

Climate action in Slovakia

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) covering the period 2021 to 2030. In October 2020, the European Commission published an [assessment](#) for each NECP. Slovakia's final [NECP](#) is from December 2019. A high proportion of Slovaks ([63 %](#)) expect national governments to tackle climate change.

Slovakia accounts for 1.1 % of the EU's total greenhouse gas (GHG) emissions and reduced emissions at a similar pace as the EU average between 2005 and 2019. The carbon intensity of Slovakia's economy is significantly above the EU average, but has fallen faster than the EU average.

Industry is responsible for the largest part of Slovakia's GHG emissions, with a 37 % share of total emissions. Energy industry emissions fell by 41 % between 2005 and 2019, and accounted for 16 % of Slovakia's emissions in 2019. Emissions from transport and from waste management increased over the same period while emissions from agriculture remained stable.

Under EU effort-sharing legislation, Slovakia was allowed to increase its emissions by 13 % by 2020, compared with 2005, and will have to reduce them by 12 % by 2030, but is aiming for 20 %. Slovakia achieved a 16.9 % share of renewable energy sources (RES) in 2019, exceeding its 14 % target for 2020. The country aims to reach its 2030 target of a 19.2 % share with onshore wind, photovoltaics and bioenergy. Energy efficiency measures focus on buildings, public sector, industry and transport.

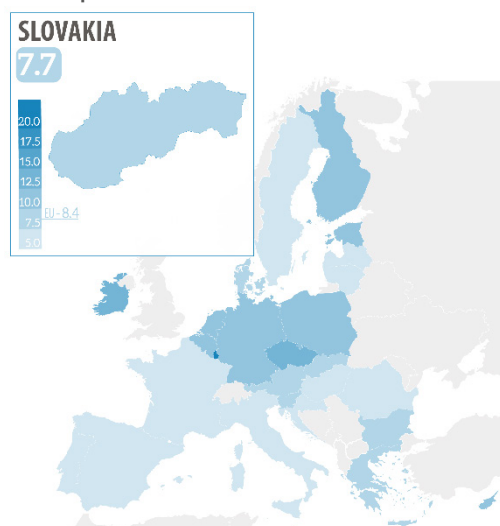
Emissions and demographics

In 2019, Slovakia had close to 5.5 million inhabitants, accounting for 1.2 % of the EU-27 [population](#).

Slovakia's average per capita emissions were 7.7 tonnes of CO₂ equivalent (CO₂e) in 2019, below the average EU-27 per capita emissions of 8.4 tonnes. The figure fell by 19.7 % between 2005 and 2019.

According to [projections](#), the Slovak population will start decreasing after 2025, mirroring the forecast for the total EU-27 population.

Figure 1 – Total greenhouse gas emissions (tCO₂e) per inhabitant in 2019



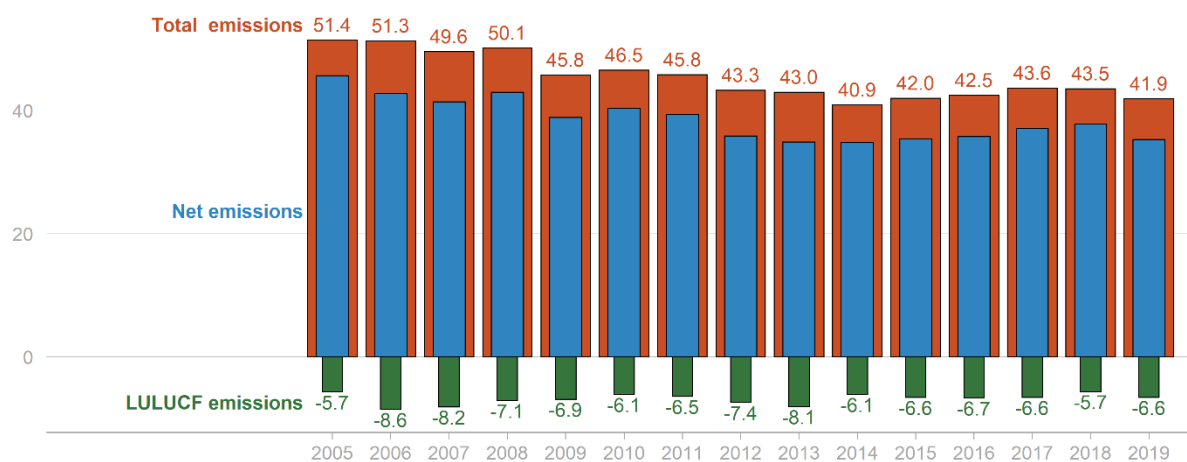
Data source: Eurostat [demo_pjan](#) and EEA ([GHG trends](#), [GHG estimates](#), [UNFCCC reporting](#)).

This briefing is one in a series covering all EU Member States.

Slovakia's progress so far

Slovakia was responsible for emissions of 41.9 million tonnes (Mt) CO₂e in 2019, excluding land use, land-use change and forestry (LULUCF). The country's emissions account for 1.1 % of EU-27 total emissions and fell by 18.6 % between 2005 and 2019, close to the overall EU reduction of 19.4 %, while net emissions, which include LULUCF, fell by almost 23 % in the same period. The LULUCF sector has acted as a carbon sink over the entire period. Slovakia's forested area has been growing, and [forests](#) now cover 41 % of the national territory.

Figure 2 – Total, LULUCF and net greenhouse gas (GHG) emissions (MtCO₂e)



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

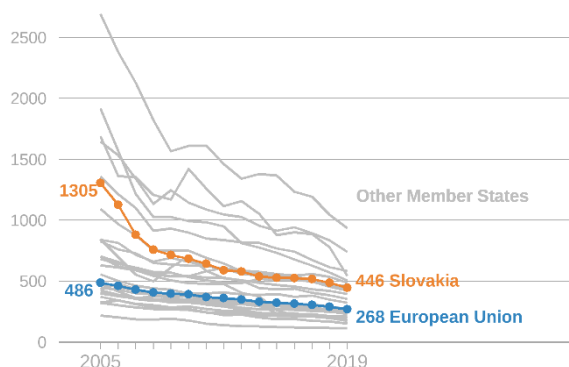
Slovakia has [sectoral policies](#) in place to enhance the carbon sink function of the LULUCF sector. The rural development programme for 2014 to 2020 aims to improve management of natural resources and promote climate-friendly agricultural practices. It provides financial support for investment in farms and food enterprises that improve competitiveness while generating environmental benefits. The LULUCF sector is expected to remain a carbon sink, although its [capacity](#) is projected to decrease in the coming decades.

Carbon intensity

Slovakia has one of the fastest growing economies in the EU. The country's real [GDP](#) grew by 61 % between 2005 and 2019, while its GHG emissions fell by 18.6 %. As a result, the carbon intensity of Slovak economy fell by 66 % over the period, faster than the EU average of 45 %. Nevertheless, the figure was still 66 % above the EU average in 2019 on account of Slovakia's economic structure. [Industry](#), including automotive and steel production, accounted for 28 % of the country's GDP in 2019, compared with 22 % in the EU as a whole.

Overall, taking into account both the changes in GDP and GHG emissions, over the 14-year period there was a clear [decoupling](#) of GHG emissions from economic performance.

Figure 3 – Carbon intensity of the economy: GHG emissions (gCO₂e) per GDP (euros in 2015 prices)



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

Emissions across the economy

Industry is responsible for the largest share of Slovakia's GHG emissions, with 21 % of total emissions coming from industrial processes and product use and 16 % from manufacturing industries and construction. The EU-wide [emissions trading system](#) (ETS) covers emissions from industry and electricity generation. The US Steel plant in Kosice – the country's largest industrial installation – and its subsidiary Ferroenergy [reported](#) emissions of 7.5 Mt CO₂e in 2019, almost 18 % of Slovakia's total emissions.

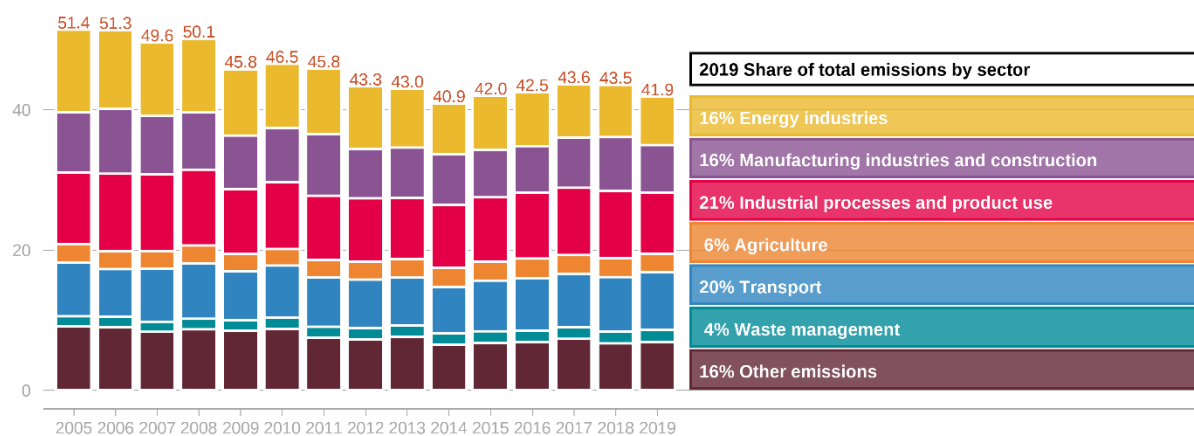


Slovakia's energy transition relies on nuclear power and biofuels.

Energy industries, the sector with the largest share (23 %) of emissions in 2005, reduced their emissions by 41 % over the 2005-2019 period, and had a 16 % share in 2019. In [electricity generation](#), nuclear energy had a 56 % share in 2019, while renewables accounted for 23 %. Only 21 % of Slovakia's electricity came from fossil fuels in 2019.

Slovakia will [stop](#) supporting coal mining and electricity production from coal by the end of 2023. The Nováky lignite power plant will be shut down in 2023, and the Vojany hard coal power plant in 2025. The Nováky plant is the country's second-largest GHG emitter, with reported emissions of 1.5 Mt CO₂e in 2019. To secure future electricity supply, two additional reactors are under construction for the Mochovce nuclear power plant, doubling its capacity. With the new nuclear capacity, Slovakia [expects](#) to become a net electricity exporter.

Figure 4 – Total GHG emissions by sector (MtCO₂e) (rounded data)



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

Emissions in the transport sector, meanwhile, increased by 7 % from 2005 to 2019, and accounted for 20 % of total emissions in 2019. To reduce transport emissions, the Slovak government [intends](#) to promote biofuels in road transport, particularly through non-food crops, wood, organic waste and waste from food crops.

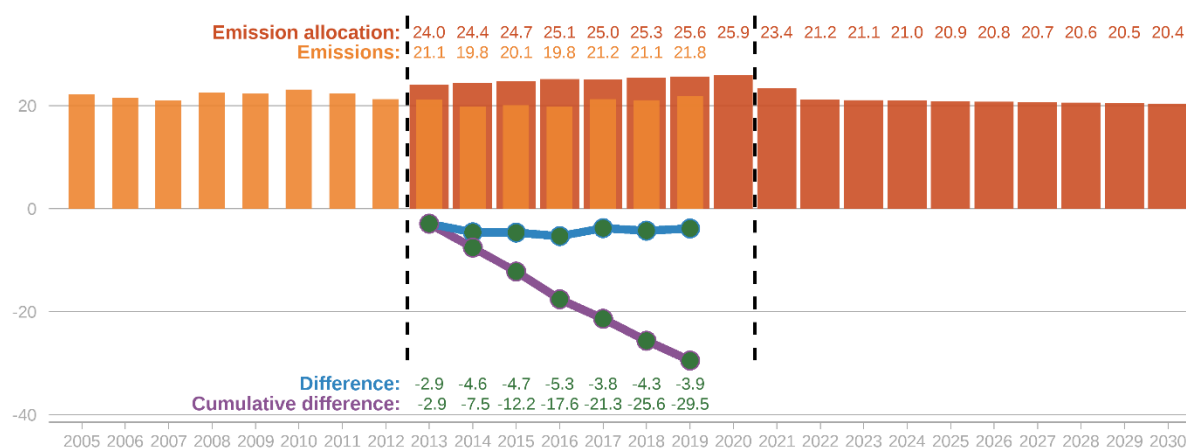
Emissions from waste management made up 4 % of the total, and increased by 20 % over the period. To address emissions in the waste sector, the [waste management programme](#) for 2016 to 2020 and the [waste prevention programme](#) for 2019 to 2025 comprise a set of measures and national targets. These include reducing the amount of mixed municipal waste by 50 % by 2025 compared with 2016 levels, and strict adherence to the [waste hierarchy](#).

Other emissions, a category that includes buildings and services, accounted for 16 % of total emissions, and fell by 25 % between 2005 and 2019.

Effort-sharing sectors

EU effort-sharing legislation covers emissions from sectors not covered by the ETS, such as transport, buildings, agriculture and waste. Under the Effort-sharing Decision (ESD), Slovakia had a binding target that allowed non-ETS emissions to increase by 13 % by 2020, relative to 2005. However, throughout the 2013-2019 period Slovakia stayed below its annual ESD allocation, with an accumulated difference that kept the country below target by 29.5 MTCO₂e – more than its emission allocation for the year 2019. For the 2021-2030 period, the [Effort-sharing Regulation](#) (ESR) sets a target for the country to reduce emissions in non-ETS sectors by 12 %, compared to 2005. Going beyond the ESR target, the '[Greener Slovakia](#)' environmental strategy sets a more ambitious national target of reducing non-ETS emissions by 20 % in the same period. In its assessment of the Slovak NECP, the Commission considers that additional measures are needed to reach this target.

Figure 5 – Slovakia's emissions under the Effort-sharing Decision/Regulation (MtCO₂e)

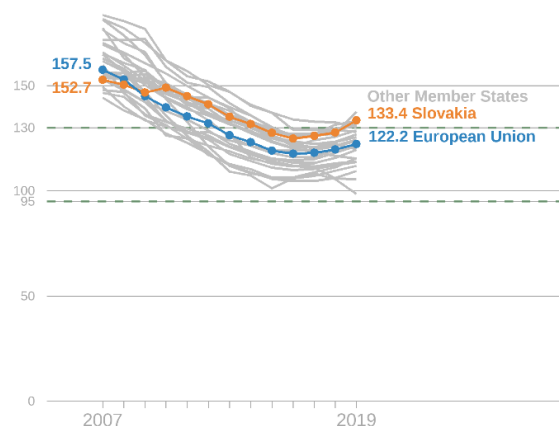


Data source: Commission [ESD allocation](#), [EUR-Lex](#) and [EEA](#), figures display rounded data.

In the Commission's [view](#), Slovakia's sectoral strategies lack detail as to their impact on greenhouse gas emissions. The NECP does not define any quantitative targets or key actions in the buildings sector. The plan for reducing emissions in the transport sector contains measures to improve energy efficiency, promote biofuels and achieve a 10 % share of renewable energy sources for the sector, but does not set a GHG emissions target.

The average CO₂ emissions of new passenger cars in Slovakia were 9 % above the EU average in 2019, and above the EU-wide target of 130 gCO₂/km that applied until 2020. They are considerably above the new EU-wide target of 95 gCO₂/km, which applies from 2021. To address vehicle emissions, Slovakia's [strategy of electromobility development](#) is geared towards promoting and supporting the purchase of environmentally friendly low-emission vehicles and supporting the construction of associated infrastructure, but does not set a quantified target.

Figure 6 – Average emissions: New passenger cars (g CO₂/km)



Data source: [EEA](#) and Eurostat sdg_12_30.

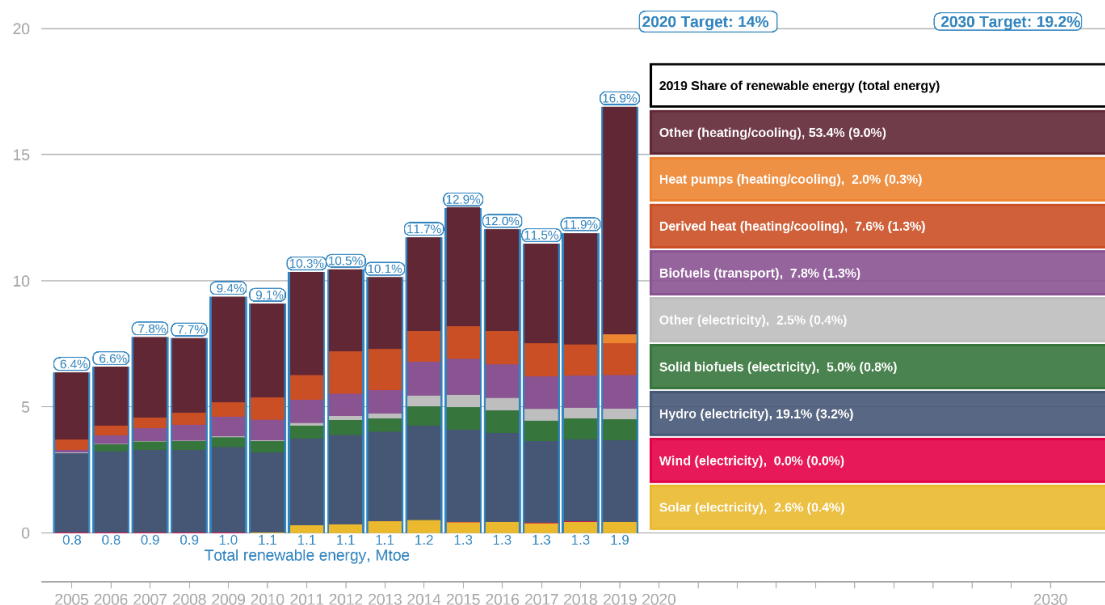
Energy transition

Renewable energy

Slovakia increased its renewable energy share between 2005 and 2019 by 10.5 percentage points from a 6.4 % share to 16.9 %, exceeding its 2020 target of 14 %. The large [increase](#) from 2018 to 2019 was due mainly to the growing use of solid biomass by Slovak households. For 2030, Slovakia has set a renewable energy target of 19.2 %, considered as unambitious by the Commission.

The reformed [Renewable Energy Law](#) that entered into force in 2019 is the basis for the measures described in Slovakia's NECP. Slovakia [plans](#) to invest in onshore wind and photovoltaics and [aims](#) for a RES share of 27.3 % in the electricity sector by 2030. In January 2020, the [Renewable Energy Law](#) was amended to reform the support of electricity production from RES with an emphasis on cost-effectiveness and minimising the impact on final energy prices. In the heating and cooling sector, the country aims to achieve a sectoral 19 % RES share by 2030, to be reached through investment in district heating and cooling infrastructures, with a major role for bioenergy. Finally, the 2030 RES target for the transport sector target is 14 %, to be achieved with the help of biofuels.

Figure 7 – Renewable energy share of gross final energy consumption



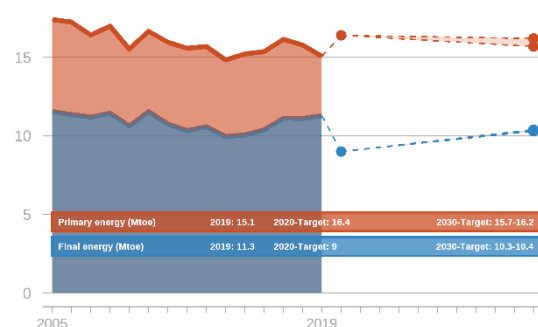
Data source: Eurostat ([shares tool](#)), [NECP 2030 targets](#) and [EEA](#).

Energy efficiency

The European Commission considers that Slovakia's 2030 targets for primary and final energy consumption show low ambition.

The NECP lists [energy efficiency measures](#) in buildings, public sector, industry and transport. However, the Commission's assessment [notes](#) a lack of information regarding the quantification of impacts, milestones and progress indicators for the planned measures for the building sector. The Commission considers that substantial efforts are required to implement the measures currently planned, and that additional measures may be needed to achieve the proposed targets.

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 2019, Slovakia committed to achieving climate neutrality by 2050. The country's [low-carbon development strategy for 2030 with a view to 2050](#) sets out scenarios to reduce emissions from 42 Mt CO₂e in 2019 to around 14 Mt CO₂e by 2050 with existing and additional measures, and identifies further measures to reduce emissions to 7 Mt CO₂e by 2050, a level that can be offset by CO₂ removals in order to achieve climate neutrality. The document states that Slovakia's annual emissions cannot be reduced below 7 Mt CO₂e per year, and that the current trend of declining LULUCF removals must therefore be reversed.

The 'Greener Slovakia' environmental policy strategy, approved in February 2019, sets out [objectives](#) for protecting natural resources, reducing pollution and moving towards a circular economy. It contains objectives for reducing Slovakia's GHG emissions by 43 % in the ETS sectors and by 20 % in the non-ETS sectors, relative to 2005 levels, and addresses issues of adaptation to climate change in relation to water, biodiversity, forestry and agriculture.

A [World Bank study](#) on Slovakia's implementation of the EU 2030 climate and energy framework contains four decarbonisation scenarios for Slovakia, all of which involve the construction of new nuclear power generation capacity, but differ with respect to the role of renewable energy.

In May 2021, Slovak Finance Minister, Igor Matovič, presented a [plan](#) to decarbonise the US Steel Košice steel plant, the largest integrated steel plant in central Europe with a crude steel production capacity of 4.5 million tonnes per year. It is one of the nation's biggest employers with over 10 000 workers. The €1.5 billion plan aims to reduce the steelworks' emissions by 80 % by replacing the coal-fuelled blast furnaces with electrical ones. Slovakia intends to use funds from the [Recovery and Resilience Facility](#) to support the conversion of the plant.

MAIN REFERENCES

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[Regional Outlook 2021: Slovak Republic – Progress in the net zero transition](#), OECD, 2021.

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eprs@ep.europa.eu (contact)

<http://www.eprs.ep.parl.union.eu/> (intranet)

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