

*Environmental  
performance reviews*



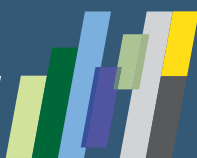
# Estonia

**HIGHLIGHTS**

2017



# Environmental Performance Reviews



## WHAT ARE EPRs?

OECD Environmental Performance Reviews (EPRs) provide evidence-based analysis and assessment of countries' progress towards their environmental policy objectives.

They promote peer learning, enhance government accountability and provide targeted recommendations to help countries improve their environmental performance. They are supported by a broad range of economic and environmental data. Each EPR cycle covers all OECD member countries and selected partner countries.

All reports, and more information, are available on the EPR website: <http://oe.cd/epr>.

## THE FIRST EPR OF ESTONIA

This is the first EPR for Estonia, which joined the OECD on 9 December 2010. The report reviews Estonia's environmental performance since 2005 and examines environmental trends since 2000. The process involved a constructive and mutually beneficial policy dialogue between Estonia and the countries participating in the OECD Working Party on Environmental Performance (WPEP). The OECD is grateful to the two examining countries: the Netherlands and Finland.

The EPR provides 30 recommendations, approved by the WPEP on 7 November 2016. They aim to help Estonia green its economy and improve its environmental governance and management. Particular emphasis is on waste and materials management, as well as mining and the environment.

<http://oe.cd/epr>



**OECD**

BETTER POLICIES FOR BETTER LIVES

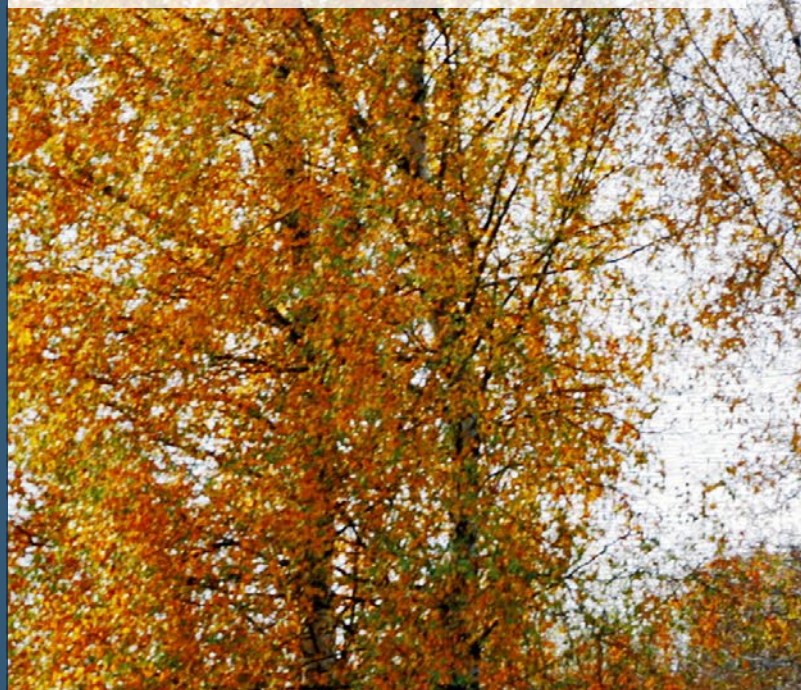


*“Handling the transition away from oil shale mining and use is Estonia’s most important economic, environmental and social challenge.*

*The development of renewable energy and integration into European electricity markets now provide alternatives.”*

**Simon Upton**

OECD Environment Director



# Estonia

## ESTONIA 2015

### Population

1.3 million

### GDP/capita

(current purchasing power parity)  
USD 24 200  
(OECD average is 40 100)

### Total area

45 339 km<sup>2</sup>

### Population density

29 inhabitants/km<sup>2</sup>  
(OECD average is 35)

### Currency

Euro  
In 2015, USD 1 = EUR 0.9

## Overview

Since 2000, Estonia's small, open economy has grown significantly, while reducing associated environmental pressures. The economy is still highly carbon- and energy-intensive, due to its dependence on oil shale. The oil shale mining and processing sector still causes considerable damage to the air, soil and water. Estonia is pursuing an ambitious green tax reform, and the environmental goods and services sector is developing fast. However, the country needs to accelerate the transition to a green, low-carbon economy.

## OPPORTUNITIES

- **well-established environmental institutions**
- **an abundance of natural assets: plentiful water and forests covering half of the territory**
- **a developed system of spatial planning, modernised in 2015**
- **vibrant environmental democracy and comprehensive environmental education**
- **ongoing green tax reform, aiming to shift part of the tax burden from income to resource consumption and pollution**
- **extensive protected areas, and a larger share of healthy species and habitats than in the rest of Europe.**

## CHALLENGES

- **the most carbon-intensive, and third most energy-intensive, economy in the OECD, due to reliance on oil shale**
- **high level of material consumption, caused by low efficiency of oil shale-based energy generation**
- **remaining elements of the Soviet-era regulatory system**
- **lack of policies to address environmental damage from road transport**
- **insufficient recovery and recycling of municipal solid waste**
- **high health risks in the oil shale mining region, due to polluted air, soil and water**
- **extensive generation and landfilling of hazardous waste in the oil shale sector**
- **need for expensive remediation of old contaminated sites.**

# Environmental performance | key trends

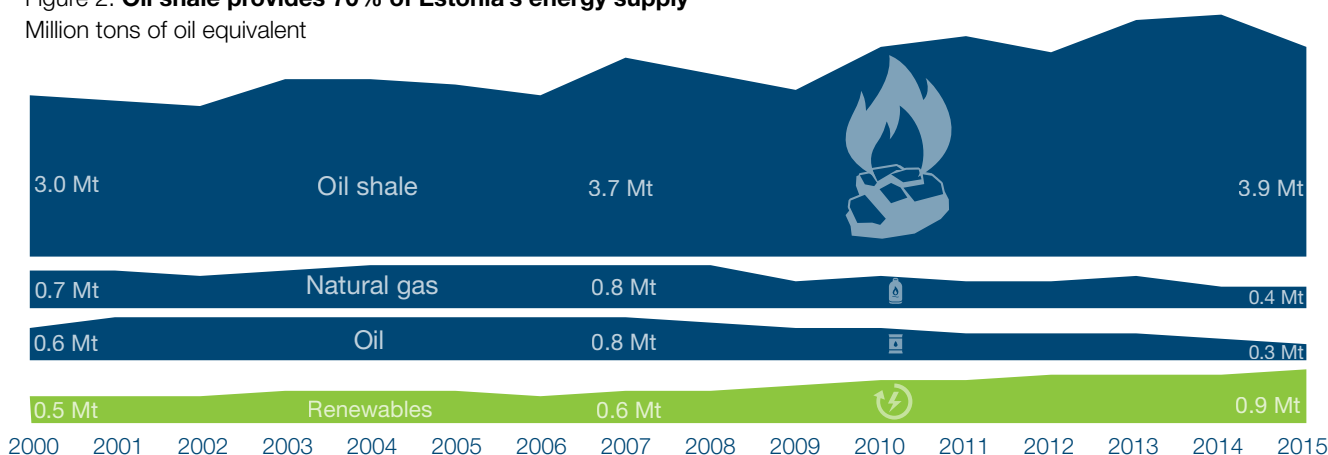
**Estonia is a small, sparsely populated country with large oil shale reserves and abundant forestry and water resources. Since 2000, the country has made significant progress in decoupling its strong economic growth from the primary environmental pressures. However, it has the most carbon-intensive and the third most energy-intensive economy in the OECD, largely due to its heavy reliance on oil shale.**

## ENERGY AND CLIMATE

Figure 1. **Estonia has the most carbon-intensive economy in the OECD**  
Kilos of CO<sub>2</sub> emissions per USD 1000 of GDP (PPP), 2014, top ten OECD countries



Figure 2. **Oil shale provides 70% of Estonia's energy supply**  
Million tons of oil equivalent



Sources: IEA (2016), IEA CO<sub>2</sub> Emissions from Fuel Combustion Statistics (database); OECD (2016), National Accounts (database).

- Fossil fuels represent 85% of the energy mix (read more on oil shale on pages 12-14).
- Since becoming an EU member in 2004, Estonia has joined regional electricity and gas markets, moving towards energy security and diversification of energy sources.
- Estonia reached its 2020 EU renewable energy target in 2011, mostly due to the extensive use of biomass in the heating sector. However, electricity generation from renewables, which comes from wind power and biomass, is still at one of the lowest rates in the OECD. Estonia used only 0.2% of renewable energy in the transport sector, far below the European goal of 10% by 2020.
- Greenhouse gas (GHG) emissions increased by 23% over 2000-14. The strategic policy framework stops short of a comprehensive climate change mitigation strategy. The National Development Plan for the Energy Sector until 2030 charts scenarios for reducing GHG emissions to comply with the 2015 Paris Agreement and EU targets. However, Estonia has not yet developed specific measures to achieve them.
- Tallinn and the county of Ida-Viru, home to most of the oil shale industry, suffer from high levels of air pollution (see page 14). Overall, however, the country enjoys good air quality.

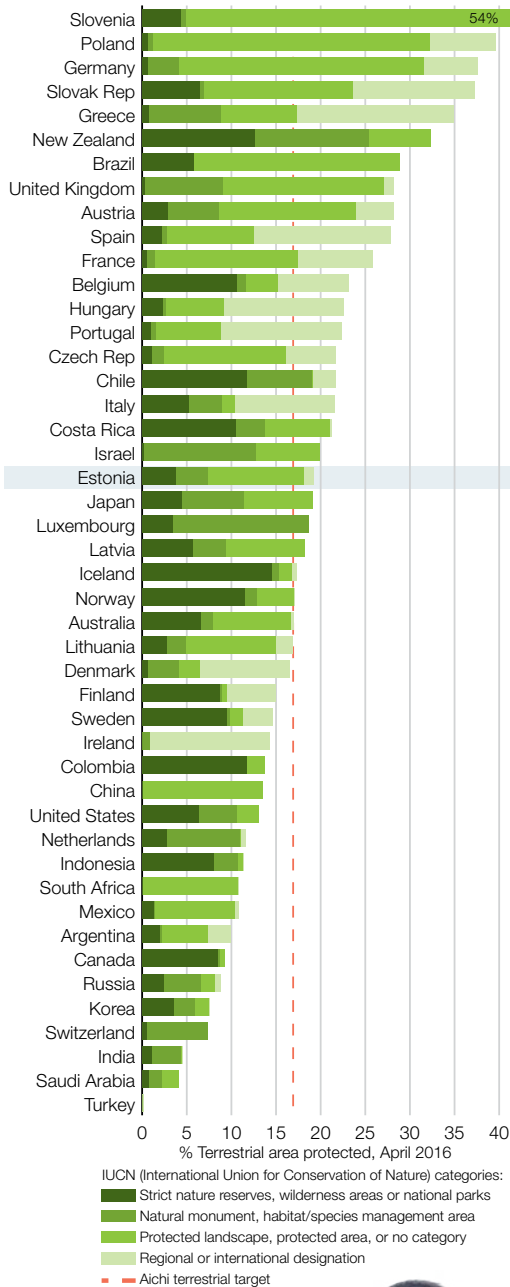
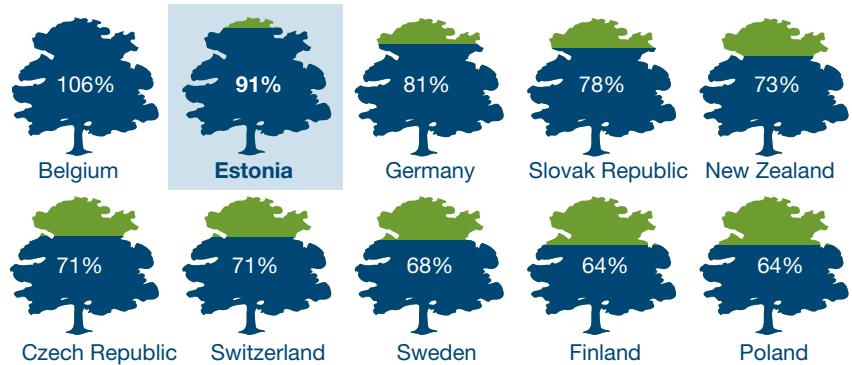


Figure 3. **Estonia achieved the Aichi target on biodiversity protection**  
 Percentage of terrestrial area under protection, April 2016. Preliminary results.  
 Source: OECD calculations based on WDPA, April 2016

Figure 4. **Forests are intensively used**  
 Fellings related to annual productive capacity, 2014, top ten OECD countries  
 Source: OECD Environment Statistics (database)



### FORESTRY AND BIODIVERSITY

- Forests cover half of Estonia's territory, with pine and birch as the most common species.
- Forests are used intensively. Over the past decade, logging increased considerably, providing for a forestry industry that represents 5% of exports. Estonia needs to further promote sustainable forestry practices through better co-operation between relevant ministries and dissemination of knowledge among private forest owners.
- 18% of terrestrial area and 27% of territorial sea are protected, under different categories. Natura 2000 sites represent 18% of territory, both on terrestrial areas and marine sites. Estonia achieved the Aichi 2020 targets on biodiversity protection ahead of time.
- The status of species has improved since 2007, with more than half of habitats and species in a favourable condition (compared to the EU average of 16% of habitats and 23% of species).

### WATER RESOURCES

- Estonia is a country with a medium level of water stress, abstracting around 14% of the total available renewable freshwater in 2014. Gross water abstraction has increased by 20% since 2000, mainly for electricity production; it is among the highest per capita in the OECD.
- Water pollution has decreased significantly: 70% of surface waters and 90% of groundwater have good status according to EU norms. Non-point source pollution from agriculture is the biggest pressure in all river basins. Water discharges from oil shale mines also affect water quality.



## Next steps | climate change, biodiversity and water

- Develop and implement specific climate change mitigation measures to achieve Estonia's commitments for 2030 and 2050.
- Encourage sustainable forestry management, including by limiting the intensity of forest use, and disseminating knowledge on sustainable forestry practices among private forest owners.
- Reduce the GHG emission intensity of the economy by taking advantage of Estonia's integration into European electricity markets, reducing the share of oil shale in the energy mix and encouraging use of renewable energy sources and energy efficiency.
- Address diffuse water pollution from agriculture.



## Environmental governance

---

**Estonia has come a long way down the road of European integration, making its legal framework consistent with EU environmental *acquis*. It achieved great progress in environmental democracy in the process. Estonia is consolidating legislation to eliminate inconsistencies and cut red tape for businesses.**

### LAWS AND INSTITUTIONS

---

- Estonia's environmental governance is centralised, except for local environmental services.
- A territorial reform is underway, which is expected to reduce the number of local jurisdictions and address local institutional capacity concerns. To date, municipal co-operation is limited to regional water utilities in several areas, including water supply. Better co-operation among municipalities is essential to ensure that policies are implemented effectively.
- Until recently, the regulatory reform has been piecemeal, leading to inconsistent and fragmented requirements and procedures. Consolidation and codification of environmental legislation, underway since 2007, is expected to be completed in the near future.

### COMPLIANCE

---

- Many instruments (permitting, enforcement sanctions and the liability regime) date to the Soviet era. This hinders more effective regulation, as well as prevention and remediation of environmental damage.
- The Environmental Inspectorate has introduced risk-based planning of its activities (Figure 5). This has

improved detection of offences, although inspectors largely react to complaints and incidents.

- Monetary penalties for environmental violations have increased substantially over the last decade, but it is not clear whether they are an effective deterrent. Sanctions are not always proportionate to the seriousness of non-compliance.
- The environmental liability system is incoherent and not conducive to restoring the environment. In general, liability regimes under issue-specific environmental laws mandate monetary compensation from the responsible party to the state. A remediation-oriented regime, in line with the EU norms, is rarely applied.
- The government started to promote green business practices through voluntary agreements, recognition awards and public procurement policies. However, sector-oriented compliance promotion among small and medium-sized enterprises has not yet received the attention it deserves.



## CHANGING BEHAVIOURS, ONE CAR REPAIR SHOP AT A TIME

In 2013, a trade association noticed that a significant number of repair shops were not turning over all their waste oil to waste management companies. The Environmental Research Centre confirmed that up to half of repair shops' waste oil was not reaching the legal waste management system. After verifying this information, the Environmental Inspectorate (EI) reminded an initial group of potentially problematic repair shops of their waste management obligations.

In addition, the Environmental Board, Estonian Waste Management Association and AMTEL jointly organised an "Information Day", accompanied by a press release. More than half of the 100 operators invited took part in the event. Over the next several months, the EI monitored behavioural changes in the repair shops based on data from waste management companies. At the end of this "grace period", the EI and the police inspected 105 repair shops. Follow-up inspections were carried out in non-compliant establishments.

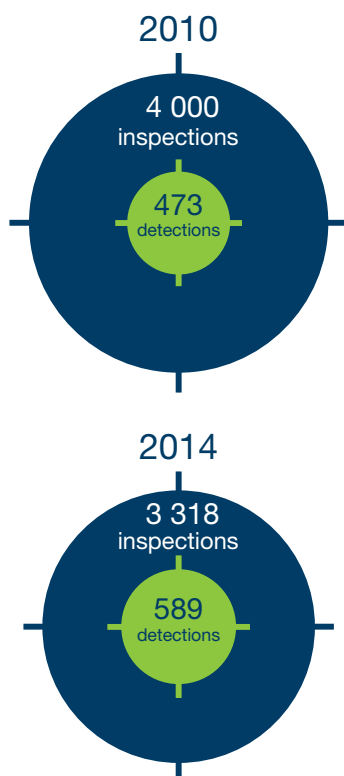


## DEMOCRACY

- The public has clear right of access to environmental information and ample opportunities to take part in policy making, environmental assessment, permitting and spatial planning. The government is actively involved in environmental education and awareness raising (see page 8).

Estonia ranks  
**14<sup>th</sup>**  
in the worldwide  
Environmental  
Democracy Index

Figure 5. **Inspections are better targeted**



Source: Country submission.

## Next steps | governance

- Finish codification of environmental legislation to improve coherence and reduce the administrative burden on the regulated community.
- Consider replacing tailored permits with sector-specific general binding rules to simplify the regulatory regime for installations with low environmental impact.
- Reform penalties for environmental violations by basing fines on both the gravity of the offence and the economic benefit of non-compliance.
- Scale up government efforts to promote environmental compliance and green business practices through a range of information-based tools and regulatory incentives.

## Case studies



### TALLINN KNOWS HOW TO RECYCLE

Since 2008, municipalities have used EU and domestic funds to build about 100 collection points across the country for recyclables, garden and park waste, household hazardous waste and electrical and electronic equipment. Tallinn's scheme for recyclable waste has gone further, providing containers for recyclable waste near residential buildings. As a result, Tallinn reached a separate collection rate of 53% of all municipal solid waste in 2012, the third highest among EU capital cities: 85% of glass and 74% of paper waste were collected. In Tallinn, biodegradable waste is also collected from apartment buildings, restaurants and food shops.



### CONNECTING TO THE EUROPEAN ENERGY MARKET

Since 2004, Estonia has been working to integrate into regional electricity and gas markets more effectively. It aims to reduce dependence on gas imports from the Russian Federation, as well as reliance on oil shale. Since Estonia is now part of the Nord Pool wholesale electricity market, it can buy renewable electricity from anywhere in Europe. Consequently, it can reduce the share of oil shale in the energy mix and the GHG emission intensity of the economy. However, prices do not give an incentive to increase imports of electricity from cleaner sources. This may change with the eventual completion of additional nuclear capacity in Finland.



### WASTE ROCKS FOR RAIL BALTICA?

Estonia, Latvia and Lithuania are planning to build Rail Baltica in the coming years: a transport link to other parts of Europe financed in part with EU support. For much of this line, new tracks will be built, with works due to start in 2017. The Estonian government has commissioned a feasibility study on the use of limestone waste from oil shale mining for the construction. While the quality of the rock is not appropriate for track ballast, it could be used for complementary works. However, its transport from oil shale mining areas in north-eastern Estonia would be costly and lead to environmental impacts.





### MANAGING MINING WASTE

The large landfill at Kohtla-Järve has received waste from oil shale processing since 1938. The landfill now contains over 80 million tonnes of semi-coke, with the associated air pollution, including volatile organic compounds, and groundwater contamination. In 1997, ditches were dug around the site to extract leachate, which was sent to a wastewater treatment plant. To meet EU requirements, the Ministry of the Environment closed a large section of the landfill. EU funds largely financed works from 2010 to reconstruct the drainage ditches and put a waterproof cap on the closed area. The work was delayed when a large portion of the closed landfill self-ignited. Although the project was largely completed by 2015, independent experts contend that the landfill still contaminates the air and groundwater.



### LOVING NATURE AT THE YOUNGEST AGE

In Estonia's top-performing education system, environment and sustainable development are mandatory topics. An online environmental education database includes contact details, a list of study programmes, a selection of study materials, worksheets, movie clips and events. In 2014, more than 86 000 children participated in such programmes. The European Regional Development Fund supports a EUR 21.2 million programme to establish and renovate 30 nature houses (run by the State Forest Management Centre) and environmental education centres in all Estonian counties. Tallinn, Tartu and Pärnu have all recently established new centres.



### PAYMENTS FOR FOREST PROTECTION

In Estonia, a third of protected forests are privately owned. EU funds provide for compensating owners of Natura 2000 protected forests: EUR 110 per ha per year in conservation zones, EUR 60 per ha per year in limited management zones. Estonia has the biggest budget for Natura 2000 private forest land support among EU Member States: EUR 28 million for 2014. It is not considering other payments for ecosystem services. While the private nature tourism industry generates an annual turnover of EUR 10-15 million, access to all protected areas, even on private property, is free in accordance with the Nordic principle of free access to nature.

# Green growth

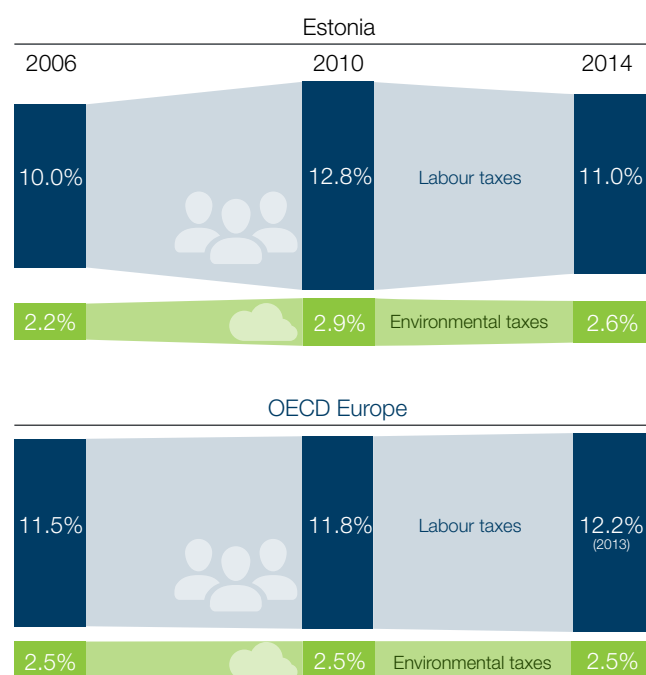
**There is no dedicated green growth strategy in Estonia, but several sectoral plans and programmes address environmental concerns, and a green tax reform is underway. Energy development plans encourage renewable energy, although they lack specific measures to minimise reliance on fossil fuels.**

## GREENING TAXES

- The government is pursuing an ambitious agenda for a green tax reform, which aims to shift part of the tax burden from labour to pollution and other negative environmental effects.
- Revenues from environmentally related taxes increased to 2.6% in 2014. Green taxes represent nearly 8% of total tax revenues. This was due to a significant increase in energy tax rates and the introduction of an excise tax on electricity.
- Road transport accounts for a significant and rising source of air pollution and carbon emissions. However, Estonia has few taxes on motor vehicles: they represent 2.5% of environmentally related tax revenues, well below the OECD average.
- Energy tax rates vary considerably across sources and uses, with a number of exemptions. Households bear a significant share of the fuel and electricity tax burden. Current rates fail to provide a consistent carbon price signal. The CO<sub>2</sub> pollution tax covers energy producers, except electricity generation, at the negligible rate of EUR 2 per tonne of CO<sub>2</sub>.
- Pollution taxes are imposed on many parameters, including air emissions of heavy metals and discharges of hazardous substances into water. However, most are not directly monitored. While rates have increased significantly since 2000, they remain too low to influence the environmental performance of firms.

Figure 6. **A long road ahead for green tax reform**

Taxes on income, profits and payroll and environmental taxes, % GDP



Sources: OECD (2016), OECD Revenue Statistics and OECD Environment Statistics (databases)

## Large inflows of European funds help improve energy efficiency

According to the draft National Development Plan for the Energy Sector, the total 2016-19 funding needs for energy efficiency improvements are **EUR 336 million** in the housing sector and **200 million** for industry and street lighting, public sector buildings and district heating.

Over 2014-20, the EU through its Cohesion Policy will invest some **EUR 238 million** to improve energy efficiency. This investment is expected to lower energy consumption in about **40 000 households**.



## GREEN INVESTMENT AND ECO-INNOVATION

- General government spending on environmental protection rose from 0.7% to 0.9% of gross domestic product (GDP) between 2000 and 2012, just above the EU-28 average. Major public funds support upgrading the municipal water supply and wastewater treatment. Investments should be better monitored to ensure they support government priorities and reflect the principles of sound public finance. Production enterprises more than doubled spending on pollution abatement over 2010-13, although it focuses more on end-of-pipe than process-integrated technologies.
- Estonia is actively promoting renewable energy via a feed-in premium scheme introduced in 2007. Achieving the current level of wind power generation has required subsidies. However, the economic viability of additional wind projects is uncertain at the current carbon price and low electricity price more generally, as the government plans no further subsidies in this sector. Over 95% of electricity generated from biomass comes from subsidy-eligible combined heat and power plants. Large investments in biomass and wind energy production allowed Estonia to reach its EU renewable energy target for 2020 (see page 4).

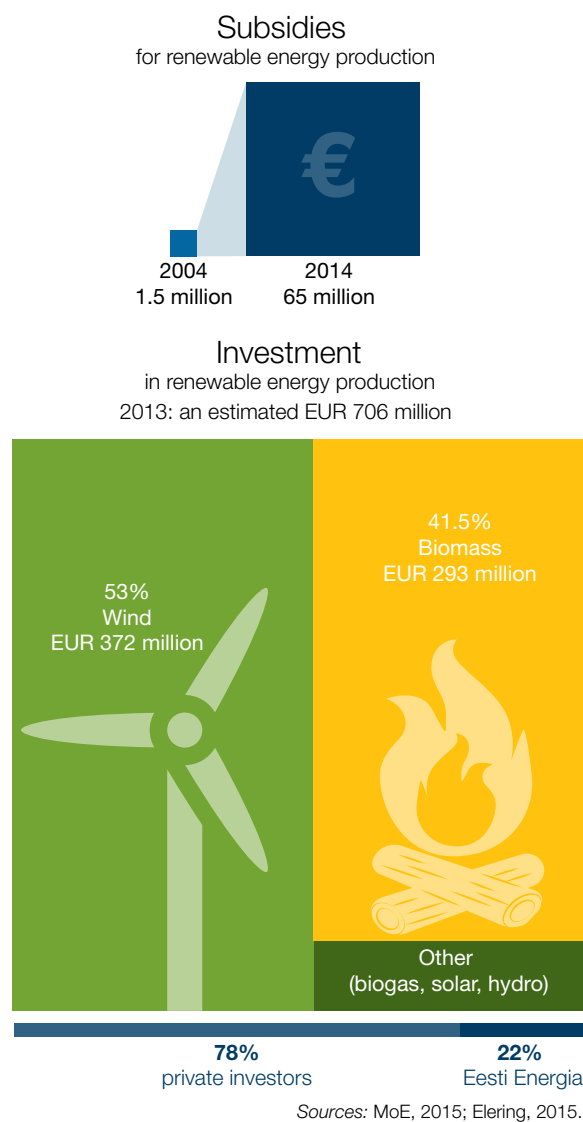
## DEVELOPING GREEN MARKETS

- Energy saving and management and renewable energy generation are the main contributors to a dynamic environmental goods and services sector. In 2013, 0.7% of total employment was related to renewable energy, above the EU average.

Environmental goods and services account for almost **6%** of GDP, 3 times the EU average

- Public procurement could boost these markets and improve business behaviour. Only 6% of such contracts are “green” (i.e. specify environmental standards up and down the supply chain), much lower than the EU average of 26%. The Ministry of the Environment aims to increase the share to 15% by 2018.
- Estonia is catching up to EU average levels of eco-innovation inputs, but remains behind in performance (GHG reduction, socio-economic outcomes or resource efficiency). This is partly due to difficulties in accessing capital. In addition, many firms remain either unaware of research and development (R&D) grants or complain that the application process is long and bureaucratic. Co-ordination between relevant ministries is poor.
- Public R&D spending peaked in 2010 with considerable one-off investments in the oil shale industry. At the same time, Estonia has the lowest share of energy efficiency in energy-related public R&D budget among OECD member countries.

Figure 7. **Estonia is promoting renewable energy**



## Next steps | green growth

- Focus air and water pollution taxes on a limited number of priority pollutants whose emissions or discharges are monitored; increase the tax rates for these pollutants to provide a real incentive for their abatement.
- Introduce a road pricing system or taxes on motor vehicles adjusted to reflect the environmental characteristics of the vehicle, in order to address the environmental damage from road transport.
- Develop a comprehensive assessment of the extent and magnitude of environmentally harmful subsidies.
- Strengthen eco-innovation by improving access to finance by raising firms' (in particular SMEs') awareness of existing forms of support and simplifying the application process.

# The oil shale issue

**Oil shale is Estonia's major source of environmental impacts, especially of air pollution and waste. While oil shale has long been considered vital for Estonia's energy security, the country's integration into European energy markets now provides access to alternative energy sources. As production facilities age and open quarries get depleted, the sector requires major investment to maintain its near-term viability.**

## ECONOMIC CHALLENGES

- The oil shale sector accounts for 4% of GDP and 1.5% of employment. Four companies hold mining permits, although state-owned Eesti Energia extracts 75-80% of total oil shale.
- The ageing oil shale sector faces economic challenges. Efficiency is decreasing as open quarries get depleted, and extraction shifts to more expensive and less efficient underground mining. Three-quarters of processing capacity will reach the end of its productive life in the near future.
- To keep the sector profitable, the Estonian government wants to reduce the use of oil shale for electricity production (given its low efficiency) and increase processing into shale oil and chemical products valued in the international market. However, for shale oil production to be competitive, global oil prices would need to recover from their current low level.
- The newly adopted National Development Plan (NDP) for Oil Shale Use for 2016-2030 aims at increasing mining efficiency, while minimising the sector's negative environmental impact.

## ENVIRONMENTAL IMPACTS

- Oil shale mining and use are the dominant source of environmental impacts in the country. While these impacts have been reduced over the last decade, air and water pollution in Ida-Viru county remains worrisome.
- The mining sector is the largest water consumer in the country. Operations influence groundwater infiltration and affect river run-off and flow. They contaminate water, particularly with sulphate discharges, and increase river water temperature.
- Oil shale mining and processing produce massive – and increasing – amounts of waste, little of which is recovered. Read more on mining waste on page 14.

## TAXES AND PERMITS

- The oil shale sector is subject to a mineral resource extraction tax and taxes on air and water pollution, as well as on waste disposal. The sector pays almost 80% of the country's environmental taxes. Rates increased significantly between 2005 and 2015. However, they have had no impact on the level of mineral extraction volumes and limited impact on environmental damage. Air emissions and wastewater discharges have been reduced, but mainly due to investments made to comply with stricter EU environmental standards.
- A June 2016 amendment effectively reduced extraction tax rates more than five-fold. This reform will deprive the government of significant revenues and runs contrary to the green tax reform plans.
- Oil shale combustion and processing are subject to integrated pollution prevention and control or issue-specific environmental permits. However, permits do not include any financial requirements and guarantees to conduct remediation.

## Oil shale and shale oil

Oil shale is a sedimentary rock containing up to 50% kerogen, a solid mixture of organic chemical compounds. Massive deposits are found around the globe, but most are too deep or too costly to be exploited. Today, only the People's Republic of China and Estonia produce oil shale commercially.

In Estonia, thermal plants use over 80% of the mined oil shale to produce electricity and heat. The rest is processed to produce shale oil (that can be refined into diesel and jet fuels) and valuable chemicals, such as phenols.

## Ensuring a socially acceptable transition

Diversifying energy supply away from oil shale will require offering social guarantees to the mostly Russian-speaking work force in north-eastern Estonia.

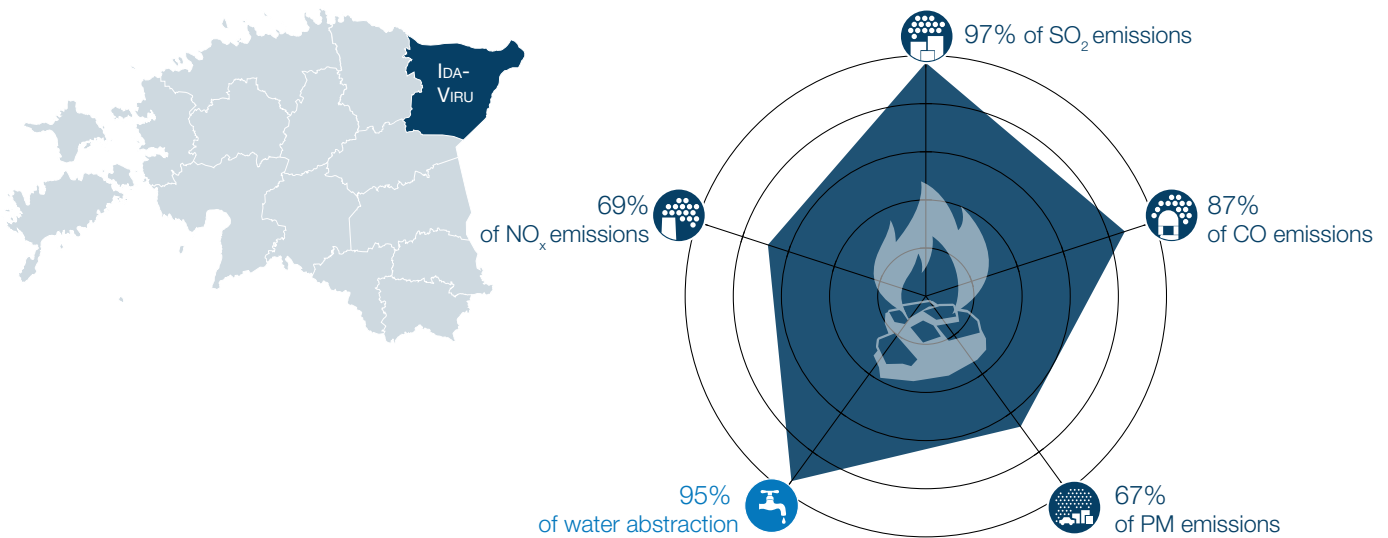
The experience of Germany's Ruhr region may provide insights into the transition from an economy based on natural resources to one based on knowledge. A

socially responsible downsizing process may include employment promotion and retraining managed by specialised agencies, for example.

Active collaboration between the central government, municipalities, employers and trade unions is essential for a successful and just transition.

Figure 8. **The oil shale industry has a heavy impact on Ida-Viru's air and water.**

Ida-Viru is home to most of Estonia's oil shale industry. It accounts for 11.2% of the population and:



**CO:** Carbon monoxide reacts with other pollutants to form ground level ozone. High levels of carbon monoxide in the air affect the heart and the brain. **NO<sub>x</sub>:** Nitrogen oxides react with sunlight to produce ozone, a cause of respiratory diseases. They also contribute to soil and water acidification. **PM:** Exposure to particulate matter, both short-and long-term, causes asthma and cardiovascular and respiratory diseases. **SO<sub>2</sub>:** Sulphur dioxide affects the respiratory system and is linked to cardiac diseases. It also contributes to soil and water acidification. **Water:** Large volumes of water are used for cooling in oil shale-fired power plants, leading to heat pollution, or pumped out of mines, causing water acidification. *Source:* ESTEA (2016)



### Next steps | oil shale

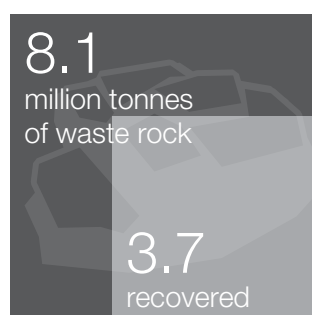
- Make the National Development Plan's efficiency and environmental targets for 2025 and 2030 more ambitious by reducing the share of oil shale in the energy mix.
- Consider diversifying Ida-Viru county's economy away from oil shale mining and use, while planning ways to limit social impacts.

# Mining waste

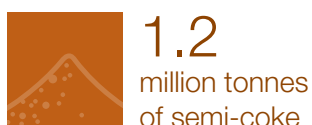
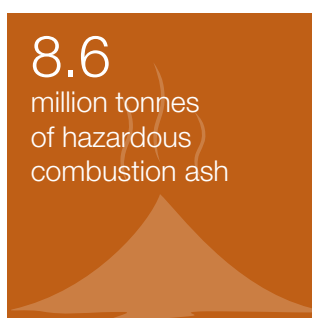
**Estonia has the lowest material productivity in OECD Europe, largely because it relies heavily on domestic oil shale with low energy content. Most of its waste comes from oil shale mining, refining and combustion. Management of this waste remains a challenge.**

Figure 9. **Oil shale and waste**

In 2014, Estonia extracted **15 million tonnes of pure oil shale** and produced in the process:



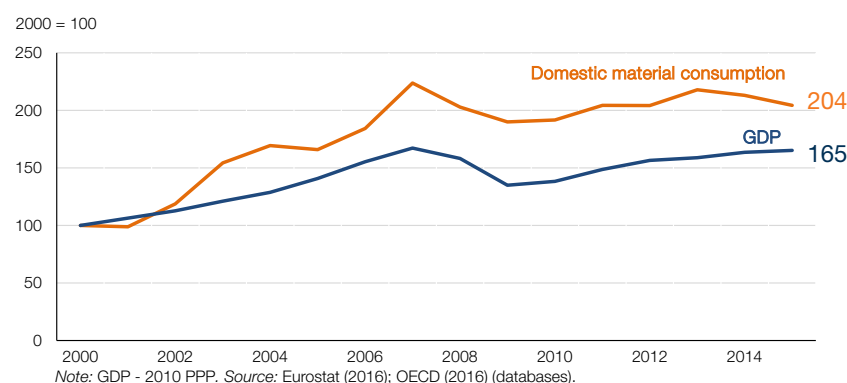
Non-hazardous waste



Hazardous waste

Source: Statistics Estonia, 2016

Figure 10. **Materials consumption increased faster than GDP**



- Between 2000 and 2014, the material productivity of Estonia’s economy (GDP generated per unit of material consumed) decreased by 26%. Its material productivity is the lowest in OECD Europe largely because Estonia relies heavily on domestic oil shale with low energy content.
- In 2014, Estonia generated about 22 million tonnes of waste. Waste from mining, refining and combustion of oil shale accounts for about 83% of primary waste.
- Estonia generates 35 times the EU average in hazardous waste per capita, 98% of which comes from oil shale combustion and refining.
- Waste rock from oil shale mining constitutes 70% of Estonia’s non-hazardous waste. As more oil shale is extracted from underground mines, more waste rock is produced per tonne of usable material. Reuse of waste rock for road construction or backfilling is encouraged, but less than half is actually reused.
- Oil shale combustion and refining are responsible for 98% of Estonia’s massive amounts of hazardous waste. Most of it – ash from oil shale combustion, and semi-coke and retorting waste from its conversion to shale oil – goes into landfills, which leads to air pollution with toxic organic substances.

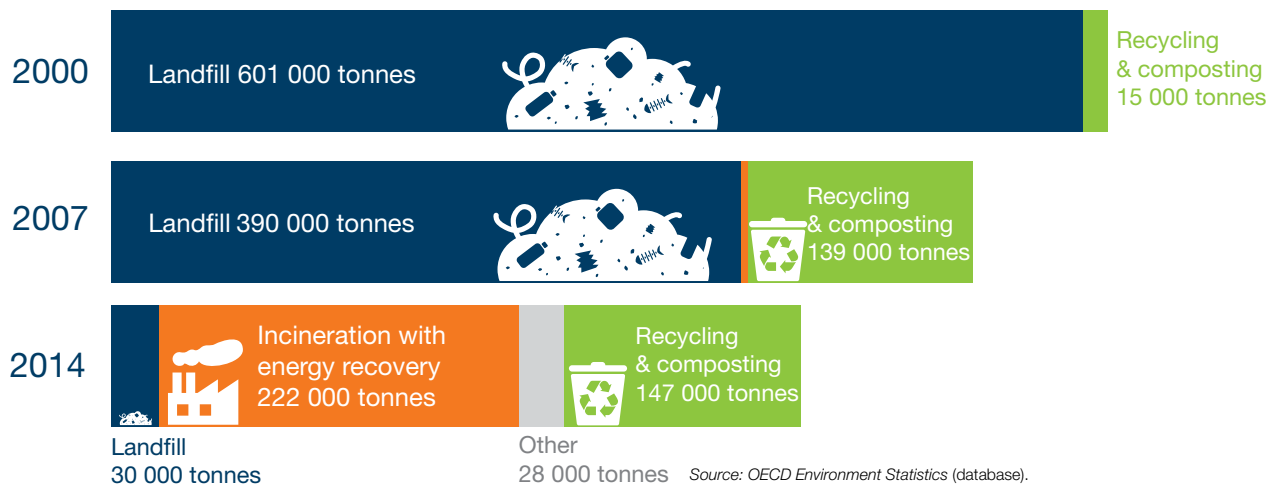
## Next steps | oil shale waste

- Strengthen efforts to improve resource productivity.
- Reinforce efforts to increase reuse of mining waste by investing in research and development in collaboration between the government, research institutions and enterprises; consider increasing landfill disposal taxes for oil shale mining and processing waste.
- Strengthen data gathering and information systems for waste management and the monitoring of potential impacts of existing and former waste sites.

## Municipal waste management

Over the last decade, Estonia has successfully transformed its municipal waste management practices from landfilling to a high level of waste incineration. It has made progress in recycling, particularly in Tallinn, but is unlikely to reach European recycling targets.

Figure 10. From landfilling to incineration and recycling



- Estonians produced 293 kg of municipal solid waste per capita in 2013, a third less than in 2005.
- Since 2005, Estonia's municipal waste management has moved from reliance on landfilling to a high level of energy recovery via waste incineration. Recycling and composting have progressed to 29% and 5% respectively, but the country is not on track to achieve the EU's 50% recycling target by 2020.
- In 2008, Estonia required municipalities to separate collection of paper and cardboard, garden waste and hazardous waste from households and small businesses. In 2012, Tallinn separated 53% of all collected municipal solid waste, the third highest among EU capital cities: it collected 85% of discarded glass and 74% of paper waste.
- Estonia has set up extended producer responsibility schemes for six waste streams, including packaging, electronic and electrical waste, and end-of-life vehicles. Current systems face all-too-common issues with data accuracy, waste leakage, free riders and appropriate fee rates. Government oversight and enforcement have not been strong enough to address these problems.
- The deposit-refund system works efficiently, allowing for a return rate of 90% of PET and glass bottles, and 64% of metal cans in 2013.
- Private companies collect municipal solid waste. The fees for households are low, but many municipalities lack capacity and resources to manage tenders effectively and more generally to ensure proper waste collection.
- The government is planning to eliminate tenders and instead require each household to contract directly with a waste collection company. Experience in other OECD member countries has shown limitations of a "side-by-side" collection system, whereby multiple companies work in the same areas: in Ireland and Poland, for example, the side-by-side system increased traffic congestion, noise and air pollution, particularly in urban areas. OECD analysis points to higher overall costs and to the need for strong government oversight.

### Next steps | municipal waste

- Establish a stable, long-term institutional framework to ensure achievement of European requirements and targets for MSW management.
- Consider introducing a tax on domestic mixed waste and possibly an incineration tax to better support recycling targets.



## MORE INFORMATION

---

### OECD Environmental Performance Reviews: Estonia 2017

The report and all data are available on  
<http://oe.cd/epr-estonia>

### Environmental Performance Review programme

<http://oe.cd/epr>

## CONTACTS

---

Head of division

**Nathalie Girouard**

[Nathalie.Girouard@oecd.org](mailto:Nathalie.Girouard@oecd.org)

Report co-ordinator

**Eugene Mazur**

[Eugene.Mazur@oecd.org](mailto:Eugene.Mazur@oecd.org)

Communications

**Clara Tomasini**

[Clara.Tomasini@oecd.org](mailto:Clara.Tomasini@oecd.org)

## IMAGE CREDITS

---

All icons are from TheNounProject.com. Cover: iStock/Peeter Viisimaa and iStock/Scanrail. Swallow icon by Agne Alesuite. P. 2-3: iStock/Peeter Viisimaa. P. 4-5: Icons by fire\_HLD, Anuar Zhumaev, Thomas Uebe, Edward Boatman, Waleed Al Alami, James Keuning. Barn swallow photo by Aleksander Kaasik, Wikimedia Commons. P. 6-7: iStock/Konstick; Luke X. Martin, Flickr (CC). P. 8-9: Eesti Pandipakend; Joonas Plaan, Flickr (CC); Mwmbwls; Zooloogiaring; Merko Ehitus Eesti; Anita, Flickr (CC). P. 10-11: Icons by Berkay Sargin, Edward Boatman, Sergey Krivoy, Econathon, HLD. P. 12-13: Shutterstock/Sarah2. P.14-15: Icons by Lucas Fhne, Ana Maria Lura Macias, Yu Luck, Krisada, Marie van den Broeck.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

2 - February 2017

<http://oe.cd/epr>

