



Directorate E: Sectoral and regional statistics
E-2: Environmental Statistics and Accounts; Sustainable Development

Country-specific notes on Waste Electrical and Electronic Equipment (WEEE)

Revision October 2024¹

General notes

- (1) This paper provides additional information on specific aspects such as methodology of data collection and related changes in the quality report.
- (2) Compliance or non-compliance with targets of the WEEE Directive is not addressed in this document. For such aspects, please refer to Eurostat's Statistics Explained article *Waste statistics - electrical and electronic equipment*.
- (3) Failure in submission by a Member State of all or some data (missing obligatory cells) is not addressed in this document.
- (4) The amount of WEEE collected from sources other than from private households is, for most Member States, far below the WEEE collected from private households.
- (5) For some product categories, Member States and years, the amount of WEEE collected exceeds the amount of EEE placed on the market. Several Member States stress the issue that not all producers and importers report the whole amount of EEE placed on the market from, for instance, internet trade, (cross border) trade with used goods or other free riders.

In principle it is possible that the weight of the WEEE collected is higher than the amount placed on the market for different reasons: a) lighter products used for the same purpose; b) a drop in sales while at the same time the EoL amount remains stable; c) producers do not report their placed on the market products in their national registers; and/or d) stock effects.

- (6) For some product categories, Member States and years, the amount of WEEE treated exceeds the amount of WEEE collected. In most cases the excess is limited and reportedly caused either by stock effects or by specific collection campaigns, collecting 'historical' WEEE.

¹ Document considers data submitted by the countries by 15 October 2024.

(7) Calculation of the recovery as well as reuse and recycling rates:

For the reference year 2011 and before, some Member States calculated the recovery as well as reuse and recycling rates using the total amount of WEEE collected (column 4 in reporting table 1) as the denominator instead of the total amount of WEEE treated (summed values from columns 5, 6, and 7 in reporting table 1), as it should be done according to Directive 2002/96/EC.

From reference year 2014, with the application of WEEE Directive 2012/19/EU recasting Directive 2002/96/EC, the total amount of WEEE collected is considered as the denominator to calculate the recovery as well as reuse and recycling rates.

- (8) The Commission Decision 2005/369/EC on formats for reporting on WEEE mentions the cells for recovery of gas discharge lamps (reporting table 2, columns 1 and 2 for product category 5a) as 'n/a'. No recovery target for this product category is established in WEEE Directive 2002/96/EC and WEEE Directive 2012/19/EU. No entries for these cells are possible for the reference years 2011 and 2012. For the mentioned reference years, the amount of reuse and recycling for gas discharge lamps is considered as a proxy for the recovery for calculating the total recovery for all product categories. From the reference year 2013 it is possible for the Member States to report on volumes for recovery differently than the volumes of total reuse and recycling.
- (9) According to the Eurostat document *Guidance for the compilation of the data according to Commission Decision 2005/369/EC*, the data for the product category 'gas discharge lamps' (category 5a) shall not be included in category 'lighting equipment' (category 5) to avoid double counting.
- (10) For reference year 2015, the European Commission asked Member States for the first time to report on photovoltaic panels. The new product group 'photovoltaic panels' became a separate under category (4b) of a product category 4. In consequence from 2015 onwards in the product category 4 the sum of consumer equipment and photovoltaic panels are reported so that the category is called 'consumer equipment and photovoltaic panes' (previously was called only 'consumer equipment' and data submitted here before the reference year 2015 does not include photovoltaic panels). In the sub-categories 4a 'consumer equipment' and 4b 'photovoltaic panels' the volumes on products consumer equipment and photovoltaic panels are supposed to be reported separately. The obligation to include photovoltaic panels is established by Directive 2012/19/EU. As of reference year 2022 seven MS (IE, EL, HR, CY, LV, LT and SI) were not able to disaggregate 'large equipment' (category 4) into the two subcategories 'large equipment excluding photovoltaic panels' and 'photovoltaic panels' (respectively categories 4a and 4b).
- (11) Few countries (AT, BE, CY, IE, IT, LT) applied substantiated estimates. They are highlighted for the respective countries.
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Please consider that the countries below are in protocol order, which is not identical to the alphabetical order in English.

Belgium

Since 2001, the Belgian Regions have set up environmental policy agreements with the collection scheme Recupel. Recupel is a collection scheme set up by producers and importers, which organises the monitoring, collection and treatment of both household and non-household WEEE. Since 2001, Recupel provides data which enable the reporting. Since 2017, Belgium states that the reporting scheme covers the entire sector.

For reference year 2022 EEE placed on the market is reported in the national reporting tool BeWEEE by compliant schemes (Recupel for WEEE and PV Cycle for solar panels). For all reference years since 2015, the compliant scheme Recupel and producers with individual waste plans reported data about EEE placed on the market. The figures reported are the sum of all data reported to BeWEEE. Recupel multiplies the amounts of EEE reported by their producers by the average weight. Until 2016, the average weight of the EEE was determined by the average weight of the WEEE taken off the market. This led to an overestimation, as the smallest appliances are less likely to end up in Recupel's collection systems. In 2016, a large study was carried out together with the producers, which led to more precise data on the average weight of different EEE.

Data on WEEE is provided by compliant schemes Recupel and PV Cycle, as well as individual producers not affiliated to a compliant scheme. Also, registered collectors, licenced treatment facilities, reuse facilities and notifiers of WEEE are obligated to report to the national reporting tool BeWEEE. Also, distributors that do not report WEEE to a compliant scheme, have to report to BeWEEE. In 2022 Belgium states that about 75% of WEEE collected is reported by the compliant schemes Recupel and PV Cycle. Between 2018 and 2021 it was only ~50 %.

For the reference years 2009-2018, the amount of waste treated was lower than the amount of waste collected (with the exception of the reference year 2014, where waste collected equals waste treatment), which results in a rising stock. Belgium explains that "Cumulated stock" does not mean that the equipment is not treated; it instead means that the data on treatment is missing.

It should be noted that in 2017 and 2018 the collection rate for televisions was more than 100 %, as the weight of collected CRT screens is greater than the weight of flat screens placed on the market. Additionally, Belgium did not hold separate data for gas discharge lamps (aggregated data for lighting equipment and gas discharge lamps). Therefore, the recycling rate may exceed 100 % (e.g., in year 2017).

In 2021 and 2022 the amount of WEEE collected is higher than the amount of EEE placed on the market for small IT equipment. Belgium speculates that collectors may have included additional IT equipment in this category, which should have been classified under a different category.

Additionally in 2022, general note (6) applies for PV-panels and small equipment. It is explained by stock effects (amount of previous was not treated until this year.)

Substantiated estimate: For reference years 2019 and 2020 the stock reported by the treatment facility at the end of the year is added to the amounts treated per category and according to the recycling and recovery percentages of the WEEE treated.

Bulgaria

Individuals and organizations that place EEE on the market provide data to the Executive Environment Agency (EEA). This applies to EEE placed on the market in Bulgaria as well as to the quantities of EEE that are exported.

Organizations and persons carrying out the collection, pre-treatment and recovery of WEEE provide data to the Executive Environment Agency (EEA) on the amount of WEEE, which was collected, prepared for re-use or recycled/recovered. Bulgaria states that the reporting scheme (EEA) covers 100 % of WEEE collected and treated. Recovery organizations and persons who perform their obligations individually submit an annual report and a report on the implementation of the obligations and achievement of targets for collection, recovery and recycling of WEEE for each reporting year. The quantities of treated WEEE are obtained from the recycling certificates.

Information about the treatment outside the country is received from organizations and entities exporting WEEE for treatment. With regards to exported WEEE, the recovery rates and the reuse and recycling rates are calculated based on documents provided by the relevant recycling companies. The Customs Agency provides information to the EEA about the quantities of imported and exported EEE from the territory of the country. The National Revenue Agency provides information to the EEA on the quantities introduced into Bulgarian territory from another country. Companies that collect, transport and treat WEEE in the country report the types and quantities of WEEE derived from imports.

For reference years 2007 and 2008, the total EEE placed on the market is higher than the sum of product categories because the data about amounts placed on the market were not available for all categories but for the total EEE only.

Bulgaria shows a very high collection rate (total collected divided by the average weight of EEE placed on the market in the 3 preceding years) is very high (around 92 % in 2020, 108 % in 2021 and 106 % in 2022). For some product categories, the amount of WEEE collected is higher than the amount of EEE placed on the market. There is relatively strong evidence that the amount of EEE placed on the market is underestimated (e.g. EEE for industrial use, import of used goods, and other undeclared). Bulgaria argues that continuously high amounts of historic waste and other minor effects cause the mentioned high collection rate. For reference year 2021 Bulgaria explains that “a National Information System "Waste" has been introduced and the scope has been increased. There has been an increase in economic entities performing this activity by approximately 50 per year for the past 2 years.” Additionally it is argued that the CoVid-19 pandemic led to an increase in the WEEE collection rate. For 2022 the high collection rate is explained by an increase in coverage (i.e. more permits were issued for activities regarding WEEE, and more obliges reported that they carried out such activities, compared to 2021).

Until 2019, Bulgaria did not provide information on photovoltaic panels separately. Please refer to general note (10).

Czech Republic

All entities collecting and processing WEEE (producers and WEEE processors in accordance with law) have reporting obligations. Still, the Czech Republic estimates that not all quantities (around 25 %-30 %) are included, because certain quantities are handled outside the legislative regime. This share is not included within reporting data. No substantiated estimates to correct the data are used.

Data from the annual reports are reported by the producers of EEE. To ensure common fulfilment of obligations, the producer may join a collection scheme that follows the Czech Waste Act (part No. 8). The collection scheme works up an annual report for all the manufacturers with whom it has concluded an agreement.

The Czech Republic calculates the collection rate based on average weight of EEE placed on the market and on the basis of information provided by EEE producers or their authorized representatives. Since 2015, the data also includes data from WEEE processors (entities not involved in the manufacturer's system). Specifically, these are WEEE processors who, in accordance with the Waste Act, can take over and process WEEE. The Ministry of the Environment verifies data sent annually by WEEE producers and processors.

WEEE exported out of the European Union is only accounted for if the exporter can prove that the treatment took place in conditions that are equivalent to the requirements of the respective Directives (Regulations (EC) No 1013/2006 and (EC) No 1418/2007).

For the years 2007 and 2008, gas discharge lamps are considered a subcategory of lighting equipment. Since 2009, gas discharge lamps have been excluded from lighting equipment.

Within the treatment of WEEE, not all WEEE collected in a defined year is processed in the same year. Some of the collected WEEE (e.g. PV-panels in 2022) is stored in warehouses and it is treated and recovered consequently in a following year. Please refer to general note (6).

For category 2 ("Screens, monitors, and equipment containing screens"), a significant decrease is observed since 2019 in both EEE placed on the market and WEEE collected and treated. It is explained with a change in consumer behaviour. At the same time, there is an increase for category 4 ("Large equipment") which is explained with the increase of PV-panel launches and subsidy programmes.

Denmark

For Denmark's quantity of EEE placed on the market, producers and importers of EEE are obliged to register and report sales data to the DPA (Danish Producer Register). The amount of collected and treated WEEE from households is reported to collection schemes, which in turn report to the DPA. WEEE amounts are reported either via "RepTool" provided by the WEEE Forum, which provides information regarding flows and treatment, or via a collection scheme, under which waste operators are certified and regularly audited.

Until 2018, the collected amounts of WEEE refer primarily to private households. WEEE from the category 'other than households' is not a part of the reporting scheme, even though data on this amount is available in the national waste data system. For a major part of WEEE from the category 'other than households', businesses (as end-users) have the right, but not the duty, to deliver this WEEE to the producers of the equipment. If the WEEE is not delivered to the producer, these volumes are not included in the statistics from the DPA. The waste data system was revised in 2017 to generate data on WEEE from the category 'other than

households'. The revision came into force in December 2018, and the changes affect data for 2019. Denmark expects that this change increased the reported total collected amounts. Between 2014 and 2016, Denmark conducted studies to reveal how non-reported amounts of WEEE are collected/disposed of. The studies show that a major part of the amount collected, which is not reported to the DPA, is collected from businesses and by retailers who are not reporting according to their obligations. Also, a non-negligible amount of WEEE is stolen from the municipal collection schemes.

Denmark has no exports to countries outside of the EU. The amount exported for treatment in other Member States is included in the calculation of recovery rates and reuse and recycling rates. No WEEE has been imported for treatment in Denmark.

Between 2009 and 2016, the total volume of collected 'consumer equipment and photovoltaic panels' (as well as of 'consumer equipment' for 2015 and 2016) is higher than the volume of 'placed on the market'. Denmark argues 'that new equipment is developing towards smaller and lighter models. This results in a lower weight placed on market than collected.' The volume placed on the market for consumer equipment halved in 2016 as compared to 2007. Activities, as described in the general note (5), might contribute to these effects. Similarly, for the category 'Large household appliances', a larger amount of WEEE was treated in 2019 than the total amount collected. For several years, it may be observed that the amount of WEEE collected for the category 'Consumer equipment' has exceeded the quantity of EEE for that category. It is assumed that this difference is due to the fact that many traditional products in this category, such as radio sets, video cameras & recorders, Hi-fi systems etc. are replaced by smaller units.

With regards to the provided data, it should be noted that in 2017 the data reported for "gas discharge lamps" was erroneous, since the amount reported comprises all types of light sources and not only gas discharge lamps. The data reported until 2018 (including data for 2018) represent the total amount for 'Lighting equipment'.

Treatment rates exceeding 100 % (e.g. in 2019 and 2022) are due to minor amounts left from the previous year. Please refer to general note (6).

It should be noted that the data for reference year 2018 contains an error. The amount of large household appliances treated within Denmark in 2018 is 33,465 t instead of 2,841 t. The erroneous data will be corrected in the database in the near future.

Since 2021, Denmark determines the collection rate based on the total WEEE generated on the territory. Previously it was based on the average weight of EEE placed on the market in the three preceding years.

In 2022, for category 2 ("Screens, monitors and equipment containing screens with an area greater than 100 cm²"), the recycling and preparation for reuse rate exceeds 95% and the recovery rate is higher than 100%. This is due to changes in stocks, i.e. some companies might collect to stock and thereby postpone the waste treatment. Please refer to general note (6)

Germany

Germany states that a large portion of the EEE placed on the market is covered by the data provided. Enforcement with respect to free riders is, however, difficult. An amendment to the national legislation sets additional obligations for operators of electronic marketplaces or providers of fulfilment services, so greater coverage is expected in the future.

Data on EEE placed on the market is obtained from EEE registration data. All producers or their agents are required to register the amount of EEE they placed on the market – differentiated by B2C and B2B – with the national clearinghouse "stiftung elektro-altgeräte register" (stiftung ear), deducting exports that are reported separately.

Data on WEEE is collected in two ways: 1) producers or their authorized representatives (B2C and B2B), distributors (B2C), public waste management authorities (B2C) and so-called last owners (B2B) have to report the collected and treated quantities to stiftung ear, and 2) primary treatment facilities have to report the quantities they received to the statistical offices of the federal states (Destatis). It should be noted that the amount of WEEE treated corresponds to the amount of WEEE collected.

The share of WEEE treated outside Germany is considered when calculating the total amount of equipment recovered or prepared for reuse/recycling. It should be noted that Germany reports WEEE which is treated outside of Germany under "Treated in Member State" due to statistical confidentiality, as it can be attributed to individual reporters. The exported WEEE is reported by the national primary treatment facilities to the Federal State Statistical Offices. These WEEE are sorted out from the WEEE that enter the primary treatment facility and are sent abroad. The reported data does not include WEEE that is exported for primary treatment outside Germany directly after collection on behalf of manufacturers, distributors, public waste management authorities and last owners. On this account, Germany assumes that a significant amount of used EEE is exported to other countries. A commissioned project is currently attempting to develop a methodology to estimate the amount of WEEE exported.

For reference year 2015, the total volume reported for 'prepared for reuse' (for previous years called 'reuse as a whole appliance') dropped from 15 552 tonnes in 2014 to 3 750 tonnes in 2015 and increased in 2016 to 10 445 tonnes and 2017 to 23 904 tonnes. Germany explained the drop in 2015 with changed reporting conditions. The amount of WEEE prepared for reuse in 2018 decreased by 41 % in direct comparison to the previous year but is still significantly higher than in 2016. This confirms the slight trend that the path of preparation for reuse is becoming increasingly more important.

Since reference year 2017, the share of WEEE exported is calculated based on the known data on "quantity treated in the Member State" and the "total WEEE accepted for primary treatment". The distribution is based on the quantities recorded in the same year and the assumption that the export outside the EU corresponds to 1 % of the quantity treated in other Member States.

Please also refer to general note (5).

Estonia

EEE producers report to the Registry of Products of Concern (PROTO). Estonia states that it does not use an established methodology for the calculation of the weight of EEE placed on the Estonian market.

With regards to WEEE, there are two data collection sources: (i) PROTO (all producers must register themselves in PROTO and submit data on EEE placed on the Estonian market and on WEEE collected and treated) and (ii) KOTKAS (Environmental decision information system to which all waste handlers must submit data on WEEE collected and treated). The data submitted is a synthesis of the data from PROTO and KOTKAS. Estonia declares that there are differences between the methodologies that are applied to both data collection systems.

Thereof data are not comparable. Nonetheless, the data from these collection schemes has been used in reporting.

Data submitted to PROTO is validated with KOTKAS. In KOTKAS, it is possible to monitor the movement of waste flows from the waste generator to the final recovery. The recycling and recovery information is based on the final operations. Waste management companies and waste generators submit the data directly to the KOTKAS online system and the Environmental Board verifies and approves the data.

Exported amounts of WEEE are included for the calculation of the recovery rates and the reuse and recycling rates. Recovery rates and reuse and recycling rates for these exported amounts have been submitted by Producers Responsibility Organizations (PRO). For other amounts that are exported, the recovery, reuse and recycling rates of PROs are extended.

Since 2016, Estonia has started to report higher amounts of collected waste, since it also includes waste collected from other sources. The collection targets applied until 2015 referred to WEEE collected from private households only, while the collection targets from 2016 onwards refer to total WEEE collected, including WEEE collected from sources other than private households.

It should be noted that only since 2020 photovoltaic panels are reported separately. Please refer to general note (10). In 2020 the amount of solar panels PoM was 6420 tonnes. The comparably large amount was due to state support for the construction of solar parks.

Additionally, for some WEEE categories it may be observed that the amount of treated waste exceeds the amount of collected waste, which is due to stocks from previous years. Please refer to general note (6).

Ireland

Data on the quantities of EEE placed on the market are obtained from the Producer Register Ltd., the National WEEE Register for IE. These data are derived from the quantities reported by both B2C ("households") and B2B ("other than households") producers in the WEEE Register's "Black Box". Data on EEE placed on the market are adjusted by an estimate of the tonnages of used EEE exported for reuse. This estimate is based on a method developed by the research project 'An assessment of used EEE exports from Ireland'.

To determine the amount of WEEE collected, treated and recovered, Ireland uses four main data sources: 1) surveys of waste treatment facilities, 2) annual environmental returns submitted by permitted waste facility operators and waste collectors; 3) datasets compiled by producer compliance schemes, and 4) Waste Management Reports (WMRs) that are submitted by B2B producers. Where B2B producers and waste treatment facilities do not supply recycling and recovery percentages for all EU WEEE treatment facilities, percentages from similar operators are applied.

Most shipments to other Member States are organised by B2C producer compliance schemes and by waste treatment operators. However, B2B producers also export WEEE to EU Member States. B2C WEEE producer compliance schemes, most IE waste treatment operators and some WEEE B2B producers provide information on recycling and recovery percentages achieved by the "non-IE treatment" facilities they use.

An unknown amount of EEE is exported for reuse by business end-users. A research project to investigate this issue commenced in 2019. The results of this project are used to subtract

EEE exported for reuse from EEE placed on the market.

In 2021, a strong increase in the amount of Small IT and telecommunications collected can be observed. Ireland states that in 2021, one of the largest WEEE treatment operators changed their approach allowing for a better estimation of the percentage of WEEE belonging to Small IT and telecommunications equipment, which contributed to this increase.

Substantiated estimates: A study (*“Estimating the Quantity of Electrical and Electronic Equipment (EEE) Exported from Ireland as Used EEE”*) was undertaken between March 2019 and March 2020 to assess the ‘average percentage WEEE’ arising in metal scrap at the metal facilities. Starting in reference year 2018, Ireland uses estimates based on this study to obtain information on WEEE in mixed metal streams; previously estimates of WEEE in mixed metals was based on information provided by the waste metal facilities. Similarly, this study is used to adjust the amount of EEE PoM by the amount of EEE exported for reuse.

Greece

Data on EEE placed on the market (except for photovoltaic panels) is based on the data collected from the producers and reported to the Hellenic Recycling Agency (HRA/EOAN) by the relevant PROs. Additionally, HRA collects data directly from the producers through a web-based platform, the “National Producers Registry (NPR)”. The difference between the quantities on EEE reported directly to HRA through NPR and those reported to the PROs is <10 % (e.g. 1.8 % in 2020). Data on photovoltaic panels are provided by the Hellenic Association of Photovoltaic Companies (HELAPCO), a non-profit organization established in 2002. Challenges exist in the reporting of PV waste, with discrepancies between recorded quantities and collection.

Data on WEEE collected from private households and other than private households are provided to the HRA by the PROs. Data on WEEE treated, except for PVs, are also reported to HRA by PROs. These data are based on the data recorded by the relevant authorised treatment facilities. Each facility is required to apply the appropriate proper treatment for each category of WEEE and report to the PRO the respective mass balances per category. The current reporting scheme does not include all the appropriate information on photovoltaic panels (category 4b). In addition, please refer to general note (10). Since 2020 PV-panels are included in the scope of the Greek PRO FOTOKYKLOSI, but reliable data is still missing, with many producers failing to meet their responsibilities despite inclusion in the PRO's scope since 2020. There is a substantial difference between the reported quantities of PV panels by the PRO FOTOKYKLOSI and the Hellenic Association of Photovoltaic Companies (HELAPCO), indicating a data inconsistency issue.

Greece only exports WEEE from category 5a “gas discharge lamps” (acc. to 10 categories of EEE), from category 3 “Lamps” (acc. to 6 categories of EEE) and additionally, in 2016, minor amounts of PV-panels (treatment abroad). Only the quantities that entered a treatment facility were considered for the calculation of the recovery and recycling quantities. Imports of WEEE for treatment in Greece are not included in the data reported by PROs to HRA.

It should be noted that, due to intermediate storage, the amount of treated WEEE may exceed the amount of collected WEEE for several WEEE categories. Also, recovery and recycling rates may exceed 100 %. Please refer to general note (6).

In 2022, there is a strong increase in the amount of WEEE collected for category 1

("Temperature exchange equipment"). Greece states that this is due to a subsidy program, in which old devices had to be disposed of in order to obtain the subsidy for new ones.

In 2021, there was a fire accident at one of the main recycling plants for category 1, which led to a significant decrease in the recycling and recovery rate of this category in 2022. Additionally, 8620 tonnes of WEEE remained untreated.

Spain

In Spain, producers report the types of EEE placed on the market to the national producer register. For WEEE, 89 % of collected WEEE can be attributed to extended producer responsibility (EPR) schemes and 11 % to WEEE collected by operators not under EPR systems. WEEE collected by EPR systems is reported to the competent authorities of the Autonomous Communities. The EPR report on WEEE collected by distributors, by local authorities and by other operators on their behalf. WEEE collected by other operators (outside EPR systems) is reported to the competent authorities of the Autonomous Communities. Subsequently, these competent authorities check the validity of the information and consolidate it before it is sent to the Ministry for Ecological Transition and the Demographic Challenge.

Spain reports a sharp decline of WEEE collected from households in 2008 and 2009. Possible reasons for this include: a drop in sales; problems of logistics and financial resources of the largest producer collection system responsible for financing management of waste from category 1; selective collection (cherry-picking) of WEEE not financed by the collection schemes that are not covered by the data.

Over the years, Spain reports higher amounts of WEEE collected in comparison to the amounts of treated WEEE. This discrepancy contributes to a substantial increase in WEEE stock in this country. As a result, the recovery as well as reuse and recycling rates are significantly above 100 % in some reporting years. Additionally, it is also reported that data on WEEE collected is estimated and data on WEEE treated is certified. Since 2015, Spain has carried out diverse actions to improve the situation. Additionally, certain effects, as described in the general note (5), might contribute to the mentioned observations.

During 2018 there was a change in the number and type of reporting categories. A statistical distribution of WEEE collected was performed, since the number and type of product categories have changed from 10 to 7 categories. Therefore, WEEE collected from 15 August 2018 onwards has been statistically split between the 10 categories and the split is based on these estimations. This change also affected data for EEE placed on the market. To calculate the number of new products placed on the market, only those declared in the last report of the year (for the months of October, November and December) have been included.

In 2021, the amount of PV panels treated was higher than the amount of PV panels collected as several solar panel treatment plants have only been built and started to treat solar panels that were in storage. Consequently, the recovery and recycling rate for PV panels is very high (>100 %) in 2021. See also general note (6).

In 2021 it is also observed that WEEE treated in categories 1 and 2 is higher than WEEE collected due to the treatment of untreated waste in previous years. See also general note (6).

In 2022, there is a significant increase in the amount of PV panels placed on the market, collected, and treated due to their increased use.

In 2022 it is also observed that ~17.5% of WEEE collected is not treated. Spain explains that due to the movement of waste between the autonomous regions, information is lost and some WEEE treated may not be counted in the report.

There is also a significant decrease in the amount of lamps (category 3) collected and treated between 2021 and 2022. Spain cannot explain the decrease.

France

The weight of EEE placed on the French market is based on information provided by producers of EEE or by their agents or eco-organisations. The data is fed into the national register held by ADEME (the Agency for the Environment and Management of Energy).

Approved eco-organisations take back all WEEE from private households free of charge. The collected WEEE are reported against ADEME by the eco-organisations. To obtain data from private households for the individual WEEE categories, a conversion table is used, as WEEE collected from private households is reported in the national register according to only five categories. This conversion table is based on sampling campaigns carried out by the approved eco-organisations for household WEEE in different treatment centres. Each eco-organisation adjusts its conversion table each year. The ministry in charge of the environment and ADEME have established common rules for carrying out the sampling.

The data on the collection of WEEE from “other than private households” is declared by the producers who have set up an individual system and by the eco-organisations approved for the management of professional EEE.

Data on the treatment of WEEE are calculated on the basis of the declarations made by the eco-organisations and individual systems, which are reported against ADEME. Information is thereby provided on the type of treatment as well as the name and location of the treatment facility, while distinguishing between treatment in France and abroad.

France states that it is difficult to estimate the coverage of the reporting scheme, but it assumes that the reported data is relatively representative of the sector. On this account France states that more free riders are to be found in WEEE data from “other than private households”. It is argued that many small producers and fewer controls (by eco-organizations) allow for more free riders.

It should be noted that France considers that all WEEE collected is also treated in the same year, to avoid temporary storage phenomena. This approach is applied since 2014.

The quantities of WEEE treated outside France are considered in the calculation of the recovery and recycling rates, given that WEEE is treated under conditions equivalent to the requirements defined by the directive. The recycling and recovery rates of WEEE treated abroad are reported by producers in the French WEEE Register. WEEE imported for treatment in France is not considered for the calculation of recovery and recycling rates.

In France, data for photovoltaic panels placed on the market shows a significant increase, from 50 802 t in 2016 to 83 624 tonnes in 2017. Similarly, the collection, treatment, recovery and recycling of PV panels increased. This is explained by an increase of this sector in the WEEE extended producer responsibility scheme. Also, with regards to PV-panels a strong increase in the treatment of PV-panels can be observed for 2021. This is explained by France that the treatment operator in France encountered technical issues on the PV-panels dismantling line but was able to treat the stock accumulated and not treated in previous

years from 2021. It is also observed that in 2022, the recycling and recovery rate for PV-panels exceeds 100%. This is explained with a significant stock effect.

Finally, it can be found that the amount of collected WEEE exceeds the amount for EEE placed on the market for the category 4a (consumer equipment) in 2018 and for category 6 (small IT and telecommunication equipment) in 2022. Please refer to general note (5).

In 2022, the amount of treated WEEE is higher for some categories than the amount of collected WEEE, which is explained by stocks from previous years. Please refer to general note (6).

For category 3 and 6, the treatment rate is significantly below 100%. This is explained with a discrepancy between collected tonnages and processed tonnages and with stock effects (category 6) and with a larger gap between treated and collected tonnage than in previous years (category 3).

Croatia

Producers and importers report the weight of EEE placed on the market. Data on WEEE are collected by the Environmental Protection and Energy Efficiency Fund (EPEEF), act as a centralized Producer Responsibility Organization. EPEEF collects all information related to producers, collectors, and recovery operators. The system covers the collection of WEEE from legal and natural persons. Reports are received from all producers and importers subject to the waste management fee. No additional calculations or estimates were made for the data reporting. Until reference year 2020 it is stated that data reported by the above-mentioned stakeholders are collected and processed at a national level and used for the report. Data for recovery/recycling are provided by authorized waste treatment facility operators.

For category 2 ("screens, monitors, and equipment containing screens having a surface greater than 100 cm²") it may be observed that the quantity of WEEE collected is significantly higher than the quantity of EEE placed on the market. Croatia reports that this is due to devices placed on the market that are significantly less in mass and have a shorter life span than devices placed on the market 10 years ago. Please also refer to general note (5). In addition, it is possible that some manufacturers report equipment placed on market under the wrong WEEE category.

It should be noted that until reference year 2022, data on photovoltaic panels was not collected separately. Please refer to general note (10).

In 2019 and 2020 all temperature exchange equipment was reported as recycled. Croatia states that "one recycling plant reported all quantities as recovered. After the queries were sent, the data was confirmed as such."

In 2022, for category 1 ("Temperature exchange equipment"), the recycling and preparation for reuse rate is above 95%, which is explained with one recycling plant having reported a high recycling rate.

Italy

Since 2018, data on WEEE and EEE are reported according to the six categories of EEE. Data on EEE that is placed on the market is derived from the National Register of Producers. Data on WEEE collected from private households is derived from the Environmental Compulsory Declarations (MUD) database. Additionally, questionnaires sent by the national Environmental Protection Agency (ISPRA) to public and private entities involved in the collection of information on waste management are used. Data on WEEE are collected for five categories, and the division into the six categories of WEEE is estimated by the Italian authorities. Data on WEEE collected from “other than private households” is estimated from MUD database information, with the exclusion of intermediate management phases, to avoid double-counting of waste.

Data on the treatment of WEEE are also derived from the MUD database. Everyone involved in the WEEE management cycle (producers and operators carrying out the operations of recovery/ disposal) is obliged to report against the MUD database.

The subdivision in category 5 (lighting equipment) and 5a (gas discharge lamps) has been derived from the information in the Register of Producers by applying a methodology of estimation based on collection data. For 2018, it was stated that the quantity reported for the product category 5 (lighting equipment) does not include the quantities for the product category 5a (gas discharge lamps).

Information on the treatment of WEEE in other Member States and outside of the EU is derived from the MUD database. WEEE sent abroad for preparing for reuse, recycling or other material recovery was only counted toward the targets after checking the final recovery operation at the destination facility.

It should be noted that, until the reference year 2014, Italy was not able to separate WEEE into categories pursuant to the Annex to the Commission Decision 2005/369/EC due to the established national reporting system. Therefore, total amounts were reported by Italy.

For certain years and categories, it can be observed that the amount of treated WEEE is higher than the amount of WEEE collected. This is because data includes quantities of WEEE sent to preliminary management operations before final recovery. Therefore, if WEEE is processed under different operations in the same year, there may be a duplication of data (double counting).

In recent years, the collection rate may exceed the amount of EEE placed on the market due to the higher specific weight of discarded EEE in comparison to EEE placed on the market. Please refer to general note (5).

Additionally, until the reference year 2017, please also refer to the general note (10).

Substantiated estimates: Data on Waste Electrical and Electronic Equipment (WEEE) collected from private households and other sources were gathered using municipal databases and questionnaires sent to various public and private entities involved in waste management. The data was categorized into six groups based on the types of electrical and electronic equipment, and estimates were made using the rates of overall WEEE managed to prevent double-counting. No estimates were used in reporting the treatment and recovery of WEEE to meet relevant targets.

Cyprus

In September 2009 in Cyprus, the collection scheme (CS) for the management of both household and non-household WEEE (WEEE Electrocyclosis Cyprus Ltd) was licensed and put into operation. Liable producers must submit an application, in which they declare the quantities of EEE placed on the market. Declarations can be submitted by the CS which represents 453 producers and 25 shareholders (as of 2022). Besides the CS, there is also an approved individual system "TEKLIMA" collecting only air-conditioning equipment placed on the market by the company TEKLIIMA. The Department of Environment maintains the National Registry and cooperates with Customs Offices to obtain information about quantities placed on the market. The assumption used for the calculation of 2022 "Put on the Market" is that quantities declared by the collective and individual systems represent 90-95% of the market, with an estimated 5-10% of WEEE free-riding (as of 2022).

There are four facilities in Cyprus that receive WEEE from all categories, and two facilities that mainly receive large household appliances rich in metals. Data on WEEE is obtained from annual reports of the individual system, licensed collectors, and WEEE treatment facilities. The data is cross-checked with annual reports from the Collective System (WEEE Cyprus Ltd) and its cooperating facilities. Currently, there are ten licensed facilities accepting WEEE in Cyprus.

With regards to exported WEEE, both amounts of WEEE "Treated in other Member States" and "Treated outside of the EU" are considered for the calculation of the recovery rates and the reuse and recycling rates. The Department of Environment checks WEEE exported abroad for treatment.

As of 2021, Cyprus does not provide separate data for photovoltaic panels, as the collective scheme is not yet ready to start collecting and managing PV panels. Cyprus states that *"there was a study conducted on PV panels imported in Cyprus, but official declarations from the producers is preferred."* Please also refer to general note (10).

In 2020, for category 3 (lamps), the quantity of WEEE collected was more than the quantity of EEE placed on the market. Please refer to general note (5). Additionally, the recycling rate exceeded 95 % for several categories during the last years.

In 2021, the amount of WEEE treated exceeded the amount of WEEE collected for category 1 (temperature exchange equipment), which is due to build-up of stock. This also resulted in a very high recovery rate for this category. On this account it should be noted that significant changes in the recycling and recovery rates may be because licensed plants do not export WEEE quantities until there are enough to fill at least one container, and thus parts of WEEE will remain in storage. Please refer to general note (6).

In 2022, the amount of WEEE treated exceeded the amount of WEEE collected for category 3 (lamps), which is due to build-up of stock. Please refer to general note (5). This also resulted in very high recovery and recycling and preparation for reuse rates for this category.

For category 6 (Small IT and telecommunication equipment), there is a significant drop in the recovery rate (from 91% in reference year 2021 to 55 % in reference year 2022). This is due to the fact that not all quantities received from the collective system were processed.

Substantiated estimates: Cyprus assumes that the collective scheme is covering 90-95% of quantities PoM.

Latvia

Latvia estimates for reference year 2022, that 90 % of WEEE collected and treated is covered by the reporting scheme.

Reports on EEE and WEEE are prepared by producers of EEE or organizations for WEEE management established in accordance with Waste Management Law (extended producer responsibility organisations). Information for preparation of this report is collected by "Register", a state information system used to register producers of EEE and to collect information on EEE placed on the Latvian market and on the management of WEEE.

Data on imported and exported WEEE for treatment are checked against the reported data in accordance to the Basel convention and compared to data collected by Register. Latvia states that there is not sufficient data to consider private imports or exports.

Latvia further states that there are indications that WEEE are also collected by companies dealing with metal scrap, but data about the amounts and types of waste collected by these companies is not given.

For 2020, Latvia states that for solar photovoltaic panels a disaggregation from category 4 (large equipment) is not given. Please refer to the general note (10).

Lithuania

The quantity (weight in tonnes) of EEE placed on the market is calculated based on the information provided by producers or importers of EEE or their authorised representatives. Data stems from annual reports which manufacturers and importers must submit via PPWIS (Unified Product, Packaging and Waste Record Keeping Information System).

Waste collectors, carriers and processors, traders in hazardous waste and intermediaries ('waste managers') must keep records of waste online and submit the annual reports (for the previous calendar year) on waste collection and management to the Lithuania Environmental Protection Agency by using PPWIS. The source of information for data on WEEE are annual waste management reports which waste management undertakings submit via PPWIS. Similarly, data on preparing for re-use, recycling and recovery of WEEE are data from annual WEEE management reports which are taken from PPWIS.

Amounts of WEEE collected domestically and exported for processing are included in the calculation of recovery, reuse and recycling rates. Data has been derived based on information about recovery and recycling percentages which is published on the Eurostat website.

For some years and categories, it appears that the amount of treated WEEE exceeds the amount of collected WEEE. According to Lithuania, this is because the waste collected in the previous year was stored and treated in the following year. Please refer to general note (6).

Additionally, Lithuania does not provide separate data on photovoltaic panels. Please refer to general note (10).

Lastly, general note (7) applies for Lithuania.

Substantiated estimates: The quantity (weight in tonnes) of EEE placed on the market is calculated on the basis of the information provided by producers or importers of EEE, or their authorised representatives, in accordance with Article 16(2)(c) of Directive 2012/19/EU and Part B of Annex X to that Directive.

Luxembourg

The main source of data for EEE placed on the market is provided by PRO Ecotrel (the only PRO in Luxembourg). All producers that are members of Ecotrel must report the number of EEE units they place on the market. An empirical estimate of the average unit weight is used to provide information on the total weight. Until 2018, these estimates were based on samples taken by Ecotrel or other similar organizations in other Member States. Since 2019, these estimates have been based on a publication from the United Nations University (Forti et al. (2018)). Data from individual producers were not included because they represented less than 10 % (as for reference years 2021 and 2022 less than 5 %) of the market and the data provided are often of poor quality. It should be noted that for some categories, such as beverage distributors, data on equipment placed on the market are not available as they are provided through leasing or rental options.

Data on WEEE collection from households is based on direct weighing by the various collection or storage facilities. Data on WEEE from non-household sources are derived from producers' annual reports. Alternatively, the PRO Ecotrel must provide information on WEEE collected. Luxembourg states that data on WEEE not originating from private households is not of satisfactory quality. It is currently being discussed how the quality can be enhanced. The recovery rates and the rates for preparation for reuse and recycling are obtained by the PRO from the contracted companies (these include treatment facilities outside Luxembourg).

The data on WEEE generated is calculated based on the product lifetime indicated in the WEEE calculation tool and the data of EEE placed on the market (PoM). The PoM data have been updated in the WEEE calculation tool by taking into account Ecotrel data for the years 2006-2020 and by making an extrapolation for the data before 2006 (based on the evolution of Prodcom data).

For Luxembourg, 100 % of WEEE must be exported for treatment. Treatment takes place mainly within the European Union, except for the final treatment of metals from refrigerator compressors, which takes place outside the EU. The national PRO Ecotrel is responsible for the export of these waste streams.

In 2022, the recovery rate exceeds 99% for category 1 ("Temperature exchange equipment"), as only 0.39% is not recovered. However, a large amount of category 3 (lamps) remains untreated. Luxembourg states that collected LED lamps remained in stock.

Between 2021 and 2022 the amount of WEEE collected dropped significantly. This is explained with high collection rates in 2021 due to floods and the pandemic, as well as cross-border trade.

Hungary

Hungary has already implemented the 6 categories of the WEEE Directive (open scope) from 1 January 2018. The WEEE-Tool was used for the transformation from 10 categories to 6 categories.

Figures for EEE placed on the market (PoM) are from producers' reports. Exceptions are lighting equipment, lamps and medical devices. These data are reported by producers to the National Environmental Information System for lighting equipment. From 2021 on Hungary states that EEE PoM for category 3 (Lamps) stems from Producers Responsibility Organisations (PROs).

Previously PROs coordinated the collection and treatment of WEEE. This changed in 2012 to a centralised, state-organised coordination except for the categories 5, 5a and 8 under the former 10 categories of EEE. As the Ministry for Innovation and Technology (today ministry of Energy)² finances the collection and treatment of WEEE, it holds detailed data on WEEE. Additionally, PROs (lamps, lighting equipment and medical devices) report to the electronic Integrated Waste Management Information System. Lastly, collector and treatment companies are asked to provide data about collection. Hungary states that 99% of separate collected WEEE is covered by the reporting scheme.

All waste generation, movement and treatment in Hungary – including export and import – must be reported into the Waste Information System by the waste producer, transporter and treatment companies. These data are compared to data provided by the PROs and data of Ministry for Innovation and Technology. Exports of WEEE are considered for the calculation of the recovery rates and the reuse and recycling rates. Separate recovery rates and reuse and recycling rates for exported amounts have not been calculated.

Beyond this, the reporting method for the treatment in the Member State and treatment in another Member State of the EU has been changed. In former years figures were given according to last treatment (recycling, energy recovery or disposal of parts from dismantling and shredders). From 2018, according to the Commission's information, figures are given according to the first treatment (dismantling and shredding). Figures for treatment outside the MS are from waste management companies.

It should be noted that the obligation for producers to keep separate records of photovoltaic panels was only introduced for reporting from reference year 2021 onwards. Please refer to general note (10). In 2022, no data collection of PV panels was reported, which is explained by their long lifetime and a low collection rate in 2021.

Due to stocks from previous years, the treatment rate may exceed the collection rate for some categories and in several years. Please refer to general note (6).

In 2022, the amount of category 2 ("Screens, monitors, and equipment containing screens") collected is higher than the amount of products put on market. This is explained by differences in weight between collected items and those placed on the market.

Malta

Malta states that the reporting scheme is estimated to cover all (100 %) WEEE streams. No substantiated estimates were used for the provision of any data. Since 2016, the amount of

² from 2016-2018 Ministry of Agriculture, from 2014-2016 National Inspectorate for Water and Nature, National Waste Management Directorate

EEE placed on the market is calculated based on the national register. The basis of this information is provided by producers of EEE or their authorised representatives. Before 2016, trade statistics provided by the National Statistics Office were used.

The amount of WEEE collected, recovered, prepared for reuse and recycled is calculated through the annual environmental reports as submitted by local waste management facilities authorised for the acceptance and treatment of WEEE. Such waste management facilities are required to indicate the amount of WEEE recovered and recycled. Checks and validations are made to identify transfers of WEEE between local waste management facilities, thus eliminating double counting. Furthermore, Producer Responsibility Organisations (PROs) are required to submit an annual report, indicating the amount of WEEE collected, recovered, re-used and recycled by category, distinguishing between WEEE collected from private households or otherwise. These reports are used to cross-check and validate information provided by waste management facilities. To facilitate this process and to improve traceability of WEEE, all movements of WEEE within Malta are covered by the notifications to the Competent Authority. Therefore, the data provided by the individual waste management facilities authorised to accept WEEE in their annual environmental report is cross-checked with the Consignment Note database managed by the Authority.

In addition, WEEE Compliance Schemes are required to submit an audited annual report, wherein, amongst others, they indicate the amount of EEE by category placed on the market by their members, the amount of WEEE by category collected from private households and other than private households, and the amount of WEEE treated (recovered, recycled and prepared for reuse) in Malta, in other Member States and outside the Union.

Due to a lack of treatment operations available locally, no WEEE is imported, while the vast majority of WEEE is exported. Until 2016, all WEEE was exported to other Member States of the EU. Since 2017, small amounts are exported outside the EU. WEEE exported for further treatment is covered by notifications to the competent authority in line with the Waste Shipment Regulations 1013/2006/EC. Notifiers (waste management facilities and waste brokers exporting WEEE) are required to indicate the amount of WEEE sent for treatment and the final treatment of waste accordingly to the recovery/disposal operation as well as the final destination of the waste. Since 2018, the amounts reported by waste operators are crosschecked with databases for the shipments of waste held by the Competent Authority. Also, since 2018, Malta reports that PROs are required to submit an annual report indicating the amount of WEEE treated by category in Malta, in another Member State or outside the European Community.

For several categories in 2005 to 2008, the total amounts of WEEE collected were higher than the sums of WEEE collected from households and other sources because the allocation to the respective source was not completely available. Thus, data on 'WEEE collected from households and from other sources' are incomplete while the figures on 'total collection' are complete.

There are instances where amounts of WEEE that were collected in previous years are kept in storage and exported during the year under review or where WEEE collected is kept in storage with the aim to be treated in the following years. Such situations might result in cases where the recycling rates for a particular year are higher than 100 %, or where the amount of WEEE recovered for certain categories in a particular year is either relatively low or none. Please refer to general note (5).

Netherlands

According to the Dutch authorities, about 50 % of WEEE is collected and treated separately, 25 % is treated as part of residual waste. The other 25 % is not found in known schemes. Producers that place EEE on the Dutch market must report to the Ministry of Infrastructure and Water Management on a yearly basis. They may report individually or together as a collective. Producers are responsible for reporting the EEE placed on the market in weight. This is the same for the treatment of WEEE. The National WEEE Register combines all the reports of individual producers and collectives.

The National WEEE Register is responsible for collecting, verifying and reporting on the statistics of WEEE collected and treated. This information comes from the producers of the EEE and all the treatment facilities of WEEE. A small portion of the treatment occurs outside the Netherlands. These quantities are also considered in the recycling rates. The extent to which these quantities can rightly be included has been considered by the register. No corrections have been made for possible private imports or exports. The Dutch authorities expect that this states a minor aspect.

Until 2011, the Netherlands reported the amounts placed on the market for most categories sometimes in tonnes and sometimes as a count (i.e. numbers). The data are thus not comparable to other countries. Since reference year 2012, the Netherlands report the amounts placed on the market in tonnes only.

Until 2010, the Netherlands calculated treatment rates on the basis of the collected amounts. As the total collected amount and the total treated amount are identical for most categories, this approach only becomes visible where both figures deviate. This is the case for product category 5 in 2009 and 2010 and product category 5a in 2009. For calculating the treatment rates, the amounts of reused whole appliances (which are included in 'total collected' and in 'total treated') are subtracted from 'total collected'. This approach has an impact only for the recovery and recycling/ reuse rates for the category 'automatic dispensers' in 2009 because for other categories the reuse of whole appliances is zero or very low.

It should be noted that the recycling or recovery rate may sometimes exceed 100 %, since part of the collected WEEE is only treated in the next year. Please refer to General note (6).

Additionally, until the years until 2016, please refer to general note (10).

In 2022, Netherlands is the country with the highest amount of EEE placed on the market within the EU. This is explained by a high amount of PV panels placed on the market in 2022.

Austria

Businesses or certified business units and producers (including importers) have to report the amount of EEE placed on the market to the national register (EDM-System).

Every collector of WEEE (collection and recovery systems, waste collectors, municipal collection points) must report the amounts of collected WEEE from both private households and other than private households to the national register (EDM-System).

Every treater and every collection and recovery System of WEEE has to report the amounts of treated WEEE to the national register (EDM-System). Municipal collection points have to separate WEEE that can be prepared for reuse from other WEEE and have to report these amounts separately. Every re-use operator, recycler and every recovery facility (treater) and

every collection and recovery system of WEEE have to report the amounts of WEEE, prepared for reuse, recycled and recovered to the national register (EDM-System).

Producers, EPR-systems, collectors and treatment facilities have to report the amounts of exported and recovered (re-used, recycled) WEEE in another Member State annually. These exports are considered for the calculation of the recovery rates and the reuse and recycling rates. For all exports of WEEE it must be ensured that the treatment takes place in conditions that are equivalent to the requirements of the WEEE-Directive.

Until 2010, Austria included the amounts of reused whole appliances in the treated quantities. For calculating the treatment rates, Austria subtracts the amounts of 'reused whole appliances' from the 'total treated', resulting in a calculation that is compliant with the requirements.

In 2020 it can be observed that for the category 'small IT and telecommunications equipment' 24 % more waste was collected (8 915 t) than was put on the market (7 184 t). Austria suspects that these figures were calculated by randomly dividing all small appliances into the collection categories of 'small IT equipment' and 'other small appliances', since the further recycling route of these two categories is the same.

In 2021 the collection rate for small IT and telecommunications equipment exceeds 100 % with respect to EEE placed on the market. Austria states that this *"can be attributed to various framework conditions. Uncertainties in the data concern the masses collected as well as the masses put into circulation. On the market side, it can be assumed that in the first few years after the changeover to the subdivision of small electrical appliances into two categories, not all manufacturers have yet made a completely correct classification of their products."*

Substantiated estimates: Since 2017, Austria uses a methodology based on a study of the Austrian Environmental Agency, which calculates the amount of WEEE in other collection streams that are not covered and reported in the WEEE-system. The main change in time series appeared for large household appliances data.

Poland

The quantity of EEE placed on the market is calculated on the basis of the reports provided by producers of EEE or their authorised representatives. For the years before 2018, the data for WEEE 'collected' and 'treated' came from the reports provided by collecting entities and treatment facilities. Since 2018, data on WEEE is based on reports provided by producers of EEE or their authorised representatives. Producers in turn get the data on WEEE from the permitted treatment facilities. The permitted treatment facilities acting on behalf of producers accept WEEE forwarded by business entities, collected from household directly, through distributors of EEE and also collected by the producer organisations and other permitted professional collectors free of charge. The data does not include independent collectors of WEEE operating outside EPR schemes. For the reference year 2019 the reports by producers and authorised representatives are collected for the first time through the electronic on-line base BDO (Database on products and packaging and waste management). Treatment facilities also report on mass of WEEE treated in Poland and subsequently transferred to recycling or recovery other than recycling in another Member State or outside the European Union. WEEE exported as whole appliances for further treatment in another

Member State or outside the EU is not reported separately by the producers and therefore is not included in the report. WEEE recycled or recovered outside Poland are included in the recycling and recovery rates.

Between 2018 and 2019 an increase by more than 70 % can be observed for collected and treated WEEE. Poland states that *“the data on mass of WEEE collected comes from the producers reports. The producers’ performance in WEEE collection is driven by the national targets the producers are to reach. For 2018 the producers nationally missed the target of about 5 percent. That might have been a driver for better performance in the following year (2019) as for 2018 the actions taken were apparently insufficient. The producers kept the performance in terms of mass (tonnes) for the year 2020. Such a tonnage collected was enough to reach the national target for 2020.”*

In reference years 2020 and 2022, the amount of small equipment that is treated is more than WEEE collected. Please refer to general note (6).

From 2019 producers started to report WEEE collected from households and from other sources separately. Also, data on PV panels were reported separately. Please refer to general note (10).

Between 2019 and 2021, the quantities of EEE placed on the market showed substantial fluctuations, particularly in the categories of small equipment, small IT and telecommunications equipment, and screens and monitors with a surface area greater than 100 cm². These deviations are attributed to a reclassification of EEE into six defined categories.

Portugal

Portugal calculates the weight of EEE placed on the market on the basis of the information provided by producers of EEE or their authorised representatives. For data reported in 2017 regarding EEE placed on the market, there was a change in the entity responsible for receiving the data. Until 2016, data which was reported against the national register was managed by ANREEE (National Association for Registration of Electrical and Electronic Equipment). In the beginning of 2018, with effects regarding the 2017 data, the national register was taken over by APA (Environmental Protection Agency). In the course of this change the registry which was previously managed by a private entity is now managed by a public entity.

Producers are required to inform the national register APA on the number of EEE (by category) placed on the market and their respective weight. Portugal states that some free-riders continue to exist on the market, although it is assumed that they can mainly be associated with small companies; thus they represent only a small market share in terms of weight of the EEE placed on the market.

Data on WEEE contains data from the national collective schemes (by category) and WEEE that is not assigned to the collective schemes although it is collected by the waste treatment operators belonging to the collective schemes network. Also, WEEE collected by other waste treatment operators outside the collective schemes and WEEE exported to foreigner waste treatment operators is included.

Data on WEEE treatment stems from the reporting obligations of collective schemes, waste treatment operators, WEEE producers, quantities of WEEE sent for treatment outside the country and information on shipments of WEEE.

WEEE which is exported for treatment outside Portugal and outside the European Union is not considered for the calculation of the recovery rates and the reuse and recycling rates if there is no evidence that the treatment took place in conditions that are equivalent to the requirements of the Directive.

From the reference year 2016 onwards, Portugal does not have separate information for 'collection from private households' and for 'collected other than from private households'. Until 2018 Portugal states that no distinctive information on the treatment of photovoltaic panels is available. Therefore, this category is reported under the total value of category 4 (large equipment). Please refer to general note (10) for further information.

Between 2018 and 2019 a significant drop in the collection and treatment of WEEE can be observed. The reason is a change in the legislation that requires reporting only the separately collected WEEE.

Between 2020 and 2022, the recycling rate showed significant fluctuations. According to Portugal, this was due to quantities of WEEE remaining unprocessed at the end of 2022, as some recovery facilities closed temporarily due to COVID-19 restrictions.

Romania

The data on EEE placed on the market is derived from PROs. These PROs report the quantity of EEE placed on the market by the producers on an annual basis. In Romania, all producers that place EEE on the market are members of a PRO that reports the quantities placed on the market.

Data on WEEE is collected by companies permitted for WEEE collection, who report types and quantities of collected WEEE on an annual basis. Companies permitted for WEEE treatment report the components that will be reused and the waste fractions that will be delivered for recycling or energy recovery. The National Environment Protection Agency uses a dedicated IT tool for data collection and cross-checks the data provided by producers and entities to the Permitting Commission, as well as data reported by waste collection and treatment companies, with other reports provided by these facilities.

Companies in Romania that export WEEE for treatment in another member state provide information on the quantities exported and the recovery processes at the destination, which are considered for target calculations. Only exports to other member states have occurred, and companies are required to report both the exported quantities and the recovered quantities and processes. Romania does not export WEEE outside of the EU.

As of October 2024 Romania has not provided data for reference year 2022.

Slovenia

Slovenia states that 100 % of WEEE are covered by the reporting scheme. No substantiated estimates were used: the recovery and reuse and recycling shares are calculated based on the total amount of collected WEEE that entered the treatment centres during the reporting period.

Data on EEE placed on the market are obtained on the basis of the obligation of persons liable to pay the environmental tax in accordance with the Decree on the environmental tax on the generation of WEEE. Liable persons must report on EEE placed on the market (separately by categories) to the Financial Administration of the Republic of Slovenia (FURS)

twice a year.

Since 2020, data on WEEE from household are obtained from annual reports of EPR organisations in accordance with the Decree on WEEE. For WEEE collected within households, the data include the amounts of WEEE collected by mandatory municipal public utility service of collection of municipal waste providers (public utility service providers), by EEE distributors and by WEEE collectors. For WEEE collected outside of households, the data include the amounts of WEEE collected by WEEE collectors. Before 2020, data on WEEE was based on the reporting obligation in accordance with the WEEE Regulation or the annual reports of the operators of the joint WEEE management plan. The amount of WEEE exported from the Republic of Slovenia to other EU Member States and from the Republic of Slovenia to countries outside the EU is considered when calculating recovery rates and re-use and recycling rates.

The data on the amount of WEEE treated also includes the amounts of WEEE that remained in stock at the collector and the treatment operator from previous years and excludes the amounts of WEEE that was in stock at the collector and the treatment centre at the end of the current year.

From reference year 2022 on Slovenia provides separate data for PV panels (separate data for subcategory 4a and 4b). Separate data for PV panels collected and treated can however not be provided, as WEEE is *“collected by EWL waste codes and EEE categories, on the basis of which data on WEEE can only be reported separately by categories from 1 to 6.”* Please refer to general note (10).

Due to the treatment of stocks from previous years, the amounts of treated WEEE are sometimes higher than the amount of collected WEEE. Please refer to general note (6). Similarly, the recycling and recovery rates may exceed 100 %.

Slovakia

Data on EEE and WEEE are compiled on the basis of reports that (i) producers of EEE fulfilling their obligations under the EPR scheme and (ii) producer responsibility organizations must provide to the Ministry of Environment of Slovakia. The reporting is based on WEEE received by collection and treatment facilities, WEEE received by distributors and WEEE separately collected by producers or third parties acting on their behalf.

The reporting scheme does not cover the amount of WEEE treated by free-riders. No estimation has been used to account for WEEE collected or treated beyond the reporting scheme. Additionally, Slovakia assumes that one third of the generated WEEE in the Slovak Republic is not properly collected (scrap metal, informal “illegal” buyers, mixed municipal waste). Also, one third of the collected WEEE is not controlled by producers or relevant producer responsibility organizations but is collected and registered as scrap metal or lost in landfills.

The amounts of WEEE exported are considered for the calculation of the recovery rates and the reuse and recycling rates. According to the Slovak Waste Act, waste may be handed over for recovery and recycling in another Member State of the European Union or a state other than a Member State.

Since 1 January 2016, the amounts of recovered and recycled gas discharge lamps have not been reported by producers. The amount of recovered as well as recycled gas discharge lamps have been estimated on the basis of the data reported within the previous 5 years.

For several years it may be observed that the quantity of WEEE treated is more than the quantity of WEEE collected. Please refer to general note (6). Additionally, the recycling and recovery rate of lighting equipment may exceed 100 %. Please refer to general note (7). For the reference year 2018, Slovakia cannot provide data on 'recovery' as well as 'reuse and recycling' of consumer equipment and photovoltaic panels separately (categories 4a and 4b). Additionally, please refer to the general note (10).

Finland

Until reference year 2021, information is gathered from producers and producer organisations. Since reference year 2022 there are no longer individual producers registered to the producer register. Also trade and industrial associations and customs have provided information for quality control purposes (for example sales statistics cross checking). No estimates have been applied to account for free riders.

In Finland, B-to-C (business-to-consumer) WEEE (waste electrical and electronic equipment) reporting covers nearly all collected and treated waste because producers handle collection. Few alternative channels exist for B-to-C WEEE, though some dual-use items from businesses (mainly ICT equipment) may divert to other channels. Criminal activities, though limited, mostly involve theft of valuable ICT equipment, which is then resold or exported. However, there's no data on the scale of these activities.

In the B-to-B (business-to-business) sector, much WEEE bypasses producer collection systems, as large companies prefer existing waste management contracts. This waste, often of some resale value, is legally processed by operators with environmental permits. While this alternative system is legal and adequately treated, data collection remains an issue. Efforts to improve reporting are underway, with national authorities gathering data directly from waste operators.

Another possibly significant channel is the export of used equipment to Russia.

Finland estimates that the coverage of the reporting scheme is about 95 % for B2C products and 50 % for B2B. The values are however considered very uncertain. The lower collection rate with regards to B2B WEEE is explained by Finland as being because B2B-end users tend to sell WEEE straight to operators

Information on the treatment of WEEE is derived from operators with permits. Operators give the information to producers/producer organisations (contract), which then gather the information and send it to the authorities. This applies to information related to the amounts taken care of producers. Those amounts, which are contracted between end users (B2B) and operators will report figures themselves to avoid double counting.

Amounts of (legally) exported WEEE (most of which is exported to Sweden) are included for the calculation of the recovery rates and the reuse and recycling rates. Finland states that some WEEE is exported without proper documentation. Until 2018, estimates for the alternative channels were based on a study published in September 2011. The source is, however, not used anymore, because it is outdated.

In reference year 2019 Finland started to report data on photovoltaic panels. Please refer to general note (10). For consumer electronics and automates it can be observed that the

quantity of WEEE collected is higher than EEE placed on the market. Finland argues that old TV's, stereos or similar appliances which come back as a waste are heavier than the ones replacing them (e.g., tablets, laptops etc). For automates it is stated that this was because the state gambling monopoly changed a large amount of their coin operated equipment to new smaller and lighter ones.

For reference year 2022 Finland states that the amount of WEEE collected in category 6 (small IT and telecommunications equipment) exceeds the amount of EEE placed on the market. Finland explains that this is due to a market shift, as certain products (e.g., printers) are now sold in lower volumes, leading to more WEEE being collected than new items being introduced.

In reference year 2022 the recycling rate in category 3 (lamps) decreased significantly. Finland states that *"a larger share of lamps was recovered as energy than previously thought. The occurrence of persistent organic pollutants has an impact on the recycling of lamps"*.

Sweden

With regards to EEE placed on the market, calculations are made on the basis of information provided by either producers of EEE, or collection schemes for WEEE. With regards to WEEE, calculations are made on the basis of information as reported by the collection schemes. Household WEEE is reported by collection schemes, irrespective of whether they are private households or others. The treatment of WEEE is reported by the collection schemes for household WEEE since they have contracts with the treatment facilities, producers or other waste management operators for other WEEE.

Sweden declares that exports are not considered for the calculation of the recovery rates and the reuse and recycling rates.

Since 2008, the total collection of consumer equipment (since 2015, the product category is called 'consumer equipment and photovoltaic panels') is substantially higher than the amounts placed on the market. Similarly, for "Screens, monitors, and equipment containing screens having a surface greater than 100 cm²", it was observed in 2020 that the amount of WEEE collected was higher than the EEE placed on the market. The reason might be that new equipment is developing towards smaller and lighter models, for instance for TVs. This results in a lower weight placed on market in comparison to collected WEEE. Effects, as described in the general note (5), might contribute to this.

For the reference year 2016, Sweden suspects that producers from outside the EU do not report their placed-on-the-market products, for example for automatic dispensers in the national register. Therefore, the amount reported as placed-on-the-market could possibly be slightly higher in reality.

Also, for some categories, the quantity of WEEE treated is slightly higher than the quantity of WEEE collected. Sweden states that the differences are probably due to rounding differences. Also, effects described in general note (6) may apply. Similarly, the recovery rate may exceed 100 %. Sweden states that the reported recovery may also include WEEE collected in previous years.

For the data submitted for 2020, Sweden states that they discovered a double count. Data for 2020 has already been corrected. With regards to previous years, a review has to be performed to see whether the numbers with respect to EEE placed on the market have to be amended. The amount of EEE placed on the market may currently be overestimated and

therefore the WEEE collection rate may be underestimated.³

As of October 2024, all data reported for reference year 2022 is flagged as confidential.

United Kingdom

The last year the UK reported on WEEE was reference year 2018.

Previously, the UK did not report data for WEEE treated in other Member States or treated outside of the EU. The UK states that the UK environment agencies have not authorised any WEEE to be 'treated in another Member State' or 'treated outside EU'; it is assumed that all WEEE collected within the UK has been treated in the country. Furthermore, UK regulations limit the export of WEEE to only whole appliances for re-use.

To calculate the figures for the column 'treated in Member State', the UK takes the total for separately collected WEEE and subtracts WEEE which has been reused as whole appliances. For the reference years 2010 to 2013, the UK did not collect 'recovery' and 'recycling and reuse' data because of the change to its national WEEE legislation in 2010. However, this amendment requires Approved Authorised Treatment Facilities (AATFs) to meet specific conditions, which include that the separately collected WEEE is recovered, and when treated, that the specific recycling targets are met. This is monitored through regular inspections of the permitted treatment operators and auditing of WEEE. As achieving the minimum targets is a condition of becoming an AATF, UK considers the recycling targets have been achieved.

Since the reference year 2014, the UK has been reporting on 'recovery' and 'recycling and reuse' data in detail, as required by the WEEE Directive.

The UK collects data both for EEE and WEEE for the category 'display equipment' (labelled category 11 in the UK), and this has been aggregated into category 3 'IT and telecommunications equipment' in Eurostat reporting. Although the UK realizes that some display equipment will include TVs from category 4, 'consumer equipment', it is not possible to break down this figure further. As a result, a small amount of WEEE that belongs in category 4 'consumer equipment' has been reported under category 3 'IT and telecommunications equipment'.

In 2017, UK introduced a more stringent process for accessing applications from treatment facilities to become "Approved Authorised Treatment Facilities (AATFs)"⁴ and as a result there was a significant reduction in the number of treatment facilities approved for reuse and treatment of WEEE in 2017.

Iceland

Iceland estimates for reference year 2020, that 35 % of WEEE collected and treated is covered by the reporting scheme. In 2022 the coverage is assumed to be 90-95 %. Data on EEE and WEEE are based on administrative data from the Icelandic Recycling Fund and the Environment Agency of Iceland. The Environment Agency of Iceland oversees data

³ In 2023 SE states: "At the moment we have only corrected the 2019-2021 data. We have to make a review also regarding previous years [...]"

⁴ In the UK treatment facilities can apply annually for additional approval to become "Approved Authorised Treatment Facilities (AATFs)". This approval enables them to issue evidence of tonnage for reuse and treatment of WEEE that they receive on behalf of producers via producer compliance schemes.

coherence and quality.

Since reference year 2013 Iceland reports higher amounts of WEEE collected than WEEE treated. For reference year 2017, this is the case in almost all waste categories (exception Automatic dispensers and Monitoring and control instruments where collection equals treatment).

As of October 2024, Iceland has not provided data for reference year 2021. Data reported for reference year 2022 is still under evaluation.

Liechtenstein

Liechtenstein states that it is difficult to estimate the amount of WEEE data that is covered by the reporting scheme because no data is available for WEEE, which is returned to sellers of EEE. Also, data on imports of EEE and direct exports of WEEE to Switzerland or other countries are incomplete.

Liechtenstein does not maintain data collection for selling points of EEE. Therefore, no data is available on EEE. In the previous years, data on EEE placed on the market was filled in with the values of WEEE collected from private households.

The Office of Environment collects data on WEEE which is disposed of at the waste collecting points of the municipalities in Liechtenstein. Since 2013, WEEE disposed of by companies at waste management companies in Liechtenstein is also included in the category 'collected from private households. At waste management companies in Liechtenstein, foreign persons and companies can also dispose of WEEE. This share is estimated by the waste management companies.

WEEE which is collected at waste collecting points of the municipalities in Liechtenstein are picked up by waste management companies from Liechtenstein. The waste management companies dismantle the WEEE or export the WEEE to Switzerland. The dismantled fractions are then recycled in Switzerland. The recovery rates and reuse and recycling rates are derived from Switzerland. No distinction is made between preparing for re-use, recycling and recovery of WEEE.

For Liechtenstein only the amount in tonnes is available for the total quantity of WEEE, but not for the single categories. Shares to the EUROSTAT categories are derived from the collected amounts in 2020 in Switzerland (Swico, SENS, SLRS Fachbericht 2021) and used for Liechtenstein.

For the calculation of the recovery rates and the reuse and recycling rates exports are included. Imported amounts have been excluded from the data delivery to Eurostat.

Liechtenstein declares that gas discharge lamps are included in the category lighting equipment. Separate data on the amount of gas discharge lamps was not collected. In addition, please refer to the general note (9) and (10).

Finally, Liechtenstein states that no data is available for all waste operations for photovoltaic panels (PVP).

Norway

Data on EEE placed on the market is reported by take-back systems (data from Norwegian producers) and Norwegian Customs (data on imports and exports).

Data on collection and treatment of WEEE are mainly reported by PROs. They report data from treatment facilities that collect and treat WEEE on behalf of PROs. This includes WEEE received from distributors and municipalities and is collected separately from producers. Some data is also received directly from the treatment facilities. This covers WEEE collected outside the PRO system which go to treatment facilities in Norway, and also if waste from this WEEE are exported.

In addition, WEEE is exported as used goods. Data are missing for these two fractions. Norwegian treatment facilities are required to report the treatment of WEEE that is not collected under the PRO system (the first reporting period for treatment facilities was 2015). However, the amount reported by treatment facilities is comparatively small, representing ~1 % of the total amount collected.

WEEE exported for treatment outside Norway is subject to the same obligations as treatment in Norway. Data on treatment in another Member State or outside the EU is reported by PRO. The data comes from Norwegian treatment facilities. Some data are reported directly by the respective treatment facilities and provide information on WEEE, which is exported for treatment outside Norway. WEEE exported to other Member States or outside the EU is included in the calculation of recovery rates and reuse and recycling rates. WEEE imported into Norway is not included in the reported data.

In 2019, Norway has introduced a new reporting system and a producer register. As of January 1, 2019, Norway will collect data for new product categories, i.e. (i) "Large Industrial Equipment" and (ii) "Large Industrial Cables". However, data for these categories are not reported to EUROSTAT. In addition, subcategories under category 5 ("small appliances") are introduced, namely (i) "Ionic smoke detectors" and (ii) "other small appliances". Changes between the 2019 and 2020 reports and previous reports can be explained by the new reporting system.

Until 2021 Norway was not able to submit separate data on PV panels. Please refer to general note (10). In 2021, the Norwegian Waste Regulation was amended and a new regulation came into force in 2022 that will include reporting requirements for PROs and treatment facilities for PV panels.

Norway indicates that the amount of WEEE collected is larger than the amount of WEEE placed on the market in some categories. Norway assumes that this is due to both a saturated market for some EEE products and the fact that many types of EEE placed on the market become smaller over time. Please also refer to the general comment (5).

For some categories, the amount of WEEE treated is greater than the amount of WEEE collected. Please refer to general note (6).

In 2020, for category 2 ("Screens, monitors and equipment containing screens with an area greater than 100 cm²"), it is found that the amount of WEEE recycled is greater than the amount of WEEE recovered. Norway states that this is because the quantity reported for "prepared for reuse" is greater than the quantity reported for "energy recovery".

In addition, for some categories, the recycling rate (including preparation for reuse) is above 95 % and the recovery rate is above 99 % from 2020. Norway cannot explain the high recycling and recovery rates but notes that this applies to the same categories where the amount of WEEE treated is higher than the amount of WEEE collected.