

# Waste management country profile

with a focus on municipal and packaging waste

# Greece

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## Key messages

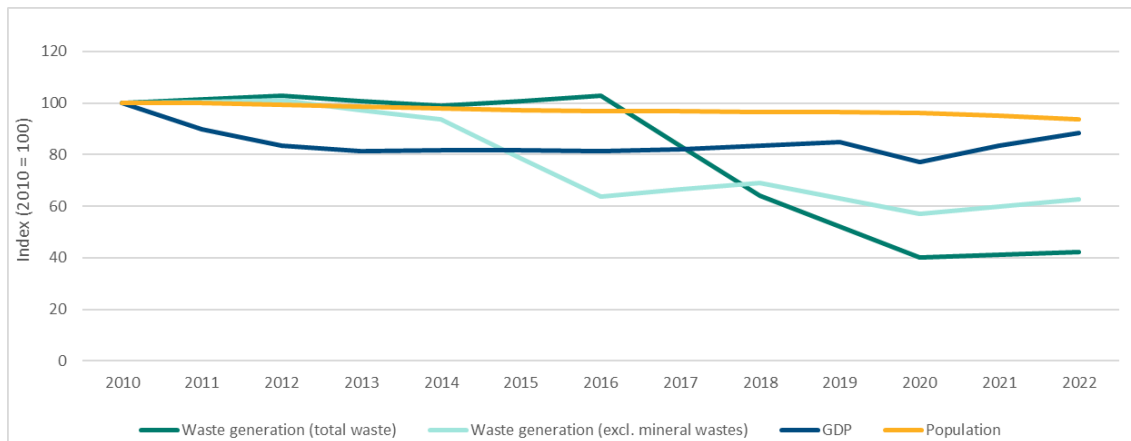
- The total amount of waste generated in Greece has decreased over the last 12 years, and there is some indication that total waste generation is decoupling from economic growth.
- Greece is considered to be at risk of missing the 2025 preparing for reuse and recycling target for municipal waste and the recycling target for total packaging waste, as well as the 2035 landfill target for municipal waste.
- Since 2019, Greece has not made progress in improving its municipal waste recycling rate and the landfill rate has stagnated at around 80%.
- The staged increase of the landfill fee (tax) to EUR 55 by 2027 is an important measure to disincentivise landfilling and generate revenue for waste prevention and recycling.
- In 2022/2023, the separate collection system was supposed to be extended. This extension included obligations for municipalities and private companies for food waste collection, the separate collection of non-packaging metals, glass and plastics, the introduction of a deposit-refund scheme for aluminium cans and plastic bottles, and the introduction of EPR for various products. While some steps have been taken, these improvements are not yet fully implemented.

## Trends in waste generation and treatment

### *Total waste generation*

The total amount of waste generated in Greece has significantly decreased over the last 12 years (Figure 1). Until 2016, waste generation was rather stable but started to drop significantly since. This was primarily due to the decrease in mineral waste from mining and quarrying, linked to a strong decrease in lignite extraction by 62% from 2018 to 2020, following Greece's policy for phasing out coal. Waste generation excluding mineral wastes has also significantly decreased over the past years. Waste generation was relatively stable until 2014, but in 2016 there was a significant decrease. This decrease was mainly due to the reduction in household and similar waste, combustion wastes and recyclable wastes. Greece's GDP showed a decreasing trend between 2010 and 2013, after which the GDP stabilised except for a drop in 2020, most likely due to the Covid-19 outbreak. There are some signs of decoupling of waste generation from economic development as waste generation decreased significantly more than GDP since 2010.

**Figure 1 Generation of waste (total and excluding major mineral wastes), population and economic development, 2010-2022**



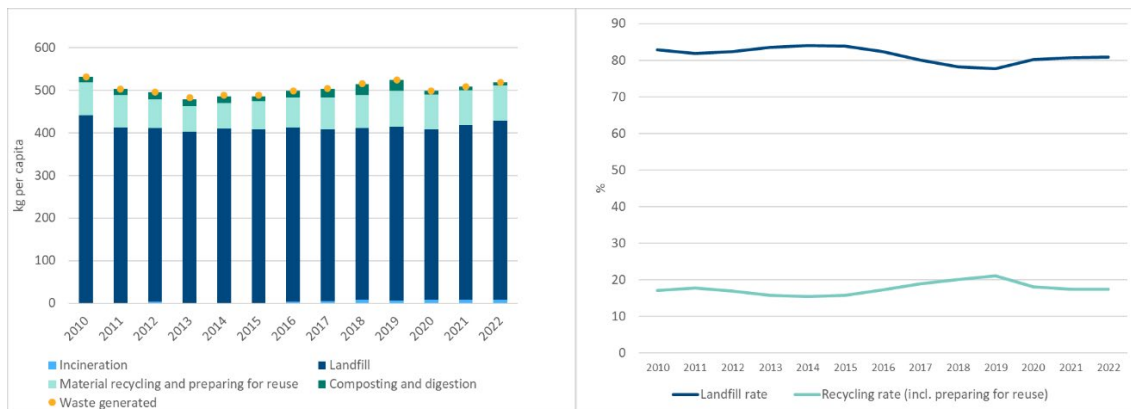
**Source:** Eurostat (2024c, 2024b, 2024g)

**Note:** Waste generation data for odd years are interpolated.

### Municipal waste

Municipal waste generation in Greece has stagnated between 2010 and 2022 (Figure 2, left). In 2022, the country generated 519 kg/cap of municipal waste, which is very close to the (estimated) EU-27 average of 513 kg/cap in the same year.

**Figure 2 Municipal waste management (left) and rates of recycling (incl. preparing for reuse) and landfill (right), 2010-2022**



**Source:** Eurostat (2024e)

**Note:** As of the reference year 2020, new reporting rules apply for calculating recycled municipal waste pursuant to the targets laid down in Article 11.2(c-e) of Directive 2008/98/EC. Greece has applied the new reporting rules since the reference year 2020 (Hellenic Ministry of Environment and Energy, 2024).

The municipal waste recycling rate in Greece remained low over the past decades (Figure 2, right). In 2022, the recycling rate was 17%, which is significantly below the (estimated) EU-27 average of 49% in the same year. The recycling rate, as well as the rate of composting and anaerobic digestion, has stagnated. The latter also remains very low in Greece, at 1% in 2022. Municipal waste incineration plays a minor role in Greece at 2% in 2022, while landfilling is still

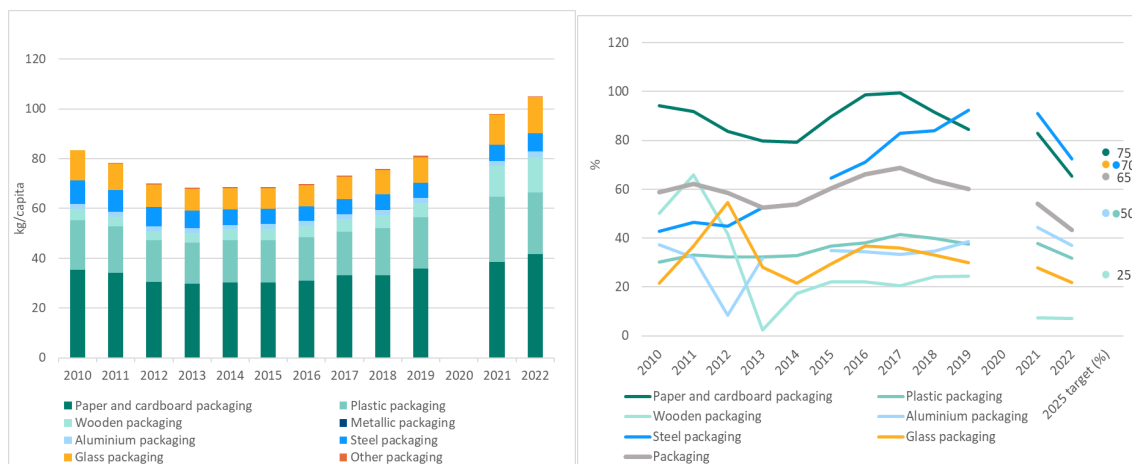
the dominant treatment method for municipal waste. The landfilling rate stagnated at a very high level around 80% (Figure 2, right).

Greece has also reported data to show compliance with the preparing for reuse and recycling target of 55% for 2025, as laid down in the Waste Framework Directive. The difference between these (provisional) data, following the reporting obligation of the Waste Framework Directive, and the data shown in Figure 2 (voluntary reporting) is below 1 percentage point for the preparing for reuse and recycling rate in 2021 (Eurostat, 2024d).

### Packaging waste

Packaging waste generation in Greece decreased between 2010 and 2013 (Figure 3, left), after which it stabilised to then increase back to the 2010 level in 2019. From 2021 onwards, it increased above the 2010 level again. In 2022, the country generated 105 kg/cap of packaging waste, which is significantly below the (estimated) EU-27 average of 186 kg/cap in the same year <sup>(1)</sup>. It should be noted that the estimation of generated packaging waste in Greece might miss quantities generated through online sales, de minimis rule, and free riders. As a result, the generated quantities might in fact be higher than reported, which also affects the recycling rate. (ETC/CE, 2022)

Figure 3: Packaging waste generation (left) and recycling rates (right), 2010-2022



Source: Eurostat (2024f)

**Note:** Data for 2020 are still under validation at Eurostat. As of the reference year 2020, the rules for calculating recycled packaging waste have changed, pursuant to Article 6a of Directive 94/62/EC. Greece has applied the new reporting rules since the reference year 2020 (Hellenic Ministry of Environment and Energy, 2024).

The overall packaging waste recycling rate in Greece was rather stable at around 60% until 2019 (Figure 3, right). However, in 2022, it dropped considerably to 43%, which is significantly below the (estimated) EU-27 average of 65% in the same year. This drop is due to the lack of verified data on industrial and commercial packaging from two producer responsibility organisations (PRO). These volumes are therefore not included in the recycling volumes which affected the recycling rates of all materials (Eurostat, 2024a).

<sup>(1)</sup> The EU-27 average might be influenced by the situation that not all Member States already fully apply the reporting rules for packaging waste as defined in the Commission Implementing Decision 2019/665.

In 2021 and 2022, Greece recycled 54% and 43% of its total packaging waste, respectively. The recycling rates for plastic, aluminium, glass, and wooden packaging were clearly below the 2025 targets in both years, while it was above the 2025 target for steel packaging. The overall packaging waste recycling rate is mainly driven by paper and cardboard and plastic packaging waste as these constitute the largest fractions. The recycling rates are likely to be overestimated as they are calculated based on the underestimated amounts of packaging placed on the market.

## **Policies in place to encourage waste prevention measures and to increase recycling**

### ***Legislative framework and waste management plans***

The main legislation related to municipal and packaging waste in Greece is Law 4819/2021 on the Integrated Framework for Waste Management. The legislative framework considering waste is very wide and includes other related laws, such as the Joint Ministerial Decision 114218/1997 which sets specifications for specific waste treatment operations. The National Waste Management Plan 2020-2030 was published in 2020. (ETC/CE, 2022) Additionally, the new National Circular Economy Action Plan was published in 2022, covering the period until 2025. This Plan has as key objectives, among others, to reduce waste, to increase high-quality recycling and reuse, and to promote the use of secondary materials.

### ***Waste prevention policies***

The National Waste Prevention Programme (NWPP) of Greece is a stand-alone strategic document and addresses the years 2021 to 2030 (EEA, 2023c). The programme is expected to be partly financed through the EU Structural Funds Programming Period 2021-2027 in combination with specific funding for waste prevention and management. There is no indication of a specific budget in the NWPP. Examples of objectives targeting waste prevention outlined in the programme are:

- promoting circular consumption, raising awareness, and providing tools for citizens to transition from a linear to a circular model of behaviour and consumption,
- setting waste reduction targets for specific streams,
- encouraging the perception of waste as a resource within the broader context of the circular economy,
- strengthening waste prevention efforts through an integrated and systematic public awareness campaign, and
- developing and promoting a new industrial strategy to transform the production processes towards circularity.

The prioritised waste streams include food waste, paper waste, packaging waste (specifying different types of plastic), waste electrical and electronic equipment, textile waste, bulky waste, industrial waste, and waste generated from excavation, construction, and demolition activities. The NWPP establishes two quantitative targets, in line with those established in Law 4819/2021: to reduce food waste per capita by 30% from 2022 to 2030, at the retail and consumer level, and to reduce the utilisation of single-use plastic cups for beverages and food, by 30% in 2024 and 60% in 2026, relative to the levels in 2022 (EEA, 2023c). To achieve these targets, various financial incentives will be used in combination with the promotion of research

and development, and implementation of awareness-raising campaigns (Government of Greece, 2022).

Measures for waste prevention include several initiatives promoting and strengthening collection networks for textiles and furniture that are no longer suitable for their original use, for instance, by investigating Extended Producer Responsibility (EPR) schemes. Additionally, there is a focus on promoting the utilisation of used electronics in both private and public procurement, along with providing financial incentives for the repair and reuse of electrical and electronic equipment. Furthermore, the NWPP encourages the development of reuse practises of construction materials and the limitation of the use of certain packaging materials to promote design for reuse and recycling, among other initiatives (Government of Greece, 2022).

From 2020 to 2023, Diadyma S.A., the official body for Waste Management in Western Macedonia, established 3 Centres for Creative Reuse of Materials. Based on this experience, Law 4819/2021 has committed to the establishment of Creative Reuse Centres (CRCs) by the end of 2023. Municipalities with more than 20000 residents, along with regional waste management bodies in collaboration with the smaller municipalities, are required to establish Creative Reuse Centres to collect used items including electrical and electronic equipment, toys, furniture, bicycles, books and textiles. In this context, the LIFE RE-WEEE project has emerged, which sorts, cleans and repairs or prepares electric and electronic equipment for reuse. (Appliances Recycling S.A., 2020; EEA, 2023c) As a follow-up activity to the project, capacity-building seminars started in 2022 in several regions, and a few repair cafes were organised but not widely implemented (Hellenic Ministry of Environment and Energy, 2024).

The NWPP includes six main pillars of food waste prevention measures, with several actions for each pillar (Government of Greece, 2022). Since 2022, food waste-related data have been reported in the Ministry's Electronic Waste Registry, according to the provisions of Art. 20 of Law 4819/2021. The first reported data concern 2021, based on the European Commission implementing decision 2019/1597.

To monitor the effectiveness of the programme, Greece has established indicators for each prioritised waste stream. The programme will be evaluated every five years and will be revised when necessary and relevant (EEA, 2023c). The evaluation of the previous programme highlights the pressing need for significant improvements across various areas and indicates that the measures implemented for waste prevention so far are incomplete and lack a comprehensive assessment of their effectiveness. Further, the evaluation stated that several actions have recently been initiated and therefore, results have not yet been recorded (EEA, 2023c).

Greece has reported data for reuse (2021) in compliance with Commission Implementing Decision (EU) 2021/19 (EEA, 2024):

- 2152 tonnes of textiles,
- 1088 tonnes of electrical and electronic devices,
- 0.84 tonnes of furniture, and
- 2552 tonnes of other products.

It should be noted that these data have been reported for the first time. As the reporting process matures, it is expected that these data will strengthen but for now, caution is advised in drawing insights from the dataset. More information about the interpretation and limitations of the dataset is available (EEA, 2024).

### ***Policies to encourage separate collection and recycling***

For recyclables, Greece implements door-to-door co-mingled collection, complemented by low-density bring points. However, the separate collection system targets packaging materials only. Most of the household packaging and non-packaging waste are collected co-mingled. For example, printed paper is collected with paper and cardboard, plastic, metal, and glass packaging, and sorted at sorting facilities into recyclable materials. Separate collection of bio-waste exists in some municipalities (Hellenic Ministry of Environment and Energy, 2024). Door-to-door separate collection of garden waste exists except in rural areas. Textile waste is only collected in cities, using high-density bring points.

Separate collection of non-household packaging waste is not mandatory for all non-household sources. It is however mandatory for operators of public gathering areas, and catering companies able to serve over 100 customers. The recently adopted Law 4819/2021 extends the separate collection obligation to non-household waste. (ETC/CE, 2022)

Since the separate collection services in Greece currently do not deliver good performance with only moderate capture rates, there is a need for incentives to enhance separation at source and separate collection. Greece has already made firm plans to improve the situation and several actions were to be implemented in 2022 and 2023. The separate collection was to be extended for the four recyclable waste streams (paper, plastic, glass, and metal) and non-packaging waste was to be included in the system. Schools and government bodies were to collect printed paper. A universal separate collection of bio-waste, including food waste, was to be implemented from the end of 2022 by municipalities and private companies. (ETC/CE, 2022) However, these improvements are not yet fully implemented (Hellenic Ministry of Environment and Energy, 2024), and more detailed status information about the implementation seems to be unavailable.

Greece does not apply pay-as-you-throw schemes but has firm plans to do so, according to the National Waste Management Plan 2020-2030 (ETC/CE, 2022). Pay-as-you-throw schemes have been made a legislative requirement (Art. 37, Law 4819/2021). Implementation of such schemes is at an initial stage (Hellenic Ministry of Environment and Energy, 2024).

Extended Producer Responsibility (EPR) schemes cover packaging waste from both household and non-household sources for all packaging materials. The system applies advanced fee modulation for plastic packaging, i.e. higher fees for difficult-to-recycle plastic types or combinations of materials (ETC/CE, 2022). In addition, Greek legislation foresees the introduction of EPR for several groups of products: textiles, agricultural plastics, medicines for/from household use, matrices, furniture, toys, athletic equipment, light personal electric vehicles and electric bicycles, in addition to those foreseen in the Single-Use Plastics Directive (Hellenic Ministry of Environment and Energy, 2024).

Greece has packaging taxes for plastic carrier bags, for single-use plastic beverage cups and food containers, and for packaging products containing PVC. Greece has no deposit-return systems in use, except for glass drink bottles by private initiatives. A nationwide deposit-return

system for aluminium, glass and plastic beverage packaging was to be implemented at the beginning of 2023 by beverage packaging producers. (ETC/CE, 2022) A law amendment for a nationwide deposit-return system (DRS) for plastic and metal beverage containers is ongoing. According to the proposed provisions, the implementation of the DRS system has been postponed to December 2025. The required ministerial decision is expected to be issued by the end of 2024. (Hellenic Ministry of Environment and Energy, 2024)

### ***Policies and instruments to discourage landfilling or incineration***

Greece applies a landfill tax (called fee) of 20 EUR/tonne as of 2022. This fee is very low and lies considerably below the landfill taxes applied in other EU-27 member states (on average EUR 39-46/tonne (EEA, 2023a)). However, the landfill fee increases annually by EUR 5/tonne up to the value of EUR 55 from 2027 onwards. According to Art. 38 of Law 4819/2021, the revenues will be used to finance waste prevention, separate collection and recycling actions of municipalities and waste management bodies, as well as research and technologies for recycling and waste. There is no landfill ban at the moment but from the beginning of 2024, it is prohibited to landfill textiles, electrical and electronic equipment (EEE), products of daily hygiene, footwear, and books unsuitable for sale or use unless it can be proven that all other waste hierarchy options have been applied to the extent possible. (ETC/CE, 2022; EEA, 2023b; Hellenic Ministry of Environment and Energy, 2024)

There are no incineration taxes in Greece, as there are no incineration facilities in the country. Greece currently does not export waste for incineration.

Until recently, the combination of a low landfill fee and cheap illegal landfills has not created any incentives to enhance recycling (ETC/CE, 2022).

### **Prospects for meeting the targets on recycling and landfilling**

Based on the EEA's early warning assessment (ETC/CE, 2022), Greece has to speed up its progress towards reaching the 2025 target for the preparing for reuse and recycling municipal waste of 55%, the 2025 target for packaging recycling of 65%, and the 2035 target to reduce landfill to 10% of the generated municipal waste. Greece has made very little progress on improving its municipal waste preparing for reuse and recycling rate.

Landfilling remains to be the dominant treatment method for municipal waste. Greece has made firm plans to improve the situation and to implement a mandatory pay-as-you-throw system, a nationwide deposit-return system for some packaging, and a gradual increase of the landfill fee, but the effects of these actions are not yet visible. Significantly more efforts are required to meet the 2025 and 2035 targets (EC, 2023).

Rates of composting and anaerobic digestion remain low and were previously identified as one of the main reasons for weak performance (EC, 2023). The European Commission issued a number of policy recommendations to improve waste management performance in Greece (EC, 2022, 2023):

- Support preparing for reuse of municipal waste and reuse systems for packaging.
- Extend at the national level separate collection at source (especially for bio-waste) and improve citizen awareness as regards waste segregation and prevention. Implement



economic instruments, such as pay-as-you-throw, and increase landfill tax to incentivise separate collection at source and minimise landfilled waste.

- Further develop waste treatment infrastructure associated with the higher steps of the waste hierarchy (in particular, increasing treatment capacity for bio-waste and supporting home-composting) and establish a quality management system for compost/digestate from bio-waste.
- Improve the data management system in order to present coherent and verifiable datasets (e.g., packaging waste).

Meanwhile, Greece has decided to postpone the deadline for meeting the 2025 targets for the recycling of municipal waste, plastic packaging and glass packaging by five years each, making use of the postponement options in the Waste Framework Directive and the Packaging and Packaging Waste Directive. The foreseen implementation plan has been submitted and is still under evaluation (Hellenic Ministry of Environment and Energy, 2024)

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