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**COMMISSION STAFF WORKING DOCUMENT**  
**EXECUTIVE SUMMARY OF THE EVALUATION**

**Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on  
waste electrical and electronic equipment (WEEE)**

{SWD(2025) 184 final}

## EXECUTIVE SUMMARY

The amount of waste electrical and electronic equipment (WEEE) generated every year in the EU is increasing rapidly. If not collected and treated properly, WEEE can pose risks to the environment and human health. To address these challenges, the WEEE Directive<sup>1</sup> was first adopted in 2002 in the EU, followed by a revision in 2012 to improve its effectiveness and implementation. The 2012 revision (the WEEE 2 Directive) aims to prevent and reduce the adverse impacts from WEEE generation and management. It includes measures, including setting targets, for separate collection, proper treatment (recovery and recycling), and for promoting the preparation of WEEE for reuse. Extended producer responsibility (EPR) mandates electrical and electronic equipment (EEE) producers to finance WEEE collection and treatment.

In the WEEE 2 Directive, there was originally no specific provision for its review. Since 2012, however, there have been considerable changes in the EU's environmental and waste policy. WEEE, which contains valuable and critical raw materials (CRMs), has significant value for the EU's circular economy and for contributing to a sustainable supply of CRMs, thereby strengthening the EU's economic security. With the recent Directive (EU) 2024/884, the Commission is mandated to assess the need for a revision of the WEEE 2 Directive by 31 December 2026. In that context, a comprehensive evaluation was carried out.

### Methodology

This evaluation covers the WEEE 2 Directive and its implementing measures. It considers the EU-27 Member States and covers the period since the entry into force of the WEEE 2 Directive (13 August 2012) up until the end of 2023. Developments since then that are relevant for the evaluation have also been taken into account.

The evaluation was carried out in line with the European Commission's Better Regulation principles and methodology, along its five criteria: effectiveness, efficiency, relevance, coherence and EU added value. External contractors carried out a support study that was used as a basis for the evaluation report and was complemented as appropriate. To address the data gaps identified<sup>2</sup>, combining a literature review, statistical data and stakeholder input with qualitative and quantitative methods to cross-check findings ensured a comprehensive analysis. However, it is concluded that modelling for important data in the area of WEEE is missing and must be further developed.

### Effectiveness

The WEEE 2 Directive has had limited success in **waste prevention** efforts, with the volumes of EEE placed on the market and WEEE generated steadily increasing. Even though reuse, the

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<sup>1</sup> Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) (OJ L 197, 24.7.2012, p. 38).

<sup>2</sup> The main data gaps identified concern: (i) the impact on the environment and human health; (ii) economic aspects, such as compliance and enforcement costs, and indirect benefits like increased economic activity and employment in the WEEE management sector; and (iii) technological and market trends (e.g. the impact of digitalisation on the WEEE sector and the integration of secondary raw materials in new product manufacturing).

repair of used EEE and the preparation of WEEE for reuse increased during the evaluation period, the quantities are very low compared to EEE placed on market. In addition, as the Directive does not have specific provisions on the design of EEE, it provides little incentive for more sustainable product design.

**WEEE collection** increased by about 65% between 2012 and 2021. Despite increasing collection rates achieved by Member States, the collection targets of 85% or 65%<sup>3</sup> were not met by 24 Member States. As a result, the Commission opened an infringement procedure against these Member States in July 2024. Large amounts (46%) of the WEEE generated in the EU is not collected separately but is illegally exported or discarded in metal scrap, or there is no information about it. As the main challenges regarding WEEE collection remain, it is concluded that the WEEE 2 Directive has not been sufficiently effective.

The combined preparing for **reuse and recycling** rate of WEEE, as reported by Member States, has remained consistently high at between 80% and 84%. There was an increase of about 70% in the total weight of WEEE recovered between 2012 and 2021, and although most of the Member States have reached most of the recovery targets, the preparing for reuse rate only slightly contributed to these targets (about 2%). This shows that the increase in **WEEE recycling and recovery** is the result of the increase in WEEE collection. On average, 40% of WEEE is recycled in the EU. The WEEE 2 Directive had little effect on enhancing recycling and recovery, including of CRMs, or on diverting WEEE from landfill and incineration. The current input-based, non-material specific recycling targets do not encourage the recovery of secondary raw materials. The level of recovery of such materials from WEEE largely depends on the type of recovery method and on the value of the raw materials.

Progress has been made on the environmentally sound handling and proper **treatment of WEEE**. However, only about 23% of recycling facilities implement high-quality standards for the treatment of WEEE. There is still significant potential for improving the quality of recycling mainly to contribute to retrieving considerable volumes of valuable secondary raw materials, including CRMs

On the **implementation of the EPR** (Extended Producer Responsibility) obligations, the WEEE 2 Directive has not been effective in ensuring that all producers, in particular online sellers, fulfil their obligations. Nevertheless, the WEEE 2 Directive has had some **positive effects on the performance of all those involved** (through awareness raising, knowledge transfer and cooperation within the WEEE sector).

### **Efficiency**

Analysing the costs and benefits of the WEEE 2 Directive has been made difficult by the **limited availability of comprehensive data**. A dedicated exercise to collect representative data from Member States and producer responsibility organisations (PROs) could contribute to addressing this issue. More reference points and case studies would need to be identified in

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<sup>3</sup>The WEEE 2 Directive requires separate collection of 85% of WEEE generated or 65% of EEE placed on the market within the three preceding years.

such a dedicated exercise to allow a statistically sound extrapolation of a great variety of costs and benefits of the WEEE 2 Directive.

The Directive's **benefits** include better awareness about WEEE and less harm caused to the environment. The WEEE 2 Directive had a positive effect on CO<sub>2</sub> savings, resource efficiency and depollution. Increasing the collection and proper treatment of WEEE are also essential to reduce the release of hazardous substances and to recover valuable materials, which reduces the demand for primary resources. European standards for the treatment of WEEE (EN 50625 series standards) are crucial for harmonising practices across Member States and ensuring high levels of depollution and recycling. Furthermore, the WEEE Directive contributes to achieving several UN Sustainable Development Goals.

The **costs** associated with implementing the WEEE 2 Directive encompass administrative, enforcement, adjustment and indirect costs, with stakeholders bearing them in different ways. Direct costs are borne by public authorities (compliance and enforcement costs), and producers and PROs incur costs in the form of EPR fees, which vary depending on the Member State and on the EEE category. However, specific information on these costs is limited.

**WEEE collection costs** must be covered by EEE producers, but the expenses incurred by municipalities for collecting WEEE are not comprehensively covered by EPR fees. This is because collection costs per tonne of WEEE collected strongly depend on the WEEE category, regional differences (e.g. population density) and the overall collection infrastructure in place.

Based on extrapolation, the average **costs for collection, treatment and logistics** per PRO per year is around EUR 2 449. Costs incurred are likely to be passed on to citizens through product costs, taxes or municipal fees.

On the **administrative costs** of implementing the WEEE 2 Directive, there is a considerable degree of variation among those involved in the sector and among Member States. The WEEE Directive 2 has resulted in simplification and reduced administrative burden. Harmonisation of the format for registration represents cost savings of EUR 3 863 100 per year for producers, including small and medium-sized enterprises (SMEs), and harmonisation of the format for reporting represents savings of EUR 7 335 000 per year for producers, including SMEs.

### **Coherence**

The WEEE 2 Directive appears to be **internally coherent**, and there is no contradiction or duplication within its secondary legislation. However, uncertainties and legislative gaps have been identified in relation to the definition of EEE, the lack of concrete obligations for 'producers supplying EEE by means of distance communication' and online intermediaries. The lack of a separate category for photovoltaic panels is also considered to be a gap.

The WEEE 2 Directive is also to a large extent **coherent with other EU initiatives** with similar objectives (e.g. the Batteries Regulation, the End-of-life vehicles (ELV) Directive and the proposal for an ELV regulation, the Restriction of Hazardous Substances (RoHS)

Directive) and with relevant international agreements. Some points of inconsistency with other EU initiatives have been identified, in particular between Article 4 of the WEEE Directive and the new Ecodesign for Sustainable Product Regulation (ESPR) and between Annex V of the WEEE 2 Directive (minimum recovery targets, which does not specify which CRM relevant components are to be separated) and the CRM Act.

### **Relevance**

The initial **environmental protection objectives** of the WEEE 2 Directive remain very relevant for the EU. However, the two main types of measures set out in the Directive (the WEEE collection and recovery targets) are not sufficient to: (i) address the environmental concerns linked to WEEE management and the related design of EEE; or (ii) significantly support implementing a circular economy model within the EU and creating a market for secondary raw materials. Developments in the policy areas of sustainable production, digitalisation, renewable energy, resource efficiency and CRMs in particular require WEEE policy to adapt to the new circumstances.

Synergies and timely sequencing between the WEEE Directive, the **ESPR** and the **CRM Act** and their related secondary acts – are very important. They can significantly contribute to creating a secondary raw material market, particularly more efficient recycling and better recovery of CRMs coupled with EEE design measures, which corresponds to wider EU policy goals and priorities.

The current system of **categorising EEE** is still relevant overall. However, it is evident that photovoltaic panels need to form a category on their own (because of their lifespan and different collection and recycling practices). Other renewable energy equipment with upcoming waste streams in the EU, such as wind turbines, could be included in the scope, and further assessment of the composition of EEE under each category could be considered.

### **EU added value**

The WEEE 2 Directive complies with the principles of **subsidiarity and proportionality**. As the environmental problems addressed by the WEEE 2 Directive are still relevant today, action at EU level continues to be pertinent. This applies, in particular, to producer responsibility, reporting requirements, and WEEE collection and recycling.

### **Lessons learnt**

The evaluation stressed that the four major shortcomings of the WEEE 2 Directive were related to the **collection of WEEE** and **recovery of CRMs** and a lack of harmonisation of EPR schemes and treatment requirements in the EU. New approaches are necessary to provide incentives to increase and improve **WEEE collection**, to better reflect the **waste hierarchy**, and to contribute to creating a **secondary material market**. To further harmonise implementation of the WEEE Directive and address future needs related to green and digital policies, there is a need to better define and extend its **scope**. On **EPR** at the core of the Directive, further harmonisation of EPR fees is needed. To ensure a more level playing field across Member States in the future, the most **appropriate legal instrument** should be

considered. There is also a need to set more harmonised requirements based, in particular, on the European Standards for the treatment of WEEE and on best practices implemented in Member States. In the wider context of pursuing circular economy objectives, the lessons learnt provide ample insights for future policymaking. It is worth considering the potential of bringing prevalent CRMs and other materials which are energy-intensive, such as steel and plastics, into circularity in the EU. This is particularly relevant for large-size EEEs and will serve to catalyse investment in recycling capacity and encourage EU industry to effectively substitute virgin materials. This in turn will boost the **EU's competitiveness, decarbonisation and economic security**.