

# POSITION PAPER



## ON THE REVIEW STUDY AND IMPACT ASSESSMENT FOR THE EXTERNAL POWER SUPPLY ECODESIGN REGULATION (2019/1782)

21 December 2023

Following the consultation forum meeting held on 24<sup>th</sup> November 2023, in which the Commission presented the progress of the review study and impact assessment (including draft legislative proposal) for the Ecodesign regulation on External Power Supplies (EPS), Coolproducts members, ECOS, DeutscheUmwelthilfe and the EEB would like to provide the Commission with the following comments:

### Aspects strongly supported:

- **Widened product scope as default:** The new approach to specifying what products are excluded rather than what products are covered, meaning that new EPSs placed on the market that are not defined within the regulation would automatically come under the scope (and PoE in scope).
- **Interoperability Option B:** The specification presented during the meeting that USB EPS must have at least one compliant USB-C port and no requirements regarding any “USB-A” port. This facilitates the transition towards a single port type of USB-C, reducing the demand for and impacts of multiple cables.
- **Improved ambition in efficiency requirements:** Inclusion of a 10% loading efficiency requirement that goes beyond the status quo, and the inclusion of a more stringent active efficiency requirement.
- **EPS durability requirements:** The requirement for EPS to have a lifetime of 10 years, an MTBF of 300,000 hours and resistibility requirements. Mandatory durability requirements based on existing standards are essential to improve EPS quality, reducing user risks and ensuring that common chargers are in use for as long as possible. These requirements can be supported by a standardisation request to ESOs to develop a standard supporting the revised regulation on EPS and detachable cable durability, building upon ETSI Standard (ES202874-1:2012-05).
- **Non-compliant EPS as spare parts for max. 2 years:** We support the limitation of non-compliant EPS being sold as spare parts to 2 years maximum after the regulation comes into force. There is no justification for extending this period, as this would impair the potential savings accessed through the revision. EPS can be backwards compatible using adaptors and, during this period, manufacturers can stock up on spare parts.
- **EPS pictogram and port marking:** A pictogram showing power information to be provided on the EPS, plus power information on each port.

- **Standby requirement on wireless chargers:** The 0.48W requirement on wireless charger standby
- **Testing requirements:** Harmonisation with US DOE testing approaches.
- **Battery charger and EPS definitions:** We consider these definitions as sufficiently robust and urge caution in editing these to avoid opening loopholes.

#### Key issues to address:

- **SCOPE:**
  - Avoid specifying industrial exemptions from scope
- **DEFINITIONS:**
  - Clarify the definition of wireless chargers and wireless charging pads, and externalisation of power supply circuitries for wireless chargers
- **ENFORCEMENT:**
  - Alignment of transition times to 1 year
  - Compliance issues
- **AMBITION:**
  - Longevity in energy efficiency requirements through a second tier
  - Need to address wireless charging active efficiency, interoperability and standards
  - Failure to specify default unbundling
  - Missing information requirements on packaging and cables
- **CLARITY:**
  - Ambiguity of low voltage power supply requirements
  - Lack of clarity on detachable cable design requirements
  - Lack of clarity on USB interoperability exemptions (inaccessible locations, toys, peak power)

The following sections describe the key issues observed in the explanatory memorandum, Consultation Forum meeting slides, and draft regulatory text. These issues need to be tackled to result in effective regulation.

## SCOPE

### AVOID SPECIFYING INDUSTRIAL EXEMPTIONS FROM SCOPE

Specifying industrial exemptions from the scope should be avoided. We note the request from industry to create an exemption for industrial power supplies (e.g. “EPS not used in industrial equipment”) and consider that this has been and continues to be unnecessary. Due to the power/voltage ranges of EPS within scope, there is no issue for industrial supplies, and creating a specific industrial power supply exemption has the potential to open a large loophole and result in lost savings.

- **Action:** Do not specify an additional exemption for EPS for industrial equipment

## DEFINITIONS

### WIRELESS CHARGERS, WIRELESS CHARGING PADS AND EXTERNALISATION OF POWER SUPPLY CIRCUITRIES FOR WIRELESS CHARGERS

The intention of the regulation is unclear regarding the externalisation of power supply circuitries for wireless chargers. ECOS supports externalising the EPS from the charger pad, in line with the intention stated in the explanatory memorandum that wireless charging devices had been brought into the EPS regulation “to require by design a separation of wireless charging functionality and the power supply function”. However, the revised definitions of wireless chargers and wireless charging pads are conflicting in this respect, and we strongly recommend they be revised. The definition of a wireless charger pad is that “it does not contain a power supply.” And yet the definition of a ‘wireless charger’ is “a wireless charging pad with an external power supply or a power supply integrated into the same unit”, thereby allowing for a wireless charger pad to have an internal power supply. In addition, the requirement in Annex I on wireless charger standby states “The stand-by power consumption of wireless charging pads shall be not higher than 0.48 W, and of wireless chargers with the power supply integrated into the same unit not higher than 0.8 W.”

- **Action:** Require that wireless chargers have only external EPS by stating this clearly as a requirement in the regulation, rather than as a definition which would simply exclude from scope those chargers that have internal supplies. Remove the conflicting references to wireless chargers with integrated power supplies.

## ENFORCEMENT

### ALIGNMENT OF TRANSITION TIMES TO 1 YEAR

We recommend that the transition times are aligned so that both the energy efficiency requirements and the interoperability requirements come into force one year after entry into force of the regulation, instead of some requirements coming into force after two years.

**Action:** Align all transition times to one year

### COMPLIANCE ISSUES

More than half of products tested in Germany (57%) were found to be non-compliant and around 40% of those tested in Denmark. We consider that the impact assessment should quantify the lost savings due to these poor compliance figures. These calculations can be used to support EC-funded compliance testing projects to identify, fine or remove non-compliant EPS from the market.

- **Action 1:** Impact assessment to quantify the lost savings due to high current levels of non-compliance
- **Action 2:** EC to commit to funding a market surveillance project on EPS

## AMBITION

### LONGEVITY IN ENERGY EFFICIENCY REQUIREMENTS THROUGH A SECOND-TIER

We support the improved ambition in the active and 10% loading efficiency requirements. However, we believe there is potential to access greater savings through a second tier of more stringent requirements. Advancements to enable this include gallium semiconductors, improved transformers, technologies for higher

power applications, modern switched-mode power supplies (SMPS), and active power factor correction (PFC). The latest US DOE analysis provides insights on where these levels could be set.

- **Action: Specify a second tier of efficiency requirements based on more ambitious US DOE CSL.**

## NEED TO ADDRESS WIRELESS CHARGING ACTIVE EFFICIENCY, INTEROPERABILITY AND STANDARDS

- **Impact assessment:** The impact assessment fails to address the high risk of increases in energy consumption due to the shift from wired to wireless charging. This is an issue that needs to be tackled urgently as consumers transition towards wireless chargers and manufacturers may switch to solely wireless charging designs. Tests carried out in 2020 showed that wireless charging may demand between 40 and 50% more power than wired charging<sup>1</sup>, when there is good alignment, and as much as 80% more where the alignment is poor. When multiplied across Europe this represents a risk of a substantial increase in energy consumption of around 1.8TWh<sup>2</sup>.
- **Active efficiency test standards:** There is a wide range of wireless charger efficiencies on the market<sup>3</sup>, yet active efficiency requirements on wireless chargers are overlooked, and there appears to be no clear intention to address the need for standards to measure wireless charging energy consumption and efficiency. This creates a significant barrier to future policy in this area, especially as the inclusion of wireless charging under scope within this regulation reduces the likelihood of it being addressed under other legislation.
- **Interoperability:** The failure to address interoperability of wireless chargers risks the proliferation of multiple wireless chargers per household before the next revision of the regulation. The form factor of some products (e.g. digital pens or smart glasses) means that such products and their chargers often do not support Qi<sup>4</sup>. For example, Apple continues to use proprietary (non-Qi) solutions for the Apple Watch and Apple Pencil. Further, fast charge limitations with Qi have resulted in some product manufacturers developing their own proprietary fast charge solutions which could also encourage a potential

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<sup>1</sup> Ravenscraft, Eric & iFixit. "Wireless Charging Is a Disaster Waiting to Happen." Medium, Debugger, 6 Aug. 2020, <https://debugger.medium.com/wireless-charging-is-a-disaster-waiting-to-happen-48afdde70ed9>.

<sup>2</sup> Based on impact assessment 2022 figures for wired charging energy consumption. Assumes 30% of products historically in scope are charged by wireless in future, with 60% increase in energy per charge assuming occasional inaccurate placement of the product on the charger pad.

<sup>3</sup> Teschler, L., & Perzow, J. (2016). *Wireless charging efficiency: How to measure in the real world*. Power Electronic Tips. Retrieved April 26, 2022, from <https://www.powerelectrontips.com/measuring-wireless-charging-efficiency-in-the-real-world/>

<sup>4</sup> European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, Sánchez, D., Schischke, K., Kuehnemund, M., Technical supporting study to assess the status of wireless charging technologies used for mobile phones and similar portable equipment and next expected main technological developments : deliverable 5 (D5) : final report, Publications Office, 2021, <https://data.europa.eu/doi/10.2873/537546>

proliferation of different wireless chargers for different products despite Qi being present. This could result in multiple separate non-Qi chargers being required, with negative material impacts.

- **Action 1:** Include an assessment of the risk of no action on the efficiency of wireless charging in the impact assessment.
- **Action 2:** Clearly specify in Article 8, the review clause, that measures on the interoperability and active efficiency of wireless chargers and information requirements on active efficiency of wireless chargers will be assessed in the next revision.
- **Action 3:** EC to initiate a study to test several products and chargers to quantify variations in energy consumption and efficiency compared to wired charging and develop principles on which standardized testing procedures can be built, including how to tackle product-to-coil alignment.
- **Action 4:** EC to commit to releasing a standardisation request to require standards on wireless charger active efficiency and energy consumption and wireless interoperability (different form factors, harmonized fast charge).

## FAILURE TO SPECIFY DEFAULT UNBUNDLING

The goal of the common charger initiative was to uncouple external power supplies from products, reducing the unnecessary proliferation of chargers. However, the text of Article 3a that was inserted into the Radio Equipment Directive<sup>5</sup> falls far short of this ambition. It is mandatory for sellers of radio equipment products in scope to offer the possibility to buy these products without any charging devices, but it does not prevent the sale of these products bundled with the charging devices nor establish which should be the default option offered to the consumer. The lack of directed action to require default unbundling of EPS from products means that savings envisaged by the common charger initiative will not fully be achieved.

- **Action:** Exclude savings figures linked to unbundling from the impact assessment and clearly specify in Article 8, the review clause, that a measure addressing default unbundling of EPS from products will be assessed in the next revision.

## MISSING INFORMATION REQUIREMENTS ON PACKAGING, CABLES AND WIRELESS CHARGERS ON BEST PRODUCT ORIENTATION FOR CHARGING

Easy to understand standardised information is necessary on packaging for EPS. Printed on-cable information, labels or tags on cables are necessary to indicate their charging performance and functionality, and avoid confusion and proliferation of multiple items. For wireless chargers, to ensure an efficient charging process, there should be clear instructions on the packaging regarding the optimal orientation of devices to be charged.

- **Action 1:** Specify packaging information requirements for separately shipped EPS. On-cable information/tags should identify cable maximum power delivery and additional capabilities (data delivery speed and display delivery resolution if available).

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<sup>5</sup> Directive (EU) 2022/2380 of the European Parliament and of the Council of 23 November 2022 amending Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment (Text with EEA relevance)

- **Action 2:** Include an information requirement provided to users on product positioning on wireless charging pads.

## CLARITY

### AMBIGUITY OF LOW VOLTAGE POWER SUPPLY REQUIREMENTS

As raised by Sweden during the consultation forum meeting, we suggest that the Commission re-examine the need for separate active efficiency requirements for low voltage EPS, as the new data may show these can be harmonised with the AC-AC and AC-DC EPS requirements for simplification and a more level playing field.

We believe there is an error in Annex I.1.b): “The 10% load condition active efficiency shall be not less than the following values for external power supplies with a nameplate output power of 10 W or less.” according to the presentation during the consultation forum, the text should read: The 10% load condition active efficiency shall be not less than the following values for external power supplies with a nameplate output power of 10 W or more.” We would also suggest removing low voltage EPS from the table of 10% load requirements as they would not be included due to the 10W threshold anyway.

- **Action 1:** Fix the error in Annex I 1.b) and remove low voltage EPS from the 10% load requirements table.
- **Action 2:** Harmonised low voltage EPS requirements with those for AC-AC and AC-DC EPS, or state the intention to assess this in the next revision in Article 8, the review clause.

### LACK OF CLARITY ON DETACHABLE CABLE DESIGN REQUIREMENTS

The statement in the current annexes that an AC-DC EPS “shall be a USB power supply” is insufficiently specific to ensure cables are detachable from the EPS. There are EPSs on the market sold as USB power supplies that have the cable integrated to the charger, as shown in the example below.



Figure 1: Non-detachable cable on a USB-C charger

Action: Clarify the wording to make it directly clear that EPS cables must be detachable.

### LACK OF CLARITY ON USB INTEROPERABILITY EXEMPTIONS

The exemption on inaccessible locations needs to be clarified to avoid creating a loophole. We consider that rather than completely excluding toys, an SR should be launched to revise the toy safety standards and ensure that they are brought up to date with the new possibilities of USB interoperability for indoor use. Further, it is crucial to ensure that any exemptions addressing peak power are sufficiently robust and precise to avoid opening loopholes, e.g., directly specifying it is for EPS required to withstand audio peaks from loudspeakers. Relying on a documentation requirement to achieve this is insufficient.

- **Action 1:** Clarify the exemption on inaccessible locations and specify that the exemption on peak power relates to EPS for loudspeakers that need to withstand audio peaks.
- **Action 2:** EC to launch an SR to revise the toy safety standards and ensure that they are brought up to date with the new possibilities of USB interoperability for indoor use.
- **Action 3:** Specify in Article 8, the review clause, that the interoperability exemption for toys will be reassessed.

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## ACTION SUMMARY

In summary, we recommend the following actions:

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| <b>REVIEW CLAUSE to specify that in the next revision the following will be assessed:</b>   |
| Measures on the interoperability and active efficiency of wireless chargers and information requirements on active efficiency of wireless chargers.   |
| A measure addressing default unbundling of EPS from products.   |
| Harmonising low voltage EPS requirements with those for AC-AC and AD-DC EPS.  |
| Reassessment of the interoperability exemption for toys.  |
| <b>IMPACT ASSESSMENT revisions to:</b>  |
| Quantify the lost savings due to high current levels of non-compliance  |
| Include an assessment of the risk of no action on efficiency of wireless charging.  |
| Exclusion of savings figures linked to unbundling.  |
| <b>STANDARDISATION SRs to address the following:</b>  |
| Development of a standard to support the revised EPS regulation on EPS and detachable cable durability, building upon ETSI Standard (ES 202 874-1).   |
| Development of standards on wireless charger active efficiency and energy consumption and wireless interoperability (different form factors, harmonized fast charge).   |
| Revision of the toy safety standards and ensure that they are brought up to date with the new possibilities of USB interoperability for indoor use.   |
| <b>CHANGES to the REGULATION to:</b>  |
| Align all transition times to one year  |
| No specification of an additional exemption for EPS for industrial equipment  |
| Require that wireless chargers have only external EPS by stating this clearly as a requirement in the regulation, rather than as a definition which would simply exclude those chargers with internal supplies from scope. Removal of the conflicting references to wireless chargers with integrated power supplies. |
| Specify a second tier of efficiency requirements based on more ambitious US DOE CSL.  |
| Specify packaging information requirements for separately shipped EPS. On-cable information/tags to identify cable maximum power delivery and additional capabilities (data delivery speed and display delivery resolution if available).   |
| Specify an information requirement provided to users on product positioning on wireless charging pads.  |
| Fix the error in Annex I.1.b) and remove low voltage EPS from the 10% load requirements table.  |
| Harmonise low voltage EPS requirements with those for AC-AC and AD-DC EPS.  |
| Clarify the wording to make it clear that EPS cables must be detachable.  |



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| Clarify the exemption on inaccessible locations and specify that the exemption on peak power relates to EPS for loudspeakers that need to withstand audio peaks.   |
| <b>SUPPLEMENTARY STUDIES commitment by the EC</b>  |
| Market surveillance of EPS   |
| Testing of several products and chargers to quantify variations in energy consumption and efficiency compared to wired charging and develop principles on which standardized testing procedures can be built, including how to tackle product-to-coil alignment. |