



ecos

Ecodesign and Digital Product Information Systems – Unlocking Circularity and Transparency

16th Symposium on ICTs, Environment, Climate Change and Circular Economy

Day 3: 21 May 2026 - Dedicated to Digital Product Information Systems (DPIS), E-waste, and Circular Economy

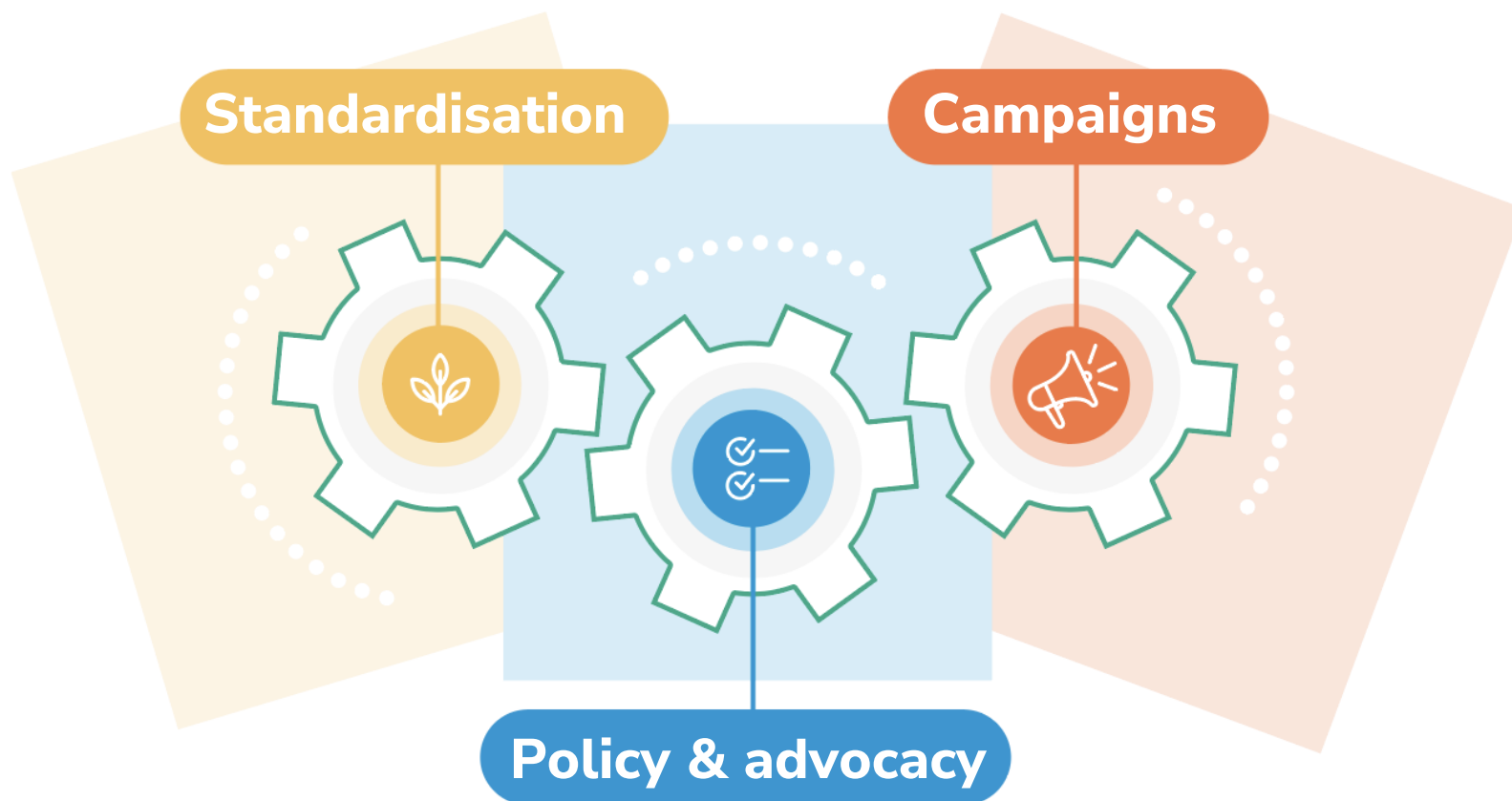
ECOS

Environmental Coalition on Standards

is an international NGO with a network of members and experts advocating for environmentally friendly technical standards, policies, and laws.



The ECOS method – how do we work?



ECOS in Africa: Goal & Objectives

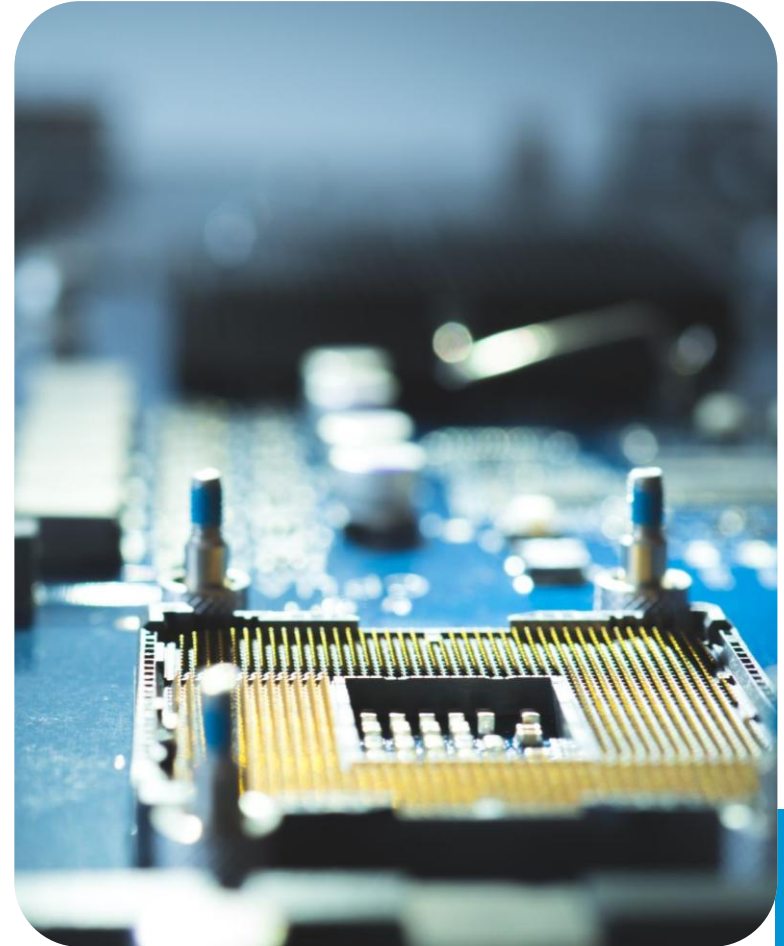


Environmentally ambitious and inclusive policies and standards at national, regional and international level

- Increased level of ambition in environmental management tools
- Strengthened capacity of African expertise
- Enhanced inclusion and access for environmental civil society in policy. and standards development
- Environmental thought leadership in EU-Africa policy and initiatives

ECOS- InDiCo Global-ICT Project

Promoting green digitalisation: sharing
EU ICT product standardisation and
policy insights



Overview: Actions and Scope

- Promote practical, long-term uptake of sustainable ICT management and procurement practices in the African Region
- Promote the role and benefits of EU policy and standardisation on sustainable digital and ICT sectors,
- Provide a platform to share expertise and technical knowledge between Europe and Africa,
- Highlight opportunities for collaboration and inclusivity in standardisation, in particular of environmental stakeholders.



Sustainable ICT products: Why necessary?

- E-waste is the fastest-growing waste stream in the world
- According to the Global E-waste Monitor 2024 (data from 2022)
 - 62 billion kg of e-waste generated globally, including
 - 5.9 billion kg (10%) Screens and Monitors – 25% collected and recycled
 - 4.9 billion kg (8.3%) Small IT and Telecommunication Equipment – 22% collected and recycled
- Trigger conflicts, human rights abuses, chemical pollution and environmental degradation
- Standards and regulations are still insufficient



What ECOS wants to achieve?

- The global market provides enabling conditions for low environmental impact electronic products and batteries: ambitious standards, regulations and labels
- Electronic products and batteries are the instruments of a fair digital transition
- Through a life-cycle approach, advocating for standards, laws and ecolabels driving the global market towards sustainable electronic products and batteries with:



1. Electronic products and batteries that are long-lasting, repairable and energy-efficient



2. With better access to repairability, reusability and recyclability information, waste management prevents waste electronics



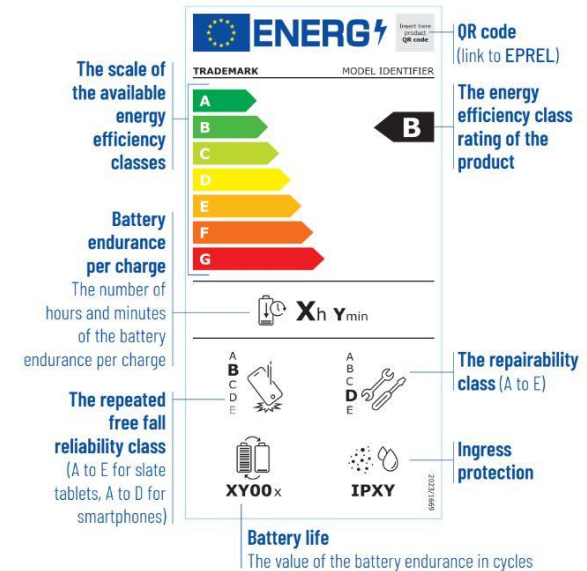
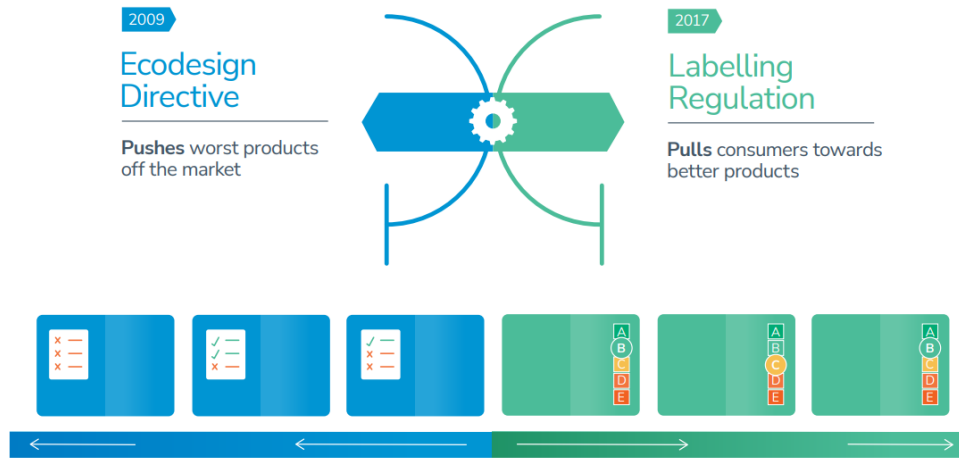
3. A reduced and better-quality extraction of minerals respecting environmental and social requirements

ECOS strategy and activities

- Influence regulations, standards and labels at international and EU level to push for sustainable ICT products and sound waste management systems
- Looking to collaborate with other regions interested in this work
- Sustain and expand environmental alliances
- Develop research and capacity building



EU Initiatives on the sustainability of ICT products



Ecodesign Regulations:

- Set minimum energy efficiency requirements
- Set minimum resource efficiency requirements on
 - Repairability/Reusability (access to spare parts, ease of disassembly, repair information, upgradeability, part pairing, secure data transfer and deletion functionalities and ability to reset password and factory settings, etc.)
 - Reliability (resistance to accidental drops, longevity of the battery, resistance to humidity, etc.)

Energy Labelling Regulations:

- Set information requirements on (for example):
 - Energy efficiency
 - Repairability (through the repairability class)
 - Endurance of the battery
 - Ingress protection (water and dust)
 - Etc.

EU Initiatives on the sustainability of ICT products

Ecodesign and Energy Labelling Requirements for ICT products:

- Smartphones, other mobile phones, cordless phones and slate tablets
 - [Ecodesign Regulation](#) (2023)
 - [Energy Labelling Regulation](#) (2023)
- Computers
 - [Ecodesign Regulation](#) (2013 - under [revision](#) by Q3 2027)
 - Energy Labelling Regulation ([under development](#) by Q3 2027)
- Electronic displays
 - [Ecodesign Requirements](#) (2019 - under [revision](#) by Q3 2026)
 - [Energy Labelling Requirements](#) (under [revision](#) by Q3 2026)
- Imaging equipment (including consumables)
 - Ecodesign Requirements (under [development](#) by Q3 2026)
- Servers and data storage products
 - [Ecodesign Requirements](#) (under [revision](#) by Q4 2026)

ESPR [horizontal requirements on repairability](#) (by 2027) and recycled content and recyclability (by 2029) to cover other types of ICT products, such as:

- Handheld game consoles
- Smart watches
- E-book readers
- Smart home devices

EU Initiatives on the sustainability of ICT products

European Product Registry for Energy Labelling:

- Covers products that are covered by Energy Labelling regulations (only [electronic displays](#), [smartphones and tablets](#) for now, but soon computers too, and potentially imaging equipment and servers).
- Allowing Market Surveillance Authorities to identify the potentially non-compliant products.
- Allowing consumers to find more details about the sustainability of products and easily identify the most sustainable ones.

Smartphones and tablets

REGULATION (EU) 2023/1669 with regard to energy labelling of smartphones and slate tablets

Search by

GTIN identifier

Include models not placed on the market anymore [?]

Filter by

Device type

Smartphone

Tablet

Operating system

Android

iOS

Other

Foldable

Yes

No

Ingress protection rating [?]

IP rating ≥

Battery endurance per cycle (hours) [?]

0 500

-

Battery user-replaceable

Energy efficiency class

Repeated free fall reliability

View the models distribution by performance class [?]

Showing 1 - 3 of 3 Items per page 25

Sort by

BLU G75

Smartphone Android C A G

Battery endurance per cycle	499h 59min
Battery endurance in cycles	9 900
Repeated free fall reliability class	ABCDE
Repairability class	ABCDE
Ingress protection rating	IP68

DOOGEE V Max 2

Smartphone Android B A G

Battery endurance per cycle	403h 10min
Battery endurance in cycles	1 000
Repeated free fall reliability class	ABCDE
Repairability class	ABCDE
Ingress protection rating	IP68

EU Initiatives on the sustainability of ICT products

Digital Product Passport in EU regulation

LAW	PRODUCTS	MANDATORY DPP	POSSIBLE INFORMATION
Batteries Regulation	Certain batteries	February 2027	Sustainability and circularity information, due diligence information
Ecodesign for Sustainable Products Regulation	Potentially all products except food, feed, medicinal products	Incrementally with adoption of sectoral delegated acts (first ones expected 2027, timeline for DPP adoption unknown)	Sustainability and circularity information
Critical Raw Materials Act	Permanent magnets in products	November 2028: add information to DPPs introduced by other acts, if they exist.	Chemicals presence and information on removal

EU Initiatives on the sustainability of ICT products

Digital Product Passport in EU regulation

Products in the scope of the Ecodesign for Sustainable Products Regulation (including ICT products) might eventually have DPPs, containing information about:

- 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

EU Initiatives on the sustainability of ICT products

Digital Product Passport in EU regulation

- The information requirements will be specified in product-specific ecodesign regulations
- Product aspects: **mandatory**
- Product parameters: if appropriate.
- Example:
 - Information on durability and reliability would be mandatory.
 - Information on product's guaranteed lifetime, technical lifetime, mean time between failures, indication of real use information on the product, resistance to stresses or ageing mechanisms will only be added if appropriate.



EU Initiatives on the sustainability of ICT products

Digital Product Passport in EU regulation

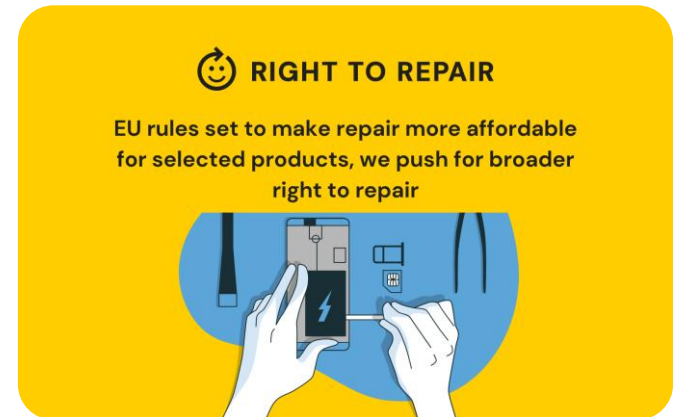
- DPPs will be introduced by default if there are information requirements.
- Possible exemptions:
 - Delegated act with horizontal requirements
 - If standards are not ready
 - If there is an existing system (e.g. *EPREL*) covering the information. Possibility for coexistence!



EU Initiatives on the sustainability of ICT products

Directive on common rules promoting the repair of goods

- Not ecodesign but consumer rights legislation
- Only covers products that already have ecodesign reparability requirements
- Spare parts for these products have to be provided at a “reasonable price”, that is yet to be defined
- Obligation for manufacturers to repair beyond the legal guarantee period
- Scope to be significantly expanded with the horizontal reparability requirements



EU Initiatives on the sustainability of ICT products

- (Voluntary) Green Public Procurement on electronics
 - [EU GPP Criteria for Computers, monitors, tablets and smartphones](#) (2021)
 - [EU GPP Criteria for Data centres, server rooms and cloud services](#) (2020)
 - [EU GPP criteria for Imaging Equipment, consumables, and print services](#) (2020)

EU Initiatives on the sustainability of ICT products

CENELEC - JTC10 – and the material efficiency standards

- The 2015 Circular Economy Action Plan led the European Commission to request new standards for material efficiency.
- CEN, CENELEC, and ETSI were tasked with developing ecodesign standards focusing on durability, reparability, and recyclability.
- CEN-CLC/JTC 10 created eight horizontal standards with generic principles to improve material efficiency in energy-related products.
- These standards support product-specific Technical Committees in incorporating material efficiency into their own standards.



EU Initiatives on the sustainability of ICT products

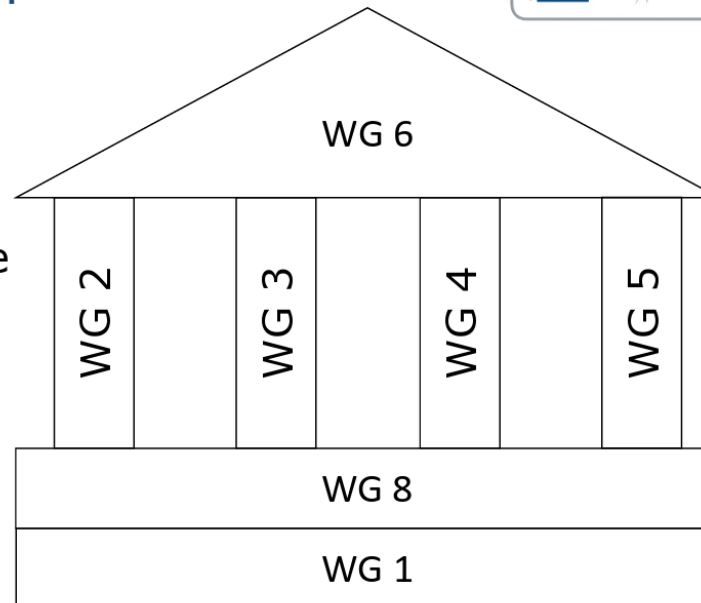
CENELEC - JTC10 – and the material efficiency standards

JTC10 Working Groups



1. Terminology
2. Durability
3. Repair, reuse, upgrade
4. Remanufacture
5. Recycling
6. Communication
8. Circular ready Design

[Their different scopes](#)



EU Initiatives on the sustainability of ICT products

CENELEC - JTC10 – and the material efficiency standards

JTC10 Document Status



- EN45552 Durability – published 2020
- EN45553 Ability to remanufacture ErP – published 2020
- EN45554 Ability to Repair, Reuse, Upgrade – published 2020
- EN45555 Recyclability, Recoverability – published 2019
- EN45556 Reused Components – published 2019
- EN45557 Recycled Materials – published 2020

- EN45558 Critical Raw Materials – published 2019
EN45558 may be directly applied.
- EN45559 Information – published 2019
EN45559 is intended as guidance but is applied in the rest of the EN4555X series to ensure consistency.
- TR45550 Terms and Definitions – published 2020

EU Initiatives on the sustainability of ICT products

IEC TC 111/WG23 - General methods for the assessment of durability

- An international standard on the ability to repair, reuse and upgrade energy-related products (IEC 63683-2 ED1 - General methods for the assessment of product durability - Part 2: Ability to repair, reuse and upgrade) is being developed
- This standard will be an international version of “EN 45554:2020 - General methods for the assessment of the ability to repair, reuse and upgrade energy-related products”, with hopefully some improvements on:
 - Parts pairing
 - Price of spare parts
 - Data deletion
 - New categories of fasteners

EU Initiatives on the sustainability of ICT products

Recommendation ITU-T L.1017 – Environmental performance scoring of smartphones

The Recommendation[1] provides a standardized method to assess the environmental performance of smartphones. A method to arrive at an aggregate score reflecting the overall environmental performance is defined, which takes into account material efficiency and life cycle assessment (LCA) aspects. The following attributes of a smartphone are evaluated:

- Durability.
- Reparability, reusability and upgradeability.
- Recyclability and recoverability.
- Use of hazardous or restricted substances.
- Use of recycled materials.
- Packaging and accessories.
- Environmental impacts.

International initiatives on the sustainability of ICT products

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International initiatives on the sustainability of ICT products

EPEAT – Developed by the Global Electronics Council



Climate Change Mitigation

Reducing greenhouse gas (GHG) emission in manufacturing, the supply chain, and product use.



Sustainable Use of Resources

Designing products for longevity, reuse and recycling, and responsibly addressing packaging, water and waste.



Chemicals of Concern

Eliminating use of toxic chemicals in the product and manufacturing that are hazardous to human health and the environment.



Responsible Supply Chains

Responsible sourcing of materials, fair labor practices, and worker health and safety in the electronics supply chain.

EPEAT 2.0 Criteria

International initiatives on the sustainability of ICT products

TCO Certified



Climate

IT products contribute to the climate crisis through emissions across their life cycle. Effective methods to reduce climate impact are already available.

[Reduce climate impact →](#)



Substances

Many chemicals used in the IT industry have unknown risks. As legislation lags behind, substances need to be assessed before they are used.

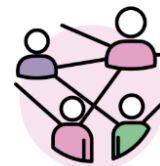
[Learn about safer substances →](#)



Circularity

By using products longer and enabling the circulation of products and materials, we can reduce environmental impact and conserve natural resources.

[Circular IT in practice →](#)



Supply chain

Significant environmental and social risks occur in IT supply chains. Strict follow-up and accountability are needed to drive positive change.

[Reduce supply chain risk →](#)

<https://tcocertified.com/>

Thank you

Mathieu Rama • Senior Programme Manager – Energy Transition • mathieu.rama@ecostandard.org

Marxine Waite • Senior Programme Manager – Global Engagement • marxine.waite@ecostandard.org



Environmental Coalition on Standards

c/o WeWork
Rue du Commerce 31
1000 Brussels, Belgium

+32 2 899 7680
info@ecostandard.org

www.ecostandard.org



@ECOS_Standard



ECOS-NGO



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63

ECOS MEMBER ORGANISATIONS

National member organisations

Austria

- Umweltdachverband
- GLOBAL 2000

Belgium

- Bond Beter Leefmilieu Vlaanderen (BBL)
- Canopea
- Repair Together
- Repair & Share

Bulgaria

- Institute for Ecological Modernisation (IEM)

Cameroon

- Association Camerounaise pour le Développement, l'Entraide Sociale et la Protection de l'Environnement (ACDESPE)

Croatia

- DOOR – Society for Sustainable Development Design

Cyprus

- Terra Cypria – The Cyprus Conservation Foundation



Czechia

- Institut Cirkulární Ekonomiky (INCIEN)
- Zelený Kruh (Green Circle)

Denmark

- The Danish Society for Nature Conservation (DN)
- Green Transition Denmark (Rådet for Grøn Omstilling)

France

- Zero Waste France
- Women Engage for a Common Future (WECF-France)
- Halte à l'Obsolescence Programmée (HOP)
- CLER – French Energy Transition Network
- Ethikis

Germany

- Bund Für Umwelt und Naturschutz Deutschland (BUND)
- Bundesverband Bürgerinitiativen Umweltschutz (BBU)
- Deutscher Naturschutzring (DNR)
- Nature Friends Germany (NaturFreunde Deutschlands)
- Deutsche Umwelthilfe
- Runder Tisch Reparatur

Greece

- Ecocity Greece

Hungary

- Clean Air Action Group (CAAG)

Ireland

- Community Reuse Network Ireland (CRNI)

Italy

- Kyoto Club
- Legambiente
- Giacimenti Urbani

Latvia

- Friends of the Earth Latvia (Zemes Draugi)

Lithuania

- Žiedinė ekonomika

Luxembourg

- The Luxembourg Ecological Center (Oekozenner Lëtzebuerg)

Malta

- CircE – Circular Economy Malta

Netherlands

- Stichting Natuur en Milieu (SNM)
- Leefmilieu

Nigeria

- Pan African Vision for the Environment (PAVE)
- Community Action Against Plastic Waste (CAPWs)

Norway

- Bellona Norway

Poland

- Polish Foundation for Energy Efficiency (FEWE)
- ClientEarth Poland

Portugal

- ZERO
- Circular Economy Portugal

Romania

- 2Celsius
- ECOTECA

Slovakia

- REPAIRABLY

Spain

- ECODES

Sweden

- Protect the Forest (Skydda Skogen)
- The Swedish Society for Nature Conservation (SSNC/SNF)

Switzerland

- WWF Switzerland

United Kingdom

- Energy Saving Trust (EST)

USA

- Earthworks
- Environmental Defense Fund (EDF)
- Green Science Policy Institute
- Natural Resources Defense Council (NRDC)

International member organisations

Bellona

- Bellona Europe

EEB

- European Environmental Bureau

FoEE

- Friends of the Earth Europe

HCWH

- Health Care Without Harm Europe

RREUSE

- European umbrella for social enterprises with activities in reuse, repair and recycling

T&E

- European Federation for Transport & Environment

WWF-EPO

- WWF – European Policy Office

Standards versus regulation

Headline	Standards	Regulation
Technical specifications	State of the art	Defined by legislators or only essential requirements
Application	Voluntary	Mandatory
Responsible person	Interested stakeholders	Legislator
Development process	Openness & transparency	Depends on institution
Decision making	Consensus	Democratic
Revision	Every 5 years & easy	Foreseen in text or decided later, but burdensome