Packaging waste statistics

Statistics Explained

Data extracted on 10 October 2025. Planned article update: October 2026.

Highlights

In 2023, 79.7 million tonnes of packaging waste were generated in the EU. This corresponded to 177.8 kg per inhabitant, a reduction of 8.7 kg per capita compared with 2022.

On average, each person in the EU consumed 65 lightweight plastic carrier bags in 2023. Compared with 2018, consumption fell by 30 bags per person. Sweden (-131 bags per person), Lithuania (-125) and Latvia (-118) achieved the largest reductions.

In 2023, Belgium, Netherlands, Italy, Czechia, Slovenia, Slovakia and Spain recycled more than 70% of the packaging waste generated, the target to be reached by 2030. Another 6 countries were close, with recycling rates above 65%.

This article presents recent statistics on packaging waste in the Member States of the European Union (EU) and in available EFTA countries. Information and data are based on Directive 94/62/EC, which lays down recycling and recovery targets, aiming at providing a high level of environmental protection and harmonising national measures concerning packaging and packaging waste. Furthermore, the article presents statistics on the consumption of lightweight plastic carrier bags based on Directive 2015/720 (*The Plastic Bags Directive*), which aims to reduce the consumption of plastic carrier bags.

Waste generation by packaging material

In 2023, 79.7 million tonnes of packaging waste were generated in the EU. The largest share of this was made up of paper and cardboard, amounting to 32.3 million tonnes. This corresponded to 40.4% of the total. (Figure 1) There were also substantial amounts of plastic packaging waste, at 15.8 million tonnes (19.8%), glass at 15.0 million tonnes (18.8%), and wood at 12.6 million tonnes (15.8%). The rest of the packaging waste was made up of 3.9 million tonnes of metal (4.9%) and 0.2 million tonnes of other materials (0.2%).

Figure 1The packaging waste generated in the individual EU countries generally reflected the same distribution with respect to materials as the EU total. Figure 2 shows the shares of the different waste materials in the total packaging waste generated in each country.

In 26 of the 27 EU countries, paper and cardboard made up the largest share of the total packaging waste in 2023, in 14 of these countries with a share of more than 40% of the total. The only exception was Bulgaria (2022 data), where plastic packaging waste (28.4%) made up a slightly higher share than paper and cardboard (25.5%). Romania (29.4%; 2022 data) and Bulgaria were the only EU countries where the share of paper and cardboard remained below 30%.

Plastic and glass packaging waste also made up significant shares of the packaging waste across the EU countries. The share of plastic packaging waste in the total varied between 16.0% in Luxembourg and 29.8% in

Ireland, while the share of glass ranged from 9.2% in Finland to 26.8% in Croatia.

In 2023, wooden packaging waste was the second largest category, after paper and cardboard, in 3 EU countries: Finland (27.8%), Romania (26.8%; 2022 data) and Latvia (25.5%). The share of metal was below 10% in all countries, with shares between 3.4% in Luxembourg and 9.2% in Greece.

Figure 2

Development in packaging waste generated and recycled per inhabitant in the EU

The total volumes of packaging waste generated and recycled comprise all packaging materials: paper and cardboard, plastic, glass, wood, metal and others. Figure 3 shows the development in the volume of packaging waste generated and recycled per inhabitant in the EU over the period 2014-2023 (additional years from 2005-2013 can be selected in the drop-down box in the chart). In comparison to the previous year, the amount of packaging waste generated decreased by -4.7% to 177.8 kg per inhabitant in 2023. The peak in this period was reached in 2021, at 190.1 kg per inhabitant, 6.7% higher than the year before. Between 2014 and 2021, the amount of packaging waste generated in the EU had increased year-on-year, with only a minor fall of -0.4% in 2018.

From 2022 to 2023, the amount of packaging waste recycled also fell moderately, by -1.5% to 120.0 kg per inhabitant. The highest level of recycled packaging waste was reached in 2021 and 2022, at 121.7 and 121.8 kg per inhabitant, respectively. The amount of recycled waste per inhabitant generally followed an upwards trend 2014-2021, only interrupted by decreases in 2018 (-3.1%) and 2020 (-1.0%).

Figure 3

Generation and recycling of packaging waste in the EU countries

Figure 4 gives an overview of the data reported on generation and recycling of packaging per inhabitant by the EU and EFTA countries.

In 2023, the EU countries generated between 80.9 kg per inhabitant in Bulgaria (2022 data) and 223.1 kg per inhabitant in Ireland. In 15 of the EU countries, 150 kg or more packaging waste was generated per inhabitant. In addition to Ireland, Italy (219.5 kg per inhabitant), Germany and (215.2 kg) and Luxembourg (204.5 kg) even generated more than 200 kg per inhabitant. As in Bulgaria, less than 100 kg of packaging waste was generated per inhabitant in Cyprus (98.6 kg; 2022 data) and Croatia (81.4 kg)

Although Italy, Germany and Luxembourg generated more than 200 kg of packaging waste per inhabitant, they also recycled the highest amounts of packaging waste per inhabitant among the EU countries. In 2023, Italy recycled the highest amount of packaging waste, with 162.2 kg per inhabitant, followed by Germany with 149.3 kg and Luxembourg with 132.4 kg of recycled packaging waste per inhabitant. Ireland recycled 131.6 kg per inhabitant, despite generating the highest amount of packaging waste per inhabitant.

The lowest amounts of packaging waste recycled per inhabitant were reported by Croatia (42.3 kg), Bulgaria (47.2 kg) and Romania (48.5 kg) (all 3 countries: 2022 data). In the case of Bulgaria and Croatia, this reflected that they were also the 2 countries generating the least packaging waste per inhabitant among the EU countries.

Figure 4

Recycling targets and rates for packaging waste

Article 6 of the Packaging Waste Directive sets out recycling targets for packaging waste. By 2030, a minimum of 70% of all packaging waste should be recycled. For packaging waste of different materials, the recycling targets to be reached as a minimum by 2030, are: 85% for paper and cardboard; 75% for glass; 55% for plastics; 80% for

ferrous metals; 60% for aluminium and 30% for wood.

These targets are calculated according to weight, by dividing the amount of packaging waste recycled by the total amount of packaging waste generated.

Figure 5 shows the recycling rate of total packaging waste for the EU and EFTA countries in 2023. In 2023, the EU was already close to meeting the 2030 target of 70%, achieving an overall recycling rate of 67.5%.

In 2023, 7 of the EU countries already met the 2030 overall recycling target for packaging waste: Belgium (79.7%), Netherlands (75.8%), Italy (75.6%), Czechia (74.8%), Slovenia (73.6%), Slovakia (71.9%) and Spain (70.5%). A further 13 countries were closing in on the 70% target with recycling rates above 60%. Most notably, Cyprus (2022 data), Germany, France, Estonia and Sweden all reported recycling rates between 68.5% and 69.5%.

At the other end of the scale, 4 countries reported total packaging recycling rates of less than 50% in 2023. These were Romania (37.3%; 2022 data), Hungary (42.8%), Malta (44.4%) and Greece (48.0%).

Figure 5

Recycling of plastic packaging waste

Figure 6 presents the recycling rate of plastic packaging waste in the EU and EFTA countries in 2023.

The Packaging Waste Directive sets out a target of minimum 55% of plastic packaging waste (by weight) being recycled by 2030. Belgium (59.5%) and Latvia (59.2%) were the only EU countries that achieved this target in 2023. However, Slovakia (54.1%), Czechia (52.4%), Germany (52.2%) and Slovenia (51.5%) were also closing in on it. Another 4 of the EU countries reported recycling rates of between 45% and 50% for plastic packaging waste in 2023.

The lowest recycling rates for plastic packaging waste were recorded by Hungary (23.0%), France (25.7%), Austria (26.9%) and Denmark (27.8%). Croatia, Sweden, Finland and Ireland also reported recycling rates for plastic packaging waste of less than 30% in 2023.

Figure 6

Consumption of plastic carrier bags

The Plastic Bags Directive (Directive 2015/720) aims at reducing the consumption of lightweight plastic carrier bags (LPCBs) in the EU. It sets out a target of less than 40 LPCBs per inhabitant being consumed, with this target to be reached at the latest in 2025.

In 2023, 65 LPCS were consumed per inhabitant in the EU. This represented only a modest reduction of -3.0% in consumption compared with the previous year, when it stood at 67 LPCBs per inhabitant. Compared with 95 LPCBs per inhabitant in 2018, the consumption of LPCBs has fallen in the EU year-on-year, reflecting the implementation of consumption reduction measures across the EU countries.

All EU countries have consumption reduction measures in place, as required by the Plastic Bags Directive. Nevertheless, consumption of LPCBs per inhabitant varies widely across the EU countries. This is primarily attributable to differences in the effectiveness of these measures. The differences in consumption also reflect that some countries have had measures in place longer than others, allowing more time for consumption patterns to change. In addition, there are certain differences in the data collection methodologies used by the countries. It thus cannot be ruled out that some of the differences between countries may be attributable to methodological issues in the data. However, data quality has improved year-on-year and is expected to improve further.

In 2023, the consumption ranged from 4 LPCBs per inhabitant in Belgium to 209 LPCBs in Latvia. In addition to Belgium, another 8 EU countries had already managed to reduce the consumption of LPCBs below the target of less than 40 LPCBs per inhabitant. These included Poland (7 LPCBs per inhabitant), Portugal and Austria (both 14

LPCBs), Sweden (22 LPCBs), Denmark (23 LPCBs), Luxembourg (25 LPCBs), Netherlands and Germany (both 31 LPCBs). Ireland with 45 LPCBs and France with 46 LPCBs per inhabitant were also closing in on the 2025 consumption target.

By contrast, Latvia was the only EU country with a consumption of LPCBs of more than 200 per inhabitant in 2023, although also Lithuania (196 LPCBs) and Czechia (185 LPCBs) stood out with high consumption of LPCBs per inhabitant. Another 7 countries reported consumption of more than 100 LPCBs per inhabitant in 2023, in the range between 111 and 131 LPCBs per inhabitant.

EU countries are required to report the total number of LPCBs consumed in the country. Countries may also voluntarily provide data on the weight of LPCBs consumed. They may also provide more detailed data on consumption of very lightweight plastic carrier bags (VLPCBs), with a wall thickness of less than 15 microns, and LPCBs with a wall thickness of at least 15 but less than 50 microns.

Among the 19 EU countries that provided detailed data for 2023 on consumption of VLPCBs and LPCBs with a wall thickness of at least 15 but less than 50 microns, respectively, the share of VLPCBs in total LPCB consumption ranged from 97.1% in Ireland to 9.3% in Luxembourg. Other EU countries with high shares of VLPCBs included France (95.7%), Czechia (95.0%), Croatia (94.2%) and Hungary (92.2%).

Figure 7Over the period from 2018 to 2023, the largest reductions in consumption of LPCBs were achieved in Sweden, with 131 less LPCBs per inhabitant, Lithuania (-125), Latvia (-118), Spain (-104) and Cyprus (-102). However, 5 of the EU countries recorded increases in LPCBs over this period, most notably Romania, with an increase of 45 LPCBs per inhabitant (2018-2022), Italy (+36 LPCBs) and Croatia (+24 LPCBs).

When looking at this development in relative terms, Belgium achieved the largest reduction in LPCB consumption per inhabitant over this period, with a decrease of -86%, closely followed by Sweden (-85%). Luxembourg (-76%), Austria (-72%) and Poland (-70%) also significantly reduced the consumption of LPCBs in their countries over this period.

Figure 8

Source data (MS Excel)

• Packaging waste and plastic carrier bags - October 2025 (Excel file)

Data sources

The packaging waste data are reported by the EU countries as laid down in Commission Decision 2005/270/EC and amended by Commission Implementing Decision 2019/665.

The data on lightweight plastic carrier bags are reported by countries as laid down in Commission Implementing Decision (EU) 2018/896. Countries commonly collect their data on consumption of lightweight plastic carrier bags from producers and importers or from retailers. The reported data are usually available in the Eurostat database on waste approximately 22 months after the end of the reference year.

Context

As a first legal basis, Council Directive 85/339/EEC of June 1985 required the establishment of national programs for the reduction in the volume of beverage containers disposed as waste in order to raise consumer awareness of the advantage of using refillable containers. The directive was repealed by the introduction of the Directive 94/62/EC of the European Parliament and of the Council of 20 December 1994 on packaging and packaging waste (Packaging Waste Directive - PPWD). This directive aims at harmonising national measures concerning the management of packaging and packaging waste and lays down measures aimed, as a first priority, at preventing the production of packaging waste and, as additional fundamental principles, at:

- reusing packaging;
- · recycling; and
- implementing other forms of recovering packaging waste hence reducing the final disposal of such waste.

It also limits the level of heavy metals in packaging.

Directive 94/62/EC was amended in 2018 by Directive (EU) 2018/852. At the end of 2024, Regulation (EU) 2025/40 on packaging and packaging waste was adopted, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904 and repealing Directive 94/62/EC. The formats relating to the database system for packaging and packaging waste were defined in Commission Decision 2005/270/EC in 2005. This was further amended by Commission Implementing Decision 2019/665, which applies from reference year 2018.

Directive 2015/720 on reducing the consumption of lightweight plastic carrier bags is an amendment to the Packaging Waste Directive. It was the first EU directive requiring the EU countries to take measures to achieve a sustained reduction in the consumption of a specified product. It aims to reduce consumption of lightweight plastic carrier bags in order to combat littering, change consumer behaviour and promote waste prevention. It requires the EU countries to either adopt measures to ensure that consumption does not exceed specified target levels, or to prohibit that points of sale provide lightweight plastic carrier bags free of charge. Countries may also implement a combination of these measures.

Definitions

Packaging is defined as any material that is used to contain, protect, handle, deliver or present goods. Packaging waste can arise from a wide range of sources including supermarkets, retail outlets, manufacturing industries, households, hotels, hospitals, restaurants and transport companies. Items like glass bottles, plastic containers, aluminium cans, food wrappers, timber pallets and drums are all classified as packaging.

Article 3 and Annex I of the Packaging Waste Directive specify 'packaging' in further detail.

The main packaging materials are glass, paper and cardboard, plastics, metals (aluminium and steel) and wood.

Composite materials are made of paper, plastic and metal which could not be separated by hand. Composites are reported under their predominant material by weight. Other packaging materials are counted as 'others'.

Recovery includes recycling, energy recovery and other forms of recovery. Annex II of the Waste Framework Directive 2008/98/EC (consolidated version) defines energy recovery and other forms of recovery.

The weight of recovered or recycled packaging waste shall be the input of packaging waste to an effective recovery or recycling process. If the output of a sorting plant is sent to effective recycling or recovery processes without significant losses, it is acceptable to consider this output to be the weight of recovered or recycled packaging waste. The weight should exclude non-packaging materials as far as practical.

Reusable packaging is only counted once in its lifetime and not after every refilling and purchase trip.

The recycling rates are usually the total quantity of recycled materials divided by the total quantity of generated packaging waste. The data set 'Recycling rates of packaging waste for monitoring compliance with policy targets, by type of packaging (env_waspacr)' includes, for two types of waste material (plastic and wood), 'Adjusted recycling rate'. That means the recycling rates adjusted for monitoring compliance with policy targets in accordance with Article 6 of Directive 94/62/EC and Article 6b(1) of Decision 2005/270. The relevant rates for those materials are:

- Recycling rate of plastic packaging waste counts exclusively material that is recycled back into plastic (material recycling / generation).
- Recycling rate of wooden packaging waste is calculated including repair (recycling + repair of wooden packaging waste / generation + repair of wooden packaging waste).

Commission Implementing Decision (EU) 2018/896 lays down the methodology for calculating the annual consumption of lightweight plastic carrier bags.

• Plastic carrier bags (PCBs) are defined as carrier bags, with or without handles, made of plastic, which are supplied to consumers at the point of sale of goods.

- Lightweight plastic carrier bags (LPCBs) are defined as plastic carrier bags with a wall thickness below 50 microns.
- Very lightweight plastic carrier bags (VLPCBs) are defined as plastic carrier bags with a wall thickness below 15 microns, which are required for hygiene purposes or provided as primary packaging for loose food when this helps to prevent food wastage.

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Database

• Waste (env_was) , see:

Waste streams (env wasst)

Packaging waste by waste management operations (env_waspac)

Recycling rates of packaging waste for monitoring compliance with policy targets, by type of packaging (env_waspacr)

Consumption of lightweight plastic carrier bags by their wall thickness (env_waspcb)

Thematic section

Waste

Publications

· All publications on waste issued by Eurostat.

Selected datasets

· Waste statistics , see:

Waste streams (t_env_wasst)

Recovery rates for packaging waste (ten00062)

Recycling rates for packaging waste (ten00063)

Methodology

- Packaging waste (ESMS metadata file env waspac esms)
- · Guidance on packaging and packaging waste
- Consumption of lightweight plastic carrier bags by their wall thickness (ESMS metadata file env_waspcb_esms)
- · Eurostat: Guidance for reporting annual consumption of lightweight plastic carrier bags

External links

- European Commission Directorate-General Environment (DG ENV): Packaging waste
- European Commission Directorate-General Environment (DG ENV): Plastic bags
- European Commission: Scoping study to assess the feasibility of further EU measures on waste prevention and implementation of the Plastic Bags Directive: Part II Implementation of Plastic Bags Directive (2022)
- · European Environment Agency (EEA): Circular economy and Waste and recycling

Legislation

- Regulation (EU) 2025/40 of the European Parliament and of the Council of 19 December 2024 on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC
- Directive 94/62/EC of the European Parliament and of the Council of 20 December 1994 on packaging and packaging waste (PPWD) (consolidated version)
 - Directive (EU) 2018/852 of the European Parliament and of the Council of 30 May 2018 amending Directive 94/62/EC
 - Commission Decision 2005/270/EC of 22 March 2005 establishing the formats relating to the database system pursuant to Directive 94/62/EC
 - Commission Implementing Decision (EU) 2019/665 of 17 April 2019 amending Decision 2005/270/EC establishing the formats relating to the database system pursuant to Directive 94/62/EC
- Directive 2015/720 of the European Parliament and of the Council of 29 April 2015 amending Directive 94/62/EC as regards reducing the consumption of lightweight plastic carrier bags (The Plastic Bags Directive)
 - Commission Implementing Decision (EU) 2018/896 of 19 June 2018 laying down the methodology for the calculation of the annual consumption of lightweight plastic carrier bags