Waste statistics

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The overall objective of the Batteries Directive (Directive 2006/66/EC on portable batteries and accumulators) is to minimise the negative impact of batteries and accumulators on the environment, contributing to the protection, preservation and improvement of the quality of the environment. Therefore, waste batteries and accumulators should be collected and recycled; a high collection and recycling rate should be achieved to ensure a high level of environmental protection and material recovery.

The amount of portable batteries and accumulators put on the market varies strongly across the EU Member States, with sales in individual Member States ranging from 164 tonnes in Malta to more than 63 000 tonnes in Germany in 2021. Overall, country-specific sales have increased over the period from 2009 to 2021, with volumes increasing for most Member States. Only two Member States reported a decrease over this period.

The amount of waste portable batteries and accumulators, measured in tonnes, is lower than average sales over the last three years. Between 2009 and 2021, collection of waste batteries increased steadily in almost all Member States. There are only a few exceptions, where the data fluctuate around a slightly growing trend.

Figure 1 shows the development of the collection and sales of portable batteries and accumulators in the EU. The amount put on the market rose from 2009 to 2010, reaching 176 000 tonnes, before falling slightly to 169 000 tonnes in 2013. Steady growth followed from 2014 to 2018, before accelerating to 206 000 tonnes in 2019 and a new peak of 242 000 tonnes in 2021.

By contrast, the collection of waste batteries and accumulators in the EU has increased steadily since 2009. Starting from a level of around 50 000 tonnes in 2009, collection increased to around 108 000 tonnes by 2021.

Due to the wide range of batteries that exist and the different type of metals and compounds of which they are made, there are specific recycling processes for each battery type. In this respect, the Batteries Directive differentiates between the type of applied technology based on lead-acid, nickel-cadmium (Ni-Cd) and other elements and compounds.

In contrast to sales and collection data, no distinction is made between portable and industrial / automotive batteries when it comes to recycling of batteries and accumulators. Thus, it is not possible to determine the type of batteries once they are shipped to the recycling facility. Consequently, the quantities of waste batteries and accumulators entering the recycling process are much higher than the recorded sales and collection amounts, which only include portable batteries and accumulators (see Tables 1a and 1b above and Tables 3a, 3b and 3c below).

Recycling efficiencies for lead-acid batteries for reference years 2012 and 2021 are presented in Figure 2. In 2021, all EU Member States achieved the target of 65 % recycling efficiency for lead-acid batteries and accumulators.

It should be noted that for two Member States, Romania and Greece, data for 2021 are not yet available. In 2020, they reported a recycling efficiency of 90.9 % and 87.6 %, respectively.

Indeed, in 2021 all EU Member States reported recycling efficiencies of lead-acid batteries that were well above the target. Five Member States reported a recycling efficiency of more than 90 % and 13 a recycling efficiency in the range between 80 % and 90 %.

However, when comparing the recycling efficiencies for 2021 with those of 2012, there was no clear trend in the development of the recycling efficiency for lead-acid batteries and accumulators across the Member States. For 14 Member States, the recycling efficiency was lower in 2021 than in 2012. By contrast, the recycling efficiency was higher in 2021 than in 2012 for 13 Member States.

Recycling efficiencies for Ni-Cd batteries are presented in Figure 3. Most of the EU Member States achieved the recycling efficiency target of 75 % in both 2012 and 2021, with only a few exceptions. Among the 23 Member States for which 2021 data are available, all achieved this target. In comparison, of the 23 Member States for which data were available for 2012, 18 achieved the target.