Review
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EU actions and existing challenges on electronic waste

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Executive summary

I Waste electrical and electronic equipment (WEEE), also known as “electronic waste” or e-waste, designates various forms of electrical and electronic equipment that have ceased to be of value to their users or no longer satisfy their original purpose. Hazardous substances often present in this kind of waste make it harmful to the environment. E-waste also often contains metals and plastics that serve as raw materials for new products, making it suitable for recycling.

II This is not an audit report; it is a review mainly based on publicly available information or material specifically collected for this purpose. It focuses on the role and actions taken by the European Union (EU) to tackle the challenges to e-waste management in the EU. It presents the EU’s response to the problem and it highlights some key challenges remaining to the implementation of the WEEE Directive. The publication of this review in the first quarter of 2021 provides an opportunity for the Commission to consider it for the “Circular Electronics Initiative”, planned for the last quarter of 2021.

III The EU adopted its first Directive on WEEE in 2003, replaced by a new one in 2012. The Directive established the principle of “extended producer responsibility” that, following the polluter pays principle, imposes that producers of electrical and electronic equipment finance the management of WEEE. The WEEE Directive also incentivises cooperation between producers and recyclers with a view to improving product design to facilitate reuse, as well as the dismantling and recovery of WEEE components and materials. Furthermore, it contains a range of targets for WEEE collection and recovery. EU and international law forbid exports of hazardous e-waste to countries that are not members of the Organisation for Economic Co-operation and Development.

IV In 2019, the Commission published a communication on the European Green Deal supporting the modernisation of the EU’s economy, and the prioritisation of reducing material usage, and increasing reuse over recycling. In 2020, the Commission published an Action Plan on a new Circular Economy. The Plan identifies electronics and information and communications technology (ICT) equipment as products requiring urgent action and it promotes better product design, the empowerment of consumers, as well as circularity in the production processes.

V We identify that the EU has an e-waste management framework that compares favourably with other parts of the world. EU Member States, on average, collect and

recover more WEEE than most third countries. Collectively, the EU has met its past WEEE collection and recovery targets, although some Member States did not achieve the 2016 collection target. The EU has subsequently set itself more challenging collection and recovery targets.

VI We also identify that the EU has improved legislation on electronic waste, by revising targets, e-waste categorisation, and reporting procedures. The Commission has assessed policy implementation, and launched infringement procedures against Member States.

VII We note that challenges in EU e-waste management remain. One of them is the implementation of existing e-waste treatment requirements. Another one is dealing with mismanagement of e-waste, illegal shipments and other criminal activities. In addition, the EU faces the challenge of further increasing e-waste collection, recycling and reuse.

Introduction

Policy context

01 "Waste electrical and electronic equipment" (WEEE, "electronic waste", or "e-waste") designates "various forms of electrical and electronic equipment that have ceased to be of value to their users or no longer satisfy their original purpose"[1]. This includes a whole range of devices from small household electrical appliances and IT equipment to large equipment such as photovoltaic panels or automatic teller machines (ATMs). It does not include batteries, which, in the EU, are covered by separate legislation.

02 WEEE, if not treated properly, is harmful to the environment, as it often contains complex combinations of highly toxic substances. Burning untreated WEEE can release hazardous chemicals, such as dioxins[2]. The use of certain metals in such equipment, such as lead and mercury, has been restricted in the EU since 2003[3], but those may still be present in older products.

03 Proper treatment of e-waste can yield significant economic benefits and reduce demand for raw materials. For instance, 1 tonne of smartphones contains about 100 times more gold than 1 tonne of gold ore[4]. E-waste may also contain other important metals such as copper, nickel, indium or palladium[5]. Recycling e-waste also contributes to climate change mitigation, given that it avoids emissions of greenhouse gases resulting from the production of new materials, in particular metals[6]. The

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1 Gill, Gitanjali Nain, Electronic waste. Encyclopaedia Britannica, May 2016.

2 Perkins, Devin N.; Brune Drisse, Marie-Noel; Nxele, Tapiwa; Sly, Peter D. E-Waste: A Global Hazard. *Annals of Global Health*. November 2014, pp. 286-295.

3 Directive 2002/95/EC (no longer in force) and Directive 2011/65/EU.

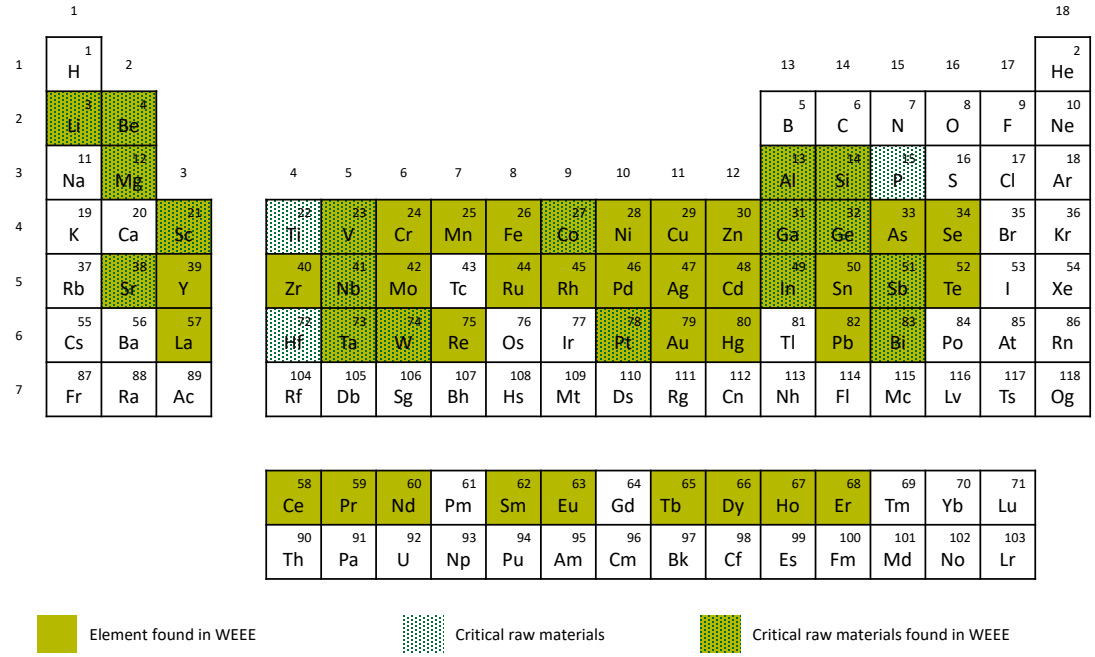
4 World Economic Forum, A New Circular Vision for Electronics: Time for a Global Reboot, 2019.

5 INTOSAI, Auditing Waste Management, October 2016, p. 16.

6 Golsteijn, Laura; Martinez, Elsa V. The Circular Economy of E-Waste in the Netherlands: Optimizing Material Recycling and Energy Recovery. *Journal of Engineering*, vol. 2017, pp. 3-4.

EU-funded ProSUM project[7] has identified 49 chemical elements present in WEEE, many with the potential to be recycled for use in other products[8]. The European Commission has listed 18 of those 49 elements as critical raw materials, i.e. economically important materials with a high supply risk[9] (see ***Figure 1***).

Figure 1 – Chemical elements found in WEEE and critical raw materials, highlighted in the periodic table of elements



Note: The European Commission lists bauxite, a rock with a high aluminium content, as a critical raw material, not the chemical element aluminium itself.

Source: ECA, based on data from the Urban Mine Platform and the European Commission.

04 The EU first legislated on e-waste in 2003 (the first WEEE Directive[10]). This Directive encouraged collection schemes that allowed consumers to return their WEEE

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7 Prospecting Secondary raw materials in the Urban mine and Mining waste (ProSUM), Funded under H2020-EU.3.5.4, Grant Agreement n. 641999.

8 Huisman, Jaco et al., Prospecting Secondary Raw Materials in the Urban Mine and mining wastes (ProSUM) - Final Report, 21 December, 2017, Brussels, Belgium. See also the ProSUM's project Urban Mine Platform.

9 European Commission, Critical Raw Materials Resilience: Charting a Path towards greater Security and Sustainability, COM(2020) 474 final, p. 1 and Annex 1.

10 Directive 2002/96/EC.

free of charge, based on the principle of "extended producer responsibility" (see ***Box 1***). In 2012, the EU adopted a "recast" Directive (the second WEEE Directive)[11].

Box 1

Understanding "Extended Producer Responsibility"

Extended producer responsibility is a practical application of the polluter pays principle, where producers are responsible for the environmental impacts of their products during their whole life cycle[12].

The EU's Waste Framework Directive defines "Extended producer responsibility" as a set of measures taken by Member States to ensure that producers are responsible (financially and/or organisationally) for the management of the waste stage of a product's life cycle"[13].

Producers and importers of electrical and electronic equipment, as well as authorized representatives in Member States, may take care of e-waste individually, organizing directly the collection and subsequent management of waste. They may also contribute towards a collective scheme, for instance by setting up and financing (together with other producers) a "Producer Responsibility Organization" that takes charge of e-waste management.

05 According to the WEEE Directive, Member States must ensure systems are established for the return of e-waste free of charge (to the final holder)[14]. Producers of electrical and electronic equipment finance those systems in proportion to their respective share of the market by type of equipment, under arrangements that vary from Member State to Member State, established in line with minimum requirements set by the Waste Framework Directive[15] and the WEEE Directive.

06 Waste management is a broad term used to designate the collection, transport, recovery and disposal of all sorts of waste[16]. The WEEE Directive contains provisions on the following e-waste management operations: separate WEEE collection, proper

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11 Directive 2012/19/EU.

12 Pouikli, Kleonik, Concretising the role of extended producer responsibility in European Union waste law and policy, *ERA Forum*. V. 20, February 2020, p. 494.

13 Directive 2008/98/EC, Article 3.21.

14 Directive 2012/19/EU, Article 5.

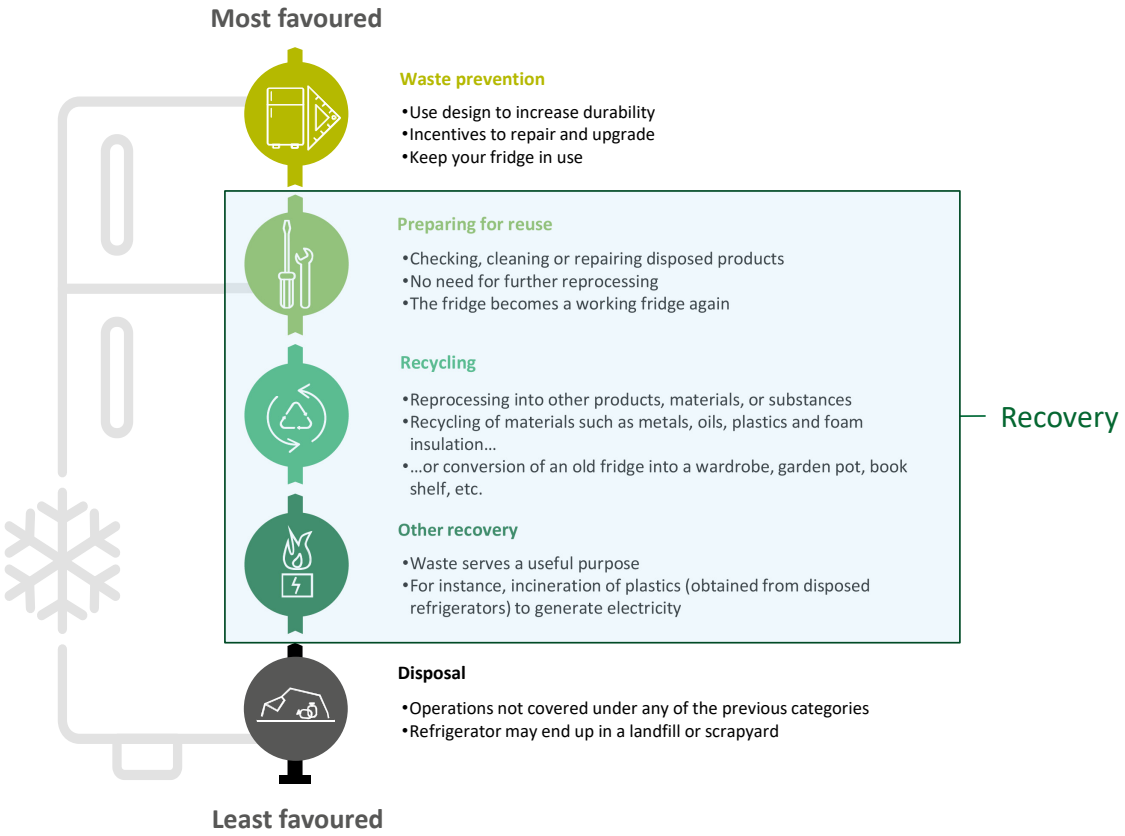
15 Directive 2008/98/EC, Article 8a.

16 Directive 2008/98/EC, Article 3.9.

treatment, WEEE shipments, recovery (including recycling and preparing for reuse), and environmentally sound disposal.

07 The WEEE Directive also encourages the application of the Waste Framework Directive's waste hierarchy. Taking into account this waste hierarchy, the WEEE Directive provides for cooperation and exchange of information between producers and recyclers with a view to improving product design to facilitate reuse, as well as the dismantling and recovery of WEEE components and materials. ***Figure 2*** provides examples of the application of the waste hierarchy to a refrigerator.

Figure 2 – Example: application of the waste hierarchy to a refrigerator

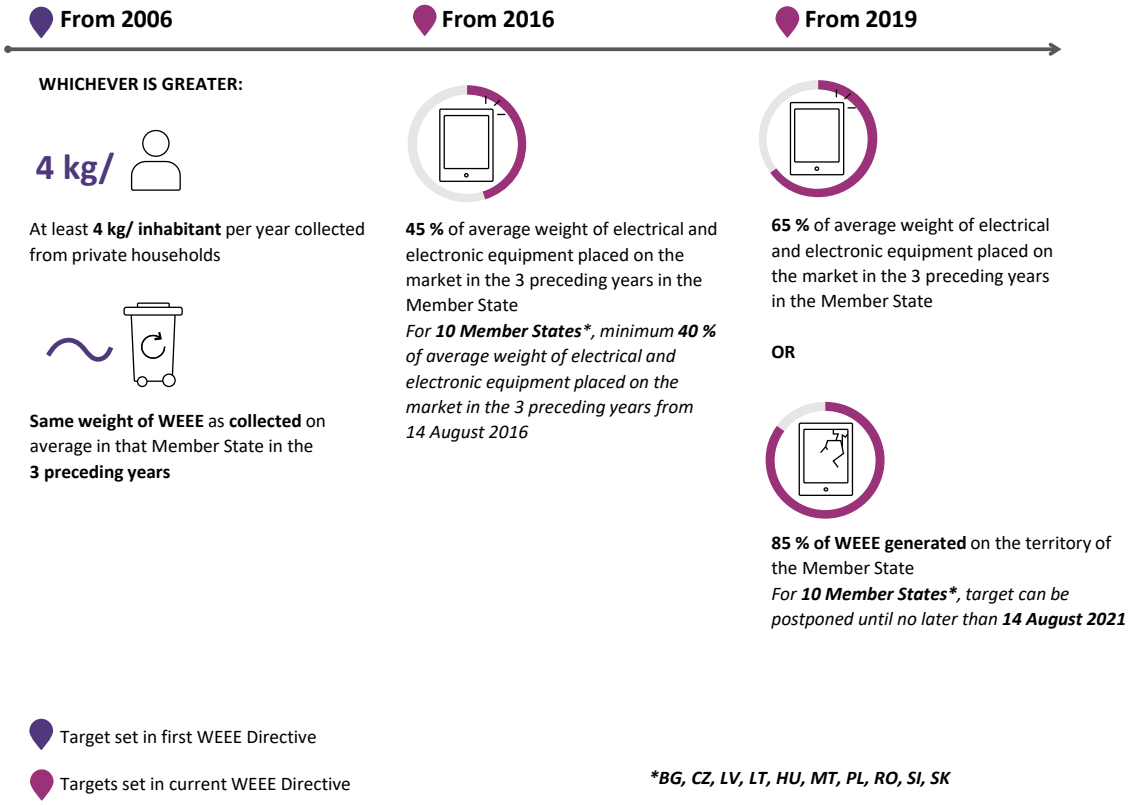


Source: ECA, based on Waste Framework Directive.

08 The WEEE Directive establishes a range of collection targets for WEEE (see ***Figure 3***), and also sets several recovery targets with minimum targets for preparing for reuse and for recycling (see ***Annex I***). Recovery relates to recycling and extraction of metals and metal compounds, as well as incineration to generate energy[17].

[17] Directive 2008/98/EC, Annex II.

Figure 3 – E-waste collection targets based on the WEEE Directive



Source: ECA, based on Directive 2012/19/EU and on Directive 2002/96/EC.

09 To protect the environment, the WEEE Directive establishes common EU-wide e-waste treatment requirements. Member States can set additional minimum quality standards for the treatment of collected WEEE. The Directive also empowers the Commission to adopt implementing acts laying down minimum quality standards for WEEE treatment (including recovery, recycling, and preparing for reuse), based on the work of standardisation organisations under the Commission's mandate[18].

10 The WEEE Directive states that WEEE shipments to other EU Member States or to third countries may only occur if in compliance with EU legislation on waste shipments. In case of waste shipments to non-EU countries, EU law forbids exports of hazardous waste to non-EU countries that are not members of the Organisation for Economic Co-operation and Development (OECD)[19]. Since 2019, international law also forbids

[18] European Commission, Mandate M/518 - Mandate to the European Standardisation Organisations for Standardisation in the Field of Waste Electrical and Electronic Equipment, 24 January 2013.

[19] Regulation 1013/2006, Article 36.

exports of various hazardous wastes, including hazardous e-waste, from the EU to non-OECD countries[20].

Roles and responsibilities

11 The European Commission, through its Directorate-General for Environment (DG ENV), proposes policy (including new legislation), and monitors e-waste policy implementation. The Commission may also launch infringement procedures against Member States when they do not comply with EU legislation. The European Statistical Office (Eurostat), another Directorate-General of the European Commission, is responsible for gathering data collected by Member States on electrical and electronic equipment (EEE) placed on the market, WEEE collection, WEEE recovery (including recycling and preparing for reuse), and on WEEE exported, and for performing consistency checks on those data[21]. Eurostat also reports on the achievement of the targets[22].

12 The EU finances research and capacity building in the area of e-waste, having provided close to €100 million through Horizon 2020[23], and over €8 million through the LIFE Programme[24]. The EU budget also provides some funding for general waste infrastructure through the Cohesion Fund and the European Regional Development Fund, but the data published by the Commission do not make it possible to determine whether a share of this funding goes towards infrastructure that is relevant to e-waste[25].

13 Member States have transposed the WEEE Directive into national law and set up processes to implement it. They also report data to Eurostat.

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[20] Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Annex VII.

[21] Directive 2012/19/EU, Article 16, and Commission Implementing Decision (EU) 2019/2193.

[22] See Eurostat, Waste statistics – electrical and electronic equipment.

[23] See CORDIS database.

[24] See LIFE Programme projects database.

[25] European Commission, Open Data Portal, data on the Cohesion Fund and on the European Regional Development Fund.

14 Producers of electrical and electronic equipment, importers (and authorised representatives) in Member States are responsible for ensuring that those products placed on the EU market comply with EU laws, and for financing the management of e-waste.

E-waste, the European Green Deal, and the circular economy

15 In 2019, the Commission published its communication on the European Green Deal. It is "an initial roadmap of the key policies and measures" aimed at transforming "the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy"[26]. Among an array of targets and actions, the communication envisaged a "new circular economy action plan". In a circular economy, products and the materials they contain are highly valued, which implies reducing waste to a minimum, keeping materials within the economy to the extent possible[27].This would include prioritising reducing material usage, and increasing reuse over recycling, and would entail a strengthening of extended producer responsibility.

16 In March 2020, the Commission published the communication "A new Circular Economy Action Plan – For a cleaner and more competitive Europe"[28]. It identifies electronics and information and communications technology (ICT) equipment as one of the key value chains requiring "urgent, comprehensive, and coordinated actions".

17 The Commission intends to present a "Circular Electronics Initiative" in the 4th quarter of 2021[29], aiming to promote longer product lifetimes, which is expected to involve, *inter alia*, the following[30]:

- regulatory measures covering the design of electrical and electronic equipment, aimed at improving their energy efficiency, durability, reparability, upgradability, maintenance, reuse, and recycling;

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[26] COM(2019) 640 final, p. 2.

[27] European Parliamentary Research Service, Closing the loop: New circular economy package, January 2016, pp. 2-3.

[28] COM(2020) 98 final.

[29] COM(2020) 690 final, Annex.

[30] COM(2020) 98 final, Section 3.1.

- prioritising electronics and ICT products for implementing a “right to repair” policy, including a right to update obsolete software;
- regulatory measures on chargers for mobile phones and similar devices;
- improvement of WEEE collection, including by exploring an EU-wide take back scheme for old mobile phones, tablets and chargers;
- a review of EU rules on hazardous substances in electrical and electronic equipment.

Review scope and approach

18 This review focuses on the role and actions taken by the EU on WEEE. It takes stock of the EU's actions on the matter of e-waste, and highlights key challenges concerning the implementation of the WEEE Directive. This review covers the period from the entry into force of the 2012 WEEE Directive (August 2012) until January 2021. We focused on the identification of the challenges to e-waste management in the EU. We held meetings with officials from DG ENV, and we also reviewed:

- reports by the European Court of Auditors (ECA)[31] and national Supreme Audit Institutions (SAIs);
- European Commission policy assessments, notably the final report of its 2017 WEEE Compliance Promotion Exercise;
- European Parliament reports, including by the European Parliamentary Research Service (EPRS);
- publications by academics, think tanks, and NGOs on WEEE management.

19 This is not an audit report; it is a review mainly based on publicly available information or material specifically collected for this purpose. It consolidates in a single document information and knowledge on the state of e-waste policy in the EU, as well as on the challenges faced by the EU in improving the recovery of e-waste, thus contributing to the broader debate on waste reduction and on ways to make the economy more circular. The publication of this review in the first quarter of 2021 provides an opportunity for the Commission to consider it for the "Circular Electronics Initiative", planned for the last quarter of 2021.

[31] Special report 01/2020 (EU action on Ecodesign and Energy Labelling: important contribution to greater energy efficiency reduced by significant delays and non-compliance) and special report 16/2019 (European Environmental Economic Accounts: usefulness for policymakers can be improved).

The EU framework for dealing with e-waste

The EU collects and recovers more e-waste than most other parts of the globe

20 Global statistics on e-waste show higher rates of e-waste collection and treatment in the EU than in most parts of the world. Data from the Global E-Waste Statistics Partnership identify Europe (including both EU and non-EU countries) as the continent with the highest generation of e-waste per capita, but also as the part of the world with the highest WEEE collection and recycling rates. Europe generates a per capita amount of e-waste comparable to the Americas and Oceania, but has a collection and recycling rate that is over four times higher (see ***Table 1***).

Table 1 – E-waste generation, collection and recycling per continent (2019)

Indicators		Africa	Americas	Asia	Europe	Oceania
E-waste generated	Total (Mt)	2.9	13.1	24.9	12.0	0.7
	Per capita (kg)	2.5	13.3	5.6	16.2	16.1
E-waste documented to be collected and properly recycled	Total (Mt)	0.03	1.2	2.9	5.1	0.06
	Share of total generated waste (%)	0.9	9.4	11.7	42.5	8.8

Source: ECA, with data from Global E-waste Monitor 2020.

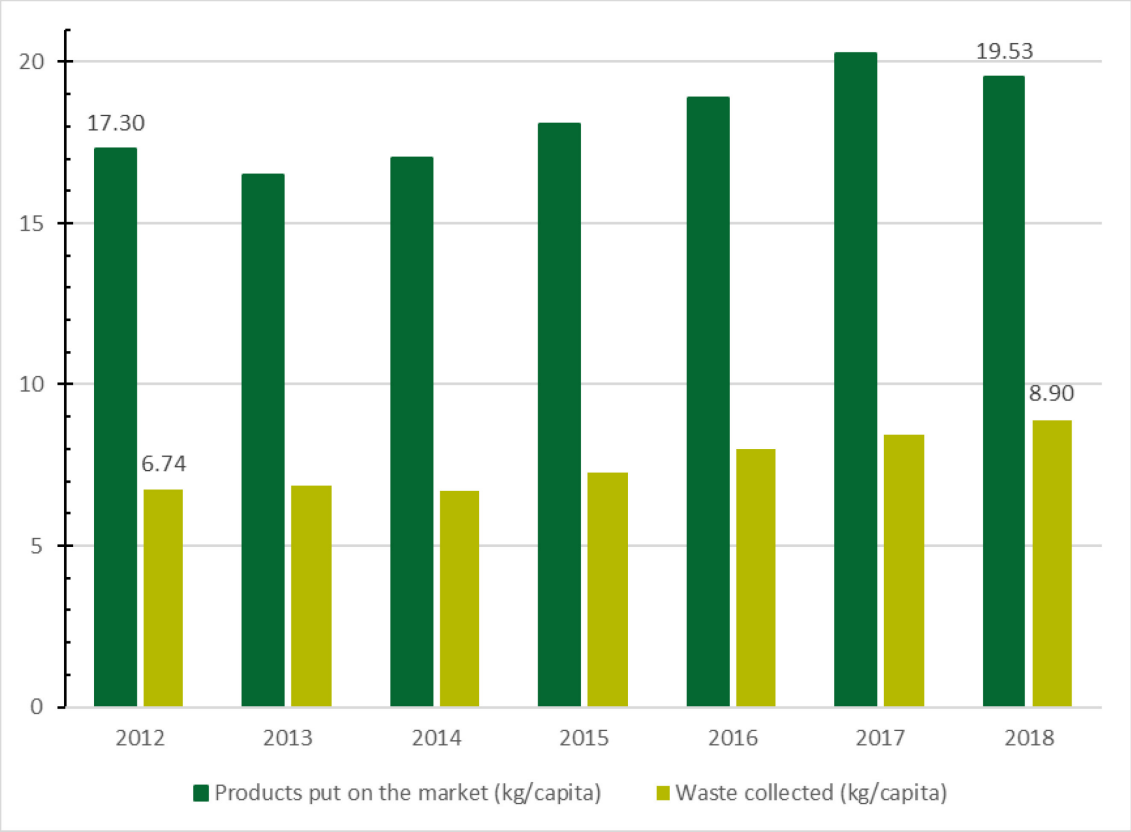
21 EU Member States tend to outperform most non-EU countries in the collection of e-waste, including developed countries such as the United States and Japan (see ***Figure 1*** in ***Annex II***).

E-waste collection and recovery in the EU have improved over time

22 Data from Eurostat show that the amount of WEEE collected per capita has increased in the EU in the period from 2012 until 2018 (see ***Figure 4***, and ***Figure 2*** in ***Annex II***). The data available until 2018 show that, despite variations between Member States, the overall trend across the EU has been towards an increase in the WEEE

collection rate (relative to the average weight of products placed on the market in the preceding three years, see ***Table 1*** in ***Annex II***).

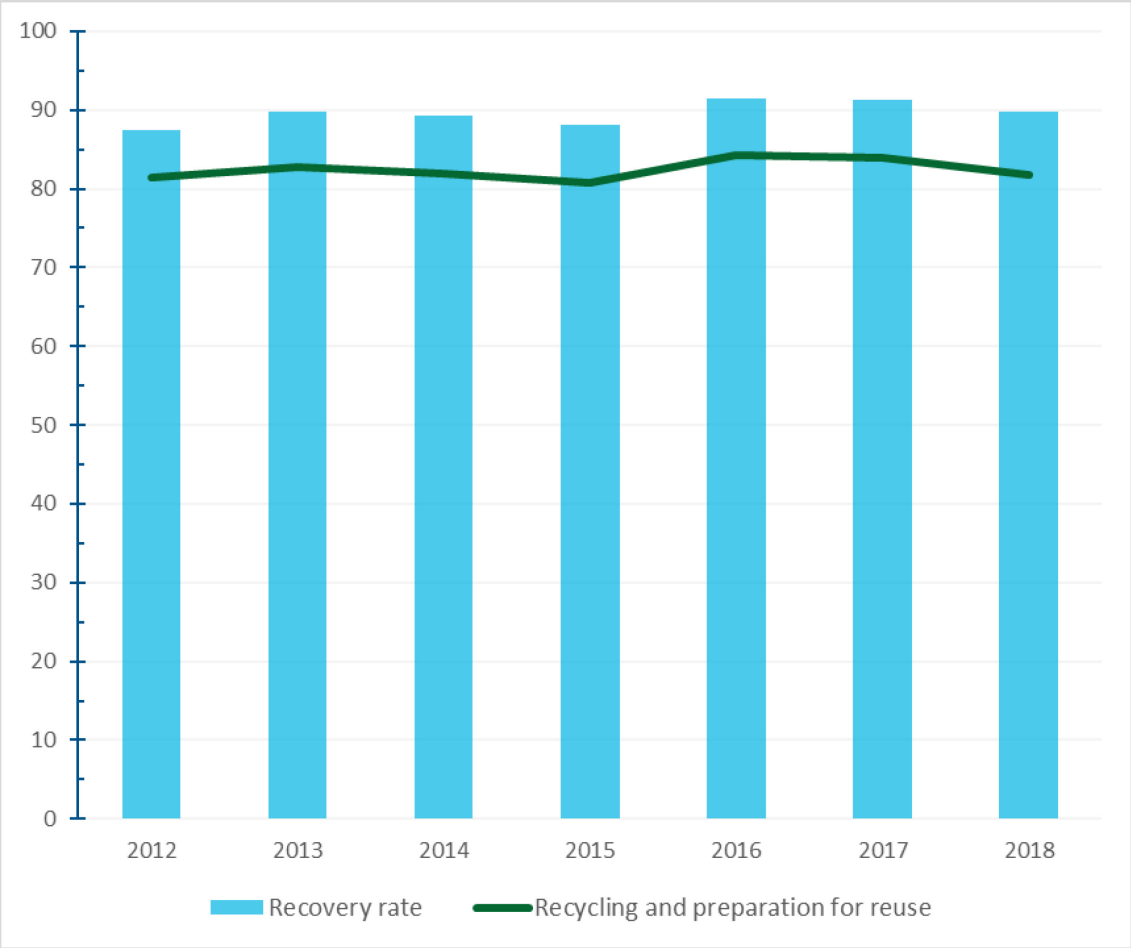
Figure 4 – Electrical and electronic equipment put on the market, and WEEE collected (EU-27, in kg per capita)



Source: ECA, based on data from Eurostat.

23 Recovery comprises various sorts of operation, such as recycling, preparing for reuse, and incineration (energy recovery). Data from Eurostat show that, in the EU, from 2012 to 2018, over 87 % of the WEEE collected was recovered, and over 80 % was recycled (see ***Figure 5***).

Figure 5 – WEEE recovery rate and rate of recycling and preparing for reuse (EU-27, in %)



Note: The rate is relative to WEEE collected.

Source: ECA, based on data from Eurostat.

The EU met its past WEEE collection and recovery targets, and subsequently set itself more challenging collection and recovery targets

24 From 31 December 2006 until 31 December 2015, EU Member States had to achieve a minimum collection rate of WEEE from private households of four kilogrammes on average per inhabitant per year[32]. Data from Eurostat show that nearly all EU countries had achieved that target by 2015 (see ***Figure 2*** in ***Annex II***).

[32] Directive 2002/96/EC, Article 5.5; Directive 2012/19/EU, Article 7.1.

25 In 2016, Member States had to achieve a minimum collection rate of 45 % of all WEEE (not only from private households), relative to the average weight of electrical and electronic equipment placed on the market in the preceding three years[33]. Bulgaria, Czechia, Latvia, Lithuania, Hungary, Malta, Poland, Romania, Slovenia, and Slovakia benefitted from a derogation allowing them to achieve a target of a minimum of 40 % by August 2016. Most Member States reached the 45 % target and so did the EU as a whole. However, two Member States fell short of the target, and several performed worse in the subsequent two years, even if above the minimum collection rate (see ***Figure 3*** and ***Table 1*** in ***Annex II***).

26 From 2019, Member States must achieve a minimum collection rate of 65 % of all WEEE relative to the average weight of electrical and electronic equipment placed on the market in the preceding three years or, alternatively, 85 % of the WEEE generated on the Member State territory. As of January 2021, data on WEEE collection for 2019 was not yet available.

27 Data from Eurostat point to the achievement of the EU recovery and recycling targets set for 2012 and 2015 (see ***Figure 4*** and ***Figure 5*** in ***Annex II***). From 2018 onwards, recovery targets follow a different categorisation of WEEE, and data on their achievement were not available as of January 2021.

[33] Directive 2012/19/EU, Article 7.1.

The Commission's actions to improve EU e-waste policy

The EU has adapted its legislation on WEEE

28 The 2012 WEEE Directive kept the main characteristics of the 2003 Directive, but introduced several significant changes. Among these was a new classification of WEEE, moving from ten relatively narrow categories to six open categories.

29 Another modification was the adoption of a different metric for establishing collection targets. Under the 2003 Directive, all Member States had to comply with a 4 kg/inhabitant target for the collection of WEEE from private households. The collection targets set in the 2012 Directive for 2016 and 2019 apply to all WEEE (from businesses and private households). These new targets are expressed either as a percentage of the average weight of electrical and electronic equipment placed on the market in the Member State in the three preceding years or as a percentage of the WEEE generated in the Member State.

30 In 2017, the Commission adopted an implementing regulation establishing a common methodology for the calculation of the weight of EEE placed on the national market and of WEEE generated, in order to harmonise the calculation of the annual WEEE collection rate by the Member States[34].

31 In 2018, an amendment to the WEEE Directive[35] consolidated data reporting obligations into a single annual electronic reporting exercise based on a template established by the Commission[36]. An amendment to the Waste Framework Directive from the same year established general minimum requirements for extended producer responsibility schemes, including those for WEEE[37], and required the modulation of fees paid by the manufacturer or importer to producer responsibility organisations,

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[34] Commission Implementing Regulation (EU) 2017/699.

[35] Directive 2018/849.

[36] Directive 2012/19/EU, Article 16.6.

[37] Directive 2008/98/EC, Article 8a (as modified by Directive (EU) 2018/851).

taking into account ecodesign aspects, such as durability, reparability, recyclability, and the presence of hazardous substances.

32 In 2019, the Commission adopted legislation harmonising the format used by the Member States' registers of producers of electrical and electronic equipment[38], and establishing procedures for data collection and reporting that complemented the 2018 changes in reporting procedures[39].

The Commission has assessed policy implementation and launched infringement procedures

33 The Commission conducted a "WEEE compliance promotion exercise" in 2017, in which it assessed Member States' compliance with legislation on WEEE[40]. This exercise used a classification of EU Member States in three groups according to their fulfilment of assessment criteria (see ***Figure 6***)[41].

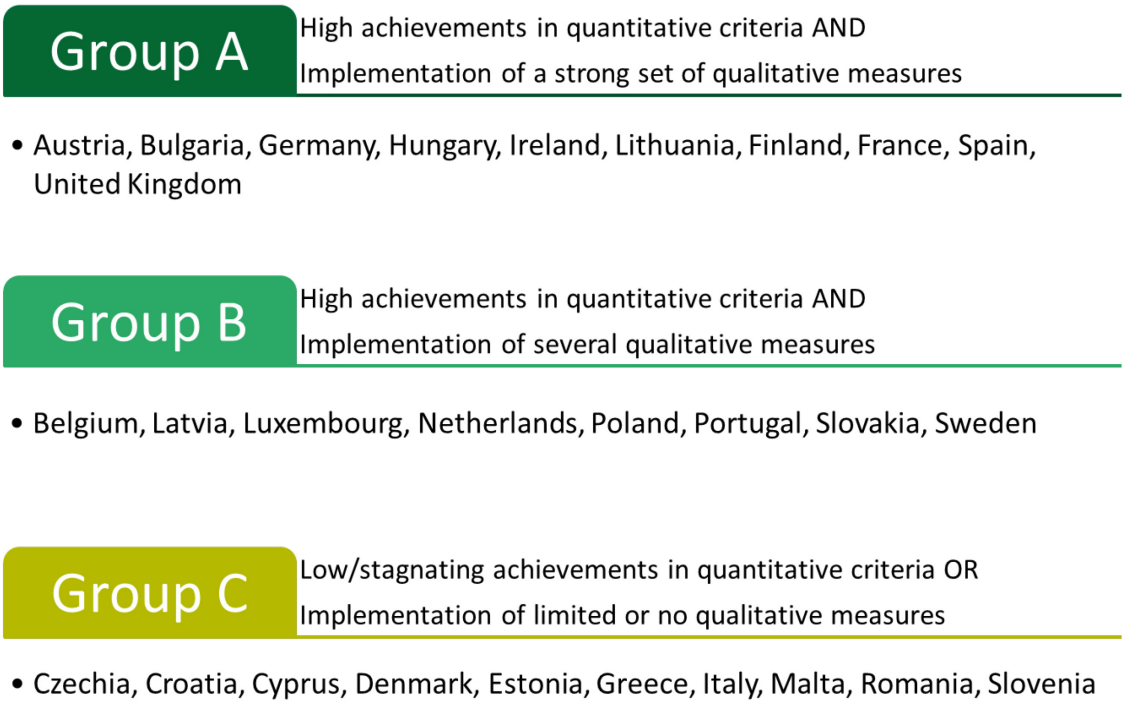
[38] Commission Implementing Regulation (EU) 2019/290.

[39] Commission Implementing Decision (EU) 2019/2193.

[40] European Commission, WEEE compliance promotion exercise – final report, December 2017.

[41] WEEE compliance promotion exercise – final report, December 2017, pp. 76-84.

Figure 6 – Commission's assessment of Member States' WEEE management policy (2017)



Note: Results do not necessarily imply failure to legally comply with EU legislation on WEEE.

Source: WEEE compliance promotion exercise 2017.

34 The Commission's report also provided examples of what it considered good practice, such as:

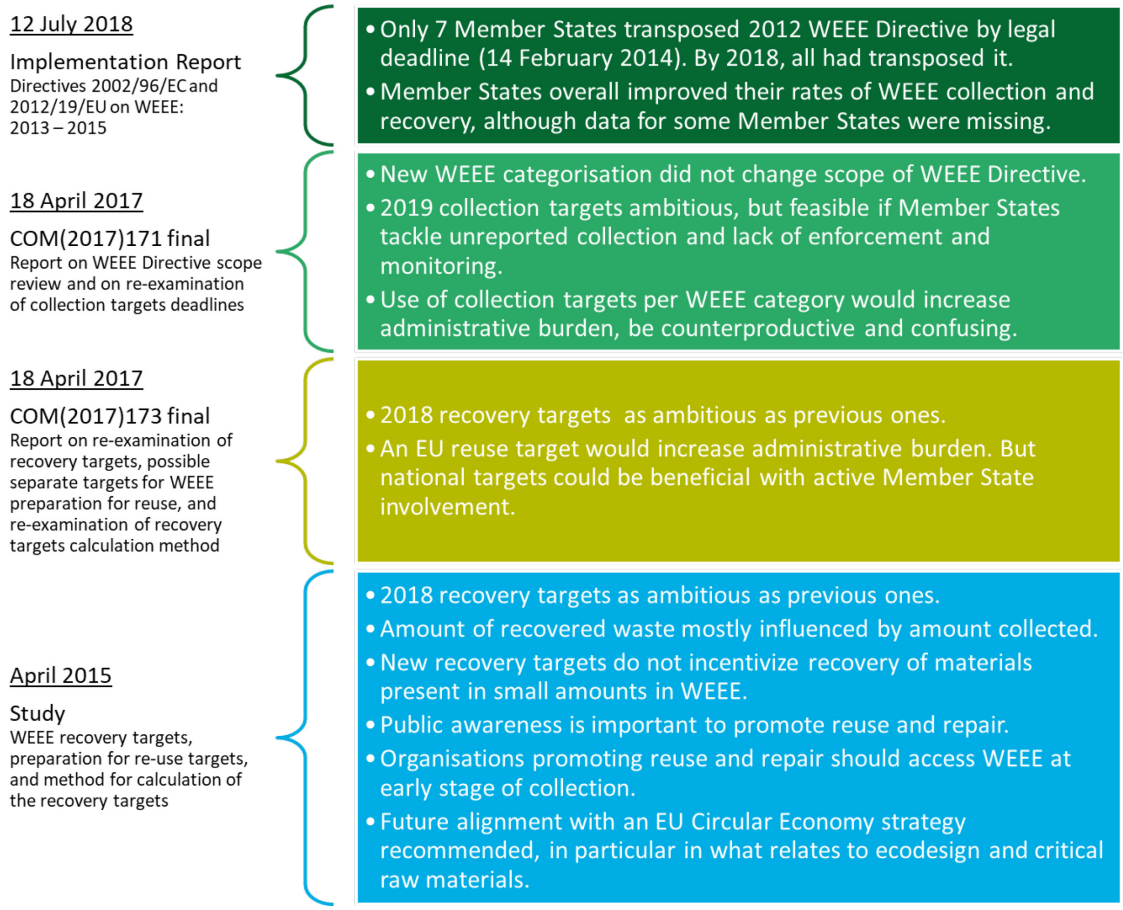
- free competition among WEEE management operators in Bulgaria, with allocation of collection duties based on their market share;
- mandatory investment by producers or producer responsibility organisations on information and awareness campaigns in Portugal;
- mandatory treatment quality requirements in Ireland and France;
- prohibition of cash payments in France, aimed at improving WEEE traceability and at fighting leakage of e-waste out of the official scheme;
- eco-labelling in Austria of electrical and electronic equipment designed for easy repair;

- separation of reusable and non-reusable WEEE in primary and secondary collection points in Flanders (Belgium).

35 The WEEE compliance promotion exercise also provided recommendations related to issues such as governance and financing of WEEE management, enforcement, illegal activities, awareness-raising, data quality, extended producer responsibility, collection infrastructure, re-use and product design.

36 The Commission has also assessed WEEE policy in reports to the Council and the European Parliament, as well as in triennial reports on the implementation of the WEEE Directive (see ***Figure 7***).

Figure 7 – Summary of selected Commission reports assessing WEEE policy

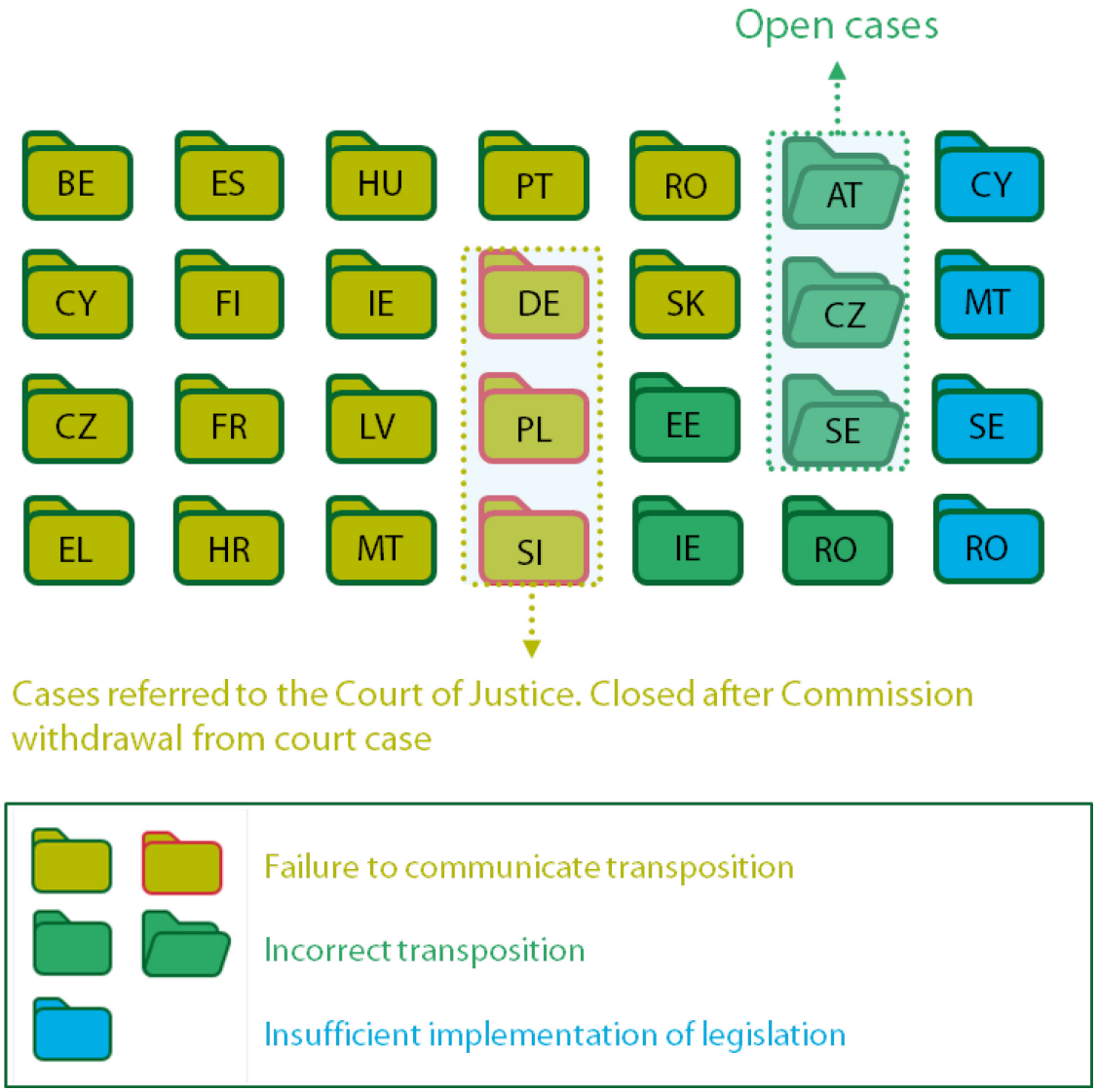


Source: ECA, based on the Commission reports listed in the table.

37 In addition to assessing policy implementation, the Commission has launched 28 infringement procedures against Member States related to the WEEE Directive. The Commission referred to the European Court of Justice three cases based on failure to

communicate transposition, and withdrew from those court cases after the three Member States in question transposed the Directive. As of December 2020, three cases based on incorrect transposition of the Directive remained open (see ***Figure 8***).

Figure 8 – Infringement procedures related to the WEEE Directive (as of January 2021)



Source: ECA, based on information provided by the European Commission.

Challenges in EU e-waste management

Implementing existing e-waste treatment requirements

38 The WEEE Directive lays out general requirements for the "proper treatment" of e-waste, which include[42]:

- the removal of all fluids;
- removal of certain substances, mixtures and components depending on the kind of WEEE (e.g. removal of cathode ray tubes from TVs, removal of toner cartridges from printers);
- minimum basic infrastructural requirements for facilities used for WEEE storage and treatment.

39 The WEEE Directive also allows Member States to complement these general requirements with minimum quality standards for the treatment of WEEE, and provides for the harmonisation of e-waste treatment requirements across the EU[43]. The Commission started this process by giving a mandate to the European Committee for Electrotechnical Standardization (CENELEC) to develop common European standards for the treatment of WEEE[44].

40 From 2014 to 2020, CENELEC developed thirteen standards. These standards remain voluntary, although the Commission, according to the WEEE Directive, may lay down EU-wide minimum quality standards based on them (which it had not done as of January 2021). They cover a range of areas related to the collection of WEEE, such as[45]:

- collection and logistics;
- treatment and depollution;

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[42] Directive 2012/19/EU, Article 8.2, Annex VII and Annex VIII.

[43] Directive 2012/19/EU, Article 8.5.

[44] European Commission, Mandate M/518 - Mandate to the European Standardisation Organisations for Standardisation in the Field of Waste Electrical and Electronic Equipment, 24 January 2013.

[45] CENELEC, European Standards for Waste Electrical and Electronic Equipment (WEEE), 2017.

- preparing for re-use.

41 Member States are responsible for enforcing the existing rules on proper treatment. For that purpose, the WEEE Directive establishes minimum inspection and monitoring requirements on Member States, covering information reported by the producers, inspections of shipments of WEEE outside of the EU, as well as the operations of treatment facilities[46]. The Directive also allows Member States to charge producers of electrical and electronic equipment and shippers of WEEE for the costs of analyses and inspections in cases of suspected shipment of WEEE falsely declared as second hand electrical and electronic equipment.

42 In 2017, 13 out of the then 28 Member States had no inspection plans covering both WEEE treatment and collection, and Member State authorities often lacked resources to target a significant number of operators and failed to perform legally required controls of "equivalent treatment conditions" in case of waste shipment outside the EU[47] (see also paragraph ***10***).

43 Audits and reviews conducted by SAIs in several Member States have shown that EU countries often face difficulties in implementing EU legislation on waste management. We identified eight reports touching upon issues related to the implementation of WEEE policy in the EU, plus a coordinated audit by multiple SAIs on the enforcement of the European Waste Shipment Regulation[48]. These reports identify weaknesses in the implementation of EU policy on WEEE (see ***Annex III***).

Dealing with criminal activity in the management of e-waste

44 Criminals can practice illegal acts related to WEEE management in several ways. Companies paid to treat e-waste can increase their profits by illegally dumping WEEE

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[46] Directive 2012/19/EU, Article 23.

[47] The following Member States had no inspection plans: Czechia, Denmark, Hungary, Italy, Luxembourg, Portugal. The following had plans only for collection or for treatment: Belgium, Estonia, Romania. No information on inspection plans could be found for the following Member States: Cyprus, France, Greece, Slovenia. See European Commission, WEEE compliance promotion exercise – final report, December 2017, pp. 61-62, 74-75.

[48] EUROSAI, Coordinated audit on the enforcement of the European Waste Shipment Regulation, October 2013.

instead, sometimes removing only its valuable parts[49]. There is also illegal shipment of WEEE to third countries. According to the International Organization of Supreme Audit Institutions (INTOSAI), the economic incentives for illegal or unsound waste management are large, while the risks of getting caught are generally low[50]. A report prepared by the Presidency of the Council of the European Union has identified that environmental crime (including those related to waste) has a low detection rate, and that prosecution of those cases is in certain cases statistically irrelevant[51]. According to an expert report, criminal proceeds in the waste industry can be comparable to those from drug trafficking, but with much lower sanctions[52].

45 Illegal dumping and the removal of valuable parts from WEEE are an important issue within the EU. For instance, from 2009 to 2013, Italian authorities uncovered 299 illegal WEEE dumping sites in areas such as forests, industrial zones and agricultural land[53]. In another case, authorities in Spain caught a WEEE recycling company hoarding significant amounts of e-waste, leaving it untreated (see ***Box 2***).

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[49] Rucevska et al., Waste Crime – Waste Risks: Gaps in Meeting the Global Waste Challenge, A UNEP Rapid Response Assessment, UNEP and GRID-Arendal, Nairobi and Arendal, 2015, p. 8.

[50] INTOSAI, Auditing Waste Management, October 2016, p. 41.

[51] Council of the European Union, 14065/19. Final report of the Eighth round of mutual evaluations on environmental crime, p. 12.

[52] EnviCrimeNet and Europol, Intelligence Project on Environmental Crime (IPEC), February 2015, p. 1.

[53] Biffi, Laura; Ciafani, Stefano; Dodaro, Francesco; Pergolizzi, Antonio; Ceglie, Chiara; Longoni, Fabrizio; Lorusso, Luca, I pirati dei RAEE – Dall'analisi dei fenomeni d'illegalità nella raccolta, gestione e riciclo dei rifiuti da apparecchiature elettriche ed elettroniche, alle attività di prevenzione e di contrasto, Centro di Coordinamento RAEE/Legambiente, 2014, p. 11.

Box 2

Example of mismanagement of WEEE in the EU

In July 2020, Spanish authorities arrested five executives of a WEEE recycling company in Seville (Spain). The authorities alleged that the company was not treating hazardous wastes it received. Among other things, it was hoarding all waste generated in Andalucía containing refrigerating gases, such as refrigerators, air conditioners, as well as electric water heaters (which contain such gases in their insulation materials). Those gases can be particularly harmful to the Earth's ozone layer, and posed a potential health risk to the plant's workers and people in the vicinity[54].

46 According to data from Eurostat, the EU Member States collect an amount of WEEE that corresponds to less than half of the weight of electrical and electronic products placed on the market (see ***Figure 3*** and ***Table 1*** in ***Annex II***). The Countering WEEE Illegal Trade project has estimated that mismanagement of discarded electronic equipment within Europe involves ten times the volume of WEEE illegally exported to other parts of the world[55]. It estimated in 2015 that the then 28 EU Member States exported about 400 thousand tonnes of undocumented WEEE mixed with used electrical and electronic equipment every year[56]. To put this into perspective, this exported amount was equivalent to approximately 10.5 % of the WEEE properly collected in those 28 countries in 2015[57].

47 E-waste shipments to other EU Member States need to comply with EU legislation on waste shipments (in particular Regulation (EC) 1013/2006)[58]. As far as shipments to third countries go, both EU and international law forbid shipments of hazardous WEEE from EU countries towards countries that are not members of the

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[54] Guardia Civil, Cinco detenidos y dos investigados en una empresa de Sevilla dedicada al reciclaje electrónico, 14 July 2020.

[55] Huisman et al., Countering WEEE Illegal Trade (CWIT) Summary Report, Market Assessment, Legal Analysis, Crime Analysis and Recommendations Roadmap, August 2015, p. 16.

[56] Huisman et al., Countering WEEE Illegal Trade: Summary Report, 2015, p. 16.

[57] Eurostat, Waste electrical and electronic equipment (WEEE) by waste management operations [ENV_WASELEE__custom_441774].

[58] Directive 2012/19/EC, Article 10.1.

OECD[59]. To help Member State authorities, the WEEE Directive contains rules aimed at distinguishing between used electrical and electronic equipment and WEEE[60].

48 Illegal e-waste shipments often happen through the misclassification of WEEE as used equipment[61]. This misrepresents the shipments as regular trade operations in order to escape legal requirements (see ***Box 3***). The WEEE Directive currently provides rules to distinguish between used equipment and e-waste, which are complemented by EU guidance[62]. An experiment conducted by the Basel Action Network (BAN, an NGO) has shed some light on the destination of WEEE. From April 2017 until September 2017, BAN deployed 314 items of used electrical and electronic equipment secretly equipped with GPS trackers in WEEE collection points in 10 EU Member States. Out of the 314 tracked units, 303 remained in the EU, while 11 ended up in seven different non-OECD countries and territories (Ghana, Hong Kong, Nigeria, Pakistan, Tanzania, Thailand, and Ukraine)[63].

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[59] Regulation 1013/2006, OECD Decision C(2001)107/Final, Article 36, and Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Annex VII.

[60] Directive 2012/19/EU, Annex VI.

[61] Forti V. et al., The Global E-waste Monitor 2020: Quantities, flows and the circular economy potential, United Nations University (UNU)/United Nations Institute for Training and Research (UNITAR) – co-hosted SCYCLE Programme, International Telecommunication Union (ITU) & International Solid Waste Association (ISWA), Bonn/Geneva/Rotterdam. 2020, p. 14.

[62] Directive 2012/19/EU, Article 23 and Annex VI. See also Correspondents' Guidelines No 1 on Shipments of Waste Electrical and Electronic Equipment (WEEE) and of used Electrical and Electronic Equipment (EEE) suspected to be WEEE.

[63] Basel Action Network, Holes in the Circular Economy: WEEE Leakage from Europe, 2019, p. 6.

Box 3

Example of illegal e-waste shipment

In June 2020, Spanish authorities, with the support of Italian authorities and Europol, dismantled an organised criminal group responsible for illegally shipping hazardous waste, including WEEE, from the Canary Islands. The group would intentionally misclassify WEEE as second-hand goods and ship it to buyers in Africa, totalling over 750 000 kg of WEEE in 2018 and 2019[64].

49 The EU Waste Shipment Regulation classifies waste either as "green listed", with less stringent requirements for shipment, or as "amber listed", with stricter requirements[65]. Untreated WEEE, usually hazardous, generally falls under the "amber listed" category. A joint audit on the enforcement of the Waste Shipment Regulation conducted by SAIs from seven Member States plus Norway found that hazardous waste (which includes most types of WEEE) was often being imported and exported as "goods" or as "green-listed" waste in order to avoid the more stringent procedures and prohibitions applicable to "amber listed" waste[66]. As of March 2021, the Commission was in the process of reviewing the Waste Shipment Regulation[67].

50 International trade statistics do not differentiate between used and new electrical and electronic equipment[68]. Illegal shipments of WEEE may happen through its misclassification as "used equipment" (see paragraph ***48***). According to the World Customs Organization (WCO), this situation is expected to change with the introduction of a new heading for "Electrical and electronic waste and scrap" in the most recent version of the Harmonized System nomenclature used for the

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64 Europol, 2500 tonnes of waste trafficked from the Canary Islands to Africa, 29 June 2020.

65 Regulation 1013/2006, Annexes III and IV.

66 EUROSAI, Coordinated audit on the enforcement of the European Waste Shipment Regulation: Joint report based on eight national audits, 2013, p. 6.

67 European Commission. Inception Impact Assessment: Waste Shipment – revision of EU rules, 2020.

68 Krings, Hanna, International trade in second-hand electronic goods and the resulting global rebound effect, MAGKS Joint Discussion Paper Series in Economics, No. 38-2015, Philipps-University Marburg, School of Business and Economics, Marburg, 2015, p. 7.

classification of internationally traded goods, which will enter into force in January 2022[69].

51 According to the European Commission, Member States (including the UK) have reported 2 800 illegal shipments of waste (encompassing all kinds of waste) in 2013-2015[70]. In the period from 2014 to 2015, a group of 14 environmental authorities from European countries and regions (Austria, Czechia, Finland, Germany, Ireland, Italy, Malta, Northern Ireland, Norway, Poland, Scotland, Slovenia, Sweden, and Wales) reported 815 waste shipment violations, 99 of which related to illegal shipments of WEEE[71]. A report by experts from the BlockWaste research project estimated that, between 2010 and 2014, 33 % of the hazardous waste generated in the EU (which include hazardous WEEE) was not recorded as treated[72].

52 The WCO has organised, since 2009, the DEMETER operations, where customs and other authorities cooperate to enforce the trade requirements provided by international treaties (such as those related to trade in waste). In 2020, operation DEMETER VI gathered 73 customs authorities, as well as a range of other actors, such as the European Anti-Fraud Office (OLAF) and the European Union Agency for Law Enforcement Cooperation (Europol), resulting in 131 seizures. Most of the seizures referred to metal waste, but also included WEEE. In the EU, most seizures happened in Belgium, Poland, and Denmark[73]. Previous DEMETER operations have also resulted in seizures of hazardous e-waste[74].

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69 Omi, Kenji, Current situation, analysis and observations on waste control at borders by Customs. WCO Research Paper No. 50, December 2020, p. 16. See also World Customs Organization, The new 2022 Edition of the Harmonized System has been accepted, 8 January 2020.

70 Report from the Commission to the European Parliament and the Council on the implementation of Regulation (EC) 1013/2006 on shipments of waste, COM(2018) 762, p. 6.

71 Olley, Katie et al. IMPEL – TFS Enforcement Actions 2014-2015: Enforcement of the European Waste Shipment Regulation. European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL), pp. 28-32.

72 Meneghini et al., An exploratory estimate of the extent of illicit waste trafficking in the EU, BlockWaste Project, October 2017, pp. 29-30.

73 World Customs Organization, Operation DEMETER VI thwarts transboundary shipments of illegal waste and ozone depleting substances, 29 October 2020.

74 World Customs Organization, Illegal trade in waste: overview of Operation Demeter IV, 28 November 2018.

Further increasing e-waste collection, recycling and reuse

53 The WEEE Directive has established a minimum collection rate of 65 % of all WEEE relative to the average weight of electrical and electronic equipment placed on the market in the preceding three years or, alternatively, 85 % of the WEEE generated on the territory of the Member State, applicable from 2019 onwards[75]. Under the first target (65 %), the collection rate is measured against the average weight of EEE placed on the market, meaning that the 65 % target does not measure the share of generated WEEE that gets collected.

54 Member States have to report the 2019 data to Eurostat by June 2021, thus figures for 2019 were not available as of January 2021. Eurostat data available for 2017 and 2018 point to few Member States achieving a collection rate of 65 % in those years (see ***Figure 3*** in ***Annex II***). A study has estimated that only Bulgaria and Croatia would reach this 65 % target in 2019, and no Member State would achieve the alternative 85 % target[76], the main reason for this shortfall being WEEE mixed in metal scrap[77] (see ***Figure 9***).

[75] Directive 2012/19/EU, Article 7.1.

[76] C.P. Baldé, M. Wagner, G. Iattoni, R. Kuehr, In-depth Review of the WEEE Collection Rates and Targets in the EU-28, Norway, Switzerland, and Iceland, 2020, United Nations University (UNU) / United Nations Institute for Training and Research (UNITAR) – co-hosting the SCYCLE Programme, Bonn, Germany, pp. 28-31.

[77] Idem, pp. 32-50.

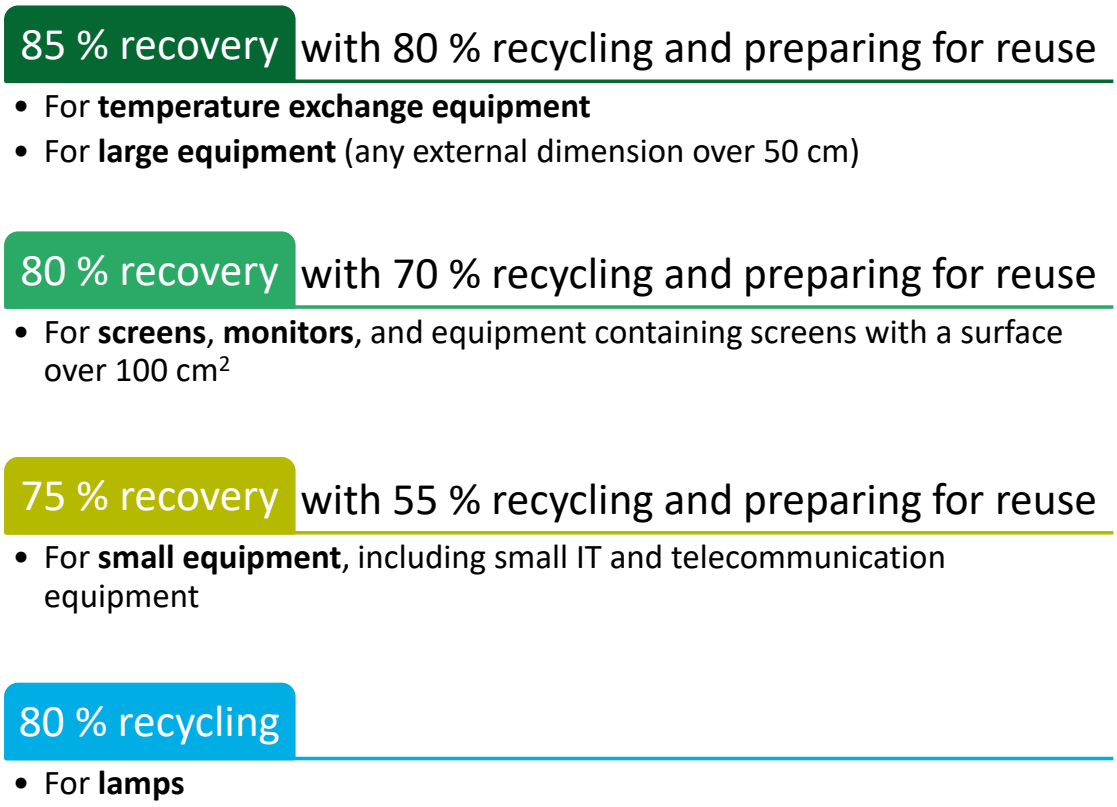
Figure 9 – Distance to 2019 collection target (based on 2018 figures, EU-27 + UK, Norway and Iceland)

Possible ways of increasing collection	
Possibilities of improvement	Estimated yearly improvement (in kg per capita)
WEEE mixed in metal scrap	2.1
Failures in the reporting of WEEE collection from businesses	1.8
WEEE discarded in regular bins	1.4
Failures in reporting of legal exports of used electrical and electronic equipment	1 to 2
Illegal WEEE exports	0.5 to 1.4
Implementation and enforcement mechanisms	>2
	Estimated stock (in kg per capita)
Amount of WEEE currently hoarded in households	4 to 5

Source: ECA, based on In-depth review of the WEEE Collection Rates and Targets, UNU/UNITAR.

55 The 2019 collection targets complement a set of recovery targets that are applicable from 2018 onwards. These recovery targets include minimum recovery rates, but also minimum rates for recycling and preparing for reuse (see ***Figure 10***).

Figure 10 – WEEE recovery targets applicable from 15 August 2018

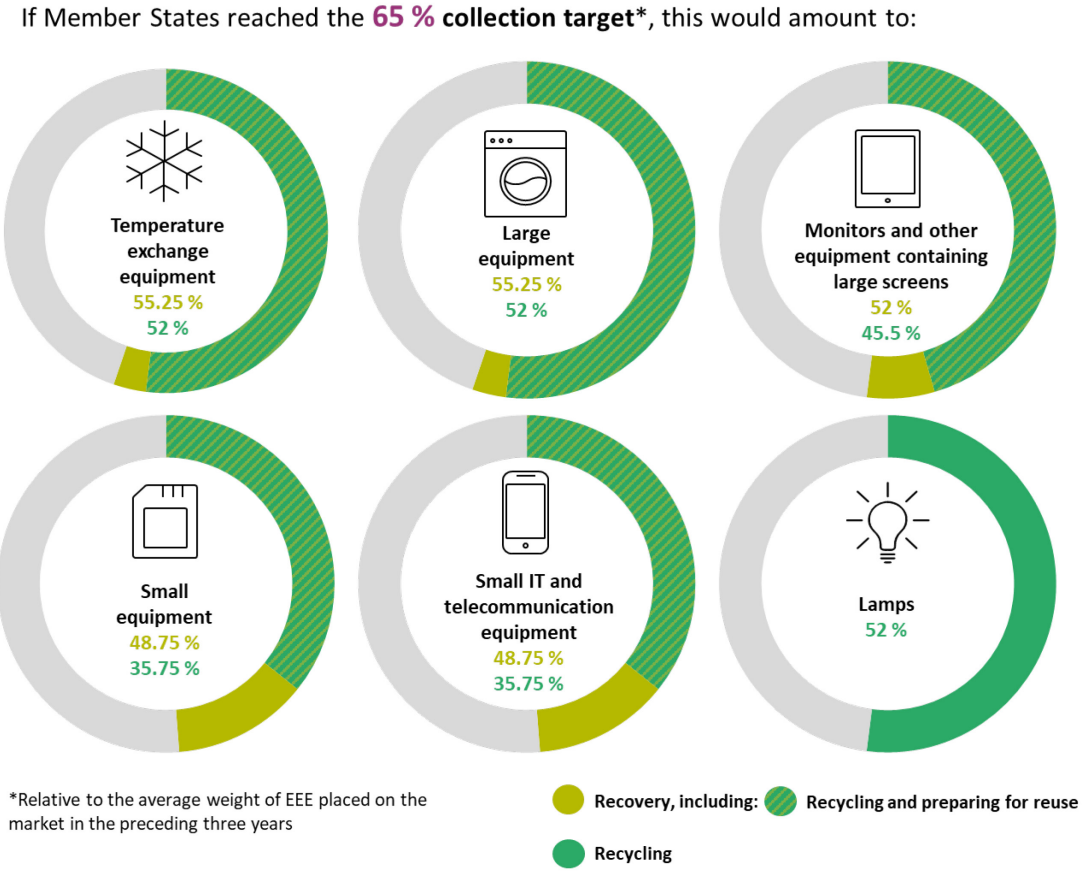


Note: Targets are relative to WEEE treated after collection.

Source: ECA, based on the WEEE Directive.

56 Even if the EU were to achieve the minimum collection rate of 65 % for each of the six categories of discarded electrical and electronic equipment, a large part of WEEE would still neither be recycled nor prepared for reuse. In this hypothetical scenario, the EU would (measured against the average weight of products placed on the market), recycle 35.75 % of its mobile phones, 45.5 % of its TVs, and 52 % of its refrigerators (see ***Figure 11***).

Figure 11 – Recovery, recycling and preparing for reuse based on a 65 % collection rate



Source: ECA, based on the WEEE Directive.

57 Product design could reduce e-waste and increase reuse by making electrical and electronic equipment more durable and easier to repair[78]. Manufacturers can increase product durability, for instance, through better choice of materials and through changes in the techniques used to put together the product components. Better design can also increase product reparability.

58 The WEEE Directive contains some provisions relating to product design. Furthermore, the EU's new Circular Economy Action Plan also envisages changes to product design as a way to build a more circular economy. We have already called attention to the role of design on product recyclability, reparability and durability (see ***Box 4***).

[78] Parajuly, K. et al., Future e-waste scenarios, StEP, UNU Vie-SCYCLE, and UNEP IETC, Bonn and Osaka, 2019, p. 20.

Box 4

ECA's previous work on ecodesign

In special report 01/2020[79], we noted that the Commission had started taking into account factors such as the presence of critical and rare materials, as well as the product recyclability, reparability and durability. We recommended that the Commission adopt a standard methodological framework for including circular economy requirements to be applied during preparatory works for legislative proposals that are of relevance to product design. The Commission has accepted this recommendation and has until December 2021 to implement it.

59 In 2019, the Commission updated the ecodesign requirements for 10 different classes of products[80]. For six of them (refrigerating appliances, electronic displays, household dishwashers, household washing machines and washer-dryers, refrigerators with a direct sales function, and welding equipment)[81], it established that manufacturers must, by 2021, ensure that the products are designed in a way that allows them to be repaired with "commonly available tools". The revised requirements also established that manufacturers must keep spare parts available to professional repairers (and, in some cases, to end users).

60 Those updated ecodesign requirements do not yet encompass some popular electrical and electronic equipment, like mobile phones and computers. The European Consumer Organisation (BEUC), which represents 45 consumer organisations from 32 European countries, has criticised the requirements for not giving end users the same right of access to spare parts given to professional repairers[82].

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[79] ECA, special report 01/2020: EU action on Ecodesign and Energy Labelling: important contribution to greater energy efficiency reduced by significant delays and non-compliance.

[80] European Commission, Press corner: The new ecodesign measures explained, 1 October 2019.

[81] Commission Regulation (EU) 2019/2019, Commission Regulation (EU) 2019/2021, Commission Regulation (EU) 2019/2022, Commission Regulation (EU) 2019/2023, Commission Regulation (EU) 2019/2024, and Commission Regulation (EU) 2019/1784.

[82] BEUC, Thanks to the EU, we're moving closer to a repair society, 2 October 2019.

Closing remarks

61 The EU has a framework for dealing with e-waste that compares favourably with other parts of the world. EU Member States, on average, collect and recover more WEEE than most third countries. The collection and recovery of e-waste in the EU have improved over time, and the EU currently recycles over 80 % of the WEEE it collects. The EU as a whole has met its past WEEE collection and recovery targets, although some Member States did not achieve the 2016 collection target. The EU has subsequently set itself more challenging collection and recovery targets (for which data are not yet available).

62 Over time, the EU has improved legislation on electronic waste, by revising targets, e-waste categorisation, and reporting procedures. The Commission has assessed policy implementation, provided guidance, and launched infringement procedures against Member States.

63 Challenges in EU e-waste management remain. One of them is the implementation of existing e-waste treatment requirements. For example, some Member States lack the resources to inspect a significant number of operators and to perform legally required controls of “equivalent treatment conditions” in case of waste shipment outside the EU. Another one is dealing with mismanagement of e-waste, illegal shipment and other criminal activities. In addition, the EU faces the challenge of further increasing e-waste collection, recycling and reuse.

This Review was adopted by Chamber I, headed by Mr Samo Jereb, Member of the Court of Auditors, in Luxembourg on 14 April 2021.

For the Court of Auditors

Klaus-Heiner Lehne
President

Annexes

Annex I – Summary of WEEE recovery and recycling targets established by the EU

Table 1 – WEEE recovery and recycling targets in the EU

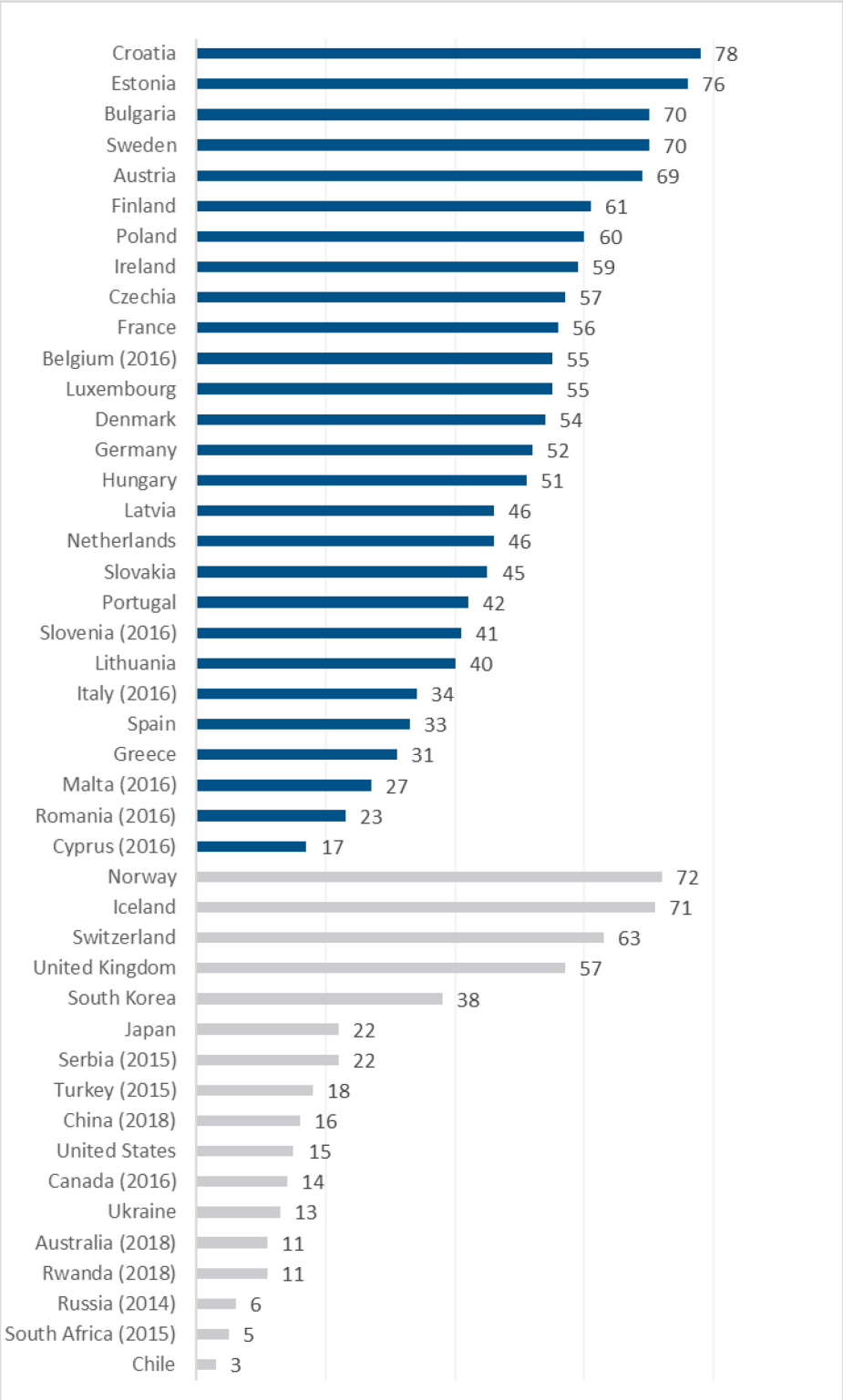
From 13 August 2012 until 14 August 2015	From 15 August 2015 until 14 August 2018	From 15 August 2018
80 % recovery, with 75 % recycling, of WEEE in Annex I categories 1 or 10	85 % recovery, with 80 % recycling and preparing for reuse, of WEEE in Annex I categories 1 or 10	85 % recovery, with 80 % recycling and preparing for reuse, of WEEE in Annex III categories 1 or 4
75 % recovery, with 65 % recycling, of WEEE in Annex I categories 3 or 4	80 % recovery, with 70 % recycling and preparing for reuse, of WEEE in Annex I categories 3 or 4	80 % recovery, with 70 % recycling and preparing for reuse, of WEEE in Annex III category 2
70 % recovery, with 50 % recycling, of WEEE in Annex I categories 2, 5, 6, 7, 8, or 9	75 % recovery, with 55 % recycling and preparing for reuse, of WEEE in Annex I categories 2, 5, 6, 7, 8, or 9	75 % recovery, with 55 % recycling and preparing for reuse, of WEEE in Annex III categories 5 or 6
80 % recycling for gas discharge lamps	80 % recycling for gas discharge lamps	80 % recycling for lamps
Annex I categories	1. Large household appliances 2. Small household appliances 3. IT and telecommunications equipment 4. Consumer equipment and photovoltaic panels 5. Lighting equipment 6. Electrical and electronic tools (except large scale stationary industrial tools) 7. Toys, leisure and sports equipment 8. Medical devices (except implanted and infected products) 9. Monitoring and control instruments 10. Automatic dispensers	
Annex III categories	1. Temperature exchange equipment 2. Screens, monitors, and equipment containing screens having a surface greater than 100 cm^2 3. Lamps 4. Large equipment (any external dimension more than 50 cm) 5. Small equipment (no external dimension more than 50 cm) 6. Small IT and telecommunication equipment (no external dimension more than 50 cm)	

Note: Targets are relative to WEEE treated after collection, and not to products placed on the market.

Source: ECA, based on EU legislation.

Annex II – Data on WEEE collection and recovery

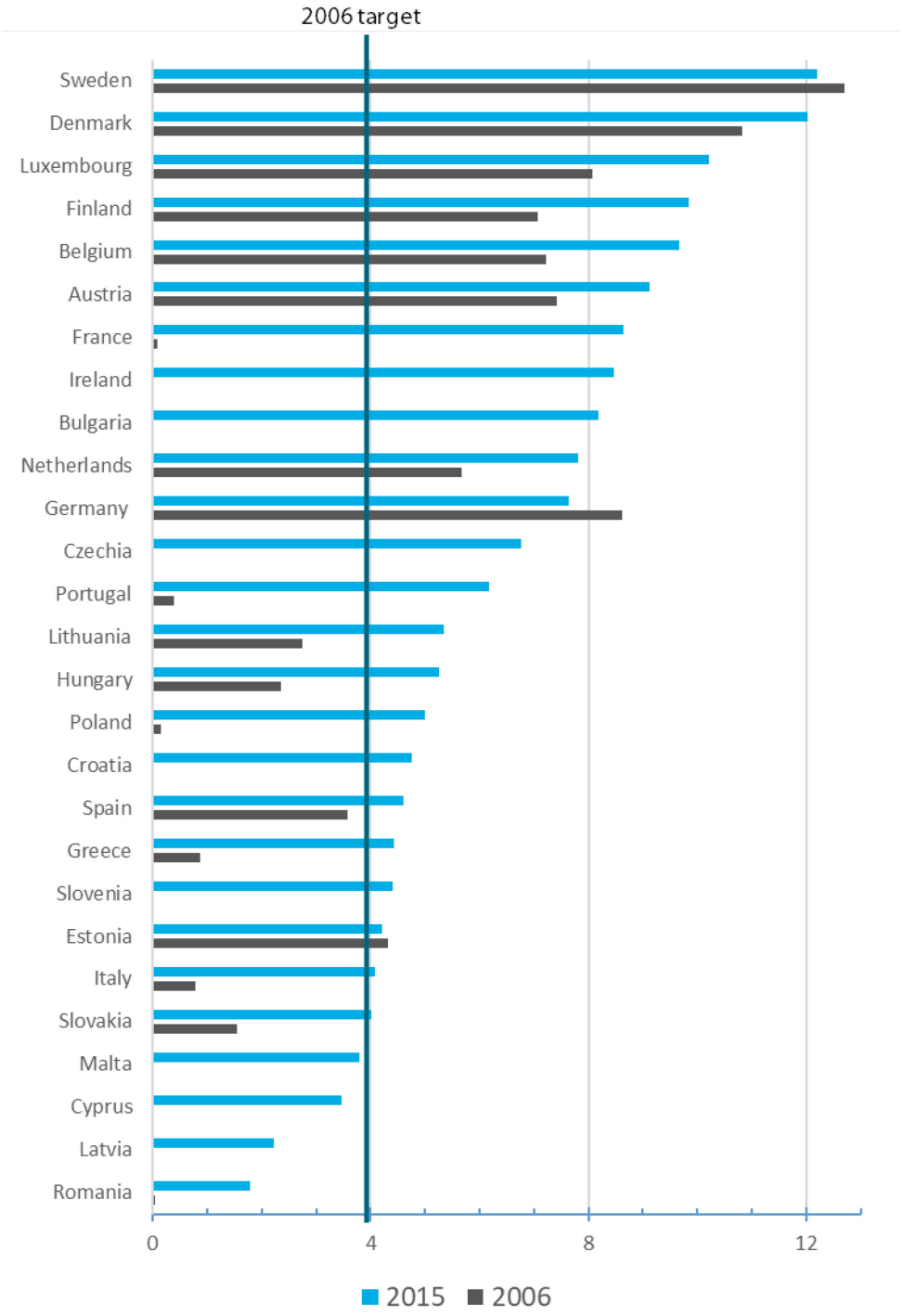
Figure 1 – E-waste collection rate (in %, 2017*)



Note: Collection rate expressed as a share of generated waste.*Unless indicated otherwise.

Source: ECA, with data from The Global E-waste Statistics Partnership.

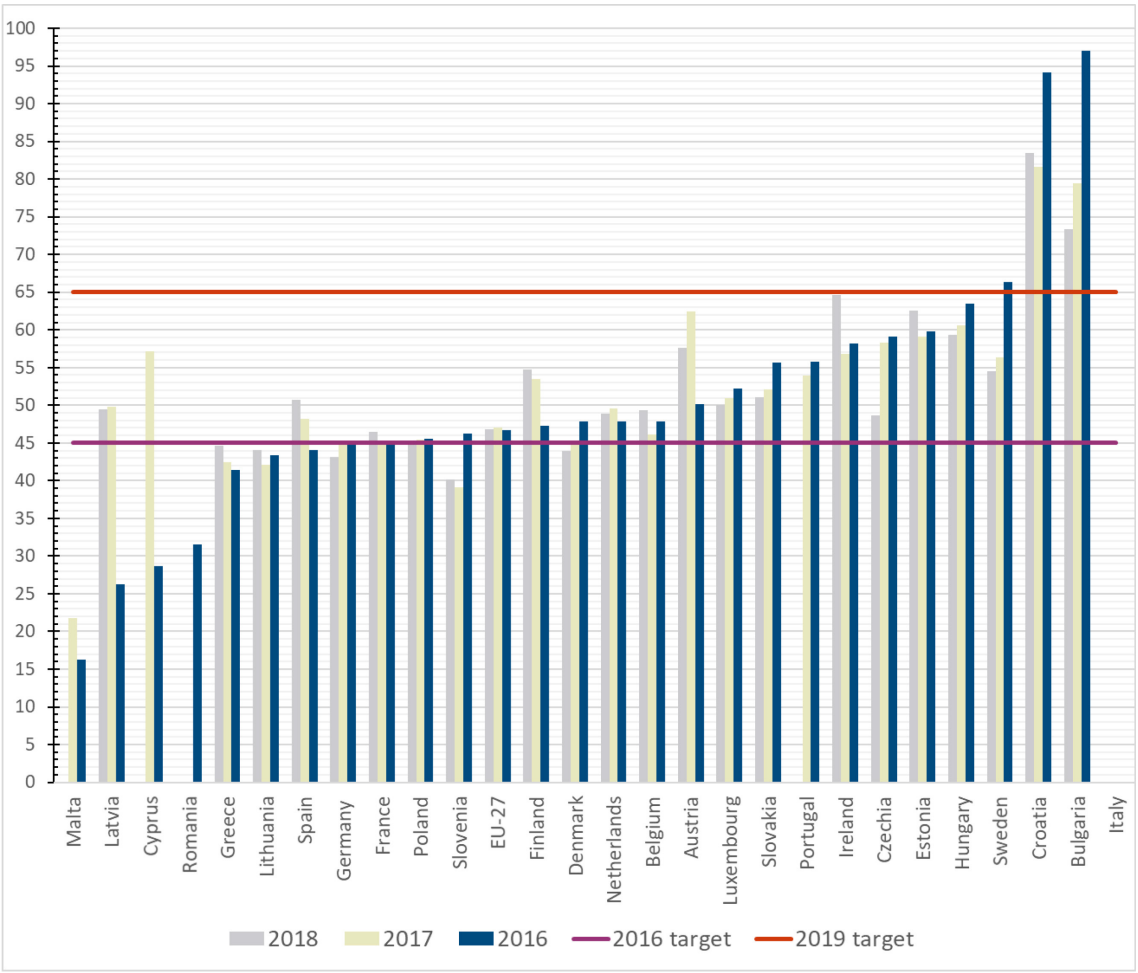
Figure 2 – Collection of WEEE from private households (in kg/capita)



Note: 2006 data not available for Bulgaria, Croatia, Cyprus, Czechia, Ireland, Latvia, Malta, and Slovenia.

Source: ECA, based on data from Eurostat.

Figure 3 – WEEE collection rate with 2016 and 2019 targets (%*)



*Percentage is relative to average weight of products placed on the market in the preceding three years.

Note: Data not available for Italy.

Source: ECA, based on data from Eurostat.

Table 1 – WEEE collection rate in the EU and its Member States (in %*)

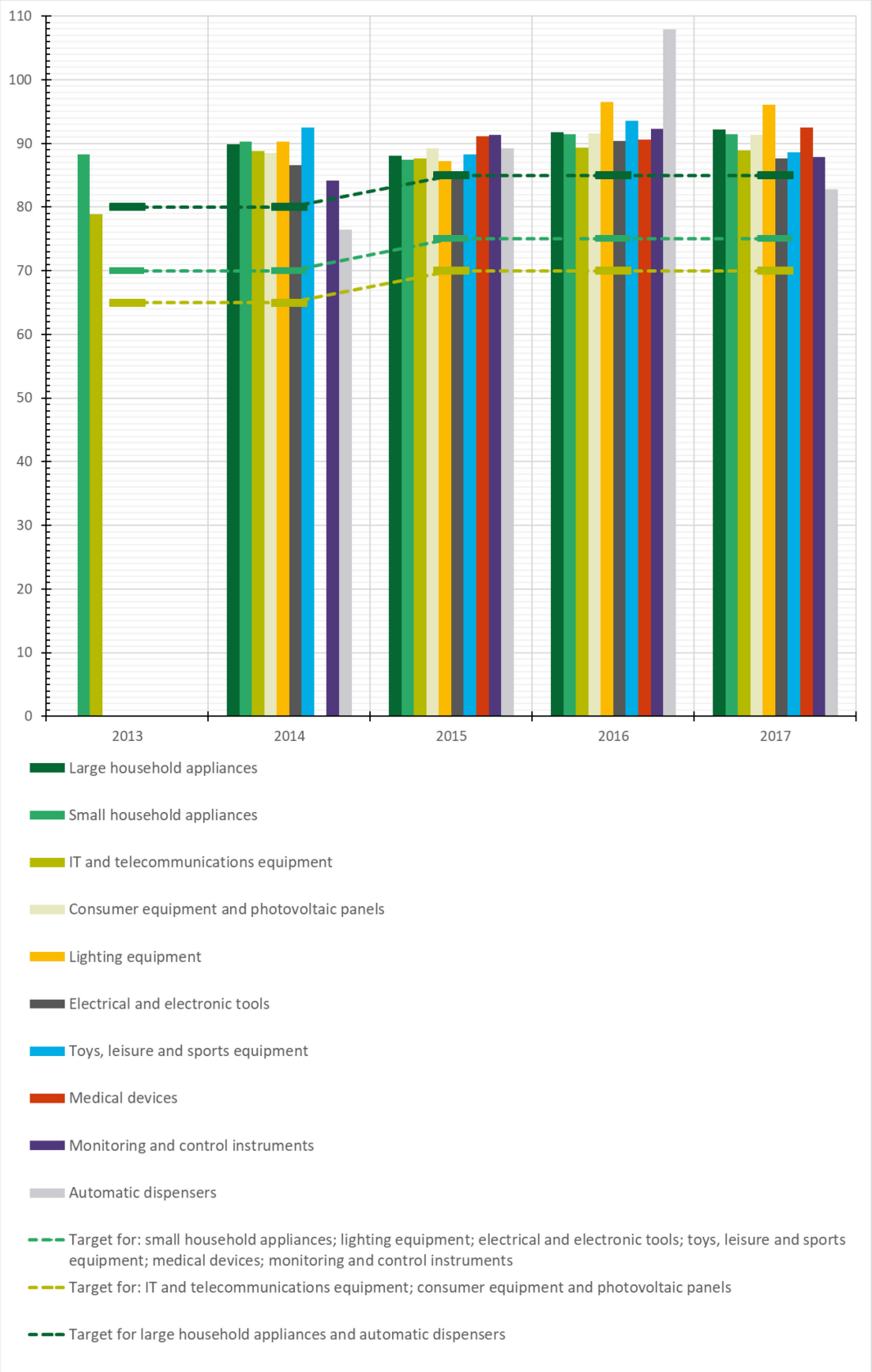
	2012	2013	2014	2015	2016	2017	2018
EU-27	38.6	39.2	39.4	43.1	46.7	47.0	46.8
Austria	47.7	47.6	49.1	50.2	50.1	62.4	57.6
Belgium	39.4	38.8	38.6	41.4	47.9	46.1	49.4
Bulgaria	72.8	67.8	78.8	106.0	97.0	79.4	73.4
Croatia	N/A	N/A	37.2	60.1	94.1	81.6	83.5
Cyprus	14.1	14.5	18.2	28.5	28.7	57.1	N/A
Czechia	30.4	31.4	33.0	42.0	59.1	58.3	48.7
Denmark	52.5	50.1	50.8	50.3	47.9	44.9	44.0
Estonia	42.4	32.9	42.0	50.5	59.8	59.1	62.6
Finland	36.3	40.3	47.1	46.7	47.3	53.5	54.8
France	29.0	29.4	32.5	39.3	45.3	44.7	46.1
Germany	40.9	42.2	42.9	42.5	44.9	45.1	43.1
Greece	20.5	24.6	33.0	36.8	41.4	42.4	44.6
Hungary	35.9	45.6	54.8	60.8	63.5	60.6	59.3
Ireland	42.3	45.6	50.1	55.4	58.2	56.8	64.6
Italy	48.4	43.6	34.5	39.4	N/A	N/A	N/A
Latvia	30.2	30.3	29.3	27.7	26.3	49.8	49.5
Lithuania	58.3	62.1	81.6	55.8	43.4	42.1	44.1
Luxembourg	31.8	33.4	40.2	48.9	52.2	51.0	50.0
Malta	10.8	12.2	11.9	13.2	16.3	21.8	N/A
Netherlands	N/A	N/A	N/A	45.8	47.9	49.6	48.9
Poland	36.2	34.7	35.0	40.2	45.6	45.4	44.7
Portugal	28.7	37.1	49.1	53.6	55.8	53.9	N/A
Romania	17.2	24.2	24.4	30.1	31.5	N/A	N/A
Slovakia	48.3	47.3	48.7	47.6	55.7	52.1	51.1
Slovenia	33.0	29.7	33.7	36.2	46.2	39.1	40.2
Spain	22.5	31.7	31.2	41.4	44.1	48.2	50.7
Sweden	74.1	77.5	62.7	61.7	66.4	56.3	54.5

N/A = Not available.

* % of average quantity of products put on the market in the previous 3 years in the respective territory.

Source: ECA, based on data from Eurostat.

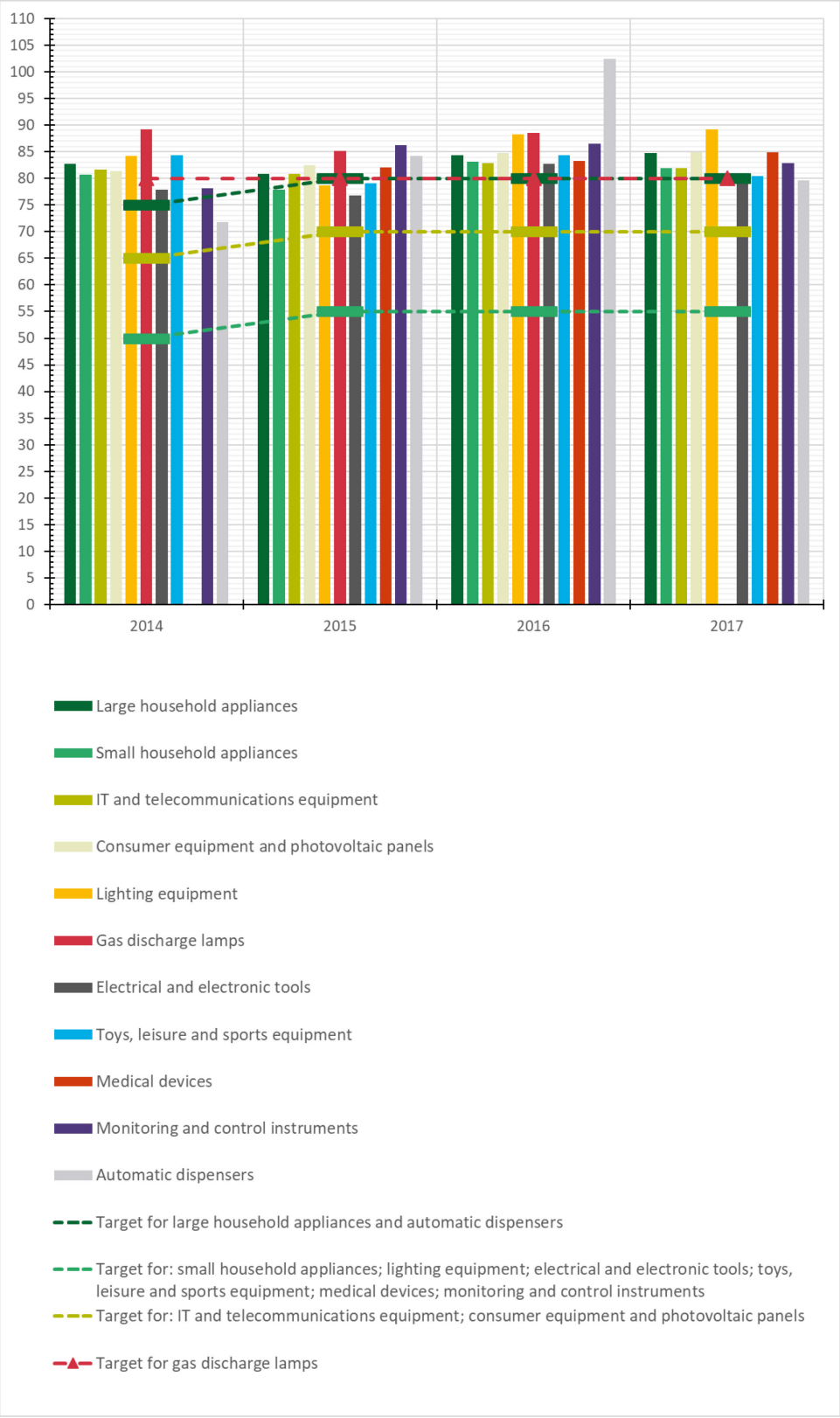
Figure 4 – Recovery per product category (EU-27, %, w/ targets)



Note: Some data unavailable for 2014-2017.

Source: ECA, based on data from Eurostat.

Figure 5 – Recycling plus preparing for reuse per category (EU-27, %, w/ targets)



Note: Data for 2012 and 2013 unavailable. Some data unavailable for 2014-2017.

Source: ECA, based on data from Eurostat.

Annex III – Audits on e-waste in EU Member States

Table 1 – Main findings of audits on WEEE by Supreme Audit Institutions

Audit	Main issues related to WEEE
2019 – Tribunal de Cuentas (ES) Environmental actions carried out by municipalities of more than 10 000 inhabitants of the Autonomous Communities without their own regional audit office	Out of the 15 municipalities audited for their handling of e-waste, one had not established a system for the separate collection of WEEE, and seven collected it separately, but as part of general municipal waste.
2018 – Valstybės Kontrolė (LT) Hazardous waste management	Not all hazardous waste identified; significant amounts collected together with regular municipal waste. Permits for hazardous waste management operations given without full assessment of potential impact on public health. There were cases of facilities processing more waste than their permits allowed.
2018 – Riigikontroll (EE) Follow-up audit on processing of hazardous and radioactive waste	Recommendations from 2015 audit being implemented, but problems remained. Some waste had started to pile up on business premises.
2017 – Valstybės Kontrolė (LT) Application of the producer responsibility principle	State lacks correct and reliable data on products supplied to the internal market, as well as on the management of waste. Authorities fail to inspect the riskiest producers and importers.
2017 – Najwyższa Izba Kontroli (PL) Management system of used electric and electronic devices	Most audited entities did not comply with relevant regulations. Most did not register WEEE correctly, and many did not submit reports to the relevant authority. Ambiguities in national legislation led to cases of both national and regional authorities not considering themselves responsible for inspections.
2016 – Riigikontroll (EE) Activity of the state and local governments in the collection and recovery of municipal waste: Is household waste recycled?	WEEE often remains unsorted. In many cases, it was impossible for people to discard sorted waste close to their homes.
2015 – Riksrevisionen (SE) Transport of hazardous waste – effectively supervised?	Supervision of hazardous waste transport is deficient, and sanctions do not deter non-serious actors.
2015 – Riigikontroll (EE) Processing of hazardous and radioactive waste: Has the government managed to organise the treatment of hazardous and radioactive waste?	National data on hazardous waste are inaccurate. Amount of hazardous waste generated increased, but recycling remained at 2008 levels (for all hazardous waste, including WEEE). Collection centres failed to ensure expedient subsequent treatment for hazardous waste.
2013 – EUROSAI – (SAIs from BG, EL, HU, IE, NL, NO, PL, and SI) Coordinated audit on the enforcement of the European Waste Shipment Regulation: Joint report based on eight national audits	All audited countries formally comply with EU regulation on waste shipments, but with significant discrepancies in enforcement, interpretation of legislation, and in handling of infringements. In several countries, misclassification of e-waste imports and exports takes place, something facilitated by differences between Basel Convention waste classification and tariff codes used by customs authorities.

Source: ECA, based on the reports listed.

Acronyms and abbreviations

BAN: Basel Action Network

BEUC: The European Consumer Organisation

CENELEC: European Committee for Electrotechnical Standardization

DG ENV: Directorate-General for Environment of the European Commission

EEE: Electrical and electronic equipment

Europol: European Union Agency for Law Enforcement Cooperation

ICT: Information and communications technology

INTOSAI: International Organization of Supreme Audit Institutions

OECD: Organisation for Economic Co-operation and Development

OLAF: European Anti-Fraud Office

SAI: Supreme Audit Institution

WCO: World Customs Organization

WEEE: Waste Electrical and Electronic Equipment

Glossary

Circular economy: Economic system aimed at minimising resource inputs, waste and emissions, through reuse, sharing, repair, refurbishment, remanufacturing and recycling.

Ecodesign: An approach to design that minimises environmental impact at all stages of a product's life cycle.

Extended producer responsibility: Approach which adds the post-consumer stage of a product's life cycle, including recycling and disposal, to the producer's environmental responsibilities.

E-waste: Electrical and electronic equipment that has ceased to be of value to its users; also known as 'waste electrical and electronic equipment' (WEEE).

Producer responsibility organisation: Body set up by manufacturers to meet their obligations in respect of the environmental impact of their products.

ECA team

This ECA's Review EU actions and existing challenges on electronic waste was adopted by Chamber I Sustainable use of natural resources, headed by ECA Member Samo Jereb. The task was led by ECA Member Joëlle Elvinger, supported by Ildikó Preiss, Head of Private Office and Charlotta Törneling, Private Office Attaché; Robert Markus, Principal Manager; Ernesto Roessing, Head of Task; João Coelho, auditor. Adrian Williams provided linguistic support. Marika Meisenzahl provided support with visual elements.

This review focuses on the EU's role and actions to tackle the challenges to e-waste management. EU Member States, on average, collect and recover more e-waste than most third countries. Collectively, the EU has met its past e-waste collection and recovery targets, and subsequently set itself more challenging ones. Nevertheless, challenges remain. Our review highlights the challenges in implementing existing e-waste treatment requirements; dealing with mismanagement of e-waste, illegal shipments and other criminal activities; and further increasing e-waste collection, recycling and reuse.

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