European Environment Agency

8th Environment Action Programme

Waste generation in Europe

8TH EAP HEADLINE INDICATOR, 2025

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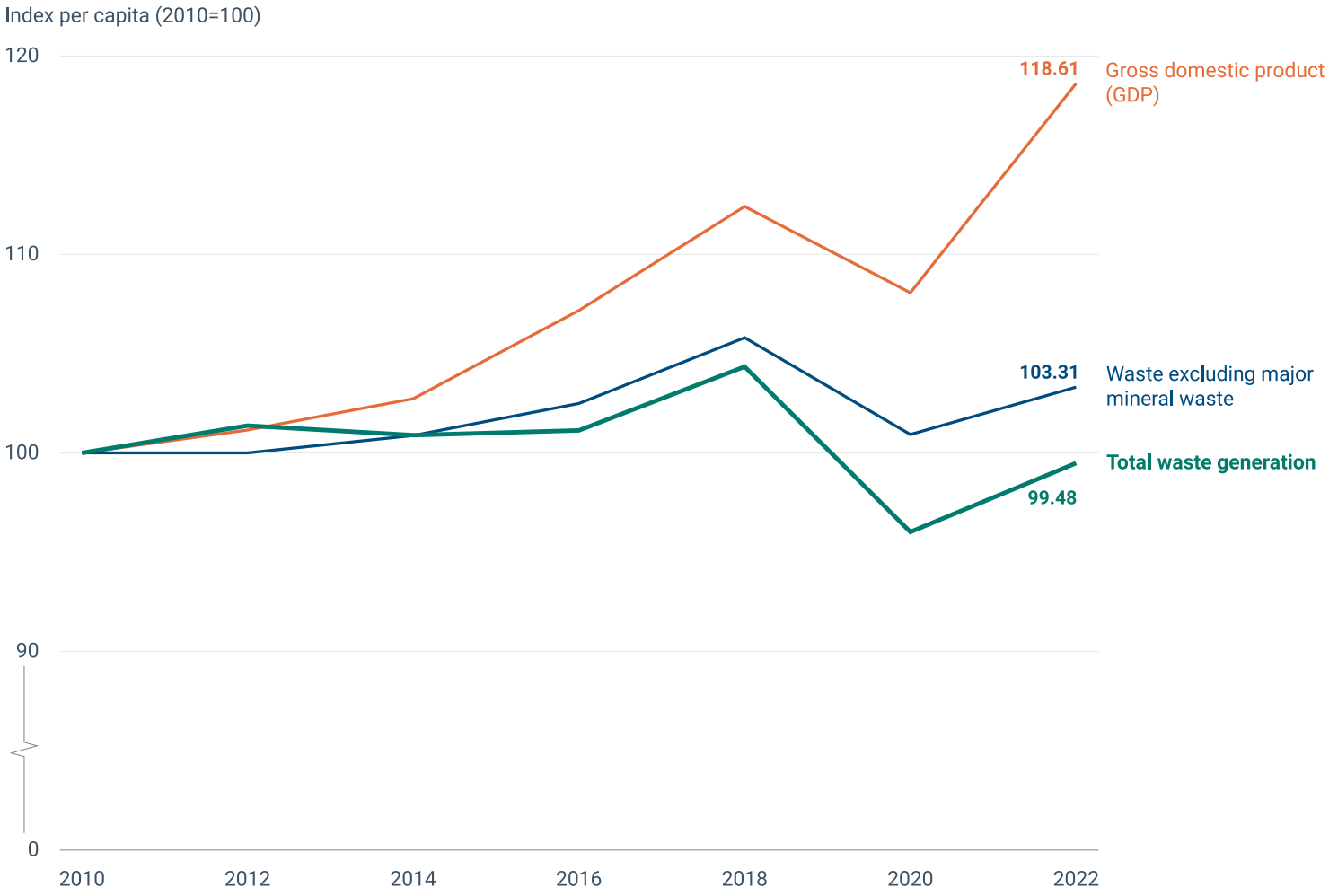
Total per capita waste generation remained near stable in the European Union between 2010 and 2022. Waste generation historically follows trends in economic growth, e.g. during the 2020 economic slowdown and recovery thereafter. The EU aims to signficantly decrease its total waste generation by 2030. Although the observed stability and decoupling of waste generation from economic growth is encouraging, the latest data indicates that the link between economic growth and waste generation remains. Therefore, it is unlikely that waste generation will substantially decrease by 2030.

Figure 1. Waste generation per capita in the EU-27



For a long time, the EU has set a policy objective to reduce waste though prevention, which is the first step of the waste hierarchy laid down in the Waste Framework Directive[1]. The circular economy and zero pollution **ambition** of the EU is to significantly reduce total waste by 2030[2].

Total **waste generation** per capita decreased very slightly by 0.5% (decrease of 26 kg/capita) in the EU-27 between 2010 and 2022 and reach 5 tonnes per capita in 2022. A sharp decrease occurred in 2018-2020, following an increase in 2016-2018, due to the COVID-19 pandemic and economic slowdown. Waste generation has bounced back since, with an increase of 4% (174 kg/capita) between 2020 and 2022.

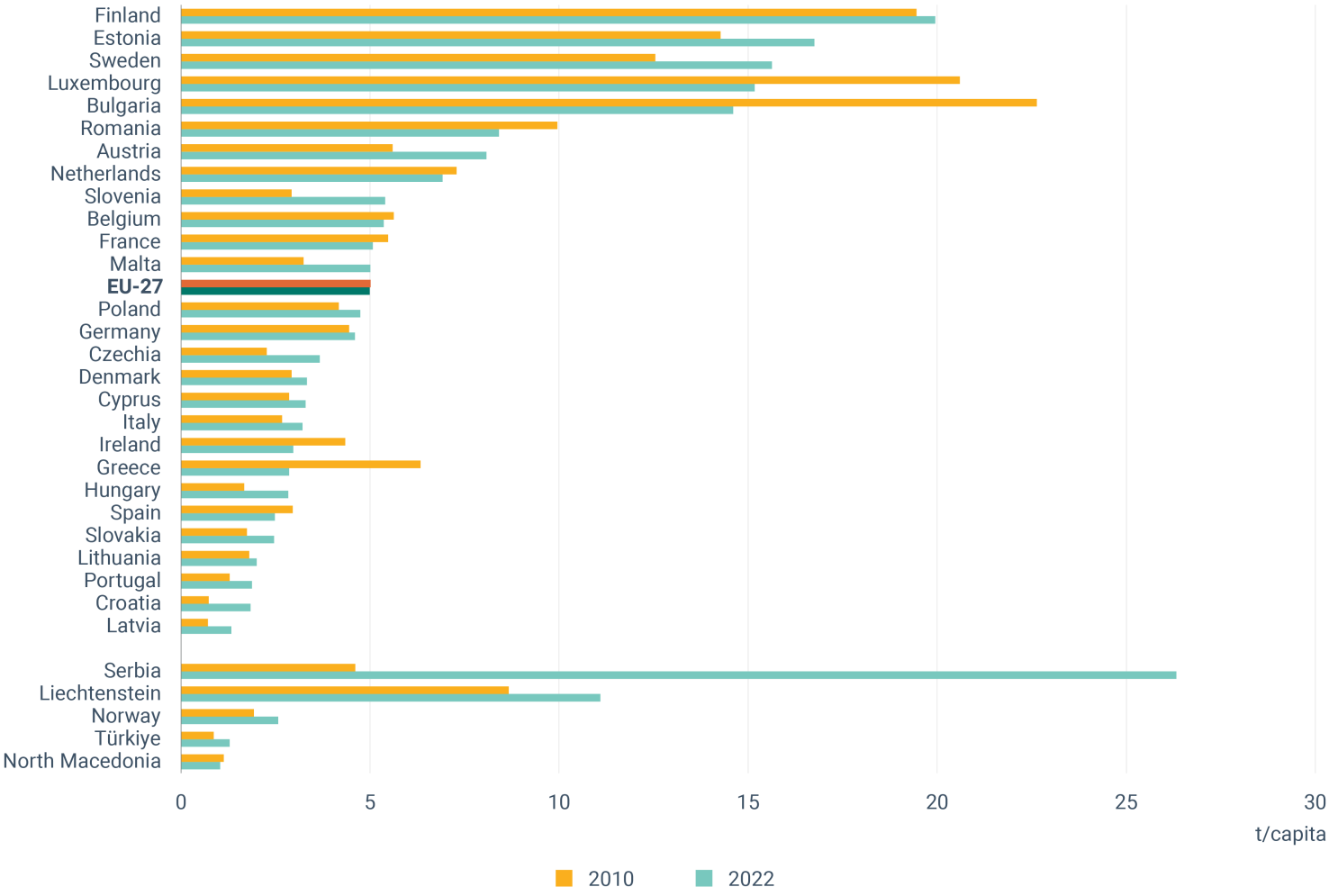
Total waste generation remained stable, yet underlying waste streams show variations, modifying the composition. Sorting residues[3] almost doubled from 2010 to 2022 (indicating increases in collection of recyclables), while excavated soils and mineral waste from construction and demolition increased by more than 100kg/capita. The **stability** of the total waste is mainly due to a high decrease in generation of other mineral waste by around 400kg/capita in the reporting time period, due to a slowdown of mining activities in Europe.

Major **mineral wastes** (hard rocks, concrete, soil and others) mainly produced in mining and construction sectors, feature in large quantities in relation to other waste types. They usually represent less of an environmental concern because of their inert nature. If excluded from the totals, the remaining and more environmentally significant waste streams increased by 3.3% between 2010 and 2022, a rise of 57 kg/capita.

The main driver for trends in total waste volumes is considered to be **economic growth**, with gross domestic product (GDP) the most common parameter used to track the economy's size. During 2010-2022, the EU's per capita GDP increased in real (deflated) terms by almost 19%. While waste generation remained stable in the same period, it followed overall trends in GDP development (the drop in 2020), indicating a relative decoupling of waste generation from economic growth.

Latest data indicates that a **link** remains between waste generation and economic growth, albeit weaker. Therefore, it seems unlikely that the per capita total waste generation will significantly decrease by 2030. The only significant decrease observed (around 8%) in waste generation is very recent (2018-2020) and coincided with negative GDP growth rates. Waste generation has historically followed GDP growth closely and GDP growth rates have been positive since 2020. The European Central Bank projects this to remain as such in the coming years. Additional effort on implementing waste prevention is needed to significantly waste generation by 2030.

Figure 2. Generation of waste per capita and by European country (2010 and 2022)



On average, **5 tonnes** of total waste was generated per EU citizen in 2022, almost identical to the per capita generation in 2010. This average masks large country differences both in total waste volumes per capita and in waste generation trends.

Amounts generated for EU Member States in 2022 range from less than 1.35 tonnes per capita in Latvia to 20 tonnes per capita in Finland. Other European countries range from 1 tonne in North Macedonia to 26 tonnes in Serbia. Extreme numbers and differences can be affected by specific country situations and partly reflect variant structures of countries' economies. In 2022, 12 EU Member States (14 of 32 countries with available data) were **above the EU average** for 2022.

Trends over time also show a mixed picture between countries. The total waste generated per capita increased in 18 Member States (22 of the 32 countries with available data). The largest relative decrease within the EU was observed in Greece and the largest relative increase in Bulgaria. The highest increase overall was reported in Serbia.

Supporting information

Definition

This indicator consists of two figures about waste generation. Figure 1 shows indexed values of waste generation, waste generation excluding major mineral waste and GDP with 2010 taken as a reference year (2010=100%). GDP was chosen as a basic indicator of economic growth. Figure 2 shows total waste generation per capita by European country. Data presented in the form of a bar chart are displayed as a comparison of the reference year (2010) and the last available year.

Methodology

Figure 1: Raw data for waste generation (total and excluding major mineral wastes) and GDP were retrieved from Eurostat. Eurostat aggregates for the EU-27 were used. Data on waste generation contain all NACE activities and households. Frequency of data publishing varies from every 2 years (for waste generation) to every year (for GDP). The aggregated figures are indexed to 2010, which means that the figure for each year is divided by the figure for 2010 and then multiplied by 100. Information on data sets uncertainties can be found directly in the metadata and explanatory notes provided by Eurostat. Only official datasets by Eurostat have been used.

Figure 2: Data for waste generation were retrieved from Eurostat. Data are displayed for country level, contain all NACE activities and households, and are expressed in kg per capita. To provide the broadest possible picture of European countries, geographical coverage was extended to the EEA-32 member countries and West Balkan cooperating countries. Frequency of data publishing is every 2 years. Gap filling was applied for three countries where 2018 data were used to fill the 2020 data gap. Information on data sets uncertainties can be found directly in the metadata and explanatory notes provided by Eurostat. Only official datasets by Eurostat have been used.

Policy/environmental relevance

One of the symbols of the linear economy system, which predominated in recent decades, is the high consumption of resources followed by high waste generation ('take-make-dispose'). This economic model is based on increasing profits generated by the consumption of primary resources and increasing demand for short-cycle products. In 2015, 2018 and 2020, the European Commission adopted Circular Economy packages to make the transition to a circular economic model where resources are used in a more sustainable way. The waste hierarchy serves to set priorities for EU and national waste policies and gives the highest priority to waste prevention, followed by preparing for reuse, recycling, and other methods of recovery and disposal. These priorities are highlighted by recent waste and resource efficiency policies and strategies at EU and national levels.

This indicator is a headline indicator for monitoring progress towards the 8th Environment Action Programme (8th EAP)[4][5]. It contributes mainly to monitoring aspects of the 8th EAP priority objective Article 2.2.c that shall be met by 2030: ‘advancing towards a well-being economy that gives back to the planet more than it takes and accelerating the transition to a non-toxic circular

economy, where growth is regenerative, resources are used efficiently and sustainably, and the waste hierarchy is applied'. For the purposes of 8th EAP monitoring, this indicator assesses specifically whether the EU will significantly reduce the per capita total amount of generated waste by 2030[6].

The zero pollution ambition of the EU calls for a significant reduction in EU waste generation by 2030 and this indicator also monitors progress towards this EU policy objective.

Accuracy and uncertainties

Methodology uncertainty
No uncertainty has been specified.

Data sets uncertainty

Rationale uncertainty
No uncertainty has been specified.

Data sources and providers

- Generation of waste by waste category, hazardousness and NACE Rev. 2 activity, Statistical office of the European Union (EUROSTAT)

Metadata

DPSIR

Pressure

Topics

Waste and recycling # Resource use and materials # Circular economy

Tags

WST004 # Waste generation # Industrial waste generation # 8th EAP

Temporal coverage

2010-2022

Geographic coverage

Austria
Belgium
Bulgaria
Croatia
Cyprus
Czechia
Denmark
Estonia

Finland	France
Germany	Greece
Hungary	Ireland
Italy	Latvia
Liechtenstein	Lithuania
Luxembourg	Malta
Netherlands	North Macedonia
Norway	Poland
Portugal	Romania
Serbia	Slovakia
Slovenia	Spain
Sweden	Türkiye

Typology

Descriptive indicator (Type A - What is happening to the environment and to humans?)

UN SDGs

SDG12: Responsible consumption and production

Unit of measure

· Figure 1: Index (2010=100)

· Figure 2: t/capita

Frequency of dissemination

Every 2 years

References and footnotes

1. EU, 2018, Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste, OJ L 150, 14.6.2018, p. 109-140. ↲
2. EC, 2021, 'Zero pollution action plan', (https://environment.ec.europa.eu/strategy/zero-pollution-action-plan_en) accessed November 10, 2022. ↲
3. Waste generated by the sorting of separately collected recyclables ↲

4. EC, 2022, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on the monitoring framework for the 8th Environment Action Programme: Measuring progress towards the attainment of the Programme's 2030 and 2050 priority objectives
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5. EU, 2022, Decision (EU) 2022/591 of the European Parliament and of the Council of 6 April 2022 on a general Union Environment Action Programme to 2030, OJ L 114, 12.4.2022, p. 22–36.
↵
6. EC, 2021, COMMISSION STAFF WORKING DOCUMENT Digital Solutions for Zero Pollution Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Pathway to a Healthy Planet for All EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil'
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