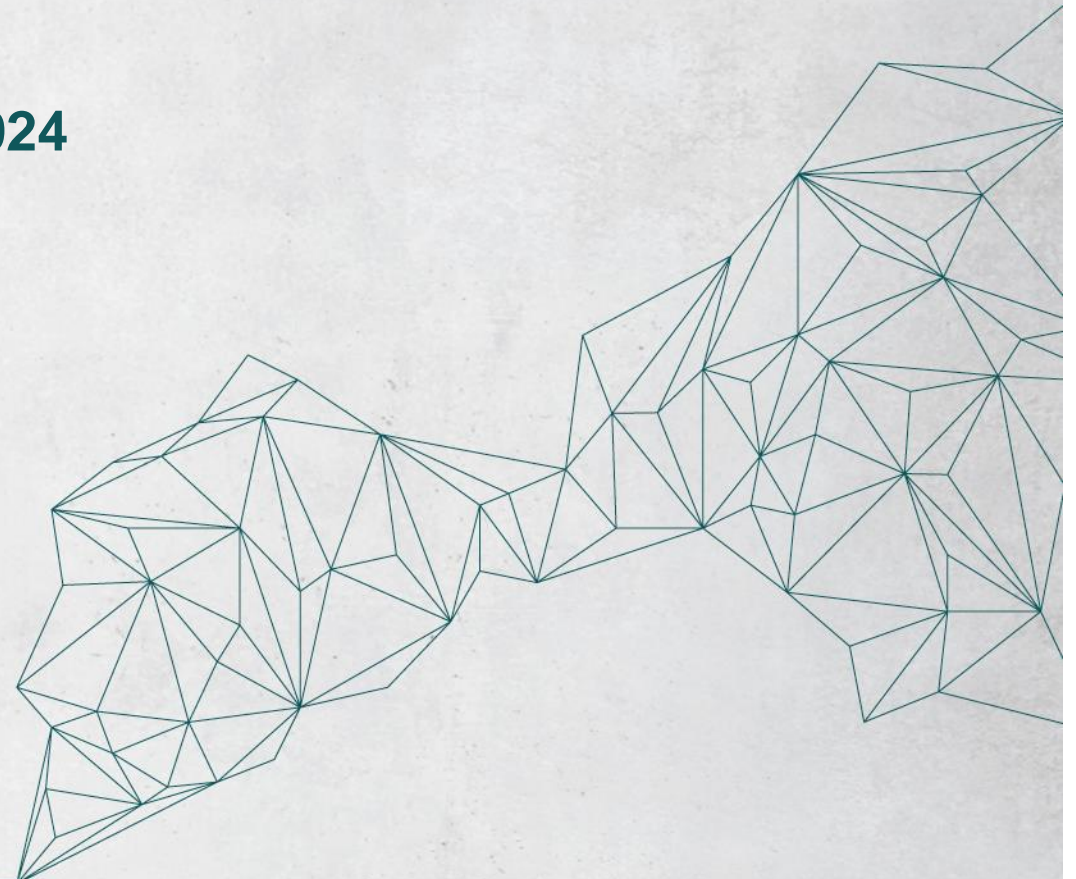


Chillventa Specialist Forums 2024
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**CONNECTING
EXPERTS.**



The prospects for the life-cycle sustainability of fans and ventilation units under the EU's Ecodesign Regulation

EVIA Fans Forum

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Mitsubishi Electric

EU Product Policy Manager

9 October 2024

Contents:

- 1. Ecodesign for Sustainable Products Regulation**
- 2. Ecodesign & EPDs/LCAs/PEFs**
- 3. EVIA PEF Project**

1. Ecodesign for Sustainable Products Regulation

© European Commission

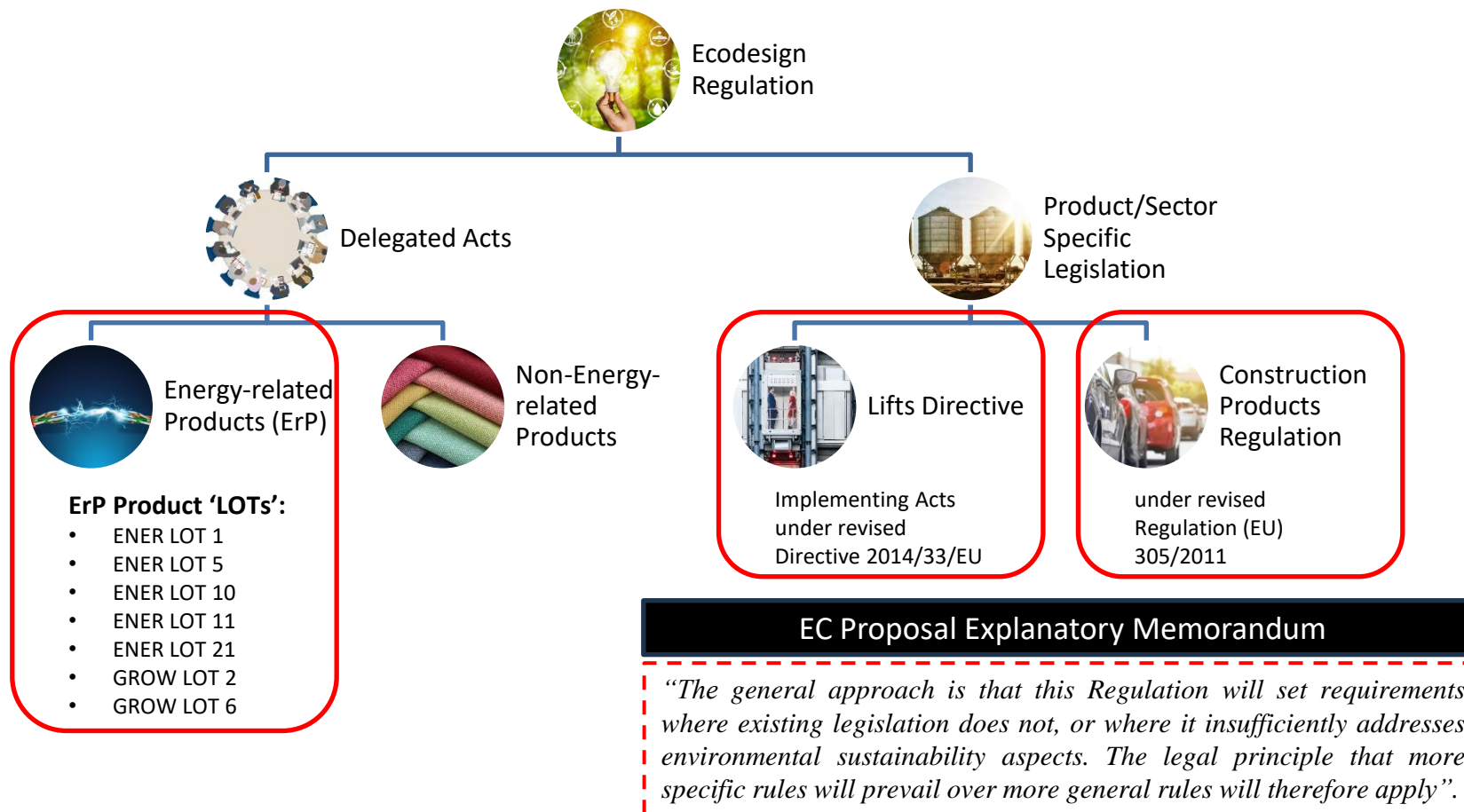


This Regulation applies to ***any physical good that is placed on the market or put into service, including components and intermediate products.***

Except for food, feed, medicines, living plants and animals, and products of human origin.

Ecodesign for Sustainable Products Regulation

Framework Regulation



"In addition, when formulating working plans, the Commission should take into account that, in continuation of current practice, the construction products Regulation[(CPR)], gives prevalence to sustainability requirements set under [ESPR] for energy-related products that are also construction products. This should be the case for instance for heaters, boilers, heat pumps, water and space heating appliances, fans, cooling and ventilating systems ... The [CPR] can apply to those products in a complementary manner where needed, mainly in relation to safety aspects, also taking account of other Union law on products such as on gas appliances, low voltage equipment and machinery".

Ecodesign for Sustainable Products Regulation

‘ecodesign requirement’ means a **performance requirement** or an **information requirement** aimed at making a product more environmentally sustainable;

The Commission shall, as appropriate to the relevant product groups and **with due consideration for all stages of their life cycle**, establish ecodesign requirements to improve the following product aspects:

- (a) durability;
- (b) reliability;
- (c) reuseability;
- (d) upgradability;
- (e) reparability;
- (f) possibility of maintenance and refurbishment;
- (g) presence of substances of concern;
- (h) energy use or energy efficiency;
- (i) resource use or resource efficiency;
- (j) recycled content;
- (k) possibility of remanufacturing and recycling;
- (l) possibility of recovery of materials;
- (m) environmental impacts, including carbon and environmental footprint;
- (n) expected generation of waste materials.



Transitional Regime

Recital: “In order to preserve the preparatory work, it is therefore necessary to provide for **transitional rules allowing implementing measures on the products [below] mentioned to be adopted pursuant to Directive 2009/125/EC at the latest by 31 December 2026**. In addition, and in order to ensure the proper functioning of implementing measures adopted under article 15 of Directive 2009/125/EC, the adoption of amendments addressing the necessary technical issues should be done if relevant in accordance with the relevant provisions of the Ecodesign Directive at the latest by 31 December 2030”.

► Transitional regime

Industrial fans	Cooking appliances
Space and combination heaters	Professional refrigeration equipment
Water heaters	Power transformers
External power supplies	Imaging equipment
Photovoltaic panels	Circulators
Water pumps	Air heating / cooling products
Air conditioners inc. A-A HPs	Ventilation units
Vacuum cleaners	Computers
Solid fuel local space heaters	Servers and data storage products
Solid fuel boilers	

► ESPR WP

Electronic displays
Light sources and separate control gear
Welding equipment
Electric motors and variable speed drives
Household dishwashers
Household washing machines and washer-dryers
Refrigerating appliances (household)
Refrigerating appliances with sales function
EV charging boxes
Professional laundry
Professional dishwashers

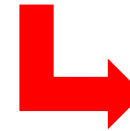
 **2030ish**

* The timing of the ESPR implications for ‘Transitional’ LOTs will be determined by the deadlines in the respective Review Clauses.

Prioritisation & Planning

Ecodesign Working Plan 2025-2028+

- (a) iron and steel;
- (b) aluminium;
- (c) textiles, in particular garments and footwear;
- (d) furniture, including mattresses;
- (e) tyres;
- (f) detergents;
- (g) paints;
- (h) lubricants;
- (i) chemicals;
- (j) energy related products for which ecodesign requirements are to be set for the first time or for which existing measures adopted pursuant to Directive 2009/125/EC are to be reviewed under this Regulation; and
- (k) information and communication technology products and other electronics.



Deadline

April 2025						
M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

► ESPR WP

Electronic displays
Light sources and separate control gear
Welding equipment
Electric motors and variable speed drives
Household dishwashers
Household washing machines and washer-dryers
Refrigerating appliances (household)
Refrigerating appliances with sales function
EV charging boxes
Professional laundry
Professional dishwashers

Precedents: New Gen Sustainability Requirements

1. Reparability Scoring:

- **GROW LOT X:** Smartphones and tablets

Table 4

Reparability classes of smartphones and slate tablets

Reparability Class	Reparability Index (R)
A (most repairable)	$R \geq 4,00$
B	$4,00 > R \geq 3,35$
C	$3,35 > R \geq 2,55$
D	$2,55 > R \geq 1,75$
E (least repairable)	$1,75 > R \geq 1,00$

2. Self-monitoring Requirements:

- **ENER LOT 1:** Space heaters

- 1) The heater shall determine and store, either on the heater and/or on remote devices, the following information. The information shall be determined and stored for each heating function (space and/or water heating) for each calendar year as cumulative values per day, per month, and per year. The information referred to in points a), b), and c) shall be determined and stored also as real-time values.
 - a) *real-world final energy consumption* expressed in kWh for electricity and/or in any other unit for fuels consumed;
 - b) *real-world heat delivered*, expressed in kWh for electricity and/or in any other unit for fuels consumed;
 - c) *real-world energy efficiency*;
 - d) *real-world operating times expressed in days, hours and minutes*;
 - e) *number of on/off cycles*;

3. Critical Raw Materials:

- **ENER LOT 30: Review Clause:**
 - “setting additional resource efficiency requirements for products in accordance with the objectives of the circular economy, including identification and reuse of rare earth in permanent magnet motors”.
- **GROW LOT 9:**
 - Information Requirement:
 - indicative weight range (less than 5 g, between 5 g and 25 g, above 25 g) at component level, of the following critical raw materials:
 - (a) Cobalt in the batteries;
 - (b) Neodymium in the HDDs

4. Substance of Concern Restrictions:

- **ENER LOT 5:**
 - 4. Halogenated flame retardants
 - The use of halogenated flame retardants is not allowed in the enclosure and stand of electronic displays.

5. Recycled Content:

6. Carbon Footprint/Product Environmental Footprint:

- **Batteries Regulation**
- **Ecodesign for Photovoltaics:** Preparatory study
 - Using PEF methodology

7. Removability & Replaceability:

- **Batteries Regulation:** Article 11

BE PREPARED

Horizontal Initiatives

Reparability Scoring System Product relevance scoping study

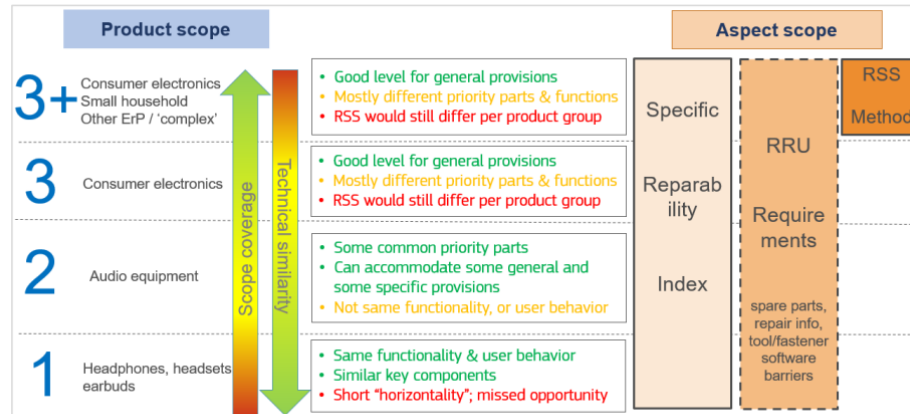
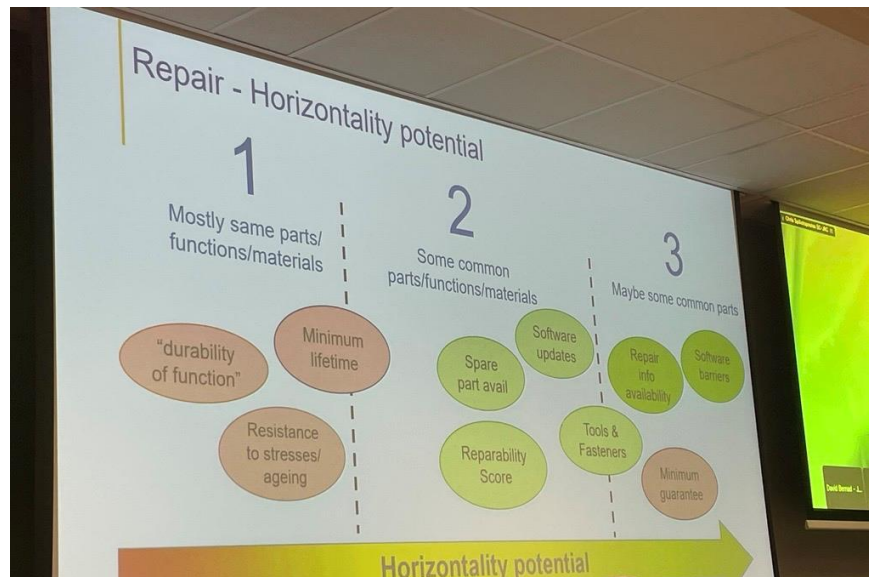


Figure 15: Options of different "horizontality" levels for regulating Reparability Scoring Source: JRC own elaboration



Preparatory study on CRMs and on Recycled Content

Table 3: Recommended five product-material bins with details relevant to the prioritisation

Product-material bin	Environmental ranking	Supply risk ranking CRM	Legislative feasibility	Life-time	Comments
Household refrigerators and freezers (white goods) / Plastics	Plastics: 1 All materials: 7 3 highest amounts of materials: - Ferro: 49% - Bulk plastics: 19% - Technical plastics: 15%	15 Top 5: - Bauxite/Al - Silicon metal - Palladium - Coking coal - Copper	Review due December 2025 under ESPR	16.0	Results from this study would need to await the review.
Imaging equipment (ICT / electronics) / Plastics	Plastics: 2 All materials: 3 3 highest amounts of materials: - Ferro: 40% - Bulk plastics: 31% - Technical plastics: 11%	9 Top 5: - Palladium - (Tin) - Bismuth - Bauxite/Al - Antimony	Preparatory study ongoing under ED	5.3	
Electric motors (industrial /B2B) / Ferrous & non-ferrous metals	Ferrous metals: 1 Non-ferrous metals: 1 All materials: 6 3 highest amounts of materials: - Ferro: 75% - Non-ferro: 22% - Technical plastics: 2%	13 Top 5: - Bauxite/Al - Silicon metal - Palladium - Coking coal - Copper	Due for review under ESPR	9.3	No other industrial / B2B are relevant. Results from this study would need to await the review.



2. Ecodesign & EPDs/LCAs/PEFs

The ESPR Promise: Address Fragmentation of the Internal Market



Methodological Diversity Leads to Fragmentation + Non-Comparability



Journal of Cleaner Production
Volume 375, 15 November 2022, 133999

Assessing the completeness and comparability of environmental product declarations

Flávia Bittencourt Moré^a, Bruno Menezes Galindo^b,
Sebastião Roberto Soares^c

“Numerous different but at the same time compliant EPDs can be obtained for the same product, highlighting a serious harmonisation issue within the EPD system. EPDs are thus not necessarily accurate, and it remains doubtful whether EPD comparability can be achieved. This weakness of the EPD system can in the worst case be exploited by producers to obtain lower results and undermines the system”.

<https://link.springer.com/article/10.1007/s11367-023-02246-x>

“From four product categories, 436 EPDs were selected, each based on one PCR/sub-PCR. Only 5.04% of the EPDs presented all the mandatory information required; this lack of information affected comparability, since items that are not reported cannot be compared. This, together with flexible definitions of some elements (such as functional/declared units, allocation procedures, and cut-off rules) in the PCRs led to low rates of comparability. Of all the potential comparisons, 8.06% of the documents could not be compared in any aspect, 89.15% were considered incomparable, 2.75% could be compared with caution, and only 0.04% were comparable”.

<https://www.sciencedirect.com/science/article/abs/pii/S0959652622035715>

The ESPR Promise: Life-Cycle Environmental Performance



2030

Revised EPBD life-cycle GWP declaration for
ALL new buildings (2028: $X < 1000 \text{ m}^2$)

Total GWP is communicated as a numeric indicator for each life-cycle stage expressed as $\text{kgCO}_2\text{e/m}^2\cdot\text{y}$ (of useful floor area) averaged for one year of a reference study period of 50 years.

The data selection, scenario definition and calculations shall be carried out in accordance with [EN 15978](#) (EN 15978 - 'Sustainability of construction works').



The scope of building elements and technical equipment is as defined in the Level(s) common EU framework for indicator 1.2.

By 31 December 2025: The Commission is empowered to adopt delegated acts in accordance with Article 29 to amend Annex III to set out a Union framework for the national calculation of life-cycle GWP.



RE2020, the new 'environmental regulation', covers the entire life cycle of the building. Total emissions caps for new buildings - depending on the type of building (single-family house, multi-family house) and climate zone - which will be gradually tightened over time. The environmental impact of each material, piece of equipment and unit of energy consumed is assessed in a building's Life Cycle Assessment (LCA).

Where a national calculation tool or method exists or is required for making disclosures or for obtaining building permits, that tool or method may be used to provide the required disclosure. Other calculation tools or methods may be used if they fulfil the minimum criteria laid down by the Level(s) common EU framework.

Product Environmental Footprint (PEF)/LCA Scoring/Classes of Performance/Labelling

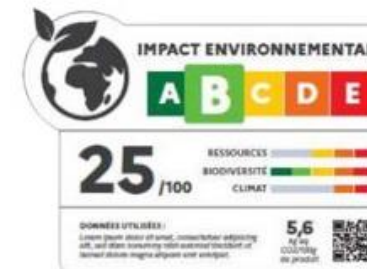


[EU COM 2012: Study on different options for communicating environmental information for products](#)

Under the revised EPBD: Where product-specific regulations for energy-related products adopted under the ESPR include specific product information requirements for the purpose of the calculation of ... life-cycle GWP under the EPBD, national calculation methods shall not require additional information for the life-cycle contribution of that product to the building's GWP.



ADEME launched a [public consultation](#) (French only) on w/c 6 February 2023 on the future "environmental score" for products ([Textiles/Food as priorities](#)).



The ESPR Promise: Life-Cycle Environmental Performance

2030

Revised EPBD life-cycle GWP declaration for



Under the revised EPBD: Where product-specific regulations for energy-related products adopted under the ESPR include specific product information requirements for the purpose of the calculation of ... life-cycle GWP under the EPBD, national calculation methods shall not require additional information [for the life-cycle contribution of that product to the building's GWP].



3. EVIA PEF Project



NRVU



RVU - BVU

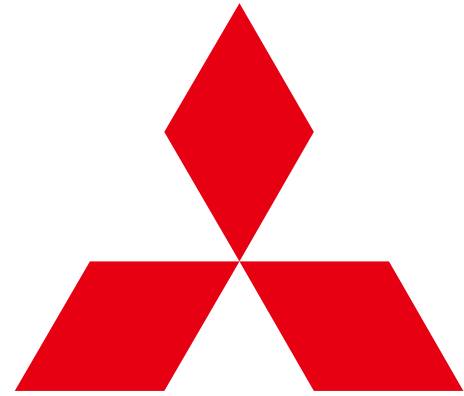


RVU - UVU



Fan





**MITSUBISHI
ELECTRIC**

Changes for the Better

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