

Ecolabels criteria for electronics and their use in sustainable public procurement

Cases from TCO Certified and EPEAT

GOOD PRACTICES IN THE USE OF ECOLABELLING AND SUSTAINABLE PUBLIC PROCUREMENT



EcoAdvance
SUSTAINABLE PUBLIC PROCUREMENT AND LABELING



One planet
inform with care

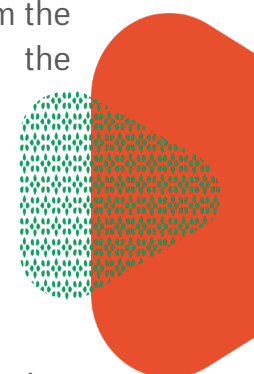


Good practices in the use of ecolabelling and sustainable public procurement

This series of good practices reflects experiences on ecolabelling, sustainable public procurement, or the joint use of ecolabelling and sustainable public procurement that have demonstrated positive impacts on fostering sustainable consumption and production — for this reason, they are called "good practices." They focus on ecolabels and environmental certifications:

- **Ecolabels:** formerly known as Type 1 ecolabels and defined by ISO 14024. They are voluntary programs based on multiple criteria and lifecycle considerations, with third-party verification. These ecolabels indicate the overall environmental preferability of a product or a service within a particular category. Examples include the members of the [Global Ecolabelling Networking](#), such as the Blue Angel, the China Environmental Labelling, TCO Certified, and EPEAT.
- **Environmental certifications:** they are also voluntary programs, with third-party verification and based on life cycle considerations. The main difference is that they focus on specific aspects (single attributes), like sustainable fishing, sustainable forest management, or organic farming. Examples include members of the [ISEAL Alliance](#), such as the Forest Stewardship Council (FSC), the Marine Stewardship Council (MSC), and the Global Organic Textile Standard (GOTS).

These good practices aim to promote global exchange by providing information and examples of various approaches that entities from different countries and contexts can apply to strengthen the use of ecolabels and sustainable public procurement. They were developed as an outcome of the Working Group on Ecolabelling from the Consumer Information Programme, under the One Planet network, and the EcoAdvance project.



Acknowledgements

This document was compiled within the framework of the Consumer Information Programme from the One Planet Network, Working Group on Ecolabeling, and the EcoAdvance project. It was produced by Universidad de los Andes and the UN Environment Programme (UNEP). The views presented in this publication are those of the authors and do not necessarily reflect the views of the One Planet network or its members in any way or for any purpose. We regret any errors or omissions that may have been unwittingly made.

On behalf of:



of the Federal Republic of Germany



About the Eco-Advance project

The project [EcoAdvance: Ecolabels and Sustainable Public Procurement](#) is jointly implemented by the German Cooperation for Development (GIZ), the United Nations Environment Programme (UNEP) and Öko-Institut, receiving financial support from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and Consumer Protection (BMUV) through the International Climate Initiative (IKI). The project aims to increase the use of sustainable public procurement and ecolabels (ISO 14024) as tools to improve climate mitigation, biodiversity, and resource protection. By supporting ecolabels and sustainable public procurement the project helps to create incentives for cleaner production focusing on high-impact sectors, addressing a major barrier to changing consumption and production patterns: the complexity of communicating the environmental impacts of products and services to consumers and public authorities.



About the One Planet network and the Consumer Information Programme

The [One Planet network \(OPN\)](#) is a multistakeholder community working to engage in dialogue and collaborate on innovative solutions to achieve SDG 12 through global thematic and sectoral programmes. The [Consumer Information Programme](#) of the OPN holds projects, resources, and expertise to inspire a global movement for sustainable consumption and production. Its Working Group on Ecolabeling is led by the Global Ecolabelling Network and UNEP and focuses on supporting collaboration among ecolabels (ISO 14024) programs, facilitating their mutual recognition and providing education, capacity building, and consultation to developing countries and emerging economies to develop and strengthened ecolabels schemes.





Ecolabels criteria for electronics and their use in sustainable public procurement

What is it about?

Computers, displays, and other information technology (IT) products are essential for most private and public organizations. However, they have significant sustainability impacts spanning their entire life cycle. The production phase of IT equipment often involves numerous steps in global value chains, complicating the management and tracking of sustainability impacts. Key issues include the high demand for energy and raw materials, CO2 emissions, water and soil pollution threatening biodiversity and ecosystems, as well as potential labor law violations and health and safety risks for workers.

Additionally, the end-of-life phase generates significant e-waste, creating further environmental challenges. In 2022, a record 62 million tonnes of e-waste was produced globally, with only 22.3% recycled. This problem is projected to escalate, with unrecycled e-waste expected to reach 82 million tonnes by 2030,

resulting in billions of dollars in lost resources and increasing global pollution risks.

Ensuring the sustainability of electronics is crucial to mitigating the environmental and social impacts associated with their production, usage, and disposal.

Ecolabels ensure that electronics are produced under conditions that protect human and worker rights while minimizing environmental impact. They also combat greenwashing (false or unverified environmental claims), bluewashing (false or unverified social claims), and empty sustainability claims by providing proof of compliance with specific environmental and social standards. Moreover, ecolabels offer valuable information to support consumers in making informed decisions.





What are the advantages?

- Ensures that electronics are designed and manufactured in ways that reduce environmental impact.
- Promotes safer working conditions by adhering to strict health and safety standards.
- Helps consumers identify more sustainable options and make informed purchasing decisions.
- Builds market confidence through verified sustainability claims.
- Helps manufacturers stand out in a competitive market by showcasing their commitment to sustainability.
- Drives technological advancements and better practices in the industry, leading to more sustainable product development.



How does it benefit sustainable public procurement?

Prioritizing the purchase of ecolabeled IT products is especially important in sustainable public procurement processes, as the public sector can influence the entire IT supply chain by demanding environmentally and socially responsible practices.

- Reduces costs and simplifies processes for establishing sustainability criteria and verification methods, by leveraging existing ecolabel criteria for electronic products.
- Enables public procurers to make more informed choices based on reliable criteria, as ecolabels require third-party verification.
- Ensures that purchased electronic products meet specific environmental and social standards, directing public funds towards sustainable practices.
- Allows procurers to assess the market's readiness to provide sustainable products based on the availability of certified electronic products.
- Enhances supply chain transparency, making it easier to track and verify compliance with sustainability criteria.
- Aligns procurement practices with national and international sustainability policies and goals.
- Strengthens the adoption of ecolabels by incentivizing companies to certify their products to participate in public procurement, creating a virtuous cycle.



Examples

TCO Certified

[TCO Certified](#) is a leading ecolabel for electronic products, introducing criteria in four focus areas—climate, substances, circularity, and supply chain—to drive progress in sustainability. Every three years, updated criteria are released to further sustainability efforts.

TCO Certified covers multiple product categories, including displays, notebooks, tablets, smartphones, and others. Key criteria from the [Generation 10 update for notebooks](#), released in December 2024, include:

1. Information to End Users:

Requires transparency in providing detailed, accurate, and comparable information about product and manufacturing conditions. Certified products must be clearly identified as more sustainable throughout their life cycle, promoting digital product passports and standardized product information.

2. Socially Responsible Manufacturing:

Addresses social risks in IT supply chains, including poor working conditions, child labor, and corruption. Requires safer working conditions and compliance with standards like ISO 37001 (anti-bribery) and independent verification of due diligence in mineral sourcing, among others.

3. Environmentally Responsible Manufacturing:

Focuses on environmental management systems (ISO 14001) and energy management (ISO 50001). Demands increased renewable energy use, annual reporting on energy efficiency metrics, and disclosure of post-consumer recycled content.

4. User Health and Safety:

Ensures product safety, including protection against overheating, fire risks, and electrical hazards.

5. Product Performance:

Balances performance with energy efficiency, including standards for visual ergonomics and luminescence.

6. Product Lifetime Extension:

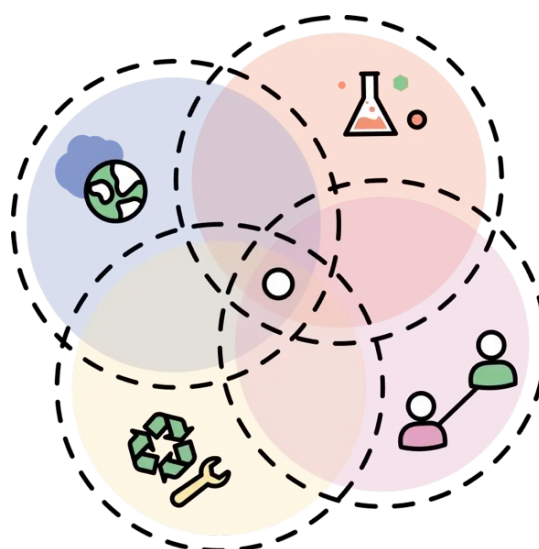
Promotes durability, repairability, and reuse, requiring longer-lasting batteries, standardized connectors, and free warranties.

7. Reduction of Hazardous Substances:

Sets stricter limits than RoHS, requiring independent toxicological tests and increased use of safer substances.

8. Material Recovery:

Focuses on e-waste reduction through material recovery and mandates product take-back systems for certified items.



Source: TCO Certified



The Netherlands' SPP Example

The Netherlands provides an example of sustainable public procurement process that used TCO Certified. In the 2021, the Ministry of Economic Affairs and Climate Policy initiated five procurement procedures for the government-wide purchasing 'Category ICT Workspace Central Government', covering displays, laptops & fixed ICT workstations, android hardware devices & Accessories, iOS, MacOS, and iPadOS devices, and workspace services.

The contracting authority incorporated a variety of green and social criteria into technical specifications, award criteria, and contract performance conditions, including the use of ecolabels. These criteria varied across tenders and included the following innovations:

- All purchased products, excluding accessories, had to be TCO Certified or equivalent.
- Compensation for all CO₂ emissions from delivered products through the Fairtrade Climate Standard or equivalent certifications, as well as waste compensation via TCO Certified Edge E-Waste Compensated or equivalent certifications.
- Compliance with the latest Energy Star criteria for energy performance.
- Availability of spare parts for at least five years, demonstrated by a certificate from an ISO Type I ecolabel.

The 2021 experience impacts include:

- A 17% reduction in CO₂ emissions compared to 1990 levels, with 3.36 K tonnes of CO₂ compensated through Fairtrade Climate Standard credits supporting projects in Burkina Faso, India, and Rwanda.

- Certification of all 13,527 purchased laptops, tablets, and smartphones as e-waste neutral by TCO Certified E-waste Compensated, leading to 4,400 kg less e-waste, 46 tonnes of CO₂ reductions, and increased use of recycled raw materials.
- Extension of electronic product lifecycles to a minimum of 4 to 10 years, depending on the product.



Italy's SPP Example

Another example of TCO Certified being used in sustainable public procurement is from Italy. In 2020, [Region Tuscany](#) in Italy conducted a procurement for the supply of computers, printers, and associated services for managing office workstations. This process applied environmental criteria adapted from [EU GPP standards](#) alongside social responsibility criteria across the supply chain for specific products.

One criterion addressing social aspects required electronics brand owners to adhere to strict policies on responsible sourcing minerals from Conflict-Affected or High-Risk Areas. To ensure compliance, the tender leveraged TCO Certified Generation 8: Brand owners were required to prove membership in initiatives like the European Partnership for Responsible Minerals (EPRM) or the Responsible Minerals Initiative (RMI). Alternatively, they could demonstrate compliance with TCO Certified Generation 8, which provides a robust framework for verifying ethical sourcing of materials such as tin, tantalum, tungsten, and gold.



EPEAT

EPEAT is a leading global ecolabel for electronic technology products, with over 4,000 registered products available in 40 countries. It is owned and managed by the Global Electronics Council (GEC), a mission-driven non-profit organization dedicated to accelerating the market for sustainable electronic technology products.

EPEAT criteria apply to several categories of electronic technology products, including computers and displays, imaging equipment, servers, network equipment, televisions, mobile phones, and photovoltaic modules and inverters. Products independently verified as meeting these criteria are listed in the free online [EPEAT Registry](#). This platform enables purchasers to search by product category, manufacturer, country of use, and EPEAT tier level (Bronze, Silver, and Gold). Bronze products meet all required criteria and demonstrate sustainability leadership. Silver products meet all required criteria and at least 50% of optional criteria, while Gold products meet all required criteria and at least 75% of optional criteria, highlighting a company's commitment to innovation in environmental and social performance.



GEC is nearing the completion of a multi-year initiative to update EPEAT criteria, aligning them with the priority sustainability impacts of electronics and their supply chains. The [Climate Change Mitigation Criteria](#) were published in 2023, while criteria addressing chemicals of concern, circularity/sustainable resource use, and responsible supply chains are set to be published and implemented in 2025.

To encourage early adoption of the climate criteria, GEC introduced [EPEAT Climate+](#), a product-level designation for registered products designed and manufactured with climate change mitigation in mind. Over 1,500 unique EPEAT Climate+ products are currently available on the Registry, and purchasers can filter for these products.

EPEAT Climate [Criteria](#) address critical climate change impacts across the electronics life cycle, focusing on:

1. GHG Emissions and Life Cycle Assessment:

Manufacturers must assess and disclose a product's carbon footprint across its life cycle, including an annual GHG inventory covering [Scope 1, 2, and 3 emissions](#). Optional points are awarded for assessing transport emissions and conducting comprehensive Life Cycle Assessments (LCA) addressing resource depletion and energy consumption.

2. Carbon Reduction Goals Aligned with Climate Science:

Companies must target annual reductions of 4.2% in Scope 1 and 2 emissions and 2.5% in Scope 3 emissions, with long-term goals extending to at least 2030. Optional points are granted for validated net-zero commitments aligned with global climate goals, such as those endorsed by the Science Based Targets initiative.



3. Manufacturing Energy Efficiency:

Manufacturers must enhance energy efficiency in key facilities using energy management systems like ISO 50001 or demonstrate ongoing improvements. Optional points are available for certified performance improvements in final assembly facilities and for disclosing energy data for transparency and accountability.

4. Renewable Electricity Sourcing:

Manufacturers are required to source at least 12.5% of their electricity from renewable sources, with additional points awarded for further increases in renewable energy use within operations and supply chains.

5. High Global Warming Potential Chemicals in Manufacturing:

Manufacturers can earn optional points by reducing fluorinated greenhouse gas (F-GHG) emissions, particularly in flat panel display and semiconductor production.

6. Product Energy Efficiency:

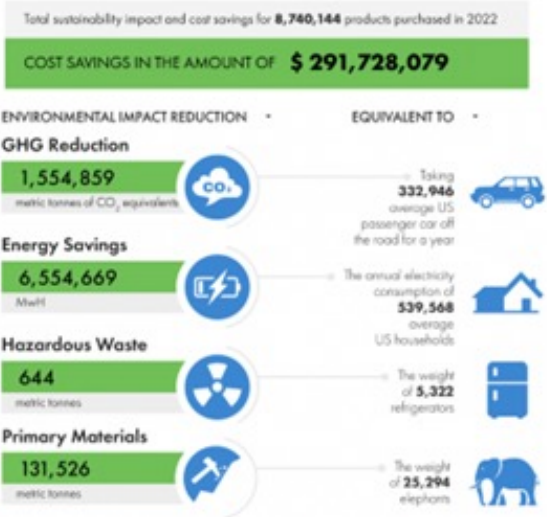
Products must meet or exceed ENERGY STAR standards to reduce energy consumption during operation. This includes energy-efficient subcomponents like external power supplies and battery chargers.

Other EPEAT Criteria address circularity, chemicals, and responsible supply chains, covering aspects such as recycled content, design for reuse and recycling, repairability, responsible recycling, critical and rare earth metals, water use, [EU RoHS](#) and [REACH](#) restrictions, bromine and chlorine in plastics, substance inventory, alternatives assessment, manufacturing process chemicals, fair labor practices, worker health and safety, and responsible mineral sourcing.

[The US Environmental Protection Agency recommends EPEAT](#), and federal regulations mandate the acquisition of EPEAT-registered electronic products under the [Federal Acquisition Regulation \(FAR\)](#). [These measures not only mitigate the environmental and public health impacts of IT products but also ensure efficient use of public resources and promote global market shifts toward sustainable electronics.](#)

GEC offers a [free Environmental Benefits Calculator](#) to help purchasers measure the benefits of procuring EPEAT-registered products. This tool quantifies the environmental advantages of their purchases, exemplified below with data from the US Federal Government's 2022 acquisitions.

2022 US Federal Government Sales EPEAT Impacts



Source: EPEAT

→ [Click here to read more about the benefits of measuring the environmental impact of ecolabels.](#)



Context needed to replicate

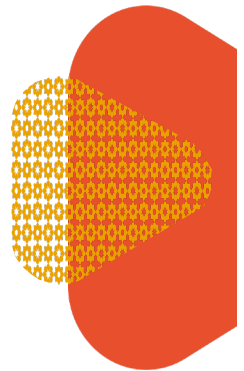
Government support is crucial for incorporating ecolabels and environmental certification criteria into sustainable public procurement (SPP) for electronic products. Public procurement officers and other relevant stakeholders must be educated on the potential of these tools to facilitate SPP implementation and drive the electronic market toward greater sustainability.

Governments should endorse at least one ecolabel or certification and implement policies that prioritize the purchase of certified electronic products. These policies can outline specific sustainability requirements, with ecolabels or certification criteria serving as verification methods to streamline the procurement process.

Depending on market readiness, governments could take a further step by establishing policies that mandate the procurement of certified electronic products.

→ [Learn more about government strategies to educate the public procurement ecosystem on sustainable practices.](#)

→ [Read more about sustainable public procurement policies utilizing ecolabels and environmental certifications.](#)



Join the CFIT Pact!

[The Circular & Fair ICT \(CFIT\) Pact](#) is an international procurement-led partnership aimed at accelerating circularity, fairness, and sustainability in the electronic sector. CFIT promotes the use of common, user-friendly procurement criteria, provides guidance, and facilitates knowledge sharing. The pact seeks to harness collective procurement power, engaging closely with the electronics supply side to drive necessary change and innovation. Governments with circular and fair ambitions for electronics, as well as other public and private organizations procuring ICT, are invited to join the pact.

The CFIT Pact is an initiative under the Sustainable Public Procurement Programme of the One Planet Network. Learn more at: circularandfairictpact.com.



Are you interested in replicating this good practice?

Please contact ciscp@un.org

ADDITIONAL RESOURCES



- The growing environmental risk of e-waste
<https://www.genevaenvironmentnetwork.org/resources/updates/the-growing-environmental-risks-of-e-waste/>
- Global e-Waste Monitor 2024: Electronic Waste Rising Five Times Faster than Documented E-waste Recycling
<https://unitar.org/about/news-stories/press/global-e-waste-monitor-2024-electronic-waste-rising-five-times-faster-documented-e-waste-recycling>
- Navigating the sustainable IT revolution - TCO Certified
https://f.hubspotusercontent40.net/hubfs/8472544/Reports/Navigating-the-Sustainable-IT-Revolution.pdf?utm_medium=email&_hsenc=p2ANqtz--wA4XTwr2Gbx9fij1T8GisLy1FwH6gZasUjXfOTIA6StB2pYOWvSti64aGJ_L5q24xr4e88V99VGXrSXH-o7ugetOUFG&_hsmi=132878182&utm_content=132878182&utm_source=hs_automation
- TCO Certified
<https://tcocertified.com/>
- TCO Certified, Generation 10 for notebooks
<https://tcocertified.com/files/certification/tco-certified-generation-10-for-notebooks.pdf>
- Sustainability and circularity as a starting point for ICT procurement
https://green-business.ec.europa.eu/green-public-procurement/good-practice-library/sustainability-and-circularity-starting-point-ict-procurement_en
[European Green Public Procurement: Case Study on Dutch ICT Procurement](#)
- Procuring sustainable computers, printers and related services
https://green-business.ec.europa.eu/green-public-procurement/good-practice-library/procuring-sustainable-computers-printers-and-related-services_en
- EPEAT
<https://www.epeat.net/>
- Global Electronics Council
<https://globalelectronicscouncil.org/es/>
- EPEAT Criteria
https://globalelectronicscouncil.org/wp-content/uploads/EPEAT_CCM_2023.pdf
- What are Scope 3 emissions and why do they matter?
<https://www.carbontrust.com/our-work-and-impact/guides-reports-and-tools/what-are-scope-3-emissions-and-why-do-they-matter>
- EPEAT and sustainable public procurement in the USA
https://19january2021snapshot.epa.gov/greenerproducts/electronic-product-environmental-assessment-tool-epeat_.html#requirements
- Federal Acquisition Regulation - USA
<https://www.acquisition.gov/browse/index/far>
- Guidance on purchasing EPEAT registered products
https://www.epa.gov/sites/default/files/2020-10/documents/presentation_on_how_to_procure_epeat_registered_products_10.14.20_.pdf

LEARN MORE ABOUT THE ECOADVANCE PROJECT:

oneplanetnetwork.org/knowledge-centre/projects/ecoadvance

READ ALL THE GOOD PRACTICES:

<https://www.oneplanetnetwork.org/news-and-events/news/good-practices-ecolabelling-and-sustainable-public-procurement>

On behalf of:



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