Waste management country profile

with a focus on municipal and packaging waste

Estonia

March 2025

European Environment Agency

Key messages

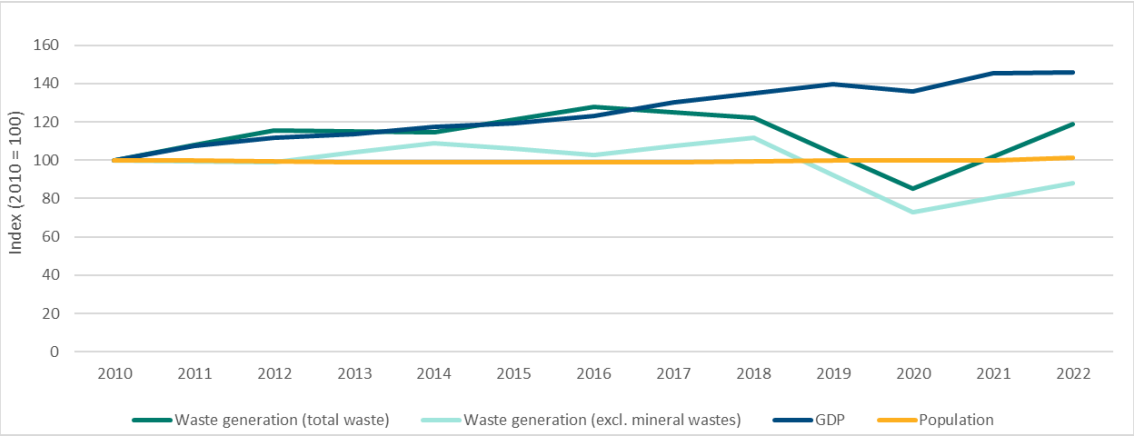
- Total waste generation in Estonia shows an increasing trend although it grew less than the GDP, while it slightly decreased for waste excluding major mineral wastes.
- Estonia already reports a landfill rate close to the 2035 landfill target and packaging recycling rates above the 2025 packaging waste recycling targets for all packaging waste streams, except for plastics.
- Estonia is considered to be at risk of not meeting the 2025 target of preparing for reuse and recycling municipal waste. It has recently made only minor progress in improving its rate of preparing for reuse and recycling of municipal waste. Significantly more efforts are thus required to meet the 2025 target, but Estonia takes some important steps with the planned waste reform, including targets for municipalities, an increase of the landfill tax and the introduction of incineration taxes.
- Estonia needs to improve its Extended Producer Responsibility (EPR) systems, to improve and extend separate collection systems, especially for bio-waste, as well as to shift reusable and recyclable waste away from incineration. The recently implemented bio-waste collection is likely to increase the recycling rate, but the effects will only become visible once data for 2023 and 2024 become available.

Trends in waste generation and treatment

Total waste generation

The total amount of waste generated in Estonia significantly increased throughout the considered timeframe (Figure 1). The increasing trend is primarily driven by major mineral wastes. When major mineral wastes are excluded, a moderate decrease can be observed which is largely influenced by combustion wastes. Estonia's GDP showed a steady growth, but dropped slightly in 2020, most likely due to the Covid-19 outbreak. Overall, a decoupling from economic growth can be observed for total waste excluding major mineral wastes, however, this is only partly the case for total waste.

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



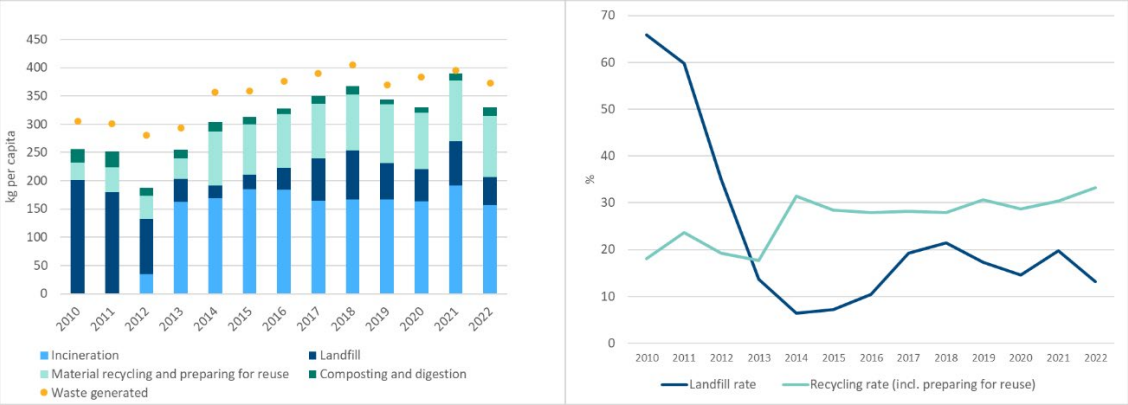
Source: Eurostat (2024a, 2024b, 2024f)

Note: Waste generation data for odd years are interpolated.

Municipal waste

Estonia's municipal waste generation has slightly increased over the past decade. In 2022, the country generated 373 kg/cap of municipal waste, which is significantly below the (estimated) EU-27 average of 513 kg/cap. Estonia has a low rate of preparing for reuse and recycling of 33%, which is significantly below the (estimated) EU-27 average of 49% in the same year ([1]), and which shows a stagnating trend since 2014, but a positive upwards development in 2022.

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



Source: Eurostat (2024d)

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. The Estonian authorities have indicated that the new reporting rules have been implemented since the reference year 2019 with some exemptions (ETC/CE, 2022).

Estonia effectively managed to divert municipal waste from landfilling by the introduction of mechanical-biological treatment (MBT) and incineration, reaching an incineration rate of 42% in 2022. While this strategy reduced the landfill rate to 13% in 2022, it also led to an overcapacity of MBT plants and waste incineration facilities for energy recovery, hindering recycling of municipal waste (ETC/CE, 2022). The share of composting and digestion is rather low, at 5% in 2022, due to an insufficient separate collection system and uneven capacity across regions for treating bio-waste.

The data shown in Figure 2 differ slightly from the data reported by the Estonian authorities to show compliance with the preparing for reuse and recycling target of 55% for 2025, as laid down in the Waste Framework Directive. Estonia reported a preparing for reuse and recycling rate in response to the target that was 1-5 percentage points below the data shown in Figure 2 for the reference year 2022, but the data are still provisional and awaiting final validation by Eurostat (Eurostat, 2024c).

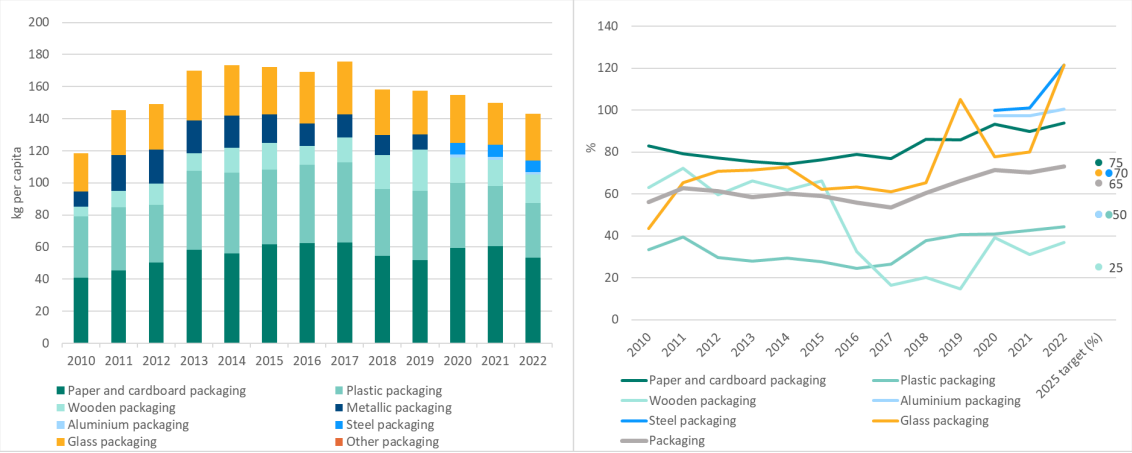
Packaging waste

Estonia's packaging waste generation significantly increased between 2010 and 2017 but started to decrease in 2017. In 2022, the country generated 143 kg/cap, which is significantly

[1] The EU-27 average might be influenced by the situation that not all Member States already fully apply the rules for reporting on municipal waste as defined in the Waste Framework Directive as amended in 2018.

below the (estimated) EU-27 average of 186 kg/cap in the same year ([2]) (Figure 3, left). This low figure may indicate that some quantities of generated municipal waste are not reported (EC, 2023).

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



Source: Eurostat (2024e)

Note: As of the reference year 2020, the rules for calculating recycled packaging waste have changed, pursuant to Article 6a of Directive 94/62/EC. As of reference year 2020, the calculation points for calculating recycled packaging waste pursuant to Article 6c, of Directive 94/62/EC, have changed. Estonia has applied the new calculation rules since the reference year 2019, and there is a break in series flagged for all packaging waste data for 2019 (Eurostat, 2022).

In 2022, the overall recycling rate for packaging waste was 73%, which is slightly above the (estimated) EU-27 average of 65% and above the 2025 target. This high recycling rate is partly due to a deposit-refund scheme for beverage packaging that has been in place since 2005 (EC, 2023). The overall recycling rate is mainly driven by paper/cardboard and plastic packaging recycling, which are the largest packaging waste fractions. The plastic packaging recycling rate has slightly increased since 2017 due to increased opportunities for recycling, the entry of new operators into the market, and the start of full-time operation of Estonia's largest plastics recycling plant in 2018 (ETC/CE, 2022). However, in 2022, the plastic packaging rate was 44%, which is still below the 2025 material-specific target of 50%. The peaks in glass recycling in 2019 and 2022 were influenced by the recycling of glass waste stocks from previous years, and the recycling of wooden packaging is affected by competition with biomass demand for energy purposes (Eurostat, 2022). For the reference year 2020 and onwards, it is mandatory to report steel and aluminium packaging separately. The recycling rates of both fractions exceeded the 2025 target.

([2]) 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.

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

Legislative framework and waste management plans

The main acts and regulations regarding municipal waste and packaging waste in Estonia include the Waste Act, the Packaging Act and other specific regulations, e.g. defining sorting of municipal waste, calculating the quantities of municipal waste prepared for reuse, recycled and disposed of, and calculating the reuse of packaging and the recovery and recycling of packaging waste. Estonia had a National Waste Management Plan (NWMP) for the period 2014-2022, and a new NWMP for 2023-2028 was approved in 2023 (Ministry of Climate, 2023). The NWMP is based on the Circular Economy White Paper, in which the country sets a strategic objective to promote resource efficiency and measure the transition more effectively (Ministry of Climate, 2022).

Waste prevention policies

Estonia's current National Waste Prevention Programme (NWPP) is integrated into the National Waste Management Plan (NWMP) for the period 2023-2028 (Ministry of Climate, 2023). The programme does not specify a budget for its implementation. Estonia intends to finance the activities through EU and local funds, as well as through the Environmental Investment Centre (EIC) (EEA, 2023b).

While the integration of the NWPP into the NWMP lacks clarity, with no explicit differentiation between waste management and waste prevention, Estonia's dedication to tackling food waste is clearly articulated. This commitment is outlined in a food waste prevention plan in Appendix 2 of the NWMP (Ministry of Climate, 2023). This includes six key areas to prevent and reduce food waste, exemplified by activities such as establishing guidelines for quantifying food waste in companies, creating incentives for companies to reduce food waste, and promoting the development of new products from surpluses and by-products in primary production and the food industry.

Beyond food waste, the priority waste streams for prevention mentioned in the NWMP are household waste, construction and demolition waste, hazardous waste, packaging waste, biodegradable waste, waste textiles, and waste from the shale oil industry (EEA, 2023b). Preventing and reducing littering was introduced as a new priority in the current NWPP 2023-2028. The status of each waste stream is presented along with the achieved progress and identified weaknesses (Ministry of Climate, 2023).

The NWMP 2023-2028 mentions that the previous NWPP was evaluated based on various factors developed by the European Environment Agency (EEA, 2021), but information is limited on the evaluation’s details and results. The evaluation recommends specifying measures not uniformly over all waste streams but rather adjusting them for each stream. The evaluation of the NWPP 2014-2020 did not specify any indicators and targets for waste prevention, hence its impact has not been assessed (Ministry of Climate, 2023). On the other hand, a variety of supporting, regulatory and awareness-raising measures are highlighted. In 2020, mandatory eco-label criteria were introduced in public procurement for four product groups: furniture, cleaning, office IT, and paper. The aim was to inform, reduce and regulate the use of resources in production (Ministry of Climate, 2023). Other measures are, for example, the expansion of the sharing economy and the use of surplus food and increased reuse, demonstrated by the

Food Bank and other charitable organisations involved in food redistribution. Another example is the rental of reusable containers including cups at events (EEA, 2023b).

In terms of preventing food waste, several actions have been implemented but not evaluated. Since 2020, the Ministry of the Climate has organised annual campaigns to raise awareness about food waste prevention in households, and organised seminars for the food industry, catering institutions, retail, and wholesale companies. The non-profit organisation Toidipank deals with the reduction of food loss in shopping centres. It collects expired food and distributes it to the less fortunate. In production, food loss is being reduced through resource efficiency measures. (Ministry of Climate of Estonia, 2024)

Another example comes from the Stockholm Environment Institute Tallinn Centre and Estonian Food Bank, which led the joint campaign 'Consume Food Wisely' and provided guidelines to reduce food waste and encourage the production of value-added products from surplus food (Ministry of Climate, 2023).

Other examples of reuse initiatives in Estonia, although not incorporated into the NWMP 2023-2028, include the yearly financial support provided by the EIC for waste prevention and reuse activities. For example, in 2021, the Centre supported projects aimed at reusing products or product components. Also notable is the fact that as of 2024, only reusable containers and utensils are permitted for food and beverage services at public events in Estonia (EEA, 2023b).

According to 2021 data reported to the EEA according to Commission Implementing Decision (EU) 2021/19 (EEA, 2024), Estonia reused:

- 5459 tonnes of textiles,
- 12984 tonnes of electrical and electronic equipment, and
- 20856 tonnes of furniture.

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 data set is available (EEA, 2024).

Policies to encourage separate collection and recycling

Separate collection of paper and cardboard, metals, packaging waste, bio-waste, combustible waste (incl. wood and plastic), bulky waste, and hazardous waste is mandatory for households and non-households. (ETC/CE, 2022)

Estonia has a door-to-door separate collection system at household properties in cities for paper and cardboard, and for bio-waste (the last two municipalities launched bio-waste collection in April 2024). There is a bring-point system for the separate collection of glass, plastic, metal, and paper and cardboard packaging (separate or co-mingled), complemented by door-to-door packaging collection in some areas. Most municipalities allow the collection of food and garden waste in the same bio-waste bin, otherwise, garden waste and wooden packaging are collected at civic amenity sites. The separate collection system mainly targets packaging, and the collection of non-packaging recyclables is mainly arranged at civic amenity sites.

In Estonia, Extended Producer Responsibility (EPR) applies to all packaging and there is some advanced fee modulation in place (i.e., fee modulation beyond the broad material categories, such as higher fees for difficult-to-recycle plastic types or combinations of materials). Some of the producer responsibility organisations (PRO) apply different fees for mono-material and composite material-based packaging for plastic and paper/cardboard. Estonia has packaging taxes (excise duty) in place that only apply when recycling rates are not fulfilled. The amount of excise duty is 0.60 EUR/kg for glass, 2.50 EUR/kg for metal and plastic, and 1.20 EUR/kg for wood and paper and cardboard. (ETC/CE, 2022)

In order to incentivise sorting at source, nearly all regions and municipalities have implemented various types of volume-based pay-as-you-throw schemes. Moreover, Estonia has a mandatory deposit-return system for most aluminium drink cans, some glass drink bottles, and most plastic drink bottles. (ETC/CE, 2022)

Policies and instruments to discourage landfilling or incineration

Estonia has a landfill tax in place since 1991, and the rate has been 29.84 EUR/tonne since 2015. The landfill tax is considerably lower than the average of landfill taxes in those EU member states applying such taxes (EUR 39-46/tonne (EEA, 2023a)). Estonia has a ban in place for landfilling unsorted municipal waste since 2004, but exemptions led to considerable amounts still being landfilled. However, requirements have been sharpened, and since 2020, the share of biodegradable waste in municipal waste landfilled shall not exceed 20% by weight, all municipal waste has to be pre-treated before landfilling, and landfilling of separately collected waste is banned. Estonia has no tax on waste incineration, but incineration of separately collected waste is also banned. (ETC/CE, 2022; Ministry of Climate of Estonia, 2024)

Waste reform – planned changes to the waste management system

Estonia is currently implementing a wider waste reform (Ministry of Climate, forthcoming), and a draft plan for amending the Waste Act and other laws has been developed. The development of the draft plan is based on previous activities aimed at implementing a waste reform, including the World Bank's comprehensive analysis of the waste sector (The World Bank, 2021) and the State Waste Management Plan 2023-2028. Feedback from stakeholders has also been taken into account in the development of the draft plan. The proposed changes in the draft plan are aimed at significant stages of the circular economy (Ministry of Climate of Estonia, 2024):

- By changing the packaging tax, producers are encouraged to introduce fewer and more recyclable packaging materials to the market.
- To increase the collection of sorted waste, municipalities are given specific targets, and waste fees may be charged to achieve these targets. The collection of packaging waste will largely transition to point-of-generation collection.
- Priority is given to recycling in the handling of collected waste. To achieve this, landfill fees will be increased, an incineration fee will be introduced, and waste incineration will be integrated into the EU emissions trading system.
- Successful organisation of all these stages requires reliable, high-quality, and up-to-date data. Therefore, the draft plan also includes changes related to the digitalisation of waste data.
- The waste reform creates conditions for innovation and additional competition in waste collection, waste treatment, and packaging production sectors. A greater number of providers improve the quality of services and price levels.

Prospects for meeting the targets on recycling and landfilling

Estonia's reported recycling rates for total packaging waste and all packaging materials, except for plastic packaging, are already above the 2025 targets. The reported landfill rate is close to the 2035 target. On the other hand, Estonia has only made minor progress recently on the recycling and preparing for reuse of municipal waste, while the combined share of landfilling and incineration has remained rather stable, at around 60% in the period of five years. Therefore, it has to speed up its progress towards reaching the 2025 target of 55% for preparing for reuse and recycling of municipal waste.

As indicated above, Estonia intends to further develop the separate collection and introduce relevant changes through a comprehensive municipal waste reform, including defined responsibilities, targets and timelines. This is backed up by support measures aimed at packaging waste prevention, recycling and infrastructure for separate collection of municipal waste.

Until 2014 Estonia made great progress in diverting municipal waste from landfills, mainly to incineration but also to recycling. However, since then, waste volumes have increased, the recycling rate stayed largely stable, and the share of landfilled waste increased again. Nevertheless, the most recent data show a positive development towards more recycling and less landfilling of municipal waste.

In the 2022 Environmental Implementation Review, the European Commission recommended introducing new policy instruments, setting mandatory targets at the municipality level for recycling and residual waste generation, improving and extending separate collection systems, shifting reusable and recyclable waste away from incineration, and improving the EPR systems (EC, 2022).

The European Commission issued a number of policy recommendations to improve Estonia's waste management performance (EC, 2023):

- Support preparing for reuse of municipal waste and reuse systems for packaging.
- Consider making municipalities and larger territorial units responsible for meeting mandatory targets for separate collection.
- This could be complemented with financial rewards for those municipalities that achieve the targets and/or financial penalties for those that do not achieve them.
- Consider introducing a tax on incinerating mixed municipal waste.
- Provide clear guidance to municipalities on using pay-as-you-throw schemes, which are designed to give strong incentives to the public to separate waste for collection.

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