



U.S.-EU Trade and Technology Council
Working Group on Climate and Clean Tech

**Joint U.S.-EU Catalogue of
Best Practices on Green Public
Procurement**

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The U.S.-EU Trade and Technology Council Working Group on Climate and Clean Tech agreed to work towards a common understanding between the European Union (EU) and the United States (U.S.) on how green public procurement can positively contribute to achieving our shared environmental goals and support our efforts to address the challenges posed by climate change.

As part of this effort, the EU and U.S. have developed a **Joint U.S.-EU Catalogue of Best Practices on Green Public Procurement**. This catalogue aims to identify and present key policies, actions and best practices used in the field of green public procurement that can inspire policymakers and government entities to increase the use of green public procurement practices and thereby accelerate the wide deployment of green goods, services and technologies in the public sector.

Key role for public procurement in addressing environmental challenges

In line with the Paris Agreement temperature goals, the U.S. and EU are actively pursuing efforts to limit the global temperature increase to 1.5 degrees Celsius. As part of this commitment and to achieve this objective, the U.S. and the EU are collaborating to take innovative actions that help to reduce carbon and other greenhouse gas emissions. At the same time, our respective efforts to address climate change also benefit our overall global sustainable development objectives with the view of conserving and protecting the environment, preventing further loss of biodiversity and negative impacts of pollution.

In light of the triple global crises of climate change, biodiversity loss, and pollution, alongside the emergent energy crisis, both sides recognize that green public procurement is a powerful leverage point for the public sector to address these challenges. Green public procurement can help achieve the 2030 Sustainable Development Goals¹. Both the U.S. and EU have large procurement budgets, which can be utilized to provide sustainable public services and be used in a manner that addresses the broader environmental challenges faced by our societies. In this regard, the public sector is encouraged to take a proactive role and act as a trailblazer in the broad deployment of approaches and technologies that can contribute to protecting the environment, reducing our dependencies on fossil fuels and fighting climate change.

Green Public Procurement in the U.S. and EU

Green Public Procurement is to be understood as a set of policies, actions and practices that leverage acquisitions to address all types of environmental challenges. The objectives stem from *tackling climate change and the reduction of greenhouse gas (GHG) emissions, to increasing energy efficiency, promoting environmental justice, boosting the use of clean energy, and ensuring energy security; safeguarding the health of the environment at large; eliminating waste and preventing air, soil, water, and noise pollution; restoring degraded ecosystems and expanding protected areas; reducing waste and moving towards a circular economy; using the Earth's precious resources more carefully and optimally; shifting to clean transport (clean vehicles, boats, railroads, air traffic); constructing more eco-friendly buildings and strengthening the vitality and the liveability of communities; reducing the environmental footprint of pharmaceuticals and public healthcare systems at large; promoting sustainable food production and consumption, and addressing other environmental challenges.*

In order to enable the public sector on both sides of the Atlantic to effectively address the pressing environmental issues that our planet is facing, it is essential that GPP fosters sustainable solutions

¹ Target 12.7 of the UN SDGs provides a commitment to "Promote public procurement practices that are sustainable, in accordance with national policies and priorities." Both the EU and U.S. have received high scores from the One Planet Network's Global Review of progress towards this target and the underlining indicator that asks countries to implement Sustainable Public Procurement policies and action plans.

to address this diverse set of environmental challenges. At all stages of the procurement process, measures relating to green public procurement procedures must be prepared, adopted, and applied in a manner consistent with the Parties' international procurement obligations, such as the World Trade Organization (WTO) Agreement on Government Procurement (GPA).

Structure of the Joint Catalogue

This catalogue considers GPP practices across all stages of the procurement process. This includes:

- *strategic planning,*
- *pre-procurement,*
- *procurement itself, and finally*
- *post-contract award stage.*

For each of the above listed stages in the procurement process, the Joint Catalogue presents existing initiatives, policies and actions supported by and implemented in the EU and U.S., further complemented with a number of examples from both the EU and U.S. procurement markets.

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1. STRATEGIC PLANNING STAGE

Translating comprehensive green policies into an ambitious GPP strategy with clear goals and concrete preparatory actions can have a major impact on reinforcing the environmental impact of procurements. This can take the form of multi-annual GPP action plans that ensure that procurement planning is aligned with green policy priorities, or the definition of appropriate GPP requirements, targets, and capacity-building measures.

Such strategic planning efforts not only better prepare public procurement officials to adopt sustainable procurement practices, but they are also a strong signal to the marketplace about upcoming public sector demand for green products and services.

1.1 EU best practice examples

Ambitious action plans and targets for green public procurement

Since 2003, the EU has encouraged EU Member States to create ambitious National Action Plans (NAPs) for green procurement in order to direct at least 50% of public procurement across the EU to GPP. To date, almost all EU Member States have drafted and published NAPs for GPP. The NAPs contain an assessment of the existing situation and set ambitious “buying green” targets for the next three years, specifying which measures will be taken to achieve them.

Box I. Examples of commitments in NAPs

- Austria has a general obligation to always procure sustainable goods and services;
- Denmark requires that a high percentage of all public procurement is to be implemented as green;
- Denmark, Germany, Italy, France and Portugal have mandatory rules to apply green procurement for specific products.

EU Member States regularly update the NAPs in order to incorporate new requirements that come from evolving EU green policies and legislation. A number of legislative proposals under the EU Green Deal package establish mandatory GPP requirements and targets to green the EU economy and this has given a strong impulse to greener public procurement.

This includes for example defining climate neutrality targets, legislative requirements for procuring clean vehicles, deploying public e-charging and hydrogen infrastructure, equipping public buildings with solar panels and heat pumps, buying more circular and energy efficiently, using cleaner fuels and renewable energy, reducing waste and pollution of air, water and soil, increasing biodiversity, restoring degraded ecosystems, etc.

Publicly accessible multi-annual NAPs on GPP allow potential suppliers to improve their understanding of existing GPP-related ambitions and procurement plans for years to come.

More information is available at: https://ec.europa.eu/environment/gpp/action_plan_en.htm.

Box II. Examples of green procurement strategies beyond EU or national targets

Several local and regional authorities have created green procurement strategies more ambitious than EU targets or respective NAPs:

- Copenhagen increased the level of ambition of its green procurement plan to align with [Copenhagen's Climate Plan](#) which aims to become the first carbon-neutral capital by 2025 (which is much earlier than the EU target to become climate-neutral by 2050);
- Helsinki, Amsterdam and Paris have adopted clean vehicles procurement strategies that exceed the minimum requirements set by the EU Clean Vehicles Directive and their country's NAP targets for clean vehicles. In line with such strategies, these cities are procuring for instance zero-emission city buses;
- In 2013, well before the adoption of the EU's Circular Economy Action Plan in 2020, the network of southern Swedish municipal waste operators' cities (SAMSA) adopted a circular city strategy. SAMSA created a digital platform that allows all partner cities to lend and share office equipment among each other, promoting reuse and repurposing, thereby reducing new equipment purchases;
- Already in 2008, [Wolfhagen](#) in Germany adopted a 100% renewable energy target for 2015 and strategy, exceeding the respective EU aspirational 42.3% target by 2030. The town procured installation of windmills, solar panels and a biomass plant that powers all public buildings, houses, and businesses. Today the city is self-sufficient in terms of energy supply, having been able to disconnect from the national energy grid. Even amidst the global energy crisis, Wolfhagen has ensured security of supply with cheap and green energy. In addition, the city's strategy has attracted new businesses and jobs, inspiring other German cities to follow its example.

Since 2019, the EU Green Deal has accelerated the transition to a clean and resource-efficient economy. It announced for the first time Europe's ambition to become the world's first climate-neutral continent by 2050. Following this, a legally binding target was set to ensure that the EU reaches net-zero GHG emissions by 2050, with an intermediary target to reduce GHG emissions by 55% by 2030. The EU Green Deal triggered a suite of legislative proposals and strategies to combat climate change and environmental degradation (in particular on transport, energy, nature preservation and pollution, see below). In this context, it also emphasised that the public sector needs to lead by example and ensure that public procurement is green. Hence, the European Commission is working on minimum mandatory green public procurement criteria in sectorial legislation.

Box III. Legislative framework offering context for action in green public procurement in specific sectors

The EU Green Deal policy framework sets out actions to be reflected in public procurement such as:

- *In the field of transport:* requirements on public buyers across Europe to buy minimum percentages of clean vehicles and a complete ban of new fossil fuel car sales in Europe from 2035 onwards; obligations on EU Member States to deploy infrastructure for charging transportation with alternative fuels (electrical, LNG, hydrogen, etc.) in roads, airports, harbours, public buildings; target to move to zero-emission freight transport by moving 75% of such transport from the road to rail and waterways and optimising multimodality (obligation on EU Member States to adapt transport planning and support transshipment/loading and to adopt the polluter pays principle);
- *In the field of energy:* obligations on EU Member States to reduce the use of energy by 11.7% by 2030 and to increase the use of renewable energy to 42.5% of the energy mix by 2030, obligations to make public buildings zero-emission by 2027 (e.g. through requirements to install solar panels and heat pumps and double the use of geothermal energy); obligations on public buyers in Europe to use high energy efficiency requirements in public contracts and to publish information about the energy impact of public contracts; data

centres and telecommunications solutions will need to become more energy-efficient, reuse waste energy, and use more renewable energy sources and the target is for them to become climate-neutral by 2030;

- *In the field of nature preservation:* targets for EU Member States to restore by 2030 degraded ecosystems and manage them sustainably, addressing the key drivers of biodiversity loss; requirement to plant three billion additional trees by 2030 across Europe; requirements for biomass heat and power installations to comply with minimum GHG emissions-saving thresholds and to apply EU sustainability criteria to smaller heat and power installations; stricter requirements for sectors that involve heavy land use (e.g. agriculture) and minimum requirements for sustainable food procurement;
- *In the field of pollution:* Target to reduce by 2050 air, water and soil pollution to levels no longer considered harmful to health and natural ecosystems, with the following intermediary 2030 targets: Improve air quality reducing premature deaths caused by air pollution by 55%; improve water quality by reducing waste, plastic litter at sea by 50% and microplastics released into the environment by 30%; improve soil quality by reducing nutrient losses and chemical pesticides' use by 50%; reduce by 25% the EU ecosystems where air pollution threatens biodiversity; reduce the share of people chronically disturbed by transport noise by 30%; significantly reduce waste generation and by 50% residual municipal waste; stricter rules to ensure the procurement of batteries with minimum recycled content and minimal environmental impact over their entire life cycle; encouraging public sector organisations to make zero-pollution pledges, using less polluting products and services over their whole life cycle (using Eco-labels); expanding EU legislation (e.g. REACH, CLP) to ban/phase out most harmful chemicals (e.g. PFAS); requirements to further minimise the presence of substances of concern, prioritising those product categories that affect vulnerable populations as well as those with the highest potential for circularity, such as textiles, packaging including food packaging, furniture, electronics and ICT, construction and buildings.

To meet the EU's energy and climate targets by 2030, EU Member States were also required to establish ten-year integrated national energy and climate plans (NECPs) for the period from 2021 to 2030. The NECPs outline how EU Member States intend to address energy efficiency, renewables, GHG emissions reductions, interconnections, research and innovation. They also describe the main existing and planned policies and measures to achieve these objectives, including those related to buildings and energy-efficient public procurement. This approach requires coordination across all government departments. It also provides a level of planning that will ease private and public investments (including public procurements). The fact that all EU countries use a similar template allows them to work together to make efficiency gains across borders. Progress in implementing the NECPs is monitored regularly and all EU Member States issue a progress report every two years. Furthermore, as part of the [State Of The Energy Union Reports](#), the European Commission monitors the EU's overall progress towards achieving its targets.

More information about EU Member State's NECPs is available here: https://energy.ec.europa.eu/topics/energy-strategy/national-energy-and-climate-plans-NECPs_en.

Professionalization of procurement staff and providing easy-to-use tools for buying green

The EU has taken several initiatives to boost the professionalization of procurement staff, capacity-building, training, as well as information-sharing on green procurement and green technologies. Increasing expertise and know-how on green procurement and green technologies is a key objective of the European competency framework for public procurement professionals (ProcurCompEU). The ProcurComp^{EU} tool helps procurement organizations build and train teams of professionals needed to reach strategic investment goals, and encourages careers in this field.

Box IV. Tools available to promote green procurement

- The **EU Green Procurement Toolkit** provides concrete guidance on how public buyers can buy green in line with public procurement rules. For more information: https://ec.europa.eu/environment/gpp/toolkit_en.htm;
- The **EU GPP helpdesk** supports public buyers in EU Member States to green their purchases. It provides replies to stakeholders' enquiries, disseminates information and promotes GPP

through news alerts and webinars. More info: <https://ec.europa.eu/environment/gpp/helpdesk.htm>;

- The **EU GPP criteria** offer ready-made criteria that procurers can use to include green requirements in their public tender documents. For more information: https://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm;
- The **EU Life Cycle Costing (LCC) tools** provide a series of calculation tools that help public procurers use LCC in specific sectors. For more information: <https://ec.europa.eu/environment/gpp/lcc.htm>;
- The **EU Ecolabel product catalogue** allows public procurers to quickly identify environmentally friendly products and services that meet the EU Ecolabel requirements. For more information: <http://ec.europa.eu/ecat/>;
- The **EPREL database (European Product Registry for Energy Labelling)** helps public buyers look up which products on the market are the most energy-efficient according to the EU Energy labels. EPREL permits to assess which, at any moment, is the “highest significantly populated class”, by providing a summary of the share of different models in each class and related to a selection on specific criteria. Information on other aspects beyond a product’s energy use, such as its possible water consumption, noise emission, extension of the warranty, availability of spare parts, duration, or product support, is also provided. For more information: https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/product-database_en.

Several EU Member States have also foreseen specific capacity-building measures for green procurement. France’s NAP, one of the most ambitious in the EU, foresees ambitious actions regarding supporting buyers and training on GPP.

Fostering synergies with digital transformation strategies

Digital technologies can accelerate the green transition in other sectors. Digital twins and smart control systems can optimize or even reduce energy consumption in buildings. Connected mobility reduces CO2 emissions. Precision farming reduces the use of pesticides. Smart manufacturing and smart city solutions speed up circular business models and satellite-enabled earth monitoring, resulting in less pollution.

In sum, using ICTs technologies for climate neutrality objectives can reduce 15-20% of GHG emissions. Public procurement strategies should therefore aim to maximize smart synergies between green and digital procurement.

Smart digital transformation strategies require that public procurers are able to identify when and how to best procure/use digital technologies in such a way that they have a net-positive environmental impact. However, to date, there are no science-based assessment methods (metrics) to estimate their net-environmental impact, in particular their positive impact. So far, there are only some standards (e.g. [the ITU L. 1400-1470](#) series) for estimating the negative impact.

Overcoming this hurdle is not possible without a widely accepted methodology that allows to quantify what environmental benefits exactly can be achieved by buying a digital solution versus a non-digital solution.

In this context, two initiatives were launched in 2021: **The Declaration on A Green and Digital Transformation** and **the European Green Digital Coalition**.

Box V. EU initiatives fostering synergies with digital transformation strategies

- The [Declaration on A Green and Digital Transformation](#) was signed by 26 EU Member States and Norway and Iceland. These countries commit to make GPP the default option overall in their national digital transition programmes;

- The [European Green Digital Coalition](#) brings together EU Member States, ITC companies and the European Commission to invest in developing and deploying greener solutions. The members of the Coalition are developing methods that can be used by public procurers to measure the net-environmental impact of green digital solutions (that can consist of a combination of hardware and software). This effort will feed into the European Commission's planned activities, including the plan that will define additional GPP criteria for the ICT sector and the announced [Digitalisation Of Energy Sector Action Plan](#).

1.2 U.S. best practice examples

Ambitious action plans and targets for green public procurement

Executive Order 14057 on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") outlines an ambitious path to achieve net-zero emissions across Federal operations by 2050. To achieve this goal, the Federal Government will transition its infrastructure to zero-emission vehicles (ZEVs) and buildings, powered by carbon pollution-free electricity (CFE). It also will transform its operations to develop a net-zero supply chain, require Federal agencies to set goals to reduce greenhouse gas (GHG) emissions, and partner with leading domestic and international organizations to accelerate progress. By leveraging its power of procurement, the Federal Government will accelerate the country's transition to a clean energy economy and create well-paying union jobs during the process.

Box VI. Steps taken by U.S. federal agencies to implement U.S. federal sustainability policies

- Pilot programs for carbon pollution-free electricity;
- Expanding ZEV fleets and charging infrastructure;
- Building buildings for net-zero emissions and increasing water and energy efficiency;
- Maximizing the procurement of sustainable products and services;
- Establishing a federal "buy clean" initiative to procure and fund lower embodied emissions construction materials;
- Modernizing federal policy, programs, operations, and infrastructure to support climate-resilient investment.

This policy is further articulated in the **2021 Federal Sustainability Plan**, and updates and adds to many of the green procurement goals contained in The Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 introduced new standards for federal buildings, such as achieving carbon neutrality by 2030 and requiring lighting in federal buildings to be ENERGY STAR products. The Act also established conservation requirements and emissions standards for federal fleet vehicles.

Box VII. The Federal Sustainability Plan and Agency

The [Federal Sustainability Plan](#) outlines an ambitious path to achieve [net-zero emissions from Federal procurement by 2050](#) while increasing the sustainability of federal supply chains. These supply chain initiatives include major contractor GHG emission disclosures paired with science-based targets, a "buy clean" initiative for low-carbon materials, and a sustainable products policy.

"Net-zero procurement" means reducing the carbon footprint of all purchased products and services to zero. As such, it is a long-term goal that encompasses improved measurement of the

carbon footprint of procurement, while using purchasing references to drive investment in low-carbon and zero-carbon products and services.

All U.S. federal agencies are required to draft and submit **Sustainability Plans and Climate Action Plans** that describe steps the agency can take regarding preparing facilities and operations for the impact of climate change. Action plans shall also identify how the agency will use procurement to increase energy and water efficiency of U.S. government installations, buildings, and facilities. Agencies shall also submit annual reports after the initial action plan on progress towards its implementation. These plans and annual progress reports are publicly available at <https://www.sustainability.gov/progress.html>.

Professionalization of procurement staff and providing easy-to-use tools for buying green

The U.S. federal government has established multiple training programs focused on sustainability and climate risk to ensure that acquisition managers and procurement officials have the tools to integrate green procurement policies and meet federal green purchasing goals.

Box VIII. Professionalization of procurement staff and providing easy-to use tools to help procurers buy greener

Sustainable Procurement Training Programs: Multiple training programs are being developed for procurement professionals to understand how to integrate climate considerations into the acquisition lifecycle. For example, the Office of Federal Procurement Policy's Federal Acquisition Institute (FAI) has developed a "Climate Adaptation for Program Managers" course to provide program managers managing non-IT major acquisitions with high-level climate risk background information, authoritative sources, the necessity of climate adaptation in procurement, and risk management illustrations. The climate adaptation training for acquisition managers that we developed is now accessible without an FAI account: https://www.fai.gov/climate_adaptation_program.

GSA Acquisition Advisory Committee: GSA [Acquisition Advisory Committee to Address Climate Crisis and Increase Sustainability](https://www.gsa.gov/policy-regulations/policy/acquisition-policy/gsa-acquisition-policy-federal-advisory-committee) was launched to serve as an advisory body to GSA's Administrator on how GSA can use its acquisition tools and authorities to target the highest priority Federal acquisition challenges. The GAP FAC advises GSA's Administrator on emerging acquisition issues, challenges, and opportunities to support its role as America's buyer. The initial focus for the GAP FAC has been on driving regulatory, policy, and process changes required to embed climate and sustainability considerations in Federal acquisition. This includes examining and recommending steps GSA can take to support its workforce and industry partners in ensuring climate and sustainability issues are fully considered in the acquisition process. Membership, meeting notes and recommendations are posted here: <https://www.gsa.gov/policy-regulations/policy/acquisition-policy/gsa-acquisition-policy-federal-advisory-committee>.

DOE GreenBuy: Department of Energy (DOE)'s GreenBuy Award Program recognizes DOE sites for excellence in "green purchasing" that extends beyond minimum compliance requirements. All Federal agencies, including DOE, are required to purchase products that are energy efficient, water efficient, and made from biobased or recycled content material. To help navigate these numerous, and sometimes overlapping, requirements DOE developed a Priority Products List. The Priority Products List is the backbone of the GreenBuy Award Program because it helps DOE sites readily identify products with leading and verifiable sustainability attributes. The Priority Products List simplifies the process by identifying products that:

1. Meet or exceed statutory requirements;
2. Lower health and environmental impacts;
3. Are regularly purchased products or services and a significant part of DOE spending;
4. Reduce maintenance costs;

5. Reduce waste management costs;
6. Are covered by standards or eco-labels covering multiple attributes;
7. Conform to the Federal Guiding Principles for High Performance and Sustainable Buildings; and
8. Support other sustainability program goals.

This list was developed by DOE's Sustainable Acquisition Working Group following extensive research and review of multiple standards. More than half of the DOE sites have participated in the GreenBuy Awards since its launch in FY 2011.

For more information, please see:

- Priority product categories: <https://sftool.gov/greenprocurement/doi>
- FY2023 GreenBuy Award Categories: <https://sftool.gov/Content/attachments/DOE-GreenBuyAwardGuide-FY2023.docx>
- Interactive GreenSpaces: <https://sftool.gov/learn/about/642>

DoD Sustainable Procurement Program: The Department of Defense (DoD) Environment, Safety & Occupational Health Network and Information Exchange (DENIX) runs a Sustainable Procurement Program (SPP) to increase the purchase of environmentally preferable products and services in accordance with federally-mandated "green" procurement preference programs. The Department's vision of sustainability is to maintain the ability to operate into the future without decline either in the mission or in the natural and manufactured systems that support it. DoD embraces sustainability as a means of improving mission accomplishment. DoD's SPP strives to enhance and sustain mission readiness through cost-effective acquisition that achieves compliance and reduces resource consumption of solid and hazardous waste generation. As the single largest buyer of supplies and services throughout the government, DoD strives to ensure that every procurement meets the requirements of applicable Federal green procurement preference programs. DoD's SPP is focused not only on the procurement function but also on the roles and responsibilities of each member of the Department and recognizes that every person has a role to play.

For more information: <https://www.denix.osd.mil/spp/>.

DoD product specific site: <https://sftool.gov/learn/about/435/department-defense-dod-sustainable-product-purchasing>.

2. PRE-PROCUREMENT STAGE

A number of activities can be undertaken during the preparation of a specific procurement project to facilitate the implementation of sustainability considerations and the maximize the potential achievement of sustainability goals.

2.1 EU best practice examples

Identifying user needs as green outcomes based on an assessment of the environmental risks

This identification concerns the green outcomes strived for as well as the environmental risks linked to the implementation and the life cycle of a project. This can help determine how to best formulate the scope and nature of green requirements for the procurement.

Box IX. Identifying user needs as green outcomes based on an assessment of the environmental risks

In 2017, Sør-Trøndelag County Council in Norway realized that it had to take action to lower the emissions of the public ferry services. The environmental risks of the existing public ferries were assessed, and the conclusion was clear: 85% of the GHG emissions from the county's business came from the transport sector and the fast ferry connections were responsible for the same amount of emissions as the 1000 busses in Trøndelag combined. This situation could not continue, otherwise the county would not be able to achieve its climate goals.

The market had not developed or tested any zero-emission technology for fast ferries yet and reducing these emissions required new development work. Therefore, Trøndelag teamed up with 10 other counties and started in 2018-2019 a pre-commercial procurement that challenged the industry to develop climate-friendly technology.

A crucial success factor of the procurement was that the user needs were formulated in terms of the green outcomes the procurers wanted to achieve: "Enable zero-emission operation of scheduled express boats that can carry at least 275 passengers at speeds of minimum 30 knots over 95 nautical miles (which corresponds to the ferry distance Trondheim-Kristiansund)". In other words, the procurement only specified that the outcome had to be a "zero-emission" public ferry boat, it did not specify which type or design of boat, nor which type of green technology had to be used. This enabled the market to come with new approaches to solve the problem.

Indeed, the five consortia that were awarded research and development contracts and started the competition in 2018 came up with different innovative ways to address the problem: they proposed different boat designs and types and configurations of renewable energy that ranged from pure battery to pure hydrogen to hybrid hydrogen/battery solutions. The development efforts that industry put into the project exceeded the expectations of the procurers. All five prototypes were so promising that they all made it through to final testing in the summer of 2019. The tests that were conducted in the summer of 2019 showed that it will indeed be possible for the counties to buy emission-free express boats in the future, although further work was still needed to commercialize the solutions. Trøndelag started new procurements to boost the improvement of the energy-efficient design even further and to extend the range of zero-emission ferry transport to even faster public speedboats.

Trøndelag won the 3rd Local Climate Action of the Year 2018 prize for the Speedboat of the Future PCP (pre-commercial procurement).

More information is available here: <https://digital-strategy.ec.europa.eu/en/news/pre-commercial-procurement-turns-dream-emission-free-public-ferry-boats-reality>.

Early market dialogue

Entering into dialogue early on in the procurement is crucial to identify and understand the solutions that are available or under development on the market, how the market can respond to the stated

green goals and what are the environmental risks associated to the procurement. It can also help test the feasibility of potential green requirements with economic operators and assess what the market can realistically deliver and under which conditions.

Box X. Advantages of early market dialogue

Since 1990, NUTEK (the precursor of the current Swedish Energy Agency) financed and initiated nearly 60 different public procurements of innovative, greener solutions (called technology procurements in Sweden). To create sufficient market pull, it grouped public buyers and when possible also private buyers (e.g. municipalities and private building owners) interested to buy innovations with the same requirements.

Open market consultations with industry were organized to clarify what level of innovation could realistically be achieved by suppliers in a set timeframe for deployment, and how large the purchase volume had to be to incentivize industry to make the necessary investments to bring these innovations to the market.

Based on this information, for the buyers group, NUTEK published their requirements in terms of functionalities, characteristics and price and informed the market about their intention to purchase significant amounts of products. Suppliers were invited to come forward by a predefined date (e.g. six months or one year later) with their new solution, to demonstrate whether it met the minimum requirements defined by the buyers group. Test/certification events were organized at the procurers' premises and participating products were classified into different categories matching different energy labels (A, B, C, D, E, etc.).

The members from the buyers group then launched individual procurements to buy the solutions they needed with the energy performance they wished. This approach of coordinated procurements in group encouraged industry to make the additional necessary investment to bring to the market more energy-efficient appliances (light bulbs, washing machines, windows, heat pumps, refrigerators for public housing, etc.).

NUTEK has assessed in 2006 and 2007 the effects of ten of the most important technology procurements that were performed in Sweden since 1990 (heat pumps, energy-efficient motors, cold counters, FTX systems, individual heat metering, control and monitoring systems in premises, motion detection lighting systems, copiers, tap water armatures, freezers/refrigerators). Bringing these technologies to the market created energy savings that reduced Sweden's dependency on nuclear energy by 15%. The current Swedish Energy Agency continued the same approach of leading by example through market dialogues followed by procuring a critical mass of new, green solutions. As a result, Sweden is one of the leading countries in Europe in the energy transition.

More information is available at:
[http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc_id=7935.](http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc_id=7935)

Joining forces with other procurers to use the collective green purchasing power

Working together with other public buyers can increase the critical mass on the demand side needed to encourage suppliers to bring better-value-for-money green products to the market. Also, positive impact can be achieved by using procurement to trigger in a forward-looking way the development of novel, innovative solutions that can feed later into the mainstream solution acquisition process and help to address environmental challenges in a more effective way.

Box XI. Examples of joint procurement to increase green purchasing power

The **Circular and Fair ICT Pact** (CFIT) is an international partnership of public buyers that was set up in June 2021 by the Netherlands and Belgium to accelerate circularity, fairness and sustainability in the ICT sector. To date, eight countries worldwide signed the pact and are working together to make laptops and smartphones more circular through procurement. Together, the signatories leverage their collective procurement power, in close dialogue with the ICT supply side, to affect the change and innovation needed. CFIT is an action under the UN One Planet Network SPP programme. CFIT creates buyer groups that together build up knowledge and tools, engage the market, develop common, easy-to-use procurement criteria. Future actions being explored are joining forces when needed for research and innovation and for issuing joint statements of demand for circular products. More information is available at: <https://circularandfairictpact.com/>.

In 2019, Malmo, Oslo, Helsinki and Copenhagen published a joint statement of demand to buy only circular smartphones by 2025. The statement declared common ambitions to work by 2025 with harmonized criteria and clauses for environmental sustainability across the entire supply chain that allow to extend the lifespan of purchased phones, to opt out of buying accessories, to collect 100% of smartphones in order to boost reuse, recycle and remanufacture and be able to procure high-quality second-life devices, to apply systematic monitoring throughout the entire life cycle of products and regular dialogue with suppliers and resellers to ensure continuous improvement. More information is available at: https://procuraplus.org/fileadmin/user_upload/Interest_Group/Joint_Statement_of_Demand-circular_fair_smartphones.pdf.

Procuring research and development to challenge industry to bring innovative green solutions to the market

Another way to promote green solutions is by procuring research and development (R&D) solutions, including for industrial decarbonization. To this end, the EU has been working in dialogue with its European Environment Agency (EEA) partners on how to effectively reduce CO₂ emissions of the energy-intensive industries that produce large amounts of CO₂ and are difficult to fully decarbonize, such as fossil fuel-based heat and power plants, biomass energy plants, clean hydrogen systems, cement and steel factories, etc. The ambition is to realize a cost-effective solution for carbon capture and storage (CCS) to limit CO₂ emissions to the atmosphere from those heavy industries by capturing their CO₂ emissions and storing them safely, for example in underground geological formations. This process can also produce carbon-free hydrogen, which can be reused in different types of industrial and transport applications. By returning carbon underground to living vegetation and soil, this process of land-use sink can also support natural processes, including the capacity of land to renew.

Box XII. Norwegian projects for carbon capture and storage facilities.

Norway has vast experience with large gas storage facilities and overseas transport as well as forward-looking climate change ambitions. Based on this experience, Norway took the lead on exploring storage solutions for carbon.

In 2010, the Norwegian government decided that Statoil (now called Equinor) and Gassnova, two Norwegian oil and gas operators governed by public law, will work to develop carbon storage facilities and de-risk the technology using pre-commercial procurement (PCP).²

Between July 2011 and the beginning of 2013, Statoil and Gassnova carried out the so-called "[Mongstad Carbon Capture PCP](#)" that contracted five vendors from across the globe to develop and test different technological solutions to capture carbon. The PCP showed that carbon capture was technically possible but that the developed technologies still created unwanted side effects.

² This is an approach to procure R&D services from different suppliers competing in order to trigger wide industry participation and cost-efficient, stepwise de-risking of solution development and testing.

After further studies found how to solve those issues, in 2015-2016, Gassnova carried out a [second "Full-scale Carbon Capture Feasibility PCP"](#) to assess at different potential technical site installations in Norway what would be suitable conditions for full-scale carbon capture deployment. Meanwhile, Gassnova made also [commercial partnerships for the transport and storage of CO2](#) coming in from industrial sites all over Europe to Norway.

After having successfully completed these two PCPs in Europe, in mid-2020 the Norwegian parliament made the investment decision to roll out CCS at full-scale in Norway by 2022. The European Free Trade Association (EFTA) surveillance authority also approved EUR 2.1 billion in support for the project. This resulted in the world's largest and first full-scale carbon capture, transport and storage facility.

The Norwegian CCS project is important in Europe's fight against climate change. In its long-term climate strategy, the EU has defined CCS as one of the seven key technologies to reach climate neutrality in 2050. Once the Norwegian full-scale CCS is rolled-out, other European countries could start transporting CO2 from their energy-intensive industry sites to Norway. Several EU programs are funding European industries and ports to connect to the Norwegian CCS system so that they can capture and send their CO2 emissions there. This process is ongoing, and it is expected that by 2050, CCS could capture 14% of the CO2 emitted in the EU.

For more information, please see: <https://digital-strategy.ec.europa.eu/en/news/creating-worlds-first-and-largest-full-scale-carbon-capture-transport-and-storage-facility>.

2.2 U.S. best practice examples

Set climate protection levels, criteria, and design decisions early in the project

The Department of Defense (DOD) has produced [Sustainability Analysis Guidance: Integrating Sustainability into Acquisition Using Life Cycle Assessment](#) as a standardized framework for conducting a Sustainability Analysis, an assessment of costs (quantified using life cycle costing, LCC) and potential environmental liabilities (quantified using life cycle assessment, LCA) for DoD weapons systems, equipment, or platforms.

DOD has developed this guidance for combining LCC estimating with LCA to conduct a Sustainability Analysis. It was tailored to integrate with existing DoD-required analyses and leverages available LCA data and models to reduce data collection requirements, striking a balance between accuracy and level of effort. This guidance describes five steps that are instrumental to, and in support of, existing cost and performance analyses.

Box XIII. Five steps for conducting Sustainability Analysis

1. **Define the Scope of the Analysis:** The first step is to clearly define the objectives and range of the study. This includes a description of required performance, specific alternatives analyzed, and the life cycle stages included in the Sustainability Analysis. A well-defined scope ensures that all alternatives considered fulfil all performance requirements and are compared on an equivalent basis;
2. **Develop a Life Cycle Inventory:** The second step is to identify and quantify all relevant system inputs (e.g., resources, transportation, procured items and services), outputs (e.g., products, systems, or environmental releases), and internal DoD costs that fall within the scope of the analysis, and to develop an initial LCC estimate based on the internal DoD costs;
3. **Estimate LCCs:** The fourth step is to estimate internal costs incurred by the DoD, external costs to society, and contingent costs that may be incurred by the DoD from future events over the system's life cycle;
4. **Estimate Life Cycle Impacts:** The third step is to translate the inventory of inputs and outputs into impacts on resource availability, climate change, human health, and ecosystem

quality. This is accomplished using a set of peer-reviewed, publicly available, impact assessment models;

5. **Synthesize Results:** The fifth step is to analyze, interpret, and act on results to assess the level of confidence in the results, identify the life cycle activities that drive life cycle impacts and costs, and compare the performance of alternatives. If the comparison needs further data or definition, previous steps are repeated as necessary.

The U.S. General Services Administration (GSA), in collaboration with the U.S. Department of Transportation (DOT), incorporated climate change considerations into building design and renovation processes for the U.S. DOT Volpe Exchange Project in Cambridge, Massachusetts. Below are examples of adaptation actions incorporated into the project that will reduce the vulnerability of DOT infrastructure to climate change impacts.

Box XIV. Volpe Exchange Project – addressing climate change impacts

GSA and DOT collaborated to proactively include considerations from the building's shape, structure, orientation, floor, and office layouts to building materials, mechanical systems, and furnishings, which all contribute to the new facility's sustainability and climate resiliency.

The new DOT Volpe Centre building will include several climate-ready features:

- Locating the first floor and major building systems above the projected 2070 500-year floodplain;
- Upgraded roofing systems and the building envelope (where warranted);
- Above-grade emergency back-up generators located on the 13th floor mechanical level,
- An above-grade data centre;
- Pipes for chilled water distribution that are sized to handle increased loads due to future climate change impacts; and
- Enhance landscaping to address climate change vulnerabilities.

Without this type of adaptation planning and implementation, sea level rise and storm surges could compromise buildings and damage important communication and safety infrastructure. Furthermore, the renovation included further examples of green landscaping and strategies:

- Leveraging combination of pervious areas, open space, and soft scaping to reduce the existing site condition from 83% impervious area to 65%;
- Using soil replacement for better infiltration of stormwater during rain events;
- Planting native and adaptive vegetation to reduce irrigation water demand;
- Collecting runoff from impervious areas (such as the roof) into a 15,000-gallon cistern to be used to meet 100% of the site's irrigation demand; and
- Incorporating green roofs into the 3rd and 6th level outdoor terrace areas.

More information can be found at: <https://www.volpe.dot.gov/about-us>.

Box XV. Department of Defense – Fort Huachuca REPI, Arizona

Located in Arizona’s Sonoran Desert, Fort Huachuca is accustomed to periodic drought and wildfires that threaten the unmanned aircraft system training and electronic warfare testing missions of this once remote installation.

The threat to the installation’s physical infrastructure and water security led Fort Huachuca to partner with the Arizona Land and Water Trust (ALWT) to conduct an extensive Water Supply and Use Assessment that included:

- An analysis of groundwater levels and surface flows;
- A survey of current irrigation and water use; and
- A comprehensive review of historic pumping records and water rights.

In the financial year of 2020, Fort Huachuca and ALWT completed this survey and were awarded USD 2 million from DOD’s Readiness and Environmental Protection Integration (REPI) Program. The REPI Program’s mission is to make military installations more resilient to climate change and land use conversion. The funding from REPI coupled with USD 4.3 million in partner funding will protect over 2,000 acres of working ranches and forests from incompatible development that would increase demand for groundwater pumping in the area. Funds will also support installation efforts with the U.S. Forest Service to reduce hazardous fuels within the adjacent Coronado National Forest, resulting in the reduced threat of wildfires in the area and at Fort Huachuca.

More information can be found at: <https://www.sustainability.gov/pdfs/dod-2021-cap.pdf>.

Box XVI. GSA Green Building Advisory Committee Building Energy Storage Task Group

A task force was established to study the use of energy at federal facilities and consider value of energy storage systems. The task force evaluated key technologies such as hot and cold-water storage systems and lithium-ion batteries as possible technologies for adaptation, including benefits and challenges of each technology, as well as procurement financing options to support deployment of these technologies.

The task force provided a series of recommendations, such as to continue evaluating evolving technologies, assess non-financial benefits to stakeholders, and deploy a roadmap for GSA staff to make decisions on energy storage in federal buildings. The initial study and recommendations will help GSA reduce electricity bills, provide additional electrical grid support, and reduce carbon emissions.

More information can be found at: <https://sftool.gov/Content/attachments/Iswg/iswg-case-studies/Energy%20Storage%20at%20Fed%20Bldgs%20-%20D.%20Kaneda%20Jan%202022.pdf>.

Supplier Engagement

GSA engages suppliers across multiple industries — including (among others) dozens of major retailers, automakers, electronics manufacturers, financial companies, and hospitality companies — who consistently share that working with suppliers to reduce their energy and environmental footprints can increase efficiencies and reduce business risks for all parties, generating cost savings and other forms of financial value. GSA is working to adopt these industry best practices for supply chain management as an important best-value component of solutions that vendors provide to the federal government.

Box XVII. Examples of federal agency engagement with suppliers

- **Participation of the GSA in CDP Supply Chain:**

Since 2015, GSA has been a member of [CDP Supply Chain](#), a third-party international non-profit supply chain climate disclosure system. Contractor participation in GSA's CDP Supply Chain program is voluntary for invited contractors, unless separately required by contract. GSA tracks, via an annual survey and analysis process, actions that major federal contractors are taking to reduce their carbon emissions and the impacts of these actions.

This information is summarized for the 200 largest federal suppliers here: <https://d2d.gsa.gov/report/gsa-federal-contractor-climate-action-scorecard>.

GSA develops contract requirements for energy and environmental management based on anticipated cost savings and impact opportunities, unique to each procurement and market sector. GSA believes that a market sector approach is best, since it aligns with other GSA strategic sourcing practices and recognizes that opportunities to reduce costs via energy and environmental management differ between market sectors, depending on the relevant impacts and practices of each sector.

- **Joint Agency MOUs:**

In March 2023, [DoD and GSA Signed a MOU](#) to Bring More Environmental Innovators to Federal Marketplace. Under the agreement, GSA will use DoD's Sustainable Technology Evaluation and Demonstration Program information on product performance and pricing to streamline the acquisition process and make sustainable technology alternatives more readily available to federal agencies.

The STED Program coordinates with military installations to prove the performance of the sustainable alternatives.

Once the STED program ensures a more sustainable alternative meets or exceeds DoD requirements, GSA then provides assistance to vendors to help them secure a new Federal Supply Schedule, and in some cases, a National Stock Number.

3. PROCUREMENT STAGE

There are different ways to integrate green considerations at the procurement stage, in particular as regards to the qualification of suppliers, through technical specifications, award criteria and contractual terms.

3.1 Qualification (including pre-qualification) of suppliers

Environmental considerations can be included when evaluating, assessing, and selecting potential suppliers. For example, such considerations can include, inter alia: *the verification of absence of breaches to environmental norms; requiring evidence of human and technical resources for handling the required green solutions; specific experience and references related to handling the required green solutions; education and professional qualifications of staff related to green aspects required for the procurement; etc.*

3.1.1 EU best practice examples

The [EU GPP toolkit](#) generally encourages greater supply chain transparency and avoiding abuse of environmental rights in the qualification of suppliers. In doing so, contracting authorities can rely on the EU public procurement directives, which list the cases in which a contracting authority may exclude a supplier from a procurement.

From green procurement perspective, the most relevant exclusion criteria are:

- *Non-compliance with applicable national, EU or international environmental laws;*
- *Grave professional misconduct which renders integrity questionable;*
- *Significant/persistent deficiencies in performance of substantive requirement under prior contract which led to termination or comparable sanctions; and*
- *Misrepresentation of any of the above or inability to submit supporting documents.*

Contracting authorities can exclude an operator where they can demonstrate by any appropriate means that it has violated applicable environmental obligations under EU or national law.

The directives also allow exclusion for violation of a limited list of international environmental conventions:

- *Vienna Convention on the ozone layer;*
- *Basel Convention on hazardous waste;*
- *Stockholm Convention on persistent organic pollutants; and*
- *PIC Convention (hazardous chemicals/pesticides).*

Some EU Member States choose to make exclusions for non-compliance with these laws mandatory. Violations of environmental law can also be used as grounds to refuse to award a contract to a supplier, to reject an abnormally low tender, or to require replacement of a subcontractor. Requiring the supplier to provide evidence about the compliance of its subcontractors with the exclusion criteria ensures greater supply chain transparency as regards the respect of environmental rights.

The above-mentioned exclusion criteria are subject to a maximum exclusionary period of three years from the date of the relevant event unless a shorter period is prescribed in national law or a longer period is prescribed in a judgment against the operator. They are also subject to the ability of operators to "self-clean" – that is to demonstrate their reliability despite the existence of one of the grounds of exclusion. In order to do this, the operator must show that it has:

- *paid or undertaken to pay compensation in respect of any damage caused by the criminal offence or misconduct;*
- *clarified the facts and circumstances in a comprehensive manner by actively collaborating with the investigating authorities; and*

- *taken concrete technical, organizational and personnel measures that are appropriate to prevent further criminal offences or misconduct.*

It is up to the contracting authority to assess the measures taken and to determine whether they are sufficient to allow the operator to participate in the procedure, providing reasons to the operator if they are excluded.

3.1.2 U.S. best practice examples

Executive Order on Climate-Related Financial Risk

On 20 May 2021, President Biden signed the [Executive Order \(EO\) on Climate-Related Financial Risk](#). This EO proposes changes to federal procurement that would require major suppliers to disclose emissions related information and ensure the government can minimize the risk of climate change.

Specifically, the EO requires the Federal Acquisition Regulatory Council, in consultation with the Chair of the Council on Environmental Quality and the heads of other agencies as appropriate, to consider amending the Federal Acquisition Regulation (FAR) to:

- *require major federal suppliers to publicly disclose GHG emissions and climate-related financial risk and to set science-based reduction targets; and*
- *ensure that major federal agency procurements minimize the risk of climate change, including requiring the social cost of GHG emissions to be considered in procurement decisions and, where appropriate and feasible, give preference to bids and proposals from suppliers with a lower social cost of GHG emissions.*

The Green Procurement Compilation (GPC)

The [Green Procurement Compilation](#) (GPC) is a comprehensive green purchasing resource designed for federal contracting personnel, program managers and vendors working with U.S. federal agencies. It identifies applicable U.S. federal green purchasing requirements and consolidates and organizes information from federal environmental programs in one place, avoiding the need for federal purchasers to visit multiple websites. Goods and services from any supplier compliant with the Trade Agreements Act (TAA) can qualify for these programs.

The GPC allows procuring officials to:

- *Quickly identify federal green purchasing requirements for the products and services they buy;*
- *Search by keyword or browse by category to find products and services;*
- *Determine procurement options available to federal buyers, including applicable GSA Multiple Award Schedules (MAS), GSA Global Supply and other Best in Class (BIC) solutions;*
- *Learn more about federal environmental programs, such as WaterSense and Bio-Preferred; and*
- *Discover and additional procurement guidance that will help officials meet their sustainability goals.*

The GPC identifies all product types covered by federal environmental programs, including:

- *Bio-Preferred;*
- *Comprehensive Procurement Guidelines (CPG);*
- *Safer Choice;*
- *ENERGY STAR;*
- *Federal Energy Management Program (FEMP);*
- *Significant New Alternatives Policy (SNAP);*
- *WaterSense;*

- *Private sector standards and ecolabels included in EPA’s Recommendations of Specifications, Standards and Ecolabels; and*
- *Other certifications or standards that apply equivalent criteria.*

In order to determine which requirements, apply to the products they are interested in, a user may search or browse for the product. The guidance addresses green product requirements and optional green practices that federal buyers may incorporate into service contracts. Each service includes a variety of downloadable resources, such as sample green solicitation language and previous solicitation examples.

In addition, the GPC:

- *Allows users to download the entire GPC database into a single Excel, Text, or CSV file;*
- *Allows users to create and download customized product lists;*
- *Remains current with the latest changes in green product designations;*
- *Provides basic life cycle cost-savings information for many energy-consuming products;*
- *Allows agencies to add agency-specific green product requirements and content.*

Box XVIII. SFTool Product Search

The SFTool Product Search (<https://sftool.ecomedes.com/>) is the easy product search for green procurement, where you can find the specific products that comply with the category rules set out in the Green Procurement Compilation (GPC) to simplify procurement, documentation, and reporting.

It is the largest curated database of compliant high-performance products in the marketplace and includes:

- 15+ product categories;
- 4,500+ brands;
- 20+ ecolabels/certifications;
- Over 150,000 products;

[SFTool Product Search](#) is free for buyers, project teams, subcontractors, distributors, and suppliers. It allows all users to:

- Search and filter results within a complaint catalogue of products;
- Compare, analyze and document compliance;
- Create project and purchase analysis in a single click; and
- Track overall performance toward mission, targets and goals.

For access to the GPC, click here: <https://sftool.gov/greenprocurement>.

3.2 Technical specifications and award criteria

Technical specifications

Environmental considerations can be included in technical specifications provided they are not discriminatory and are described in terms of performance and functional requirements, rather than design or descriptive characteristics. Prioritizing greener solutions could be done by procuring products or services that meet specific environmental minimum requirements, labels, standards, certifications or equivalent.

Award criteria

Another way is adding green considerations in the award evaluation, where using evaluation criteria such as “the most advantageous tender” (“the most economically advantageous tender” (the “MEAT” criterion) or equivalent), or “Best Value”, rather than the lowest price, can be an important tool for advancing environmental objectives, consistent with the principle of “best value for money”. One can use a Life-Cycle-Cost (LCC) approach in order to award contracts to those offers that provide the best environmental impact across the whole life cycle of the object of the procurement.

3.2.1 EU best practice examples

Box XIX. Using technical specifications in procuring ICT workplace hardware

The Ministry of Economic Affairs and Climate Policy of the Netherlands won the 2022 Procura+ Procurement Award for its government-wide procurement “Category ICT Workspace Central Government (IWR)”.³ In this specific category, procurement projects are awarded for recognising sustainability and circularity as the core value of the procurement project.

The award criteria were based on the EU GPP criteria for computers, monitors, tablets and smartphones. For what regards the energy and climate requirements, the tender specifications included:

- *Compliance with the relevant EU eco-design requirements, EU energy labels, EU ecolabels and US Energy Star requirements or equivalent;*
- *The CO2 footprints and a Life Cycle Analysis calculation for all products, covering at least the life cycle stages raw material extraction, production, downstream transport, use and where available also for end-of-life;*
- *Use of the Fairtrade Climate Standard to require suppliers to compensate for all the CO2 emitted by the delivered products across the life cycle;*
- *Requirement to maximize reuse and repurposing (minimum 80% of products repurposed for a second or third life) and to recycle remaining components and compensate for waste in compliance with WEEE requirements;*
- *Purchased products, excluding accessories, had to be TCO Certified, and repairability and the availability of spare parts had to be ensured for at least three to five years after the end of sale on the Dutch market. Use of the TCO certification also makes the process less bureaucratic compared to other options; and*
- *All products had to comply with the EU ROHS and REACH legislative requirements to ensure any hazardous substances and chemicals were avoided.*

Since the award in July 2021, the project has already led to 17% CO2 reduction compared to 1990 and 3,36 kilotons of CO2 has been compensated through Fairtrade Climate Standard credits. As the tender specifications require contractors to keep improving their environmental

³ For results in the 2022 Awards, please visit: <https://procuraplus.org/dev/awards/awards-2022/>.

performance during the contract duration, even more ambitious results are expected to be achieved in the future.

More information about the tender: <https://ted.europa.eu/udl?uri=TED:NOTICE:254436-2021:TEXT:EN:HTML>. More information about the Procura+ Award: <https://procuraplus.org/awards/>.

Use of eco-design criteria and energy labels across different sectors

The EU energy labelling and eco-design legislation helps improve the energy efficiency of products on the EU market. Eco-design sets common EU wide minimum standards to eliminate the least-performing products from the EU market. As products that do not meet these minimum requirements are not allowed to be sold on the EU market, eco-design criteria effectively ban those products from the EU market that are not considered energy-efficient enough. Those products that meet the minimum requirements are assigned energy labels that provide a clear and simple indication of the energy efficiency and other key features of products at the point of purchase.

Box XX. EU energy labels

According to the EU energy labelling and eco-design legislation, products are labelled in classes from the most energy-efficient ones (label corresponding to energy class A) to the least energy-efficient ones (label corresponding to energy class F).

Labelling has several benefits:

- *It creates competition in the market that encourages manufacturers to continue to improve their products in order obtain a label of a higher class;*
- *A to F scale labels are user-friendly and make it easier for consumers to save money on their household energy bills and contribute to reducing GHG emissions across the EU;*
- *Labelling does not involve a costly compliance testing procedure for manufacturers to put a product with an EU energy label on the market.*

Thousands of products across tens of product categories from manufacturers all across the world have registered their product information with their corresponding EU energy label in the EPREL database.

The EU legislation for energy labels and eco-design is estimated to bring energy savings of approximately 130 million tonnes of oil equivalent (Mtoe) by 2030. For customers, this will mean an average saving of up to EUR 312 per year on their energy bills. For companies, these energy efficiency measures bring EUR 31 billion in extra revenue.

For more information about EU eco-design criteria and EU energy labels visit the https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/about_en#Energylabels.

EU legislation is currently being revised to require public procurers across all EU countries to buy products from the highest two populated classes of EU energy labels. The EU eco-design framework is also being revised in order to set a wider range of requirements on a growing range of product categories including on product durability, reusability, upgradability and reparability, presence of substances that inhibit circularity, energy and resource efficiency, recycled content, remanufacturing and recycling, carbon and environmental footprints and information requirements. Part of this effort is to introduce a new Digital Product Passport that will provide information about products' environmental sustainability.

Box XXI. Italian requirement for minimum energy and environment sustainability criteria in procurement

Italy was the first EU country to make the use of minimum energy and environmental sustainability criteria (MEC) mandatory in its Public contracts code. This obliges Italian public buyers to use technical specifications, contract clauses and award criteria that incorporate MEC requirements when identifying most economically advantageous tenders. These obligations apply to tenders of any amount, for the categories of supplies, services and works covered by the MEC adopted under the GPP national plan. Energy labels are used to verify compliance with the criteria regarding energy efficiency. Meanwhile Italy has set mandatory Minimum Environmental Criteria for 16 product groups.

And the effects of this decision are already visible in increasing positive energy efficiency impacts from the use of the MEC. For example, the central purchasing body for the Italian public sector Consip records massive energy savings and reductions of energy emissions that have been achieved across nation-wide contracts for different product categories like building heating/cooling, lighting etc.

More information about the Italian Minimum Energy and Environmental Criteria and impacts achieved by Consip procurements:

- <https://ec.europa.eu/environment/gpp/pdf/Gironi.pdf>; https://projects2014-2020.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1645896698.pdf
- <https://www.forumcompraverde.it/en/il-gpp-obbligatorio/>; [https://gpp2020.eu/fileadmin/files/Webinars/Consip s Approach to Energy Efficiency FINAL.pdf](https://gpp2020.eu/fileadmin/files/Webinars/Consip_s_Approach_to_Energy_Efficiency_FINAL.pdf)

Use of GPP criteria and ecolabels when procuring office supplies

Box XXII. Procuring office supplies in a sustainable manner

The Hungarian Public Procurement and Supply Directorate-General, which conducts centralised public procurement procedures at national level for around 1,000 public authorities, has been applying GPP criteria in public tenders for several years.

Already in 2010, GPP criteria were applied in big framework contracts for example **for office paper and supplies**. For the supply of office paper, it was mandatory to submit at least one green product. Tenderers were required to offer office paper, envelopes and paper arch files made from 100% recycled fibres. The ecological criteria of the EU Ecolabel or other type I eco-labels directly related to paper production had to be met. This included the requirement that paper be elemental chlorine-free (ECF) or totally chlorine-free (TCF). In terms of verification, all products carrying the EU Ecolabel were deemed to comply. Other Type I eco-labels were also accepted, as well as any other appropriate means of proof such as a technical dossier of the manufacturer or a test report from a recognised body.

The framework entered into force on 31 January 2011, and public authorities have bought 980 million HUF (EUR 3.2 million) worth of products since then. The purchase of 100% recycled paper enabled to reduce impacts on deforestation and loss of biodiversity by reducing the volume of virgin pulp required. In addition, where post-consumer recycled fibre was used, the amount of water and energy required during the production process was significantly reduced. Requiring chlorine-free bleached paper avoided introducing toxic and poorly degradable substances in the aquatic environment.

Including green requirements in the call for tenders did not increase administrative burdens. It also did not narrow the competition, because there were many green products available on the market already. This positive experience has triggered the Directorate to increase the number

and value of green products and services purchased within the centralised public procurement system steadily afterwards.

More information on this case in the EU GPP newsletter:

https://ec.europa.eu/environment/gpp/pdf/news_alert/Issue16_Case_Study37_Hungary_supplies.pdf.

Use of circular economy requirements in tender specifications for buildings

Box XXIII. Circular economy requirements for buildings

In 2020, a large public developer in the region of Strasbourg in France, SERS (Société d'Aménagement et d'Équipement de la Région de Strasbourg) launched a call for tenders with the objective to increase the amount of reused building material. They noticed that often buildings are demolished without even assessing the possibility of reclaiming certain elements and materials, while in many cases materials are easily dismantled and/or are of interest to professional resellers. To achieve this, they compiled an inventory of the reusable materials and the contracting authority investigated if there was a market for reclaimed materials.

The reclamation targets were expressed under two forms in the tender document:

In form of technical specifications:

Some targets were formulated as technical specifications, with a minimum quantitative target to be reached. This concerned more specifically three large batches of materials, with a very high reuse potential (category A):

- *Cast-iron radiators (two different types), for which at least 80% of the pieces needed to be reclaimed for reuse;*
- *Structural timber in the roof, for which at least 50% of the total volume was to be reclaimed for reuse;*
- *Enamelled wall covering tiles, for which at least 50% of the surface was to be reclaimed for reuse.*

In form of award criteria:

In the award criteria, tenderers were invited to commit to achieve better reclamation rates than the minimum targets for the three main batches of reusable materials. Additionally, they could also commit to reclaim other batches mentioned in the reclamation audit (that included metallic staircases, handrail, guardrail, antique windows, lighting, doors and sanitary equipment).

This approach led to positive results: All participating bidders complied with the minimum requirements. Some bidders committed to go further than the requirements in terms of reclamation. Pricewise, the different offers were very comparable for some operations, but also presented more important divergences for others. The dismantling of the mural tiles, for instance, varied between 16 and 25 EUR/m² (with an average at 20 EUR/m²). While the dismantling of the structural timber, however, varied between 20 and 175 EUR/m³ (with an average at 126 EUR/m³). These differences can be explained by the fact that these operations are relatively new.

The tenderer that was awarded the contract was not the most ambitious in terms of reclamation targets. In its offer, it stated that it would reach the minimum target. Its offer was the best value-for-money.

The dismantling work started in August 2020 and ended in June 2021. During the execution of the contract, the tenderer managed to go further than initially planned. The dismantling of the initial batches was as efficient as planned, with satisfactory recovery rates. The contractor also

managed to contact a professional dealer ready to buy the batches of dismantled materials at an attractive price.

More information:

- Project webpage: <https://sers.eu/realisations/nextmed-strasbourg/>
- Full case description in EU GPP newsletter: https://ec.europa.eu/environment/gpp/pdf/news_alert/Issue114_NewsAlert_CaseStudyStrasbourg.pdf
- Link to contract notice on TED: <https://ted.europa.eu/udl?uri=TED:NOTICE:366785-2020:TEXT:EN:HTML&src=0&tabId=0>

3.2.2 U.S. best practice examples

Integration of GPP criteria into contract specifications

Box XXIV. Climate Risk Management Requirements

The General Services Administration (GSA) Federal Acquisition Council (FAC) reviews all major contracts to ensure climate resilience clauses and requirements are included prior to issuance of the RFPs. Acquisitions for the top five priority goods and services are reviewed by the FAC to assess the need for climate risk management requirements. In 2022, this resulted in climate risk requirements being incorporated into multiple solicitations with a combined spend of more than \$400 million.

Experts use this process to provide reviews to Contract Managers and to procurement leadership for tracking and monitoring progress in increasing alignment with priority clauses suggested for inclusion based on the environmental impacts of the products/services being tendered.

More information is available: <https://www.sustainability.gov/pdfs/gsa-2022-cap.pdf>.

Use of GPP criteria in award criteria

Box XXV. Alliant 2 government acquisition program

Alliant 2, a Best-in-Class Governmentwide Acquisition Contract (GWAC), is preferred government-wide solution, offers artificial intelligence (AI), distributed ledger technology (DLT), robotic process automation (RPA), and other types of emerging technologies. It provides best-value IT solutions to federal agencies, while strengthening chances in federal contracting for small businesses through subcontracting. This contract includes and monitors contract requirements for contractors to track and reduce GHG emissions in several dozen contracts within the Alliant 2 GWAC program.

GSA required vendors on the [Alliant 2](#) governmentwide IT solutions contract to submit sustainable practices and impact disclosures outlining how they measured and reduced greenhouse gas emissions associated with the services provided. Alliant 2 sustainability requirements included progressive milestones as the period of performance progressed. This approach demonstrated the effectiveness of working directly with contractors awarded large government wide acquisition contract vehicles to reduce emissions.

More information is available: <https://www.gsa.gov/technology/it-contract-vehicles-and-purchasing-programs/governmentwide-acquisition-contracts/alliant-2>.

Frameworks and tools for managing climate risks in federal supply chains:

Managing climate risks in federal supply chains

The U.S. Federal Government has a number of tools and resources to guide contracting authorities to manage climate risks:

- **[SFTool: Managing Climate Risks to Federal Supply Chain](#)**: GSA developed this framework to provide guidance to federal agencies ready to assess observed and expected climate or weather-related risks (e.g., extreme heat waves, tropical storms and hurricanes, wildfires, etc.) to supply chains and develop plans to minimize those risks;
- **[SFTool: Responsible Business Conduct](#)**: This module provides a framework for incorporating best practices and resources for responsible business conduct within procurements. Responsible business conduct includes promoting workers' rights and safe working conditions, preventing human trafficking, and addressing other human rights-related risks;
- **[Guidelines for Energy Management](#)**: EPA offers a proven strategy for superior energy management with tools and resources to help each step of the way. Based on the successful practices of ENERGY STAR partners, these guidelines for energy management can assist your organization in improving its energy, and its financial performance while distinguishing your organization as an environmental leader;
- **[Green Power Locator](#)**: Buying renewable electricity is one of the easiest ways for many small businesses to reduce their GHG footprint. In many areas, green power options are available directly through your local utility. This Department of Energy tool helps locate providers of renewable electricity by state.

3.3 Contract terms

Contract clauses are a key instrument to turn the environmental commitments within a supplier's offer (technical specifications and also those scored in the award criteria) into contractual obligations. Contract clauses can also require the contractor to execute its duties in a specific, environmentally friendly manner. These types of clauses may include requirements on use, reuse, recycling and disposal of packaging, efficient use of energy and water, training of the staff performing the contract in energy savings, and preventing environmentally harmful behaviours.

In addition, contract terms are crucial to establishing monitoring and control mechanisms on the environmental aspects and goals of the contract, as well as the environmental impact of the performance and its production/life cycle, auditing mechanisms, terms on disclosure of environmental impact of the contract, escalation mechanisms and penalties in cases where the contractor fails to comply with its environmental duties and commitments under the contract.

3.3.1 EU best practice examples

The European Eco-Management and Audit Scheme (EMAS) developed by the European Commission certifies organizations that implement permanent improvement of their environmental performance. EMAS is a tool that public buyers are encouraged to use in contractual clauses to ensure that suppliers implement a certified environmental management system during the implementation of a contract.

Box XXVI. Contract clauses in the procurement of pharmaceuticals in Sweden

Swedish County Councils are widely using contract clauses when procuring pharmaceuticals to achieve more environmentally responsible procurement. This can be ensured in different ways and below examples show the type of clauses used.

1) By implementing an environmental management system

The supplier shall, no later than six months after signing the contract, have established a structured and documented environmental work plan, including an environmental policy, measurable and time-related goals, subject for examination by the procurer. Information about the environmental work is linked to a certified environmental management system such as EMAS or ISO 14001 or an equivalent environmental management system. The environmental work shall be active during the entire contract period. The supplier shall also appoint a person responsible for the environmental work and ensure that the goals will undergo follow-up activities at least once a year.

2) By offering aquatic environmental information

The supplier commits itself from the day of signing the contract, for the products subject for the procurement, provide own environmental information or refer to other environmental information which corresponds to the transparent model for environmental classification practiced in FASS. This entails, that the environmental information shall be verified and approved by a competent third party before its publication. Additionally, the supplier shall post this information on www.fass.se or another publicly available website.

The supplier commits itself from the day of signing the contract, to provide a description where the environmental information is available for the pharmaceuticals subject for the procurement. The supplier shall inform which competent third-party has verified and approved the environmental information. Furthermore, it should be justified if there is a lack of environmental information available for specific substances.

3) By implementing environmental routines carried out in the supply chain

The supplier shall, no later than six months after the start of the contract work, have implemented routines securing a minimal environmental impact from the proper use and handling of active substances and other raw materials/chemicals made use of in the manufacturing process of the offered product. These routines should at least include the following:

- *national legislation for environment, health and safety;*
- *information about sampling frequency and reporting from control of pollutant emissions to soil, water and air from the manufacturing process of the active substance and other chemical substances; and*
- *a continuous dialogue with sub-suppliers with regard to their control of emissions of chemicals to soil, water and air encompassing a description of how the dialogue is carried out, risk assessments and how non-compliances are handle.*

In addition, contract clauses are also used for other purposes, such as ensuring that suppliers:

- *Commit to comply with environmental code of conducts;*
- *Continuously improve their environmental performance;*
- *Pass on environmental procurement requirements along the value chain from suppliers to their sub-suppliers and a mandate to follow-up achievements reached by sub-suppliers;*
- *Regular report about the result of their environmental work as a result of the procurement criteria; and*
- *Inform the procurer about compliance with other duties related to the suppliers' environmental work such as producer responsibility.*

More information: <https://www.diva-portal.org/smash/get/diva2:1389922/FULLTEXT01>.

3.3.2 U.S. best practice examples

The Federal Acquisition Regulations (FAR) requires 95% of all new contract actions include sustainability requirements and provide for specific contract clauses that procuring officials use in solicitations.

Requiring specific award criteria and providing specific contract clauses to federal agencies helps to ensure that sustainable procurement policies are carried out consistently and procurement solicitations are able to obtain sustainable procurement bids.

Box XXVII. Sustainability requirements for federal contracts

Federal regulations foresee that federal agencies shall advance sustainable acquisition by ensuring that 95% of new contract actions for the supply of products and for the acquisition of services (including construction) require that the products meet certain sustainable criteria.

The Federal Government will maximize procurement of sustainable products and services, including ENERGY STAR rated equipment; products that are bio-based, made from recycled content, water-efficient, fuel-efficient, made with safer chemical ingredients, and non-ozone-depleting; and products that have earned third-party ecolabels reviewed and recommended by the Environmental Protection Agency. Additionally, agencies should avoid the procurement of products containing perfluoroalkyl or polyfluoroalkyl substances (PFAS).

More information is available at:

- <https://www.acquisition.gov/far/subpart-23.1>
- <https://www.sustainability.gov/federalesustainabilityplan/procurement.html>

As a result of these requirements, in 2020 the federal government purchased more than 27.4 million EPEAT-registered products resulting in a cost savings to the federal government of around USD 1 billion.

Federal purchasers leading by example influence what is available for other purchasers to buy as well. According to the Global Electronics Council (GEC), over their lifetime, compared to products that do not meet EPEAT criteria, the more than 355 million EPEAT-registered IT products purchased worldwide in 2020 will result in:

- *Reduction of 23.6 million metric tons of GHGs, equivalent to taking over 5 million average U.S. passenger cars off the road for a year;*
- *Reduction of over 1.7 million metric tons of non-hazardous waste, equivalent to the annual waste generation of over 932,000 U.S. households;*
- *Reduction of over 13,000 million metric tons of toxic substances, equivalent to the weight of 5.8 million bricks.*

Required Changes to Contract Language Changes

Box XXVIII. Department of Transportation (DOT) Contract Language Changes

Design and construction contracts for new buildings include language to specify that architects and civil engineers evaluate strategies and materials to reduce climate change risk. In addition, contracts specify that DOT-identified resilience strategies must be incorporated into new building designs. For example, cables that previously would not be specified as saltwater-resistant may be specified as such in new building designs to prevent damage resulting from salt water intrusion.

More information: <https://www.sustainability.gov/pdfs/dot-2021-cap.pdf>.

4. POST-CONTRACT AWARD STAGE

In order to ensure that the environmental objectives set for a specific procurement are really implemented, it is important to start follow-up activities as early as possible after the contract has been signed and the work begins in order to ensure that the deliverables meet the defined environmental requirements.

This includes, for example, monitoring the implementation of the contract through **verification mechanisms** that are based on clear performance indicators to ensure the efficiency and effectiveness of the different GPP targets and on-site auditing of the contractors.

It is important to also foresee sufficient follow-up activities with a longer-term perspective that draw lessons learned from applying green procurement practices regularly across several procurements in order to keep on improving GPP procurement over time. Monitoring could thus also include the collection and reporting of green procurement statistics. Governments therefore need to find and implement effective and accurate methods to collect and report on the total value of green procurement awarded in a given year and on the environmental impacts that were achieved by those procurements.

4.1 EU best practice examples

Key performance indicator (KPI) setting and requesting supplier reports as a contract performance verification mechanisms

Box XXIX. Code of conduct and reporting requirements in Finnish procurement

Finnish authorities jointly developed contract clauses that require suppliers to comply with an environmental [code of conduct](#) and report on their performance to achieve environmental key performance indicators (KPIs) during the contract.

The below contract conditions are used in contracts for different product categories for suppliers of goods and services.

- *Comply with the conventions mentioned above in section "A. International conventions": the Vienna Convention and the Montreal Protocol, the Basel Convention, the Stockholm pops Convention and the PIC Convention, as well as the local and national environmental legislation;*
- *Ensure that the products and services that it sells, are produced in an environmentally responsible way;*
- *Monitor and measure the environmental impact of its actions and its supply chain, seeking to continually improve its environmental performance and minimize the use of resources and the production of waste;*
- *Aim towards assessing the environmental impact of the products and services it produces, covering their entire life cycle;*
- *Aim to place requirements to its supply chain, ensuring environmentally friendly production and diminishing the carbon footprint of the operations.*

These contract terms come also with provisions on compliance:

- *Transparency in the supply chain is required to guarantee compliance with this Code of Conduct. Supplier and/or its parent company will publish annually a sustainability report;*
- *In order to assess compliance, the Client will monitor the compliance with this Code of Conduct during the Contract period. For this purpose, the Client may request the Supplier to present documents and clarifications, take corrective actions and report on their implementation. The*

Client can conduct reviews as well as on-site and off-site audits on the Supplier and/or its subcontractors in accordance with the Procurement Contract;

- *The Supplier shall take relevant contractual measures in order for the content of this Code of Conduct to be implemented in its own operations, as well as in the supply chain. The supplier shall complete the [self-assessment form](#) to report to the contracting authority.*

Requiring independent third parties to implement environmental audits and continuously improve environmental performance with suppliers

Box XXX. Electronics sector requirement of third-party environmental audits of suppliers

In the electronics sector, public buyers in Europe often appoint independent third parties to audit their contractors, not only to check during contract implementation whether the contractor is respecting the environmental requirements of the contract but also to actively work with the contractors on continuously keep improving their environmental performance.

Examples of such third-party organizations that are often appointed by public buyers are Electronics Watch and Ecovadis.

More information can be found at:

- https://electronicswatch.org/en/contract-conditions_2548258
- <https://ecovadis.com>

While currently there is no systematic monitoring that allows to quantify the total value that is spent on GPP in the EU, the EU has taken steps towards actions in this regard. This includes notably:

- *Adapting the standard forms for the publication of contract notices in the field of public procurement in the European Tender Database (eForms) to provide for collection of GPP data. Fields related to GPP can be filed voluntarily but each EU Member State can make this mandatory.*
- *Committing in the Circular Economy Action Plan to propose minimum mandatory GPP criteria and targets in sectoral legislation and phase in compulsory reporting to monitor the uptake of GPP. A few EU Member States already have national GPP monitoring systems (Belgium, Netherlands, Austria).*

Furthermore, the EU is tracking the progress of EU Member States to achieve European climate and energy targets via governance mechanisms that involve national planning, reporting and European scoreboards. For example in 2019, all EU Member States were required to draft [NECPs](#) for 2020-2030. This approach requires a coordination across all government departments and it provides a level of planning that aims to align national investments (including those implemented through public procurements) with the EU climate and energy targets. In 2020, The EU published the first EU-wide assessment on the plans. Member States must submit progress reports every two years.

4.2 U.S. best practice examples

Tracking government-wide performance data on sustainable procurement

The U.S. Federal Government is the largest energy consumer in the nation, managing more than 300,000 buildings and 600,000 vehicles. By increasing the efficiency of federal operations, federal agencies cut waste, save taxpayer dollars, reduce impacts on the environment, and promote clean air, land, and water.

In order to demonstrate the effectiveness of GPP and track progress in meeting some of the federal government's GPP goals, federal agencies are required to submit an annual scorecard on their compliance with sustainability targets and report this data to the federal procurement data system (FPDS).

Box XXXI. U.S. federal agencies annual scorecard sustainability targets

Some of the targets that the federal government tracks data on include:

- **Facility Energy Efficiency:** Agencies are assessed on meeting or exceeding the statutory goal of a 30% reduction in Btu/GSF from a 2003 baseline and demonstrating a reduction from the prior year;
- **Identification of Efficiency Measures/Investment:** Agencies are assessed on covered facility evaluations. The Office of Management and Budget (OMB) will also track percentage of efficiency investment executed through performance contracts, potential investment in identified ECMs and reported project investment in covered facilities;
- **Renewable Energy:** Agencies are assessed on meeting or exceeding 7.5% renewable electricity use annually. OMB will also track non-electric RE use;
- **Water Efficiency:** Agencies are assessed on continued reductions in potable water use intensity and a 20% reduction from its 2007 baseline;
- **High-Performance Sustainable Buildings:** Agencies are assessed on the number and square footage of owned federal buildings that are sustainable buildings and are tracked in the Federal Real Property Profile (FRPP);
- **Fleet Management:** Agencies are assessed on meeting or exceeding a 20% reduction in petroleum use compared to 2005 and demonstrating a reduction from the prior year. OMB will also track alternative fuel use percentage, fleet acquisitions, and installed EV charging ports. As of 2022, federal agencies will also be assessed with meeting net zero-emission federal fleet targets for all new contract actions;
- **GHG Emissions:** Agencies' GHG emission reductions compared to FY 2008 base year by scope and end-use sector will be tracked and reported as an indicator on the Scorecard along with direct GHG emissions intensity from energy use in all facilities;
- **Sustainable Acquisition:** Agencies are assessed on the change from prior year performance of the percentage of contract actions and dollar value of sustainable acquisitions as reported in the FPDS, which include the mandatory clauses for the purchase of biobased, energy-efficient, recycled content and other sustainable attributes.

Federal government-wide performance data by year can be found here: https://www.sustainability.gov/government_data.html.

Federal Agency-Specific Progress on Sustainability and Climate Resilience Goals, including adaption plans, reports, scorecards, and agency-specific, interactive sustainability progress graphs can be found here: <https://www.sustainability.gov/progress.html>.

LIST OF ABBREVIATIONS

Abbreviation	Full definition
AI	Artificial Intelligence
ALWT	Arizona Land and Water Trust
BIC	Best in Class
Btu/GSF	British thermal units per Gross square foot
CCS	Carbon Capture and Storage
CFIT	Circular and Fair ICT Pact
CLP	Classification, Labelling and Packaging
CPG	Comprehensive Procurement Guidelines
DENIX	DoD Environment, Safety & Occupational Health Network and Information Exchange
DLT	Distributed ledger technology
DoD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
ECF	Elemental chlorine-free
EFTA	European Free Trade Association
EMAS	European Eco-Management and Audit Scheme
EEA	European Environment Agency
EO	Executive Order
EPA	Environmental Protection Agency
EPEAT	Electronic Product Environmental Assessment Tool
EPREL	European Product Registry for Energy Labelling
EU	European Union
FAI	Federal Acquisition Institute
FAR	the Federal Acquisition Regulation
FEMP	Federal Energy Management Program
FPDS	Federal Procurement Data System
FRPP	Federal Real Property Profile
GAP FAC	GSA Acquisition Policy Federal Advisory Committee
GEC	Global Electronics Council

GHG	Greenhouse Gas
GPA	Agreement on Government Procurement
GPC	Green Procurement Compilation
GPP	Green Public Procurement
GSA	General Services Administration
ICT	Information and Communications Technology
ITU	International Telecommunication Union
IWR	Workspace Central Government
KPI	Key performance indicator
LCA	Life Cycle Assessment
LCC	Life Cycle Costing
LNG	Liquefied Natural Gas
MAS	Multiple Award Schedules
MEAT	Most Economically Advantageous Tender
MEC	Minimum Energy Criteria
MIT	Massachusetts Institute of Technology
Mtoe	Million tonnes of oil equivalent
NAP	National Action Plan
NECP	National Energy and Climate Plan
OMB	Office of Management and Budget
PCP	Pre-commercial Procurement
PFAS	Per- and Polyfluoroalkyl Substances
PIC	Prior Informed Consent
ProcurCompEU	Public Procurement Professionals
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
REPI	Readiness and Environmental Protection Integration
RPA	Robotic Process Automation
SAMSA	Southern Swedish municipal waste operators' cities
SERS	Société d'Aménagement et d'Équipement de la Région de Strasbourg
SNAP	Significant New Alternatives Policy
SPP	Sustainable Procurement Program
TAA	Trade Agreements Act

TCF	Totally Chlorine-free
TCO	Confederation of Professional Employees
U.S.	United States
UN SDG	United Nations 2030 Sustainable Development Goal
WTO	World Trade Organization
ZEV	Zero-emissions Vehicle

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