

Plastic Pollution Policy Country Profile: Estonia

Christian Laspada and Rachel Karasik

CONTENTS

Introduction	2
Plastic Pollution in Estonia	2
Policies to Address Plastic Pollution	3
Policy Effectiveness	5
References	5
Appendix	6

Key Takeaways*

- In 2017, the Ministry of the Environment reported that the country produced over 65,000 tons of plastic waste.
- Compared to other EU states, Estonia’s overall recycling rate is lower than average, though its packaging waste recycling rate is on par with the average.
- In 2019, Estonia had the fifth largest consumption of lightweight plastic carrier bags in the EU, reporting a total consumption of 152.1 bags per inhabitant.
- Estonia borders both the Baltic Sea and the Gulf of Finland, two vulnerable ecoregions where marine debris and microplastics have been measured as early as 1995.
- As a member of the EU, Estonia is compliant with plastic pollution directives including those related to deposit return schemes, packaging waste, and a plastics tax.
- Subnationally, Tallinn has introduced innovative waste management schema to digitize and implement real-time monitoring of waste collection and sorting, ban certain single-use items in public areas, and collect single-use face masks.
- Effectiveness data on deposit return schemes demonstrates they have led to a reduction of roadside litter.

* These are based on a review of literature published and policies enacted before December 2021

Author Affiliations

Christian Laspada, Nicholas School of the Environment
Rachel Karasik, Nicholas Institute for Environmental Policy Solutions

Citation

Laspada, C., and R. Karasik. 2022. “Plastic Pollution Policy Country Profile: Estonia.” NI PB 22-04. Durham, NC: Duke University.

Acknowledgments

This work was funded by UNDP Ocean Innovation Challenge with support from Sida and Norad.

Published by the Nicholas Institute for Environmental Policy Solutions in 2022. All Rights Reserved.

Publication Number: NI PB 22-04



Sida



Norad

INTRODUCTION

This document outlines: 1) the nature of the plastic pollution problem in Estonia, 2) available information about the national, subnational, and to a smaller extent, international policy landscape guiding government approaches to the plastic pollution problem in Estonia, and 3) what, if any, information exists about the effectiveness of these policy approaches. This document is written using a basic literature review process and with support from the [Plastics Policy Inventory](#), as outlined in the Appendix (below), and is not exhaustive. It contains the most up-to-date information at time of publication, but this information may eventually be less relevant as the policy landscape continues to evolve. The authors were not able to get expert review for this case study, to ensure the information gathered aligns closely with what experts and practitioners are observing and experiencing on the ground. If conducting research on the plastic pollution crisis in Estonia, we recommend you use this document as one of many resources available to better understand the problem and its solutions.

PLASTIC POLLUTION IN ESTONIA

Estonia is a Northeastern European country bordering the Baltic Sea and Gulf of Finland. The smallest of the three “Baltic States” (Estonia, Latvia, and Lithuania), Estonia’s landmass expands 17,505 mi² and juts out into the Baltic Sea (Statistics Estonia, n.d.). Estonia’s long and shallow shoreline is dotted with over 1,500 islands and islets. With a population of 1.33 million, Estonia is the fourth smallest Member State in the European Union (EU) (Statistics Estonia 2017). Despite its size, Estonia is one of the highest municipal waste generators among the EU (Baran 2020). In 2020, Estonia produced 49 kg of municipal plastic waste per person, making it the third largest waste generator, just behind Ireland and Luxemburg in Europe (Baran 2020). Furthermore, Estonia has consistently had one of the lowest recycling rates in the EU, being the absolute lowest in 2015 with a recycling rate of 24.6% (Baran 2020). Sigrid Soomlaid, Estonia’s Head of the Environmental Management Department at the Ministry of the Environment, reported that the country produced over 65,000 tons of plastic waste in 2017 and only 27% was recycled (Statistics Estonia 100).

Interestingly, waste numbers reported by Estonia are not consistent with numbers reported by the European Union. In more recent years, the EU has ranked Estonia’s plastic generation and recycling efforts as the average for EU states. From Eurostat data in 2019, Estonia generated about 157.64 kg per capita of packaging waste. Estonia reported a packaging waste recycling rate of 66.2% in 2019, close to the EU average of 64.8% (Eurostats). In 2019, Estonia had the fifth largest consumption of lightweight plastic carrier bags, reporting a total consumption of 152.1 bags per inhabitant (Eurostats). Estonia argues they are more accurately collecting waste generation numbers. This places them at a disadvantage for plastic policy. During the EU’s discussion on implementing a plastic tax as part of the EU budget period for 2021–2027, Estonia was the only member state to not approve the tax. Soomlaid argued that Estonia uses a different method to calculate the amount of plastic waste, and Estonia data is not comparable to other member states. Initial calculations report that Estonia will owe upwards of 20 million Euros under the plastic tax based on their plastic waste generation (ERR News 2020). Estonia reports its waste generation numbers through Statistics Estonia, while the EU reports numbers through Eurostat, the statistics office of the EU.

Estonia’s geographic relation to the Baltic Sea and Gulf of Finland makes it an important case study for plastic production and pollution. The Baltic Sea is one of the world’s largest bodies of brackish water and is home to critical plants and animal species, micro-organisms, ecoregions, and habitats, including the Gulf of Finland (UNEP 2009). The Gulf of Finland is one of the Baltic’s most unique and fragile ecosystems due to its hydro-physical and geomorphological characteristics (Eremina et al. 2018). As ecosystems in an enclosed sea, the Baltic Sea and Gulf of Finland are incredibly vulnerable to the accumulation of plastic along the coast, in lagoons, and in estuaries (Eremina et al. 2018). Teams of students with Coastwatch Estonia surveyed Estonian shorelines in 500m increments between 1995 and 2006 and found that on average, 52% of litter found on shorelines were plas-

tic items (UNEP 2009). This average is slightly higher than the global average of plastic debris collected in coast cleanups globally in 2006 (about 45%) (ICC Report 2006). Likewise, in a waste composition assessment from a clean-up campaign that was conducted in 203, 80% of the litter collected was beverage containers (Balcers et al. 2019). Experts in Estonia estimate an average of 20 kg of litter per 500m on Estonian Baltic coastlines between 1995–2006 (UNEP, 2009). On the Hiiumaa Island in the Putkaste and Kärđla districts, the State Forest Management Centre of Estonia found the average litter per 500m ranged between 90 to 316 kg in 2004 alone (UNEP, 2009). This plastic pollution combined with Estonia’s low recycling rates endangers the ecosystems and inhabitants of Estonia.

Despite the plastic challenges Estonia has faced, the country is starting to make progress in becoming more sustainable as it related to managing plastic production, consumption, and disposal. Tallinn, Estonia’ capital, is leading Estonia to the future by aiming to become the greenest city in Europe. Tallinn was awarded the European Green Capital award in 2021 and is set to lead several European cities in the award’s 2023 goals (SmartCitiesWorld 2021; Tallinn 2021b). As part of this award, Tallinn outlined activities and goals spanning 12 issue areas, including waste. The city has developed a waste management plan that details a number of measures aimed at waste prevention. The Tallinn Waste Management Plan emphasizes, “The development on re-use centers, the promotion of environmental management in urban areas, awareness-raising and the prevention of plastics and marine litter” (Tallinn 2021). The city has also reported their regular information campaigns and marine litter cleaning campaigns to prevent marine litter. Tallinn is one of the cities that has placed marine debris capture technology, the Seabin in the Old City Harbour (Tallinn 2021a). To prevent the generation of plastic waste, the city placed a prohibition on the use of plastic disposable food utensils at public events since October 2019. After the onset of the COVID-19 pandemic, Tallinn installed 100 mask collection bins in public spaces in order to recycle them. Five months after installation, over a quarter of a million face masks were recycled (Tallinn 2021c). Likewise, as a highly technologically advanced nation, Estonia is planning to digitize and implement real-time monitoring of waste collection and sorting using European Union funding from the 2021–2027 budget (ERR News 2021). With 2020 and 2021 waste and recycling numbers yet to be collected, the world anxiously awaits to see if Tallinn’s efforts are pushing Estonia in the right direction.

Relevant European LEGISLATION TO ADDRESS PLASTIC POLLUTION

EU Directive on Packaging Waste (1994)

This directive which was established in 1994 and implemented in 2005 and has been updated since aimed to aid in achieving the ambitious recycling targets, to encourage the development of innovative, environmentally sound, and viable recycling processes. This directive calls for an evaluation of the different recycling methods should be made with a view to drawing up definitions for these methods. EU member states, of which Estonia is a part are expected to comply with EU directives by a certain deadline, as outlined by the directive (EUR-Lex, n.d).

EU Plastic Tax (2021)

Starting January 2021, the EU placed a tax on nonrecycled plastic packaging by weight. This tax is calculated based on Eurostat data, which Member States are required to collect. The rate of tax is EUR 0.80 per kilogram of nonrecycled plastic packaging waste (KPMG 2021). This proposal was passed at the European Council’s EU budget period for 2021–2027 and applies to all EU Member States, though as mentioned above was not voted for by Estonia (European Commission).

Estonian LEGISLATION TO ADDRESS PLASTIC POLLUTION

Packaging Act (2004)

This act passed in 2004 and most recently updated in 2021, provides general requirements for packaging and the use of packaging, measures for preventing or reducing the waste resulting in packaging generation, organization of a system for recovery of packaging and packaging waste, requirements for audit and recycling targets, and liability for failure to comply with these requirements. This act covers all packaging placed on the market in the

Republic of Estonia regardless of setting (industrial, commercial, industry, household, office, etc.). Packaging is defined as any product made to house, protect, handle, deliver, or present goods at any stage during its life cycle. Plastic and plastic carrier bags are listed under this act. Plastic carrier bags in this act are defined as a carrier bag with or without handles made of plastic which is supplied to the consumer at the place of sale of goods. Carrier bag types include:

- Lightweight with wall thickness below 50 microns
- Very lightweight with wall thickness below 15 microns
- Oxo-degradable (“compostable plastic bags”)

This act outlines goals for packaging waste reduction and recovery goals. Under this act packaging must be designed, produced, and sold in such a way as to permit its reuse or the recovery of packaging waste, including recycling, and to eliminate adverse impact on the environment when packaging waste or residues from the processing of packaging waste are disposed of. The 2018 amendment bans free lightweight plastic carrier bags (Riigi Teataja 2021). As of 2019, the fee of heavier plastic bags was raised to one euro (Schnurr et al. 2019).

Deposit Return System (2005)

Like many EU member states, Estonia implemented a deposit return scheme for beverage containers (bottles) in the early 2000s. These beverage containers included cans, plastic bottles, and glass bottles (Schneider et al. 2021). In this system, there exists a tax on the purchase of a beverage container, which is then returned as a subsidy upon the return of the beverage container for collection and recycling. In many deposit return schemes, which are often a part of extended producer responsibility, retailers and producers provide the funding to maintain the infrastructure to collect, sort, and recycle returned beverage containers. In Estonia, the deposit is .10 euros (Schneider et al. 2021)

Packaging Excise Duty Act (1996)

Under this act, most recently updated in 2017, an excise duty is imposed on packaging of goods placed on the market in Estonia or acquired in and imported from another Member State of the European Union. Plastic is taxed at an excise duty rate of 2.5 euros per kg, the highest alongside metal. This excise duty is paid for by the person who purchases the goods, those who use the packaging, or those who request the packaging to be destroyed in Estonia (e.g., imported packaging waste). Although it is a comprehensive policy, this act outlines exemptions for plastic waste: plastics with a weight of less than 25 kilograms (~55 lbs) per quarter and packaging made of another material with the weight of less than 50 kilograms per quarter (Riigi Teataja 2021; Eunomia and IEEP et al. 2017).

Tallinn Ban on Single-Use Plastic Dishes, Utensils at Public Events (2019)

In October 2019, Tallinn passed a ban on single-use plastic dishes and cutlery at public events. Under this ban, public event organizers will also need to ensure the sorting of at least mixed municipal waste, biodegradable waste, and recyclable packaging at all waste disposal sites. The use of bottles and cans subject to deposit return systems are not regulated under this ban (ERR News 2019).

The Tallinn Waste Management Plan (2017–2021)

Tallinn’s most recent waste management plan includes provisions targeting plastic waste specifically. These include replacing plastic cups with reusable ones at public events and enabling sorting of plastic, glass, and metal waste in advance of door-to-door waste pick-up (INTHERWASTE 2018). Tallin’s Waste management commitments also include being a partner in a few regional associations including INTHERWASTE, in which European heritage cities share experiences and lessons learned from municipal waste management, and Project BLASTIC (2016–2018), a project intended to reduce the flow of plastic waste into the Baltic Sea by creating partners with city governments and NGOs to map and monitor marine flows into the aquatic environment (InterregEurope, n.d; Blasticeu).

POLICY EFFECTIVENESS

In one study that reviewed roadside litter composition before and after the implementation of the deposit return system in 2005, found that beverage containers went from making up 80% of the litter found on roads, to 10% of the litter found alongside roads (Balcers et al. 2019). Likewise, the Estonian State Forest administration has contributed the implementation of the deposit return system on a reduction of littered bottles in Estonian forests. (Balcers et al. 2019). According to another resource, this scheme has led to return rates of 82% for beverage containers generally (Plastic Smart Cities, n.d.), and 92% for PET bottles specifically (Schneider et al. 2021).

CONCLUSION

Compared to some EU neighbors, Estonia has below average recycling rates and above average single-use plastic bag use and has been resistant to additional plastic policy initiatives, notably the plastic bag tax. Effectiveness data on policies remains limited, but there is some evidence of reduced litter from deposit return schemes and Tallinn's mask collection efforts have resulted in the collection and littering of nearly a quarter million face masks during the COVID-19 pandemic.

REFERENCES

- Balcers, O., J. Brizga, H. Moora, R. Raal, and M.B.A. Estonia. 2019. *Deposit Return Systems for Beverage Containers in the Baltic States*. Riga: Green Liberty.
- Baran, B. 2020. Plastic Waste as a Challenge for Sustainable Development and Circularity in the European Union. *Ekonomia I Prawa: Economics and Law*.
- BLASTIC Project website. <https://www.blastic.eu/>.
- Eremina, T., Ershova, A., Martin, G., & Shilin, M. 2018, June. Marine Litter Monitoring: Review for the Gulf of Finland coast. In 2018 IEEE/OES Baltic International Symposium (BALTIC) (pp. 1–8). IEEE.
- ERR News. 2019. Tallinn to Ban Single-Use Plastic Dishes, Utensils at Public Events. <https://news.err.ee/922752/tallinn-to-ban-single-use-plastic-dishes-utensils-at-public-events>.
- ERR News. 2020. Estonia Threatened by Major Plastic Tax. <https://news.err.ee/1054658/estonia-threatened-by-major-plastic-tax>.
- ERR News. 2021. Estonia Planning National Real-Time Waste Management Monitoring System. <https://news.err.ee/1608207373/estonia-planning-national-real-time-waste-management-monitoring-system>.
- Eunomia and IEEP et al. 2017. "Inventory of Economic Instruments." <https://ieep.eu/uploads/articles/attachments/ea5c3c7a-bd9c-4355-91ee34643e940a1f/ETR%20Instruments%20Inventory%20-%20for%20publication.xlsx?v=63680917736>.
- Eur-Lex. n.d. Packaging and packaging waste. Accessed at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:l21207>
- European Commission. The 2021–2027 EU budget – What's new? https://ec.europa.eu/info/strategy/eu-budget/long-term-eu-budget/2021-2027/whats-new_en.
- European Commission. Eurostat. <https://ec.europa.eu/eurostat>
- INTHERWASTE. 2018. Tallinn: Setting New Targets in Waste Management. <https://www.interregeurope.eu/intherwaste/news/news-article/3135/tallinn-setting-new-targets-in-waste-management/>.
- INTERREGEurope. INTHERWASTE: Interregional Environmental Integration of Waste Management in European Heritage Cities.
- KPMG. Plastic Tax. Reduce, Reuse, Recycle. <https://home.kpmg/xx/en/home/insights/2021/09/plastic-tax.html>.
- Plastic Smart Cities. n.d. Best Practices, Deposit Refund Scheme. <https://plasticsmartcities.org/products/deposit-return-program>.
- Riigi Teataja. 2017. Packaging Excise Duty Act. <https://www.riigiteataja.ee/en/eli/504072017009/consolide>.
- Riigi Teataja. 2021. Packaging Act. <https://www.riigiteataja.ee/en/eli/ee/513052021001/consolide>.
- Schneider, D.R., T. Tomić, and R. Raal. 2021. "Economic Viability of the Deposit Refund System for Beverage Packaging Waste—Identification of Economic Drivers and System Modelling." *Journal of Sustainable Development of Energy*,

Water and Environment Systems 9(3): 1–33.

Schnurr, R.E., V. Alboiu, M. Chaudhary, R.A. Corbett, M.E. Quanz, K. Sankar, et al. 2018. “Reducing Marine Pollution from Single-Use Plastics (SUPs): A Review.” *Marine Pollution Bulletin* 137, 157–171.

SmartCitiesWorld. 2021. Tallinn named European Green Capital 2023. <https://www.smartcitiesworld.net/news/news/tallinn-named-european-green-capital-2023-6934>.

Statistics Estonia. Waste and Circular Economy. <https://www.stat.ee/en/find-statistics/statistics-theme/environment/waste-and-circular-economy>.

Tallin. 2021a. The Marine Litter Collector Seabin Starts Its Second Season in Tallinn. <https://www.tallinn.ee/eng/Uudis-The-marine-litter-collector-Seabin-starts-its-second-season-in-Tallinn>.

Tallinn. 2021b. Tallinn – The European Green Capital 2023. <https://www.tallinn.ee/eng/greencapital/green-capital>.

Tallin. 2021c. Tallinn Has Recycled a Quarter of a Million Face Masks. <https://www.tallinn.ee/eng/Uudis-Tallinn-has-recycled-a-quarter-of-a-million-face-masks>.

UNEP. 2009. *Marine Litter: A Global Challenge*. Nairobi: UNEP. 232 pp.

APPENDIX – METHODS

To start off the search for policy documents, researchers referenced the Nicholas Institute’s Plastics Policy Inventory for any relevant national or subnational policies in Estonia. In addition to the Estonia plastic pollution policy search, researchers then searched for academic and grey literature relating to plastic pollution and relevant policies in Estonia. This search was mostly done through Google Scholar. Search terms included, but were not limited to, “Estonia plastic,” “Estonia plastic pollution,” “Estonia plastic pollution policies,” “Estonia plastic bag ban,” “Estonia single-use plastic,” and “Estonia plastic use.” Eleven total articles were found, and all were screened for inclusion. The inclusion criteria were that the articles described the plastic pollution problem in Estonia, described relevant policies in Estonia, or they described the effectiveness of relevant policies. They were then read through and relevant information that could aid this case study was extracted. When citations referenced additional literature that seemed relevant, those papers were subsequently screened for inclusion as well. This is the primary method in which the background information was collected.

Once the secondary literature had been exhausted for relevant policies, researchers then moved the search to InforMEA and ECOLEX to see if any more policies could be found that were not referenced in the literature. No new policies were discovered in this round of the search.

Finally, to check if any new policies had been agreed upon or enacted since the publication of the literature referenced above, the same search strings that were used to find the literature were applied in a normal Google search. Here, researchers were looking for recent news articles referencing policies that may have been implemented and not yet included in any literature. From this search, 6 news articles were found.