

Circular economy country profile – Estonia



Cover design: EEA
Cover image © Peder Jensen
Layout: ETC CE

Publication Date

EEA activity Circular economy and resource use

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Preparation of this report has been co-funded by the European Environment Agency as part of a grant with the European Topic Centre on Circular economy and resource use (ETC CE) and expresses the views of the authors. The contents of this publication do not necessarily reflect the position or opinion of the European Commission or other institutions of the European Union. Neither the European Environment Agency nor the European Topic Centre on Circular economy and resource use is liable for any consequence stemming from the reuse of the information contained in this publication.

ETC CE coordinator: Vlaamse Instelling voor Technologisch Onderzoek (VITO)

ETC CE partners: Banson Editorial and Communications Ltd, česká informační agentura životního prostředí (CENIA), Collaborating Centre on Sustainable Consumption and Production (CSCP), Istituto Di Ricerca Sulla Crescita Economica Sostenibile, Istituto Superiore per la Protezione e la Ricerca Ambientale, IVL Swedish Environmental Research Institute, PlanMiljø, Università Degli Studi Di Ferrara (SEEDS), German Environment Agency (UBA), Teknologian Tutkimuskeskus VTT oy, Wuppertal Institut für Klima, Umwelt, Energie gGmbH, World Resources Forum Association.

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Introduction

The European Commission requested the EEA to produce EU country profiles that offer an updated view of the following elements:



- circular economy policies being implemented at a national level with a particular focus on elements that go beyond EU mandatory elements; and
- best practice with a focus on policy innovation.

While implementing the EU Circular Economy Action Plan (CEAP 2020), Member States are encouraged to advance circularity at a national level by adopting policies and initiatives that go beyond EU regulations, while preserving the Single Market.

This circular economy country profile is based on information reported by the Eionet network and, in particular, the Eionet Group on Circular Economy and Resource Use in the second quarter of 2022. The information was reviewed and edited by the European Topic Centre on Circular economy and resource use (ETC CE). A selection of Eurostat data was made to further complement this country profile.

The information is current as of 5 September 2022 (final review), when members of Eionet verified the content of this profile.

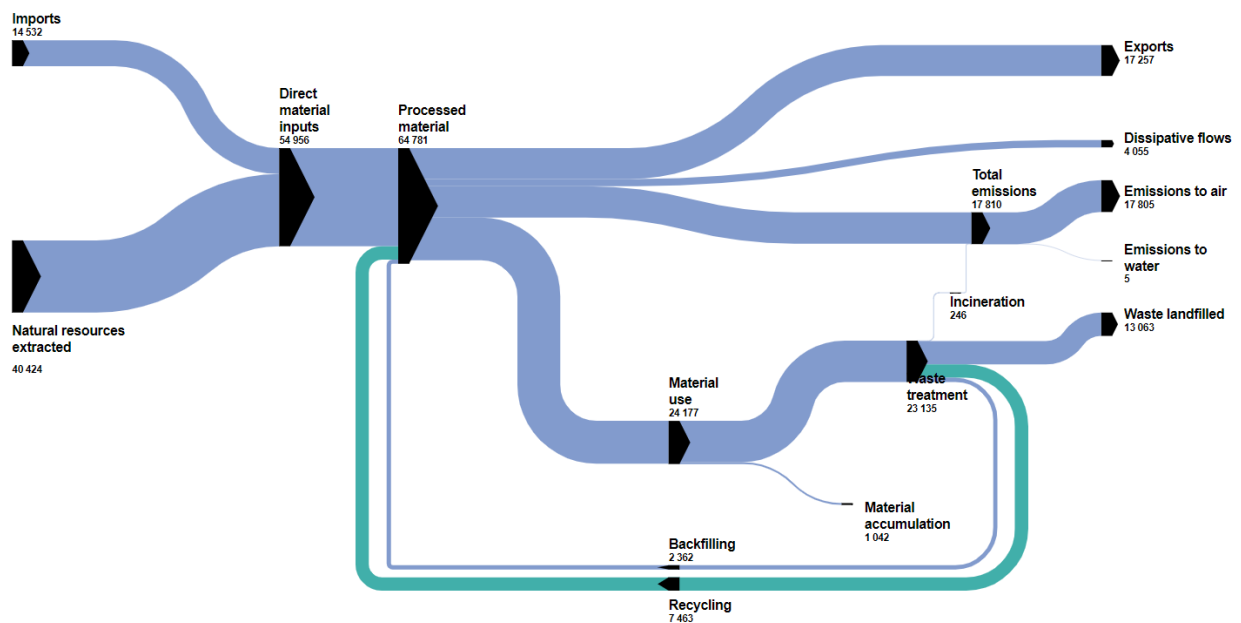
Estonia – facts and figures

| | |
|--|---|
|   | GDP: EUR 26.8 billion (0.2 % of EU27 total in 2020) |
| | GDP per person: EUR 20 190 (purchasing power standard) (84.0 % of EU27 average per person figure in 2020) |
| | Use of materials (domestic material consumption (DMC)) 37.7 million tonnes DMC (0.6 % of EU27 total in 2020) 28.4 tonnes DMC per person (210.6 % of EU27 average per person in 2020) |
| | Structure of the economy: Agriculture: 2.5 % Industry: 25.9 % Services: 71.6 % |
| | Employment in circular sectors: Data not available |
| | Surface area: 45 227 square kilometres (1.0 % of EU27 total) |
| | Population: 1 328 976 (0.3 % of EU27 total in 2020) |

Note: all definitions and metadata used in this profile are taken, as shown, from Eurostat

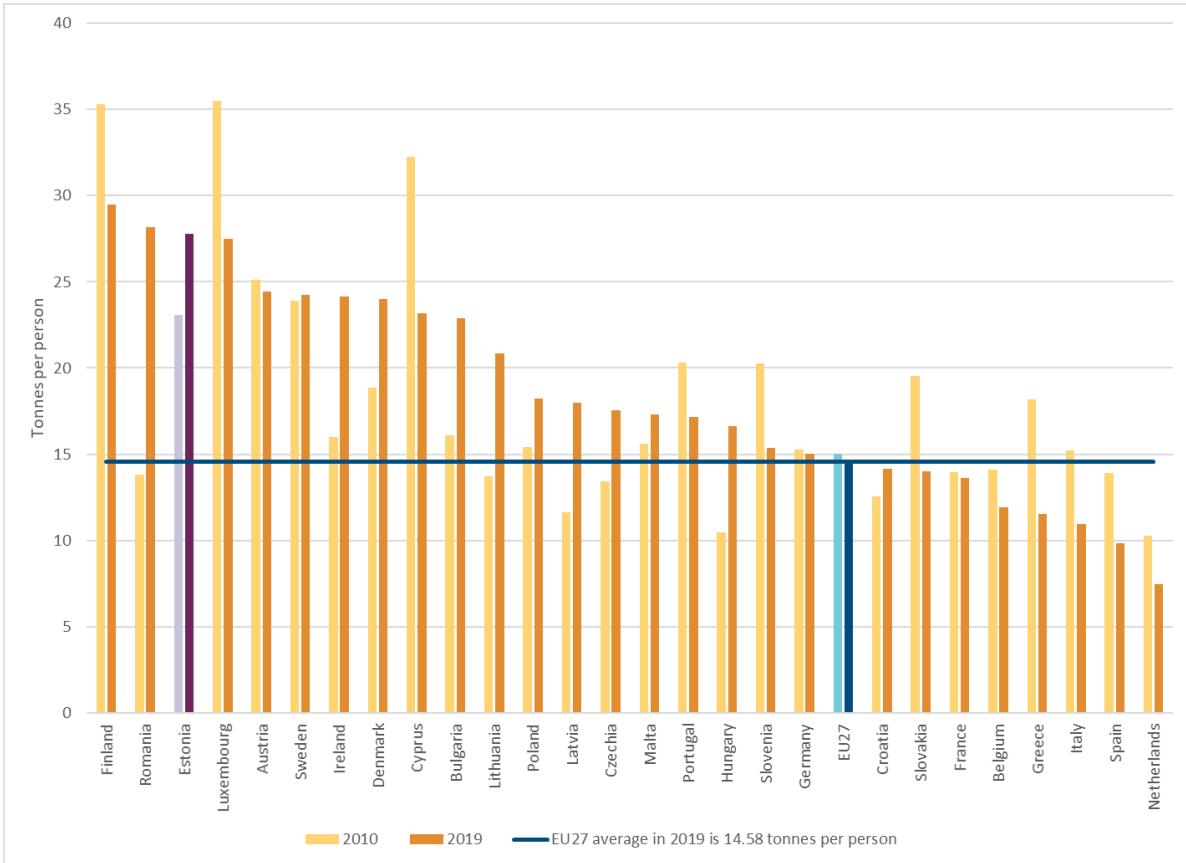
Source: Eurostat datasets, EU27 2020 (accessed 20 June 2022)

Figure 1 Material flow diagram for Estonia in 2020, '000 tonnes



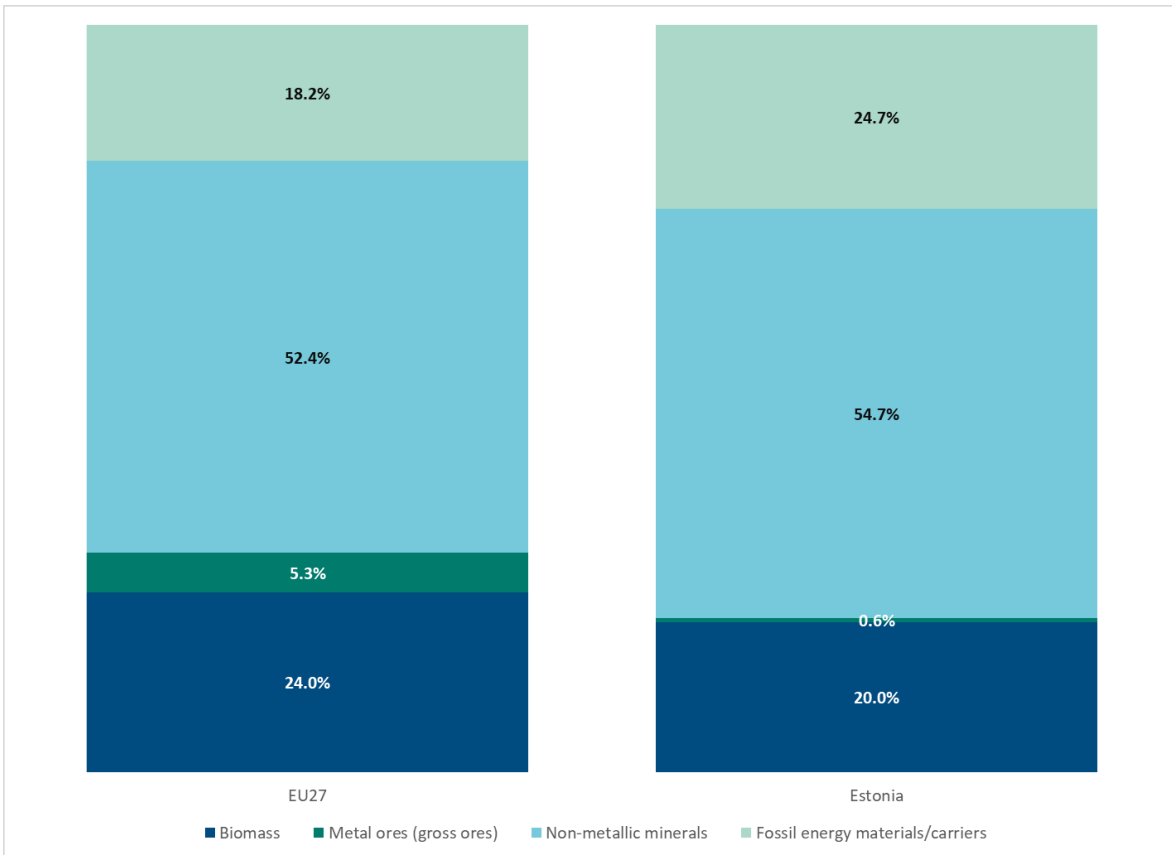
Source: Eurostat (2022) [env_ac_mfa], [en_ac_sd], [env_wassd] (accessed 20 June 2022)

Figure 2 Material footprint (raw material consumption), EU27, 2010 and 2019, tonnes per person



Source: Eurostat (2020) [env_ac_rme] (accessed 4 July 2020)

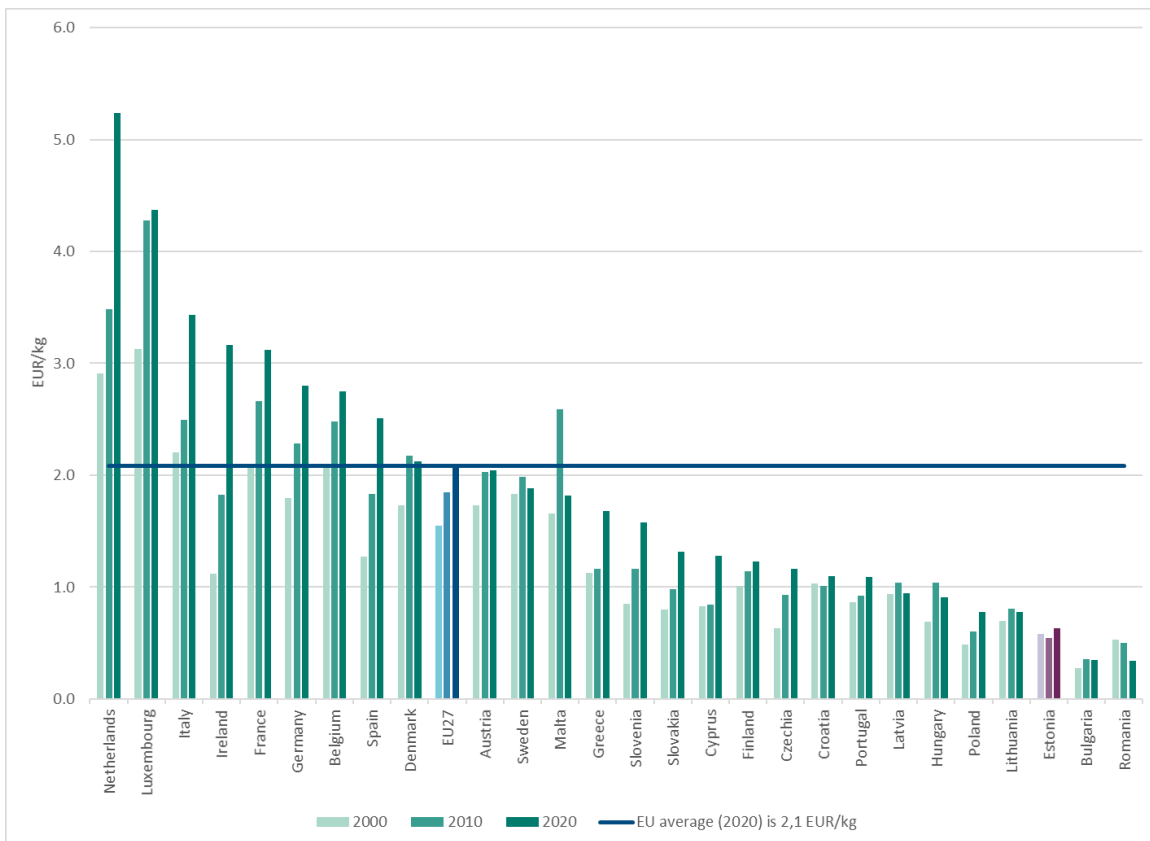
Figure 3 Domestic material consumption by selected material category, EU27 and Estonia, 2020, per cent



Note: totals may not sum to 100 % due to rounding

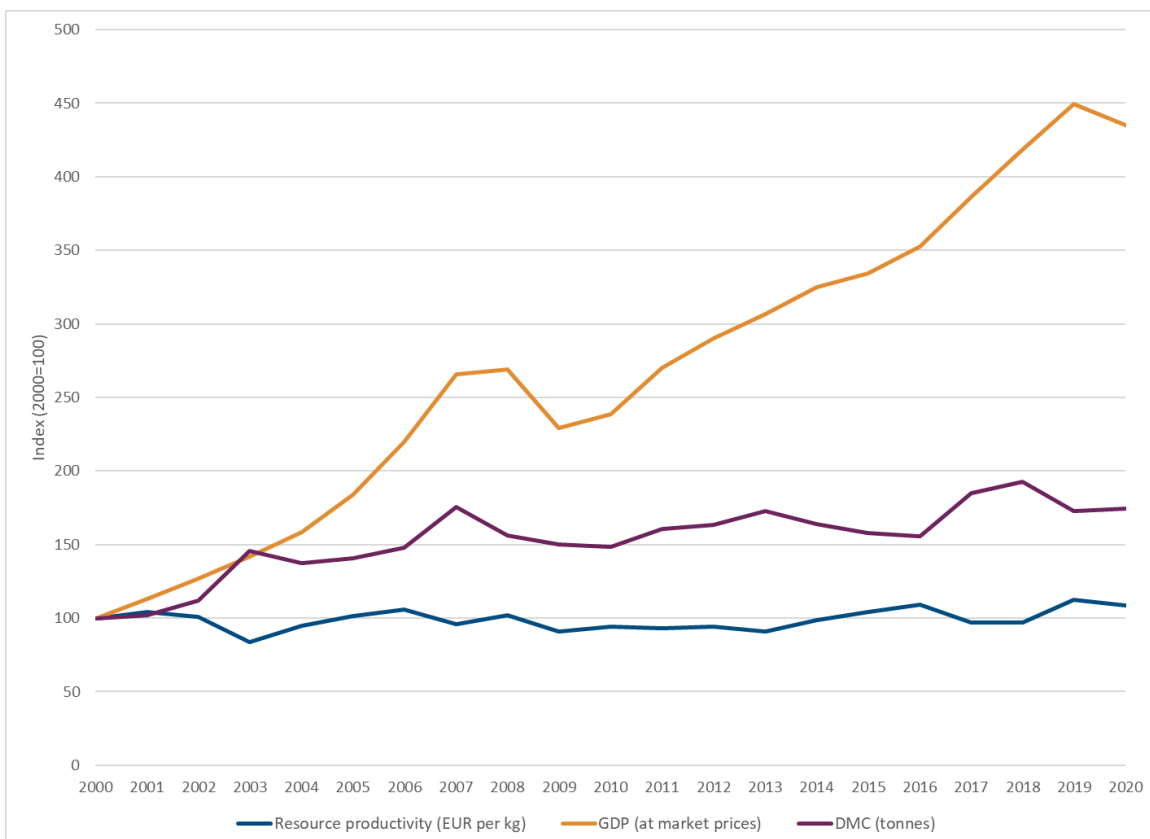
Source: Eurostat (2022) [env_ac_mfa] (accessed 20 June 2022)

Figure 4 Resource productivity (gross domestic product/domestic material consumption), EU27, 2000, 2010 and 2020, EUR per kilogram



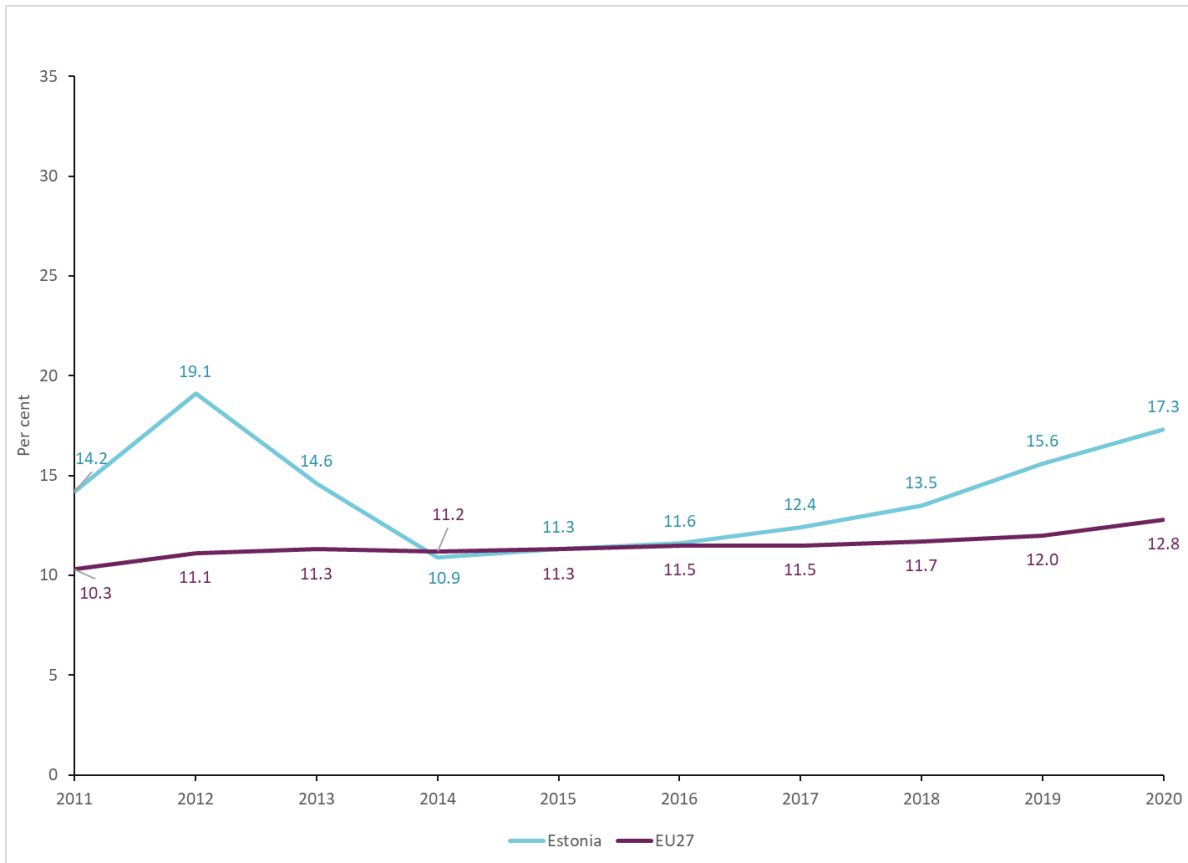
Source: Eurostat (2022) [env_ac_rp] (accessed 20 June 2022)

Figure 5 Gross domestic product, domestic material consumption and resource productivity trends, Estonia, 2000–2020, index (2000=100)



Source: Eurostat [env_ac_mfa], [env_ac_rp] & [nama_10_gdp] (accessed 4 July 2022)

Figure 6 Circular material use rate in Estonia, 2011–2020, per cent



Source: Eurostat (2022) [env_ac_cur] (accessed 20 June 2022)

Existing policy framework

Dedicated strategy, roadmap or action plan for circular economy

Estonia has not yet adopted a dedicated circular economy (CE) strategy. Currently, Estonia is in the process of establishing such a framework and plans to publish a **CE white paper** in September 2022 followed by an **action catalogue** by the end of 2022 ⁽¹⁾. The draft of the circular economy white paper sets the vision and developmental goals for the CE in Estonia. It is designed to support different stakeholders – the government, municipalities, entrepreneurs and individuals – in mainstreaming the principles of circularity in production, consumption, policies, lifestyle, culture and values.

In the draft document, Estonia has set an **ambitious vision**:

“Estonia has a functioning circular system of production and consumption, and we are a smart country leading the transition to a circular economy.”

This means that by 2030 sustainable production and consumption, the use of smart technologies, services and digital solutions will ensure that a circular and competitive business model has been established in Estonia. The use of resources will be sustainable and long lasting, and products will have long and safe lifetimes. Through smart technologies, Estonia will be a flagship for CE solutions across Europe.

To achieve this vision, it will be necessary to create a favourable social-economic environment and apply certain principles to guide action and choices. The necessary conditions are environmental awareness, cooperation and involvement, smart solutions, a systemic and coordinated approach, and an up-to-date legal environment.

All stakeholders must apply the following **principles**.

- Needs-based production and consumption: that means that producers know the demand and produce accordingly, avoiding waste and overproduction. At the same time, all purchase decisions will be made thoughtfully.
- Applying the principles of circular design: that means that more emphasis will be put on the product and service design phases.
- Employing the best possible approach: that means using the best available technologies and methods – services, communication and procurement – that prioritise circularity.
- Following the principles of the materials’ hierarchy: that means following 10 common circular economy strategies – refuse, rethink, reconsider, reuse, repair, refurbish, remanufacture, repurpose, recycle and recover – and the CE butterfly diagram ⁽²⁾.
- Promoting sustainable choices: that means engaging consumers on making better choices for themselves and society.

Additionally, the draft document sets **six development priorities**.

1. Resource use will be well-considered, resources used responsibly based on demand, and waste production will be minimised.
2. The business models of Estonian companies will be forward-looking and circular.
3. The necessary know-how and expertise for implementing the CE will be ensured and cooperation between stakeholders and sectors will function well.
4. Functional digital solutions will be created to support the CE and high-quality data for monitoring the situation will be ensured.
5. The circular economy will be well coordinated with a supportive legal and economic environment.

¹ <https://ringmajandus.envir.ee/index.php/en/strategy>

² <https://ellenmacarthurfoundation.org/circular-economy-diagram>

6. Environmentally conscious thinking and environmentally friendly behaviour will be mainstreamed in society.

To ensure a tangible strategy that considers the principles of the CE as well as the options and resources of Estonia, interest groups were included in its development and learning from the experience of other countries. Required work has been mainly divided into the following stages.

- Studies: developing circular economy indicators (2019) and mapping the current state of Estonia’s CE (2020-2021).
- Compilation of a strategic document and action plan for the CE in Estonia (2021-2022).
- Stakeholder involvement throughout the process.

We have a structure that consists of a lead group of policy makers including all ministries and government offices, a board of experts – advisers from different fields, and working groups – to prepare a CE development document, thematic working groups are set up to raise issues and propose solutions and good examples. So far, 10 working groups have been set up covering the bio-circular economy, international dimensions, information exchange, sustainable culture, financing, environmental taxation, construction, textiles, food, and planning/municipalities.

Circular economy policy elements included in other policies

| Circular economy policy element | Included in policy |
|---|--|
| <p>Green public procurement (GPP): national mandatory criteria exist for the following four categories: copy and graphic paper, cleaning products and services, office information technology (IT) equipment and furniture. The regulation is applicable to all public sector or network sector procurers (as defined in the Public Procurement Act³). The criteria are based on the EU GPP criteria (⁴), adapted to the Estonian context. It is mandatory to use all main criteria included for the specific category. For example, all cleaning products must comply with the EU Ecolabel or equivalent. Categories are based on product and service certification and eco labels, but, for example, packaging recycling aspects are also emphasised. GPP seminars and training are taking place in 2022 and will continue in subsequent years.</p> <p>In the summer of 2022, an exercise was conducted to find the next five priority categories as a result of new analysis. This will be completed in spring 2023.</p> <p>New regulations will be prepared by the end of 2022 for two additional categories: 1) road lighting and traffic signals, and 2) imaging equipment, consumables, and print services. These will also be based on EU GPP criteria.</p> | <p>GPP criteria for products and services (in Estonian)</p> |
| <p>Valorisation of local resources is one of five key focus areas in the Research, Development, Innovation and Entrepreneurship (RDIE) Strategy. The first roadmaps are for valorisation of secondary raw materials and waste, and for food resources. Both are under development and planned to be finalised in 2022. Roadmaps will be updated in 3–4 year cycles.</p> | <p>Estonian Research and Development, Innovation and Entrepreneurship Strategy 2021—2035</p> |

³ <https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/517062022001/consolide%20in%20pgh%204>

⁴ https://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm

The principles of the circular economy will be promoted. To increase the recycling of materials and the use of secondary raw materials, sustainable production and consumption patterns will be introduced. Enterprises need to improve resource efficiency, including energy efficiency, for example, through industrial symbiosis, digitisation and support for more resource-efficient technologies. Waste management is being reorganised based on the waste hierarchy and innovative solutions to reduce waste generation, increase material recycling and improve separate waste collection are being developed.

[Development Strategy Estonia 2035](#)

Monitoring and targets

Assessment of circular economy performance

Estonia's progress regarding the EU Circular Economy Monitoring Framework indicators is mixed and there have been no significant changes recently. There are some positive trends, such as reducing waste generation and improving the use of circular materials. On the other hand, there are still difficulties in improving recycling rates.

Estonia does not have enough processing capacity of its own. The main activities that are implemented in Estonia are meant to prepare materials for reuse but Estonia's sorting ability is low and as a result it depends on other countries and their facilities. Also, there are not enough incentives to invest into recycling solutions. Estonia has a scattered population and low overall population density, as well as plentiful low-value raw materials, such as limestone, oil shale, sand and wood, that hamper the transition to a CE, including competitive prices for secondary materials as few of these are available and there is little incentive to use them. There are also challenges related to small volumes of specific wastes, such as lithium-ion batteries or different types of plastic waste, that hamper efficient recycling.

Circular economy monitoring frameworks and their indicators beyond the ones from Eurostat

Estonia does not have a dedicated CE monitoring framework, but some indicators will be part of the CE white paper and National Environment Development Plan. To find which are the most suitable CE indicators, Estonia published a study ⁽⁵⁾ in 2019 that mapped possible CE indicators that will be used in different monitoring frameworks.

The following CE indicators are part of Estonia's 2035 monitoring framework in the Tree of Truth ⁽⁶⁾ that is regularly updated

- **Net greenhouse gas emissions** shows the total net emissions of greenhouse gases, including the impact of the forestry and land use sector. Greenhouse gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and fluorinated greenhouse gases, or F-gases – hydrofluorocarbons (HFCs), perfluorocarbons (PFC), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃) – that are emitted as a result of human activities. In the forestry and land use sector, removals of CO₂ from the atmosphere are generally higher than emissions, which has an impact on total net emissions.
- **Circular material use rate** shows the share of the circular use of materials in overall material use. The circular material use (CMU), also known as the circularity rate, is defined as the ratio of the circular use of materials to the overall material use.
- **Sustainable development in Estonia, ranking in the world** shows where Estonia ranks in the global Sustainable Development Goals (SDGs) Index. The indicator measures overall performance of all 193 UN Member States in their progress towards achieving all 17 SDGs ⁽⁷⁾. Countries are ranked by their overall score, which can be interpreted as a percentage of SDG achievement. A score of 100 indicates that all SDGs have been achieved.
- **Resource productivity** (GDP/DMC) measures the total amount of material directly used by an economy, DMC relative to GDP.

Dedicated CE indicators will also be part of Estonia's Environmental Development Plan (KEVAD) that will be ready in 2023. Exact indicators are yet to be determined.

⁵ [Ringmajanduse strateegia koostamise meetodika väljatöötamine](#) (in Estonian)

⁶ <https://tamm.stat.ee/?lang=en>

⁷ <https://dashboards.sdgindex.org/rankings>

Circular economy targets

In **Estonia 2035** ⁽⁸⁾ the following targets have been set for 2035:

- net greenhouse gas emissions – 8 million tonnes of CO₂ equivalent;
- circular material use rate – 30 %;
- sustainable development in Estonia, world ranking in the global SDGs Index – top 10;
- resource productivity – EUR 0.9 per kilogram.

⁸ <https://valitsus.ee/en/estonia-2035-development-strategy/necessary-changes/economy-and-climate>

Innovative approaches and good practice

Examples of public policy initiatives (national, regional or local)

→ *Good practice example: research and innovation/innovative business models*

The Accelerate Estonia programme ⁽⁹⁾

Accelerate Estonia (aEstonia) is a programme initiated by the Ministry of Economic Affairs and Communications in 2018 offering institutional and regulatory arrangements to support the transition towards a resource-efficient CE. It brings the private and public sectors to work together to develop the business and regulatory environment to create new business models, products and services. The aEstonia programme is implemented by the Tehnopol science park ⁽¹⁰⁾.

Accelerate Estonia is a testbed for moon-shot ideas. It will combine the urgency of start-ups and the power of the public sector to test, validate and build solutions to complex global problems. Among other projects, some innovative, CE linked projects have been implemented or are under development:

- Materjalivoog – Excess Material Flow ⁽¹¹⁾
- Rohetiiger – Environmental Impact Metrics ⁽¹²⁾
- Nutriloop – Using biowaste in sustainable food production ⁽¹³⁾
- TexRoad – Digital infrastructure for circular textiles ⁽¹⁴⁾
- Sustaxo – Taxonomy of sustainable financing ⁽¹⁵⁾
- Pattern Buildings – Modular Buildings Platform for a Circular Construction ⁽¹⁶⁾

→ *Good practice example: financial support programme/public procurement*

Supporting the framework for circular economy in public sector

The European Economic Area's programme consists of two activities: open call for **Circular Economy pilot projects** provides grants to municipalities and pre-defined project Enhanced Capacity on Circular Economy.

The grants aim to contribute to the development of the CE and the introduction of more environmentally friendly solutions by the public sector targeting municipalities. As a result of a grant, an innovative pilot project, using CE principles and identifying the impact of its implementation, must be carried out. In addition, competence in the CE will increase and good practice will emerge that can be applied elsewhere, creating value for society as a whole. The quality of environmental decisions made by local governments will also improve. Three municipality projects were granted support totalling EUR 900.000:

- Tallinn – transition of civic amenity sites into reuse and repair centres;
- Tartu – circular renovation;
- Rae – a municipal CE pilot project.

The main objective of the Enhanced Capacity on Circular Economy ⁽¹⁶⁾ project is to strengthen the CE framework and increase awareness of action related to climate change. It aims to contribute substantially to the transition to a low-carbon circular economy in Estonia in a smooth, inclusive and informed manner. The overall outcome and result of the project will be:

⁹ <https://accelerateestonia.ee/>

¹⁰ <https://www.tehnopol.ee/en/>

¹¹ <https://accelerateestonia.ee/project/excess-materials-flow/>

¹² <https://accelerateestonia.ee/project/environmental-impact-metrics/>

¹³ <https://accelerateestonia.ee/project/sustainable-food-production/>

¹⁴ <https://accelerateestonia.ee/project/circular-textiles/>

¹⁵ <https://accelerateestonia.ee/project/taxonomy-of-sustainable-financing/>

¹⁶ <https://accelerateestonia.ee/project/circular-construction/>

- The Strategy on Circular Economy will be completed as part of the Estonian Environmental Development Plan (KEVAD) that will be ready in 2023;
- 100 professionals trained on the CE;
- 10 product categories for Green Public Procurement will be developed;
- 10 000 people will be reached by awareness-raising campaigns;
- 30 schools will participate in the Green Schools competition.

Examples of private policy initiatives (sectoral)

Small-scale solutions in the textile industry

With the new EU Textile Strategy, published in 2022, Estonia has examples of best practice in the textile industry for small-scale solutions covering the entire value chain and is working on developments at an international level to expand these.

- **Reet Aus** ⁽¹⁷⁾ – a sustainable design collection, including UPMADÉ® certification ⁽¹⁸⁾, that enables brands and manufacturers to apply Upmade industrial upcycling methods and obtain certification.
- **Stella Soomlais** ⁽¹⁹⁾ – long-lasting leather bags;
- **Reverse Resources** ⁽²⁰⁾ – a tracking and trading platform for textile waste, providing total transparency for waste flows.

Let's Do It Foundation ⁽²¹⁾

The Let's Do It Foundation is a non-governmental organisation that coordinates and supports the global movement, inspiring and empowering leaders to raise awareness and move countries towards sustainable solutions. It was the founder and coordinator of World Clean Up Day ⁽²²⁾. Let's Do It has also initiated the **Green Tiger platform** ⁽²³⁾, a multidisciplinary cooperation platform whose purpose is to create a balanced economic model for Estonia and the world. Green Tiger has partners among entrepreneurs, individuals, the public sector and the voluntary sector. Let's Do It has also been leading the way on reuse action in Estonia, including packaging reuse systems and reducing single-use plastics ⁽²⁴⁾, and is part of the EU reuse network ⁽²⁵⁾.

17 <https://www.reetaus.com/>

18 <https://www.upmade.org/>

19 <https://stellasoomlais.com/en>

20 <https://reverseresources.net/>

21 <https://letsdoitworld.org/>

22 <https://www.worldcleanupday.org/>

23 <https://rohetiiger.ee/en/>

24 <https://letsdoitfoundation.org/2021/12/28/national-reuse-package-system-could-be-adopted-first-in-estonia/>

25 <https://wechoosereuse.org/>

The way forward

Addressing barriers and challenges

Estonia's main challenges in promoting circular economy are:

- lack of cooperation between stakeholders and the dilution of responsibilities;
- low level of environmental awareness and knowledge of the CE in society;
- the CE is not mainstreamed;
- a lack of experts;
- a lack of innovative sustainable solutions.

More **training of relevant experts and their expertise** on the CE is needed – Estonia is planning to have training programme as part of its Multi-annual Financial Framework 2021–2027 measures.

Also, the CE needs to be part of horizontal **higher education**, for example, the CE should be included as part of all university curriculums rather than being studied in isolation.

Another important policy initiative is a **co-creation process** that could contribute to better policy development, with all participants working towards finding suitable solutions. On raising awareness of CE, more **targeted campaigns**, aimed, for example at consumers and/or companies with tangible and clear message are needed.

Ranking types of barrier

| | |
|---|--|
| High barrier | Institutional challenge to develop policy for a complex cross-sectoral issue |
|  | Market barriers for recycled resources |
| | Companies' ability to grasp opportunities |
| | Consumer behaviour and awareness |
| Low barrier | Good indicators and targets |

Future policy plans

Under its **Recovery and Resilience Plan**, Estonia has a development programme for green technologies, in which CE is highlighted as one important focus area. This intervention aims to contribute to the green transition of companies by **fostering the development and spreading of innovative green technologies**. It is expected to increase the number of research-intensive green technology companies in the market and support the start-up ecosystem. It consists of support to start-ups and development clusters with a focus on integrated green technology solutions through various development services, including accelerators, incubation, business development, prototype development and piloting. It also aims to improve cooperation between different types of organisation and actors such as academia, businesses and other stakeholders that are already active in the market. The focus will be on energy and resource efficiency, promoting the CE, new business models, digitalisation and automation. The projects it supports will contribute to reducing greenhouse gas emissions and increasing resource productivity in Estonia.

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