European Parliament

Climate action in Estonia

Latest state of play

The EU's binding climate and energy legislation for 2030 requires Member States to adopt national energy and climate plans (NECPs) for the 2021-2030 period. In October 2020, the European Commission published an assessment for each NECP. Estonia submitted its NECP in December 2019. A high proportion of Estonians (67 %) expect national governments to tackle climate change.

Estonia recovered its independence in 1991 and joined the European Union in 2004. In the 1990s, the country launched structural reforms related to its transition to a market-based economy. In 2019, its total GHG emissions amounted to 15.2 million tonnes of CO_2-equivalent ($MtCO_2e$), excluding land use, land-use change and forestry (LULUCF) and including international aviation, generating 0.4 % of the EU-27's total greenhouse gas (GHG) emissions. By 2030, Estonia aims to achieve a GHG emissions reduction of 70 % compared with 1990. Its long-term target is a reduction of 80 % by 2050. The new government has set an even more ambitious target, aiming for climate neutrality by 2050. It also envisages a motivation package to help local governments reach carbon neutrality by 2030. However, Estonia's total emissions per inhabitant remained above the EU average in 2019, and the carbon intensity of its economy was one of the highest in the Union. The country's energy independence and security of supply still rely on oil shale, although between 2005 and 2019, the share of renewables in Estonia grew faster than the EU average, over-reaching the 2020 target.

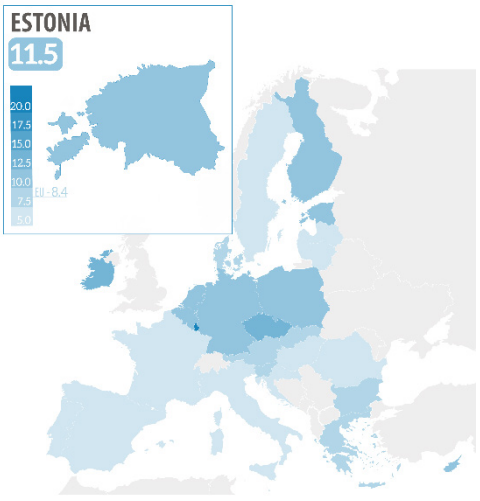
Emissions and demographics

In the European Union, average GHG emissions per inhabitant decreased from 10.8 tonnes to 8.4 tonnes CO_2e over the 2005-2019 period.

Between 2005 and 2019, Estonia's GHG emissions per capita fluctuated above the EU average and remained among the highest in the Union. Over the 2005-2019 period, average emissions per person decreased, with variations from year to year, between 14.1 tonnes in 2005 to 11.5 tonnes in 2019.

In 2019, according to Eurostat, there were about 1 324 820 people living in Estonia, which is a decrease of 2.5 % compared with 2005. This tendency is expected to continue despite the slight increase in 2020.

Figure 1 – Total greenhouse gas emissions (tCO_2e) per inhabitant in 2019



Data source: Eurostat demo_pjan and EEA (GHG trends, GHG estimates, UNFCCC reporting).

This briefing is one in a series which will cover all EU Member States.

EPRS | European Parliamentary Research Service

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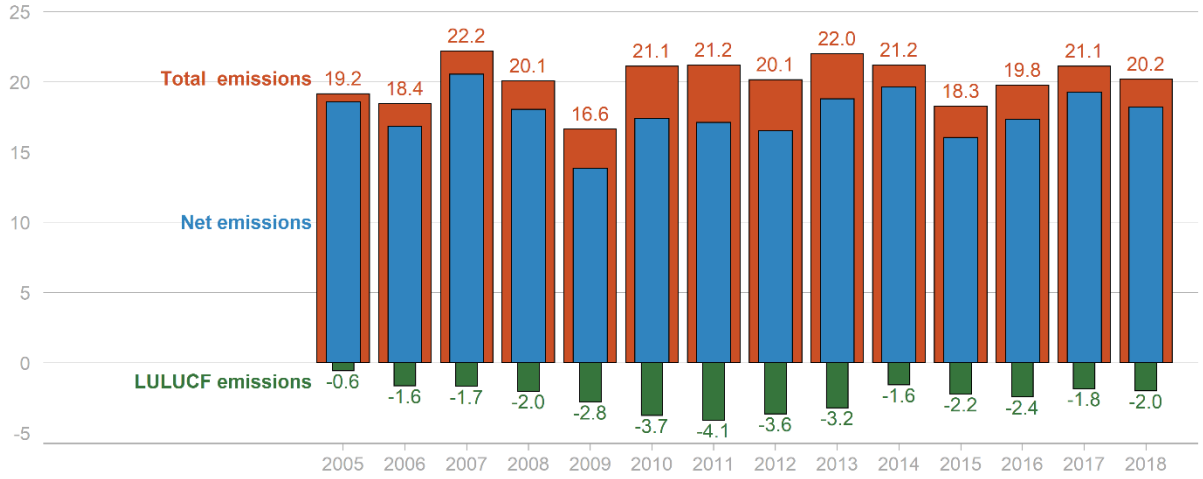
Estonia's progress so far

In 2018, Estonia accounted for 20.2 $MtCO_2e$ in total emissions (excluding LULUCF and including international aviation): 5.4 % above the 2005 level. Taking into account the carbon sink functions of its LULUCF sectors, in 2018 the country had net emissions of 18.2 $MtCO_2e$, representing a reduction of 2.1 % compared with 2005. In 2019, Estonia emitted 15.2 $MtCO_2e$, a reduction of 20.5 per cent since 2005, resulting mainly from a decrease in emissions from energy industries.

Figure 2 – Total, LULUCF and net greenhouse gas (GHG) emissions ($MtCO_2e$)



Data source: EEA (GHG trends, GHG estimates, UNFCCC reporting).

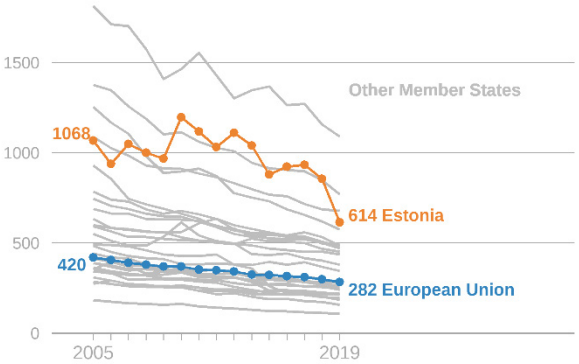
Since 2005, Estonia has been reporting net carbon removals from LULUCF sectors, woodland being the main carbon sink. According to the NECP, the fluctuation of LULUCF emissions over the past 10 years is due to logging intensity and deforestation. To maintain the carbon sink functions of forests and land-use, the plan outlines management-related measures, mainly reforestation and additional measures, such as converting arable land on peat soils to permanent grassland. The plan expects LULUCF sector emissions and removals to at least remain in balance (no-debit commitment), although a decrease in the LULUCF sink is expected by 2030.

Carbon intensity

For each euro generated in the economy, Estonia emitted 614 grams of CO_2 equivalent in 2019, compared with 1 068 grams in 2005. However, in 2019 Estonia still had one of the highest carbon intensities in the EU after Bulgaria, Poland and Czechia, mainly because of the dominant role of oil shale in its energy sector.

To achieve the transition to a low-carbon economy, Estonia aims to reduce the energy intensity of its economy and decarbonise its industrial sectors by promoting the efficient use of resources in industrial processes and the switch to low-carbon technologies, e.g. use of hydrogen. It also intends to introduce legislative incentives for the use of low-carbon fuels.

Figure 3 – Carbon intensity of the economy: GHG emissions (gCO_2e) per unit of GDP (€ in 2015 prices)



Data source: Eurostat Nama_10_gdp [CLV15MEUR] and EEA (GHG trends, GHG estimates, UNFCCC reporting).

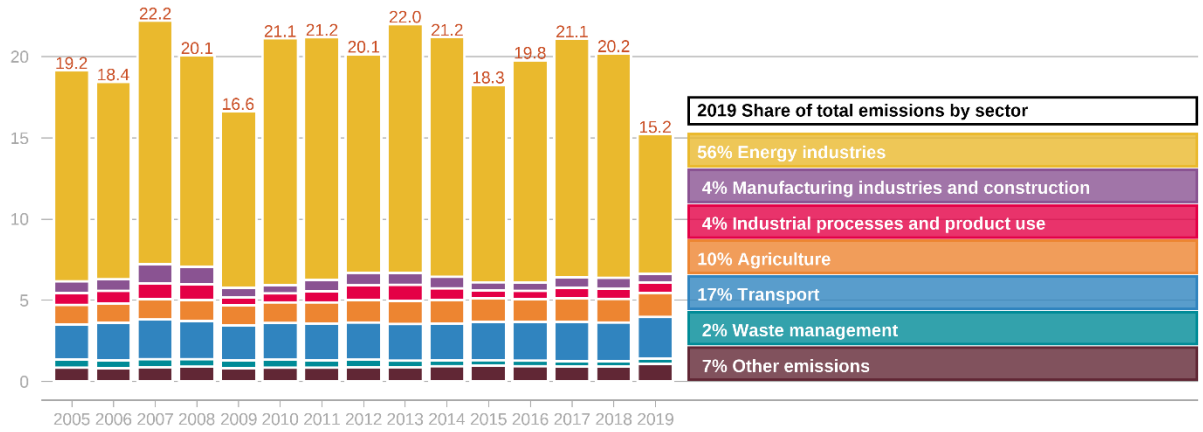
Emissions across the economy

Between 2005 and 2019, energy industries remained the main source of GHG emissions in Estonia. The main raw material used in the energy sector for electricity generation and production of liquid diesel fuel is oil shale. Its extraction and processing are highly energy intensive and generate a significant amount of CO_2 emissions. The new government's programme aims to phase out oil shale electricity production by 2035, and the use of oil shale in the entire energy sector by 2040.

Estonia still relies on locally produced and highly polluting oil shale as its primary source of fuel for electricity.

In 2019, electricity production from oil shale decreased by 46 %, according to national statistics, and energy industries achieved their lowest share of total emissions, mostly on account of the closure of oil shale units in this sector. The shares of the other two major emitters, transport and agriculture, varied slightly over the 2005-2019 period.

Figure 4 – Total GHG emissions by sector ($MtCO_2$) (rounded data)



Data source: EEA (GHG trends, GHG estimates, UNFCCC reporting).

As regards decarbonisation, Estonia's NECP envisages a 25% reduction in GHG emissions over the 2020-2030 period, by applying existing and additional measures. Estonia is also counting on cross-sectoral policies and measures with GHG emissions reduction potential, for instance producing bioenergy and increasing its share in agriculture. The aim is to increase biomethane production on farms, producing biogas from manure and slurry, to be used instead of fossil fuels in the energy and transport sectors.

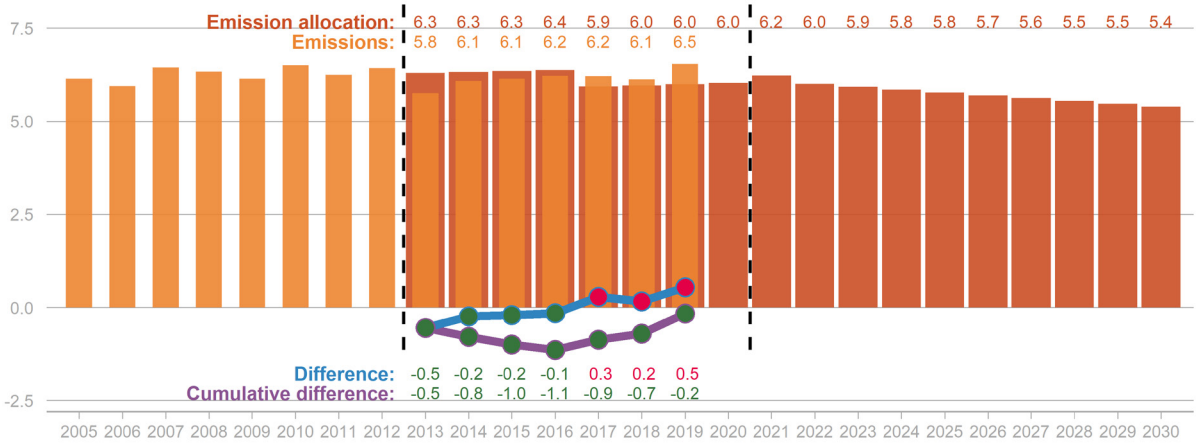
In the transport sector, Estonia's NECP identifies key measures such as: increasing the fuel efficiency of transport and the share of biofuels, also using 'second generation' biofuels; transferring public transport to biomethane and electricity; electrifying railways and ferries; and imposing time-based road charges for heavy duty vehicles. Aid for the purchase of electric vehicles is planned, as well as a development of railway infrastructure to encourage the use of public transport.

GHG emissions in the agriculture sector are expected to increase by 14 % between 2020 and 2030 and without additional measures, they would grow steadily by 2040, according to the NECP's projections. Therefore, several existing measures, such as organic farming, manure management, and the storage and increase of carbon stock in soil, should be improved. Additional measures, including precision fertilisation and replacement of inorganic fertilisers with organic, are under discussion.

Effort-sharing sectors

EU effort-sharing legislation covers emissions from sectors not included in the EU emissions trading system (ETS), such as transport, buildings, small industry, agriculture and waste. It establishes binding GHG emission targets for each Member State and sets up annual emissions allocations (AEAs). The Effort-sharing Decision (ESD) set the national targets up to 2020, while the Effort-sharing Regulation (ESR) sets them up to 2030. The aim is to achieve a collective emissions reduction in the non-ETS sectors of 10 % by 2020 and of 30 % by 2030 compared with 2005.

Figure 5 – Estonia's emissions under the Effort-sharing Decision/Regulation ($MtCO_2e$)



Data source: Commission ESD allocation, EUR-Lex and EEA, figures display rounded data.

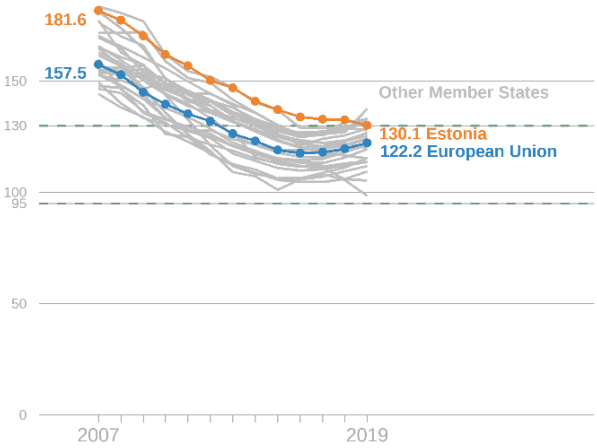
Under the ESD, Estonia is allowed to increase its non-ETS emissions in 2020 by 11 % compared with 2005 while under the ESR, the country has to achieve in 2030 a reduction of 13 % compared with 2005. Between 2017 and 2019, Estonia exceeded its AEAs but accumulated an AEA surplus of 13 % of 2005 base year emissions over the 2013-2018 period. The country's projections show that with existing measures, Estonia will not meet its ESR target. Nevertheless, if the planned measures and policies in the NECP are fully implemented, the country should over-achieve the target by 7 %. The new government aims to develop a more forceful plan of measures to decrease GHG emissions in the transport and building sectors by 2030.

The EU law on CO_2 emissions from new passenger cars sets targets for EU fleet-wide average CO_2 emissions.

Since 2007, following the EU trend, CO_2 emissions from new passenger cars in Estonia have decreased gradually, almost reaching the EU fleet-wide average target of 130 gCO_2/km set in 2015 and applied until 2020.

However, in 2019 average CO_2 emissions from new cars in Estonia were still above the EU average level and 37 % above the new EU-wide emissions target of 95 gCO_2/km which is applied from 2021.

Figure 6 – Average emissions: New passenger cars (g CO_2/km)



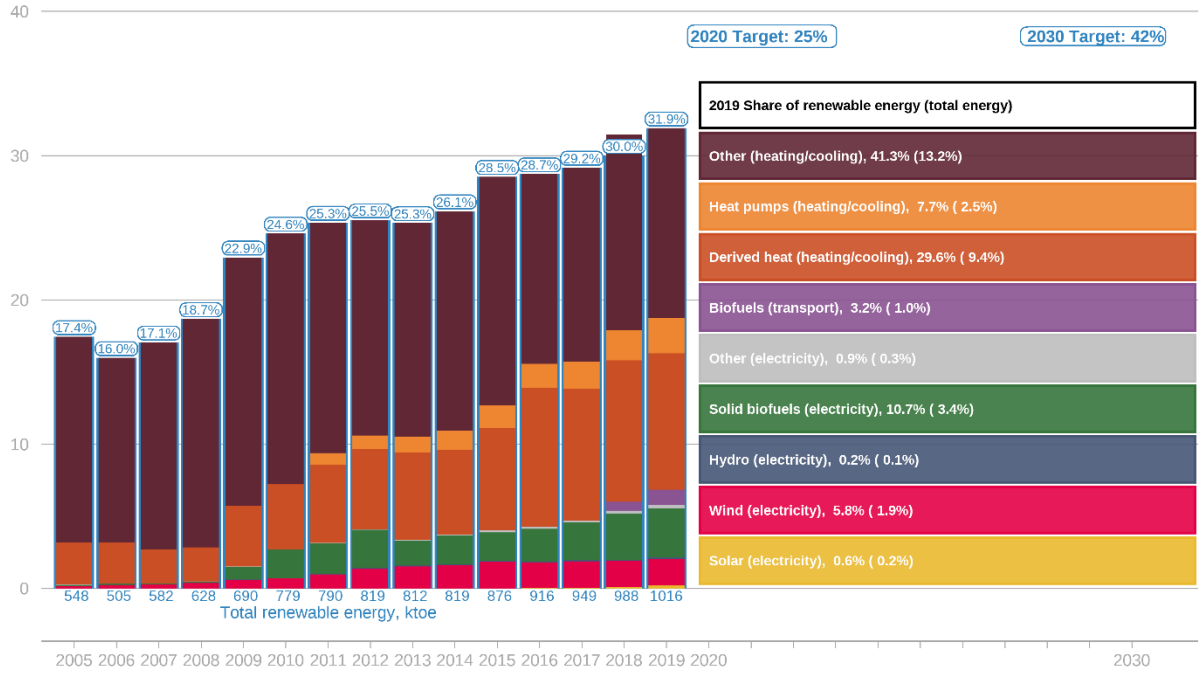
Data source: EEA and Eurostat sdg_12_30.

Energy transition

Renewable energy

In 2019, the share of energy from renewable energy sources (RES) in Estonia's gross final consumption was 31.9 %. Between 2005 and 2019, it rose by 14.5 percentage points (pp) but was 10.1 pp below its target of 42 % for 2030. Between 2005 and 2019, the contribution of RES to energy needs was centred on the heating and cooling sector. In the electricity sector, the share of wind energy and solid biofuels grew steadily. The contribution of transport biofuels doubled in 2019 compared with 2018 and was at 3.2 %. In 2018, Estonia also transferred a volume of renewables to help Luxembourg fulfil its 2020 national renewable energy target.

Figure 7 – Renewable energy share of gross final energy consumption



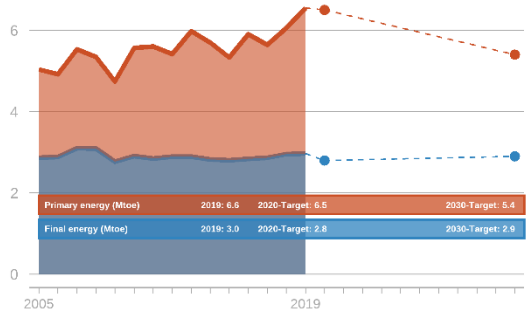
Data source: Eurostat (shares tool), NECP 2030 targets and EEA.

The EU-27 have set a binding target of a minimum 32 % RES share by 2030. To achieve its contribution of 42 % to the EU-wide target, Estonia is counting on the potential of biomass, new heat pumps, co-generation plants, wind power, biomethane, and the renovation of district heating.

Energy efficiency

In 2019, Estonia's primary and final energy consumption were still above its 2020 targets. The national contribution to the EU's 2030 target is 5.4 Mtoe for primary energy consumption, meaning that Estonia has to achieve a reduction of 17.6 % over the coming decade. For final energy, the country aims to maintain consumption at roughly the same level until 2030. The Commission considers these levels of ambition to be modest and very low respectively. Measures to achieve the national targets focus mainly on the transport sector, existing building stock, and new buildings. Savings are planned in other sectors.

Figure 8 – Energy efficiency: Primary and final energy consumption (Mtoe)



Data source: Eurostat nrg_bal_s, NECP 2020 + 2030 targets and EEA.

Outlook: Plans and policies

In its assessment of the final NECP, the Commission notes that most of its recommendations on the draft plan have been partially addressed. It also points out the need for sustainable use of forest biomass, in connection with its high share in the heat and power sectors. Forestry is therefore one of the crucial issues for the new government, whose programme plans to reduce and limit the pressure to fell state-owned forests.

As regards renewables, the national contribution is qualified as sufficiently ambitious. By 2030, 63 % of the gross final consumption of heat in Estonia should rely on renewable energy; 40 % of its electricity consumption should come from RES; and the target of 14 % in transport should be achieved by 'second generation' biofuels (35 %) and electricity (65 %).

Estonia's NECP highlights the synergies between policies and measures relating to energy efficiency, renewables and building renovation and sets a target to renovate 3 % of public buildings per year. The main objective of Estonia's long-term renovation strategy is the full renovation, by 2050, of buildings constructed before 2000. The implementation of the strategy means a reduction in CO_2 emissions of 89 % and in energy use of 59 % by 2050 compared with 2020. The strategy however identifies challenges to be addressed and support measures to be introduced to improve the energy performance of existing buildings and support their energy saving potential.

Estonia also aims to step up its existing regional cooperation with the other Baltic countries by developing, for instance, joint infrastructure projects and offshore wind farms. The NECP reports that the Baltic States have already agreed to expand the cooperation to new relevant cross-border issues. Broader cooperation including the Nordic countries is also planned. The new government's programme envisages speeding up the construction of Rail Baltic and further developing the power grid in the Baltic Sea.

MAIN REFERENCES

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