This article gives an overview of developments relating to waste electrical and electronic equipment in the European Union (EU) and some EFTA countries; it draws exclusively on data collected within the framework of Directive 2012/19/EU on waste electrical and electronic equipment (WEEE).

The objective of the WEEE Directive is to promote reuse, collection and recycling and other forms of recovery of waste electrical and electronic equipment to reduce the quantity of such waste to be disposed of. In the European Union in 2016 the collection rate of WEEE was 49 % (amount of collected WEEE in relation to the average amount of EEE put on the market in the three preceding years, 2013-2015).

### EEE put on the market and WEEE collected in the EU

Figure 1 shows trends in the amount of electrical and electronic equipment (EEE) put on the market and of WEEE collected and treated for the EU in the period 2010 to 2016. Missing data for some EU Member States have been estimated in order to be able to show developments for the entire EU. The time lag between the year when EEE is put on the market and the year when it becomes waste is currently not available in the data collection when monitoring the WEEE collection target. This target changed with the revised monitoring from reference year 2016 onwards (see Context section for more details).

Between 2010 and 2013, the amount of EEE put on the market in the EU dropped by nearly 0.68 million tonnes from 9.45 to less than 8.77 million tonnes in 2013. This decrease (-7.2 %) has been by far compensated between 2013 and 2016 (+15.2 %). Amounts of EEE put on the market increased again in 2014 to 9.26 million tonnes. From 2015 to 2016 the amount of products put on the market grew by 2.9 %, from 9.81 million tonnes in year 2015 to 10.09 million tonnes in year 2016. The amount of EEE put on the market is accounting for +6.8 % over the observation period 2010-2016.
Electrical and electronic equipment put on the market by country

Figure 2 shows the composition of the shares of EEE product categories put on the market, reflecting the consumption shares pattern in the countries shown in the graph.

Large household appliances (category 1) is the dominant product category in all EU countries. Its proportion of total EEE put on the market ranges between 42.1% in Luxembourg and 71.4% in Bulgaria (average at EU level: 52.1%). IT and telecommunication equipment (category 3) is the second largest product category in most countries, accounting for 4.8% in Malta to 16.6% in Austria and Luxembourg (average at EU level: 11.4%). Small household appliances (category 2, (average at EU level: 9.7%) and Consumer equipment (category 4, average at EU level: 8.8%) rank third or fourth in most countries.

Medical devices (category 8), Monitoring and control equipment (category 9) and Automatic dispensers (category 10), which are summarised together in one category in the figure, account for only a small share of the total EEE put on the market. Together, these three categories account on average for 3.6% of the total. Only Malta (9.0%) and Denmark (7.2%) report higher figures for these agglomerated categories.
Collection of WEEE by country

Figure 3 shows the amount of WEEE collected by country in kg per inhabitant for the years 2008 and 2016. The figure illustrates both the level of collection in the countries and the progress made between 2008 and 2016. In 2016, the total amount of collected WEEE varied considerably across EU Member States, ranging from 1.6 kg per inhabitant in Romania to 16.5 kg per inhabitant in Sweden. The considerable variation in the collected amounts reflects differences in EEE consumption levels as well as the different performance levels of existing waste collection schemes.

Figure 4 shows the amount of WEEE collected by equipment category. Large household appliances account for approximately 2.5 million tonnes, i.e. 55.6 % of the total WEEE collected in 2016. IT and telecommunications equipment (14.8 %) and consumer equipment and photovoltaic panels (13.5 %) are the second and third largest categories for WEEE collection in the EU, accounting for 669 thousand tonnes and 610 thousand tonnes respectively. Small household appliances contributed with 408 thousand tonnes, accounting for 9.0 % to WEEE collection. The remaining seven categories together (see 'Other') totalled about 325 thousand tonnes, or 7.2 %
The recast of the WEEE Directive (2012/19/EU), which entered into force on 13 August 2012, introduces a stepped increase in the collection targets taking effect in 2018 with reference year 2016 and in 2021 with reference year 2019. From reference year 2016 onwards, the annual collection target is defined as the ratio between the collected amount and the average weight of EEE put on the market in the three preceding years. The collection target is set at 45 % for reference year 2016 (as reported in 2018) and will rise to 65 % for reference year 2019 (to be reported in 2021).1

In Figure 5, WEEE collected in 2016 is shown as the share of the EEE put on the market. The share is calculated as the ratio of the amount of collected WEEE in 2016 in relation to the average amount of EEE put on the market in the three preceding years, 2013-2015. The figures indicate how much more WEEE the EU Member States need to collect to achieve the future collection targets of 45 % and 65 %, respectively.

According to the data, 18 EU Member States (Bulgaria, Croatia, Estonia, Sweden, Hungary, the United Kingdom, Ireland, Portugal, Slovakia, Luxembourg, Czechia, Austria, Denmark, the Netherlands, Finland, Poland, France and Germany), as well as Liechtenstein and Norway surpassed the 45 % target in 2016, while Spain, Lithuania, Belgium, Italy, Greece, Slovenia, as well as Iceland, remained close to the 45 % target. However, for the countries showing estimates and provisional data, these figures might still change.

The high collection rates for Bulgaria (106 % in year 2015 and 97 % in year 2016) were due to a campaign: many additional collection campaigns were organised in 2015 to provide the necessary amount of WEEE to fulfil the national target for the collection of EEE. These campaigns were organised as collection for a fee, providing direct remuneration or vouchers to citizens. In 2016, the share of collected WEEE decreased to 97 %. For the next years Bulgaria expects a lower collection rate.

1The collection rate for reference year 2019 may also be calculated on the basis of WEEE generated instead of on the average weight of EEE put on the market in the three preceding years. Member States will be able to choose which of these two equivalent ways to use to measure the target they wish to report.
Figure 5: Rate of total collection of waste electrical and electronic equipment in 2016 in relation to the average weight of EEE put on the market in the three preceding years (2013-2015) (%) Source: Eurostat (env_waselee)

Figure 6 specifies the source of the separately collected amount of waste for countries in 2016 by showing the amount of WEEE that originated from households and the amount from sources other than households. The figure furthermore illustrates the relation between the amount of waste collected and the amount of WEEE that is potentially available for collection.

The amount of EEE put on the market in the three preceding years (2013-2015), which is reflected by the total height of the bars, is used to approximate the potential WEEE available for separate collection.

Households are the main source of WEEE in nearly all countries. Significant rates of WEEE collection (over 1 kg per inhabitant) from sources other than from private households were reported in 2016 only by 6 Member States, Estonia (5.1 kg/inhabitant, equivalent to 51.6 % of total WEEE collected in Estonia), Italy (1.6 kg/inhabitant, 26.3 %), Sweden (2.5 kg/inhabitant, 15.1 %), Ireland (1.4 kg/inhabitant, 12.9 %), Finland (1.3 kg/inhabitant, 11.4 %), as well as Norway (6.0 kg/inhabitant, 30.5 %) and Iceland (3.0 kg/inhabitant, 25.2 %).

Metadata from several countries indicate that the data coverage for WEEE from other sources is lower than for WEEE from households. Thus, WEEE collected from other sources is likely to be higher than reflected by the reported figures.

Figure 6: Waste electrical and electronic equipment collected in 2016 by source in relation to the average weight of EEE put on the market in the three preceding years (2013–2015) (kg per inhabitant) Source: Eurostat (env_waselee)
Data sources

Data on WEEE are reported by the EU Member States as laid down in Decision 2005/396/EC laying down rules for monitoring compliance of EU Member States and establishing data formats for the purposes of Directive 2012/19/EU of the European Parliament and of the Council on waste electrical and electronic equipment.

Member States have the obligation to report to the Commission on the achievement of the targets for WEEE collection, re-use, recycling and/or recovery on the basis of Decision 2005/369/EC within 18 months of the end of the reference year.

The reported data become available in the Eurostat database approximately three months after the reporting deadline. Data are available from reference year 2005 onwards.

Context

WEEE is a complex mixture of materials and components that — because of their hazardous content, and if not properly managed — can cause major environmental and health problems. Moreover, the production of modern electronics requires the use of rare and expensive resources. To improve the environmental management of WEEE and to contribute to a circular economy and enhance resource efficiency, the improvement of collection, treatment and recycling of electronics at the end of their life is essential.


The first WEEE Directive (Directive 2002/96/EC) entered into force in February 2003. The Directive provided for the creation of collection schemes where consumers return their WEEE free of charge. These schemes aim to increase the recycling of WEEE and/or re-use.

Directive 2002/96/EC was repealed on 15 February 2014 and was replaced by Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), which introduces a stepped increase in collection targets for years 2016 and 2019. Furthermore, from reference year 2018, the current scope of the Directive will be extended from its present restricted scope to all categories of EEE, and consequently the definition and number of the categories will change.

Annex I to Directive 2012/19/EU defines 10 categories of electrical and electronic equipment covered by the Directive:

1. Large household appliances
2. Small household appliances
3. IT and telecommunications equipment
4. Consumer equipment and photovoltaic panels
5. Lighting equipment
6. Electrical and electronic tools (with the exception of large-scale stationary industrial tools)
7. Toys, leisure and sports equipment
8. Medical devices (with the exception of all implanted and infected products)
9. Monitoring and control instruments
10. Automatic dispensers
Annex II contains an indicative list of products falling under the categories in Annex I.

Other articles
- Waste statistics
- Waste management indicators
- End-of-life vehicle statistics
- Municipal waste statistics
- Packaging waste statistics
- Recycling – secondary material price indicator
- Waste shipment statistics
- Waste shipment statistics based on the European list of waste codes

Publications
- Energy, transport and environment indicators — 2018 edition

Main tables
- Waste statistics, see:
  Waste streams ( _env_waselee_ )

Database
- Waste, see:
  Waste statistics ( _env_was_ )Waste streams ( _env_wasst_ ) Waste electrical and electronic equipment (WEEE) ( _env_waselee_ )

Dedicated section
- Waste

Methodology
- Waste electrical and electronic equipment (WEEE) (ESMS metadata file — _env_waselee_esms_)
- Country-specific notes on waste electrical and electronic equipment (WEEE)
Legislation

- Directive 2012/19/EU on waste electrical and electronic equipment (WEEE)
- Commission Decision 2005/396/EC

External links

- European Commission — DG Environment — Waste EEE