Council of the European Union

Brussels, 15 April 2019
(OR. en)

8302/19
ADD 26

ENV 397
CLIMA 111
AGRI 201
PECHE 160
ECOFIN 380
COMPET 321

COVER NOTE

From:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	5 April 2019
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2019) 135 final
Subject:	COMMISSION STAFF WORKING DOCUMENT The EU Environmental Implementation Review 2019 Country Report - ESTONIA *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 Environmental Implementation Review 2019: A Europe that protects its citizens and enhances their quality of life

Delegations will find attached document SWD(2019) 135 final.

Encl.: SWD(2019) 135 final

EUROPEAN
COMMISSION

Brussels, 4.4.2019
SWD(2019) 135 final

COMMISSION STAFF WORKING DOCUMENT

The EU Environmental Implementation Review 2019
Country Report - ESTONIA

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

Environmental Implementation Review 2019:
A Europe that protects its citizens and enhances their quality of life

{COM(2019) 149 final} - {SWD(2019) 111 final} - {SWD(2019) 112 final} -
{SWD(2019) 113 final} - {SWD(2019) 114 final} - {SWD(2019) 115 final} -
{SWD(2019) 116 final} - {SWD(2019) 117 final} - {SWD(2019) 118 final} -
{SWD(2019) 119 final} - {SWD(2019) 120 final} - {SWD(2019) 121 final} -
{SWD(2019) 122 final} - {SWD(2019) 123 final} - {SWD(2019) 124 final} -
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{SWD(2019) 128 final} - {SWD(2019) 129 final} - {SWD(2019) 130 final} -
{SWD(2019) 131 final} - {SWD(2019) 132 final} - {SWD(2019) 133 final} -
{SWD(2019) 134 final} - {SWD(2019) 136 final} - {SWD(2019) 137 final} -
{SWD(2019) 138 final} - {SWD(2019) 139 final}

This report has been written by the staff of the Directorate-General for Environment, European Commission. Comments are welcome, please send them to ENV-EIR@ec.europa.eu

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Executive summary

Estonia and the Environmental Implementation Review (EIR)

In the 2017 EIR, the main challenges identified with regard to implementation of EU environmental policy and law in Estonia were:

- reducing the intensity of resource use, which would improve industrial resilience;
- creating a greater capacity in recycling to offset the overcapacity in incineration and the mechanical biological treatment of waste.

In March 2017, Estonia organised an EIR dialogue focusing on waste management and the circular economy.

Also in 2017, the Commission launched the TAIEX-EIR peer-to-peer instrument (**EIR P2P**) as a new practical tool allowing peer-to-peer learning among environmental authorities. Estonia participated in EIR P2P workshops on air quality (both on effective measures and good practices aiming to reduce emissions from domestic heating) and on exchanging experiences and good practices related to reducing air pollution in zones or agglomerations where the levels of pollutants in ambient air exceed limit or target values.

Progress on meeting challenges since the 2017 EIR

Estonia's performance in terms of resource efficiency of SMEs as well as its low score on the Eco-Innovation Scoreboard show room for more improvement, especially given the country's strong overall innovation potential. There is strong public support in Estonia for increasing resource efficiency through for example Green Industry Innovation Estonia and the Environmental Investment Centre. Thus, the challenge appears to be to engage SMEs in circular economy activities.

For resource productivity, Estonia remains among the worst performing in the EU, although it has improved slightly since 2015.

Some progress on waste is underway thanks to the national waste management plan for 2014-2020, and the adoption of a circular economy action plan scheduled for 2020. However, according to the Commission's 2018 Early Warning Report, Estonia is considered at risk of non-compliance with the 2020 municipal waste recycling target of 50 %. **No progress** has been made in dealing with excess incineration and mechanical biological treatment (MBT) capacities, as these facilities are now installed and are hard to upgrade. This makes investment in separate collection and recycling capacity crucial to reach the targets. The recent administrative reform (which reduced the number of municipalities) could help increase coordination and efficiency in delivering waste collection services.

On economic instruments, significant progress was made with the Estonian government's decision taken on 17 March 2017, to introduce a vehicle registration tax dependent on the vehicle's power and CO2 emissions. However, a new subsidy has been put in place for peat and this is a step backwards. In addition, Estonia still lacks a national action plan for green public procurement but intends to cover this in their action on circular economy.

Examples of good practice

- The National Environmental Investment Centre provides good opportunities for investment in environmental projects.
- Estonia has one of the most complete prioritised action frameworks in the EU, and this was successfully used to secure funding for Natura 2000 sites from various EU funds.
- The Ministry of Environment organises an annual 'partnering event', a good example of how to involve stakeholders and the public in environmental issues.

Part I: Thematic areas

1. Turning the EU into a circular, resource-efficient, green and competitive low-carbon economy

Measures towards a circular economy

The Circular Economy Action Plan emphasises the need to move towards a life-cycle-driven 'circular' economy, reusing resources as much as possible and bringing residual waste close to zero. This can be facilitated by developing and providing access to innovative financial instruments and funding for eco-innovation.

Following the adoption of the Circular Economy Action Plan in 2015 and the setting up of a related stakeholder platform in 2017, the European Commission adopted a new package of deliverables in January 2018[1]. This included additional initiatives such as: (i) an EU strategy for plastics; (ii) a Communication on how to address the interplay between chemical, product and waste legislation; (iii) a report on critical raw materials; and (iv) a framework to monitor progress towards a circular economy[2].

Estonia's performance in terms of circular economy varies. The circular (secondary) use of material was 11.8 % in 2016 (EU-28 average 11.7 %), while the number of people employed in the circular economy in Estonia is above the EU-28 average (2.01 % of total employment in 2016, against an EU-28 average of 1.73 %).

In the 2017 Special Eurobarometer 468 on attitudes of EU citizens towards the environment, 89 % of Estonian people said they were concerned about the effects of plastic products on the environment (EU-28 average 87 %). 85 % said they were worried about the impact of chemicals (EU-28 average 90 %)[3]. There appears to be general support for circular economy initiatives and environmental protection actions in Estonian society.

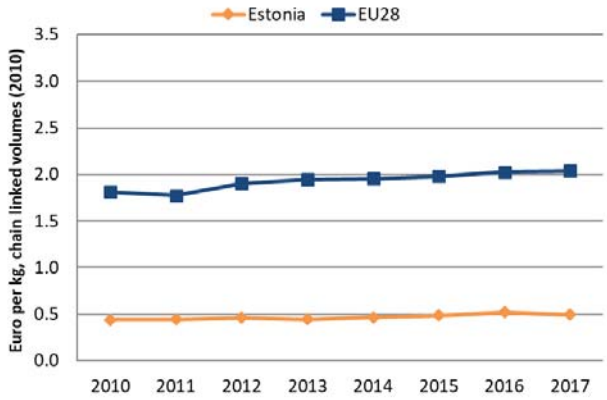
Estonia's resource productivity[4] (how efficiently the economy uses material resources to produce wealth) has slightly decreased in 2017, and now stands at 0.494 EUR/kg compared to the EU average of 2.04 EUR/kg (see Figure 1, preliminary estimate). It remains among the lowest in the EU, together with that of Bulgaria and Romania.

The Ministry of Rural Affairs, the Ministry of the Environment, and the Ministry of Economic Affairs and Communication are all in principle responsible for setting and implementing circular economy policies. This fragmented responsibility makes it harder to implement comprehensive circular policies.

During the second half of 2018, Estonia announced the preparation of a circular economy action plan and strategy. The action plan takes a long-term strategic approach, with different actions envisaged for the short- and medium term, including green public procurement, voluntary instruments and economic measures.

In 2019, the Estonian government plans to open the proposal for consultation. Adoption is planned for 2020 at the earliest.

Figure 1: Resource productivity 2010-2017[5]



The most recent waste-related policy initiative, Estonia's national waste management plan for 2014-2020, has already adopted the underlying principles of the circular economy.

In the context of the multiannual financial framework for 2014-2020, Estonia has decided to invest EUR 111 million in more resource-efficient solutions, mainly in small and medium-sized enterprises (SMEs) in the manufacturing industry. Funding went to raising awareness (events

[1] European Commission, 2018 Circular Economy Package.
[2] COM(2018) 029.
[3] European Commission, 2017, Special 486 Eurobarometer, 'Attitudes of European citizens towards the environment'.
[4] Resource productivity is defined as the ratio between gross domestic product (GDP) and domestic material consumption (DMC).
[5] Eurostat, Resource productivity.

started in 2016), training resource specialists/auditors, supporting resource audits and investing in resource-efficient solutions.

The number of EU Ecolabel products and EMAS-licensed organisations[6] in a country can give a rough measurement of the circular economy transition. These two indicators show to what extent this transition is engaging the private sector and other national stakeholders. These two indicators also show the commitment of public authorities to policies that support the circular economy. As of September 2018, Estonia had 311 products and 13 licences registered in the EU Ecolabel scheme, out of 71 707 products and 2 167 licences the EU. This shows significant take-up of these licences[7]. Moreover, as of May 2018 5 organisations from Estonia were registered in EMAS[8].

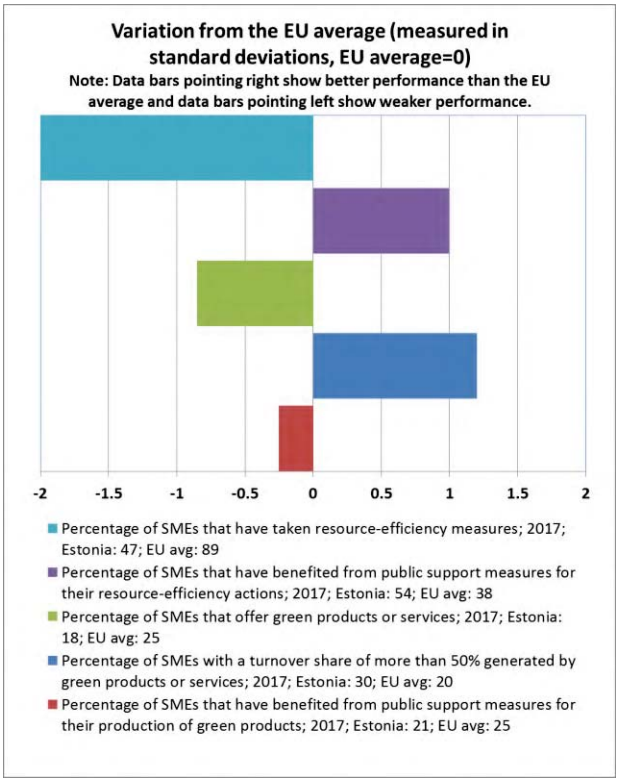
SMEs and resource efficiency

Estonian SMEs continue to perform in line with the EU-28 average on environmental aspects (see Figure 2). There is significant divergence among indicators, however. The percentage of SMEs that have taken up resource-efficiency measures is the lowest in the EU, despite the fact that nearly 50 % of Estonia's SMEs benefited from public support measures for such actions. In contrast, the proportion of SMEs whose main income is generated by green products or services is above the EU average. However, the proportion of companies offering green products and services below the EU average.

There has been considerable policy action in this area in recent years, for example Green Industry Innovation Estonia and support grants for agricultural, processing and non-farming rural businesses to use renewable energy, organic raw materials and eco-friendly processes. The Environmental Investment Centre (*Keskkonnainvesteeringute Keskuse* — KIK) also supports eco-friendly business.

The latest Eurobarometer on 'SMEs, resource efficiency and green markets'[9] asked companies about both recent resource-efficiency actions they had taken and additional resource-efficiency actions they planned to take in the next 2 years. The Eurobarometer then compared these responses with responses given to the same questions in 2015. 50 % of Estonian companies expressed the intention to not take any resource-efficiency actions – this is the 3rd highest number in the EU (EU average 19 %). There is no significant increase in ambition in any of the eight areas covered by the Eurobarometer. Energy (21 % compared to 59 % in EU) and material saving (16 % compared to 51 %) are the main areas where companies are planning future actions .

Figure 2: Environmental performance of SMEs[10]



Only 4 % of Estonian companies (compared to 22 % in the EU on average, Member State range 3 %-38 %) relied on external support in their efforts to be more resource efficient. Because of the low number of Eurobarometer respondents, however, it is impossible to specify the most used types of external assistance, except to say that none of the respondents mentioned having relied on external consulting services.

The companies surveyed regard grants and subsidies as the most significant source of support for becoming resource efficient (36 %). In addition, 20-23 % of surveyed companies mention technical or financial consultancy, technology demonstration or better cooperation among companies as useful assistance.

Estonia is known for its excellent approach to supporting ambitious innovation among new entrepreneurs. This might explain the good performance of companies that generate more than 50 % of turnover from green products and services.

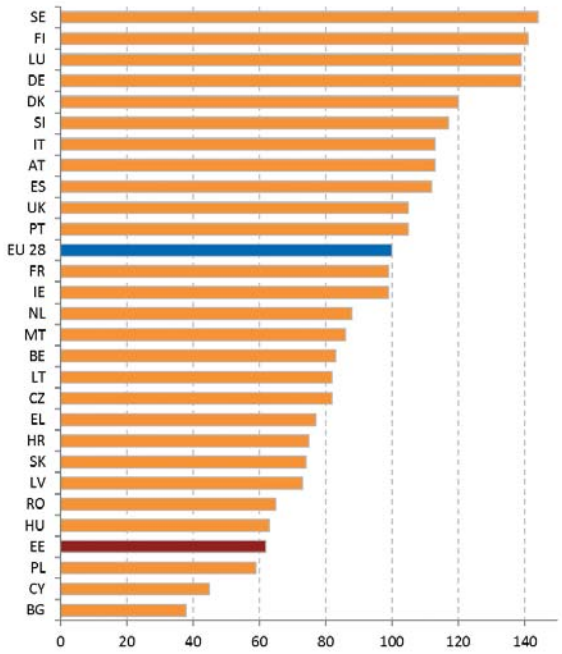
[6] EMAS is the European Commission's Eco-Management and Audit Scheme – a programme to encourage organisations to behave in a more environmentally sustainable way.
[7] European Commission, Ecolabel Facts and Figures.
[8] European Commission, Eco-Management and Audit Scheme.
[9] Flash Eurobarometer 456 'SME, resource efficiency and green markets' January 2018. The 8 dimensions were Save energy; Minimise waste; Save materials; Save Water; Recycle by reusing material internally; Design products easier to maintain, repair or reuse; Use renewable energy; Sell scrap materials to another company.
[10] European Commission, 2018 SBA fact sheet - Estonia, p. 12.

However, when it comes to investing in resource efficiency, this good performance does not spill over to SMEs. They are highly individualistic, do not rely on external assistance and lack motivation to invest in their resource efficiency. Awareness raising and pressure from peers at local level could motivate them to engage more in resource efficiency and the circular economy.

Eco-innovation

Estonia ranked 17th on the 2018 European Innovation Scoreboard, being the 3rd worse innovator in terms of performance evolution (3.2 % decrease since 2010)[11]. Estonia's eco-innovation performance does not fully reflect the country's potential. Its composite eco-innovation score of 60 lies 40 % below the EU average (see Figure 3).

Figure 3: 2017 Eco-innovation index (EU=100)[12]

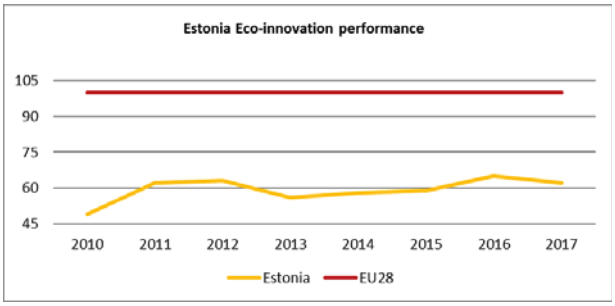


Estonia has been performing well below the EU average for several years (see Figure 4).

Resource efficiency outcomes stands out as the most alarming indicator of the index, as Estonia is lagging behind any other Member State.

One significant initiative in this area is Estonia's smart specialisation strategy, which focuses specifically on Information and Communication Technologies (ICT). It could help further diversify the country's strong industrial base, which could potentially be a burden on eco-innovation and the circular economy, as R&D intensity and added value in industries appear to be rather low.

Figure 4: Estonia's eco-innovation performance[13]



On the other hand, Estonia's strong start-up and entrepreneurial culture, well-functioning labour market, and highly advanced, digitised processing of public and governmental services support eco-innovation.

The country's focus on and interest in ICT is clear in its cleantech sector, which has shown considerable advances in the development and commercialisation of cleantech solutions.

The main driver behind Estonia's progress on eco-innovation is foreign demand, which means that, ultimately, Estonia's eco-innovation scene is highly dependent on foreign support. This creates a barrier to entry for new and small companies with low project management capabilities, and results in a general lack of funding opportunities for start-ups and established companies to engage in eco-innovative solutions.

In 2016, the Estonian government put in place several measures that support R&D. The most important of these are: i) a specific development programme for companies with distinctively high growth potential; ii) more tailored and effective support for public procurement of innovation; iii) a more active engagement of financial instruments; and iv) an industrial policy green book'[14].

The EIR dialogue held in Estonia in March 2017 included a panel discussion on eco-innovation. Participants included representatives of the Commission, an Estonian designer/software company that upcycles waste from garment production in Bangladesh/India to designer clothing, a Professor at Tallinn Technological University, and a sustainability specialist from Team Resource Wisdom, a municipality-led initiative in Jyväskylä, Finland.

Eco-innovation was also one of the priorities for the Estonian EU presidency in 2017. Estonia is looking for ways to engage young software programmers across the

[11] European Commission, European innovation Scoreboard 2018.
[12] European Commission, The Eco-Innovation Scoreboard and the Eco-Innovation Index.
[13] European Commission, The Eco-Innovation Scoreboard and the Eco-Innovation Index.
[14] European Commission, Eco-Innovation Observatory: Eco-innovation Country Profiles 2016-2017

EU in a coding competition (hackathon) specifically addressing eco-efficiency/circular economy challenges.

2019 priority action

- Stregthen the policy framework to speed up the transition towards the circular economy by all economic sectors.

Waste management

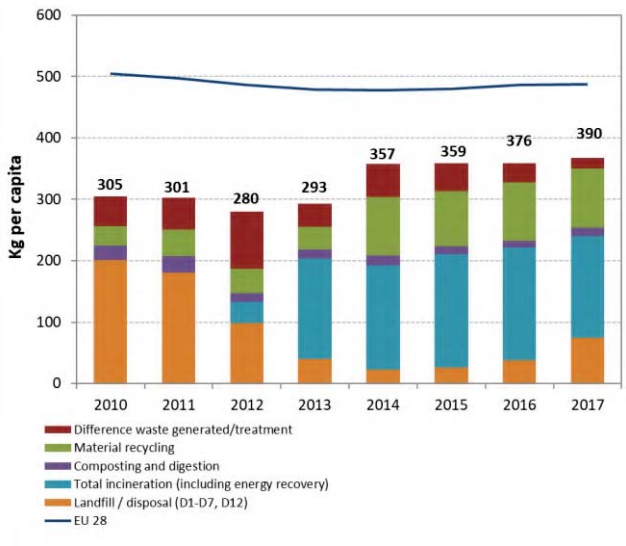
Turning waste into a resource is supported by:
(i) fully implementing EU waste legislation, which includes the waste hierarchy, the need to ensure separate collection of waste, the landfill diversion targets, etc.;
(ii) reducing waste generation and waste generation per capita in absolute terms; and
(iii) limiting energy recovery to non-recyclable materials and phasing out landfilling of recyclable or recoverable waste.

This section focuses on the management of municipal waste for which EU law sets mandatory recycling targets.[15].

As shown in Figure 5, the amount of municipal waste generated in Estonia kept increasing from 280 kg per capita in 2012 and amounted to 390 kg per capita in 2017[16]. It remained below the EU average of 487 kg, however. In addition, Estonia uses an index to measure the growth rate of municipal waste per capita in relation with the growth rate of the Gross Domestic Product (GDP) where the trend was more positive, as waste generation grows slower than GDP.

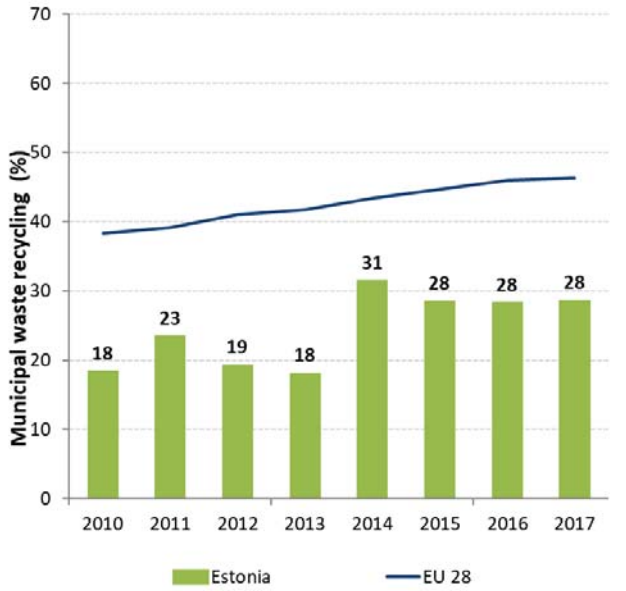
Figure 5 shows Estonia's municipal waste by treatment in terms of kg per capita, revealing a shift from landfilling to incineration. Strong conclusions on trends in waste treatment methods in Estonia are difficult to make due to adjustments made to waste data for 2010-2015. However, it is clear that Estonia made progress in reducing landfilling of municipal waste, which was at 19 % in 2017, below the EU average of around 24 %. Most of this waste was however shifted towards incineration, which is now the predominant waste treatment method in Estonia (42 % in 2017).

Figure 5: Municipal waste by treatment in Estonia 2010-2017[17]



As shown in Figure 6, Estonia's municipal waste recycling rate is at 28 %, below the EU average of 46 %. This is well below the 50 % recycling target set for 2020[18].

Figure 6: Recycling rate of municipal waste, 2010-2017[19]



Therefore, in its Early Warning Report'[20] the Commission considered that Estonia is at risk of non-compliance with

[15] See Article 11.2 of Directive 2008/98/EC. This Directive was amended in 2018 by Directive (EU) 2018/851, and more ambitious recycling targets were introduced for the period up to 2035.
[16] This important increase as compared to previous years results from a correction of data to also include the relevant fraction of packaging waste.

[17] Eurostat, Municipal waste by waste operations.
[18] Member States may choose a different method than the one used by ESTAT (and referred to in this report) to calculate their recycling rates and track compliance with the 2020 target of 50% recycling of municipal waste.
[19] Eurostat, Recycling rate of municipal waste.
[20] European Commission, Report on the implementation of waste legislation, including the early warning report for Member States at risk of missing the 2020 preparation for re-use/recycling target on municipal waste, SWD(2018)416 accompanying COM(2018)656.

the 2020 municipal waste recycling target of 50 %. Furthermore, it stated that Estonia will need to make even more efforts to comply with the recycling targets set for the post-2020 period[21]. The report identified the structural problems leading to slow progress in recycling. This refers to a number of regulatory barriers that are causing uncertainty in the country, including the possibility for municipalities to choose between tendering for the market and competition in the market, which has also slowed down investment in the sector. Separate collection is not yet efficient, with lack of focus on door-to-door services and generous derogations from the obligation to organise food waste collection, which may be limiting the system's overall performance. Extended producer responsibility schemes for packaging are not integrated in municipal collection services. The incentives for households to separate waste are not sufficient, with waste fees being too low. There are no effective instruments to force municipalities to comply with the recycling targets. Moreover, there is no incineration tax to shift waste management towards recycling.

There have been some positive developments since the 2017 EIR and these are likely to improve the situation in Estonia. They include an administrative reform reducing the number of municipalities which could bring more coordination and more efficiency in delivering services. In addition, mandatory audits of producers placing packaging on the market have already led to positive corrections of the data on packaging put on the market. This translates into higher financial contributions to the system and puts more pressure on producers to meet their packaging recycling targets.

The EIR dialogue held in March 2017 addressed waste issues. Estonia is committed to further reducing incineration and increasing recycling, and to working on all areas that were identified as needing improvement.

2019 priority actions

- Introduce new policy instruments, including economic ones, to promote waste prevention, make reuse and recycling more economically attractive and shift reusable and recyclable waste away from incineration and landfilling.
- Set mandatory targets for recycling and generation of residual waste at the municipal level, with financial penalties for non-compliance. Develop and run implementation support programmes for municipalities to help support their efforts to organise separate collection and improve recycling performance.
- Improve and extend separate collection of waste, including for bio-waste. Establish minimum service standards for separate collection (e.g. frequency of collections, types of containers etc.) in municipalities to ensure high capture rates of recyclable waste, and put in place civic amenity sites. Use economic instruments such as pay-as-you-throw.
- Shift reusable and recyclable waste away from incineration.
- Improve the functioning of extended producer responsibility systems, in line with the general minimum requirements on extended producer responsibility[22].

Climate change

The EU has committed to undertaking ambitious climate action internationally as well as in the EU, having ratified the Paris Climate Agreement on 5 October 2016. The EU targets are to reduce greenhouse gas (GHG) emissions by 20 % by 2020 and by at least 40 % by 2030, compared to 1990. As a long-term target, the EU aims to reduce its emissions by 80-95 % by 2050, as part of the efforts required by developed countries as a group. Adapting to the adverse effects of climate change is vital to alleviate its already visible effects and improve preparedness for and resilience to future impacts.

The EU emissions trading system (EU ETS) covers all large greenhouse gas emitters in the industry, power and aviation sectors in the EU. The EU ETS applies in all Member States and has a very high compliance rate. Each year, installations cover around 99 % of their emissions with the required number of allowances.

For emissions not covered by the EU ETS, Member States have binding national targets under the effort sharing legislation. Estonia's emissions were below its annual emission allocations (AEAs) in each of the years 2013-2016. According to preliminary data, emissions exceeded the AEA for 2017 by 1 percentage point. For 2020, Estonia's national target under the EU Effort Sharing Decision is to avoid increasing emissions by more than 11 % compared to 2005. For 2030, its national target under the Effort Sharing Regulation is to reduce emissions by 13 % compared to 2005.

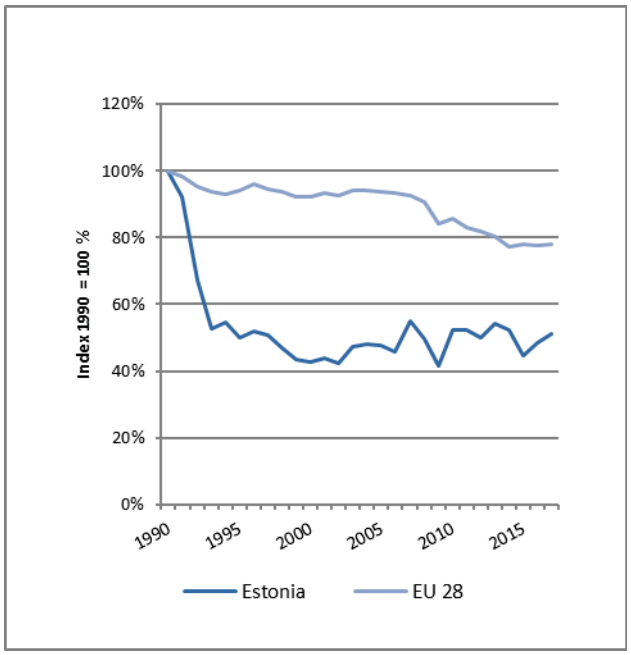
The Estonian low-carbon strategy, 'General Principles of Estonian Climate Policy until 2050 (Climate Policy 2050)' was adopted by the Parliament in April 2017. The

[21] Directive (EU) 2018/851, Directive (EU) 2018/852, Directive (EU) 2018/850 and Directive (EU) 2018/849 amend the previous waste legislation and set more ambitious recycling targets for the period up to 2035. These targets will be taken into consideration to assess progress in future Environmental Implementation Reports.

[22] Directive (EU) 2018/851.

strategy presents a long-term vision of Estonia's climate policy and actions to be implemented by 2050. According to the guidelines, Estonia will aim to create a competitive low-carbon economy and reduce greenhouse gas emissions in the energy, transportation, industry, agriculture, forestry and waste management sectors by at least 80 % by 2050, compared to 1990 levels. This would mean a reduction of Estonia's current greenhouse gas emissions to the level of 8 million tonnes of CO2eq by 2050 (MoE, 2016). Estonia also has interim goals for 2030 (reduction by 70 % compared to 1990 levels) and for 2040 (reduction by 72 % compared to 1990 levels). The strategy's targets and guidelines will be implemented with the help of sector-specific developments plans.

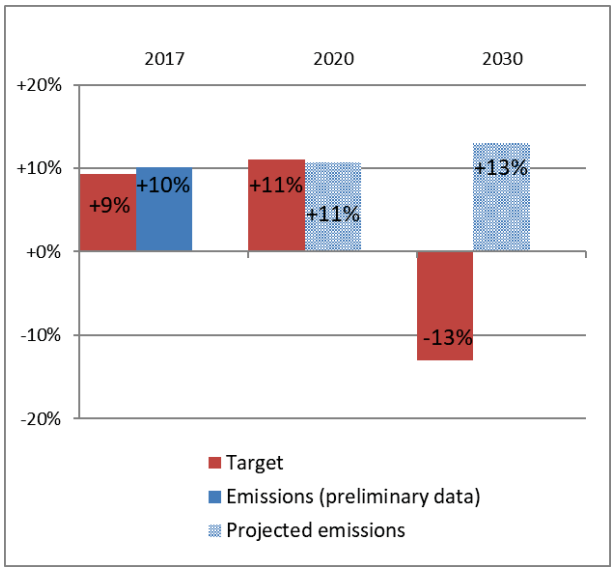
Figure 7: Change in total GHG emissions 1990-2017 (1990=100 %)[23].



Starting from 2019 and at least once every four years, the government will present the Estonian parliament, Riigikogu, with a report considering the main principles of climate policy in the preparation and implementation of cross-sectoral and sectoral strategies (NECP Survey, 2017).

Regarding F-gases (fluorinated greenhouse gases), Member States had to put in place training and certification programmes and rules for penalties and notify the Commission of them by 2017. Estonia has notified both measures.

Figure 8: Targets and emissions under the Effort Sharing Decision and Effort Sharing Regulation [24]



The accounting of GHG emissions and removals from forests and agriculture is governed by the Kyoto Protocol. For the land use sector, Estonia's reported quantities under the Kyoto Protocol show net removals of on average -3.6 Mt CO_2-eq for 2013-2016. This means that Estonia contributes with 0.9 % to the annual average sink of -384.4 Mt CO_2-eq in the EU-28. Accounting for this period shows net credits of on average -0.8 Mt CO_2-eq, which corresponds to 0.7 % of the EU-28 accounted sink of -115.7 Mt CO_2-eq. Reported net removals and accounted net credits show a continuous increase.

The EU Strategy on adaptation to climate change, adopted in 2013, aims to make Europe more climate-resilient, by promoting action by Member States, better-informed decision making, and promoting adaptation in key vulnerable sectors. By adopting a coherent approach and providing for improved coordination, it seeks to enhance the preparedness and capacity of all governance levels to respond to the impacts of climate change.

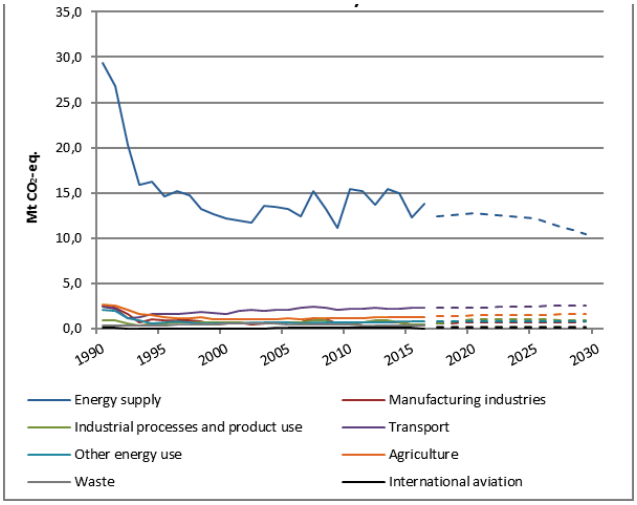
The Estonian national strategy on climate change adaptation was adopted in 2017. It calls for eight sub-goals in the following priority areas: human health and rescue preparedness, land use and spatial planning, natural environment, bio-economy, economy, society, infrastructure and buildings, and energy and energy supply systems. The action plan to implement the adaptation strategy was developed in parallel with the strategy itself and supports its goals and sub-goals. Sectoral mainstreaming is monitored and reported annually through a centralised National Adaptation

[23] Annual European Union greenhouse gas inventory 1990–2016 (EEA greenhouse gas data viewer). *Proxy GHG emission estimates for 2017Approximated EU greenhouse gas inventory 2017* (European Environment Agency). Member States national projections, reviewed by the European Environment Agency.

[24] European Environmental Agency, Annual European Union greenhouse gas inventory 1990–2016. Proxy GHG emission estimates for 2017, Member States national projections.

Strategy (NAS) / National Adaptation Plan report published by the Ministry of Environment. Furthermore, the Ministry of Environment presents an overview of the execution of the NAS to the government once a year.

Figure 9: GHG emissions by sector (Mt. CO2-eq.) (historical data 1990-2016; projections 2017-2030)[25].



Total revenues from the auctioning of emission allowances under the EU ETS over 2013-2017 were EUR 110 million in Estonia. National legislation states that 50 % of the revenues must be used for energy and climate purposes. 47 % of the auctioning revenues have so far been spent, or are planned to be spent, on climate and energy purposes.

A good practice, taking place in Tallinn, is the 'fix the façade' programmes to combat climate change[26].

2019 priority action

In this report, no priority actions have been included on climate action, as the Commission will first need to assess the draft national energy and climate plans which the Member States had to send by the end of 2018. These plans should increase the consistency between energy and climate policies and could therefore become a good example of how to link sector-specific policies on other interlinked themes such as agriculture-nature-water and transport-air-health.

[25] Annual European Union greenhouse gas inventory 1990–2016 (EEA greenhouse gas data viewer). *Proxy GHG emission estimates for 2017Approximated EU greenhouse gas inventory 2017* (European Environment Agency). Member States national projections, reviewed by the European Environment Agency.

[26] European Commission, Good Practice Report, European Green Capital 2018, p.64.

2. Protecting, conserving and enhancing natural capital

Nature and biodiversity

The EU biodiversity strategy aims to halt the loss of biodiversity in the EU by 2020. It requires the full implementation of the Birds and Habitats Directives to achieve favourable conservation status of protected species and habitats. It also requires that the agricultural and forest sectors help to maintain and improve biodiversity.

Biodiversity strategy

The Estonian government approved the national biodiversity strategy and action plan (NBSAP) in 2012, with a timeline extending until 2020.

Setting up a coherent network of Natura 2000 sites

By late 2017, 17.9 % of Estonia's national territory was covered by Natura 2000 sites (EU average 18.2 %), with Birds Directive Special protection Areas (SPAs) covering 13.7 % (EU average 12.4 %) and Habitats Directive Sites of Community Importance (SCIs) covering 17.3 % (EU average 13.9 %)[27].

Altogether, there are 567 Natura 2000 sites in Estonia. The latest assessment of the Natura 2000 network shows that the SCI part of Estonia's Natura 2000 network is almost complete in the Marine Baltic region and close to being complete in the Boreal region.

Designating Natura 2000 sites and setting conservation objectives and measures

Estonia has designated most of its Natura 2000 sites as special areas of conservation. 348 of them have management plans in place; representing 86.3 % of the total number of Estonian sites. Action plans for semi-natural habitats, protected marshes and a number of threatened species have also been established.

Estonia's number of nature-related complaints to the EU is low compared to that of many other countries. Complaints are mainly linked to public participation and assessment of infrastructure projects. Estonian NGOs often manage to handle the complaints at national or local level.

Estonia has provided one of the most complete prioritised action frameworks in the EU. It was successfully used to ensure funding for Natura 2000 sites from various EU funds e.g. rural development plan (RDP) and the Cohesion Fund. Estonia has also been active in applying for LIFE funding to manage its Natura 2000 sites.

About 25 % of forests located on Estonia's Natura 2000 sites are on privately owned land. A recent study[28] concluded that the connectivity of forest protected areas should be improved.

Progress in maintaining or restoring favourable conservation status of species and habitats

The 2017 EIR was based on the latest (2012) report from Member States on the conservation status of habitats and species. New data will be available for the next EIR reporting cycle.

2019 priority actions

- Complete the designation process for special areas of conservation and put in place clearly defined conservation objectives and the necessary conservation measures for the sites. Provide adequate resources for their implementation in order to maintain/restore species and habitats of community interest to a good conservation status across their natural range.
- Ensure that Natura 2000 management plans are being effectively implemented.
- Develop and promote smart and streamlined ways of implementation, in particular as regards site and species permitting procedures, ensuring necessary knowledge and data availability and improving communication with stakeholders.

[27] EEA, Natura 2000 Barometer.

[28] Institute of Ecology and Earth Sciences, University of Tartu, Alategevuse LOORA teadusaruanne.

Maintaining and restoring ecosystems and their services

The EU biodiversity strategy aims to maintain and restore ecosystems and their services by including green infrastructure in spatial planning and restoring at least 15 % of degraded ecosystems by 2020. The EU green infrastructure strategy promotes the incorporation of green infrastructure into related plans and programmes.

The EU has provided guidance on the further deployment of green and blue infrastructure in Estonia[29] and a country page on the Biodiversity Information System for Europe (BISE)[30]. This information will also contribute to the final evaluation of the EU Biodiversity Strategy to 2020.

Estonia views spatial planning as the appropriate mechanism through which to create ecological networks. Green infrastructure is developed through the Estonian Green Network, based on a national spatial plan and county-level thematic spatial plans. The Green Network was set up in 2000 and covers about half of Estonia's territory.

While the principle of the ecosystem approach has been introduced into all major national programmes, strategies and development plans, there is no methodology for how it should be implemented in practice. Furthermore, the implementation of county plans remains a challenge. In larger cities, especially Tallinn, the area, cohesion and biodiversity of the Green Network is decreasing and the pressure on protected areas is growing. There is therefore room to improve Tallin's Green Network. The Estonia 2030+ national spatial plan[31] envisages national guidelines that would improve the quality of space while taking into account public interest.

Several LIFE projects that include green infrastructure elements are ongoing. They relate to the conservation and restoration of Mire habitats, Estonian alvar grasslands, and petrifying spring habitats. EU funds are the main source of funding for green infrastructure in Estonia.

[29] The recommendations of the green infrastructure strategy review report and the EU Guidance on a strategic framework for further supporting the deployment of EU-level green and blue infrastructure.
[30] Biodiversity Information System for Europe.
[31] Regionaalministri Valitsemisala, Estonia 2030+ national spatial plan.

Estimating natural capital

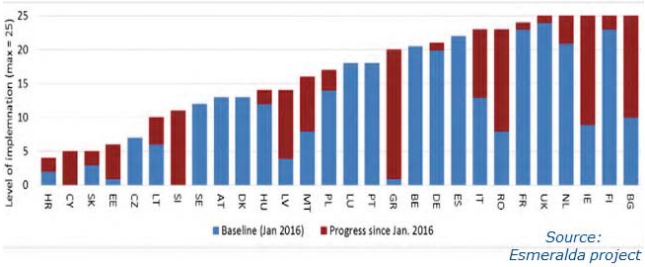
The EU biodiversity strategy calls on Member States to map and assess the state of ecosystems and their services [32] in their national territories by 2014, assess the economic value of such services and integrate these values into accounting and reporting systems at EU and national level by 2020.

The mapping of Estonian ecosystem services was started in 2017 and will be finalised in early 2019. National and local spatial planners and the environmental assessment community are working in groups to integrate the mapping and assessment of ecosystem services into decision-making tools at national and local level by 2020. The project is managed by the Estonian Environment Agency.

Methods that help assess and map the ecosystem services of marine and inland waters were developed in 2016[33].

At the MAES (mapping and assessment of ecosystems and their services) working group meeting held in Brussels in September 2018, it was shown that Estonia has made some progress in implementing MAES. It was noted that progress has been communicated through the BISE (Biodiversity Inforamtion System for Europe) platform (Figure 9). However, last updates from Estonia were received in September 2016, making the progress insufficient. This assessment was made by the ESMERALDA project[34] and based on 27 implementation questions. The assessment is updated every 6 months.

Figure 10: Implementation of MAES (September 2018)



Source: Esmeralda project

Estonia has not yet set up a business and biodiversity platform[35][36], a key tool for promoting and facilitating natural capital assessments among business and financial service providers. Such a platform would help Estonia

[32] Ecosystem services are benefits provided by nature such as food, clean water and pollination on which human society depends.
[33] BISE, Estonia.
[34] Esmeralda Project.
[35] Natural Capital Coalition, Natural Capital Protocol
[36] Business and Biodiversity, The European Business and Biodiversity Campaign aims to promote the business case for biodiversity in the EU Member States through workshops, seminars and a cross media communication strategy.

achieve the goals of the EU biodiversity strategy.

2019 priority action

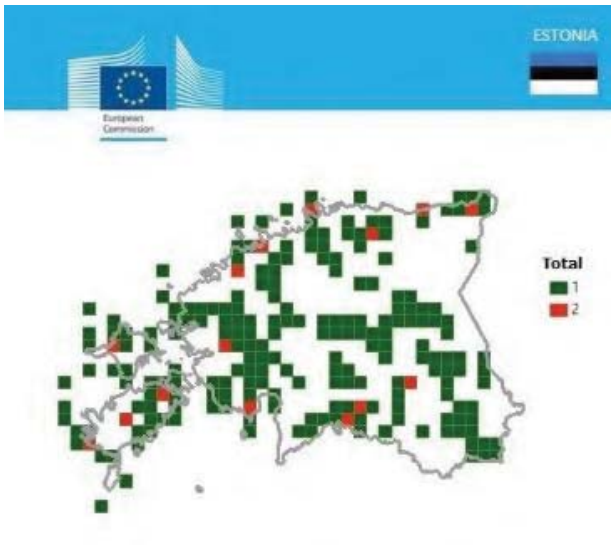
- Strengthen support for the mapping and assessment of ecosystems and their services, and valuation work and develop natural capital accounting systems.

Invasive alien species

Under the EU biodiversity strategy, the following are to be achieved by 2020:
(i) invasive alien species are identified;
(ii) priority species controlled or eradicated; and
(iii) pathways managed to prevent new invasive species from disrupting European biodiversity.
This is supported by the Invasive Alient Species Regulation, which entered into force on 1 January 2015.

The report on the baseline distribution (Figure 10), for which Estonia could only review its country-level data (there was a delay in reviewing the grid level data due to format incompatibilities), shows that of the 37 species on the first EU list, seven have been observed in Estonia. Of these, four are established: Persian and sosnowsky's hogweed (*Heracleum persicum* and *sosnowskyi*), signal crayfish (*Pacifastacus leniusculus*) and amur sleeper (*Perccottus glenii*). Sosnowsky's hogweed seems to be the most widespread.

Figure 11: Number of IAS of EU concern, based on available georeferenced information for Estonia[37]



Between the entry into force of the EU list and 18 May 2018, Estonia has submitted one early detection notification to the Commission, for spiny-cheek crayfish (*Orconectes limosus*). Estonia subsequently notified its decision not to apply eradication measures. Based on the evidence provided by Estonia, the Commission did not reject this decision.

With regard to the IAS Regulation, Estonia has notified the Commission of its competent authorities responsible for implementation, as well as of its national provisions on penalties applicable to infringements. It has therefore fulfilled its notification obligations.

Soil protection

The EU soil thematic strategy underlines the need to ensure a sustainable use of soils. This entails preventing further soil degradation and preserving its functions, as well as restoring degraded soils. The 2011 Roadmap to a Resource Efficient Europe states that by 2020, EU policies must take into account their direct and indirect impact on land use.

Soil is an extremely fragile finite resource and it is increasingly degrading in the EU.

Estonia ranks below the EU average as regards artificial land coverage, with 1.9 % of artificial land (EU-28 average: 4.1 %). Its population density is 30.3/km^2, which is below the EU average of 118[38].

Contamination can severely reduce soil quality and threaten human health or the environment. A recent report of the European Commission[39] estimated that potentially polluting activities have taken or are still taking place on approximately 2.8 million sites in the EU. At EU level, 650 000 of these sites have been registered in national or regional inventories. 65 500 contaminated sites have already been remediated. Estonia has registered 300 sites where potentially polluting activities have taken or are taking place, and has already remediated or applied aftercare measures on 110 sites.

Soil erosion by water is a natural process, but this natural process can be aggravated by climate change and human activities such as inappropriate agricultural practices, deforestation, forest fires or construction works. High levels of soil erosion can reduce productivity in agriculture and can have negative and transboundary impacts on biodiversity and ecosystem service. High levels of soil erosion can also have negative and transboundary effects on rivers and lakes (due to increased sediment volumes and transport of contaminants). According to the RUSLE2015 model[40],

[37] Tsiamis K; Gervasini E; Deriu I; D`amico F; Nunes A; Addamo A; De Jesus Cardoso A. Baseline Distribution of Invasive Alien Species of Union concern. Ispra (Italy): Publications Office of the European Union; 2017, EUR 28596 EN, doi:10.2760/772692.

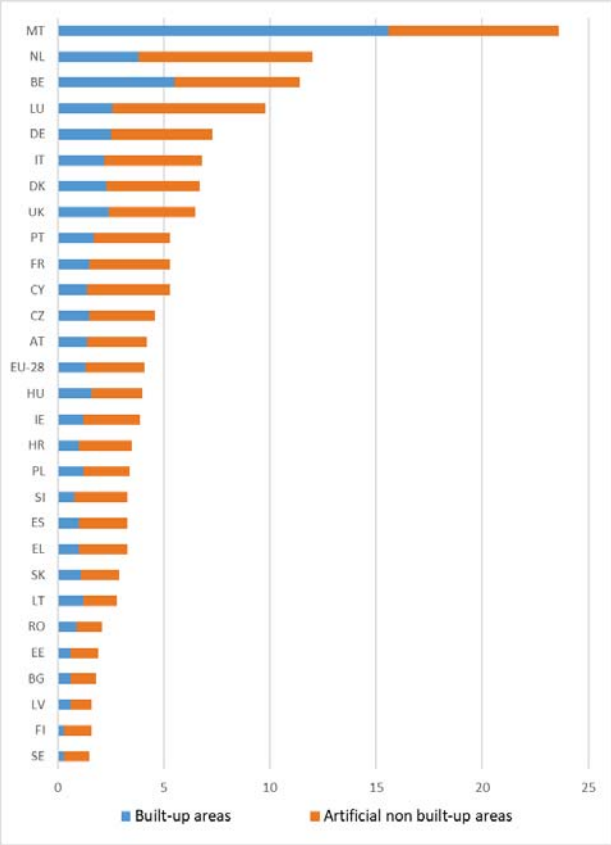
[38] Eurostat, Population density by NUTS 3 region.

[39] Ana Paya Perez, Natalia Rodriguez Eugenio Status of local soil contamination in Europe: Revision of the indicator "Progress in the management Contaminated Sites in Europe",2018).

[40] Panagos, P., Borrelli, P., Poesen, J., Ballabio, C., Lugato, E., Meusburger, K., Montanarella, L., Alewell, C., The new assessment of

Estonia has an average soil loss rate by water of 0.21 tonnes per hectare per year (t ha^{-a} yr^{-y}), compared to the EU mean of 2.46 t ha^{-a} yr^{-y}. This indicates that soil erosion in Estonia is low on average.

Figure 12: Proportion of artificial land cover, 2015 [41]



These figures are the output of an EU level model and can therefore not be considered as locally measured values. The actual rate of soil loss can vary strongly within a Member State depending on local conditions.Soil organic matter plays an important role in the carbon cycle and in climate change. Soils are the second largest carbon sink in the world after the oceans.

Marine protection

The EU coastal and marine policy and legislation require that by 2020 the impact of pressures on marine waters be reduced to achieve or maintain good environmental status and ensure that coastal zones are managed sustainably.

The Marine Strategy Framework Directive (MSFD)[42] aims to achieve Good environmental status (GES) of the EU's marine waters by 2020. To that end, Member States must develop a marine strategy for their marine waters, and cooperate with the EU countries that share the same marine (sub)region. In Estonia's case, the Baltic Marine Environment Protection Commission (Helsinki Commission) plays an important role here.

The marine strategies comprise different steps to be developed and implemented over six-year cycles. The latest step required Member States to develop their programme of measures and report it to the Commission by 31 March 2016.

The Commission could not assess whether the Estonian measures were appropriate to reach GES [43] because Estonia reported its measures too late for the Commission to include them in the assessment exercise [44].

2019 priority action

- Ensure timely reporting on the various elements under the Marine Strategy Framework Directive so that Estonia can be part of future Commission assessments.

soil loss by water erosion in Europe, (2015) Environmental Science and Policy, 54, pp. 438-447.

[41] Eurostat, Land covered by artificial surfaces by NUTS 2 regions.

[42] Directive 2008/56/EC.

[43] Ref to Commission report assessing Member States' programme of measures under the MSFD to be added once published (July 2018).

[44] Estonia reported its programme of measures to the Commission on 24 April 2017 whereas the due date was 31 March 2016.

3. Ensuring citizens' health and quality of life

Air quality

EU clean air policy and legislation require the significant improvement of air quality in the EU, moving the EU closer to the quality recommended by the World Health Organisation. Air pollution and its impacts on human health, ecosystems and biodiversity should be further reduced with the long-term aim of not exceeding critical loads and levels. This requires strengthening efforts to reach full compliance with EU air quality legislation and defining strategic targets and actions beyond 2020.

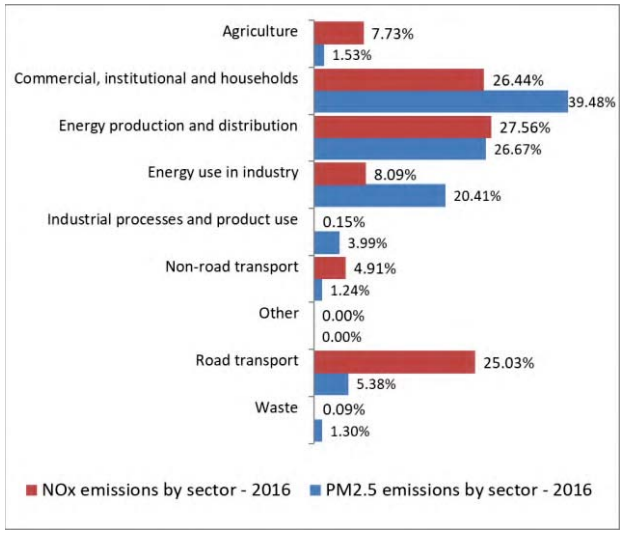
The EU has developed a comprehensive body of air quality legislation[45], which establishes health-based standards and objectives for a number of air pollutants.However, according to the European Court of Auditors (ECA)[46], EU action to protect human health from air pollution has not delivered its expected impact.

The emissions of several air pollutants have decreased significantly in Estonia[47]. The emission reductions between 1990 and 2014 mentioned in the previous EIR continued between 2014 and 2016. Emissions of sulphur oxides (SO_x) fell by 26.9 %, emissions of ammonia (NH_3) fell by 1.24 %, emissions of volatile organic compounds (NMVOCs) fell by 2.98 %, emissions of fine particulate matter ($PM_{2.5}$) fell by 5.67 % and emissions of nitrogen oxides (NO_x) fell by 10.16 % (see also Figure 13 on the total $PM_{2.5}$ and NO_x emissions per sector).

Air quality in Estonia is reported to be generally good, with exceptions. Despite the reduction in emissions, Estonia needs to make additional efforts to meet its emission reduction commitments (compared with 2005 levels) set by the new National Emissions Ceilings Directive [48] for 2020 -2029 and for any year from 2030.

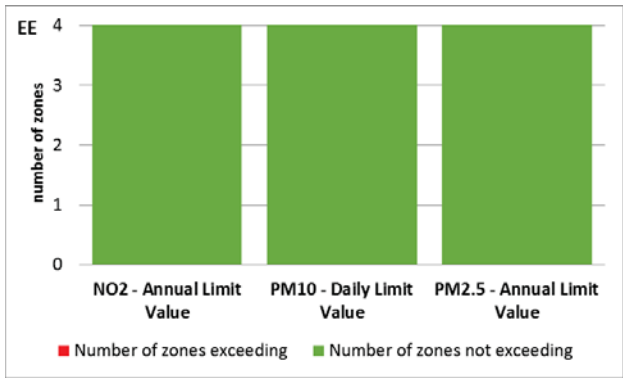
For 2017, Estonia did not report any values that exceeded EU air quality standards[49]. However, the European Environment Agency[50] estimated that in 2015 more than 560 premature deaths were attributable to air pollution.

Figure 13: $PM_{2.5}$ and NO_x emissions by sector in Estonia[51]



See also Figure 13 on the number of air quality zones that exceed limit values of NO_2, $PM_{2.5}$, and PM_{10}.

Figure 14: Air quality zones exceeding EU air quality standards in 2017[52]



In a TAIEX-EIR P2P workshop held in Bratislava, Slovakia on 2–3 July 2018, experts from Slovakia, Hungary, Czechia, Estonia, Latvia, Lithuania, Germany, Belgium, Poland, Ireland, the United Kingdom, Denmark and Bulgaria exchanged knowledge and experience on effective measures and good practices related to reducing emissions from domestic heating.

A TAIEX-EIR P2P workshop held in Graz, Austria on 10-11 September 2018 brought together environmental authorities, regions and cities from Austria, Croatia,

[45] European Commission, Air Quality Standards, 2016.
[46] European Court of Auditors, Special report no 23/2018: Air pollution: Our health still insufficiently protected.
[47] See EIONET Central Data Repository and Air pollutant emissions data viewer (NEC Directive)
[48] Directive 2016/2284/EU
[49] EEA, EIONET Central Data Repository. .
[50] EEA, Air Quality in Europe – 2018 Report, p.64. Please see details in this report as regards the underpinning methodology.
[51] 2016 NECD data submitted by Member State to the EEA.
[52] EEA, EIONET Central Data Repository. Data reflects the reporting situation as of 26 November 2018.

Estonia, Germany, Hungary, Italy, Lithuania, Poland, Romania, the Slovak Republic, Spain and Sweden. They exchanged experiences and good practice on reducing air pollution. They also discussed the effectiveness of air quality plans in zones or agglomerations where the levels of pollutants in ambient air exceed limit or target values.

2019 priority action

- Take action, in the context of the forthcoming national air pollution control programme (NAPCP), to reduce the main emission sources, including through the tax system.

Industrial emissions

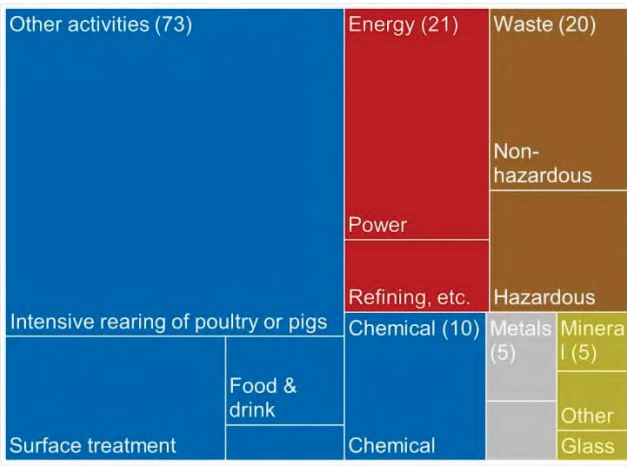
The main objectives of EU policy on industrial emissions are to:
(i) protect air, water and soil;
(ii) prevent and manage waste;
(iii) improve energy and resource efficiency; and
(iv) clean up contaminated sites.
To achieve this, the EU takes an integrated approach to the prevention and control of routine and accidental industrial emissions. The cornerstone of the policy is the Industrial Emissions Directive[53] (IED).

The below overview of industrial activities regulated by the IED is based on the 'industrial emissions policy country profiles' project [54].

In Estonia, around 135 industrial installations must have a permit according to the IED. In 2015, the industrial sectors in Estonia with the most IED installations were 'other activities' (55 % of total - mainly intensive rearing of poultry or pigs), energy-power and waste management (see Figure 14).

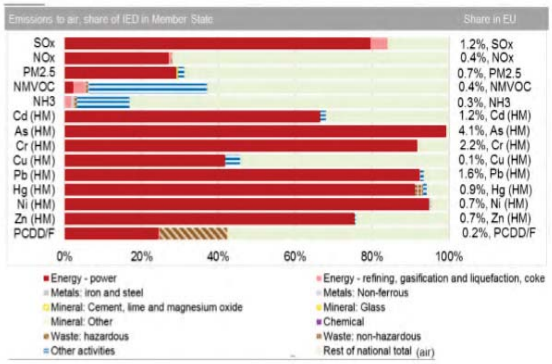
The energy-power sector was identified as contributing the most emissions to air in Estonia, with pollutants including sulphur oxides (SOx), nitrogen oxides (NOx), particulate matter ($PM_{2.5}$) and heavy metals. The 'other activities' sector (mainly intensive rearing of poultry or pigs) significantly contributes to emissions of non-methane volatile organic compounds (NMVOCs) and ammonia (NH_3). The breakdown is shown in Figure 15.

Figure 15: Number of IED industrial installations by sector, Estonia (2015)[55]



The 'other activities' and energy-power sectors contributed the most emissions to water. The energy-power, intensive rearing of poultry or pigs and waste management sectors were identified as contributing the most to waste generation.

Figure 16: Emissions to air from IED sectors and all other national total air emissions, Estonia (2015)



The enforcement approach under the IED creates strong rights for citizens to have access to relevant information and to participate in the permitting process for IED installations. This empowers NGOs and the general public to ensure that permits are appropriately granted and their conditions respected.

Best available techniques (BAT) reference documents and BAT conclusions are developed through the exchange of information between Member States, industrial associations, NGOs and the Commission. This ensures a good collaboration with stakeholders and a better application of the IED's rules.

Thanks to the national competent authorities' efforts to apply the legally binding BAT conclusions and associated

[53] Directive 2010/75/EU covers industrial activities carried out above certain thresholds. It covers energy industry, metal production, mineral and chemical industry and waste management, as well as a wide range of industrial and agricultural sectors (e.g. intensive rearing of pig and poultry, pulp and paper production, painting and cleaning).
[54] European Commission, Industrial emissions policy country profile – Estonia.
[55] European Commission, Industrial emissions policy country profile – Estonia.

BAT emission levels in environmental permits, pollution has decreased considerably and continuously in the EU.

For example, by applying the recently adopted BAT emission levels for large combustion plants, emissions of sulphur dioxide will be cut on average by between 25 % and 81 %, nitrogen oxide by between 8 % and 56 %, dust by between 31 % and 78 % and mercury by between 19 % and 71 %.

2019 priority actions

- Review permits to ensure that they comply with the newly adopted BAT conclusions.
- Strengthen control and enforcement to ensure compliance with the BAT conclusions.
- Address water and air pollution from the power sector and intensive rearing of poultry or pigs.

Noise

The Environmental Noise Directive provides for a common approach to avoiding, preventing and reducing the harmful effects of exposure to environmental noise.

Excessive noise from aircrafts, railways and roads is one of the main causes of health problems in the EU [56].

Based on a limited set of data calculated by the European Environment Agency in 2017[57], environmental noise causes at least 100 premature deaths per year in Estonia and is responsible for around 300 hospital admissions. Noise also disturbs the sleep of roughly 1 200 people in Estonia. The noise mapping for the previous reporting round (reference year 2011) is complete, as are the action plans (reference year 2013).

Tallinn's main source of noise is traffic, which is significant due to the high commuting levels caused by urban sprawl. Tallinn monitors compliance with environmental noise requirements when planning new noise-sensitive projects; it is mandatory to carry out a noise survey during the planning stage for new sites that could potentially cause a noise disturbance. Noise maps and noise reduction action plans are available on Tallinn's website. Tallinn displays real-time noise levels on noise boards.

The noise reduction action plan prepared for Tallinn in 2013 defined quiet areas. Quiet areas have been divided into two categories based on noise level: quiet areas (noise level Lday ≤ 55 dB) and critical quiet areas (noise level Lday ≥ 55 dB). In the last 10 years, Tallinn has several quiet areas and has made them accessible to citizens. In 2015, just under 70 % of Estonians reported to be satisfied with the level of noise in their city[58]. These instruments, adopted after a public consultation had been carried out, should include the measures to keep noise low or reduce it.

Water quality and management

EU legislation and policy requires that the impact of pressures on transitional, coastal and fresh waters (including surface and ground waters) be significantly reduced. Achieving, maintaining or enhancing a good status of water bodies as defined by the Water Framework Directive will ensure that EU citizens benefit from good quality and safe drinking and bathing water. It will further ensure that the nutrient cycle (nitrogen and phosphorus) is managed in a more sustainable and resource-efficient way.

The existing EU water legislation[59] puts in place a protective framework to ensure high standards for all water bodies in the EU and addresses specific pollution sources (for example, from agriculture, urban areas and industrial activities). It also requires that the projected impacts of climate change are integrated into the corresponding planning instruments e.g. flood risk management plans and river basin management plans, including programme of measures which include the actions that Member States plan to take in order to achieve the environmental objectives.

Water Framework Directive

Estonia has adopted and reported the second generation of River Basin Management Plans under the Water Framework Directive and the European Commission has assessed the status and the development since the adoption of the first River Basin Management Plans, including suggested actions in the EIR report 2017.

The **most significant pressures on** surface water bodies were unknown anthropogenic pressure (71% of water bodies) and dams, barriers and locks affecting 25% of water bodies.

For groundwater bodies, "no significant pressure" was reported for 77% of groundwater bodies. The most

[56] WHO/JRC, Burden of disease from environmental noise, Fritschi, L., Brown, A.L., Kim, R., Schwela, D., Kephalopoulos, S. (eds), World Health Organization, Regional Office for Europe, Copenhagen, Denmark, 2011.
[57] European Environment Agency, Noise Fact Sheets 2017.

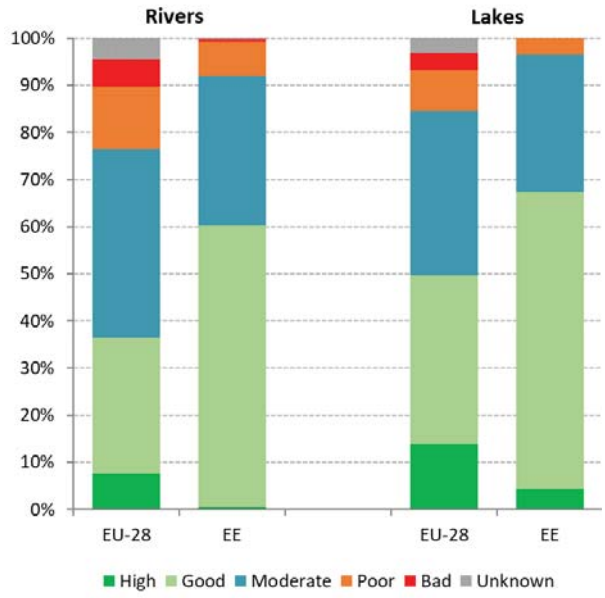
[58] European Commission, The 7th Report on Economic, Social and Territorial Cohesion, 2017, p.120.
[59] This includes the Bathing Waters Directive (2006/7/EC), the Urban Waste Water Treatment Directive (91/271/EEC) (on discharges of municipal and some industrial wastewaters), the Drinking Water Directive (98/83/EC) (on potable water quality), the Water Framework Directive (2000/60/EC) (on water resources management), the Nitrates Directive (91/676/EEC) and the Floods Directive (2007/60/EC).

significant pressures were contaminated sites or abandoned industrial sites (point sources 15% and diffuse polution 13%), waste disposal sites (13%) and discharges not connected to sewerage network (13%)

The **most significant impact** on surface water bodies was classified as an "unknown impact type" (58.4% of water bodies), followed by altered habitats due to morphological changes (21%). The situation was similar in groundwater bodies, with 77% of water bodies with reported impacts classified as unknown.

The proportion of water bodies in good or better ecological status or potential is 60% for rivers, 67% for lakes and 13% for coastal waters as illustrated in Figure 16 but there is a risk that the proportion of water bodies in good ecological status is overestimated because of the low confidence in the classification of most of those water bodies.

Figure 17: Ecological status or potential of surface water bodies in Estonia[60]



A significant proportion of monitoring sites are used for assessment of ecological status (100%, 98%, 80% and 78% of sites for lakes, rivers, territorial and coastal waters respectively) with a considerably lower proportion of sites used for monitoring of chemical status (26%, 38%, 70% and 30% of sites for lakes, rivers, territorial and coastal water respectively).

Between the first and second River Basin Management Plans there was a large decrease in the proportion of surface water bodies with **good chemical status** from 99 to 10% and a significant increase in the proportion with unknown status from 0 to 88%. Methodological changes of the assessment of status as well as increase in the monitoring data available explain the large decrease in the proportion of surface water bodies with good chemical status. 5% of the total groundwater body area is in poor chemical status.

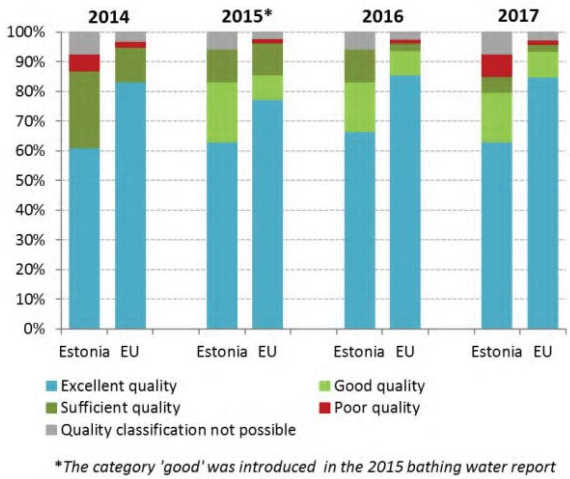
38 out of 39 groundwater bodies (97%) were in **good quantitative status** and 1 (3%) was failing good status. In terms of area this means that 1% was failing good quantitative status.

The implementation of the measures identified in the first Programme of Measures has started but unexpected planning delays, lack of finance, and the lack of a mechanism for implementing measures were identified as obstacles to the implementation. Pressures causing failure of objectives in the Water Framework Directive have been identified in the second River Basin Management Plans and it is reported that measures have been put in place for most of these.

Bathing Water Directive

Figure 16 shows that in 2017, out of Estonia's 54 bathing waters, 63 % were of excellent quality, 16.7 % of good quality and 5.6 % of sufficient quality (compared to 66.7 %, 16.7 % and 11.1 % respectively in 2016). However, four bathing waters were of poor quality[61]. Detailed information on Estonia's bathing waters is available on a national web portal [62] and on an interactive map viewer designed and hosted by the European Environment Agency [63].

Figure 18: Bathing water quality 2014-2017 [64]



**The category 'good' was introduced in the 2015 bathing water report*

[60] EEA, WISE dashboard.

[61] European Environment Agency, European bathing water quality in 2016, 2017, p. 17.

[62] Health Board.

[63] EEA, State of bathing waters.

[64] European Environment Agency, European bathing water quality in 2017, 2018, p. 21.

Urban Waste Water Treatment Directive

Overall, Estonia shows a high level of compliance with the Urban Waste Water Treatment Directive, with close to 97 % of waste water collected and around 90.4 % of it subject to secondary and more stringent treatment. However, a few agglomerations remain non-compliant and the Commission is following up on them with infringement procedures. The estimated investment needed to ensure adequate collection and treatment of waste water in Estonia's remaining agglomerations is EUR 56 million[65].

Nitrates Directive

The last report on the implementation of the Nitrates Directive, referring to the period 2012-2015, showed stability in nitrate concentrations in groundwater, as well as in surface waters. However, between the reporting periods 2008-2011 and 2012-2015, 44.4 % of groundwater stations in nitrate-vulnerable zones showed an increase in average nitrate concentrations.

The trophic status of fresh surface water showed some improvement, but for coastal water the aggregated value reported by eutrophic and hypertrophic monitoring stations in 2012-2015 was 54 %, compared with 39 % in 2008-2011. This is of particular concern considering the overall issue of eutrophication in the Baltic Sea.

Floods Directive

The Floods Directive established a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences associated with significant floods.

Estonia has adopted and reported its first Flood Risk Management Plans under the Directive and the European Commission conducted an assessment.

The Commission's assessment found that good efforts were made with positive results in setting objectives and devising measures focusing on prevention, protection and preparedness. The assessment also showed that, as was the case for other Member States, Estonia's Flood Risk Management Plans do not yet include a baseline to assess the progress achieved in implementing measures (by extension the objectives, too) and an as complete as possible estimation of the cost of measures. In addition, there is scope for clarifying the method for selecting measures, including the use of cost/benefit analysis.

2019 priority actions

- Step up efforts to assess the status of all water bodies, increasing the confidence in the assessment of status and reducing the proportion of unknown status. Monitoring should provide sufficient temporal resolution and spatial coverage (including in biota).
- Further prevent and reduce nitrate pollution from agricultural sources by effectively implementing and enforcing the Water Act adopted in 2017.
- Resolve the last remaining issues related to the Urban Waste Water Treatment Directive.
- Take steps to clarify the method for selecting measures, including the use of cost/benefit analysis in relation to the Flood Risk Management Plans.

Chemicals

The EU seeks to ensure that by 2020 chemicals are produced and used in ways that minimise any significant adverse effects on human health and the environment. An EU strategy for a non-toxic environment that is conducive to innovation and to developing sustainable substitutes including non-chemical option is being prepared.

The EU's chemicals legislation[66] provides baseline protection for human health and the environment. It also ensures stability and predictability for businesses operating within the internal market.

In 2016, the European Chemicals Agency (ECHA) published a report on REACH and the CLP Regulation[67] that showed that enforcement activities are still evolving. Member States cooperate closely within the Forum for Exchange of Information on Enforcement [68].

[65] European Commission, Ninth Report on the Implementation Status and the Programmes for Implementation of the Urban Waste Water Treatment Directive (COM(2017)749) and Commission Staff Working Document accompanying the report (SWD(2017)445).

[66] Principally for chemicals: REACH (OJ L 396, 30.12.2006, p.1.); for Classification, Labelling and Packaging, the CLP Regulation (: OJ L 252, 31.12.2006, p.1.), together with legislation on biocidal products and plant protection products.

[67] European Chemicals Agency, Report on the Operation of REACH and CLP 2016.

[68] ECHA, On the basis of the projects REF-1, REF-2 and REF-3.

This cooperation has shown that there is scope to increase the effectiveness of enforcement activities, particularly for registration obligations and safety data sheets where the level of non-compliance is still relatively high.

While progress has been made, there is room to further improve and harmonise enforcement activities across the EU, including controls on imported goods. Enforcement remains weak in some Member States, particularly for controls on imports and supply chain obligations. The enforcement architecture is complex in most EU countries and enforcement projects reveal differences in compliance between Member States.

A 2015 Commission study already emphasised the importance of harmonised market surveillance and enforcement when implementing REACH at Member State level, enforcement, deeming it to be a critical success factor in the operation of a harmonised single market[69].

In March 2018, the Commission published an evaluation of REACH[70]. The evaluation concludes that REACH delivers on its objectives, but that progress made is slower than anticipated. In addition, the registration dossiers often are incomplete. The evaluation underlines the need to enhance enforcement by all actors, including registrants, downstream users and in particular for importers, to ensure a level playing field, meet the objectives of REACH and ensure consistency with the actions envisaged to improve environmental compliance and governance. Consistent reporting of Member State enforcement activities was considered important in that respect.

Five enforcing authorities are responsible for REACH and CLP enforcement in Estonia: the Health Board, the Labour Inspectorate, the Environmental Inspectorate, the Consumer Protection Board and the Estonian Tax and Customs Board. Responsibilities are divided as follows:

- the Health Board focuses on chemical substances on their own, in mixtures and in articles (manufacture, import, wholesale);
- the Labour Inspectorate focuses on the working environment and workers' protection;
- the Environmental Inspectorate focuses on environmental hazards during manufacture and professional use of substances;
- the Consumer Protection Board focuses on articles, substances and mixtures available at retailers;
- the Estonian Tax and Customs Board focuses on controlling the cross-border flow of chemicals and articles.

Two sectors are specific to the Estonian chemical industry: oil shale chemistry and production of rare earth metals and their oxides. Up to 85 % of Estonia's chemical industry production is exported. The chemical industry accounts for about 5.2 % of the processing industry and contributes 0.8 % to Estonian GDP. It is characterised by strong territorial concentration, as more than half of it is located in East- Virumaa[71].

Making cities more sustainable

EU policy on the urban environment encourages cities to put policies in place for sustainable urban planning and design. These should include innovative approaches to urban public transport and mobility, sustainable buildings, energy efficiency and urban biodiversity conservation.

The population living in urban areas in Europe is projected to rise to just over 80% by 2050[72]. Urban areas pose particular challenges for the environment and human health, but they also provide opportunities for using resources more efficiently. The EU encourages municipalities to become greener through initiatives such as the Green Capital Award [73], the Green Leaf Award [74] and the Green City Tool [75].

Financing greener cities

Estonia has allocated EUR 101 million or 5.4 % of its allocation under the European Regional Development Fund (ERDF) to sustainable urban development[76].

[69] European Commission, Monitoring the Impacts of REACH on Innovation, Competitiveness and SMEs, Final Report, 2015.
[70] COM(2018) 116.

[71] The Federation of Estonian Chemical Industries, Chemical industry in Estonia.
[72] European Commission, Eurostat, Urban Europe, 2016, p.9.
[73] European Commission, European Green Capital.
[74] European Commission, European Green Leaf Award.
[75] European Commission, Green City Tool.
[76] http://www.struktuurifondid.ee/eng/public/PA_EE_20062014_EN.pdf. – DOESN'T OPEN!

The country participates in the European Urban Development Network (UDN)[77], which includes more than 500 cities across the EU responsible for carrying out integrated measures based on sustainable urban development strategies financed by ERDF in 2014-2020.

Participation in EU urban initiatives and networks

Estonian municipalities are generally involved in EU initiatives on environmental protection and climate change.

So far no Estonian city has won the EU Green Capital or Green leaf awards, although Talinn and Pärnu have been candidates.

As mentioned in the 2017 EIR, a number of initiatives are organised under the Union of the Baltic Cities Sustainable Cities Commission, a voluntary network of cities in the Baltic Sea region. This network addresses a number of issues, including environmentally sustainable development. It runs projects in areas such as integrated management systems and spatial management, urban water management, maritime activities and sustainable urban mobility. In addition, Tallinn's urban planning department is a partner in the Baltic Urban Lab project, which aims to identify and promote best practices in brown field regeneration.

Estonian cities participate in initiatives such as Eurocities and the EU Covenant of Mayors. As of June 2018, five Estonian cities were signed up to the EU Convenant of Mayors.

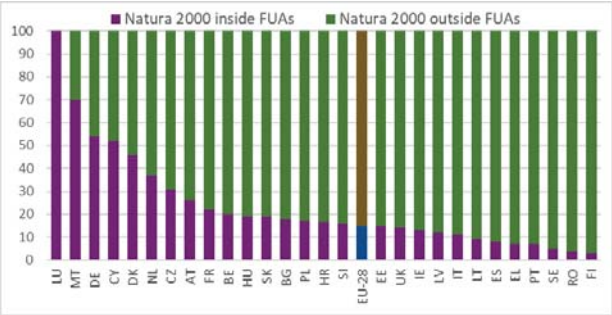
Tallinn and Tartu are involved in the URBACT initiative to support sustainable urban development, through different thematic networks [78].

These welcome urban initiatives and networks contribute to a better urban environment. In 2017, 8.5 % of the Estonian population living in cities said that their neighbourhood was affected by pollution, grime or other environmental problems, down from 12.5 % in 2016 and 14 % in 2015. These figures are lower than the EU-28 average (20 % in 2017, 18.9 % in 2016 and 19.2 % in 2015)[79].

Nature and cities

Around 16 % of Estonia's Natura 2000 network is in functional urban areas[80], just above the EU average of 15 % (see Figure 18).

Figure 19: Proportion of Natura 2000 network in Functional Urban Areas (FUAs)[81]



When it comes to biodiversity, Tallinn has a particularly strong planning process, starting with good mapping based on survey work for species and habitats and backed by bio-data inventories and research[82]. Furthermore, the city has a good organisational structure, overseen by overall strategic plans (the Tallinn Environmental Strategy to 2030 and the Tallinn Environmental Protection Plan 2013-2018) and local action plans, with shared objectives throughout.

Policies are linked through the different planning levels and involve a good variety of implementation measures and projects. A biodiversity action plan has been developed, as have the management plans for all of Estonia's protected areas, including the Pääsküla Bog Conservation Area.

Urban sprawl

Estonia had a Weighted Urban Proliferation of 0.71 UPU/m^2 [83] in 2009 compared to the EU average of 1.64 UPU/m^2, with an increase of 1.7 % from 2006 to 2009[84].

Traffic congestion and urban mobility

The number of hours spent annually in road congestion fell from 20.32 in 2014 to 18.66 in 2016 and is now one of the lowest in the EU [85].

Tallinn City Council decided to introduce free public transport in order to increase social inclusion, boost the local economy and contribute to protecting the environment. This increased the number of passengers by 6 % in 2013 compared with 2012. In October 2013, Tallinn made people's train fares for trips within city borders free. The number of train journeys within the city increased 2.3 times in 2014 compared with 2012. There has also been significant investment in the public

[77] European Commission, The Urban Development Network.
[78] URBACT, Associated Networks by country.
[79] European Commission, Eurostat, Pollution, grime or other environmental problems by degree of urbanisation.
[80] Eurostat, Definition of Functional Urban Areas.

[81] European Commission, the 7th Report on Economic, Social and Territorial Cohesion, 2017, p. 121.
[82] European Commission, Good Practice Report, European Green Capital 2018, p.30.
[83] Urban Permeation Units measure the size of the built-up area as well as its degree of dispersion throughout the region.
[84] EEA, Urban Sprawl in Europe, Annex I, 2014, pp.4-5.
[85] European Commission, Hours spent in road congestion annually.

transport system in Tallinn's city centre: 28.6 km of former car lanes have been turned into public transport lanes [86].

The urban area action plans for Tallinn, Tartu and Pärnu focus on increasing the proportion of people using sustainable means of mobility and providing residents with nursery school and childcare options near their homes. The urban area action plans for Narva and Kohtla-Järve/Jõhvi focus on increasing the proportion of people using sustainable means of mobility and reviving major underused districts.

An environmental information screen has been set up in Tallinn's city centre to inform people about the status of ambient air, the most recent noise map and the changing PM10 levels.

[86] European Commission, Good Practice Report, European Green Capital 2018, p.23.

Part II: Enabling framework: implementation tools

4. Green taxation, green public procurement, environmental funding and investments

Green taxation and environmentally harmful subsidies

European Structural and Investment Fund (ESIF) rules oblige Member States to promote environment and climate in their funding strategies and programmes for economic, social and territorial cohesion, rural development and maritime policy.

Estonia's revenue from environment-related taxes remains among the highest in the EU. Environmental taxes accounted for 2.88 % of GDP in 2017 (EU-28 average 2.4 %) (see Figure 19) and energy taxes for 2.54 % of GDP (EU average 1.84 %) [87]. In the same year, environmental tax revenues were 8.73 % of total revenues from taxes and social security contributions (higher than the EU-28 average of 5.97 %).

Estonia's tax structure shows that the proportion of revenues from labour tax in total tax revenues is in line with the EU average, at 49.9 % in 2016, while the implicit tax burden on labour was 34.1 % [88]. Consumption taxes remained relatively high (42.5 %, 4th in EU-28), showing that there is limited potential to shift taxes from labour to consumption, particularly to environmental taxes.

The Commission has repeatedly stated in the European Semester that there is potential for new vehicle taxation in Estonia, in addition to the circulation tax for heavy vehicles and the new heavy goods vehicle road usage-charging scheme. Receipts from transport taxes (excluding fuel taxes) amounted to only 0.06 % of GDP in Estonia in 2016, the second lowest in the EU[89]. As of 2018, heavy goods vehicles in Estonia will be subject to road usage fees that will partly depend on their emissions.

At the EIR dialogue held on 28 March 2017, the Estonian government's decision of 17 March 2017 to introduce a vehicle registration tax dependent on the vehicle's power / CO2 emissions was mentioned.

One of the positive environmental fiscal measures introduced in Estonia is the mineral resource extraction charge imposed on various state-owned construction rocks, energy minerals and minerals used in agriculture, based on the quantity of the extracted resource[90]. Another good example is the hunting and fishing fee system, from which 77 % of revenues are earmarked for conservation purposes[91].

Figure 20: Environmental tax revenues as % of GDP, 2017 [92]

Meanwhile, fossil fuel subsidies decreased over the past decade, mainly because subsidies for coal used by households ended. However, a new limited subsidy for peat has been put in place and EUR 33 million are still spent to support petrol and diesel[93].

[87] Eurostat, Environmental tax revenues, 2018.
[88] European Commission, Taxation Trends Report, 2017.
[89] European Commission, European Semester Country Report 2018, p. 24.
[90] Institute for European Environmental Policy, Case Studies on Environmental Fiscal Reform, Mineral resource extraction charge.
[91] Institute for European Environmental Policy, Case Studies on Environmental Fiscal Reform, Hunting and fishing fees in Estonia.
[92] Eurostat, Environmental tax revenues, 2018.
[93] OECD, Inventory of Support Measures for Fossil Fuels, 2018.

Reasonable progress has been made on reducing the 'diesel differential' (difference in the price of diesel versus petrol) since 2005. In 2016, there was still an 8 % gap between petrol and diesel tax rates, making Estonia the 4th best performing country in the EU[94]. Excise tax rates levied on petrol and diesel in 2016 remained similar to those in 2015 in national currency (EUR 0.46 per litre for petrol and EUR 0.44 for diesel) [95]. A planned increase in the diesel tax rate for 2018 was not implemented due to concerns about rising fuel tourism, as rates in Estonia are appreciably higher than those in its neighbouring countries other than Sweden and Finland[96].

Tax treatment for company cars is not a cause for concern in Estonia[97]. New fiscal measures were introduced for company cars in 2018. They will subject heavy goods vehicles to road tolls and link remaining subsidies for company cars to the vehicles' power capacity [98]. Any new developments that reduce the favourable taxation of company cars in Estonia would be welcome.

There are no CO_2-based motor vehicle taxes in place in Estonia [99]. Incentives to encourage the purchase of cars with lower CO2 emissions were rare in 2016 and mostly linked to annual circulation taxes, road tolls, and congestion or low emission zone charges. There were no incentives to acquire cleaner vehicles or use public infrastructure [100]. New vehicles purchased in Estonia are the most environmentally unfriendly in the EU, with average CO2 emissions of 134 grams per kilometre, above the EU average of 118 grams in 2016[101].

The use of alternative fuels in new passenger cars sold in Estonia has been decreasing in recent years. In 2016, the number of new passenger cars using alternative fuels was only 11 % of the 2011 figure. The abolition of a support scheme showed that, without direct support for buying specialised vehicles, take-up of electric- or bio-methane-run vehicles is unlikely to be high[102].

Green public procurement

The EU green public procurement policies encourage Member States to take further steps to apply green procurement criteria to at least 50 % of public tenders. The European Commission is helping to increase the use of public procurement as a strategic tool to support environmental protection.

The purchasing power of public procurement amounts to around EUR 1.8 trillion in the EU (approximately 14% of GDP). A substantial proportion of this money goes to sectors with a high environmental impact such as construction or transport. Therefore, green public procurement (GPP) can help to significantly lower the negative impact of public spending on the environment and can help support sustainable innovative businesses. The Commission has proposed EU GPP criteria[103].

There is no national action plan or national strategy on green public procurement currently in force in Estonia. Training sessions are being organised for local government representatives and state authority specialists, to explain the concept of environmentally sound procurement and discuss possibilities for putting it into practice.

Environmentally-friendly requirements are currently only mandatory for vehicles. Mandatory GPP criteria will also be introduced for the central government sector, furniture, cleaning products and services, copying and graphic paper and computers and monitors. GPP is periodically monitored through the official electronic public procurement website (EProcurement Estonia). In 2015, there were 10 850 public procurements in Estonia, of which 605 (5.6 %) included green criteria. In 2016,

[94] European Environment Agency 2016, Environmental taxation and EU environmental policies, p.27.
[95] European Commission, Taxes in Europe Database, 2018.
[96] OECD 28th Joint Meeting on Taxation and Environment, 18th May 2018.
[97] European Commission, Taxation of commercial cars in Belgium, 2017, p.3.
[98] FleetEurope, Major changes to company car taxation in Europe.
[99] ACEA, CO_2 based motor vehicle taxes in Europe.
[100] European Environmental Agency, Appropriate taxes and incentives do affect purchases of new cars, 18 May 2018.
[101] European Environment Agency, Average CO2 emissions from new passenger cars sold in EU-28 Member States plus Norway, Iceland and Switzerland in 2016.
[102] European Commission, Transport in the European Union Current Trends and Issues, 2018, pp.27-28.
[103] In the Communication 'Public procurement for a better environment' (COM (2008) 400) the Commission recommended the creation of a process for setting common GPP criteria. The basic concept of GPP relies on having clear, verifiable, justifiable and ambitious environmental criteria for products and services, based on a life-cycle approach and scientific evidence base.

there were 10 343 public procurements in Estonia, of which 597 included green criteria (5.8 %).

In October 2017, Estonia co-organised and hosted the 2nd Circular Procurement Congress in Tallinn.

Environmental funding and investments

European Structural and Investment Fund (ESIF) rules oblige Member States to include environment and climate objectives in their funding strategies and programmes for economic, social and territorial cohesion, rural development and maritime policy.

Achieving sustainability requires the mobilisation of public and private financing sources[104]. Using the European Structural and Investment Funds (ESIF)[105] is essential to achieving environmental goals and integrating them into other policy areas. Other instruments such as Horizon 2020, the LIFE programme[106] and the EFSI[107] may also support implementation and spread good practices.

According to the 2017 Special Eurobarometer on attitudes of EU citizens towards the environment, 84 % of Estonians support greater EU investment in environmental protection (EU-28 average 85 %).

European Structural and Investment Funds 2014-2020

Through three national and regional programmes, Estonia has been allocated EUR 4.46 billion from ESIF funds for 2014-2020. This means that with its national contribution of EUR 1.54 billion, Estonia has a total budget of EUR 6 billion to invest in areas such as the low-carbon economy, sustainable transport, environmental protection and adaptation to climate change[108]. Figure 19 shows ESIF financing for Estonia.

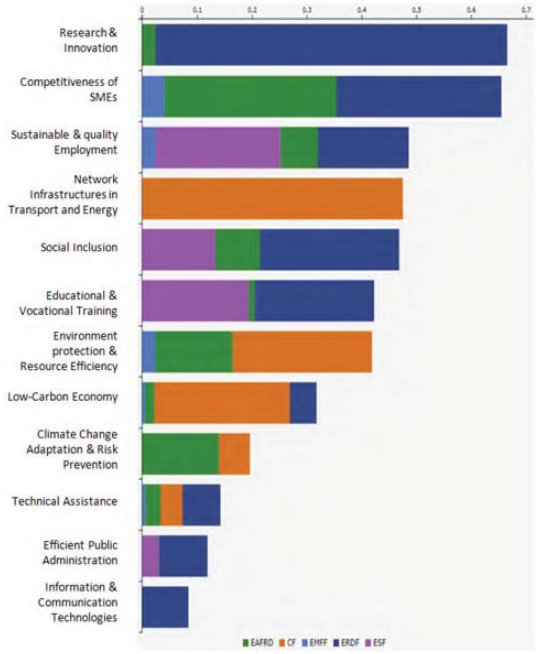
Estonia's annual total public environmental expenditure as a percentage of GDP is estimated at around 1.67 %[109].

Cohesion policy

Estonia has been allocated over EUR 4.4 billion from EU sources in total cohesion policy funding for 2014-2020, including EUR 1.07 billion from the Cohesion Fund, EUR 443 million from the European Social Fund and EUR 2.46 billion from the European Regional Development Fund (ERDF)[110].

Directly allocated investments in environmental infrastructure added up to EUR 800 million in 2007-2013. Estonia has allocated the highest EU amount of Cohesion Policy funds to direct environmental investments, with EUR 956 total per capita since 2000[111].

Figure 21: ESIF 2014-202 – EU allocation by theme, Estonia (EUR billion) [112]



EU funds are a key asset for protecting the environment in Estonia[113]. One of the Commission's investment priorities for Estonia in 2014-2020 is to use natural resources more efficiently and create a less energy- and carbon-intensive economy[114]. Boosting investment in these areas will help the country transition to a circular economy.

Innovation and the low-carbon economy are key areas to consider when estimating environmental spending. The

[104] European Commission, Action Plan on Financing Sustainable Growth.
[105] ESIF comprises five funds – the European Regional Development Funds (ERDF), the Cohesion Fund (CF), the European Social Fund (ESF), the European Agricultural Fund for Rural Development (EAFRD), and the European Maritime and Fisheries Fund (EMFF). The ERDF, the CF and the ESF together form the Cohesion Policy funds.
[106] European Commission, LIFE Estonia Sheet, 2017.
[107] European Investment Bank, European Fund for Strategic Investments, 2016.
[108] European Commission, European Structural and Investment Funds (Country factsheet Estonia), 2017.
[109] Commission annualized estimate based on ESIF, Horizon 2020, EIB and EFSI loans, LIFE and national public environmental expenditures 2014-2020.
[110] European Commission, Cohesion Policy and Estonia, 2014.
[111] COWI-MILIEU 2017 Study on the integration of environmental concerns in the Cohesion Policy funds (ERDF, ESF, CF), p. 35.
[112] European Commission, European Structural and Investment Funds Data By Country.
[113] 'The objectives of the ESI Funds shall be pursued in line with the principle of sustainable development and with the Union's promotion of the aim of preserving, protecting and improving the quality of the environment, as set out in Article 11 and Article 191(1) TFEU, taking into account the polluter pays principle' Article 8, Reg. (EU) No 1303/2013.
[114] European Commission, Summary pf the Partnership agreement for Estonia, 2014, pp. 1-2.

ERDF has allocated EUR 57 million to Estonia's low-carbon economy [115].

The ERDF supports projects such as the Narva Water and Sewage Treatment System Construction, including with investment in the treatment and distribution of drinking water and collection of wastewater for all residents of Narva. Significant environmental benefits stem from the elimination of groundwater and subsoil contamination, made possible by the reconstruction of waste-water collectors and elimination of leakages [116].

Rural development

The Estonian Rural development programme (RDP) outlines the country's priorities for using EUR 993 million of funding available for 2014-2020. This funding includes EUR 823 million from the European Agricultural Fund for Rural Development (EAFRD) and EUR 169 million of national co-funding [117].

The programme takes a solid environmental approach, with its main priorities being water, soil, and biodiversity. Around 70 % of farmland will be under agri-environmental commitments. 37 % of the budget is being allocated to activities that make it possible to avoid deforestation of the agri-environment. The plan also includes a water protection measure for the nitrate vulnerable area and support measures for semi-natural habitats and organic farming [118].

There are currently several EAFRD-RDP projects supporting a variety of environment-related matters. They include a knowledge-transfer programme on organic farming, resource-efficient greenhouses, dairy cowshed renovation and solar power generation in strawberry farms[119].

European Maritime and Fisheries Fund

Estonia has allocated around EUR 129 million in co-financing for the fisheries and maritime sector, with a EU contribution of EUR 101 million [120]. This has helped finance projects that benefit the environment in the sustainable fisheries and sustainable aquaculture areas of Estonia's operational programme. The proportion of funding for environmental projects is around 20 %, representing more than EUR 32 million [121].

The energy efficiency of the fishing fleet will be improved with the replacement and modernisation of 140 engines. Other actions will also help reduce greenhouse gas emissions and conserve or rehabilitate 9 000 hectares of terrain [122].

The Connecting Europe Facility (CEF)

The CEF is a key EU funding instrument developed specifically to direct investment into European transport, energy and digital infrastructures. It aims to address identified missing links and bottlenecks and promote sustainability.

By the end of 2017, Estonia had signed project agreements amounting to EUR 208 million under the CEF [123].

EUR 15 million will go to the deployment of hydrogen refueling stations, tackling the demand for hydrogen vehicles [124].

Horizon 2020

Estonia has benefited from Horizon 2020 funding since the programme started in 2014. As of January 2019, 140 participants have been granted a maximum amount of EUR 41.6 million for projects from the Societal Challenges work programmes dealing with environmental issues[125] [126].

In addition to the abovementioned work programmes, climate and biodiversity expenditure is present across the entire Horizon 2020. In Estonia, projects accepted for funding in all Horizon 2020 working programmes until December 2018 included EUR 45 million destined to climate action (33.8 % of the total Horizon 2020 contribution to the country) and EUR 11 million for biodiversity-related actions (8.5 % of the Horizon 2020 contribution to the country)[127].

[115] European Commission, https://cohesiondata.ec.europa.eu/countries/EE#, 2019.
[116] European Commission, EU invest in Estonia, 2017.
[117] European Commission, https://cohesiondata.ec.europa.eu/countries/EE#, 2019.
[118] European Commission, Factsheet on 2014-2020 Rural Development Programme for Estonia, 2017, pp. 1-2.
[119] European Commission, European Network for Rural Development, Projects and Practice, Estonia.
[120] European Commission, European Maritime and Fisheries Fund in Estonia, 2015.
[121] European Commission, European Maritime and Fisheries Fund in Estonia, 2015, p. 2.
[122] European Commission, ESIF Data for Estonia.
[123] European Commission, European Semester Country Report for the Netherlands, 2018, p. 10.
[124] European Commission, H2Nodes Estonia.
[125] European Commission own calculations based on CORDA (COmmon Research DAta Warehouse). A maximum grant amount is the maximum grant amount decided by the Commission. It normally corresponds to the requested grant, but it may be lower.
[126] i.e. (ii) Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy; (iii) Secure, clean and efficient energy; (iv) Smart, green and integrated transport; and (v) Climate action, environment, resource efficiency and raw materials.
[127] European Commission own calculations based on CORDA (COmmon Research DAta Warehouse).

Several successful projects are taking place in Estonia. The LAkHsMI project is developing new monitoring and imaging technology for water that could be used for the production of renewable energy and to improve the conservation of autochthonous species [128]. The LeanShips project is trying to create greener ships, which would cut fuel use and CO2 emissions by 25 % [129].

LIFE programme

Since its launch in 1992, the LIFE programme has co-financed a total of 34 projects in Estonia [130]. Altogether, they represent a total investment of EUR 38 million, of which EUR 20 million have been provided by the EU [131]. Of these projects, 10 have focused on environmental innovation (under the LIFE project's 'environment and resource efficiency' priority) and 18 on nature conservation (under the LIFE project's 'nature and biodiversity' priority).

For 2014-2017, the EU has allocated EUR 5 million to Estonian projects[132]. The EstBatLIFE project is among these and is taking action to improve Pond Bat (Myotis dasycneme) habitats with a requested EU contribution of more than EUR 500 000[133].Currently, there are two ongoing projects focusing on restoring the alvar grasslands and mire habitats [134].

A project in which Estonia took part was included in the Best LIFE Projects of 2016-2017 [135]. This was the SAMBAH project [136], which was included under 'nature and biodiversity' and aimed to apply best practice to provide data for the reliable assessment of the distribution and habitat use of the Baltic Sea subpopulation of harbour porpoise.

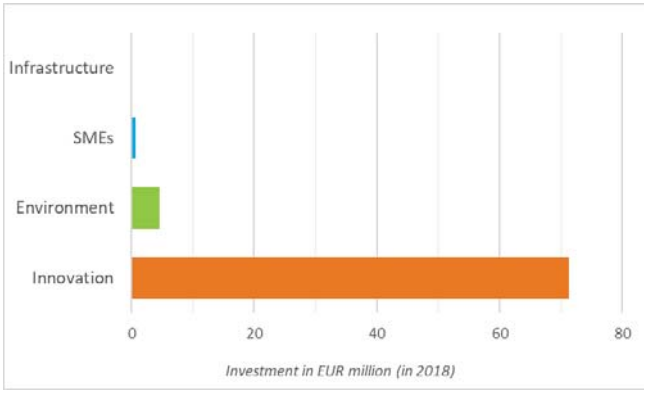
European Investment Bank

In 2018 alone, the EIB group (the European Investment Bank and the European Investment Fund) [137] loaned Estonian businesses and public institutions more than EUR 76 million (see Figure 21). Of this, around EUR 4.6 million (6 %) went to environmental projects. In 2017, loans of more than EUR 50 million went to various companies working on the circular economy in the Baltic countries [138].

European Fund for Strategic Investments

The European Fund for Strategic Investments (EFSI) aims to help overcome the current investment gap in the EU. As of January 2019, it has mobilised more than EUR 130 million in Estonia. The secondary investment triggered by this is expected to be more than EUR 1.3 billion [139].

Figure 22: EIB loans to Estonia in 2018 [140]



National environmental financing

Estonia spent EUR 123.1 million on environmental protection in 2016, a 12 % decrease from 2015[141]. 32 % of these payments went to the waste management sector, while 12.5 % were allocated to wastewater management. 5.5 % was used for pollution abatement and 16 % for protecting biodiversity and the landscape. Between 2012 and 2016, general government funding for environmental protection was EUR 652.5 million [142].

As it has been mentioned in the report, one of the challenges for Estonia is to ensure that environmental financing remains at an adequate level. Existent financial gaps in areas such as waste management, water quality or biodiversity are delaying the correct implementation of EU environmental law and policies. Therefore, ensuring financial resources to reduce the implementation gap should be considered as a priority for the country.

2019 priority action

- Prepare for the next financing period 2021-2027 to ensure that there is sufficient funding to implement the waste, water and management plans for Natura 2000 sites.

[128] European Commission, The LAKHSMI Project.
[129] European Commission, Leanships project.
[130] European Commission, LIFE programme – Country profile: Estonia, 2017.
[131] European Commission, LIFE by country: Estonia.
[132] Commission services based on data provided by EASME.
[133] European Commission, EstBatLIFE.
[134] European Commission, LIFE in Estonia, 2017, p. 2-4.
[135] European Commission, Best LIFE-Environment Projects 2016-2017.
[136] European Commission, SAMBAH Project.
[137] The EIB Group includes EIB and EFSI investments and loans.
[138] European Investment Bank, Estonia and the EIB.
[139] European Investment Bank, The EIB in Estonia, what we do.
[140] European Investment Bank, The European Investment Bank in Estonia, 2017.
[141] Eurostat, General government expenditure by function., 2018.
[142] Eurostat, General Government Expenditure by function, 2018.

5. Strengthening environmental governance

Information, public participation and access to justice

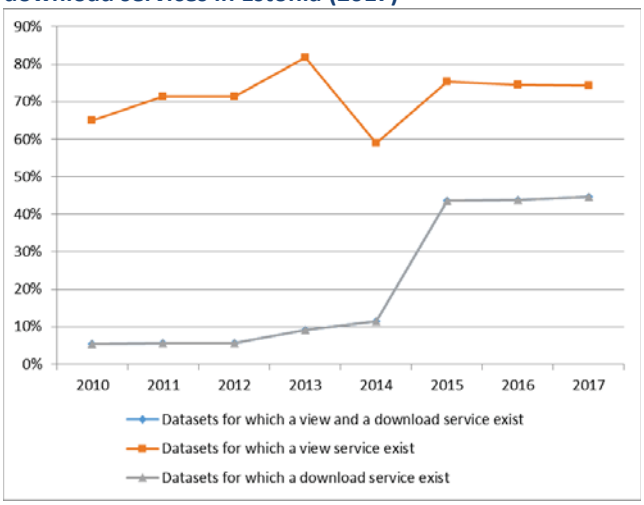
Citizens can more effectively protect the environment if they can rely on the three 'pillars' of the Aarhus Convention:
(i) access to information;
(ii) public participation in decision making; and
(iii) access to justice in environmental matters.
It is of crucial importance to public authorities, the public and business that environmental information is shared efficiently and effectively[143]. Public participation allows authorities to make decisions that take public concerns into account. Access to justice is a set of guarantees that allows citizens and NGOs to use national courts to protect the environment[144]. It includes the right to bring legal challenges ('legal standing')[145].

Environmental information

Estonia has a mixed governance structure. There are two important environmental portals, one run by the Environmental Agency[146] and one by the Ministry of Environment[147]. They have a similar structure and overlap in the areas of water, air and emissions. They are generally well linked. The portals include some monitoring data in tables and graphs of indicators. For air, the Estonian Environmental Research Centre runs a separate portal[148]. Information on chemicals was not available on any of the environmental portals, only monitoring data related to water. Information on chemicals was, however, found on the Health Board's chemical safety portal[149]. The main environmental portals focus on providing information on national plans, national legislation and high level indicators in a number of domains. The environmental data provided does not meet INSPIRE specifications. Estonia has a separate INSPIRE portal at inspire.maaamet.ee. The INSPIRE portal is not integrated or linked to the main environmental portals.

Estonia's performance on implementing the INSPIRE Directive leaves room for improvement. The country's performance has been reviewed by the Commission based on their 2016 implementation report[150] and their most recent monitoring data from 2017[151]. There has been good progress on coordination and documentation of data and services. Additional efforts are needed to make the data accessible through services, improve the conditions for data reuse and prioritise high-value spatial datasets, in particular those used to implement environmental legislation[152].

Figure 23: Access to spatial data through view and download services in Estonia (2017)



Public participation

The general part of Estonia's Environmental Code Act[153] and its Administrative Procedure Act[154] include general obligations for public participation and for open proceedings in decision making. These are complemented by a variety of sector-specific environmental laws in the areas of air, nature, water and waste. In practice, the Estonian Ministry of Environment website includes a clearly visible section[155] on public consultation. Moreover, there are a number of government web portals[156] that promote public

[143] The Aarhus Convention, the Access to Environmental Information Directive, 2003/4/EC and the INSPIRE Directive, 2007/2 together create a legal foundation for the sharing of environmental information between public authorities and with the public. This EIR focuses on INSPIRE.
[144] The guarantees are explained in Commission Notice on access to justice in environmental matters, OJL 275, 18.8.2017 and a related Citizen's Guide.
[145] This EIR looks at how well Member States explain access to justice rights to the public, and at legal standing and other major barriers to bringing cases on nature and air pollution.
[146] Keskkonnaagentuur.
[147] Ministry of the Environment.
[148] Ambient air quality.
[149] REACH 2018: Registreerimisdokumentide esitamine.
[150] INSPIRE EE country sheet 2017.
[151] INSPIRE, monitoring dashboard.
[152] List of high value spatial data sets.
[153] General Part of the Environmental Code Act.
[154] Administrative Procedure Act.
[155] Ministry of Environment, Kaasamine ja osalemine.
[156] Osale (makes available policy documents) and Eelnõude infosüsteem (includes all legislative drafts, including letters from other government authorities).

participation in government work. A good example of proactively engaging with the public is the annual 'partnering event', where the Ministry of Environment introduces its annual workplan and priorities and leads a discussion of current hot topics. Participation in this event increases each year (120 participants in 2018).

Estonia's citizen engagement activities have been identified as good practices in the context of the Commission's Better Regulation Toolbox[157].

The Eurobarometer figures from 2017 show that Estonians agree relatively strongly (77 % of respondents) that an individual can play a role in protecting the environment. This has remained largely unchanged since 2014.

Access to justice

Although Estonia has an official website with information on access to justice in general, this fails to provide the public with clear, comprehensive, user-friendly information about access to justice rights in relation to the environment.

In Estonia, legal standing is generally rights-based and restrictive so far as individuals are concerned. There is broader provision for legal standing in the case of environmental NGOs. On this basis, it is likely that NGOs would be able to bring legal challenges in relation to both nature and air pollution cases, but individuals would not be able to bring a nature-related case in the general interest.

2019 priority actions

- Improve access to spatial data and services by making stronger links between the central INSPIRE website and regional portals. Identify and document all spatial datasets required for the implementation of environmental law[158] and make the data and documentation at least accessible 'as is' to other public authorities and the public through the digital services set out in the INSPIRE Directive.
- Better inform the public about their rights to access justice.

Compliance assurance

Environmental compliance assurance covers all the work undertaken by public authorities to ensure that industries, farmers and others fulfil their obligations to protect water, air and nature, and manage waste[159]. It includes support measures provided by the authorities, such as:
(i) compliance promotion[160];
(ii) inspections and other checks that they carry out, i.e. compliance monitoring[161]; and
(iii) the steps that they take to stop breaches, impose sanctions and require damage to be remedied, i.e. enforcement[162].
Citizen science and complaints enable authorities to focus their efforts better. Environmental liability[163] ensures that the polluter pays to remedy any damage.

Compliance promotion and monitoring

Online information is given to farmers on how to comply with obligations on nitrates and nature. The quality of this information is an indicator of how actively authorities promote compliance in subject-areas with serious implementation gaps.

The Fund for Advancement of Rural Life [164] (Maaelu Edendamise Sihtasutus) provides some free web-based guidance material[165], including on obligations that apply in Estonia's two nitrate-vulnerable zones. Estonia also provides extensive site-specific information about obligations relating to its Natura 2000 sites[166].

Major industrial installations can be a serious pollution risk. Public authorities must have plans to inspect these installations and to make individual inspection reports available to the public[167]. The Estonian Environmental Inspectorate publishes an inspection plan[168]. Information

[157] European Commission, Good Engagement Practices.
[158] European Commission, INSPIRE.

[159] The concept is explained in detail in the Communication on 'EU actions to improve environmental compliance and governance' COM(2018)10 and the related Commission Staff Working Document, SWD(2018)10.
[160] This EIR focuses on the help given to farmers to comply with nature and nitrates legislation.
[161] This EIR focuses on inspections of major industrial installations.
[162] This EIR focuses on the availability of enforcement data and co-ordination between authorities to tackle environmental crime.
[163] Directive 2004/35/CE, creates the framework.
[164] Rural Development Foundation.
[165] MES nõuandeteenistus.
[166] Protected Areas of Estonia.
[167] Article 23, Directive, 2010/75/EU.
[168] Käitiste korrapärase kontrollimise ajakava aastateks 2016-2018.

about inspection reports is available on the Ministry of Environment website[169].

Citizen science and complaint handling

Engaging the general public through citizen science can increase knowledge about the environment and help the authorities in their work. There are two public portals: Estonian Nature Observations Database[170] (LVA) and eBiodiversity (eElurikkus). The former is the result of long-term cooperation between the Estonian Environment Agency and the Estonian Naturalists' Society. Since 2010, the Agency has organized annual public campaigns to provide observations on species[171]. The availability of clear online information about how to make a complaint is an indicator of how responsive authorities are to complaints from the public. The website of the Environmental Inspectorate clearly shows[172] the contact e-mail address and 24-hour telephone number for complaints about environmental problems.

Enforcement

When monitoring identifies problems, a range of responses may be appropriate. While Estonia publishes inspection reports, information is lacking on the administrative follow-up to detected non-compliance. Furthermore, there is no published information on responses to cross-compliance breaches on nitrates and nature. Statistics on environmental crimes are published[173].

Tackling waste, wildlife crimes and other environmental offences is especially challenging. It requires close cooperation between inspectors, customs authorities, police and prosecutors.

The website of the Environmental Inspectorate refers to inter-agency cooperation as does the website of the Prosecutor's Office[174] .

Environmental liability

The Environmental Liability Directive (ELD) establishes a framework based on the 'polluter pays' principle to prevent and remedy environmental damage. The 2017 EIR focused on gathering better information on environmental damage, on financial security and guidance. The Commission is still collecting evidence on progress made.

[169] Ministry of environment, Tööstusheide.
[170] Nature observations database.
[171] Since 2015, there is a special smartphone application to support collecting observation data for the Nature Observations Database.
[172] Environmental Inspectorate, Keskkonnainfo 1313.
[173] Environmental Inspectorate, Järelevalve statistika, Statistical reports are presented as downloadable xlsx files.
[174] Prosecutor's office.

2019 priority actions

- Better inform the public about compliance promotion, monitoring and enforcement.
- Publish more information on the outcomes of enforcement action and on the follow-up to detected cross-compliance breaches on nitrates and nature.
- Improve financial security for liabilities and ELD-guidance and publish information on environmental damage.

Effectiveness of environmental administrations

Those involved in implementing environmental legislation at EU, national, regional and local levels need to have the knowledge, tools and capacity to ensure that the legislation and the governance of the enforcement process bring about the intended benefits.

Administrative capacity and quality

Central, regional and local administrations must have the ability to carry out their own tasks and work effectively with each other, within a system of multi-level governance.

Most environmental issues fall within the responsibility of the Ministry of Environment. Local municipalities play a key role in construction- and territorial planning. The most important agencies under the governance of the Ministry of Environment are the:

- Keskkonnaamet (Environmental Board), which has various functions in the field of nature protection, environmental protection, resource use and radiation;
- Keskkonnainspektsioon (Environmental Inspectorate), which is the primary enforcement agency; and
- Keskkonnaagentuur (Estonian Environment Agency), which implements the national environmental monitoring programme, prepares reports and assesses the state of the environment.

Local governments are autonomous entities and have relatively loose ties with the central government. According to the EUPACK study[175], local authorities' engagement in policymaking is rather superficial and central government lacks the capacity to put in place better coordination mechanisms. Local governments have formed associations that attempt to coordinate their activities with regard to relations with the central government.

[175] Pesti, C., Randma-Liiv, T., *Public administration characteristics in Estonia.* EU PACK project, 2017, p 9.

An extensive state-led reform decreased the number of municipalities in 2017. There are now 79 municipalities as compared to 213 before the reform.

Estonia's score in the 2018 Environmental Performance Index is 64.31. It ranks 48th out of 180[176].

In order to ensure effective environmental governance, environmental authority staff must have the appropriate administrative and technical knowledge and skills. In the 2017 EIR, the Commission introduced TAIEX-EIR PEER-2-PEER as a new instrument facilitating peer learning between experts from Member States' environmental authorities. Estonia has not made use of this instrument yet, but Estonian experts participated in a workshop on air pollution caused by household heating[177]

Coordination and integration

As mentioned in the 2017 EIR, the transposition of the revised Environmental Impact Assessment (EIA) Directive[178] into national law provides an opportunity for countries to streamline their regulatory framework on environmental assessments.

Despite a delay, Estonia has now transposed the revised Directive.

The Commission encourages the streamlining of environmental assessments to reduce duplication and avoid overlaps in environmental assessments for projects. Streamlining helps to reduce unnecessary administrative burden. It also accelerates decision making, without compromising the quality of the environmental assessment procedure[179].

Estonia has introduced a joint procedure for assessments under the EIA and Habitats Directives. It also has a coordinated procedure for assessments under the EIA, Water Framework and Industrial Emissions Directives.

Adaptability, reform dynamics and innovation (eGovernment)

When it comes to eGovernment, Estonia is among the EU's leading countries. It is among the five EU countries that are very close to having a fully developed digital channel for public services, with a score above 95 %[180]. Estonia uses digital identification, digital signing, paper-free e-Government and more. In the DESI Report 2018, Estonia had a score of 77 out of 100 on digital public services, higher than the EU average of 58[181].

Environmental authorities use electronic services that make it possible for the public to interact with them online. Since the introduction of digital signing and digital identification, digital means of communication are the public's preferred choice.

Environmental authorities aim to provide all their services electronically. The Environmental Board has recently introduced a new portal for environmental decisions *(Keskkonnalubade Infosüsteem KOTKAS*[182]*).* It replacies the older, more cumbersome e-service. Installations needing environmental permits submit all their data and applications electronically.

As part of Estonia's continuous efforts to improve its e-governance, an environmental monitoring database that would improve access to monitoring data is being developed[183]. For water quality data, a comprehensive modeling system with integration of relevant data is being developed[184]. Water quality data is currently rather difficult to find and/or to understand without expert knowledge. The new modelling system could significantly improve the quality of environmental information and its accessibility.

Enabling financing and effective use of funds

Estonia created the Environmental Investment Centre[185] to finance environmental activities and investment projects. The fund's website provides clear information about funding opportunities. Funding is available for the following areas: energy and reduction of air emissions; the circular economy; waste; fisheries; environmental education; environmental management systems; environmental monitoring and surveillance; nature conservation; mineral resources; marine environment; forestry; water.

The Environmental Investment Centre is the implementing agency for funding financed by the state and funding available from the EU funds. Calls for applications are usually published in national newsletters and on the websites of the Ministry of Environment and the centre itself.

2019 priority action

- Estonia can further improve its overall environmental governance (such as transparency, citizens engagement, compliance and enforcement, as well as

[176] Yale Center for Environmental Law & Policy, 2018 Environmental Performance Index Yale University, p. 4.
[177] European Commission, TAIEX EIR Peer-to-Peer .
[178] Directive 2014/52/EU.
[179] The Commission issued a guidance document in 2016 regarding the setting up of coordinated and/or joint procedures that are simultaneously subject to assessments under the EIA Directive, Habitats Directive, Water Framework Directive, and the Industrial Emissions Directive, OJ C 273, 27.7.2016, p. 1.
[180] European Commission, Europe's Digital Progress Report, 2017.
[181] European Commission, Digital Economy and Society Index Report 2018, Digital Public Services.
[182] Keskkonnaministeerium.
[183] Ministry of Environment, Environmental Monitoring.
[184] Ministry of Environment, Veeinfosüsteem – Veeveeb.
[185] Environmental Investment Centre.

administrative capacity and coordination).

International agreements

The EU Treaties require the EU environmental policy to promote measures at international level to deal with regional or worldwide environmental problems.

The EU is committed to strengthening environmental law and its implementation globally. It therefore continues to support the Global Pact for the Environment process, which was launched by the United Nations General Assembly in May 2018[186]. The EIR is one of the tools to ensure that the Member States set a good example by respecting European Union environmental policies and laws and international agreements.

Estonia has signed and ratified almost all Multilateral Environmental Agreements (MEAs), including the Nagoya Protocol [187] to which it is a party since 19 March 2019.

Forests: EU Timber Regulation (EUTR)[188]/ Forest Law Enforcement, Governance and Trade (FLEGT)[189] Regulation

It is estimated that 10 000 Estonian operators place domestic timber on the EU market and 450 import timber and related products. Between March 2015 and February 2017, Estonia reported having carried out 70 % of the 1135 checks that it had planned for domestic timber and 75 % of the 20 checks it had planned for imported timber. In addition, the Estonian authorities carried out 214 checks on traders. This is significant compared with other countries[190].

In Estonia, infringements of the EUTR found during checks of domestic timber mainly relate to breaches of due diligence and prohibition. So far, these infringements have led to 125 penalties being imposed on operators (fines and compensation for environmental damage) and 17 court cases. With regard to imported timber, Estonia issued six notices of remedial action for breaches of the due diligence requirement.

On cooperation (Article 12 EUTR), Estonia reports to have collaborated with various Estonian competent authorities and other institutions in EU countries. It also highlighted the Nordic-Baltic action plan.

Genetic resources: Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising (ABS)[191]

Estonia has appointed its competent authorities for genetic resources and has applied sanctions for infringements of the Regulation.

Estonia is one of the four countries that have put in place a risk-based plan for checks and conducted checks (on-site visits and inspections). However, no due diligence declaration was submitted so far and no penalties have been applied. Estonia has submitted its first report on implementing the EU ABS Regulation to the Commission (end of 2017).

International wildlife trade: trade: the Convention on International Trade in Endangered Species of Wild Fauna and Flora CITES[192]

Estonia has set up the relevant national authorities and processes (requests for) import, (re-) export and intra-EU trade documents on a regular basis. Reports on seizures of illegal shipments, in particular those reported every six months to TRAFFIC under its contract with the Commission, and those exchanged through the EU-TWIX platform, show that customs authorities are active.

To ensure full implementation of the EU Wildlife Action Plan (2016) and improve the rate of detection of illegal activities, Estonia is working on defining and assessing priority risks as part of its enforcement strategies.

Sustainable development and the implementation of the UN SDGs

Sustainable development links environmental, social and economic policies in a coherent framework and therefore helps to implement environmental legislation and policies.

The Ministry of Environment was responsible for developing the national strategy for sustainable development, which was approved by the Estonian Parliament in 2005. Implementation of this strategy is now coordinated by the Government Office.

The Estonian government established the Committee on Sustainable Development (Säästva Arengu Komisjon) already back in 1996[193]. Initially, the committee was given the task of overseeing sustainable development goals that were established within the government. In November 2017, the government re-formulated the committee's purpose to overseeing the implementation

[186] UN General Assembly Resolution 72/277 and Organizational session of the ad hoc open-ended working group.
[187] Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity.
[188] Regulation (EU) No 995/2010.
[189] Regulation (EC) No 2173/2005.
[190] Traders were checked by 19 countries, with numbers of checks ranging from 1 (Denmark, France, Luxembourg) to 747 (Cyprus). 12 out of 19 countries conducted between 1 and 65 checks.
[191] Regulation (EU) No 511/2014.
[192] European Commission, The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
[193] Riigi Teataja, Riigi pikaajalise säästva arengu üksikküsimuste läbitöötamise asjatundjate komisjon.

of the SDGs in Estonia[194]. One of the committee's tasks is to ensure that the SDGs are integrated in sector-specific policies.

No institution is officially responsible for policy coordination, but the local self-government unions take part in monitoring the strategy through the Estonian Commission on Sustainable Development. This commission provides a forum for stakeholder involvement.

Estonia submitted a voluntary national review report on implementing the SDGs in 2016[195]. It was one of the first four EU countries to do so.

[194] Riigikantselei, Saastva arengu komisjon.
[195] Republic of Estonia, Government Office, Review on the implementation of the 2030 Agenda in Estonia, 2016.