversion by hostile forces.

Chapter 53 National Economic Security

Mechanisms for economic security risk early warning and prevention and control and related capacity building will be strengthened to keep under control risks to key industries, including food production, energy, and financial services, as well as critical infrastructure, strategic resources, and major technology facilities.

I. Food security

The supply of agricultural products will be ensured based on crop varieties. It is essential to improve the systems to guarantee the supply of major agricultural products and to the production, purchase, storage, marketing, and sale of grain, so as to ensure absolute security of staple food, basic self-sufficiency of grain, and adequate supply of major agricultural and sideline products. Efforts will continue to develop grain production, further implement the strategy of sustainable farmland use and innovative application of agricultural technology for national food security, break through the bottleneck of technologies in superior seed sources, and keep independent production of improved varieties under control. It is of great significance to guard against the red line of 120 million hectares of farmland and the control line of permanent basic farmland, which allows for stable and increased grain acreage and yield. It is also necessary to create an appropriate layout of regional emergency supply bases for agricultural products. In order to better regulate and control grain reserves, it is needed to deepen reforms for the purchase and storage of agricultural products, step up to diversify market participants, and reform and improve the central grain reserve management system. Provincial governors should assume responsibility for food security and mayors assume responsibility for the "vegetable basket". Both Party and government leaders should take responsibilities. The grain conservation campaign will be ongoing to reduce the losses in grain production, storage, transportation, and processing. International cooperation on major agricultural products will be carried out to improve the mechanism for managing importing agricultural products, and diversify sources of import, thus creating an enabling environment for domestic large international grain merchants and agricultural conglomerate companies. The food security law will be enacted.

II. Energy and resource security

By focusing on domestic demand, addressing weaknesses, carrying out diversified guarantee measures, and strengthening reserves, we will improve the production, supply, storage, and marketing systems and enhance the ability of sustainable and stable energy supply and risk management and control, with the aim to ensure that basic coal supply is secure, that core oil and gas demand is met by domestic supply, and that power supply is stable and reliable. Building on domestic output, China will see a high and steady yield of crude oil and natural gas, and move ahead with the planned distribution and control of strategic coal-to-liquid and coal gas bases. Efforts will be made to expand the scale of oil and gas reserves and improve the oil and gas reserve system in which government reserves and corporate reserves for social responsibilities are combined and complementary to each other. The coal reserve capacity will be built. A system for energy emergencies management and control is needed to guarantee electric power supply for key cities and users, and better protect major energy facilities and networks. Diversified sources of importing oil and gas will secure the strategic channels and key nodes. A China-centric trading center and pricing mechanism will be established to promote home currency settlement. More support will be provided for the planning and control of strategic mineral resources to better secure reserves and put into effect a new round of strategic actions for breakthroughs in prospecting.

III. Financial security

The systems of financial risk prevention, early warning, disposal, and accountability will be established to ensure that the regulatory responsibilities and due responsibilities in places within jurisdiction are fulfilled, that we have zero tolerance towards violation of laws and rules, and that no systemic risks arise. Improvements will be made to the macro-prudential regulation system in order to keep the macro

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leverage ratio stable with a slight decline. Supervision of systemically significant financial institutions and financial holding companies will be enhanced, to reinforce the identification and disposal of non-performing assets, forestall and fend off shadow banking risks, dispose high-risk financial institutions in an orderly manner, crack down on illegal financial activities, and improve the long-term regulatory mechanism of internet finance. Efforts will be made to improve the mechanisms for identification, assessment, early warning, and effective prevention and control of debt risks, improve the mechanism for handling defaults in the bond market, promote unified law enforcement in the bond market, steadily resolve the implicit debt of local governments, and severely punish debt evasion and abandonment. A sound management framework of cross-border capital flow will be established to strengthen regulatory cooperation and enhance the ability of risk prevention and control as well as response under open conditions. By strengthening the RMB cross-border payment system, it is possible to ensure the security and controllability of core information technologies in the financial sector, and safeguard the financial infrastructure security.

Chapter 54 Public Security

The institutional mechanisms for public security will be improved, building on the principle that the people and their lives are above everything else, to implement the accountability and regulation systems for public security, and secure the people's lives.

I. Workplace safety

It is needed for a sound workplace safety responsibility system to establish systems for the investigation of potential public safety hazards and for safety-oriented prevention and control. An accountability system for all-staff workplace safety in enterprises will be built, with an emphasis on ensuring enterprises to shoulder due responsibilities for workplace safety. Monitoring, early warning, supervision, and law enforcement concerning workplace safety are needed for campaigns to promote safety in key sectors such as hazardous chemicals, mines, construction, transportation, fire control, industrial explosives, and special equipment, and for the level-by-level supervision of the major hidden dangers treatment and effectiveness evaluation. Standards will be set for workplace safety in enterprises to strengthen safety management in industrial parks and other key areas. Innovative and advanced technologies and equipment will be applied in the fields such as deep mining and major disaster prevention. For example, workers doing dangerous jobs will be replaced by robots. Key areas will be under full coverage of workplace safety liability insurance.

II. Food and drug safety oversight

Efforts will be made to strengthen and improve the food and drug safety oversight system, including improving the food and drug safety laws, regulations, and standards, and exploring the establishment of a system of punitive compensation system for civil public interest lawsuits over food safety. The food safety strategy will be further implemented to strengthen oversight over the quality and safety of the entire food chain, advance the food safety assurance projects, and intensify joint efforts to address food safety issues in key areas. Measures need to be taken to prevent and control drug safety risks, including building the mechanism for lifecycle management of drugs and vaccines, improving the electronic drug tracing system, and realizing the whole-process traceability of drugs under key categories. Steady progress will be made to promote the system for unique labelling of medical devices. Stronger actions are needed for risk monitoring, random inspection, regulation, law enforcement, and rapid notification and response for food and drug safety.

III. Biosafety risk prevention and control

The system for biosafety risk prevention, control, and governance will be established to enhance national capacity of biosafety governance. The national systems for risk monitoring and early warning and for emergency plan on risk prevention and control concerning biosafety need improvements so as to release information in a unified manner for major biosafety incidents. Stronger prevention and control measures need to be taken for animal and plant epidemics and alien invasive species at ports. Overall planning for biosafety infrastructure will be made, including building a system of national biosafety data centers, and better developing and managing the system of high-level biosafety laboratories. Regulation on biosafety resources will be intensified by formulating and improving the catalog of human genetic resources and biological resources, and establishing a sound risk assessment mechanism of biotechnology research and development. The biosafety law will be put into practice. China will strengthen international cooperation on biosafety and take an active part in the development of international biosafety rules.

IV. National emergency management system

An emergency management system will be put into practice, featuring unified command, both specialized and regular operations, quick response, and coordination between the upper and lower levels, to systematically improve the national emergency management capacity and enhance the ability of disaster prevention, mitigation, resistance, and relief. Actions will be taken to improve the graded response mechanism at the central and local levels based on shared responsibilities with the local governments as main responsibility takers, and strengthen inter-regional and cross-basin coordination in disaster and incident emergency response. Based on investigation of potential risks and hidden dangers of disasters and incidents, we will implement public infrastructure safety and reinforcement projects and projects for enhancing the capacity of natural disaster prevention and control, and raise the standard for preventing and protecting against natural disasters including floods and droughts, bush fires and grassland fires, geological disasters, meteorological disasters, earthquakes, and so on. It is needed to build stronger national comprehensive fire brigades with enhanced rescue capacity for all types of disasters, and strengthen and improve the aviation emergency rescue system and capacity. Science-based adjustments will be made to the type, size, and structure of emergency supply reserves to improve the capacity of rapid deployment and emergency transportation. The system of information networks and comprehensive monitoring and early warning for emergency command will be built to ensure communication support for emergency rescue under extreme conditions. Catastrophe insurance are encouraged.

Chapter 55 Social Stability and Security

Contradictions among the people under the new situation will be properly handled to better maintain public order, and weave an all-round, three-dimensional, and intelligent social security net.

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I. Resolution of social conflicts

Building on the "Fengqiao Experience" and its connotations in the new era, a comprehensive mechanism for social conflict resolution will be established, featuring prevention and control at the source, troubleshooting, dispute resolution, and emergency response. Smooth and regulated channels will be provided for people to express their needs, coordinate their interests, and protect their rights and interests. Improvements will be made to the joint work system of people's mediation, administrative mediation, and judicial mediation. Diversified resolutions will be provided for conflicts and disputes, giving full play to the role of mediation, arbitration, administrative adjudication, administrative reconsideration, and litigation in preventing and resolving social disputes. A sound petition system will be implemented to provide law-based solutions to the people's reasonable demands on the spot in a timely manner. Prevention and control of social risks and disputes will be better integrated. The social psychological service system and crisis intervention mechanism will be improved.

II. Crime prevention and control

The three-dimensional, law-based, specialized, and intelligent measures will be taken to maintain public order by combining the efforts of both professionals and the people, and preventing and controlling crimes through public participation. A working mechanism will be put into place to jointly tackle problems, work together, and put in efforts to create "Peaceful China". In this way, a sound crime prevention and control system will take shape. Efforts will continue to carry out the people's war against drugs and terrorism, combat organized crime and root out local criminal gangs on an ongoing basis, fight against all illegal and criminal activities, and enhance our ability to crack down on emerging cybercrimes and transnational and cross-regional crimes. Actions will be taken to identify and tackle potential problems in key areas for maintaining public order and improving the mechanism for coordinating crime prevention and control, by combining punishment and prevention, as well as integrating prevention and control. A intelligent big data platforms on public security will be built. Efforts are needed to improve the mechanism for checks and oversight over the exercise of law enforcement and judicial power, and improve the mechanism for safeguarding the rights and interests of law enforcement and judicial personnel. The crime prevention and control systems at ports will be established. And international practical cooperation on law enforcement and security will be deepened.

Part XVI Modernization of National Defense and the Armed Forces as We Build National Prosperity

Our efforts to strengthen national defense and the armed forces are guided by Xi Jinping's instructions and the military strategy for the new era. The Party's absolute leadership over the armed forces is of paramount importance. It is also important to raise political awareness among service members, implement necessary reforms, expand the use of new technologies, cultivate and harness talent, and create a rules-based culture. The modernization process involves mechanization, digitization, and the use of smart technologies, in addition to more rigorous and systematic military training to boost combat readiness. The process aims to enhance the ability of the armed forces to safeguard China's sovereignty, security, and national interests, and ensure that the centenary goal of strengthening the armed forces is achieved by 2027.

Chapter 56 Modernization of National Defense and the Military

More will be done to accelerate the modernization of military theories and introduce new warfare and strategic guidance to keep abreast with the times, improve the military's strategic system in the new era, and develop advanced combat theory. Efforts will be made to modernize our military's organizational structure, deepen the reform of national defense and the armed forces, promote the revolution of military management, accelerate the transformation of military branches and armed police forces, expand the strategic forces and combat forces in new domains with new types of military personnel, build a high-standard strategic deterrence and joint operation system, and strengthen the joint training, joint support, and joint application of military forces. Steps will be taken to accelerate the modernization of military personnel, implement a military education policy that is suitable for the new era, improve the three-pronged training system for new military personnel, and forge a new array of high-quality and professional military personnel. We will also gather pace in the modernization of weaponry by focusing on independent and original innovation in defense-related science and technology, as well as the development of strategic, innovative and disruptive technologies, and accelerate the upgrade of weaponry and equipment as well as the development of smart weaponry and equipment.

Chapter 57 Strengthening National Defense in Tandem with Economic Growth

In coordination with the modernization drive of the country, we will build an integrated national strategic system and capacity by stepping up strategic planning efforts, promoting the sharing of resources and factors, coordinating policies and institutions, and improving organizational management, task fulfillment, policies and institutions, personnel training, and the risk control system. We will do better in balancing the development of key regions, key sectors, and emerging sectors, and focus on the implementation of major projects in the field of national defense. The planning of military development and that of regional economic development will be well coordinated to better serve the strategic needs for national security and development. We will boost military-civilian collaborative innovation in science and technology; advance both military and civilian development in the fields of ocean, aerospace, cyberspace, biology, new energy, artificial intelligence, and quantum science and technology; promote the resource sharing of military and civilian scientific research facilities; and facilitate the two-way application of military and civilian scientific research achievements and the development of key industries. We will boost the co-development and sharing of infrastructure, intensify efforts to plan for and develop new types of infrastructure, and do better in meeting national defense needs in economic development projects. Efforts will be made to speed up the development of a modern military logistics system and asset management system, intensify the joint training of people competent in both military and civilian services, and improve the systems for their exchange, employment, and qualification certification. We will improve the structure of defense-related science, technology, and industry, and accelerate the process of standardization and generalization. We will promote the reforms of market access for weaponry and equipment and air traffic management; improve the national defense mobilization system; coordinate efforts to respond to emergencies and meet challenges in wartime; improve the mechanism for strengthening the border defense; promote national defense education for all people; and consolidate the unity of the military, the government, and the people. We will safeguard the legitimate rights and interests of service members and their families and make serviceman a profession respected by the whole society.

Part XVII Socialist Democracy, the Rule of Law, and Party and State Oversight Mechanisms

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We will uphold the unity of the leadership of the Communist Party of China (CPC), the running of the country by the people, and the rule of law, and push the socialist political system with Chinese characteristics to improve and develop.

Chapter 58 Socialist Democracy

Continued efforts will be made to improve the system where the CPC exercises overall leadership and coordinates the efforts of all involved, and ensure the CPC's leadership in all fields and aspects of the country's development. We will also uphold and improve the system of people's congresses, strengthen the system for the people's congresses to oversee the governments, the supervisory commissions, the people's courts, and the people's procuratorates, and ensure that the people engage in the management of state , economic, cultural, and social affairs through various channels and in various forms in accordance with the law. We will uphold and improve the system of multiparty cooperation and political consultation under the leadership of the CPC, promote the development of other political parties participating in state governance under Chinese socialism, further build the CPPCC as a special consultative body, leverage the unique advantages of socialist consultative democracy, and give better play to its role in offering advice to the government and building consensus. We will fully implement the the CPC's policies concerning ethnic groups, uphold and improve the system of regional ethnic autonomy, create a strong sense of community for the Chinese nation, and encourage all ethnic groups to unite closely and work in concert for common prosperity and development. We will fully implement the CPC's basic policy on religious affairs, uphold the principle of developing religions in the Chinese context, and actively guide religions to adapt themselves to the socialist society. We will improve the system of community-level self-governance, and increase the people's capacity to manage their own affairs, serve and educate themselves, and exercise public scrutiny. We will give full play to the role of trade unions, Communist Youth League organizations, women's federations, and other people's organizations as bridges linking the CPC with the people. We will improve the united front with extensive participation of all political parties, promote harmony between political parties, between ethnic groups, between religions, between social strata, and between Chinese at home and overseas, and consolidate and develop greater unity and solidarity. We will fully implement the CPC's policy on overseas Chinese affairs and pool the support of overseas Chinese to serve the big-picture interests.

Chapter 59 Promotion of the Rule of Law

We are fully committed to promoting socialist rule of law with Chinese characteristics. Efforts will be made to pursue parallel progress in the rule of law for national governance, exercise of state power, and government administration, promote the efforts to build a country, government, and society based on the rule of law, and implement the plan for promoting the rule of law in the country. Institutions and mechanisms will be improved to fully implement the Constitution, boost the implementation of the Constitution and oversight of constitutional compliance, put in place a mechanism for constitutional interpretation, and promote constitutionality review. We will improve the legislative institutions and mechanisms, advance legislation in key areas, emerging areas, and areas related to foreign affairs, lay equal emphasis on legislation, amendment, abolishment, interpretation, and compilation, and improve the socialist legal system with Chinese characteristics with the Constitution as the core. We will implement the outline for building a government based on the rule of law, uphold and improve the system of procedures for major administrative decision-making, deepen the reform of the administrative law enforcement system, see that law is enforced in a strict, standardized, fair, and civil way, regulate the use of discretionary powers in law enforcement, and promote reform of the administrative review system. We will deepen integrated, complete reform for the judicial system to improve the systems of judicial trials, of procuratorates, of punishment enforcement, and of lawyers, fully implement the judicial responsibility system, enhance the supervision over judicial activities, deepen reform of the enforcement system, and promote judicial justice. We will implement the outline for building a society based on the rule of law, foster a culture of socialist rule of law, promote publicity and education on the rule of law, implement the eighth five-year plan for increasing public knowledge of the law, and improve the public legal service system, legal aid, and national judicial assistance system. We will strengthen the judicial protection of human rights across the board and promote the all-round development of the cause of human rights. We will intensify efforts to build the legal system concerning foreign affairs and better train legal personnel on foreign affairs.

Chapter 60 Party and State Oversight Mechanisms

We will seek to improve the oversight system that features the CPC's overall leadership, full coverage, and authoritative and efficient oversight and create a mechanism for exercising power that ensures sound decision-making, resolute enforcement, and effective oversight. We will ensure that leadership and oversight responsibilities for strict self-governance are properly assumed, enhance political oversight, advance political inspections, and intensify rectification efforts. More will be done to promote the coordination of oversight via disciplinary action, supervisory mechanism, dispatched resident teams, and inspections, and form a long-standing supervision synergy by leveraging the leading role of the intra-Party supervision and driving the coordination of all types of supervision, to better integrate the oversight systems into the national governance system. We will deepen the reform of the discipline inspection and supervision system, strengthen the leadership of the discipline inspection and supervision commissions at higher levels over those at lower levels, promote well-regulated and law-based discipline inspection and supervision activities, and give full play to the role of oversight in ensuring implementation and promoting improvement and development. We will improve the power allocation and operation restriction mechanisms, as well as the systems for exercising power by matter, setting power by post, delegating power in a graded manner and regular job rotation. We will improve the system of disclosures on Party affairs, government affairs, judicial affairs, and other fields; improve the mechanisms for finding problems, correcting deviations, and ensuring accurate accountability; and build full-coverage accountability and oversight systems. We will continue to ensure that there are no no-oversight zones, no ground is left unturned, and no tolerance is shown for corruption. We will strengthen deterrence so that officials do not dare to be corrupt, strengthen the oversight of institutions so they are unable to be corrupt, and strengthen their vigilance so they have no desire to be corrupt. We will put in every effort to ensure that our political atmosphere and development environment are clean and free of corruption. We will deepen international cooperation against corruption. We will make steady efforts to implement the central Party leadership's eight-point decision on improving Party and government conduct, create a better long-term mechanism for improving conduct, continue to rectify the practice of formalities for formalities' sake and bureaucratism, effectively prevent the resurgence of hedonism and extravagance, and resolutely combat corruption and unhealthy tendencies among people.

Part XVIII The Principle of "One Country, Two Systems" and National Reunification

We stay committed to lasting prosperity and stability in Hong Kong and Macao, and peaceful development of cross-Straits relations and national reunification, on our journey towards the great renewal of the Chinese nation.

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Chapter 61 Lasting Prosperity and Stability in Hong Kong and Macao

We will stay true to the letter and spirit of the principle of "One Country, Two Systems", which allows the people of Hong Kong and Macao to administer their own affairs with a high degree of autonomy. Rule of law must be maintained in Hong Kong and Macao, the two Special Administrative Regions (SARs), in accordance with the Constitution and the basic laws. The central authorities' overall jurisdiction over the SARs cannot be challenged. The legal system and enforcement mechanisms for the SARs to safeguard national security must be implemented effectively to protect national sovereignty, security, national interests, and overall social stability in the SARs. Resolute actions will be taken to guard against and deter external interference in the affairs of Hong Kong and Macao. Support will be provided to the SARs in their efforts to enhance their competitive advantages and better integrate into the overall process of national development.

I. Support for the SARs' endeavor to enhance their competitive advantages

We will support Hong Kong in enhancing its status as an international financial, shipping, and trade center and an international aviation hub, and strengthen its functions as a global offshore RMB business hub and an international center for asset management and risk management. We will support Hong Kong in building itself into an international center for innovation and technology, a center in the Asia-Pacific region for international legal and dispute resolution services, and a regional center for intellectual property trade. We will support Hong Kong's endeavor to make its service sector more competitive in high-end markets and creating greater value, and its effort to develop itself into a center for cultural and art exchanges with other countries. We will support Macao in enriching its significance as a world tourism and leisure center, support Guangdong-Macao cooperation on developing the Hengqin region, and help Macao expand its functions as a service platform for business cooperation between China and Portuguese-speaking countries, and build itself into a center for exchanges and cooperation where Chinese culture is the mainstream and diverse cultures coexist. We will support Macao in boosting the research, development and manufacturing of traditional Chinese medicine and developing characteristic finance, high technology, convention and exhibition, commerce and trade, and other industries, and help Macao appropriately diversify its economy.

II. Support for the SARs' endeavor to better integrate into the overall process of national development

We will improve the mechanism for integrating the SARs into the overall development of the country and coordinating the development of the two regions and the mainland based on their complementary advantages. We will support the SARs in participating in and facilitating China's endeavor to open up fully and develop a modern economic system and build a functional platform for joint pursuit of the Belt and Road Initiative. We will deepen the economic, trade, and technological cooperation between the mainland and the SARs, and expand the connectivity of their financial markets. We will build a high-quality Guangdong-Hong Kong-Macao Greater Bay Area, further the cooperation between Guangdong, Hong Kong, and Macao as well as the Pan-Pearl River Delta regional cooperation, and promote the development of major cooperation platforms between Guangdong, Hong Kong, and Macao, such as Qianhai in Shenzhen, Hengqin in Zhuhai, Nansha in Guangzhou, and Shenzhen-Hong Kong Science and Technology Innovation Cooperation Zone. We will boost exchanges and cooperation between the mainland and the SARs in all fields, improve the policies and measures for helping residents of the SARs live and work better in the mainland, and promote education on the Constitution, the basic laws, and national conditions, to enhance the national awareness and patriotism of residents of the SARs. We will support the SARs in carrying out exchanges and cooperation with foreign countries and regions.

Chapter 62 Peaceful Development of Cross-Straits Relations and National Reunification

We will stay committed to the one-China principle and the 1992 Consensus, and peaceful and integrated development of cross-Straits relations with the wellbeing of the people on both sides of the Straits top of mind. We will remain vigilant against and resolutely confront any separatist activity seeking "Taiwan independence".

I. Integrated cross-Straits development

Efforts will be made to improve systems and policies for safeguarding the wellbeing of our Taiwan compatriots and ensuring they enjoy the same treatment in the mainland as local residents. We will continue to introduce and implement policies and measures that benefit Taiwan and the people, so that our Taiwan compatriots can share development opportunities and participate in the mainland's economic and social development. Taiwan's business people and enterprises will be encouraged to participate in the BRI and the implementation of the country's coordinated regional development strategy. We will promote cross-Straits financial cooperation and support qualified Taiwan-invested enterprises in going public in the mainland. We will promote the development of platforms for cross-Straits cooperation, such as the Cross-Straits Industrial Cooperation Zone, the Pingtan Comprehensive Experimental Zone, and the Kunshan Experimental Zone for Deepening Cross-Straits Industrial Cooperation. We will support Fujian in exploring a new path for integrated development across the Straits, and accelerate the development of demonstration zones for such integrated development. We will strengthen cross-Straits industrial cooperation and build a cross-Straits common market to grow a stronger Chinese economy.

II. People-to-people exchanges across the Straits

We will actively promote exchanges, cooperation, and people-to-people interactions across the Straits, to boost their mutual understanding, trust, and recognition. More will be done to advance cross-Straits exchanges and cooperation in culture, education, healthcare, and other areas, promote the sharing of social security and public resources, and support equal access to inclusive and convenient basic public services in areas adjacent to each other or with comparable conditions across the Straits. People on both sides of the Straits will be encouraged to carry forward and develop the fine traditional Chinese culture through innovation. We will strengthen cross-Straits exchanges between community-level organizations and young people and encourage young people from Taiwan to pursue and fulfill their dreams in the mainland. We will unite all the Taiwan compatriots to oppose separatist activities seeking "Taiwan independence", safeguard the peaceful development of relations across the Straits and strive for the great rejuvenation of the Chinese nation.

Part XIX Implementation of This Plan

This Plan will be implemented under the CPC's overall leadership. Implementation mechanisms will be strengthened to ensure that the government fulfils its responsibilities, and to spur dynamism and creativity across society in our join effort to build a socialist modern country.

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Chapter 63 The Overall Leadership Role of the CPC Central Committee

We will see that the CPC charts the direction, exercises overall governance, formulates policies and facilitates reform, and thoroughly study and implement Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era. We will be keenly aware of the need to maintain political integrity, think in big-picture terms, follow the leadership core, remain aligned with the central Party leadership, stay confident in the path, theory, system, and culture of socialism with Chinese characteristics, uphold General Secretary Xi Jinping's core position on the Party Central Committee and in the Party as a whole, and uphold the Party Central Committee's authority and its centralized, unified leadership. We will keep improving our capacity for political judgement, thinking, and implementation, and ensure the Party's leadership over all fields and processes of plan implementation. With these efforts we will ensure the implementation of major decisions and plans of the Party Central Committee. We will give full play to the guiding role of full and strict governance over the Party and integrate the improvement of Party and state oversight systems into plan implementation. We will improve the organizational system that links governments at all levels with effective execution and build the political competence and professionalism of leadership bodies and officials at all levels in carrying out reform, promoting development, and maintaining stability, in line with the new demands of the new era.

We will arouse the enthusiasm of all sectors to participate in plan implementation, encourage trade unions, Communist Youth League organizations, and women's federations to function well, give full play to the role of other political parties, industry and commerce federations and public figures without party affiliation, and galvanize consensus and strength of the whole society to the greatest extent. We will build a mechanism for internal driving forces to meet the requirements of high-quality development, improve the incentive-oriented performance evaluation mechanism and the mechanism to ensure that those who have fulfilled their duties are not held accountable, and mobilize the enthusiasm, initiative, and creativity of officials, especially those at the community level.

Chapter 64 Unified Planning

A national planning system will be established, comprising national development planning, spatial planning, and special and regional planning. Planning is done at the national, provincial, municipal, and county levels. It sets clear goals, defines tasks to achieve those goals and the scope within which the tasks are to be implemented, and determines the way in which the tasks are mutually reinforcing and aligned with objectives outlined in national plans.

I. The central role of national development planning

We will make better use of the strategic guiding role of national development plans, and strengthen the support of spatial, special, and regional plans for the implementation of this Plan. In accordance with the requirements and key tasks for territorial space development and protection set out in this Plan, we will formulate and implement a national territorial space plan to provide territorial space support for the implementation of major strategic tasks. Focusing on the strategic priorities and main tasks specified in this Plan, we will formulate and implement several national key special plans in the fields of scientific and technological innovation, digital economy, ecology, and people's wellbeing, and draw up and refine the timetable and roadmap for the fulfillment of the development tasks. According to the strategic tasks for regional development, as specified in this Plan, we will formulate and implement a number of plans for the implementation of national-level regional development plans, and ensure that the development strategy, main objectives, key tasks, and major projects proposed in this Plan are well embodied in local plans.

II. Better planning coordination

We will improve the planning management systems for lists and catalogs, and record compilation and coordination. We will formulate the lists and catalogs of national special plans during the 14th Five-Year Plan period, promote the filing of plans by relying on the National Comprehensive Planning Management Information Platform, and bring all kinds of plans under unified management. We will establish a sound plan coordination mechanism. The plans to be submitted to the CPC Central Committee and the State Council and provincial development plans must be coordinated with this Plan before being submitted for approval, to ensure that the national spatial plans, special plans, regional plans, and other plans at all levels are consistent with this Plan in terms of main objectives, course of development, overall agenda, major policies, key projects, risk control, etc.

Chapter 65 Mechanisms for Implementing This Plan

Implementation of this Plan requires organization, coordination, and oversight. Effective mechanisms are called for to monitor, evaluate, and oversee the implementation of the Plan, in addition to providing policy support.

I. Responsibilities for implementing this Plan

All regions and departments will, according to the division of functions and duties, formulate implementation plans for the main objectives and tasks involving their respective regions or departments in this Plan. For binding targets, major projects, and tasks in the fields of public services, environmental protection and security as specified in this Plan, we will clearly define the primary responsibility entities and schedule requirements, properly allocate public resources, and channel private sector resources, to ensure the tasks are completed as scheduled. The anticipatory targets and tasks in the fields of industrial development and structural adjustment as proposed in this Plan will be fulfilled primarily by giving play to the role of market entities, while governments at all levels should create an enabling policy environment with proper institutions and the rule of law in place. The annual plans should incorporate the development objectives and key tasks proposed in this Plan by breaking down the key targets set out in this Plan, and include well-balanced annual objectives as well as annual priorities.

II. Monitoring and evaluation of the implementation of the Plan

We will carry out dynamic monitoring, mid-stage evaluation, and final evaluation of plan implementation. The results of mid-stage and final evaluation will be submitted to the Standing Committee of the Political Bureau of the CPC Central Committee for deliberation in accordance with the procedures, and the plan's implementation will be reported to the Standing Committee of the National People's Congress (NPC) in accordance with the law, as part of the NPC's supervisory job. The central supervisory and audit authorities will play their supervisory role to promote the implementation of this Plan. The performance in plan implementation will be considered in the assessment of relevant departments, local leadership bodies, and officials, and will serve as an important measure of improvement in the work of the

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government. If it is necessary to adjust the plan, the State Council should prepare an adjustment plan and submit it to the Standing Committee of the NPC for approval.

III. Policy coordination and support

We will work to build a mechanism for coordination between this Plan and macro policies by following the directions set in this Plan, with the support of fiscal financial and other policies. The orientation of macro policies will be reasonably determined in accordance with the objectives and tasks specified in this Plan and in light of economic development. Public finance will be subordinate to and serve public policies, to strengthen the funding support for major national strategic tasks. The medium-term financial plans, annual budgets, and government investment plans will be better coordinated with the implementation of this Plan. The central government's funding will be preferentially channeled into the major tasks and projects proposed in this Plan. The projects should be carried out according to the plan, and the funds and factors of production should be provided for the projects. Based on the list of major projects provided in this Plan, the approval procedures for the projects in the list should be streamlined, and site selection, land supply, and funding support for these projects should be prioritized. The land demand of each major project will be addressed by the central government.

IV. Legislation for development planning

The provisions, requirements and proven experience and practices of the CPC Central Committee and the State Council on developing unified planning systems and national development planning will be crystalized in the form of law by following the principle of formulating and implementing plans according to law. We will adopt the development planning law at a faster pace to strengthen the legal support for plan formulation and implementation.

中华人民共和国国民经济和社会发展第十四个五年规划和2035年远景目标纲要

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中华人民共和国国民经济和社会发展第十四个五年（2021－2025年）规划和2035年远景目标纲要，根据《中共中央关于制定国民经济和社会发展第十四个五年规划和二〇三五年远景目标的建议》编制，主要阐明国家战略意图，明确政府工作重点，引导规范市场主体行为，是我国开启全面建设社会主义现代化国家新征程的宏伟蓝图，是全国各族人民共同的行动纲领。

第一篇　开启全面建设社会主义现代化国家新征程

“十四五”时期是我国全面建成小康社会、实现第一个百年奋斗目标之后，乘势而上开启全面建设社会主义现代化国家新征程、向第二个百年奋斗目标进军的第一个五年。

第一章　发展环境

我国进入新发展阶段，发展基础更加坚实，发展条件深刻变化，进一步发展面临新的机遇和挑战。

第一节　决胜全面建成小康社会取得决定性成就

“十三五”时期是全面建成小康社会决胜阶段。面对错综复杂的国际形势、艰巨繁重的国内改革发展稳定任务特别是新冠肺炎疫情严重冲击，以习近平同志为核心的党中央不忘初心、牢记使命，团结带领全党全国各族人民砥砺前行、开拓创新，奋发有为推进党和国家各项事业。全面深化改革取得重大突破，全面依法治国取得重大进展，全面从严治党取得重大成果，国家治理体系和治理能力现代化加快推进，中国共产党领导和我国社会主义制度优势进一步彰显。

经济运行总体平稳，经济结构持续优化，国内生产总值突破100万亿元。创新型国家建设成果丰硕，在载人航天、探月工程、深海工程、超级计算、量子信息、“复兴号”高速列车、大飞机制造等领域取得一批重大科技成果。决战脱贫攻坚取得全面胜利，5575万农村贫困人口实现脱贫，困扰中华民族几千年的绝对贫困问题得到历史性解决，创造了人类减贫史上的奇迹。农业现代化稳步推进，粮食年产量连续稳定在1.3万亿斤以上。1亿农业转移人口和其他常住人口在城镇落户目标顺利实现，区域重大战略扎实推进。污染防治力度加大，主要污染物排放总量减少目标超额完成，资源利用效率显著提升，生态环境明显改善。金融风险处置取得重要阶段性成果。对外开放持续扩大，共建“一带一路”成果丰硕。人民生活水平显著提高，教育公平和质量较大提升，高等教育进入普及化阶段，城镇新增就业超过6000万人，建成世界上规模最大的社会保障体系，基本医疗保险覆盖超过13亿人，基本养老保险覆盖近10亿人，城镇棚户区住房改造开工超过2300万套。新冠肺炎疫情防控取得重大战略成果，应对突发事件能力和水平大幅提高。公共文化服务水平不断提高，文化事业和文化产业繁荣发展。国防和军队建设水平大幅提升，军队组织形态实现重大变革。国家安全全面加强，社会保持和谐稳定。

“十三五”规划目标任务胜利完成，我国经济实力、科技实力、综合国力和人民生活水平跃上新的大台阶，全面建成小康社会取得伟大历史性成就，中华民族伟大复兴向前迈出了新的一大步，社会主义中国以更加雄伟的身姿屹立于世界东方。

第二节　我国发展环境面临深刻复杂变化

当前和今后一个时期，我国发展仍然处于重要战略机遇期，但机遇和挑战都有新的发展变化。当今世界正经历百年未有之大变局，新一轮科技革命和产业变革深入发展，国际力量对比深刻调整，和平与发展仍然是时代主题，人类命运共同体理念深入人心。同时，国际环境日趋复杂，不稳定性不确定性明显增加，新冠肺炎疫情影响广泛深远，世界经济陷入低迷期，经济全球化遭遇逆流，全球能源供需版图深刻变革，国际经济政治格局复杂多变，世界进入动荡变革期，单边主义、保护主义、霸权主义对世界和平与发展构成威胁。

我国已转向高质量发展阶段，制度优势显著，治理效能提升，经济长期向好，物质基础雄厚，人力资源丰富，市场空间广阔，发展韧性强劲，社会大局稳定，继续发展具有多方面优势和条件。同时，我国发展不平衡不充分问题仍然突出，重点领域关键环节改革任务仍然艰巨，创新能力不适应高质量发展要求，农业基础还不稳固，城乡区域发展和收入分配差距较大，生态环保任重道远，民生保障存在短板，社会治理还有弱项。

必须统筹中华民族伟大复兴战略全局和世界百年未有之大变局，深刻认识我国社会主要矛盾变化带来的新特征新要求，深刻认识错综复杂的国际环境带来的新矛盾新挑战，增强机遇意识和风险意识，立足社会主义初级阶段基本国情，保持战略定力，办好自己的事，认识和把握发展规律，发扬斗争精神，增强斗争本领，树立底线思维，准确识变、科学应变、主动求变，善于在危机中育先机、于变局中开新局，抓住机遇，应对挑战，趋利避害，奋勇前进。

第二章　指导方针

“十四五”时期经济社会发展，必须牢牢把握以下指导思想、原则和战略导向。

第一节　指导思想

高举中国特色社会主义伟大旗帜，深入贯彻党的十九大和十九届二中、三中、四中、五中全会精神，坚持以马克思列宁主义、毛泽东思想、邓小平理论、“三个代表”重要思想、科学发展观、习近平新时代中国特色社会主义思想为指导，全面贯彻党的基本理论、基本路线、基本方略，统筹推进经济建设、政治建设、文化建设、社会建设、生态文明建设的总体布局，协调推进全面建设社会主义现代化国家、全面深化改革、全面依法治国、全面从严治党的战略布局，坚定不移贯彻创新、协调、绿色、开放、共享的新发展理念，坚持稳中求进工作总基调，以推动高质量发展为主题，以深化供给侧结构性改革为主线，以改革创新为根本动力，以满足人民日益增长的美好生活需要为根本目的，统筹发展和安全，加快建设现代化经济体系，加快构建以国内大循环为主体、国内国际双循环相互促进的新发展格局，推进国家治理体系和治理能力现代化，实现经济行稳致远、社会安定和谐，为全面建设社会主义现代化国家开好局、起好步。

第二节　必须遵循的原则

——坚持党的全面领导。坚持和完善党领导经济社会发展的体制机制，坚持和完善中国特色社会主义制度，不断提高贯彻新发展理念、构建新发展格局能力和水平，为实现高质量发展提供根本保证。

——坚持以人民为中心。坚持人民主体地位，坚持共同富裕方向，始终做到发展为了人民、发展依靠人民、发展成果由人民共享，维护人民根本利益，激发全体人民积极性、主动性、创造性，促进社会公平，增进民生福祉，不断实现人民对美好生活的向往。

——坚持新发展理念。把新发展理念完整、准确、全面贯穿发展全过程和各领域，构建新发展格局，切实转变发展方式，推动质量变革、效率变革、动力变革，实现更高质量、更有效率、更加公平、更可持续、更为安全的发展。

——坚持深化改革开放。坚定不移推进改革，坚定不移扩大开放，加强国家治理体系和治理能力现代化建设，破除制约高质量发展、高品质生活的体制机制障碍，强化有利于提高资源配置效率、有利于调动全社会积极性的重大改革开放举措，持续增强发展动力和活力。

——坚持系统观念。加强前瞻性思考、全局性谋划、战略性布局、整体性推进，统筹国内国际两个大局，办好发展安全两件大事，坚持全国一盘棋，更好发挥中央、地方和各方面积极性，着力固根基、扬优势、补短板、强弱项，注重防范化解重大风险挑战，实现发

展质量、结构、规模、速度、效益、安全相统一。

第三节　战略导向

“十四五”时期推动高质量发展，必须立足新发展阶段、贯彻新发展理念、构建新发展格局。把握新发展阶段是贯彻新发展理念、构建新发展格局的现实依据，贯彻新发展理念为把握新发展阶段、构建新发展格局提供了行动指南，构建新发展格局则是应对新发展阶段机遇和挑战、贯彻新发展理念的战略选择。必须坚持深化供给侧结构性改革，以创新驱动、高质量供给引领和创造新需求，提升供给体系的韧性和对国内需求的适配性。必须建立扩大内需的有效制度，加快培育完整内需体系，加强需求侧管理，建设强大国内市场。必须坚定不移推进改革，破除制约经济循环的制度障碍，推动生产要素循环流转和生产、分配、流通、消费各环节有机衔接。必须坚定不移扩大开放，持续深化要素流动型开放，稳步拓展制度型开放，依托国内经济循环体系形成对全球要素资源的强大引力场。必须强化国内大循环的主导作用，以国际循环提升国内大循环效率和水平，实现国内国际双循环互促共进。

第三章　主要目标

按照全面建设社会主义现代化国家的战略安排，2035年远景目标和“十四五”时期经济社会发展主要目标如下。

第一节　2035年远景目标

展望2035年，我国将基本实现社会主义现代化。经济实力、科技实力、综合国力将大幅跃升，经济总量和城乡居民人均收入将再迈上新的大台阶，关键核心技术实现重大突破，进入创新型国家前列。基本实现新型工业化、信息化、城镇化、农业现代化，建成现代化经济体系。基本实现国家治理体系和治理能力现代化，人民平等参与、平等发展权利得到充分保障，基本建成法治国家、法治政府、法治社会。建成文化强国、教育强国、人才强国、体育强国、健康中国，国民素质和社会文明程度达到新高度，国家文化软实力显著增强。广泛形成绿色生产生活方式，碳排放达峰后稳中有降，生态环境根本好转，美丽中国建设目标基本实现。形成对外开放新格局，参与国际经济合作和竞争新优势明显增强。人均国内生产总值达到中等发达国家水平，中等收入群体显著扩大，基本公共服务实现均等化，城乡区域发展差距和居民生活水平差距显著缩小。平安中国建设达到更高水平，基本实现国防和军队现代化。人民生活更加美好，人的全面发展、全体人民共同富裕取得更为明显的实质性进展。

第二节　“十四五”时期经济社会发展主要目标

——经济发展取得新成效。发展是解决我国一切问题的基础和关键，发展必须坚持新发展理念，在质量效益明显提升的基础上实现经济持续健康发展，增长潜力充分发挥，国内生产总值年均增长保持在合理区间、各年度视情提出，全员劳动生产率增长高于国内生产总值增长，国内市场更加强大，经济结构更加优化，创新能力显著提升，全社会研发经费投入年均增长7%以上、力争投入强度高于“十三五”时期实际，产业基础高级化、产业链现代化水平明显提高，农业基础更加稳固，城乡区域发展协调性明显增强，常住人口城镇化率提高到65%，现代化经济体系建设取得重大进展。

——改革开放迈出新步伐。社会主义市场经济体制更加完善，高标准市场体系基本建成，市场主体更加充满活力，产权制度改革和要素市场化配置改革取得重大进展，公平竞争制度更加健全，更高水平开放型经济新体制基本形成。

——社会文明程度得到新提高。社会主义核心价值观深入人心，人民思想道德素质、科学文化素质和身心健康素质明显提高，公共文化服务体系和文化产业体系更加健全，人民精神文化生活日益丰富，中华文化影响力进一步提升，中华民族凝聚力进一步增强。

——生态文明建设实现新进步。国土空间开发保护格局得到优化，生产生活方式绿色转型成效显著，能源资源配置更加合理、利用效率大幅提高，单位国内生产总值能源消耗和二氧化碳排放分别降低13.5%、18%，主要污染物排放总量持续减少，森林覆盖率提高到24.1%，生态环境持续改善，生态安全屏障更加牢固，城乡人居环境明显改善。

——民生福祉达到新水平。实现更加充分更高质量就业，城镇调查失业率控制在5.5%以内，居民人均可支配收入增长与国内生产总值增长基本同步，分配结构明显改善，基本公共服务均等化水平明显提高，全民受教育程度不断提升，劳动年龄人口平均受教育年限提高到11.3年，多层次社会保障体系更加健全，基本养老保险参保率提高到95%，卫生健康体系更加完善，人均预期寿命提高1岁，脱贫攻坚成果巩固拓展，乡村振兴战略全面推进，全体人民共同富裕迈出坚实步伐。

——国家治理效能得到新提升。社会主义民主法治更加健全，社会公平正义进一步彰显，国家行政体系更加完善，政府作用更好发挥，行政效率和公信力显著提升，社会治理特别是基层治理水平明显提高，防范化解重大风险体制机制不断健全，突发公共事件应急处置能力显著增强，自然灾害防御水平明显提升，发展安全保障更加有力，国防和军队现代化迈出重大步伐。

专栏1 “十四五”时期经济社会发展主要指标

类别	指标	2020年	2025年	年均/累计	属性
经济发展	1.国内生产总值（GDP）增长（%）	2.3	—	保持在合理区间、各年度视情提出	预期性
	2.全员劳动生产率增长（%）	2.5	—	高于GDP增长	预期性
	3.常住人口城镇化率（%）	60.6*	65	—	预期性
创新驱动	4.全社会研发经费投入增长（%）	—	—	>7、力争投入强度高于“十三五”时期实际	预期性
	5.每万人口高价值发明专利拥有量（件）	6.3	12	—	预期性
	6.数字经济核心产业增加值占GDP比重（%）	7.8	10	—	预期性
民生福祉	7.居民人均可支配收入增长（%）	2.1	—	与GDP增长基本同步	预期性
	8.城镇调查失业率（%）	5.2	—	<5.5	预期性
	9.劳动年龄人口平均受教育年限（年）	10.8	11.3	—	约束性
	10.每千人口拥有执业（助理）医师数（人）	2.9	3.2	—	预期性
	11.基本养老保险参保率（%）	91	95	—	预期性
	12.每千人口拥有3岁以下婴幼儿托位数（个）	1.8	4.5	—	预期性
	13.人均预期寿命（岁）	77.3*	—	〔1〕	预期性
绿色生态	14.单位GDP能源消耗降低（%）	—	—	〔13.5〕	约束性
	15.单位GDP二氧化碳排放降低（%）	—	—	〔18〕	约束性
	16.地级及以上城市空气质量优良天数比率(%)	87	87.5	—	约束性
	17.地表水达到或好于Ⅲ类水体比例（%）	83.4	85	—	约束性
	18.森林覆盖率（%）	23.2*	24.1	—	约束性
安全保障	19.粮食综合生产能力（亿吨）	—	>6.5	—	约束性
	20.能源综合生产能力（亿吨标准煤）	—	>46	—	约束性

注：①〔〕内为5年累计数。②带*的为2019年数据。③能源综合生产能力指煤炭、石油、天然气、非化石能源生产能力之和。④2020年地级及以上城市空气质量优良天数比率和地表水达到或好于Ⅲ类水体比例指标值受新冠肺炎疫情等因素影响，明显高于正常年份。⑤2020年全员劳动生产率增长2.5%为预计数。

第二篇　坚持创新驱动发展　全面塑造发展新优势

坚持创新在我国现代化建设全局中的核心地位，把科技自立自强作为国家发展的战略支撑，面向世界科技前沿、面向经济主战场、面向国家重大需求、面向人民生命健康，深入实施科教兴国战略、人才强国战略、创新驱动发展战略，完善国家创新体系，加快建设科技强国。

第四章　强化国家战略科技力量

制定科技强国行动纲要，健全社会主义市场经济条件下新型举国体制，打好关键核心技术攻坚战，提高创新链整体效能。

第一节　整合优化科技资源配置

以国家战略性需求为导向推进创新体系优化组合，加快构建以国家实验室为引领的战略科技力量。聚焦量子信息、光子与微纳电子、网络通信、人工智能、生物医药、现代能源系统等重大创新领域组建一批国家实验室，重组国家重点实验室，形成结构合理、运行高效的实验室体系。优化提升国家工程研究中心、国家技术创新中心等创新基地。推进科研院所、高等院校和企业科研力量优化配置和资源共享。支持发展新型研究型大学、新型研发机构等新型创新主体，推动投入主体多元化、管理制度现代化、运行机制市场化、用人机制灵活化。

第二节　加强原创性引领性科技攻关

在事关国家安全和发展全局的基础核心领域，制定实施战略性科学计划和科学工程。瞄准人工智能、量子信息、集成电路、生命健康、脑科学、生物育种、空天科技、深地深海等前沿领域，实施一批具有前瞻性、战略性的国家重大科技项目。从国家急迫需要和长远需求出发，集中优势资源攻关新发突发传染病和生物安全风险防控、医药和医疗设备、关键元器件零部件和基础材料、油气勘探开发等领域关键核心技术。

专栏2　科技前沿领域攻关
01　新一代人工智能 前沿基础理论突破，专用芯片研发，深度学习框架等开源算法平台构建，学习推理与决策、图像图形、语音视频、自然语言识别处理等领域创新。
02　量子信息 城域、城际、自由空间量子通信技术研发，通用量子计算原型机和实用化量子模拟机研制，量子精密测量技术突破。
03　集成电路 集成电路设计工具、重点装备和高纯靶材等关键材料研发，集成电路先进工艺和绝缘栅双极型晶体管（IGBT）、微机电系统（MEMS）等特色工艺突破，先进存储技术升级，碳化硅、氮化镓等宽禁带半导体发展。
04　脑科学与类脑研究 脑认知原理解析，脑介观神经联接图谱绘制，脑重大疾病机理与干预研究，儿童青少年脑智发育，类脑计算与脑机融合技术研发。
05　基因与生物技术 基因组学研究应用，遗传细胞和遗传育种、合成生物、生物药等技术创新，创新疫苗、体外诊断、抗体药物等研发，农作物、畜禽水产、农业微生物等重大新品种创制，生物安全关键技术研究。
06　临床医学与健康 癌症和心脑血管、呼吸、代谢性疾病等发病机制基础研究，主动健康干预技术研发，再生医学、微生物组、新型治疗等前沿技术研发，重大传染病、重大慢性非传染性疾病防治关键技术研究。
07　深空深地深海和极地探测 宇宙起源与演化、透视地球等基础科学研究，火星环绕、小行星巡视等星际探测，新一代重型运载火箭和重复使用航天运输系统、地球深部探测装备、深海运维保障和装备试验船、极地立体观监测平台和重型破冰船等研制，探月工程四期、蛟龙探海二期、雪龙探极二期建设。

第三节　持之以恒加强基础研究

强化应用研究带动，鼓励自由探索，制定实施基础研究十年行动方案，重点布局一批基础学科研究中心。加大基础研究财政投入力度、优化支出结构，对企业投入基础研究实行税收优惠，鼓励社会以捐赠和建立基金等方式多渠道投入，形成持续稳定投入机制，基础研究经费投入占研发经费投入比重提高到8%以上。建立健全符合科学规律的评价体系和激励机制，对基础研究探索实行长周期评价，创造有利于基础研究的良好科研生态。

第四节　建设重大科技创新平台

支持北京、上海、粤港澳大湾区形成国际科技创新中心，建设北京怀柔、上海张江、大湾区、安徽合肥综合性国家科学中心，支持有条件的地方建设区域科技创新中心。强化国家自主创新示范区、高新技术产业开发区、经济技术开发区等创新功能。适度超前布局国家重大科技基础设施，提高共享水平和使用效率。集约化建设自然科技资源库、国家野外科学观测研究站（网）和科学大数据中心。加强高端科研仪器设备研发制造。构建国家科研论文和科技信息高端交流平台。

专栏3　国家重大科技基础设施
01　战略导向型 建设空间环境地基监测网、高精度地基授时系统、大型低速风洞、海底科学观测网、空间环境地面模拟装置、聚变堆主机关键系统综合研究设施等。
02　应用支撑型 建设高能同步辐射光源、高效低碳燃气轮机试验装置、超重力离心模拟与试验装置、加速器驱动嬗变研究装置、未来网络试验设施等。
03　前瞻引领型 建设硬X射线自由电子激光装置、高海拔宇宙线观测站、综合极端条件实验装置、极深地下极低辐射本底前沿物理实验设施、精密重力测量研究设施、强流重离子加速器装置等。
04　民生改善型 建设转化医学研究设施、多模态跨尺度生物医学成像设施、模式动物表型与遗传研究设施、地震科学实验场、地球系统数值模拟器等。

第五章　提升企业技术创新能力

完善技术创新市场导向机制，强化企业创新主体地位，促进各类创新要素向企业集聚，形成以企业为主体、市场为导向、产学研用深度融合的技术创新体系。

第一节　激励企业加大研发投入

实施更大力度的研发费用加计扣除、高新技术企业税收优惠等普惠性政策。拓展优化首台（套）重大技术装备保险补偿和激励政策，发挥重大工程牵引示范作用，运用政府采购政策支持创新产品和服务。通过完善标准、质量和竞争规制等措施，增强企业创新动力。健全鼓励国有企业研发的考核制度，设立独立核算、免于增值保值考核、容错纠错的研发准备金制度，确保中央国有工业企业研发支出年增长率明显超过全国平均水平。完善激励科技型中小企业创新的税收优惠政策。

第二节　支持产业共性基础技术研发

集中力量整合提升一批关键共性技术平台，支持行业龙头企业联合高等院校、科研院所和行业上下游企业共建国家产业创新中心，承担国家重大科技项目。支持有条件企业联合转制科研院所组建行业研究院，提供公益性共性技术服务。打造新型共性技术平台，解决跨行业跨领域关键共性技术问题。发挥大企业引领支撑作用，支持创新型中小微企业成长为创新重要发源地，推动产业链上中下游、大中小企业融通创新。鼓励有条件地方依托产业集群创办混合所有制产业技术研究院，服务区域关键共性技术研发。

第三节　完善企业创新服务体系

推动国家科研平台、科技报告、科研数据进一步向企业开放，创新科技成果转化机制，鼓励将符合条件的由财政资金支持形成的科技成果许可给中小企业使用。推进创新创业机构改革，建设专业化市场化技术转移机构和技术经理人队伍。完善金融支持创新体系，鼓励金融机构发展知识产权质押融资、科技保险等科技金融产品，开展科技成果转化贷款风险补偿试点。畅通科技型企业国内上市融资渠道，增强科创板“硬科技”特色，提升创业板服务成长型创新创业企业功能，鼓励发展天使投资、创业投资，更好发挥创业投资引导基金和私募股权基金作用。

第六章　激发人才创新活力

贯彻尊重劳动、尊重知识、尊重人才、尊重创造方针，深化人才发展体制机制改革，全方位培养、引进、用好人才，充分发挥人才第一资源的作用。

第一节　培养造就高水平人才队伍

遵循人才成长规律和科研活动规律，培养造就更多国际一流的战略科技人才、科技领军人才和创新团队，培养具有国际竞争力的青年科技人才后备军，注重依托重大科技任务和重大创新基地培养发现人才，支持设立博士后创新岗位。加强创新型、应用型、技能型人才培养，实施知识更新工程、技能提升行动，壮大高水平工程师和高技能人才队伍。加强基础学科拔尖学生培养，建设数理化生等基础学科基地和前沿科学中心。实行更加开放的人才政策，构筑集聚国内外优秀人才的科研创新高地。完善外籍高端人才和专业人才来华工作、科研、交流的停居留政策，完善外国人在华永久居留制度，探索建立技术移民制度。健全薪酬福利、子女教育、社会保障、税收优惠等制度，为海外科学家在华工作提供具有国际竞争力和吸引力的环境。

第二节　激励人才更好发挥作用

完善人才评价和激励机制，健全以创新能力、质量、实效、贡献为导向的科技人才评价体系，构建充分体现知识、技术等创新要素价值的收益分配机制。选好用好领军人才和拔尖人才，赋予更大技术路线决定权和经费使用权。全方位为科研人员松绑，拓展科研管

理“绿色通道”。实行以增加知识价值为导向的分配政策，完善科研人员职务发明成果权益分享机制，探索赋予科研人员职务科技成果所有权或长期使用权，提高科研人员收益分享比例。深化院士制度改革。

第三节　优化创新创业创造生态

大力弘扬新时代科学家精神，强化科研诚信建设，健全科技伦理体系。依法保护企业家的财产权和创新收益，发挥企业家在把握创新方向、凝聚人才、筹措资金等方面重要作用。推进创新创业创造向纵深发展，优化双创示范基地建设布局。倡导敬业、精益、专注、宽容失败的创新创业文化，完善试错容错纠错机制。弘扬科学精神和工匠精神，广泛开展科学普及活动，加强青少年科学兴趣引导和培养，形成热爱科学、崇尚创新的社会氛围，提高全民科学素质。

第七章　完善科技创新体制机制

深入推进科技体制改革，完善国家科技治理体系，优化国家科技计划体系和运行机制，推动重点领域项目、基地、人才、资金一体化配置。

第一节　深化科技管理体制改革

加快科技管理职能转变，强化规划政策引导和创新环境营造，减少分钱分物定项目等直接干预。整合财政科研投入体制，重点投向战略性关键性领域，改变部门分割、小而散的状态。改革重大科技项目立项和组织管理方式，给予科研单位和科研人员更多自主权，推行技术总师负责制，实行“揭榜挂帅”、“赛马”等制度，健全奖补结合的资金支持机制。健全科技评价机制，完善自由探索型和任务导向型科技项目分类评价制度，建立非共识科技项目的评价机制，优化科技奖励项目。建立健全科研机构现代院所制度，支持科研事业单位试行更灵活的编制、岗位、薪酬等管理制度。建立健全高等院校、科研机构、企业间创新资源自由有序流动机制。深入推进全面创新改革试验。

第二节　健全知识产权保护运用体制

实施知识产权强国战略，实行严格的知识产权保护制度，完善知识产权相关法律法规，加快新领域新业态知识产权立法。加强知识产权司法保护和行政执法，健全仲裁、调解、公证和维权援助体系，健全知识产权侵权惩罚性赔偿制度，加大损害赔偿力度。优化专利资助奖励政策和考核评价机制，更好保护和激励高价值专利，培育专利密集型产业。改革国有知识产权归属和权益分配机制，扩大科研机构和高等院校知识产权处置自主权。完善无形资产评估制度，形成激励与监管相协调的管理机制。构建知识产权保护运用公共服务平台。

第三节　积极促进科技开放合作

实施更加开放包容、互惠共享的国际科技合作战略，更加主动融入全球创新网络。务实推进全球疫情防控和公共卫生等领域国际科技合作，聚焦气候变化、人类健康等问题加强同各国科研人员联合研发。主动设计和牵头发起国际大科学计划和大科学工程，发挥科学基金独特作用。加大国家科技计划对外开放力度，启动一批重大科技合作项目，研究设立面向全球的科学研究基金，实施科学家交流计划。支持在我国境内设立国际科技组织、外籍科学家在我国科技学术组织任职。

第三篇　加快发展现代产业体系 巩固壮大实体经济根基

坚持把发展经济着力点放在实体经济上，加快推进制造强国、质量强国建设，促进先进制造业和现代服务业深度融合，强化基础设施支撑引领作用，构建实体经济、科技创新、现代金融、人力资源协同发展的现代产业体系。

第八章　深入实施制造强国战略

坚持自主可控、安全高效，推进产业基础高级化、产业链现代化，保持制造业比重基本稳定，增强制造业竞争优势，推动制造业高质量发展。

第一节　加强产业基础能力建设

实施产业基础再造工程，加快补齐基础零部件及元器件、基础软件、基础材料、基础工艺和产业技术基础等瓶颈短板。依托行业龙头企业，加大重要产品和关键核心技术攻关力度，加快工程化产业化突破。实施重大技术装备攻关工程，完善激励和风险补偿机制，推动首台（套）装备、首批次材料、首版次软件示范应用。健全产业基础支撑体系，在重点领域布局一批国家制造业创新中心，完善国家质量基础设施，建设生产应用示范平台和标准计量、认证认可、检验检测、试验验证等产业技术基础公共服务平台，完善技术、工艺等工业基础数据库。

第二节　提升产业链供应链现代化水平

坚持经济性和安全性相结合，补齐短板、锻造长板，分行业做好供应链战略设计和精准施策，形成具有更强创新力、更高附加值、更安全可靠的产业链供应链。推进制造业补链强链，强化资源、技术、装备支撑，加强国际产业安全合作，推动产业链供应链多元化。立足产业规模优势、配套优势和部分领域先发优势，巩固提升高铁、电力装备、新能源、船舶等领域全产业链竞争力，从符合未来产业

变革方向的整机产品入手打造战略性全局性产业链。优化区域产业链布局，引导产业链关键环节留在国内，强化中西部和东北地区承接产业转移能力建设。实施应急产品生产能力储备工程，建设区域性应急物资生产保障基地。实施领航企业培育工程，培育一批具有生态主导力和核心竞争力的龙头企业。推动中小企业提升专业化优势，培育专精特新“小巨人”企业和制造业单项冠军企业。加强技术经济安全评估，实施产业竞争力调查和评价工程。

第三节　推动制造业优化升级

深入实施智能制造和绿色制造工程，发展服务型制造新模式，推动制造业高端化智能化绿色化。培育先进制造业集群，推动集成电路、航空航天、船舶与海洋工程装备、机器人、先进轨道交通装备、先进电力装备、工程机械、高端数控机床、医药及医疗设备等产业创新发展。改造提升传统产业，推动石化、钢铁、有色、建材等原材料产业布局优化和结构调整，扩大轻工、纺织等优质产品供给，加快化工、造纸等重点行业企业改造升级，完善绿色制造体系。深入实施增强制造业核心竞争力和技术改造专项，鼓励企业应用先进适用技术、加强设备更新和新产品规模化应用。建设智能制造示范工厂，完善智能制造标准体系。深入实施质量提升行动，推动制造业产品“增品种、提品质、创品牌”。

第四节　实施制造业降本减负行动

强化要素保障和高效服务，巩固拓展减税降费成果，降低企业生产经营成本，提升制造业根植性和竞争力。推动工业用地提容增效，推广新型产业用地模式。扩大制造业中长期贷款、信用贷款规模，增加技改贷款，推动股权投资、债券融资等向制造业倾斜。允许制造业企业全部参与电力市场化交易，规范和降低港口航运、公路铁路运输等物流收费，全面清理规范涉企收费。建立制造业重大项目全周期服务机制和企业家参与涉企政策制定制度，支持建设中小企业信息、技术、进出口和数字化转型综合性服务平台。

专栏4　制造业核心竞争力提升
01　高端新材料 推动高端稀土功能材料、高品质特殊钢材、高性能合金、高温合金、高纯稀有金属材料、高性能陶瓷、电子玻璃等先进金属和无机非金属材料取得突破，加强碳纤维、芳纶等高性能纤维及其复合材料、生物基和生物医用材料研发应用，加快茂金属聚乙烯等高性能树脂和集成电路用光刻胶等电子高纯材料关键技术突破。
02　重大技术装备 推进CR450高速度等级中国标准动车组、谱系化中国标准地铁列车、高端机床装备、先进工程机械、核电机组关键部件、邮轮、大型LNG船舶和深海油气生产平台等研发应用，推动C919大型客机示范运营和ARJ21支线客机系列化发展。
03　智能制造与机器人技术 重点研制分散式控制系统、可编程逻辑控制器、数据采集和视频监控系统等工业控制装备，突破先进控制器、高精度伺服驱动系统、高性能减速器等智能机器人关键技术。发展增材制造。
04　航空发动机及燃气轮机 加快先进航空发动机关键材料等技术研发验证，推进民用大涵道比涡扇发动机CJ1000产品研制，突破宽体客机发动机关键技术，实现先进民用涡轴发动机产业化。建设上海重型燃气轮机试验电站。
05　北斗产业化应用 突破通信导航一体化融合等技术，建设北斗应用产业创新平台，在通信、金融、能源、民航等行业开展典型示范，推动北斗在车载导航、智能手机、穿戴设备等消费领域市场化规模化应用。
06　新能源汽车和智能（网联）汽车 突破新能源汽车高安全动力电池、高效驱动电机、高性能动力系统等关键技术，加快研发智能（网联）汽车基础技术平台及软硬件系统、线控底盘和智能终端等关键部件。
07　高端医疗装备和创新药 突破腔镜手术机器人、体外膜肺氧合机等核心技术，研制高端影像、放射治疗等大型医疗设备及关键零部件。发展脑起搏器、全降解血管支架等植入介入产品，推动康复辅助器具提质升级。研发重大传染性疾病所需疫苗，开发治疗恶性肿瘤、心脑血管等疾病特效药。加强中医药关键技术装备研发。
08　农业机械装备 开发智能型大马力拖拉机、精量（免耕）播种机、喷杆喷雾机、开沟施肥机、高效联合收割机、果蔬采收机、甘蔗收获机、采棉机等先进适用农业机械，发展丘陵山区农业生产高效专用农机。推动先进粮油加工装备研发和产业化。研发绿色智能养殖饲喂、环控、采集、粪污利用等装备。研发造林种草等机械装备。

第九章　发展壮大战略性新兴产业

着眼于抢占未来产业发展先机，培育先导性和支柱性产业，推动战略性新兴产业融合化、集群化、生态化发展，战略性新兴产业增加值占GDP比重超过17%。

第一节　构筑产业体系新支柱

聚焦新一代信息技术、生物技术、新能源、新材料、高端装备、新能源汽车、绿色环保以及航空航天、海洋装备等战略性新兴产业，加快关键核心技术创新应用，增强要素保障能力，培育壮大产业发展新动能。推动生物技术和信息技术融合创新，加快发展生物医药、生物育种、生物材料、生物能源等产业，做大做强生物经济。深化北斗系统推广应用，推动北斗产业高质量发展。深入推进国家战略性新兴产业集群发展工程，健全产业集群组织管理和专业化推进机制，建设创新和公共服务综合体，构建一批各具特色、优势互补、结构合理的战略性新兴产业增长引擎。鼓励技术创新和企业兼并重组，防止低水平重复建设。发挥产业投资基金引导作用，加大融资担保和风险补偿力度。

第二节　前瞻谋划未来产业

在类脑智能、量子信息、基因技术、未来网络、深海空天开发、氢能与储能等前沿科技和产业变革领域，组织实施未来产业孵化与加速计划，谋划布局一批未来产业。在科教资源优势突出、产业基础雄厚的地区，布局一批国家未来产业技术研究院，加强前沿技术多路径探索、交叉融合和颠覆性技术供给。实施产业跨界融合示范工程，打造未来技术应用场景，加速形成若干未来产业。

第十章　促进服务业繁荣发展

聚焦产业转型升级和居民消费升级需要，扩大服务业有效供给，提高服务效率和服务品质，构建优质高效、结构优化、竞争力强的服务产业新体系。

第一节　推动生产性服务业融合化发展

以服务制造业高质量发展为导向，推动生产性服务业向专业化和价值链高端延伸。聚焦提高产业创新力，加快发展研发设计、工业设计、商务咨询、检验检测认证等服务。聚焦提高要素配置效率，推动供应链金融、信息数据、人力资源等服务创新发展。聚焦增强全产业链优势，提高现代物流、采购分销、生产控制、运营管理、售后服务等发展水平。推动现代服务业与先进制造业、现代农业深度融合，深化业务关联、链条延伸、技术渗透，支持智能制造系统解决方案、流程再造等新型专业化服务机构发展。培育具有国际竞争力的服务企业。

第二节　加快生活性服务业品质化发展

以提升便利度和改善服务体验为导向，推动生活性服务业向高品质和多样化升级。加快发展健康、养老、托育、文化、旅游、体育、物业等服务业，加强公益性、基础性服务业供给，扩大覆盖全生命期的各类服务供给。持续推动家政服务业提质扩容，与智慧社区、养老托育等融合发展。鼓励商贸流通业态与模式创新，推进数字化智能化改造和跨界融合，线上线下全渠道满足消费需求。加快完善养老、家政等服务标准，健全生活性服务业认证认可制度，推动生活性服务业诚信化职业化发展。

第三节　深化服务领域改革开放

扩大服务业对内对外开放，进一步放宽市场准入，全面清理不合理的限制条件，鼓励社会力量扩大多元化多层次服务供给。完善支持服务业发展的政策体系，创新适应服务新业态新模式和产业融合发展需要的土地、财税、金融、价格等政策。健全服务质量标准体系，强化标准贯彻执行和推广。加快制定重点服务领域监管目录、流程和标准，构建高效协同的服务业监管体系。完善服务领域人才职称评定制度，鼓励从业人员参加职业技能培训和鉴定。深入推进服务业综合改革试点和扩大开放。

第十一章　建设现代化基础设施体系

统筹推进传统基础设施和新型基础设施建设，打造系统完备、高效实用、智能绿色、安全可靠的现代化基础设施体系。

第一节　加快建设新型基础设施

围绕强化数字转型、智能升级、融合创新支撑，布局建设信息基础设施、融合基础设施、创新基础设施等新型基础设施。建设高速泛在、天地一体、集成互联、安全高效的信息基础设施，增强数据感知、传输、存储和运算能力。加快5G网络规模化部署，用户普及率提高到56%，推广升级千兆光纤网络。前瞻布局6G网络技术储备。扩容骨干网互联节点，新设一批国际通信出入口，全面推进互联网协议第六版（IPv6）商用部署。实施中西部地区中小城市基础网络完善工程。推动物联网全面发展，打造支持固移融合、宽窄结合的物联接入能力。加快构建全国一体化大数据中心体系，强化算力统筹智能调度，建设若干国家枢纽节点和大数据中心集群，建设E级和10E级超级计算中心。积极稳妥发展工业互联网和车联网。打造全球覆盖、高效运行的通信、导航、遥感空间基础设施体系，建设商业航天发射场。加快交通、能源、市政等传统基础设施数字化改造，加强泛在感知、终端联网、智能调度体系建设。发挥市场主导作用，打通多元化投资渠道，构建新型基础设施标准体系。

第二节　加快建设交通强国

建设现代化综合交通运输体系，推进各种运输方式一体化融合发展，提高网络效应和运营效率。完善综合运输大通道，加强出疆入藏、中西部地区、沿江沿海沿边战略骨干通道建设，有序推进能力紧张通道升级扩容，加强与周边国家互联互通。构建快速网，基本贯通“八纵八横”高速铁路，提升国家高速公路网络质量，加快建设世界级港口群和机场群。完善干线网，加快普速铁路建设和既有铁路电气化改造，优化铁路客货布局，推进普通国省道瓶颈路段贯通升级，推动内河高等级航道扩能升级，稳步建设支线机场、通用机场和货运机场，积极发展通用航空。加强邮政设施建设，实施快递“进村进厂出海”工程。推进城市群都市圈交通一体化，加快城际铁路、市域（郊）铁路建设，构建高速公路环线系统，有序推进城市轨道交通发展。提高交通通达深度，推动区域性铁路建设，加快沿边抵边公路建设，继续推进“四好农村路”建设，完善道路安全设施。构建多层级、一体化综合交通枢纽体系，优化枢纽场站布局、促进集约综合开发，完善集疏运系统，发展旅客联程运输和货物多式联运，推广全程“一站式”、“一单制”服务。推进中欧班列集结中心建设。深入推进铁路企业改革，全面深化空管体制改革，推动公路收费制度和养护体制改革。

专栏5　交通强国建设工程
01　**战略骨干通道** 建设川藏铁路雅安至林芝段和伊宁至阿克苏、酒泉至额济纳、若羌至罗布泊等铁路，推进日喀则至吉隆、和田至日喀则铁路前期工作，打通沿边公路G219和G331线，提质改造川藏公路G318线。
02　**高速铁路** 建设成都重庆至上海沿江高铁、上海经宁波至合浦沿海高铁、京沪高铁辅助通道天津至新沂段和北京经雄安新区至商丘、西安至重庆、长沙至赣州、包头至银川等高铁。
03　**普速铁路** 建设西部陆海新通道黄桶至百色、黔桂增建二线铁路和瑞金至梅州、中卫经平凉至庆阳、柳州至广州铁路，推进玉溪至磨憨、大理至瑞丽等与周边互联互通铁路建设。提升铁路集装箱运输能力，推进中欧班列运输通道和口岸扩能改造，建设大型工矿企业、物流园区和重点港口铁路专用线，全面实现长江干线主要港口铁路进港。
04　**城市群和都市圈轨道交通** 新增城际铁路和市域（郊）铁路运营里程3000公里，基本建成京津冀、长三角、粤港澳大湾区轨道交通网。新增城市轨道交通运营里程3000公里。
05　**高速公路** 实施京沪、京港澳、长深、沪昆、连霍等国家高速公路主线拥挤路段扩容改造，加快建设国家高速公路主线并行线、联络线，推进京雄等雄安新区高速公路建设。规划布局建设充换电设施。新改建高速公路里程2.5万公里。
06　**港航设施** 建设京津冀、长三角、粤港澳大湾区世界级港口群，建设洋山港区小洋山北侧、天津北疆港区C段、广州南沙港五期、深圳盐田港东区等集装箱码头。推进曹妃甸港煤炭运能扩容、舟山江海联运服务中心和北部湾国际门户港、洋浦枢纽港建设。深化三峡水运新通道前期论证，研究平陆运河等跨水系运河连通工程。
07　**现代化机场** 建设京津冀、长三角、粤港澳大湾区、成渝世界级机场群，实施广州、深圳、昆明、西安、重庆、乌鲁木齐、哈尔滨等国际枢纽机场和杭州、合肥、济南、长沙、南宁等区域枢纽机场改扩建工程，建设厦门、大连、三亚新机场。建成鄂州专业性货运机场，建设朔州、嘉兴、瑞金、黔北、阿拉尔等支线机场，新增民用运输机场30个以上。
08　**综合交通和物流枢纽** 推进既有客运枢纽一体化智能化升级改造和站城融合，实施枢纽机场引入轨道交通工程。推进120个左右国家物流枢纽建设。加快邮政国际寄递中心建设。

第三节　构建现代能源体系

推进能源革命，建设清洁低碳、安全高效的能源体系，提高能源供给保障能力。加快发展非化石能源，坚持集中式和分布式并举，大力提升风电、光伏发电规模，加快发展东中部分布式能源，有序发展海上风电，加快西南水电基地建设，安全稳妥推动沿海核电建设，建设一批多能互补的清洁能源基地，非化石能源占能源消费总量比重提高到20%左右。推动煤炭生产向资源富集地区集中，合理控制煤电建设规模和发展节奏，推进以电代煤。有序放开油气勘探开发市场准入，加快深海、深层和非常规油气资源利用，推动油气增储上产。因地制宜开发利用地热能。提高特高压输电通道利用率。加快电网基础设施智能化改造和智能微电网建设，提高电力系统互补互济和智能调节能力，加强源网荷储衔接，提升清洁能源消纳和存储能力，提升向边远地区输配电能力，推进煤电灵活性改造，加快抽水蓄能电站建设和新型储能技术规模化应用。完善煤炭跨区域运输通道和集疏运体系，加快建设天然气主干管道，完善油气互联互通网络。

专栏6　现代能源体系建设工程
01　大型清洁能源基地 建设雅鲁藏布江下游水电基地。建设金沙江上下游、雅砻江流域、黄河上游和几字湾、河西走廊、新疆、冀北、松辽等清洁能源基地，建设广东、福建、浙江、江苏、山东等海上风电基地。
02　沿海核电 建成华龙一号、国和一号、高温气冷堆示范工程，积极有序推进沿海三代核电建设。推动模块式小型堆、60万千瓦级商用高温气冷堆、海上浮动式核动力平台等先进堆型示范。建设核电站中低放废物处置场，建设乏燃料后处理厂。开展山东海阳等核能综合利用示范。核电运行装机容量达到7000万千瓦。
03　电力外送通道 建设白鹤滩至华东、金沙江上游外送等特高压输电通道，实施闽粤联网、川渝特高压交流工程。研究论证陇东至山东、哈密至重庆等特高压输电通道。
04　电力系统调节 建设桐城、磐安、泰安二期、浑源、庄河、安化、贵阳、南宁等抽水蓄能电站，实施电化学、压缩空气、飞轮等储能示范项目。开展黄河梯级电站大型储能项目研究。
05　油气储运能力 新建中俄东线境内段、川气东送二线等油气管道。建设石油储备重大工程。加快中原文23、辽河储气库群等地下储气库建设。

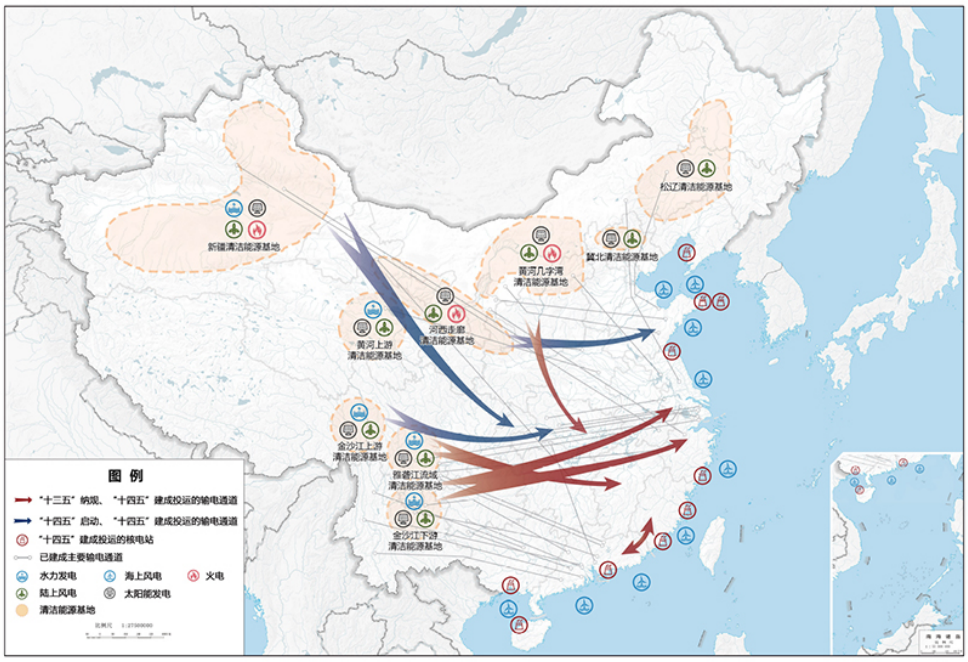

图1　“十四五”大型清洁能源基地布局示意图

第四节　加强水利基础设施建设

立足流域整体和水资源空间均衡配置，加强跨行政区河流水系治理保护和骨干工程建设，强化大中小微水利设施协调配套，提升水资源优化配置和水旱灾害防御能力。坚持节水优先，完善水资源配置体系，建设水资源配置骨干项目，加强重点水源和城市应急备用水源工程建设。实施防洪提升工程，解决防汛薄弱环节，加快防洪控制性枢纽工程建设和中小河流治理、病险水库除险加固，全面推进堤防和蓄滞洪区建设。加强水源涵养区保护修复，加大重点河湖保护和综合治理力度，恢复水清岸绿的水生态体系。

专栏7　国家水网骨干工程
01　重大引调水 推动南水北调东中线后续工程建设，深化南水北调西线工程方案比选论证。建设珠三角水资源配置、渝西水资源配置、引江济淮、滇中引水、引汉济渭、新疆奎屯河引水、河北雄安干渠供水、海南琼西北水资源配置等工程。加快引黄济宁、黑龙江三江连通、环北部湾水资源配置工程前期论证。
02　供水灌溉 推进新疆库尔干、黑龙江关门嘴子、贵州观音、湖南犬木塘、浙江开化、广西长塘等大型水库建设。实施黄河河套、四川都江堰、安徽渭史杭等大型灌区续建配套和现代化改造，推进四川向家坝、云南耿马、安徽怀洪新河、海南牛路岭、江西大坳等大型灌区建设。
03　防洪减灾 建设雄安新区防洪工程、长江中下游崩岸治理和重要蓄滞洪区、黄河干流河道和滩区综合治理、淮河入海水道二期、海河河道治理、西江干流堤防、太湖吴淞江、海南迈湾水利枢纽等工程。加强黄河古贤水利枢纽、福建上白石水库等工程前期论证。

第四篇　形成强大国内市场 构建新发展格局

坚持扩大内需这个战略基点，加快培育完整内需体系，把实施扩大内需战略同深化供给侧结构性改革有机结合起来，以创新驱动、高质量供给引领和创造新需求，加快构建以国内大循环为主体、国内国际双循环相互促进的新发展格局。

第十二章　畅通国内大循环

依托强大国内市场，贯通生产、分配、流通、消费各环节，形成需求牵引供给、供给创造需求的更高水平动态平衡，促进国民经济良性循环。

第一节　提升供给体系适配性

深化供给侧结构性改革，提高供给适应引领创造新需求能力。适应个性化、差异化、品质化消费需求，推动生产模式和产业组织方式创新，持续扩大优质消费品、中高端产品供给和教育、医疗、养老等服务供给，提升产品服务质量和客户满意度，推动供需协调匹配。优化提升供给结构，促进农业、制造业、服务业、能源资源等产业协调发展。完善产业配套体系，加快自然垄断行业竞争性环节市场化，实现上下游、产供销有效衔接。健全市场化法治化化解过剩产能长效机制，完善企业兼并重组法律法规和配套政策。建立健全质量分级制度，加快标准升级迭代和国际标准转化应用。开展中国品牌创建行动，保护发展中华老字号，提升自主品牌影响力和竞争力，率先在化妆品、服装、家纺、电子产品等消费品领域培育一批高端品牌。

第二节　促进资源要素顺畅流动

破除制约要素合理流动的堵点，矫正资源要素失衡错配，从源头上畅通国民经济循环。提高金融服务实体经济能力，健全实体经济中长期资金供给制度安排，创新直达实体经济的金融产品和服务，增强多层次资本市场融资功能。实施房地产市场平稳健康发展长效机制，促进房地产与实体经济均衡发展。有效提升劳动者技能，提高就业质量和收入水平，形成人力资本提升和产业转型升级良性循环。健全城乡要素自由流动机制，构建区域产业梯度转移格局，促进城乡区域良性互动。

第三节　强化流通体系支撑作用

深化流通体制改革，畅通商品服务流通渠道，提升流通效率，降低全社会交易成本。加快构建国内统一大市场，对标国际先进规则和最佳实践优化市场环境，促进不同地区和行业标准、规则、政策协调统一，有效破除地方保护、行业垄断和市场分割。建设现代物流体系，加快发展冷链物流，统筹物流枢纽设施、骨干线路、区域分拨中心和末端配送节点建设，完善国家物流枢纽、骨干冷链物流基地设施条件，健全县乡村三级物流配送体系，发展高铁快运等铁路快捷货运产品，加强国际航空货运能力建设，提升国际海运竞争力。优化国际物流通道，加快形成内外联通、安全高效的物流网络。完善现代商贸流通体系，培育一批具有全球竞争力的现代流通企业，支持便利店、农贸市场等商贸流通设施改造升级，发展无接触交易服务，加强商贸流通标准化建设和绿色发展。加快建立储备充足、反应迅速、抗冲击能力强的应急物流体系。

第四节　完善促进国内大循环的政策体系

保持合理的财政支出力度和赤字率水平，完善减税降费政策，构建有利于企业扩大投资、增加研发投入、调节收入分配、减轻消费者负担的税收制度。保持流动性合理充裕，保持货币供应量和社会融资规模增速同名义经济增速基本匹配，创新结构性政策工具，引导金融机构加大对重点领域和薄弱环节支持力度，规范发展消费信贷。推动产业政策向普惠化和功能性转型，强化竞争政策基础性地位，支持技术创新和结构升级。健全与经济发展水平相适应的收入分配、社会保障和公共服务制度。

第十三章　促进国内国际双循环

立足国内大循环，协同推进强大国内市场和贸易强国建设，形成全球资源要素强大引力场，促进内需和外需、进口和出口、引进外资和对外投资协调发展，加快培育参与国际合作和竞争新优势。

第一节　推动进出口协同发展

完善内外贸一体化调控体系，促进内外贸法律法规、监管体制、经营资质、质量标准、检验检疫、认证认可等相衔接，推进同线同标同质。降低进口关税和制度性成本，扩大优质消费品、先进技术、重要设备、能源资源等进口，促进进口来源多元化。完善出口政策，优化出口商品质量和结构，稳步提高出口附加值。优化国际市场布局，引导企业深耕传统出口市场、拓展新兴市场，扩大与周边国家贸易规模，稳定国际市场份额。推动加工贸易转型升级，深化外贸转型升级基地、海关特殊监管区域、贸易促进平台、国际营销服务网络建设，加快发展跨境电商、市场采购贸易等新模式，鼓励建设海外仓，保障外贸产业链供应链畅通运转。创新发展服务贸易，推进服务贸易创新发展试点开放平台建设，提升贸易数字化水平。实施贸易投资融合工程。办好中国国际进口博览会、中国进出口商品交易会、中国国际服务贸易交易会等展会。

第二节　提高国际双向投资水平

坚持引进来和走出去并重，以高水平双向投资高效利用全球资源要素和市场空间，完善产业链供应链保障机制，推动产业竞争力提升。更大力度吸引和利用外资，有序推进电信、互联网、教育、文化、医疗等领域相关业务开放。全面优化外商投资服务，加强外商投资促进和保护，发挥重大外资项目示范效应，支持外资加大中高端制造、高新技术、传统制造转型升级、现代服务等领域和中西部地区投资，支持外资企业设立研发中心和参与承担国家科技计划项目。鼓励外资企业利润再投资。坚持企业主体，创新境外投资方式，优化境外投资结构和布局，提升风险防范能力和收益水平。完善境外生产服务网络和流通体系，加快金融、咨询、会计、法律等生产性服务业国际化发展，推动中国产品、服务、技术、品牌、标准走出去。支持企业融入全球产业链供应链，提高跨国经营能力和水平。引导企业加强合规管理，防范化解境外政治、经济、安全等各类风险。推进多双边投资合作机制建设，健全促进和保障境外投资政策和服务体系，推动境外投资立法。

第十四章　加快培育完整内需体系

深入实施扩大内需战略，增强消费对经济发展的基础性作用和投资对优化供给结构的关键性作用，建设消费和投资需求旺盛的强大国内市场。

第一节　全面促进消费

顺应居民消费升级趋势，把扩大消费同改善人民生活品质结合起来，促进消费向绿色、健康、安全发展，稳步提高居民消费水平。提升传统消费，加快推动汽车等消费品由购买管理向使用管理转变，健全强制报废制度和废旧家电、消费电子等耐用消费品回收处理体系，促进住房消费健康发展。培育新型消费，发展信息消费、数字消费、绿色消费，鼓励定制、体验、智能、时尚消费等新模式新业态发展。发展服务消费，放宽服务消费领域市场准入，推动教育培训、医疗健康、养老托育、文旅体育等消费提质扩容，加快线上线下融合发展。适当增加公共消费，提高公共服务支出效率。扩大节假日消费，完善节假日制度，全面落实带薪休假制度。培育建设国际消费中心城市，打造一批区域消费中心。完善城乡融合消费网络，扩大电子商务进农村覆盖面，改善县域消费环境，推动农村消费梯次升级。完善市内免税店政策，规划建设一批中国特色市内免税店。采取增加居民收入与减负并举等措施，不断扩大中等收入群体，持续释放消费潜力。强化消费者权益保护，完善质量标准和后评价体系，健全缺陷产品召回、产品伤害监测、产品质量担保等制度，完善多元化消费维权机制和纠纷解决机制。

第二节　拓展投资空间

优化投资结构，提高投资效率，保持投资合理增长。加快补齐基础设施、市政工程、农业农村、公共安全、生态环保、公共卫生、物资储备、防灾减灾、民生保障等领域短板，推动企业设备更新和技术改造，扩大战略性新兴产业投资。推进既促消费惠民生又调结构增后劲的新型基础设施、新型城镇化、交通水利等重大工程建设。面向服务国家重大战略，实施川藏铁路、西部陆海新通道、国家水网、雅鲁藏布江下游水电开发、星际探测、北斗产业化等重大工程，推进重大科研设施、重大生态系统保护修复、公共卫生应急保障、重大引调水、防洪减灾、送电输气、沿边沿江沿海交通等一批强基础、增功能、利长远的重大项目建设。深化投融资体制改革，发挥政府投资撬动作用，激发民间投资活力，形成市场主导的投资内生增长机制。健全项目谋划、储备、推进机制，加大资金、用地等要素保障力度，加快投资项目落地见效。规范有序推进政府和社会资本合作（PPP），推动基础设施领域不动产投资信托基金（REITs）健康发展，有效盘活存量资产，形成存量资产和新增投资的良性循环。

第五篇　加快数字化发展 建设数字中国

迎接数字时代，激活数据要素潜能，推进网络强国建设，加快建设数字经济、数字社会、数字政府，以数字化转型整体驱动生产方式、生活方式和治理方式变革。

第十五章　打造数字经济新优势

充分发挥海量数据和丰富应用场景优势，促进数字技术与实体经济深度融合，赋能传统产业转型升级，催生新产业新业态新模式，壮大经济发展新引擎。

第一节　加强关键数字技术创新应用

聚焦高端芯片、操作系统、人工智能关键算法、传感器等关键领域，加快推进基础理论、基础算法、装备材料等研发突破与迭代应用。加强通用处理器、云计算系统和软件核心技术一体化研发。加快布局量子计算、量子通信、神经芯片、DNA存储等前沿技术，加强信息科学与生命科学、材料等基础学科的交叉创新，支持数字技术开源社区等创新联合体发展，完善开源知识产权和法律体系，鼓励企业开放软件源代码、硬件设计和应用服务。

第二节　加快推动数字产业化

培育壮大人工智能、大数据、区块链、云计算、网络安全等新兴数字产业，提升通信设备、核心电子元器件、关键软件等产业水平。构建基于5G的应用场景和产业生态，在智能交通、智慧物流、智慧能源、智慧医疗等重点领域开展试点示范。鼓励企业开放搜索、电商、社交等数据，发展第三方大数据服务产业。促进共享经济、平台经济健康发展。

第三节　推进产业数字化转型

实施“上云用数赋智”行动，推动数据赋能全产业链协同转型。在重点行业和区域建设若干国际水准的工业互联网平台和数字化转型促进中心，深化研发设计、生产制造、经营管理、市场服务等环节的数字化应用，培育发展个性定制、柔性制造等新模式，加快产业园区数字化改造。深入推进服务业数字化转型，培育众包设计、智慧物流、新零售等新增长点。加快发展智慧农业，推进农业生产经营和管理服务数字化改造。

专栏8　数字经济重点产业
01　云计算 加快云操作系统迭代升级，推动超大规模分布式存储、弹性计算、数据虚拟隔离等技术创新，提高云安全水平。以混合云为重点培育行业解决方案、系统集成、运维管理等云服务产业。
02　大数据 推动大数据采集、清洗、存储、挖掘、分析、可视化算法等技术创新，培育数据采集、标注、存储、传输、管理、应用等全生命周期产业体系，完善大数据标准体系。
03　物联网 推动传感器、网络切片、高精度定位等技术创新，协同发展云服务与边缘计算服务，培育车联网、医疗物联网、家居物联网产业。
04　工业互联网 打造自主可控的标识解析体系、标准体系、安全管理体系，加强工业软件研发应用，培育形成具有国际影响力的工业互联网平台，推进“工业互联网+智能制造”产业生态建设。
05　区块链 推动智能合约、共识算法、加密算法、分布式系统等区块链技术创新，以联盟链为重点发展区块链服务平台和金融科技、供应链管理、政务服务等领域应用方案，完善监管机制。
06　人工智能 建设重点行业人工智能数据集，发展算法推理训练场景，推进智能医疗装备、智能运载工具、智能识别系统等智能产品设计与制造，推动通用化和行业性人工智能开放平台建设。
07　虚拟现实和增强现实 推动三维图形生成、动态环境建模、实时动作捕捉、快速渲染处理等技术创新，发展虚拟现实整机、感知交互、内容采集制作等设备和开发工具软件、行业解决方案。

第十六章　加快数字社会建设步伐

适应数字技术全面融入社会交往和日常生活新趋势，促进公共服务和社会运行方式创新，构筑全民畅享的数字生活。

第一节　提供智慧便捷的公共服务

聚焦教育、医疗、养老、抚幼、就业、文体、助残等重点领域，推动数字化服务普惠应用，持续提升群众获得感。推进学校、医院、养老院等公共服务机构资源数字化，加大开放共享和应用力度。推进线上线下公共服务共同发展、深度融合，积极发展在线课堂、互联网医院、智慧图书馆等，支持高水平公共服务机构对接基层、边远和欠发达地区，扩大优质公共服务资源辐射覆盖范围。加强智慧法院建设。鼓励社会力量参与“互联网+公共服务”，创新提供服务模式和产品。

第二节　建设智慧城市和数字乡村

以数字化助推城乡发展和治理模式创新，全面提高运行效率和宜居度。分级分类推进新型智慧城市建设，将物联网感知设施、通信系统等纳入公共基础设施统一规划建设，推进市政公用设施、建筑等物联网应用和智能化改造。完善城市信息模型平台和运行管理服务平台，构建城市数据资源体系，推进城市数据大脑建设。探索建设数字孪生城市。加快推进数字乡村建设，构建面向农业农村的综合信息服务体系，建立涉农信息普惠服务机制，推动乡村管理服务数字化。

第三节　构筑美好数字生活新图景

推动购物消费、居家生活、旅游休闲、交通出行等各类场景数字化，打造智慧共享、和睦共治的新型数字生活。推进智慧社区建设，依托社区数字化平台和线下社区服务机构，建设便民惠民智慧服务圈，提供线上线下融合的社区生活服务、社区治理及公共服务、智能小区等服务。丰富数字生活体验，发展数字家庭。加强全民数字技能教育和培训，普及提升公民数字素养。加快信息无障碍建设，帮助老年人、残疾人等共享数字生活。

第十七章　提高数字政府建设水平

将数字技术广泛应用于政府管理服务，推动政府治理流程再造和模式优化，不断提高决策科学性和服务效率。

第一节　加强公共数据开放共享

建立健全国家公共数据资源体系，确保公共数据安全，推进数据跨部门、跨层级、跨地区汇聚融合和深度利用。健全数据资源目录和责任清单制度，提升国家数据共享交换平台功能，深化国家人口、法人、空间地理等基础信息资源共享利用。扩大基础公共信息数据安全有序开放，探索将公共数据服务纳入公共服务体系，构建统一的国家公共数据开放平台和开发利用端口，优先推动企业登记监管、卫生、交通、气象等高价值数据集向社会开放。开展政府数据授权运营试点，鼓励第三方深化对公共数据的挖掘利用。

第二节　推动政务信息化共建共用

加大政务信息化建设统筹力度，健全政务信息化项目清单，持续深化政务信息系统整合，布局建设执政能力、依法治国、经济治理、市场监管、公共安全、生态环境等重大信息系统，提升跨部门协同治理能力。完善国家电子政务网络，集约建设政务云平台和数据中心体系，推进政务信息系统云迁移。加强政务信息化建设快速迭代，增强政务信息系统快速部署能力和弹性扩展能力。

第三节　提高数字化政务服务效能

全面推进政府运行方式、业务流程和服务模式数字化智能化。深化“互联网+政务服务”，提升全流程一体化在线服务平台功能。加快构建数字技术辅助政府决策机制，提高基于高频大数据精准动态监测预测预警水平。强化数字技术在公共卫生、自然灾害、事故灾难、社会安全等突发公共事件应对中的运用，全面提升预警和应急处置能力。

第十八章　营造良好数字生态

坚持放管并重，促进发展与规范管理相统一，构建数字规则体系，营造开放、健康、安全的数字生态。

第一节　建立健全数据要素市场规则

统筹数据开发利用、隐私保护和公共安全，加快建立数据资源产权、交易流通、跨境传输和安全保护等基础制度和标准规范。建立健全数据产权交易和行业自律机制，培育规范的数据交易平台和市场主体，发展数据资产评估、登记结算、交易撮合、争议仲裁等市场运营体系。加强涉及国家利益、商业秘密、个人隐私的数据保护，加快推进数据安全、个人信息保护等领域基础性立法，强化数据资源全生命周期安全保护。完善适用于大数据环境下的数据分类分级保护制度。加强数据安全评估，推动数据跨境安全有序流动。

第二节　营造规范有序的政策环境

构建与数字经济发展相适应的政策法规体系。健全共享经济、平台经济和新个体经济管理规范，清理不合理的行政许可、资质资格事项，支持平台企业创新发展、增强国际竞争力。依法依规加强互联网平台经济监管，明确平台企业定位和监管规则，完善垄断认定法律规范，打击垄断和不正当竞争行为。探索建立无人驾驶、在线医疗、金融科技、智能配送等监管框架，完善相关法律法规和伦理审查规则。健全数字经济统计监测体系。

第三节　加强网络安全保护

健全国家网络安全法律法规和制度标准，加强重要领域数据资源、重要网络和信息系统安全保障。建立健全关键信息基础设施保护体系，提升安全防护和维护政治安全能力。加强网络安全风险评估和审查。加强网络安全基础设施建设，强化跨领域网络安全信息共享和工作协同，提升网络安全威胁发现、监测预警、应急指挥、攻击溯源能力。加强网络安全关键技术研发，加快人工智能安全技术创新，提升网络安全产业综合竞争力。加强网络安全宣传教育和人才培养。

第四节　推动构建网络空间命运共同体

推进网络空间国际交流与合作，推动以联合国为主渠道、以联合国宪章为基本原则制定数字和网络空间国际规则。推动建立多边、民主、透明的全球互联网治理体系，建立更加公平合理的网络基础设施和资源治理机制。积极参与数据安全、数字货币、数字税等国际规则和数字技术标准制定。推动全球网络安全保障合作机制建设，构建保护数据要素、处置网络安全事件、打击网络犯罪的国际协调合作机制。向欠发达国家提供技术、设备、服务等数字援助，使各国共享数字时代红利。积极推进网络文化交流互鉴。

专栏9　数字化应用场景
01　智能交通 发展自动驾驶和车路协同的出行服务。推广公路智能管理、交通信号联动、公交优先通行控制。建设智能铁路、智慧民航、智慧港口、数字航道、智慧停车场。
02　智慧能源 推动煤矿、油气田、电厂等智能化升级，开展用能信息广泛采集、能效在线分析，实现源网荷储互动、多能协同互补、用能需求智能调控。
03　智能制造 促进设备联网、生产环节数字化连接和供应链协同响应，推进生产数据贯通化、制造柔性化、产品个性化、管理智能化。
04　智慧农业及水利 推广大田作物精准播种、精准施肥施药、精准收获，推动设施园艺、畜禽水产养殖智能化应用。构建智慧水利体系，以流域为单元提升水情测报和智能调度能力。
05　智慧教育 推动社会化高质量在线课程资源纳入公共教学体系，推进优质教育资源在线辐射农村和边远地区薄弱学校，发展场景式、体验式学习和智能化教育管理评价。
06　智慧医疗 完善电子健康档案和病历、电子处方等数据库，加快医疗卫生机构数据共享。推广远程医疗，推进医学影像辅助判读、临床辅助诊断等应用。运用大数据提升对医疗机构和医疗行为的监管能力。
07　智慧文旅 推动景区、博物馆等发展线上数字化体验产品，建设景区监测设施和大数据平台，发展沉浸式体验、虚拟展厅、高清直播等新型文旅服务。
08　智慧社区 推动政务服务平台、社区感知设施和家庭终端联通，发展智能预警、应急救援救护和智慧养老等社区惠民服务，建立无人物流配送体系。
09　智慧家居 应用感应控制、语音控制、远程控制等技术手段，发展智能家电、智能照明、智能安防监控、智能音箱、新型穿戴设备、服务机器人等。
10　智慧政务 推进政务服务一网通办，推广应用电子证照、电子合同、电子签章、电子发票、电子档案，健全政务服务“好差评”评价体系。

第六篇　全面深化改革 构建高水平社会主义市场经济体制

坚持和完善社会主义基本经济制度，充分发挥市场在资源配置中的决定性作用，更好发挥政府作用，推动有效市场和有为政府更好结合。

第十九章　激发各类市场主体活力

毫不动摇巩固和发展公有制经济，毫不动摇鼓励、支持、引导非公有制经济发展，培育更有活力、创造力和竞争力的市场主体。

第一节　加快国有经济布局优化和结构调整

围绕服务国家战略，坚持有进有退、有所为有所不为，加快国有经济布局优化、结构调整和战略性重组，增强国有经济竞争力、创新力、控制力、影响力、抗风险能力，做强做优做大国有资本和国有企业。发挥国有经济战略支撑作用，推动国有经济进一步聚焦战略安全、产业引领、国计民生、公共服务等功能，调整盘活存量资产，优化增量资本配置，向关系国家安全、国民经济命脉的重要行业集中，向提供公共服务、应急能力建设和公益性等关系国计民生的重要行业集中，向前瞻性战略性新兴产业集中。对充分竞争领域的国有经济，强化资本收益目标和财务硬约束，增强流动性，完善国有资本优化配置机制。建立布局结构调整长效机制，动态发布国有经济布局优化和结构调整指引。

第二节　推动国有企业完善中国特色现代企业制度

坚持党对国有企业的全面领导，促进加强党的领导和完善公司治理相统一，加快建立权责法定、权责透明、协调运转、有效制衡的公司治理机制。加强董事会建设，落实董事会职权，使董事会成为企业经营决策主体。按照完善治理、强化激励、突出主业、提高效率的要求，深化国有企业混合所有制改革，深度转换经营机制，对混合所有制企业探索实行有别于国有独资、全资公司的治理机制和监管制度。推行经理层成员任期制和契约化管理，完善市场化薪酬分配机制，灵活开展多种形式的中长期激励。

第三节　健全管资本为主的国有资产监管体制

坚持授权与监管相结合、放活与管好相统一，大力推进国资监管理念、重点、方式等多方位转变。优化管资本方式，全面实行清单管理，深入开展分类授权放权，注重通过法人治理结构履职，加强事中事后监管。深化国有资本投资、运营公司改革，科学合理界定政府及国资监管机构，国有资本投资、运营公司和所持股企业的权利边界。健全协同高效的监督机制，严格责任追究，切实防止国有资产流失。加快推进经营性国有资产集中统一监管。

第四节　优化民营企业发展环境

健全支持民营企业发展的法治环境、政策环境和市场环境，依法平等保护民营企业产权和企业家权益。保障民营企业依法平等使用资源要素、公开公平公正参与竞争、同等受到法律保护。进一步放宽民营企业市场准入，破除招投标等领域各种壁垒。创新金融支持民营企业政策工具，健全融资增信支持体系，对民营企业信用评级、发债一视同仁，降低综合融资成本。完善促进中小微企业和个体工商户发展的政策体系，加大税费优惠和信贷支持力度。构建亲清政商关系，建立规范化政企沟通渠道。健全防范和化解拖欠中小企业账款长效机制。

第五节　促进民营企业高质量发展

鼓励民营企业改革创新，提升经营能力和管理水平。引导有条件的民营企业建立现代企业制度。支持民营企业开展基础研究和科技创新、参与关键核心技术研发和国家重大科技项目攻关。完善民营企业参与国家重大战略实施机制。推动民营企业守法合规经营，鼓励民营企业积极履行社会责任、参与社会公益和慈善事业。弘扬企业家精神，实施年轻一代民营企业家健康成长促进计划。

第二十章　建设高标准市场体系

实施高标准市场体系建设行动，健全市场体系基础制度，坚持平等准入、公正监管、开放有序、诚信守法，形成高效规范、公平竞争的国内统一市场。

第一节　全面完善产权制度

健全归属清晰、权责明确、保护严格、流转顺畅的现代产权制度。实施民法典，制修订物权、债权、股权等产权法律法规，明晰产权归属、完善产权权能。健全以公平为原则的产权保护制度，依法平等保护国有、民营、外资等各种所有制企业产权。健全产权执法司法保护制度，完善涉企产权案件申诉、复核、重审等保护机制，推动涉企冤错案件依法甄别纠正常态化机制化，畅通涉政府产权纠纷反映和处理渠道。加强数据、知识、环境等领域产权制度建设，健全自然资源资产产权制度和法律法规。

第二节　推进要素市场化配置改革

建立健全城乡统一的建设用地市场，统筹推进农村土地征收、集体经营性建设用地入市、宅基地制度改革。改革土地计划管理方式，赋予省级政府更大用地自主权，探索建立全国性的建设用地、补充耕地指标跨区域交易机制。建立不同产业用地类型合理转换机制，增加混合产业用地供给。健全统一规范的人力资源市场体系，破除劳动力和人才在城乡、区域和不同所有制单位间的流动障碍，减少人事档案管理中的不合理限制。发展技术和数据要素市场。健全要素市场运行机制，完善交易规则和服务体系。深化公共资源交易平台整合共享。

第三节　强化竞争政策基础地位

坚持鼓励竞争、反对垄断，完善竞争政策框架，构建覆盖事前、事中、事后全环节的竞争政策实施机制。统筹做好增量审查与存量清理，强化公平竞争审查制度的刚性约束，完善公平竞争审查细则，持续清理废除妨碍全国统一市场和公平竞争的规定及做法。完善市场竞争状况评估制度，建立投诉举报和处理回应机制。加大反垄断和反不正当竞争执法司法力度，防止资本无序扩张。推进能源、铁路、电信、公用事业等行业竞争性环节市场化改革，放开竞争性业务准入，进一步引入市场竞争机制，加强对自然垄断业务的监管。

第四节　健全社会信用体系

建立健全信用法律法规和标准体系，制定公共信用信息目录和失信惩戒措施清单，完善失信主体信用修复机制。推广信用承诺制度。加强信用信息归集、共享、公开和应用，推广惠民便企信用产品与服务。建立公共信用信息和金融信息的共享整合机制。培育具有国际竞争力的企业征信机构和信用评级机构，加强征信监管，推动信用服务市场健康发展。加强信用信息安全管理，保障信用主体合法权益。建立健全政府失信责任追究制度。

第二十一章　建立现代财税金融体制

更好发挥财政在国家治理中的基础和重要支柱作用，增强金融服务实体经济能力，健全符合高质量发展要求的财税金融制度。

第一节　加快建立现代财政制度

深化预算管理制度改革，强化对预算编制的宏观指导和审查监督。加强财政资源统筹，推进财政支出标准化，强化预算约束和绩效管理。完善跨年度预算平衡机制，加强中期财政规划管理，增强国家重大战略任务财力保障。建立权责清晰、财力协调、区域均衡的中央和地方财政关系，适当加强中央在知识产权保护、养老保险、跨区域生态环境保护等方面事权，减少并规范中央和地方共同事权。健全省以下财政体制，增强基层公共服务保障能力。完善财政转移支付制度，优化转移支付结构，规范转移支付项目。完善权责发生制政府综合财务报告制度。建立健全规范的政府举债融资机制。

第二节　完善现代税收制度

优化税制结构，健全直接税体系，适当提高直接税比重。完善个人所得税制度，推进扩大综合征收范围，优化税率结构。聚焦支持稳定制造业、巩固产业链供应链，进一步优化增值税制度。调整优化消费税征收范围和税率，推进征收环节后移并稳步下划地方。规范完善税收优惠。推进房地产税立法，健全地方税体系，逐步扩大地方税政管理权。深化税收征管制度改革，建设智慧税务，推动税收征管现代化。

第三节　深化金融供给侧结构性改革

健全具有高度适应性、竞争力、普惠性的现代金融体系，构建金融有效支持实体经济的体制机制。建设现代中央银行制度，完善货币供应调控机制。稳妥推进数字货币研发。健全市场化利率形成和传导机制，完善央行政策利率体系，更好发挥贷款市场报价利率基准作用。优化金融体系结构，深化国有商业银行改革，加快完善中小银行和农村信用社治理结构，规范发展非银行金融机构，增强金融普惠性。改革优化政策性金融，强化服务国家战略和规划能力。深化保险公司改革，提高商业保险保障能力。健全金融机构公司治理，强化股东股权和关联交易监管。完善资本市场基础制度，健全多层次资本市场体系，大力发展机构投资者，提高直接融资特别是股权融资比重。全面实行股票发行注册制，建立常态化退市机制，提高上市公司质量。深化新三板改革。完善市场化债券发行机制，稳步扩大债券市场规模，丰富债券品种，发行长期国债和基础设施长期债券。完善投资者保护制度和存款保险制度。完善现代金融监管体系，补齐监管制度短板，在审慎监管前提下有序推进金融创新，健全风险全覆盖监管框架，提高金融监管透明度和法治化水平。稳妥发展金融科技，加快金融机构数字化转型。强化监管科技运用和金融创新风险评估，探索建立创新产品纠偏和暂停机制。

第二十二章　提升政府经济治理能力

加快转变政府职能，建设职责明确、依法行政的政府治理体系，创新和完善宏观调控，提高政府治理效能。

第一节　完善宏观经济治理

健全以国家发展规划为战略导向，以财政政策和货币政策为主要手段，就业、产业、投资、消费、环保、区域等政策紧密配合，目标优化、分工合理、高效协同的宏观经济治理体系。增强国家发展规划对公共预算、国土开发、资源配置等政策的宏观引导、统筹协调功能，健全宏观政策制定和执行机制，重视预期管理和引导，合理把握经济增长、就业、价格、国际收支等调控目标，在区间调控基础上加强定向调控、相机调控和精准调控。完善宏观调控政策体系，搞好跨周期政策设计，提高逆周期调节能力，促进经济总量平衡、结构优化、内外均衡。加强宏观经济治理数据库等建设，提升大数据等现代技术手段辅助治理能力，推进统计现代化改革。健全宏观经济政策评估评价制度和重大风险识别预警机制，畅通政策制定参与渠道，提高决策科学化、民主化、法治化水平。

第二节　构建一流营商环境

深化简政放权、放管结合、优化服务改革，全面实行政府权责清单制度，持续优化市场化法治化国际化营商环境。实施全国统一的市场准入负面清单制度，破除清单之外隐性准入壁垒，以服务业为重点进一步放宽准入限制。精简行政许可事项，减少归并资质资格许可，取消不必要的备案登记和年检认定，规范涉企检查。全面推行“证照分离”、“照后减证”改革，全面开展工程建设项目审批制度改革。改革生产许可制度，简化工业产品审批程序，实施涉企经营许可事项清单管理。建立便利、高效、有序的市场主体退出制度，简化普通注销程序，建立健全企业破产和自然人破产制度。创新政务服务方式，推进审批服务便民化。深化国际贸易“单一窗口”建设。完善营商环境评价体系。

第三节　推进监管能力现代化

健全以“双随机、一公开”监管和“互联网+监管”为基本手段、以重点监管为补充、以信用监管为基础的新型监管机制，推进线上线下一体化监管。严格市场监管、质量监管、安全监管，加强对食品药品、特种设备和网络交易、旅游、广告、中介、物业等的监管，强化要素市场交易监管，对新产业新业态实施包容审慎监管。深化市场监管综合行政执法改革，完善跨领域跨部门联动执法、协同监管机制。深化行业协会、商会和中介机构改革。加强社会公众、新闻媒体监督。

第七篇　坚持农业农村优先发展 全面推进乡村振兴

走中国特色社会主义乡村振兴道路，全面实施乡村振兴战略，强化以工补农、以城带乡，推动形成工农互促、城乡互补、协调发展、共同繁荣的新型工农城乡关系，加快农业农村现代化。

第二十三章　提高农业质量效益和竞争力

持续强化农业基础地位，深化农业供给侧结构性改革，强化质量导向，推动乡村产业振兴。

第一节　增强农业综合生产能力

夯实粮食生产能力基础，保障粮、棉、油、糖、肉、奶等重要农产品供给安全。坚持最严格的耕地保护制度，强化耕地数量保护和质量提升，严守18亿亩耕地红线，遏制耕地“非农化”、防止“非粮化”，规范耕地占补平衡，严禁占优补劣、占水田补旱地。以粮食生产功能区和重要农产品生产保护区为重点，建设国家粮食安全产业带，实施高标准农田建设工程，建成10.75亿亩集中连片高标准农田。实施黑土地保护工程，加强东北黑土地保护和地力恢复。推进大中型灌区节水改造和精细化管理，建设节水灌溉骨干工程，同步推进水价综合改革。加强大中型、智能化、复合型农业机械研发应用，农作物耕种收综合机械化率提高到75%。加强种质资源保护利用和种子库建设，确保种源安全。加强农业良种技术攻关，有序推进生物育种产业化应用，培育具有国际竞争力的种业龙头企业。完善农业科技创新体系，创新农技推广服务方式，建设智慧农业。加强动物防疫和农作物病虫害防治，强化农业气象服务。

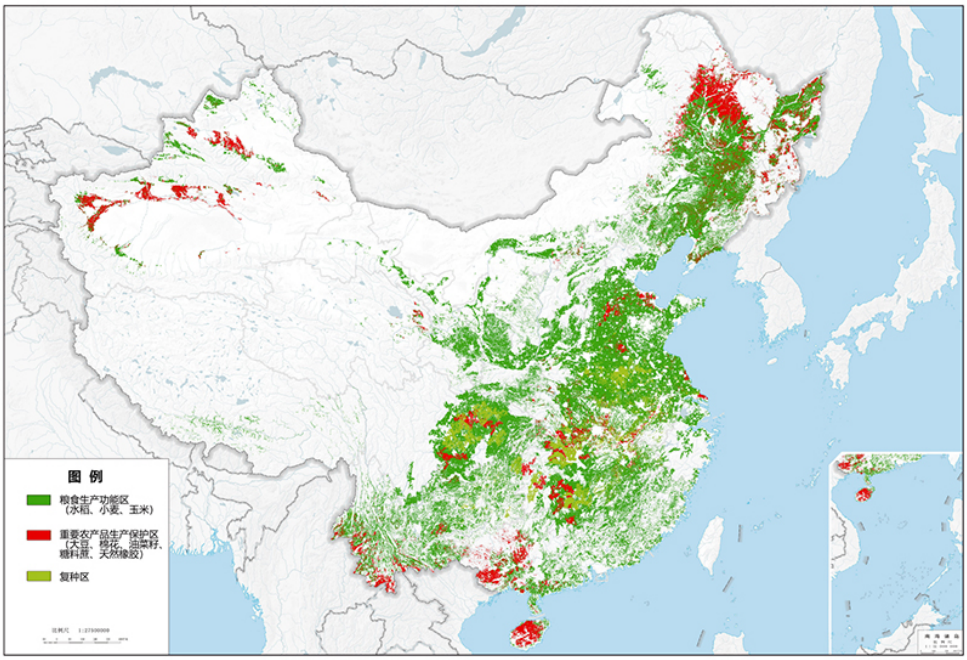

图 2　粮食生产功能区和重要农产品生产保护区布局示意图

第二节　深化农业结构调整

优化农业生产布局，建设优势农产品产业带和特色农产品优势区。推进粮经饲统筹、农林牧渔协调，优化种植业结构，大力发展现代畜牧业，促进水产生态健康养殖。积极发展设施农业，因地制宜发展林果业。深入推进优质粮食工程。推进农业绿色转型，加强产地环境保护治理，发展节水农业和旱作农业，深入实施农药化肥减量行动，治理农膜污染，提升农膜回收利用率，推进秸秆综合利用和畜禽粪污资源化利用。完善绿色农业标准体系，加强绿色食品、有机农产品和地理标志农产品认证管理。强化全过程农产品质量安全监管，健全追溯体系。建设现代农业产业园区和农业现代化示范区。

第三节　丰富乡村经济业态

发展县域经济，推进农村一二三产业融合发展，延长农业产业链条，发展各具特色的现代乡村富民产业。推动种养加结合和产业链再造，提高农产品加工业和农业生产性服务业发展水平，壮大休闲农业、乡村旅游、民宿经济等特色产业。加强农产品仓储保鲜和冷链物流设施建设，健全农村产权交易、商贸流通、检验检测认证等平台和智能标准厂房等设施，引导农村二三产业集聚发展。完善利益联结机制，通过“资源变资产、资金变股金、农民变股东”，让农民更多分享产业增值收益。

第二十四章　实施乡村建设行动

把乡村建设摆在社会主义现代化建设的重要位置，优化生产生活生态空间，持续改善村容村貌和人居环境，建设美丽宜居乡村。

第一节　强化乡村建设的规划引领

统筹县域城镇和村庄规划建设，通盘考虑土地利用、产业发展、居民点建设、人居环境整治、生态保护、防灾减灾和历史文化传承。科学编制县域村庄布局规划，因地制宜、分类推进村庄建设，规范开展全域土地综合整治，保护传统村落、民族村寨和乡村风貌，严禁随意撤并村庄搞大社区、违背农民意愿大拆大建。优化布局乡村生活空间，严格保护农业生产空间和乡村生态空间，科学划定养殖业适养、限养、禁养区域。鼓励有条件地区编制实用性村庄规划。

第二节　提升乡村基础设施和公共服务水平

以县域为基本单元推进城乡融合发展，强化县城综合服务能力和乡镇服务农民功能。健全城乡基础设施统一规划、统一建设、统一管护机制，推动市政公用设施向郊区乡村和规模较大中心镇延伸，完善乡村水、电、路、气、邮政通信、广播电视、物流等基础设施，提升农房建设质量。推进城乡基本公共服务标准统一、制度并轨，增加农村教育、医疗、养老、文化等服务供给，推进县域内教师医生交流轮岗，鼓励社会力量兴办农村公益事业。提高农民科技文化素质，推动乡村人才振兴。

第三节　改善农村人居环境

开展农村人居环境整治提升行动，稳步解决“垃圾围村”和乡村黑臭水体等突出环境问题。推进农村生活垃圾就地分类和资源化利用，以乡镇政府驻地和中心村为重点梯次推进农村生活污水治理。支持因地制宜推进农村厕所革命。推进农村水系综合整治。深入开展村庄清洁和绿化行动，实现村庄公共空间及庭院房屋、村庄周边干净整洁。

专栏10　现代农业农村建设工程
01　高标准农田 新建高标准农田2.75亿亩，其中新增高效节水灌溉面积0.6亿亩。实施东北地区1.4亿亩黑土地保护性耕作。
02　现代种业 建设国家农作物种质资源长期库、种质资源中期库圃，提升海南、甘肃、四川等国家级育制种基地水平，建设黑龙江大豆等区域性育制种基地。新建、改扩建国家畜禽和水产品种质资源库、保种场（区）、基因库，推进国家级畜禽核心育种场建设。
03　农业机械化 创建300个农作物生产全程机械化示范县，建设300个设施农业和规模养殖全程机械化示范县，推进农机深松整地和丘陵山区农田宜机化改造。
04　动物防疫和农作物病虫害防治 提升动物疫病国家参考实验室和病原学监测区域中心设施条件，改善牧区动物防疫专用设施和基层动物疫苗冷藏设施，建设动物防疫指定通道和病死动物无害化处理场。分级建设农作物病虫疫情监测中心和病虫害应急防治中心、农药风险监控中心。建设林草病虫害防治中心。
05　农业面源污染治理 在长江、黄河等重点流域环境敏感区建设200个农业面源污染综合治理示范县，继续推进畜禽养殖粪污资源化利用，在水产养殖主产区推进养殖尾水治理。
06　农产品冷链物流设施 建设30个全国性和70个区域性农产品骨干冷链物流基地，提升田头市场仓储保鲜设施，改造畜禽定点屠宰加工厂冷链储藏和运输设施。
07　乡村基础设施 因地制宜推动自然村通硬化路，加强村组连通和村内道路建设，推进农村水源保护和供水保障工程建设，升级改造农村电网，提升农村宽带网络水平，强化运行管护。
08　农村人居环境整治提升 有序推进经济欠发达地区以及高海拔、寒冷、缺水地区的农村改厕。支持600个县整县推进人居环境整治，建设农村生活垃圾和污水处理设施。

第二十五章　健全城乡融合发展体制机制

建立健全城乡要素平等交换、双向流动政策体系，促进要素更多向乡村流动，增强农业农村发展活力。

第一节　深化农业农村改革

巩固完善农村基本经营制度，落实第二轮土地承包到期后再延长30年政策，完善农村承包地所有权、承包权、经营权分置制度，进一步放活经营权。发展多种形式适度规模经营，加快培育家庭农场、农民合作社等新型农业经营主体，健全农业专业化社会化服务体系，实现小农户和现代农业有机衔接。深化农村宅基地制度改革试点，加快房地一体的宅基地确权颁证，探索宅基地所有权、资格权、使用权分置实现形式。积极探索实施农村集体经营性建设用地入市制度。允许农村集体在农民自愿前提下，依法把有偿收回的闲置宅基地、废弃的集体公益性建设用地转变为集体经营性建设用地入市。建立土地征收公共利益认定机制，缩小土地征收范围。深化农村集体产权制度改革，完善产权权能，将经营性资产量化到集体经济组织成员，发展壮大新型农村集体经济。切实减轻村级组织负担。发挥国家城乡融合发展试验区、农村改革试验区示范带动作用。

第二节　加强农业农村发展要素保障

健全农业农村投入保障制度，加大中央财政转移支付、土地出让收入、地方政府债券支持农业农村力度。健全农业支持保护制度，完善粮食主产区利益补偿机制，构建新型农业补贴政策体系，完善粮食最低收购价政策。深化供销合作社改革。完善农村用地保障机制，保障设施农业和乡村产业发展合理用地需求。健全农村金融服务体系，完善金融支农激励机制，扩大农村资产抵押担保融资范围，发展农业保险。允许入乡就业创业人员在原籍地或就业创业地落户并享受相关权益，建立科研人员入乡兼职兼薪和离岗创业制度。

第二十六章　实现巩固拓展脱贫攻坚成果同乡村振兴有效衔接

建立完善农村低收入人口和欠发达地区帮扶机制，保持主要帮扶政策和财政投入力度总体稳定，接续推进脱贫地区发展。

第一节　巩固提升脱贫攻坚成果

严格落实“摘帽不摘责任、摘帽不摘政策、摘帽不摘帮扶、摘帽不摘监管”要求，建立健全巩固拓展脱贫攻坚成果长效机制。健全防止返贫动态监测和精准帮扶机制，对易返贫致贫人口实施常态化监测，建立健全快速发现和响应机制，分层分类及时纳入帮扶政策范围。完善农村社会保障和救助制度，健全农村低收入人口常态化帮扶机制。对脱贫地区继续实施城乡建设用地增减挂钩节余指标省内交易政策、调整完善跨省域交易政策。加强扶贫项目资金资产管理和监督，推动特色产业可持续发展。推广以工代赈方式，带动低收入人口就地就近就业。做好易地扶贫搬迁后续帮扶，加强大型搬迁安置区新型城镇化建设。

第二节　提升脱贫地区整体发展水平

实施脱贫地区特色种养业提升行动，广泛开展农产品产销对接活动，深化拓展消费帮扶。在西部地区脱贫县中集中支持一批乡村振兴重点帮扶县，从财政、金融、土地、人才、基础设施、公共服务等方面给予集中支持，增强其巩固脱贫成果及内生发展能力。坚持和完善东西部协作和对口支援、中央单位定点帮扶、社会力量参与帮扶等机制，调整优化东西部协作结对帮扶关系和帮扶方式，强化产业合作和劳务协作。

第八篇　完善新型城镇化战略 提升城镇化发展质量

坚持走中国特色新型城镇化道路，深入推进以人为核心的新型城镇化战略，以城市群、都市圈为依托促进大中小城市和小城镇协调联动、特色化发展，使更多人民群众享有更高品质的城市生活。

第二十七章　加快农业转移人口市民化

坚持存量优先、带动增量，统筹推进户籍制度改革和城镇基本公共服务常住人口全覆盖，健全农业转移人口市民化配套政策体系，加快推动农业转移人口全面融入城市。

第一节　深化户籍制度改革

放开放宽除个别超大城市外的落户限制，试行以经常居住地登记户口制度。全面取消城区常住人口300万以下的城市落户限制，确保外地与本地农业转移人口进城落户标准一视同仁。全面放宽城区常住人口300万至500万的I型大城市落户条件。完善城区常住人口500万以上的超大特大城市积分落户政策，精简积分项目，确保社会保险缴纳年限和居住年限分数占主要比例，鼓励取消年度落户名额限制。健全以居住证为载体、与居住年限等条件相挂钩的基本公共服务提供机制，鼓励地方政府提供更多基本公共服务和办事便利，提高居住证持有人城镇义务教育、住房保障等服务的实际享有水平。

第二节　健全农业转移人口市民化机制

完善财政转移支付与农业转移人口市民化挂钩相关政策，提高均衡性转移支付分配中常住人口折算比例，中央财政市民化奖励资金分配主要依据跨省落户人口数量确定。建立财政性建设资金对吸纳落户较多城市的基础设施投资补助机制，加大中央预算内投资支持力度。调整城镇建设用地年度指标分配依据，建立同吸纳农业转移人口落户数量和提供保障性住房规模挂钩机制。根据人口流动实际调整人口流入流出地区教师、医生等编制定额和基本公共服务设施布局。依法保障进城落户农民农村土地承包权、宅基地使用权、集体收益分配权，建立农村产权流转市场体系，健全农户“三权”市场化退出机制和配套政策。

第二十八章　完善城镇化空间布局

发展壮大城市群和都市圈，分类引导大中小城市发展方向和建设重点，形成疏密有致、分工协作、功能完善的城镇化空间格局。

第一节　推动城市群一体化发展

以促进城市群发展为抓手，全面形成“两横三纵”城镇化战略格局。优化提升京津冀、长三角、珠三角、成渝、长江中游等城市群，发展壮大山东半岛、粤闽浙沿海、中原、关中平原、北部湾等城市群，培育发展哈长、辽中南、山西中部、黔中、滇中、呼包鄂榆、兰州－西宁、宁夏沿黄、天山北坡等城市群。建立健全城市群一体化协调发展机制和成本共担、利益共享机制，统筹推进基础设施协调布局、产业分工协作、公共服务共享、生态共建环境共治。优化城市群内部空间结构，构筑生态和安全屏障，形成多中心、多层级、多节点的网络型城市群。

第二节　建设现代化都市圈

依托辐射带动能力较强的中心城市，提高1小时通勤圈协同发展水平，培育发展一批同城化程度高的现代化都市圈。以城际铁路和市域（郊）铁路等轨道交通为骨干，打通各类“断头路”、“瓶颈路”，推动市内市外交通有效衔接和轨道交通“四网融合”，提高都市圈基础设施连接性贯通性。鼓励都市圈社保和落户积分互认、教育和医疗资源共享，推动科技创新券通兑通用、产业园区和科研平台合作共建。鼓励有条件的都市圈建立统一的规划委员会，实现规划统一编制、统一实施，探索推进土地、人口等统一管理。

第三节　优化提升超大特大城市中心城区功能

统筹兼顾经济、生活、生态、安全等多元需要，转变超大特大城市开发建设方式，加强超大特大城市治理中的风险防控，促进高质量、可持续发展。有序疏解中心城区一般性制造业、区域性物流基地、专业市场等功能和设施，以及过度集中的医疗和高等教育等公共服务资源，合理降低开发强度和人口密度。增强全球资源配置、科技创新策源、高端产业引领功能，率先形成以现代服务业为主体、先进制造业为支撑的产业结构，提升综合能级与国际竞争力。坚持产城融合，完善郊区新城功能，实现多中心、组团式发展。

第四节　完善大中城市宜居宜业功能

充分利用综合成本相对较低的优势，主动承接超大特大城市产业转移和功能疏解，夯实实体经济发展基础。立足特色资源和产业基础，确立制造业差异化定位，推动制造业规模化集群化发展，因地制宜建设先进制造业基地、商贸物流中心和区域专业服务中心。优化市政公用设施布局和功能，支持三级医院和高等院校在大中城市布局，增加文化体育资源供给，营造现代时尚的消费场景，提升城市生活品质。

第五节　推进以县城为重要载体的城镇化建设

加快县城补短板强弱项，推进公共服务、环境卫生、市政公用、产业配套等设施提级扩能，增强综合承载能力和治理能力。支持东部地区基础较好的县城建设，重点支持中西部和东北城镇化地区县城建设，合理支持农产品主产区、重点生态功能区县城建设。健全县城建设投融资机制，更好发挥财政性资金作用，引导金融资本和社会资本加大投入力度。稳步有序推动符合条件的县和镇区常住人口20万以上的特大镇设市。按照区位条件、资源禀赋和发展基础，因地制宜发展小城镇，促进特色小镇规范健康发展。

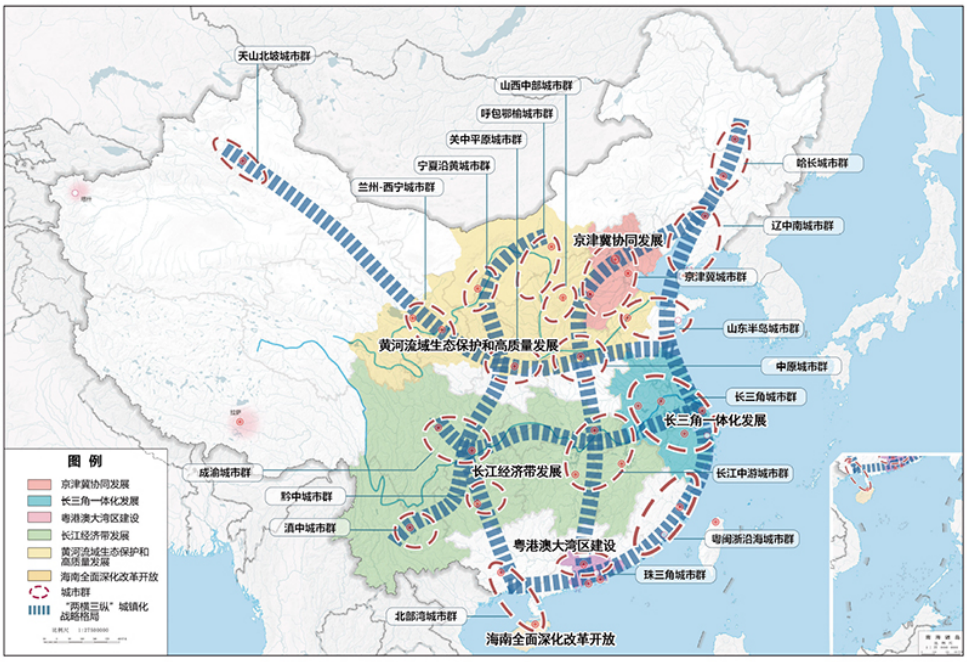

图 3　城镇化空间格局示意图

第二十九章　全面提升城市品质

加快转变城市发展方式，统筹城市规划建设管理，实施城市更新行动，推动城市空间结构优化和品质提升。

第一节　转变城市发展方式

按照资源环境承载能力合理确定城市规模和空间结构，统筹安排城市建设、产业发展、生态涵养、基础设施和公共服务。推行功能复合、立体开发、公交导向的集约紧凑型发展模式，统筹地上地下空间利用，增加绿化节点和公共开敞空间，新建住宅推广街区制。推行城市设计和风貌管控，落实适用、经济、绿色、美观的新时期建筑方针，加强新建高层建筑管控。加快推进城市更新，改造提升老旧小区、老旧厂区、老旧街区和城中村等存量片区功能，推进老旧楼宇改造，积极扩建新建停车场、充电桩。

第二节　推进新型城市建设

顺应城市发展新理念新趋势，开展城市现代化试点示范，建设宜居、创新、智慧、绿色、人文、韧性城市。提升城市智慧化水平，推行城市楼宇、公共空间、地下管网等“一张图”数字化管理和城市运行一网统管。科学规划布局城市绿环绿廊绿楔绿道，推进生态修复和功能完善工程，优先发展城市公共交通，建设自行车道、步行道等慢行网络，发展智能建造，推广绿色建材、装配式建筑和钢结构住宅，建设低碳城市。保护和延续城市文脉，杜绝大拆大建，让城市留下记忆、让居民记住乡愁。建设源头减排、蓄排结合、排涝除险、超标应急的城市防洪排涝体系，推动城市内涝治理取得明显成效。增强公共设施应对风暴、干旱和地质灾害的能力，完善公共设施和建筑应急避难功能。加强无障碍环境建设。拓展城市建设资金来源渠道，建立期限匹配、渠道多元、财务可持续的融资机制。

第三节　提高城市治理水平

坚持党建引领、重心下移、科技赋能，不断提升城市治理科学化精细化智能化水平，推进市域社会治理现代化。改革完善城市管理体制。推广“街乡吹哨、部门报到、接诉即办”等基层管理机制经验，推动资源、管理、服务向街道社区下沉，加快建设现代社区。运用数字技术推动城市管理手段、管理模式、管理理念创新，精准高效满足群众需求。加强物业服务监管，提高物业服务覆盖率、服务质量和标准化水平。

第四节　完善住房市场体系和住房保障体系

坚持房子是用来住的、不是用来炒的定位，加快建立多主体供给、多渠道保障、租购并举的住房制度，让全体人民住有所居、职住平衡。坚持因地制宜、多策并举，夯实城市政府主体责任，稳定地价、房价和预期。建立住房和土地联动机制，加强房地产金融调控，发挥住房税收调节作用，支持合理自住需求，遏制投资投机性需求。加快培育和发展住房租赁市场，有效盘活存量住房资源，有力有序扩大城市租赁住房供给，完善长租房政策，逐步使租购住房在享受公共服务上具有同等权利。加快住房租赁法规建设，加强租赁市场监管，保障承租人和出租人合法权益。有效增加保障性住房供给，完善住房保障基础性制度和支持政策。以人口流入多、房价高的城市为重点，扩大保障性租赁住房供给，着力解决困难群体和新市民住房问题。单列租赁住房用地计划，探索利用集体建设用地和企事业单位自有闲置土地建设租赁住房，支持将非住宅房屋改建为保障性租赁住房。完善土地出让收入分配机制，加大财税、金融支持力度。因地制宜发展共有产权住房。处理好基本保障和非基本保障的关系，完善住房保障方式，健全保障对象、准入门槛、退出管理等政策。改革完善住房公积金制度，健全缴存、使用、管理和运行机制。

专栏11　新型城镇化建设工程
01　都市圈建设 在中心城市辐射带动作用强、与周边城市同城化程度高的地区，培育发展一批现代化都市圈，推进基础设施互联互通、公共服务互认共享。
02　城市更新 完成2000年底前建成的21.9万个城镇老旧小区改造，基本完成大城市老旧厂区改造，改造一批大型老旧街区，因地制宜改造一批城中村。
03　城市防洪排涝 以31个重点防洪城市和大江大河沿岸沿线城市为重点，提升改造城市蓄滞洪空间、堤防、护岸、河道、防洪工程、排水管网等防洪排涝设施，因地制宜建设海绵城市，全部消除城市严重易涝积水区段。
04　县城补短板 推进县城、县级市城区及特大镇补短板，完善综合医院、疾控中心、养老中心、幼儿园、市政管网、市政交通、停车场、充电桩、污水垃圾处理设施和产业平台配套设施。高质量完成120个县城补短板示范任务。
05　现代社区培育 完善社区养老托育、医疗卫生、文化体育、物流配送、便民商超、家政物业等服务网络和线上平台，城市社区综合服务设施实现全覆盖。实施大学生社工计划，每万城镇常住人口拥有社区工作者18人。
06　城乡融合发展 建设嘉兴湖州、福州东部、广州清远、南京无锡常州、济南青岛、成都西部、重庆西部、西安咸阳、长春吉林、许昌、鹰潭等国家城乡融合发展试验区，加强改革授权和政策集成。

第九篇　优化区域经济布局 促进区域协调发展

深入实施区域重大战略、区域协调发展战略、主体功能区战略，健全区域协调发展体制机制，构建高质量发展的区域经济布局和国土空间支撑体系。

第三十章　优化国土空间开发保护格局

立足资源环境承载能力，发挥各地区比较优势，促进各类要素合理流动和高效集聚，推动形成主体功能明显、优势互补、高质量发展的国土空间开发保护新格局。

第一节　完善和落实主体功能区制度

顺应空间结构变化趋势，优化重大基础设施、重大生产力和公共资源布局，分类提高城市化地区发展水平，推动农业生产向粮食生产功能区、重要农产品生产保护区和特色农产品优势区集聚，优化生态安全屏障体系，逐步形成城市化地区、农产品主产区、生态功能区三大空间格局。细化主体功能区划分，按照主体功能定位划分政策单元，对重点开发地区、生态脆弱地区、能源资源富集地区等制定差异化政策，分类精准施策。加强空间发展统筹协调，保障国家重大发展战略落地实施。

第二节　开拓高质量发展的重要动力源

以中心城市和城市群等经济发展优势区域为重点，增强经济和人口承载能力，带动全国经济效率整体提升。以京津冀、长三角、粤港澳大湾区为重点，提升创新策源能力和全球资源配置能力，加快打造引领高质量发展的第一梯队。在中西部有条件的地区，以中心城市为引领，提升城市群功能，加快工业化城镇化进程，形成高质量发展的重要区域。破除资源流动障碍，优化行政区划设置，提高中心城市综合承载能力和资源优化配置能力，强化对区域发展的辐射带动作用。

第三节　提升重要功能性区域的保障能力

以农产品主产区、重点生态功能区、能源资源富集地区和边境地区等承担战略功能的区域为支撑，切实维护国家粮食安全、生态安全、能源安全和边疆安全，与动力源地区共同打造高质量发展的动力系统。支持农产品主产区增强农业生产能力，支持生态功能区把发展重点放到保护生态环境、提供生态产品上，支持生态功能区人口逐步有序向城市化地区转移并定居落户。优化能源开发布局和运输格局，加强能源资源综合开发利用基地建设，提升国内能源供给保障水平。增强边疆地区发展能力，强化人口和经济支撑，促进民族团结和边疆稳定。健全公共资源配置机制，对重点生态功能区、农产品主产区、边境地区等提供有效转移支付。

第三十一章　深入实施区域重大战略

聚焦实现战略目标和提升引领带动能力，推动区域重大战略取得新的突破性进展，促进区域间融合互动、融通补充。

第一节　加快推动京津冀协同发展

紧抓疏解北京非首都功能“牛鼻子”，构建功能疏解政策体系，实施一批标志性疏解项目。高标准高质量建设雄安新区，加快启动区和起步区建设，推动管理体制创新。高质量建设北京城市副中心，促进与河北省三河、香河、大厂三县市一体化发展。推动天津滨海新区高质量发展，支持张家口首都水源涵养功能区和生态环境支撑区建设。提高北京科技创新中心基础研究和原始创新能力，发挥中关村国家自主创新示范区先行先试作用，推动京津冀产业链与创新链深度融合。基本建成轨道上的京津冀，提高机场群港口群协同水平。深化大气污染联防联控联治，强化华北地下水超采及地面沉降综合治理。

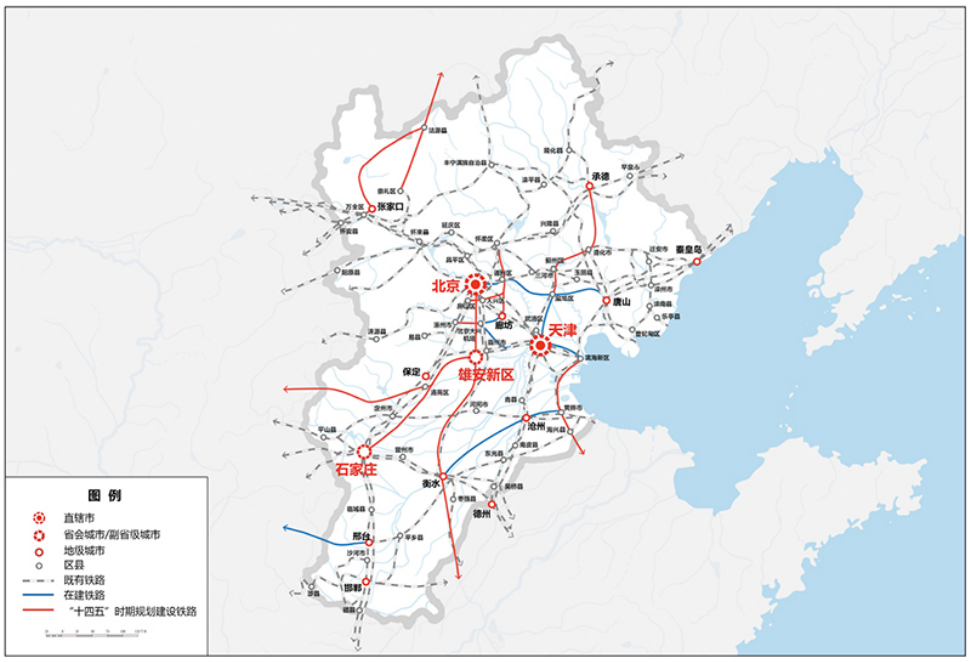

图 4　京津冀地区轨道交通规划图

第二节　全面推动长江经济带发展

坚持生态优先、绿色发展和共抓大保护、不搞大开发，协同推动生态环境保护和经济发展，打造人与自然和谐共生的美丽中国样板。持续推进生态环境突出问题整改，推动长江全流域按单元精细化分区管控，实施城镇污水垃圾处理、工业污染治理、农业面源污染治理、船舶污染治理、尾矿库污染治理等工程。深入开展绿色发展示范，推进赤水河流域生态环境保护。实施长江十年禁渔。围绕建设长江大动脉，整体设计综合交通运输体系，疏解三峡枢纽瓶颈制约，加快沿江高铁和货运铁路建设。发挥产业协同联动整体优势，构建绿色产业体系。保护好长江文物和文化遗产。

第三节　积极稳妥推进粤港澳大湾区建设

加强粤港澳产学研协同发展，完善广深港、广珠澳科技创新走廊和深港河套、粤澳横琴科技创新极点“两廊两点”架构体系，推进综合性国家科学中心建设，便利创新要素跨境流动。加快城际铁路建设，统筹港口和机场功能布局，优化航运和航空资源配置。深化通关模式改革，促进人员、货物、车辆便捷高效流动。扩大内地与港澳专业资格互认范围，深入推进重点领域规则衔接、机制对接。便利港澳青年到大湾区内地城市就学就业创业，打造粤港澳青少年交流精品品牌。

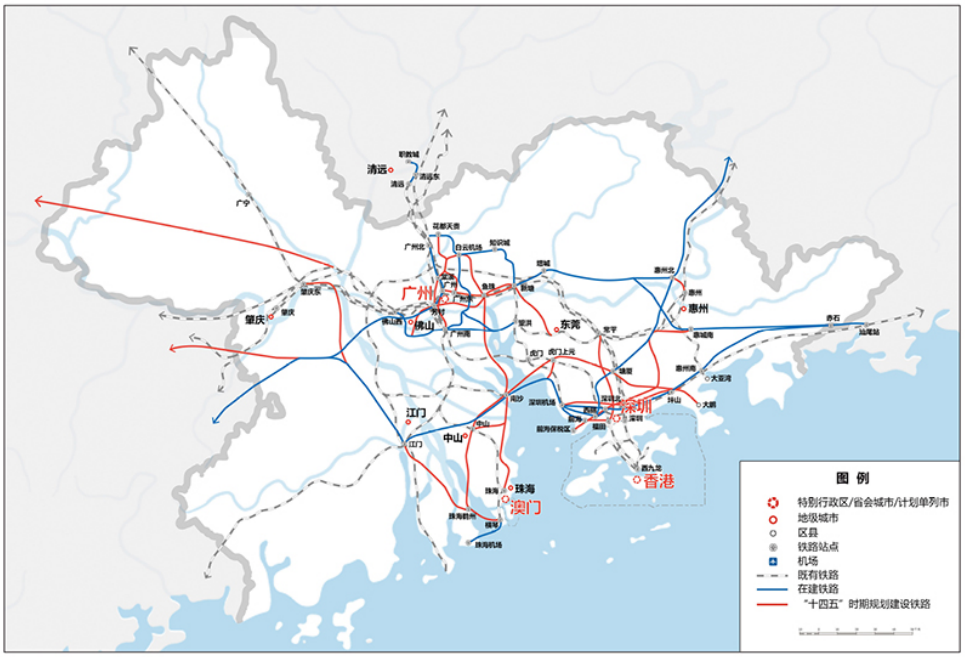

图 5　粤港澳大湾区轨道交通规划图

第四节　提升长三角一体化发展水平

瞄准国际先进科创能力和产业体系，加快建设长三角G60科创走廊和沿沪宁产业创新带，提高长三角地区配置全球资源能力和辐射带动全国发展能力。加快基础设施互联互通，实现长三角地级及以上城市高铁全覆盖，推进港口群一体化治理。打造虹桥国际开放枢纽，强化上海自贸试验区临港新片区开放型经济集聚功能，深化沪苏浙皖自贸试验区联动发展。加快公共服务便利共享，优化优质教育和医疗卫生资源布局。推进生态环境共保联治，高水平建设长三角生态绿色一体化发展示范区。

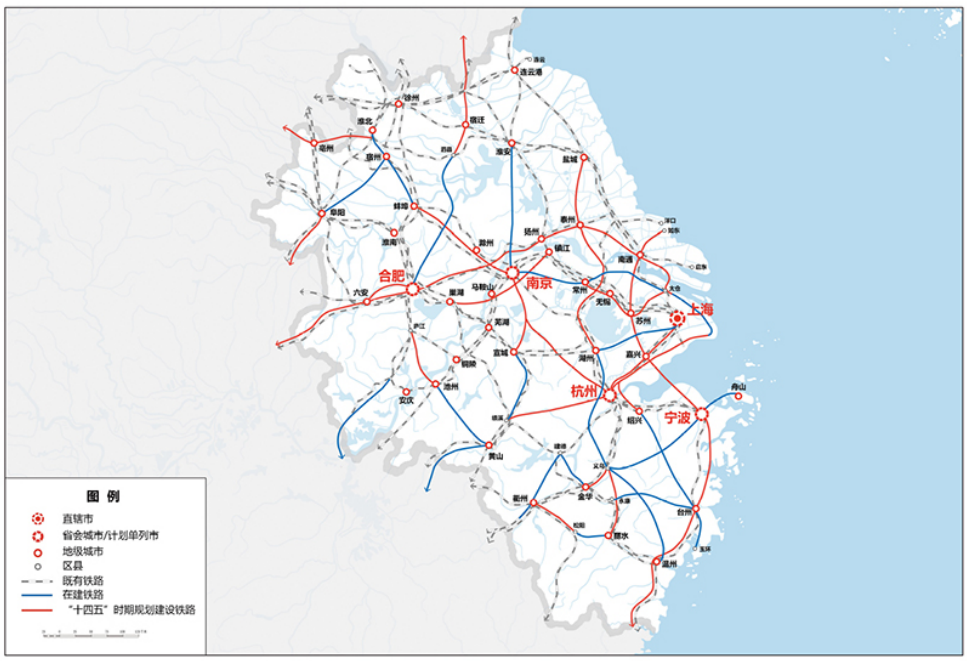

图 6　长三角地区轨道交通规划图

第五节　扎实推进黄河流域生态保护和高质量发展

加大上游重点生态系统保护和修复力度，筑牢三江源“中华水塔”，提升甘南、若尔盖等区域水源涵养能力。创新中游黄土高原水土流失治理模式，积极开展小流域综合治理、旱作梯田和淤地坝建设。推动下游二级悬河治理和滩区综合治理，加强黄河三角洲湿地保护和修复。开展汾渭平原、河套灌区等农业面源污染治理，清理整顿黄河岸线内工业企业，加强沿黄河城镇污水处理设施及配套管网建设。实施深度节水控水行动，降低水资源开发利用强度。合理控制煤炭开发强度，推进能源资源一体化开发利用，加强矿山生态修复。

优化中心城市和城市群发展格局，统筹沿黄河县城和乡村建设。实施黄河文化遗产系统保护工程，打造具有国际影响力的黄河文化旅游带。建设黄河流域生态保护和高质量发展先行区。

第三十二章　深入实施区域协调发展战略

深入推进西部大开发、东北全面振兴、中部地区崛起、东部率先发展，支持特殊类型地区加快发展，在发展中促进相对平衡。

第一节　推进西部大开发形成新格局

强化举措推进西部大开发，切实提高政策精准性和有效性。深入实施一批重大生态工程，开展重点区域综合治理。积极融入“一带一路”建设，强化开放大通道建设，构建内陆多层次开放平台。加大西部地区基础设施投入，支持发展特色优势产业，集中力量巩固脱贫攻坚成果，补齐教育、医疗卫生等民生领域短板。推进成渝地区双城经济圈建设，打造具有全国影响力的重要经济中心、科技创新中心、改革开放新高地、高品质生活宜居地，提升关中平原城市群建设水平，促进西北地区与西南地区合作互动。支持新疆建设国家“三基地一通道”，支持西藏打造面向南亚开放的重要通道。促进400毫米降水线西侧区域保护发展。

第二节　推动东北振兴取得新突破

从维护国家国防、粮食、生态、能源、产业安全的战略高度，加强政策统筹，实现重点突破。加快转变政府职能，深化国有企业改革攻坚，着力优化营商环境，大力发展民营经济。打造辽宁沿海经济带，建设长吉图开发开放先导区，提升哈尔滨对俄合作开放能级。加快发展现代农业，打造保障国家粮食安全的“压舱石”。加大生态资源保护力度，筑牢祖国北疆生态安全屏障。改造提升装备制造等传统优势产业，培育发展新兴产业，大力发展寒地冰雪、生态旅游等特色产业，打造具有国际影响力的冰雪旅游带，形成新的均衡发展产业结构和竞争优势。实施更具吸引力的人才集聚措施。深化与东部地区对口合作。

第三节　开创中部地区崛起新局面

着力打造重要先进制造业基地、提高关键领域自主创新能力、建设内陆地区开放高地、巩固生态绿色发展格局，推动中部地区加快崛起。做大做强先进制造业，在长江、京广、陇海、京九等沿线建设一批中高端产业集群，积极承接新兴产业布局和转移。推动长江中游城市群协同发展，加快武汉、长株潭都市圈建设，打造全国重要增长极。夯实粮食生产基础，不断提高农业综合效益和竞争力，加快发展现代农业。加强生态环境共保联治，着力构筑生态安全屏障。支持淮河、汉江生态经济带上下游合作联动发展。加快对外开放通道建设，高标准高水平建设内陆地区开放平台。提升公共服务保障特别是应对公共卫生等重大突发事件能力。

第四节　鼓励东部地区加快推进现代化

发挥创新要素集聚优势，加快在创新引领上实现突破，推动东部地区率先实现高质量发展。加快培育世界级先进制造业集群，引领新兴产业和现代服务业发展，提升要素产出效率，率先实现产业升级。更高层次参与国际经济合作和竞争，打造对外开放新优势，率先建立全方位开放型经济体系。支持深圳建设中国特色社会主义先行示范区、浦东打造社会主义现代化建设引领区、浙江高质量发展建设共同富裕示范区。深入推进山东新旧动能转换综合试验区建设。

第五节　支持特殊类型地区发展

统筹推进革命老区振兴，因地制宜发展特色产业，传承弘扬红色文化，支持赣闽粤原中央苏区高质量发展示范，推进陕甘宁、大别山、左右江、川陕、沂蒙等革命老区绿色创新发展。推进生态退化地区综合治理和生态脆弱地区保护修复，支持毕节试验区建设。推动资源型地区可持续发展示范区和转型创新试验区建设，实施采煤沉陷区综合治理和独立工矿区改造提升工程。推进老工业基地制造业竞争优势重构，建设产业转型升级示范区。改善国有林场林区基础设施。多措并举解决高海拔地区群众生产生活困难。推进兴边富民、稳边固边，大力改善边境地区生产生活条件，完善沿边城镇体系，支持边境口岸建设，加快抵边村镇和抵边通道建设。推动边境贸易创新发展。加大对重点边境地区发展精准支持力度。

专栏12　促进边境地区发展工程
01　边境城镇 完善边境城镇功能，重点支持满洲里、宽甸、珲春、绥芬河、东兴、腾冲、米林、塔城、可克达拉等边境城镇提升承载能力。
02　抵边村庄 完善边境村庄基础设施和公共服务设施，新建抵边新村200个左右，实现抵边自然村道路、电力、通信、邮政、广电普遍覆盖。
03　沿边抵边公路 建设集安至桓仁、珲春至圈河、泸水至腾冲、墨脱经察隅至滇藏界、青河经富蕴至阿勒泰、布伦口至红其拉甫、巴里坤至老爷庙、二连浩特至赛罕塔拉等沿边抵边公路。
04　边境机场 建设塔什库尔干、隆子、绥芬河等机场，迁建延吉机场，建设20个左右边境通用机场。
05　边境口岸 建设里孜、黑河、同江、黑瞎子岛口岸，改造提升吉隆、樟木、磨憨、霍尔果斯、阿拉山口、满洲里、二连浩特、瑞丽、友谊关、红其拉甫、甘其毛都、策克、吐尔尕特、伊尔克什坦口岸。

第六节　健全区域协调发展体制机制

建立健全区域战略统筹、市场一体化发展、区域合作互助、区际利益补偿等机制，更好促进发达地区和欠发达地区、东中西部和东北地区共同发展。提升区域合作层次和水平，支持省际交界地区探索建立统一规划、统一管理、合作共建、利益共享的合作新机制。完善财政转移支付支持欠发达地区的机制，逐步实现基本公共服务均等化，引导人才向西部和艰苦边远地区流动。完善区域合作与利益调节机制，支持流域上下游、粮食主产区主销区、资源输出地输入地之间开展多种形式的利益补偿，鼓励探索共建园区、飞地经济等利益共享模式。聚焦铸牢中华民族共同体意识，加大对民族地区发展支持力度，全面深入持久开展民族团结进步宣传教育和创建，促进各民族交往交流交融。

第三十三章　积极拓展海洋经济发展空间

坚持陆海统筹、人海和谐、合作共赢，协同推进海洋生态保护、海洋经济发展和海洋权益维护，加快建设海洋强国。

第一节　建设现代海洋产业体系

围绕海洋工程、海洋资源、海洋环境等领域突破一批关键核心技术。培育壮大海洋工程装备、海洋生物医药产业，推进海水淡化和海洋能规模化利用，提高海洋文化旅游开发水平。优化近海绿色养殖布局，建设海洋牧场，发展可持续远洋渔业。建设一批高质量海洋经济发展示范区和特色化海洋产业集群，全面提高北部、东部、南部三大海洋经济圈发展水平。以沿海经济带为支撑，深化与周边国家涉海合作。

第二节　打造可持续海洋生态环境

探索建立沿海、流域、海域协同一体的综合治理体系。严格围填海管控，加强海岸带综合管理与滨海湿地保护。拓展入海污染物排放总量控制范围，保障入海河流断面水质。加快推进重点海域综合治理，构建流域－河口－近岸海域污染防治联动机制，推进美丽海湾保护与建设。防范海上溢油、危险化学品泄露等重大环境风险，提升应对海洋自然灾害和突发环境事件能力。完善海岸线保护、海域和无居民海岛有偿使用制度，探索海岸建筑退缩线制度和海洋生态环境损害赔偿制度，自然岸线保有率不低于35%。

第三节　深度参与全球海洋治理

积极发展蓝色伙伴关系，深度参与国际海洋治理机制和相关规则制定与实施，推动建设公正合理的国际海洋秩序，推动构建海洋命运共同体。深化与沿海国家在海洋环境监测和保护、科学研究和海上搜救等领域务实合作，加强深海战略性资源和生物多样性调查评价。参与北极务实合作，建设“冰上丝绸之路”。提高参与南极保护和利用能力。加强形势研判、风险防范和法理斗争，加强海事司法建设，坚决维护国家海洋权益。有序推进海洋基本法立法。

第十篇　发展社会主义先进文化 提升国家文化软实力

坚持马克思主义在意识形态领域的指导地位，坚定文化自信，坚持以社会主义核心价值观引领文化建设，围绕举旗帜、聚民心、育新人、兴文化、展形象的使命任务，促进满足人民文化需求和增强人民精神力量相统一，推进社会主义文化强国建设。

第三十四章　提高社会文明程度

加强社会主义精神文明建设，培育和践行社会主义核心价值观，推动形成适应新时代要求的思想观念、精神面貌、文明风尚、行为规范。

第一节　推动理想信念教育常态化制度化

深入开展习近平新时代中国特色社会主义思想学习教育，健全用党的创新理论武装全党、教育人民的工作体系。建立健全“不忘初心、牢记使命”的制度和长效机制，加强和改进思想政治工作，持续开展中国特色社会主义和中国梦宣传教育，加强党史、新中国史、改革开放史、社会主义发展史教育，加强爱国主义、集体主义、社会主义教育，加强革命文化研究阐释和宣传教育，弘扬党和人民在各个历史时期奋斗中形成的伟大精神。完善弘扬社会主义核心价值观的法律政策体系，把社会主义核心价值观要求融入法治建设和社会治理，体现到国民教育、精神文明创建、文化产品创作生产全过程。完善青少年理想信念教育齐抓共管机制。

第二节　发展中国特色哲学社会科学

加强对习近平新时代中国特色社会主义思想的整体性系统性研究、出版传播、宣传阐释，推进马克思主义中国化、时代化、大众化。深入实施马克思主义理论研究和建设工程，推进习近平新时代中国特色社会主义思想研究中心（院）、中国特色社会主义理论体系研究中心等建设，建好用好“学习强国”等学习平台。构建中国特色哲学社会科学学科体系、学术体系和话语体系，深入实施哲学社会科学创新工程，加强中国特色新型智库建设。

第三节　传承弘扬中华优秀传统文化

深入实施中华优秀传统文化传承发展工程，强化重要文化和自然遗产、非物质文化遗产系统性保护，推动中华优秀传统文化创造性转化、创新性发展。加强文物科技创新，实施中华文明探源和考古中国工程，开展中华文化资源普查，加强文物和古籍保护研究利用，推进革命文物和红色遗址保护，完善流失文物追索返还制度。建设长城、大运河、长征、黄河等国家文化公园，加强世界文化遗产、文物保护单位、考古遗址公园、历史文化名城名镇名村保护。健全非物质文化遗产保护传承体系，加强各民族优秀传统手工艺保护和传承。

第四节　持续提升公民文明素养

推进公民道德建设，大力开展社会公德、职业道德、家庭美德、个人品德建设。开展国家勋章、国家荣誉称号获得者和时代楷模、道德模范、最美人物、身边好人的宣传学习。实施文明创建工程，拓展新时代文明实践中心建设，科学规范做好文明城市、文明村镇、文明单位、文明校园、文明家庭评选表彰，深化未成年人思想道德建设。完善市民公约、乡规民约、学生守则、团体章程等社会规范，建立惩戒失德行为机制。弘扬诚信文化，建设诚信社会。广泛开展志愿服务关爱行动。提倡艰苦奋斗、勤俭节约，开展以劳动创造幸福为主题的宣传教育。加强网络文明建设，发展积极健康的网络文化。

第三十五章　提升公共文化服务水平

坚持为人民服务、为社会主义服务的方向，坚持百花齐放、百家争鸣的方针，加强公共文化服务体系建设和体制机制创新，强化中华文化传播推广和文明交流互鉴，更好保障人民文化权益。

第一节　加强优秀文化作品创作生产传播

把提高质量作为文艺作品的生命线，提高文艺原创能力。实施文艺作品质量提升工程，健全重大现实、重大革命、重大历史题材创作规划组织机制，加强农村、少儿等题材创作，不断推出反映时代新气象、讴歌人民新创造的文艺精品。建立健全文化产品创作生产、传播引导、宣传推广的激励机制和评价体系，推动形成健康清朗的文艺生态。加强文化队伍建设，培养造就高水平创作人才和德艺双馨的名家大师。

第二节　完善公共文化服务体系

优化城乡文化资源配置，推进城乡公共文化服务体系一体建设。创新实施文化惠民工程，提升基层综合性文化服务中心功能，广泛开展群众性文化活动。推进公共图书馆、文化馆、美术馆、博物馆等公共文化场馆免费开放和数字化发展。推进媒体深度融合，做强新型主流媒体。完善应急广播体系，实施智慧广电固边工程和乡村工程。发展档案事业。深入推进全民阅读，建设“书香中国”，推动农村电影放映优化升级。创新公共文化服务运行机制，鼓励社会力量参与公共文化服务供给和设施建设运营。

第三节　提升中华文化影响力

加强对外文化交流和多层次文明对话，创新推进国际传播，利用网上网下，讲好中国故事，传播好中国声音，促进民心相通。开展“感知中国”、“走读中国”、“视听中国”活动，办好中国文化年（节）、旅游年（节）。建设中文传播平台，构建中国语言文化全球传播体系和国际中文教育标准体系。

第三十六章　健全现代文化产业体系

坚持把社会效益放在首位、社会效益和经济效益相统一，健全现代文化产业体系和市场体系。

第一节　扩大优质文化产品供给

实施文化产业数字化战略，加快发展新型文化企业、文化业态、文化消费模式，壮大数字创意、网络视听、数字出版、数字娱乐、线上演播等产业。加快提升超高清电视节目制播能力，推进电视频道高清化改造，推进沉浸式视频、云转播等应用。实施文化品牌战略，打造一批有影响力、代表性的文化品牌。培育骨干文化企业，规范发展文化产业园区，推动区域文化产业带建设。积极发展对外文化贸易，开拓海外文化市场，鼓励优秀传统文化产品和影视剧、游戏等数字文化产品“走出去”，加强国家文化出口基地建设。

第二节　推动文化和旅游融合发展

坚持以文塑旅、以旅彰文，打造独具魅力的中华文化旅游体验。深入发展大众旅游、智慧旅游，创新旅游产品体系，改善旅游消费体验。加强区域旅游品牌和服务整合，建设一批富有文化底蕴的世界级旅游景区和度假区，打造一批文化特色鲜明的国家级旅游休闲城市和街区。推进红色旅游、文化遗产旅游、旅游演艺等创新发展，提升度假休闲、乡村旅游等服务品质，完善邮轮游艇、低空旅游等发展政策。健全旅游基础设施和集散体系，推进旅游厕所革命，强化智慧景区建设。建立旅游服务质量评价体系，规范在线旅游经营服务。

第三节　深化文化体制改革

完善文化管理体制和生产经营机制，提升文化治理效能。完善国有文化资产管理体制机制，深化公益性文化事业单位改革，推进公共文化机构法人治理结构改革。深化国有文化企业分类改革，推进国有文艺院团改革和院线制改革。完善文化市场综合执法体制，制定未成年人网络保护、信息网络传播视听等领域法律法规。

专栏13　社会主义文化繁荣发展工程	
01	**中国特色社会主义理论出版传播** 编辑出版习近平谈治国理政、习近平新时代中国特色社会主义思想学习问答、分领域学习纲要等系列理论读物，编辑出版党史、新中国史、改革开放史、社会主义发展史经典教材，加强海外翻译出版和宣介推广。
02	**文艺精品创作** 开展精神文明建设“五个一”、舞台艺术、影视精品、优秀剧本、美术创作收藏、重大出版等工程，实施当代文学艺术创作、中华文化新媒体传播、纪录片创作传播、地方戏曲传承发展、网络文艺创作传播等重大项目。
03	**全媒体传播和数字文化** 推进国家、省、市、县四级融媒体中心（平台）建设。推进国家有线电视网络整合和5G一体化发展。分类采集梳理文化遗产数据，建设国家文化大数据体系。实施出版融合发展工程。
04	**文化遗产保护传承** 加强安阳殷墟、汉长安城、隋唐洛阳城和重要石窟寺等遗址保护，开展江西汉代海昏侯国、河南仰韶村、良渚古城、石峁、陶寺、三星堆、曲阜鲁国故城等国家考古遗址公园建设。建设20个国家重点区域考古标本库房、30个国家级文化生态保护区和20个国家级非物质文化遗产馆。
05	**中华典籍整理出版** 整理出版300种中华典籍，组织《永乐大典》、敦煌文献等重点古籍系统性保护整理出版，实施国家古籍数字化工程。推进点校本“二十四史”及清史稿修订等重大出版工程，推进复兴文库建设，启动新编中国通史纂修工程、中华民族交往交流交融史编纂工程。
06	**重大文化设施建设** 建设中国共产党历史展览馆、中央档案馆新馆、国家版本馆、国家文献储备库、故宫博物院北院区、国家美术馆、国家文化遗产科技创新中心。
07	**旅游目的地质量提升** 打造海南国际旅游消费中心、粤港澳大湾区世界级旅游目的地、长江国际黄金旅游带、黄河文化旅游带、杭黄自然生态和文化旅游廊道、巴蜀文化旅游走廊、桂林国际旅游胜地，健全游客服务、停车及充电、交通、流量监测管理等设施。

第十一篇　推动绿色发展 促进人与自然和谐共生

坚持绿水青山就是金山银山理念，坚持尊重自然、顺应自然、保护自然，坚持节约优先、保护优先、自然恢复为主，实施可持续发展战略，完善生态文明领域统筹协调机制，构建生态文明体系，推动经济社会发展全面绿色转型，建设美丽中国。

第三十七章　提升生态系统质量和稳定性

坚持山水林田湖草系统治理，着力提高生态系统自我修复能力和稳定性，守住自然生态安全边界，促进自然生态系统质量整体改善。

第一节　完善生态安全屏障体系

强化国土空间规划和用途管控，划定落实生态保护红线、永久基本农田、城镇开发边界以及各类海域保护线。以国家重点生态功能区、生态保护红线、国家级自然保护地等为重点，实施重要生态系统保护和修复重大工程，加快推进青藏高原生态屏障区、黄河重点生态区、长江重点生态区和东北森林带、北方防沙带、南方丘陵山地带、海岸带等生态屏障建设。加强长江、黄河等大江大河和重要湖泊湿地生态保护治理，加强重要生态廊道建设和保护。全面加强天然林和湿地保护，湿地保护率提高到55%。科学推进水土流失和荒漠化、石漠化综合治理，开展大规模国土绿化行动，推行林长制。科学开展人工影响天气活动。推行草原森林河流湖泊休养生息，健全耕地休耕轮作制度，巩固退耕还林还草、退田还湖还湿、退围还滩还海成果。

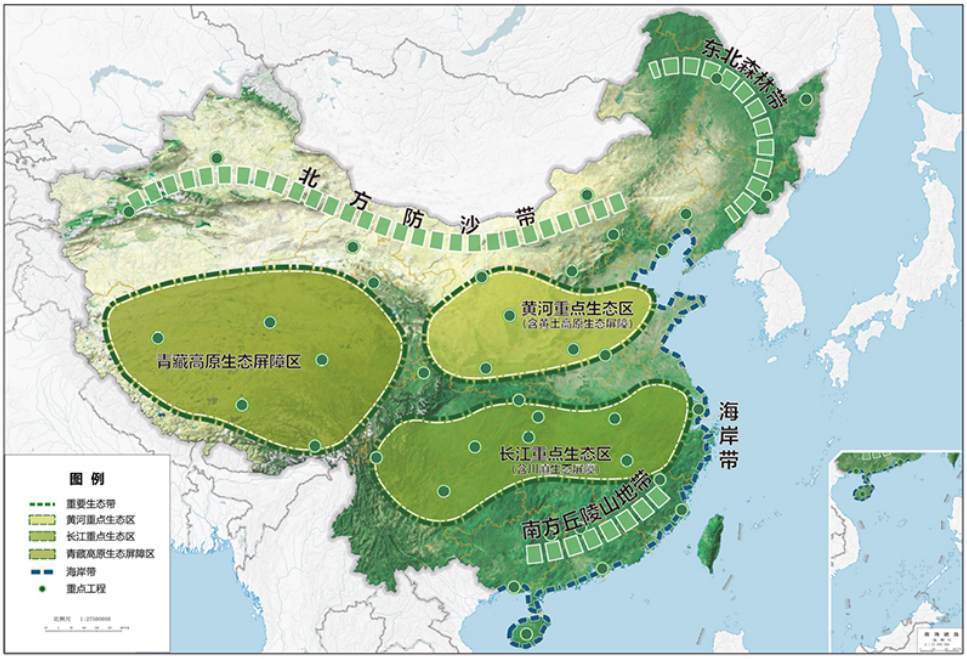

图 7　重要生态系统保护和修复重大工程布局示意图

第二节　构建自然保护地体系

科学划定自然保护地保护范围及功能分区，加快整合归并优化各类保护地，构建以国家公园为主体、自然保护区为基础、各类自然公园为补充的自然保护地体系。严格管控自然保护地范围内非生态活动，稳妥推进核心区内居民、耕地、矿权有序退出。完善国家公园管理体制和运营机制，整合设立一批国家公园。实施生物多样性保护重大工程，构筑生物多样性保护网络，加强国家重点保护和珍稀濒危野生动植物及其栖息地的保护修复，加强外来物种管控。完善生态保护和修复用地用海等政策。完善自然保护地、生态保护红线监管制度，开展生态系统保护成效监测评估。

第三节　健全生态保护补偿机制

加大重点生态功能区、重要水系源头地区、自然保护地转移支付力度，鼓励受益地区和保护地区、流域上下游通过资金补偿、产业扶持等多种形式开展横向生态补偿。完善市场化多元化生态补偿，鼓励各类社会资本参与生态保护修复。完善森林、草原和湿地生态补偿制度。推动长江、黄河等重要流域建立全流域生态补偿机制。建立生态产品价值实现机制，在长江流域和三江源国家公园等开展试点。制定实施生态保护补偿条例。

专栏14　重要生态系统保护和修复工程
01　青藏高原生态屏障区 以三江源、祁连山、若尔盖、甘南黄河重要水源补给区等为重点，加强原生地带性植被、珍稀物种及其栖息地保护，新增沙化土地治理100万公顷、退化草原治理320万公顷，沙化土地封禁保护20万公顷。
02　黄河重点生态区（含黄土高原生态屏障） 以黄土高原、秦岭、贺兰山等为重点，加强“三化”草场治理和水土流失综合治理，保护修复黄河三角洲等湿地，保护修复林草植被80万公顷，新增水土流失治理200万公顷、沙化土地治理80万公顷。
03　长江重点生态区（含川滇生态屏障） 以横断山区、岩溶石漠化区、三峡库区、洞庭湖、鄱阳湖等为重点，开展森林质量精准提升、河湖湿地修复、石漠化综合治理等，加强珍稀濒危野生动植物保护恢复，完成营造林110万公顷，新增水土流失治理500万公顷、石漠化治理100万公顷。
04　东北森林带 以大小兴安岭、长白山及三江平原、松嫩平原重要湿地等为重点，实施天然林保护修复，保护重点沼泽湿地和珍稀候鸟迁徙地，培育天然林后备资源70万公顷，新增退化草原治理30万公顷。
05　北方防沙带 以内蒙古高原、河西走廊、塔里木河流域、京津冀地区等为重点，推进防护林体系建设及退化林修复、退化草原修复、京津风沙源治理等，完成营造林220万公顷，新增沙化土地治理750万公顷、退化草原治理270万公顷。
06　南方丘陵山地带 以南岭山地、武夷山区、湘桂岩溶石漠化区等为重点，实施森林质量精准提升行动，推进水土流失和石漠化综合治理，加强河湖生态保护修复，保护濒危物种及其栖息地，营造防护林9万公顷，新增石漠化治理30万公顷。
07　海岸带 以黄渤海、长三角、粤闽浙沿海、粤港澳大湾区、海南岛、北部湾等为重点，全面保护自然岸线，整治修复岸线长度400公里、滨海湿地2万公顷，营造防护林11万公顷。
08　自然保护地及野生动植物保护 推进三江源、东北虎豹、大熊猫和海南热带雨林等国家公园建设，新整合设立秦岭、黄河口等国家公园。建设珍稀濒危野生动植物基因保存库、救护繁育场所，专项拯救48种极度濒危野生动物和50种极小种群植物。

第三十八章　持续改善环境质量

深入打好污染防治攻坚战，建立健全环境治理体系，推进精准、科学、依法、系统治污，协同推进减污降碳，不断改善空气、水环境质量，有效管控土壤污染风险。

第一节　深入开展污染防治行动

坚持源头防治、综合施策，强化多污染物协同控制和区域协同治理。加强城市大气质量达标管理，推进细颗粒物（$PM_{2.5}$）和臭氧（O_3）协同控制，地级及以上城市$PM_{2.5}$浓度下降10%，有效遏制O_3浓度增长趋势，基本消除重污染天气。持续改善京津冀及周边地区、汾渭平原、长三角地区空气质量，因地制宜推动北方地区清洁取暖、工业窑炉治理、非电行业超低排放改造，加快挥发性有机物排放综合整治，氮氧化物和挥发性有机物排放总量分别下降10%以上。完善水污染防治流域协同机制，加强重点流域、重点湖泊、城市水体和近岸海域综合治理，推进美丽河湖保护与建设，化学需氧量和氨氮排放总量分别下降8%，基本消除劣Ⅴ类国控断面和城市黑臭水体。开展城市饮用水水源地规范化建设，推进重点流域重污染企业搬迁改造。推进受污染耕地和建设用地管控修复，实施水土环境风险协同防控。加强塑料污染全链条防治。加强环境噪声污染治理。重视新污染物治理。

第二节　全面提升环境基础设施水平

构建集污水、垃圾、固废、危废、医废处理处置设施和监测监管能力于一体的环境基础设施体系，形成由城市向建制镇和乡村延伸覆盖的环境基础设施网络。推进城镇污水管网全覆盖，开展污水处理差别化精准提标，推广污泥集中焚烧无害化处理，城市污泥无害化处置率达到90%，地级及以上缺水城市污水资源化利用率超过25%。建设分类投放、分类收集、分类运输、分类处理的生活垃圾处理系统。以主要产业基地为重点布局危险废弃物集中利用处置设施。加快建设地级及以上城市医疗废弃物集中处理设施，健全县域医疗废弃物收集转运处置体系。

第三节　严密防控环境风险

建立健全重点风险源评估预警和应急处置机制。全面整治固体废物非法堆存，提升危险废弃物监管和风险防范能力。强化重点区域、重点行业重金属污染监控预警。健全有毒有害化学物质环境风险管理体制，完成重点地区危险化学品生产企业搬迁改造。严格核与辐射安全监管，推进放射性污染防治。建立生态环境突发事件后评估机制和公众健康影响评估制度。在高风险领域推行环境污染强制责任保险。

第四节　积极应对气候变化

落实2030年应对气候变化国家自主贡献目标，制定2030年前碳排放达峰行动方案。完善能源消费总量和强度双控制度，重点控制化石能源消费。实施以碳强度控制为主、碳排放总量控制为辅的制度，支持有条件的地方和重点行业、重点企业率先达到碳排放峰值。推动能源清洁低碳安全高效利用，深入推进工业、建筑、交通等领域低碳转型。加大甲烷、氢氟碳化物、全氟化碳等其他温室气体控制力度。提升生态系统碳汇能力。锚定努力争取2060年前实现碳中和，采取更加有力的政策和措施。加强全球气候变暖对我国承受力脆弱地区影响的观测和评估，提升城乡建设、农业生产、基础设施适应气候变化能力。加强青藏高原综合科学考察研究。坚持公平、共同但有区别的责任及各自能力原则，建设性参与和引领应对气候变化国际合作，推动落实联合国气候变化框架公约及其巴黎协定，积极开展气候变化南南合作。

第五节　健全现代环境治理体系

建立地上地下、陆海统筹的生态环境治理制度。全面实行排污许可制，实现所有固定污染源排污许可证核发，推动工业污染源限期达标排放，推进排污权、用能权、用水权、碳排放权市场化交易。完善环境保护、节能减排约束性指标管理。完善河湖管理保护机制，强化河长制、湖长制。加强领导干部自然资源资产离任审计。完善中央生态环境保护督察制度。完善省以下生态环境机构监测监察执法垂直管理制度，推进生态环境保护综合执法改革，完善生态环境公益诉讼制度。加大环保信息公开力度，加强企业环境治理责任制度建设，完善公众监督和举报反馈机制，引导社会组织和公众共同参与环境治理。

第三十九章　加快发展方式绿色转型

坚持生态优先、绿色发展，推进资源总量管理、科学配置、全面节约、循环利用，协同推进经济高质量发展和生态环境高水平保护。

第一节　全面提高资源利用效率

坚持节能优先方针，深化工业、建筑、交通等领域和公共机构节能，推动5G、大数据中心等新兴领域能效提升，强化重点用能单位节能管理，实施能量系统优化、节能技术改造等重点工程，加快能耗限额、产品设备能效强制性国家标准制修订。实施国家节水行动，建立水资源刚性约束制度，强化农业节水增效、工业节水减排和城镇节水降损，鼓励再生水利用，单位GDP用水量下降16%左右。加强土地节约集约利用，加大批而未供和闲置土地处置力度，盘活城镇低效用地，支持工矿废弃土地恢复利用，完善土地复合利用、立体开发支持政策，新增建设用地规模控制在2950万亩以内，推动单位GDP建设用地使用面积稳步下降。提高矿产资源开发保护水平，发展绿色矿业，建设绿色矿山。

第二节　构建资源循环利用体系

全面推行循环经济理念，构建多层次资源高效循环利用体系。深入推进园区循环化改造，补齐和延伸产业链，推进能源资源梯级利用、废物循环利用和污染物集中处置。加强大宗固体废弃物综合利用，规范发展再制造产业。加快发展种养有机结合的循环农业。加强废旧物品回收设施规划建设，完善城市废旧物品回收分拣体系。推行生产企业“逆向回收”等模式，建立健全线上线下融合、流向可控的资源回收体系。拓展生产者责任延伸制度覆盖范围。推进快递包装减量化、标准化、循环化。

第三节　大力发展绿色经济

坚决遏制高耗能、高排放项目盲目发展，推动绿色转型实现积极发展。壮大节能环保、清洁生产、清洁能源、生态环境、基础设施绿色升级、绿色服务等产业，推广合同能源管理、合同节水管理、环境污染第三方治理等服务模式。推动煤炭等化石能源清洁高效利用，推进钢铁、石化、建材等行业绿色化改造，加快大宗货物和中长途货物运输“公转铁”、“公转水”。推动城市公交和物流配送车辆电动化。构建市场导向的绿色技术创新体系，实施绿色技术创新攻关行动，开展重点行业和重点产品资源效率对标提升行动。建立统一的绿色产品标准、认证、标识体系，完善节能家电、高效照明产品、节水器具推广机制。深入开展绿色生活创建行动。

第四节　构建绿色发展政策体系

强化绿色发展的法律和政策保障。实施有利于节能环保和资源综合利用的税收政策。大力发展绿色金融。健全自然资源有偿使用制度，创新完善自然资源、污水垃圾处理、用水用能等领域价格形成机制。推进固定资产投资项目节能审查、节能监察、重点用能单位管理制度改革。完善能效、水效“领跑者”制度。强化高耗水行业用水定额管理。深化生态文明试验区建设。深入推进山西国家资源型经济转型综合配套改革试验区建设和能源革命综合改革试点。

专栏15　环境保护和资源节约工程
01　大气污染物减排 实施8.5亿吨水泥熟料、4.6亿吨焦化产能和4000台左右有色行业炉窑清洁生产改造，完成5.3亿吨钢铁产能超低排放改造，开展石化、化工、涂装、医药、包装印刷等重点行业挥发性有机物治理改造，推进大气污染防治重点区域散煤清零。
02　水污染防治和水生态修复 巩固地级及以上城市黑臭水体治理成效，推进363个县级城市建成区1500段黑臭水体综合治理。加强太湖、巢湖、滇池、丹江口水库、洱海、白洋淀、鄱阳湖、洞庭湖、查干湖、乌梁素海等重点湖库污染防治和生态修复，实施永定河、木兰溪等综合治理，加快华北地区及其他重点区域地下水超采综合治理和黄河河口综合治理。
03　土壤污染防治与安全利用 在土壤污染面积较大的100个县推进农用地安全利用示范。以化工、有色金属行业为重点，实施100个土壤污染源头管控项目。
04　城镇污水垃圾处理设施 新增和改造污水收集管网8万公里，新增污水处理能力2000万立方米/日。加快垃圾焚烧设施建设，城市生活垃圾日清运量超过300吨地区实现原生垃圾零填埋，开展小型生活垃圾焚烧设施建设试点。
05　医废危废处置和固废综合利用 补齐医疗废弃物处置设施短板，建设国家和6个区域性危废风险防控技术中心、20个区域性特殊危废集中处置中心。以尾矿和共伴生矿、煤矸石、粉煤灰、建筑垃圾等为重点，开展100个大宗固体废弃物综合利用示范。
06　资源节约利用 实施重大节能低碳技术产业化示范工程，开展近零能耗建筑、近零碳排放、碳捕集利用与封存（CCUS）等重大项目示范。开展60个大中城市废旧物资循环利用体系建设。

第十二篇　实行高水平对外开放 开拓合作共赢新局面

坚持实施更大范围、更宽领域、更深层次对外开放，依托我国超大规模市场优势，促进国际合作，实现互利共赢，推动共建“一带一路”行稳致远，推动构建人类命运共同体。

第四十章　建设更高水平开放型经济新体制

全面提高对外开放水平，推进贸易和投资自由化便利化，持续深化商品和要素流动型开放，稳步拓展规则、规制、管理、标准等制度型开放。

第一节　加快推进制度型开放

构建与国际通行规则相衔接的制度体系和监管模式。健全外商投资准入前国民待遇加负面清单管理制度，进一步缩减外资准入负面清单，落实准入后国民待遇，促进内外资企业公平竞争。建立健全跨境服务贸易负面清单管理制度，健全技术贸易促进体系。稳妥推进银行、证券、保险、基金、期货等金融领域开放，深化境内外资本市场互联互通，健全合格境外投资者制度。稳慎推进人民币国际化，坚持市场驱动和企业自主选择，营造以人民币自由使用为基础的新型互利合作关系。完善出入境、海关、外汇、税收等环节管理服务。

第二节　提升对外开放平台功能

统筹推进各类开放平台建设，打造开放层次更高、营商环境更优、辐射作用更强的开放新高地。完善自由贸易试验区布局，赋予其更大改革自主权，深化首创性、集成化、差别化改革探索，积极复制推广制度创新成果。稳步推进海南自由贸易港建设，以货物贸易“零关税”、服务贸易“既准入又准营”为方向推进贸易自由化便利化，大幅放宽市场准入，全面推行“极简审批”投资制度，开展跨境证券投融资改革试点和数据跨境传输安全管理试点，实施更加开放的人才、出入境、运输等政策，制定出台海南自由贸易港法，初步建立中国特色自由贸易港政策和制度体系。创新提升国家级新区和开发区，促进综合保税区高水平开放，完善沿边重点开发开放试验区、边境经济合作区、跨境经济合作区功能，支持宁夏、贵州、江西建设内陆开放型经济试验区。

第三节　优化区域开放布局

鼓励各地立足比较优势扩大开放，强化区域间开放联动，构建陆海内外联动、东西双向互济的开放格局。巩固东部沿海地区和超大特大城市开放先导地位，率先推动全方位高水平开放。加快中西部和东北地区开放步伐，支持承接国内外产业转移，培育全球重要加工

制造基地和新增长极，研究在内陆地区增设国家一类口岸，助推内陆地区成为开放前沿。推动沿边开发开放高质量发展，加快边境贸易创新发展，更好发挥重点口岸和边境城市内外联通作用。支持广西建设面向东盟的开放合作高地、云南建设面向南亚东南亚和环印度洋地区开放的辐射中心。

第四节　健全开放安全保障体系

构筑与更高水平开放相匹配的监管和风险防控体系。健全产业损害预警体系，丰富贸易调整援助、贸易救济等政策工具，妥善应对经贸摩擦。健全外商投资国家安全审查、反垄断审查和国家技术安全清单管理、不可靠实体清单等制度。建立重要资源和产品全球供应链风险预警系统，加强国际供应链保障合作。加强国际收支监测，保持国际收支基本平衡和外汇储备基本稳定。加强对外资产负债监测，建立健全全口径外债监管体系。完善境外投资分类分级监管体系。构建海外利益保护和风险预警防范体系。优化提升驻外外交机构基础设施保障能力，完善领事保护工作体制机制，维护海外中国公民、机构安全和正当权益。

第四十一章　推动共建“一带一路”高质量发展

坚持共商共建共享原则，秉持绿色、开放、廉洁理念，深化务实合作，加强安全保障，促进共同发展。

第一节　加强发展战略和政策对接

推进战略、规划、机制对接，加强政策、规则、标准联通。创新对接方式，推进已签文件落实见效，推动与更多国家商签投资保护协定、避免双重征税协定等，加强海关、税收、监管等合作，推动实施更高水平的通关一体化。拓展规则对接领域，加强融资、贸易、能源、数字信息、农业等领域规则对接合作。促进共建“一带一路”倡议同区域和国际发展议程有效对接、协同增效。

第二节　推进基础设施互联互通

推动陆海天网四位一体联通，以“六廊六路多国多港”为基本框架，构建以新亚欧大陆桥等经济走廊为引领，以中欧班列、陆海新通道等大通道和信息高速路为骨架，以铁路、港口、管网等为依托的互联互通网络，打造国际陆海贸易新通道。聚焦关键通道和关键城市，有序推动重大合作项目建设，将高质量、可持续、抗风险、价格合理、包容可及目标融入项目建设全过程。提高中欧班列开行质量，推动国际陆运贸易规则制定。扩大“丝路海运”品牌影响。推进福建、新疆建设“一带一路”核心区。推进“一带一路”空间信息走廊建设。建设“空中丝绸之路”。

第三节　深化经贸投资务实合作

推动与共建“一带一路”国家贸易投资合作优化升级，积极发展丝路电商。深化国际产能合作，拓展第三方市场合作，构筑互利共赢的产业链供应链合作体系，扩大双向贸易和投资。坚持以企业为主体、市场为导向，遵循国际惯例和债务可持续原则，健全多元化投融资体系。创新融资合作框架，发挥共建“一带一路”专项贷款、丝路基金等作用。建立健全“一带一路”金融合作网络，推动金融基础设施互联互通，支持多边和各国金融机构共同参与投融资。完善“一带一路”风险防控和安全保障体系，强化法律服务保障，有效防范化解各类风险。

第四节　架设文明互学互鉴桥梁

深化公共卫生、数字经济、绿色发展、科技教育、文化艺术等领域人文合作，加强议会、政党、民间组织往来，密切妇女、青年、残疾人等群体交流，形成多元互动的人文交流格局。推进实施共建“一带一路”科技创新行动计划，建设数字丝绸之路、创新丝绸之路。加强应对气候变化、海洋合作、野生动物保护、荒漠化防治等交流合作，推动建设绿色丝绸之路。积极与共建“一带一路”国家开展医疗卫生和传染病防控合作，建设健康丝绸之路。

第四十二章　积极参与全球治理体系改革和建设

高举和平、发展、合作、共赢旗帜，坚持独立自主的和平外交政策，推动构建新型国际关系，推动全球治理体系朝着更加公正合理的方向发展。

第一节　维护和完善多边经济治理机制

维护多边贸易体制，积极参与世界贸易组织改革，坚决维护发展中成员地位。推动二十国集团等发挥国际经济合作功能，建设性参与亚太经合组织、金砖国家等机制经济治理合作，提出更多中国倡议、中国方案。推动主要多边金融机构深化治理改革，支持亚洲基础设施投资银行和新开发银行更好发挥作用，提高参与国际金融治理能力。推动国际宏观经济政策沟通协调，搭建国际合作平台，共同维护全球产业链供应链稳定畅通、全球金融市场稳定，合力促进世界经济增长。推动新兴领域经济治理规则制定。

第二节　构建高标准自由贸易区网络

实施自由贸易区提升战略，构建面向全球的高标准自由贸易区网络。优化自由贸易区布局，推动区域全面经济伙伴关系协定实施，加快中日韩自由贸易协定谈判进程，稳步推进亚太自贸区建设。提升自由贸易区建设水平，积极考虑加入全面与进步跨太平洋伙伴关系协定，推动商签更多高标准自由贸易协定和区域贸易协定。

第三节　积极营造良好外部环境

积极发展全球伙伴关系，推进大国协调和合作，深化同周边国家关系，加强同发展中国家团结合作。坚持多边主义和共商共建共享原则，维护以联合国为核心的国际体系和以国际法为基础的国际秩序，共同应对全球性挑战。积极参与重大传染病防控国际合作，推动构建人类卫生健康共同体。深化对外援助体制机制改革，优化对外援助布局，向发展中国家特别是最不发达国家提供力所能及的帮助，加强医疗卫生、科技教育、绿色发展、减贫、人力资源开发、紧急人道主义等领域对外合作和援助。积极落实联合国2030年可持续发展议程。

第十三篇　提升国民素质 促进人的全面发展

把提升国民素质放在突出重要位置，构建高质量的教育体系和全方位全周期的健康体系，优化人口结构，拓展人口质量红利，提升人力资本水平和人的全面发展能力。

第四十三章　建设高质量教育体系

全面贯彻党的教育方针，坚持优先发展教育事业，坚持立德树人，增强学生文明素养、社会责任意识、实践本领，培养德智体美劳全面发展的社会主义建设者和接班人。

第一节　推进基本公共教育均等化

巩固义务教育基本均衡成果，完善办学标准，推动义务教育优质均衡发展和城乡一体化。加快城镇学校扩容增位，保障农业转移人口随迁子女平等享有基本公共教育服务。改善乡村小规模学校和乡镇寄宿制学校条件，加强乡村教师队伍建设，提高乡村教师素质能力，完善留守儿童关爱体系，巩固义务教育控辍保学成果。巩固提升高中阶段教育普及水平，鼓励高中阶段学校多样化发展，高中阶段教育毛入学率提高到92%以上。规范校外培训。完善普惠性学前教育和特殊教育、专门教育保障机制，学前教育毛入园率提高到90%以上。提高民族地区教育质量和水平，加大国家通用语言文字推广力度。

第二节　增强职业技术教育适应性

突出职业技术（技工）教育类型特色，深入推进改革创新，优化结构与布局，大力培养技术技能人才。完善职业技术教育国家标准，推行“学历证书+职业技能等级证书”制度。创新办学模式，深化产教融合、校企合作，鼓励企业举办高质量职业技术教育，探索中国特色学徒制。实施现代职业技术教育质量提升计划，建设一批高水平职业技术院校和专业，稳步发展职业本科教育。深化职普融通，实现职业技术教育与普通教育双向互认、纵向流动。

第三节　提高高等教育质量

推进高等教育分类管理和高等学校综合改革，构建更加多元的高等教育体系，高等教育毛入学率提高到60%。分类建设一流大学和一流学科，支持发展高水平研究型大学。建设高质量本科教育，推进部分普通本科高校向应用型转变。建立学科专业动态调整机制和特色发展引导机制，增强高校学科设置针对性，推进基础学科高层次人才培养模式改革，加快培养理工农医类专业紧缺人才。加强研究生培养管理，提升研究生教育质量，稳步扩大专业学位研究生规模。优化区域高等教育资源布局，推进中西部地区高等教育振兴。

第四节　建设高素质专业化教师队伍

建立高水平现代教师教育体系，加强师德师风建设，完善教师管理和发展政策体系，提升教师教书育人能力素质。重点建设一批师范教育基地，支持高水平综合大学开展教师教育，健全师范生公费教育制度，推进教育类研究生和公费师范生免试认定教师资格改革。支持高水平工科大学举办职业技术师范专业，建立高等学校、职业学校与行业企业联合培养“双师型”教师机制。深化中小学、幼儿园教师管理综合改革，统筹教师编制配置和跨区调整，推进义务教育教师“县管校聘”管理改革，适当提高中高级教师岗位比例。

第五节　深化教育改革

深化新时代教育评价改革，建立健全教育评价制度和机制，发展素质教育，更加注重学生爱国情怀、创新精神和健康人格培养。坚持教育公益性原则，加大教育经费投入，改革完善经费使用管理制度，提高经费使用效益。落实和扩大学校办学自主权，完善学校内部治理结构，有序引导社会参与学校治理。深化考试招生综合改革。支持和规范民办教育发展，开展高水平中外合作办学。发挥在线教育优势，完善终身学习体系，建设学习型社会。推进高水平大学开放教育资源，完善注册学习和弹性学习制度，畅通不同类型学习成果的互认和转换渠道。

专栏16　教育提质扩容工程
01　普惠性幼儿园 以人口集中流入地、农村地区和“三区三州”为重点，新建、改扩建2万所幼儿园，增加普惠学位400万个以上。
02　基础教育 以教育基础薄弱县和人口流入地为重点，新建、改扩建中小学校4000所以上。在边境县（团场）建设100所“国门学校”。
03　职业技术教育 支持建设200所以上高水平高职学校和600个以上高水平专业，支持建设一批优秀中职学校和优质专业。
04　高等教育 加强“双一流”建设高校基础研究和协同创新能力建设，提升100所中西部本科高校办学条件，布局建设一批高水平公共卫生学院和高水平师范院校。
05　产教融合平台 围绕集成电路、人工智能、工业互联网、储能等重点领域，布局建设一批国家产教融合创新平台和研究生联合培养基地。建设100个高水平、专业化、开放型产教融合实训基地。

第四十四章　全面推进健康中国建设

把保障人民健康放在优先发展的战略位置，坚持预防为主的方针，深入实施健康中国行动，完善国民健康促进政策，织牢国家公共卫生防护网，为人民提供全方位全生命期健康服务。

第一节　构建强大公共卫生体系

改革疾病预防控制体系，强化监测预警、风险评估、流行病学调查、检验检测、应急处置等职能。建立稳定的公共卫生事业投入机制，改善疾控基础条件，强化基层公共卫生体系。落实医疗机构公共卫生责任，创新医防协同机制。完善突发公共卫生事件监测预警处置机制，加强实验室检测网络建设，健全医疗救治、科技支撑、物资保障体系，提高应对突发公共卫生事件能力。建立分级分层分流的传染病救治网络，建立健全统一的国家公共卫生应急物资储备体系，大型公共建筑预设平疫结合改造接口。筑牢口岸防疫防线。加强公共卫生学院和人才队伍建设。完善公共卫生服务项目，扩大国家免疫规划，强化慢性病预防、早期筛查和综合干预。完善心理健康和精神卫生服务体系。

第二节　深化医药卫生体制改革

坚持基本医疗卫生事业公益属性，以提高医疗质量和效率为导向，以公立医疗机构为主体、非公立医疗机构为补充，扩大医疗服务资源供给。加强公立医院建设，加快建立现代医院管理制度，深入推进治理结构、人事薪酬、编制管理和绩效考核改革。加快优质医疗资源扩容和区域均衡布局，建设国家医学中心和区域医疗中心。加强基层医疗卫生队伍建设，以城市社区和农村基层、边境口岸城市、县级医院为重点，完善城乡医疗服务网络。加快建设分级诊疗体系，积极发展医疗联合体。加强预防、治疗、护理、康复有机衔接。推进国家组织药品和耗材集中带量采购使用改革，发展高端医疗设备。完善创新药物、疫苗、医疗器械等快速审评审批机制，加快临床急需和罕见病治疗药品、医疗器械审评审批，促进临床急需境外已上市新药和医疗器械尽快在境内上市。提升医护人员培养质量与规模，扩大儿科、全科等短缺医师规模，每千人口拥有注册护士数提高到3.8人。实施医师区域注册，推动医师多机构执业。稳步扩大城乡家庭医生签约服务覆盖范围，提高签约服务质量。支持社会办医，鼓励有经验的执业医师开办诊所。

第三节　健全全民医保制度

健全基本医疗保险稳定可持续筹资和待遇调整机制，完善医保缴费参保政策，实行医疗保障待遇清单制度。做实基本医疗保险市级统筹，推动省级统筹。完善基本医疗保险门诊共济保障机制，健全重大疾病医疗保险和救助制度。完善医保目录动态调整机制。推行以按病种付费为主的多元复合式医保支付方式。将符合条件的互联网医疗服务纳入医保支付范围，落实异地就医结算。扎实推进医保标准化、信息化建设，提升经办服务水平。健全医保基金监管机制。稳步建立长期护理保险制度。积极发展商业医疗保险。

第四节　推动中医药传承创新

坚持中西医并重和优势互补，大力发展中医药事业。健全中医药服务体系，发挥中医药在疾病预防、治疗、康复中的独特优势。加强中西医结合，促进少数民族医药发展。加强古典医籍精华的梳理和挖掘，建设中医药科技支撑平台，改革完善中药审评审批机制，促进中药新药研发保护和产业发展。强化中药质量监管，促进中药质量提升。强化中医药特色人才培养，加强中医药文化传承与创新发展，推动中医药走向世界。

第五节　建设体育强国

广泛开展全民健身运动，增强人民体质。推动健康关口前移，深化体教融合、体卫融合、体旅融合。完善全民健身公共服务体系，推进社会体育场地设施建设和学校场馆开放共享，提高健身步道等便民健身场所覆盖面，因地制宜发展体育公园，支持在不妨碍防洪安全前提下利用河滩地等建设公共体育设施。保障学校体育课和课外锻炼时间，以青少年为重点开展国民体质监测和干预。坚持文化教育和专业训练并重，加强竞技体育后备人才培养，提升重点项目竞技水平，巩固传统项目优势，探索中国特色足球篮球排球发展路径，持续推进冰雪运动发展，发展具有世界影响力的职业体育赛事。扩大体育消费，发展健身休闲、户外运动等体育产业。办好北京冬奥会、冬残奥会及杭州亚运会等。

第六节　深入开展爱国卫生运动

丰富爱国卫生工作内涵，促进全民养成文明健康生活方式。加强公共卫生环境基础设施建设，推进城乡环境卫生整治，强化病媒生物防制。深入推进卫生城镇创建。加强健康教育和健康知识普及，树立良好饮食风尚，制止餐饮浪费行为，开展控烟限酒行动，坚决革除滥食野生动物等陋习，推广分餐公筷、垃圾分类投放等生活习惯。

专栏 17　全民健康保障工程
01　疾病预防控制 启动中国疾病预防控制中心二期项目，依托现有疾控机构建设 15 个左右区域公共卫生中心，升级改造 20 个左右国家重大传染病防控救治基地、20 个左右国家紧急医学救援基地。
02　国家医学中心 加强国家心血管、呼吸、肿瘤、创伤、儿科等医学中心建设。聚焦重大病种，打造若干引领国内、具有全球影响力的高水平医学中心和医学创新转化中心。
03　区域医疗中心 支持高水平医疗机构在外出就医多、医疗资源薄弱的省份建设一批区域医疗中心，建成河北、河南、山西、辽宁、安徽、福建、云南、新疆等区域医疗中心。
04　县级医院 推动省市优质医疗资源支持县级医院发展，力争新增 500 个县级医院（含中医院）达到三级医院设施条件和服务能力。
05　中医药发展 打造 20 个左右国家中医药传承创新中心，20 个左右中西医协同旗舰医院，20 个左右中医疫病防治基地，100 个左右中医特色重点医院，形成一批中医优势专科。
06　全民健身场地设施 新建、改扩建 1000 个左右体育公园，建设户外运动、健身休闲等配套公共基础设施。推进社会足球场地和体育健身步道建设。

第四十五章　实施积极应对人口老龄化国家战略

制定人口长期发展战略，优化生育政策，以“一老一小”为重点完善人口服务体系，促进人口长期均衡发展。

第一节　推动实现适度生育水平

增强生育政策包容性，推动生育政策与经济社会政策配套衔接，减轻家庭生育、养育、教育负担，释放生育政策潜力。完善幼儿养育、青少年发展、老人赡养、病残照料等政策和产假制度，探索实施父母育儿假。改善优生优育全程服务，加强孕前孕产期健康服务，提高出生人口质量。建立健全计划生育特殊困难家庭全方位帮扶保障制度。改革完善人口统计和监测体系，密切监测生育形势。深化人口发展战略研究，健全人口与发展综合决策机制。

第二节　健全婴幼儿发展政策

发展普惠托育服务体系，健全支持婴幼儿照护服务和早期发展的政策体系。加强对家庭照护和社区服务的支持指导，增强家庭科学育儿能力。严格落实城镇小区配套园政策，积极发展多种形式的婴幼儿照护服务机构，鼓励有条件的用人单位提供婴幼儿照护服务，支持企事业单位和社会组织等社会力量提供普惠托育服务，鼓励幼儿园发展托幼一体化服务。推进婴幼儿照护服务专业化、规范化发展，提高保育保教质量和水平。

第三节　完善养老服务体系

推动养老事业和养老产业协同发展，健全基本养老服务体系，大力发展普惠型养老服务，支持家庭承担养老功能，构建居家社区机构相协调、医养康养相结合的养老服务体系。完善社区居家养老服务网络，推进公共设施适老化改造，推动专业机构服务向社区延伸，

整合利用存量资源发展社区嵌入式养老。强化对失能、部分失能特困老年人的兜底保障，积极发展农村互助幸福院等互助性养老。深化公办养老机构改革，提升服务能力和水平，完善公建民营管理机制，支持培训疗养资源转型发展养老，加强对护理型民办养老机构的政策扶持，开展普惠养老城企联动专项行动。加强老年健康服务，深入推进医养康养结合。加大养老护理型人才培养力度，扩大养老机构护理型床位供给，养老机构护理型床位占比提高到55%，更好满足高龄失能失智老年人护理服务需求。逐步提升老年人福利水平，完善经济困难高龄失能老年人补贴制度和特殊困难失能留守老年人探访关爱制度。健全养老服务综合监管制度。构建养老、孝老、敬老的社会环境，强化老年人权益保障。综合考虑人均预期寿命提高、人口老龄化趋势加快、受教育年限增加、劳动力结构变化等因素，按照小步调整、弹性实施、分类推进、统筹兼顾等原则，逐步延迟法定退休年龄，促进人力资源充分利用。发展银发经济，开发适老化技术和产品，培育智慧养老等新业态。

专栏18 “一老一小”服务项目
01 特殊困难家庭适老化改造 支持200万户特殊困难高龄、失能、残疾老年人家庭实施适老化改造，配备辅助器具和防走失装置等设施。
02 社区居家养老服务网络建设 支持500个区县建设连锁化运营、标准化管理的示范性社区居家养老服务网络，提供失能护理、日间照料以及助餐助浴助洁助医助行等服务。
03 养老机构服务提升 支持300个左右培训疗养机构转型为普惠养老机构、1000个左右公办养老机构增加护理型床位，支持城市依托基层医疗卫生资源建设医养结合设施。
04 普惠托育服务扩容 支持150个城市利用社会力量发展综合托育服务机构和社区托育服务设施，新增示范性普惠托位50万个以上。
05 儿童友好城市建设 开展100个儿童友好城市示范，加强校外活动场所、社区儿童之家建设和公共空间适儿化改造，完善儿童公共服务设施。

第十四篇 增进民生福祉 提升共建共治共享水平

坚持尽力而为、量力而行，健全基本公共服务体系，加强普惠性、基础性、兜底性民生建设，完善共建共治共享的社会治理制度，制定促进共同富裕行动纲要，自觉主动缩小地区、城乡和收入差距，让发展成果更多更公平惠及全体人民，不断增强人民群众获得感、幸福感、安全感。

第四十六章 健全国家公共服务制度体系

加快补齐基本公共服务短板，着力增强非基本公共服务弱项，努力提升公共服务质量和水平。

第一节 提高基本公共服务均等化水平

推动城乡区域基本公共服务制度统一、质量水平有效衔接。围绕公共教育、就业创业、社会保险、医疗卫生、社会服务、住房保障、公共文化体育、优抚安置、残疾人服务等领域，建立健全基本公共服务标准体系，明确国家标准并建立动态调整机制，推动标准水平城乡区域间衔接平衡。按照常住人口规模和服务半径统筹基本公共服务设施布局和共建共享，促进基本公共服务资源向基层延伸、向农村覆盖、向边远地区和生活困难群众倾斜。

第二节 创新公共服务提供方式

区分基本与非基本，突出政府在基本公共服务供给保障中的主体地位，推动非基本公共服务提供主体多元化、提供方式多样化。在育幼、养老等供需矛盾突出的服务领域，支持社会力量扩大普惠性规范性服务供给，保障提供普惠性规范性服务的各类机构平等享受优惠政策。鼓励社会力量通过公建民营、政府购买服务、政府和社会资本合作等方式参与公共服务供给。深化公共服务领域事业单位改革，营造事业单位与社会力量公平竞争的市场环境。

第三节 完善公共服务政策保障体系

优化财政支出结构，优先保障基本公共服务补短板。明确中央和地方在公共服务领域事权和支出责任，加大中央和省级财政对基层政府提供基本公共服务的财力支持。将更多公共服务项目纳入政府购买服务指导性目录，加大政府购买力度，完善财政、融资和土地等优惠政策。在资格准入、职称评定、土地供给、财政支持、政府采购、监督管理等方面公平对待民办与公办机构。

第四十七章 实施就业优先战略

健全有利于更充分更高质量就业的促进机制，扩大就业容量，提升就业质量，缓解结构性就业矛盾。

第一节　强化就业优先政策

坚持经济发展就业导向，健全就业目标责任考核机制和就业影响评估机制。完善高校毕业生、退役军人、农民工等重点群体就业支持体系。完善与就业容量挂钩的产业政策，支持吸纳就业能力强的服务业、中小微企业和劳动密集型企业发展，稳定拓展社区超市、便利店和社区服务岗位。促进平等就业，增加高质量就业，注重发展技能密集型产业，支持和规范发展新就业形态，扩大政府购买基层教育、医疗和专业化社会服务规模。建立促进创业带动就业、多渠道灵活就业机制，全面清理各类限制性政策，增强劳动力市场包容性。统筹城乡就业政策，积极引导农村劳动力就业。扩大公益性岗位安置，着力帮扶残疾人、零就业家庭成员等困难人员就业。

第二节　健全就业公共服务体系

健全覆盖城乡的就业公共服务体系，加强基层公共就业创业服务平台建设，为劳动者和企业免费提供政策咨询、职业介绍、用工指导等服务。构建常态化援企稳岗帮扶机制，统筹用好就业补助资金和失业保险基金。健全劳务输入集中区域与劳务输出省份对接协调机制，加强劳动力跨区域精准对接。加强劳动者权益保障，健全劳动合同制度和劳动关系协调机制，完善欠薪治理长效机制和劳动争议调解仲裁制度，探索建立新业态从业人员劳动权益保障机制。健全就业需求调查和失业监测预警机制。

第三节　全面提升劳动者就业创业能力

健全终身技能培训制度，持续大规模开展职业技能培训。深入实施职业技能提升行动和重点群体专项培训计划，广泛开展新业态新模式从业人员技能培训，有效提高培训质量。统筹各级各类职业技能培训资金，创新使用方式，畅通培训补贴直达企业和培训者渠道。健全培训经费税前扣除政策，鼓励企业开展岗位技能提升培训。支持开展订单式、套餐制培训。建设一批公共实训基地和产教融合基地，推动培训资源共建共享。办好全国职业技能大赛。

第四十八章　优化收入分配结构

坚持居民收入增长和经济增长基本同步、劳动报酬提高和劳动生产率提高基本同步，持续提高低收入群体收入，扩大中等收入群体，更加积极有为地促进共同富裕。

第一节　拓展居民收入增长渠道

坚持按劳分配为主体、多种分配方式并存，提高劳动报酬在初次分配中的比重。健全工资决定、合理增长和支付保障机制，完善最低工资标准和工资指导线形成机制，积极推行工资集体协商制度。完善按要素分配政策制度，健全各类生产要素由市场决定报酬的机制，探索通过土地、资本等要素使用权、收益权增加中低收入群体要素收入。完善国有企业市场化薪酬分配机制，普遍实行全员绩效管理。改革完善体现岗位绩效和分级分类管理的事业单位薪酬制度。规范劳务派遣用工行为，保障劳动者同工同酬。多渠道增加城乡居民财产性收入，提高农民土地增值收益分享比例，完善上市公司分红制度，创新更多适应家庭财富管理需求的金融产品。完善国有资本收益上缴公共财政制度，加大公共财政支出用于民生保障力度。

第二节　扩大中等收入群体

实施扩大中等收入群体行动计划，以高校和职业院校毕业生、技能型劳动者、农民工等为重点，不断提高中等收入群体比重。提高高校、职业院校毕业生就业匹配度和劳动参与率。拓宽技术工人上升通道，畅通非公有制经济组织、社会组织、自由职业专业技术人员职称申报和技能等级认定渠道，提高技能型人才待遇水平和社会地位。实施高素质农民培育计划，运用农业农村资源和现代经营方式增加收入。完善小微创业者扶持政策，支持个体工商户、灵活就业人员等群体勤劳致富。

第三节　完善再分配机制

加大税收、社会保障、转移支付等调节力度和精准性，发挥慈善等第三次分配作用，改善收入和财富分配格局。健全直接税体系，完善综合与分类相结合的个人所得税制度，加强对高收入者的税收调节和监管。增强社会保障待遇和服务的公平性可及性，完善兜底保障标准动态调整机制。规范收入分配秩序，保护合法收入，合理调节过高收入，取缔非法收入，遏制以垄断和不正当竞争行为获取收入。建立完善个人收入和财产信息系统。健全现代支付和收入监测体系。

第四十九章　健全多层次社会保障体系

坚持应保尽保原则，按照兜底线、织密网、建机制的要求，加快健全覆盖全民、统筹城乡、公平统一、可持续的多层次社会保障体系。

第一节　改革完善社会保险制度

健全养老保险制度体系，促进基本养老保险基金长期平衡。实现基本养老保险全国统筹，放宽灵活就业人员参保条件，实现社会保险法定人群全覆盖。完善划转国有资本充实社保基金制度，优化做强社会保障战略储备基金。完善城镇职工基本养老金合理调整机制，逐步提高城乡居民基础养老金标准。发展多层次、多支柱养老保险体系，提高企业年金覆盖率，规范发展第三支柱养老保险。推进失业保险、工伤保险向职业劳动者广覆盖，实现省级统筹。推进社保转移接续，完善全国统一的社会保险公共服务平台。

第二节　优化社会救助和慈善制度

以城乡低保对象、特殊困难人员、低收入家庭为重点，健全分层分类的社会救助体系，构建综合救助格局。健全基本生活救助制度和医疗、教育、住房、就业、受灾人员等专项救助制度，完善救助标准和救助对象动态调整机制。健全临时救助政策措施，强化急难社会救助功能。加强城乡救助体系统筹，逐步实现常住地救助申领。积极发展服务类社会救助，推进政府购买社会救助服务。促进慈善事业发展，完善财税等激励政策。规范发展网络慈善平台，加强彩票和公益金管理。

第三节　健全退役军人工作体系和保障制度

完善退役军人事务组织管理体系、工作运行体系和政策制度体系，提升退役军人服务保障水平。深化退役军人安置制度改革，加大教育培训和就业扶持力度，拓展就业领域，提升安置质量。建立健全新型待遇保障体系，完善和落实优抚政策，合理提高退役军人和其他优抚对象待遇标准，做好随调配偶子女工作安排、落户和教育等工作。完善离退休军人和伤病残退役军人移交安置、收治体养制度，加强退役军人服务中心（站）建设，提升优抚医院、光荣院、军供站等建设服务水平。加强退役军人保险制度衔接。大力弘扬英烈精神，加强烈士纪念设施建设和管护，建设军人公墓。深入推动双拥模范城（县）创建。

第五十章　保障妇女未成年人和残疾人基本权益

坚持男女平等基本国策，坚持儿童优先发展，提升残疾人关爱服务水平，切实保障妇女、未成年人、残疾人等群体发展权利和机会。

第一节　促进男女平等和妇女全面发展

深入实施妇女发展纲要，持续改善妇女发展环境，促进妇女平等依法行使权利、参与经济社会发展、共享发展成果。保障妇女享有卫生健康服务，完善宫颈癌、乳腺癌综合防治体系和救助政策。保障妇女平等享有受教育权利，持续提高受教育年限和综合能力素质。保障妇女平等享有经济权益，消除就业性别歧视，依法享有产假和生育津贴，保障农村妇女土地权益。保障妇女平等享有政治权利，推动妇女广泛参与社会事务和民主管理。落实法规政策性别平等评估机制，完善分性别统计制度。提高留守妇女关爱服务水平。严厉打击侵害妇女和女童人身权利的违法犯罪行为。

第二节　提升未成年人关爱服务水平

深入实施儿童发展纲要，优化儿童发展环境，切实保障儿童生存权、发展权、受保护权和参与权。完善儿童健康服务体系，预防和控制儿童疾病，减少儿童死亡和严重出生缺陷发生，有效控制儿童肥胖和近视，实施学龄前儿童营养改善计划。保障儿童公平受教育权利，加强儿童心理健康教育和服务。加强困境儿童分类保障，完善农村留守儿童关爱服务体系，健全孤儿和事实无人抚养儿童保障机制。完善落实未成年人监护制度，严厉打击侵害未成年人权益的违法犯罪行为，完善未成年人综合保护体系。深入实施青年发展规划，促进青年全面发展，搭建青年成长成才和建功立业的平台，激发青年创新创业活力。

第三节　加强家庭建设

以建设文明家庭、实施科学家教、传承优良家风为重点，深入实施家家幸福安康工程。构建支持家庭发展的法律政策体系，推进家庭教育立法进程，加大反家庭暴力法实施力度，加强婚姻家庭辅导服务，预防和化解婚姻家庭矛盾纠纷。构建覆盖城乡的家庭教育指导服务体系，健全学校家庭社会协同育人机制。促进家庭服务多元化发展。充分发挥家庭家教家风在基层社会治理中的作用。

第四节　提升残疾人保障和发展能力

健全残疾人帮扶制度，帮助残疾人普遍参加基本医疗和基本养老保险，动态调整困难残疾人生活补贴和重度残疾人护理补贴标准。完善残疾人就业支持体系，加强残疾人劳动权益保障，优先为残疾人提供职业技能培训，扶持残疾人自主创业。推进适龄残疾儿童和少年教育全覆盖，提升特殊教育质量。建成康复大学，促进康复服务市场化发展，提高康复辅助器具适配率，提升康复服务质量。开展重度残疾人托养照护服务。加强残疾人服务设施和综合服务能力建设，完善无障碍环境建设和维护政策体系，支持困难残疾人家庭无障碍设施改造。

专栏19　社会关爱服务行动
01　残疾人服务 加强专业化残疾人康复、托养和综合服务设施建设，补贴110万户困难重度残疾人家庭无障碍设施改造，提升社区无障碍建设水平。
02　困难儿童关爱 支持儿童福利机构建设，提升孤弃儿童集中养治教康水平。加强留守儿童数量较多的欠发达地区未成年人保护设施建设。建设残疾儿童康复救助定点机构，推动残疾儿童普遍享有基本康复服务。
03　流浪乞讨人员救助 充分利用现有社会福利设施建设流浪乞讨人员救助设施或救助站，实现救助服务网络覆盖全部县市。
04　精神卫生福利设施 在精神卫生服务能力不足的地区建设100个左右精神卫生福利设施，为困难精神障碍患者提供集中养护、康复服务。
05　公益性殡葬服务 加强殡仪馆、公益性骨灰安葬（放）设施建设，推动老旧殡仪馆改造，推动基本殡葬服务设施覆盖全部县市。推进农村公墓建设。加大生态殡葬奖补力度。

第五十一章　构建基层社会治理新格局

健全党组织领导的自治、法治、德治相结合的城乡基层社会治理体系，完善基层民主协商制度，建设人人有责、人人尽责、人人享有的社会治理共同体。

第一节　夯实基层社会治理基础

健全党组织领导、村（居）委会主导、人民群众为主体的基层社会治理框架。依法厘清基层政府与基层群众性自治组织的权责边界，制定县（区）职能部门、乡镇（街道）在城乡社区治理方面的权责清单制度，实行工作事项准入制度，减轻基层特别是村级组织负担。加强基层群众性自治组织规范化建设，合理确定其功能、规模和事务范围。加强基层群众自治机制建设，完善村（居）民议事会、理事会、监督委员会等自治载体，健全村（居）民参与社会治理的组织形式和制度化渠道。

第二节　健全社区管理和服务机制

推动社会治理和服务重心下移、资源下沉，提高城乡社区精准化精细化服务管理能力。推进审批权限和公共服务事项向基层延伸，构建网格化管理、精细化服务、信息化支撑、开放共享的基层管理服务平台，推动就业社保、养老托育、扶残助残、医疗卫生、家政服务、物流商超、治安执法、纠纷调处、心理援助等便民服务场景有机集成和精准对接。完善城市社区居委会职能，督促业委会和物业服务企业履行职责，改进社区物业服务管理。构建专职化、专业化的城乡社区工作者队伍。

第三节　积极引导社会力量参与基层治理

发挥群团组织和社会组织在社会治理中的作用，畅通和规范市场主体、新社会阶层、社会工作者和志愿者等参与社会治理的途径，全面激发基层社会治理活力。培育规范化行业协会商会、公益慈善组织、城乡社区社会组织，加强财政补助、购买服务、税收优惠、人才保障等政策支持和事中事后监管。支持和发展社会工作服务机构和志愿服务组织，壮大志愿者队伍，搭建更多志愿服务平台，健全志愿服务体系。

第十五篇　统筹发展和安全 建设更高水平的平安中国

坚持总体国家安全观，实施国家安全战略，维护和塑造国家安全，统筹传统安全和非传统安全，把安全发展贯穿国家发展各领域和全过程，防范和化解影响我国现代化进程的各种风险，筑牢国家安全屏障。

第五十二章　加强国家安全体系和能力建设

坚持政治安全、人民安全、国家利益至上有机统一，以人民安全为宗旨，以政治安全为根本，以经济安全为基础，以军事、科技、文化、社会安全为保障，不断增强国家安全能力。完善集中统一、高效权威的国家安全领导体制，健全国家安全法治体系、战略体系、政策体系、人才体系和运行机制，完善重要领域国家安全立法、制度、政策。巩固国家安全人民防线，加强国家安全宣传教育，增强全民国家安全意识，建立健全国家安全风险研判、防控协同、防范化解机制。健全国家安全审查和监管制度，加强国家安全执法。坚定维护国家政权安全、制度安全、意识形态安全，全面加强网络安全保障体系和能力建设，切实维护新型领域安全，严密防范和严厉打击敌对势力渗透、破坏、颠覆、分裂活动。

第五十三章　强化国家经济安全保障

强化经济安全风险预警、防控机制和能力建设，实现重要产业、基础设施、战略资源、重大科技等关键领域安全可控，着力提升粮食、能源、金融等领域安全发展能力。

第一节　实施粮食安全战略

实施分品种保障策略，完善重要农产品供给保障体系和粮食产购储加销体系，确保口粮绝对安全、谷物基本自给、重要农副产品供应充足。毫不放松抓好粮食生产，深入实施藏粮于地、藏粮于技战略，开展种源“卡脖子”技术攻关，提高良种自主可控能力。严守耕地红线和永久基本农田控制线，稳定并增加粮食播种面积和产量，合理布局区域性农产品应急保供基地。深化农产品收储制度改革，加快培育多元市场购销主体，改革完善中央储备粮管理体制，提高粮食储备调控能力。强化粮食安全省长责任制和“菜篮子”市长负责制，实行党政同责。有效降低粮食生产、储存、运输、加工环节损耗，开展粮食节约行动。积极开展重要农产品国际合作，健全农产品进口管理机制，推动进口来源多元化，培育国际大粮商和农业企业集团。制定粮食安全保障法。

第二节　实施能源资源安全战略

坚持立足国内、补齐短板、多元保障、强化储备，完善产供储销体系，增强能源持续稳定供应和风险管控能力，实现煤炭供应安全兜底、油气核心需求依靠自保、电力供应稳定可靠。夯实国内产量基础，保持原油和天然气稳产增产，做好煤制油气战略基地规划布局和管控。扩大油气储备规模，健全政府储备和企业社会责任储备有机结合、互为补充的油气储备体系。加强煤炭储备能力建设。完善能源风险应急管控体系，加强重点城市和用户电力供应保障，强化重要能源设施、能源网络安全防护。多元拓展油气进口来源，维护战略通道和关键节点安全。培育以我为主的交易中心和定价机制，积极推进本币结算。加强战略性矿产资源规划管控，提升储备安全保障能力，实施新一轮找矿突破战略行动。

第三节　实施金融安全战略

健全金融风险预防、预警、处置、问责制度体系，落实监管责任和属地责任，对违法违规行为零容忍，守住不发生系统性风险的底线。完善宏观审慎管理体系，保持宏观杠杆率以稳为主、稳中有降。加强系统重要性金融机构和金融控股公司监管，强化不良资产认定和处置，防范化解影子银行风险，有序处置高风险金融机构，严厉打击非法金融活动，健全互联网金融监管长效机制。完善债务风险识别、评估预警和有效防控机制，健全债券市场违约处置机制，推动债券市场统一执法，稳妥化解地方政府隐性债务，严惩逃废债行为。完善跨境资本流动管理框架，加强监管合作，提高开放条件下风险防控和应对能力。加强人民币跨境支付系统建设，推进金融业信息化核心技术安全可控，维护金融基础设施安全。

专栏20　经济安全保障工程
01　**粮食储备设施** 建设高标准粮仓，实施粮食绿色仓储提升工程，整合布局一批大型粮食物流枢纽和园区，提高应急分拨集散和通道衔接能力。
02　**油气勘探开发** 加强四川、鄂尔多斯、塔里木、准噶尔等重点盆地油气勘探开发，稳定渤海湾、松辽盆地老油区产量，建设川渝天然气生产基地。推进山西沁水盆地、鄂尔多斯东缘煤层气和川南、鄂西、云贵地区页岩气勘探开发，推进页岩油勘探开发。开展南海等地区天然气水合物试采。
03　**煤制油气基地** 稳妥推进内蒙古鄂尔多斯、陕西榆林、山西晋北、新疆准东、新疆哈密等煤制油气战略基地建设，建立产能和技术储备。
04　**电力安全保障** 布局一批坚强局部电网，建设本地支撑电源和重要用户应急保安电源。建设电力应急指挥系统、大型水电站安全和应急管理平台。构建电力行业网络安全仿真验证环境和网络安全态势感知平台。
05　**新一轮找矿突破战略行动** 开展基础性地质调查，优选油气、铀、铜、铝等100～200个找矿远景区，提交可供商业勘查的靶区200～300处。
06　**应急处置能力提升** 建设6个区域应急救援中心和综合应急实训演练基地。推动救援装备现代化，升级完善中央和地方综合应急物资储备库，建设一批应急物资物流基地。建设3座区域核与辐射应急监测物资储备库。

第五十四章　全面提高公共安全保障能力

坚持人民至上、生命至上，健全公共安全体制机制，严格落实公共安全责任和管理制度，保障人民生命安全。

第一节　提高安全生产水平

完善和落实安全生产责任制，建立公共安全隐患排查和安全预防控制体系。建立企业全员安全生产责任制度，压实企业安全生产主体责任。加强安全生产监测预警和监管监察执法，深入推进危险化学品、矿山、建筑施工、交通、消防、民爆、特种设备等重点领域安全整治，实行重大隐患治理逐级挂牌督办和整改效果评价。推进企业安全生产标准化建设，加强工业园区等重点区域安全管理。加强矿山深部开采与重大灾害防治等领域先进技术装备创新应用，推进危险岗位机器人替代。在重点领域推进安全生产责任保险全覆盖。

第二节　严格食品药品安全监管

加强和改进食品药品安全监管制度，完善食品药品安全法律法规和标准体系，探索建立食品安全民事公益诉讼惩罚性赔偿制度。深入实施食品安全战略，加强食品全链条质量安全监管，推进食品安全放心工程建设攻坚行动，加大重点领域食品安全问题联合整治力度。严防严控药品安全风险，构建药品和疫苗全生命周期管理机制，完善药品电子追溯体系，实现重点类别药品全过程来源可溯、去向可追。稳步推进医疗器械唯一标识制度。加强食品药品安全风险监测、抽检和监管执法，强化快速通报和快速反应。

第三节　加强生物安全风险防控

建立健全生物安全风险防控和治理体系，全面提高国家生物安全治理能力。完善国家生物安全风险监测预警体系和防控应急预案制度，健全重大生物安全事件信息统一发布机制。加强动植物疫情和外来入侵物种口岸防控。统筹布局生物安全基础设施，构建国家生物数据中心体系，加强高级别生物安全实验室体系建设和运行管理。强化生物安全资源监管，制定完善人类遗传资源和生物资源目录，建立健全生物技术研究开发风险评估机制。推进生物安全法实施。加强生物安全领域国际合作，积极参与生物安全国际规则制定。

第四节　完善国家应急管理体系

构建统一指挥、专常兼备、反应灵敏、上下联动的应急管理体制，优化国家应急管理能力体系建设，提高防灾减灾抗灾救灾能力。坚持分级负责、属地为主，健全中央与地方分级响应机制，强化跨区域、跨流域灾害事故应急协同联动。开展灾害事故风险隐患排查治理，实施公共基础设施安全加固和自然灾害防治能力提升工程，提升洪涝干旱、森林草原火灾、地质灾害、气象灾害、地震等自然灾害防御工程标准。加强国家综合性消防救援队伍建设，增强全灾种救援能力。加强和完善航空应急救援体系与能力。科学调整应急物资储备品类、规模和结构，提高快速调配和紧急运输能力。构建应急指挥信息和综合监测预警网络体系，加强极端条件应急救援通信保障能力建设。发展巨灾保险。

第五十五章　维护社会稳定和安全

正确处理新形势下人民内部矛盾，加强社会治安防控，编织全方位、立体化、智能化社会安全网。

第一节　健全社会矛盾综合治理机制

坚持和发展新时代“枫桥经验”，构建源头防控、排查梳理、纠纷化解、应急处置的社会矛盾综合治理机制。畅通和规范群众诉求表达、利益协调、权益保障通道，完善人民调解、行政调解、司法调解联动工作体系。健全矛盾纠纷多元化解机制，充分发挥调解、仲裁、行政裁决、行政复议、诉讼等防范化解社会矛盾的作用。完善和落实信访制度，依法及时就地解决群众合理诉求。健全社会矛盾风险防控协同机制。健全社会心理服务体系和危机干预机制。

第二节　推进社会治安防控体系现代化

坚持专群结合、群防群治，提高社会治安立体化、法治化、专业化、智能化水平，形成问题联治、工作联动、平安联创的工作机制，健全社会治安防控体系。继续开展好禁毒人民战争和反恐怖斗争，推动扫黑除恶常态化，严厉打击各类违法犯罪活动，提升打击新型网络犯罪和跨国跨区域犯罪能力。坚持打防结合、整体防控，强化社会治安重点地区排查整治，健全社会治安协调联动机制。推进公安大数据智能化平台建设。完善执法司法权力运行监督和制约机制，健全执法司法人员权益保障机制。建设国门安全防控体系。深化国际执法安全务实合作。

第十六篇　加快国防和军队现代化 实现富国和强军相统一

贯彻习近平强军思想，贯彻新时代军事战略方针，坚持党对人民军队的绝对领导，坚持政治建军、改革强军、科技强军、人才强军、依法治军，加快机械化信息化智能化融合发展，全面加强练兵备战，提高捍卫国家主权、安全、发展利益的战略能力，确保2027年实现建军百年奋斗目标。

第五十六章　提高国防和军队现代化质量效益

加快军事理论现代化，与时俱进创新战争和战略指导，健全新时代军事战略体系，发展先进作战理论。加快军队组织形态现代化，深化国防和军队改革，推进军事管理革命，加快军兵种和武警部队转型建设，壮大战略力量和新域新质作战力量，打造高水平战略威慑和联合作战体系，加强军事力量联合训练、联合保障、联合运用。加快军事人员现代化，贯彻新时代军事教育方针，完善三位一体新型军事人才培养体系，锻造高素质专业化新型军事人才方阵。加快武器装备现代化，聚力国防科技自主创新、原始创新，加速战略性前沿性颠覆性技术发展，加速武器装备升级换代和智能化武器装备发展。

第五十七章　促进国防实力和经济实力同步提升

同国家现代化发展相协调，搞好战略层面筹划，深化资源要素共享，强化政策制度协调，完善组织管理、工作运行、政策制度、人才队伍、风险防控体系，构建一体化国家战略体系和能力。推动重点区域、重点领域、新兴领域协调发展，集中力量实施国防领域重大工程。促进军事建设布局与区域经济发展布局有机结合，更好服务国家安全发展战略需要。深化军民科技协同创新，加强海洋、空天、网络空间、生物、新能源、人工智能、量子科技等领域军民统筹发展，推动军地科研设施资源共享，推进军地科研成果双向转化应用和重点产业发展。强化基础设施共建共用，加强新型基础设施统筹建设，加大经济建设项目贯彻国防要求力度。加快建设现代军事物流体系和资产管理体系。加强军地人才联合培养，健全军地人才交流使用、资格认证等制度。优化国防科技工业布局，加快标准化通用化进程。推进武器装备市场准入、空中交通管理等改革。完善国防动员体系，加强应急应战协同，健全强边固防机制，强化全民国防教育，巩固军政军民团结。维护军人军属合法权益，让军人成为全社会尊崇的职业。

第十七篇　加强社会主义民主法治建设 健全党和国家监督制度

坚持中国共产党领导、人民当家作主、依法治国有机统一，推进中国特色社会主义政治制度自我完善和发展。

第五十八章　发展社会主义民主

坚持和完善党总揽全局、协调各方的领导制度体系，把党的领导落实到国家发展各领域各方面各环节。坚持和完善人民代表大会制度，加强人大对“一府一委两院”的监督，保障人民依法通过各种途径和形式管理国家事务、管理经济文化事业、管理社会事务。坚持和完善中国共产党领导的多党合作和政治协商制度，提高中国特色社会主义参政党建设水平，加强人民政协专门协商机构建设，发挥社会主义协商民主独特优势，提高建言资政和凝聚共识水平。全面贯彻党的民族政策，坚持和完善民族区域自治制度，铸牢中华民族共同体意识，促进各民族共同团结奋斗、共同繁荣发展。全面贯彻党的宗教工作基本方针，坚持我国宗教中国化方向，积极引导宗教与社会主义社会相适应。健全基层群众自治制度，增强群众自我管理、自我服务、自我教育、自我监督实效。发挥工会、共青团、妇联等人民团体作用，把各自联系的群众紧紧凝聚在党的周围。完善大统战工作格局，促进政党关系、民族关系、宗教关系、阶层关系、海内外同胞关系和谐，巩固和发展大团结大联合局面。全面贯彻党的侨务政策，凝聚侨心、服务大局。

第五十九章　全面推进依法治国

坚定不移走中国特色社会主义法治道路，坚持依法治国、依法执政、依法行政共同推进，一体建设法治国家、法治政府、法治社会，实施法治中国建设规划。健全保障宪法全面实施的体制机制，加强宪法实施和监督，落实宪法解释程序机制，推进合宪性审查。完善立法体制机制，加强重点领域、新兴领域、涉外领域立法，立改废释纂并举，完善以宪法为核心的中国特色社会主义法律体系。实施法治政府建设实施纲要，坚持和完善重大行政决策程序制度，深化行政执法体制改革，严格规范公正文明执法，规范执法自由裁量权，推进行政复议体制改革。深化司法体制综合配套改革，完善审判制度、检察制度、刑罚执行制度、律师制度，全面落实司法责任制，加强对司法活动监督，深化执行体制改革，促进司法公正。实施法治社会建设实施纲要，加强社会主义法治文化建设，深入开展法治宣传教育，实施“八五”普法规划，完善公共法律服务体系、法律援助和国家司法救助制度。全面加强人权司法保护，促进人权事业全面发展。加强涉外法治体系建设，加强涉外法律人才培养。

第六十章　完善党和国家监督体系

健全党统一领导、全面覆盖、权威高效的监督体系，形成决策科学、执行坚决、监督有力的权力运行机制。落实全面从严治党主体责任、监督责任，强化政治监督，深化政治巡视并强化整改落实。推进纪律监督、监察监督、派驻监督、巡视监督统筹衔接，以党内监督为主导、推动各类监督贯通协调，形成常态长效的监督合力，使监督体系更好融入国家治理体系。深化纪检监察体制改革，加强上级纪委监委对下级纪委监委的领导，推进纪检监察工作规范化、法治化，发挥监督保障执行、促进完善发展作用。完善权力配置和运行制约机制，健全分事行权、分岗设权、分级授权、定期轮岗制度，完善党务、政务、司法和各领域办事公开制度，健全发现问题、纠正偏差、精准问责有效机制，构建全覆盖的责任制度和监督制度。坚持无禁区、全覆盖、零容忍，一体推进不敢腐、不能腐、不想腐，营造风清气正的良好政治生态和发展环境。深化反腐败国际合作。锲而不舍落实中央八项规定精神，完善作风建设长效机制，持续纠治形式主义、官僚主义，切实防止享乐主义、奢靡之风反弹回潮，坚决整治群众身边的腐败和不正之风。

第十八篇　坚持“一国两制” 推进祖国统一

保持香港、澳门长期繁荣稳定，推进两岸关系和平发展和祖国统一，共创中华民族伟大复兴的美好未来。

第六十一章　保持香港、澳门长期繁荣稳定

全面准确贯彻“一国两制”、“港人治港”、“澳人治澳”、高度自治的方针，坚持依法治港治澳，维护宪法和基本法确定的特别行政区宪制秩序，落实中央对特别行政区全面管治权，落实特别行政区维护国家安全的法律制度和执行机制，维护国家主权、安全、发展利益和特别行政区社会大局稳定，坚决防范和遏制外部势力干预港澳事务，支持港澳巩固提升竞争优势，更好融入国家发展大局。

第一节　支持港澳巩固提升竞争优势

支持香港提升国际金融、航运、贸易中心和国际航空枢纽地位，强化全球离岸人民币业务枢纽、国际资产管理中心及风险管理中心功能。支持香港建设国际创新科技中心、亚太区国际法律及解决争议服务中心、区域知识产权贸易中心，支持香港服务业向高端高增值方向发展，支持香港发展中外文化艺术交流中心。支持澳门丰富世界旅游休闲中心内涵，支持粤澳合作共建横琴，扩展中国与葡语国家商贸合作服务平台功能，打造以中华文化为主流、多元文化共存的交流合作基地，支持澳门发展中医药研发制造、特色金融、高新技术和会展商贸等产业，促进经济适度多元发展。

第二节　支持港澳更好融入国家发展大局

完善港澳融入国家发展大局、同内地优势互补、协同发展机制。支持港澳参与、助力国家全面开放和现代化经济体系建设，打造共建“一带一路”功能平台。深化内地与港澳经贸、科创合作关系，深化并扩大内地与港澳金融市场互联互通。高质量建设粤港澳大湾区，深化粤港澳合作、泛珠三角区域合作，推进深圳前海、珠海横琴、广州南沙、深港河套等粤港澳重大合作平台建设。加强内地与港澳各领域交流合作，完善便利港澳居民在内地发展和生活居住的政策措施，加强宪法和基本法教育、国情教育，增强港澳同胞国家意识和爱国精神。支持港澳同各国各地区开展交流合作。

第六十二章　推进两岸关系和平发展和祖国统一

坚持一个中国原则和“九二共识”，以两岸同胞福祉为依归，推动两岸关系和平发展、融合发展，高度警惕和坚决遏制“台独”分裂活动。

第一节　深化两岸融合发展

完善保障台湾同胞福祉和在大陆享受同等待遇的制度和政策，持续出台实施惠台利民政策措施，让台湾同胞分享发展机遇，参与大陆经济社会发展进程。支持台商台企参与“一带一路”建设和国家区域协调发展战略。推进两岸金融合作，支持符合条件的台资企业在大陆上市。推进海峡两岸产业合作区、平潭综合实验区、昆山深化两岸产业合作试验区等两岸合作平台建设。支持福建探索海峡两岸融合发展新路，加快两岸融合发展示范区建设。加强两岸产业合作，打造两岸共同市场，壮大中华民族经济。

第二节　加强两岸人文交流

积极促进两岸交流合作和人员往来，加深相互理解，增进互信认同。推动两岸文化教育、医疗卫生等领域交流合作，促进社会保障和公共资源共享，支持两岸邻近或条件相当地区基本公共服务均等化、普惠化、便捷化，促进两岸同胞共同传承和创新发展中华优秀传统文化。加强两岸基层和青少年交流，鼓励台湾青年来大陆追梦、筑梦、圆梦。团结广大台湾同胞共同反对“台独”分裂活动，维护和推动两岸关系和平发展，致力中华民族伟大复兴。

第十九篇　加强规划实施保障

坚持党的全面领导，健全规划实施保障机制，更好履行政府职责，最大程度激发各类主体的活力和创造力，形成全面建设社会主义现代化国家的强大合力。

第六十三章　加强党中央集中统一领导

贯彻党把方向、谋大局、定政策、促改革的要求，深入学习贯彻习近平新时代中国特色社会主义思想，增强“四个意识”、坚定“四个自信”、做到“两个维护”，不断提高政治判断力、政治领悟力、政治执行力，把党的领导贯穿到规划实施的各领域和全过程，确保党中央重大决策部署贯彻落实。充分发挥全面从严治党引领保障作用，把完善党和国家监督体系融入规划实施之中。完善上下贯通、执行有力的组织体系，提高各级领导班子和干部适应新时代新要求抓改革、促发展、保稳定的政治能力和专业化水平。

激发全社会参与规划实施的积极性，注重发挥工会、共青团、妇联等作用，充分发挥民主党派、工商联和无党派人士作用，最大限度凝聚全社会共识和力量。构建适应高质量发展要求的内生激励机制，健全激励导向的绩效评价考核机制和尽职免责机制，调动广大干部特别是基层干部的积极性、主动性、创造性。

第六十四章　健全统一规划体系

加快建立健全以国家发展规划为统领，以空间规划为基础，以专项规划、区域规划为支撑，由国家、省、市县级规划共同组成，定位准确、边界清晰、功能互补、统一衔接的国家规划体系。

第一节　强化国家发展规划的统领作用

更好发挥国家发展规划战略导向作用，强化空间规划、专项规划、区域规划对本规划实施的支撑。按照本规划确定的国土空间开发保护要求和重点任务，制定实施国家级空间规划，为重大战略任务落地提供空间保障。聚焦本规划确定的战略重点和主要任务，在科技创新、数字经济、绿色生态、民生保障等领域，制定实施一批国家级重点专项规划，明确细化落实发展任务的时间表和路线图。根据本规划确定的区域发展战略任务，制定实施一批国家级区域规划实施方案。加强地方规划对本规划提出的发展战略、主要目标、重点任务、重大工程项目的贯彻落实。

第二节　加强规划衔接协调

健全目录清单、编制备案、衔接协调等规划管理制度，制定“十四五”国家级专项规划等目录清单，依托国家规划综合管理信息平台推进规划备案，将各类规划纳入统一管理。建立健全规划衔接协调机制，报请党中央、国务院批准的规划及省级发展规划报批前须与本规划进行衔接，确保国家级空间规划、专项规划、区域规划等各级各类规划与本规划在主要目标、发展方向、总体布局、重大政策、重大工程、风险防控等方面协调一致。

第六十五章　完善规划实施机制

加强对本规划实施的组织、协调和督导，建立健全规划实施监测评估、政策保障、考核监督机制。

第一节　落实规划实施责任

各地区、各部门要根据职责分工，制定本规划涉及本地区、本部门的主要目标任务实施方案。本规划确定的约束性指标、重大工程项目和公共服务、生态环保、安全保障等领域任务，要明确责任主体和进度要求，合理配置公共资源，引导调控社会资源，确保如期完成。本规划提出的预期性指标和产业发展、结构调整等领域任务，主要依靠发挥市场主体作用实现，各级政府要创造良好的政策环境、体制环境和法治环境。年度计划要贯彻本规划提出的发展目标和重点任务，将本规划确定的主要指标分解纳入年度计划指标体系，设置年度目标并做好年度间综合平衡，合理确定年度工作重点。

第二节　加强规划实施监测评估

开展规划实施情况动态监测、中期评估和总结评估，中期评估和总结评估情况按程序提请中央政治局常委会审议，并依法向全国人民代表大会常务委员会报告规划实施情况，自觉接受人大监督。发挥国家监察机关和审计机关对推进规划实施的监督作用。规划实施情况纳入各有关部门、地方领导班子和干部评价体系，作为改进政府工作的重要依据。需要对本规划进行调整时，由国务院提出调整方案，报全国人民代表大会常务委员会批准。

第三节　强化政策协同保障

坚持规划定方向、财政作保障、金融为支撑、其他政策相协调，着力构建规划与宏观政策协调联动机制。按照本规划目标任务、结合经济发展形势，合理确定宏观政策取向。坚持公共财政服从和服务于公共政策，增强国家重大战略任务财力保障，加强中期财政规划和年度预算、政府投资计划与本规划实施的衔接协调，中央财政性资金优先投向本规划确定的重大任务和重大工程项目。坚持项目跟着规划走、资金和要素跟着项目走，依据本规划制定重大工程项目清单，对清单内工程项目简化审批核准程序，优先保障规划选址、土地供应和资金需求，单体重大工程项目用地需求由国家统一保障。

第四节　加快发展规划立法

坚持依法制定规划、依法实施规划的原则，将党中央、国务院关于统一规划体系建设和国家发展规划的规定、要求和行之有效的经验做法以法律形式固定下来，加快出台发展规划法，强化规划编制实施的法治保障。

相关稿件

- 第十三届全国人民代表大会第四次会议关于国民经济和社会发展第十四个五年规划和2035年远景目标纲要的决议
- 新华社受权播发"十四五"规划和2035年远景目标纲要