

Climate action in Poland

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](#) of each NECP. Poland's final [NECP](#) is from December 2019. A high proportion of Poles (62%) expect national governments to tackle climate change.

The country generates 10.5% of the EU's total greenhouse gas (GHG) emissions. Emissions were stable over the 2005-2019 period, with only small annual variations. The carbon intensity of the Polish economy fell by 44% over the same period, but remains the second highest in the Union.

The energy industries sector, heavily reliant on coal, is the country's largest GHG emitter, with 38% of total emissions. While energy industry emissions fell by 17% in the 2005-2019 period, the transport sector emissions increased by 84%, reaching a 17% share in 2019.

Under EU effort-sharing legislation, Poland was permitted to increase its emissions by 14% compared with 2005 levels by 2020 and now needs to achieve a 7% reduction by 2030. Poland reached a 12.2% share of renewable energy sources in 2019, and aims to reach a renewables share of at least 23% by 2030, by focusing on biomass, offshore wind and biofuels.

Emissions and demographics

In 2019, Poland had close to 38 million inhabitants, representing 8.5% of the total EU-27 [population](#).

In 2019, Polish per capita emissions were at an average of 10.4 tonnes of carbon dioxide equivalent (CO₂e), a figure that was above the EU average of 8.4 tonnes and the eighth highest in the EU-27. Between 2005 and 2019, Polish per capita emissions decreased by only 2.3%, against an EU average reduction of 22% over the same period. While Poland's per capita emissions were close to the EU average in 2005, the difference had increased to 2 tCO₂e by 2019.

The EU population is [projected](#) to decrease from 2025 onwards, a process that has already started in Poland and is expected to accelerate over the coming decades. This situation may make it increasingly difficult to lower per capita emissions.

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



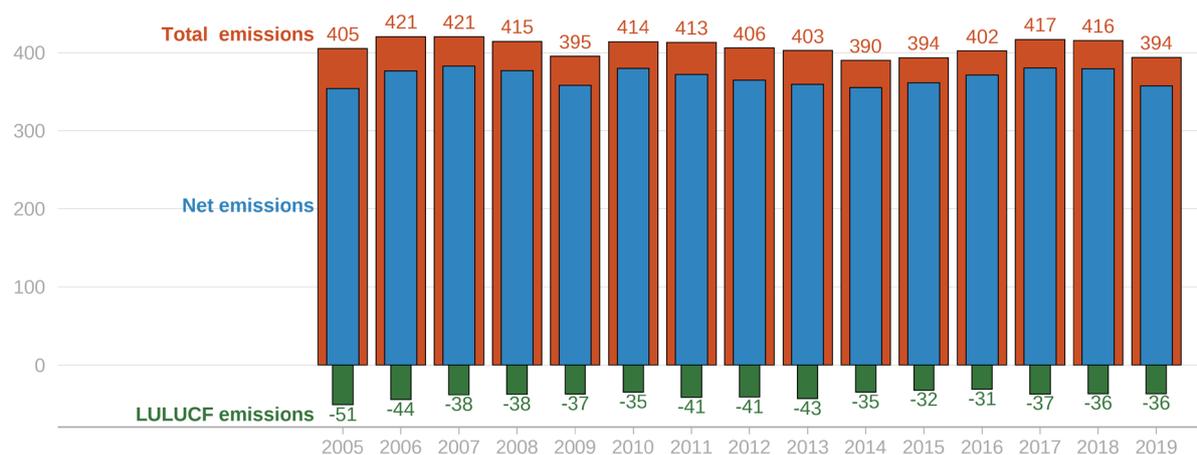
Data source: Eurostat [demo_pjan](#) and EEA ([GHG trends](#), [GHG estimates](#), [UNFCCC reporting](#)).

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

Poland's progress so far

In 2019 Poland accounted for 10.5 % of the EU's total GHG emissions. Whereas the EU-27 achieved a 19 % reduction over the 2005-2019 period, Poland's emissions remained stable, fluctuating between 390 and 421 million tonnes (Mt) CO₂e. The land use, land use change and forestry (LULUCF) sector has consistently provided carbon sink functions, lowering Poland's 2019 net GHG emissions to 358 MtCO₂e. Poland has 9.3 million hectares of forest, covering 29.7 % of the surface area. The 'carbon forests' project, launched by the Polish State Forests organisation in 2017, aims to enhance carbon stock in forests while preserving biological diversity and water retaining functions. Additional amounts of organic carbon captured by forests will be measured and auctioned by the State Forests organisation.

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



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

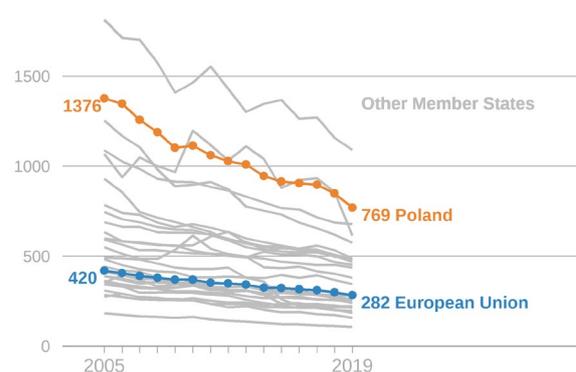
Poland has [planned](#) policies and measures for this sector, notably forest management and soil protection. However, according to the Commission's assessment of the NECP, these do not include a clear definition of specific targets or details on the actions to be taken. Moreover, the Commission considers that the plan lacks information about policies and measures to generate carbon removals in the LULUCF sector to comply with Poland's 2030 effort-sharing target (see page 4), using the flexibilities available under the Effort-sharing Regulation, as intended by the Polish government.

Carbon intensity

The carbon intensity of the Polish economy is 172 % above the EU average, and second-highest among EU Member States. However, between 2005 and 2019, Poland's carbon intensity fell by 44 %, while the EU-27 average decreased by 33 %. In the same period, the Polish [economy grew](#), with annual growth fluctuating between 1 and 7 %, while emissions remained relatively stable. The 2009 financial crisis had no significant impact on the Polish economy or GHG emissions.

With strong economic growth and fairly stable GHG emissions, there has been a [relative decoupling](#) of economic performance and environmental impact that must be reinforced if Poland is to achieve its national emission reduction targets and contribute to EU-level objectives.

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



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

Emissions across the economy

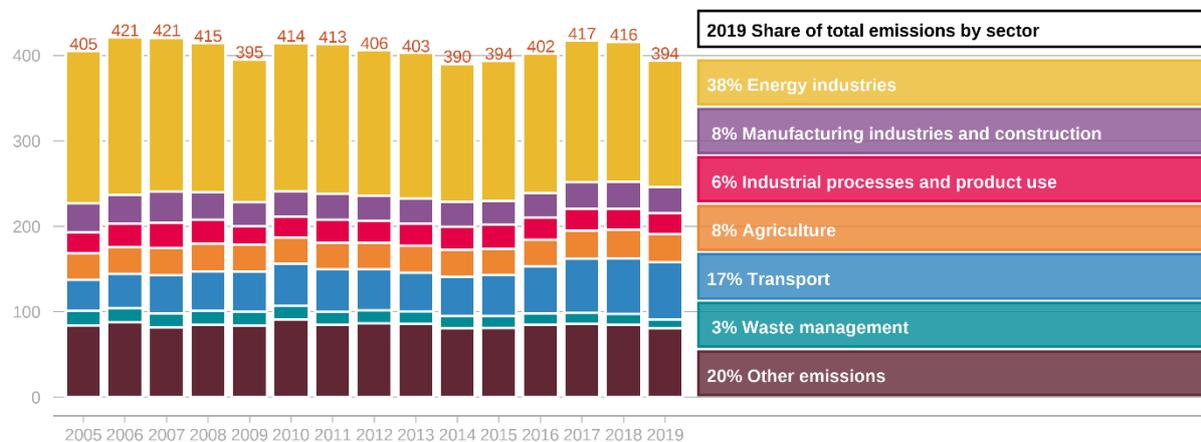
The energy industry sector was the largest GHG emitter in Poland in 2019, accounting for 38 % of emissions. In the 2005-2019 period, this sector's emissions fell by 17 %, while the share of energy industries in total emissions dropped by 6.5 percentage points.

Poland has the EU's largest [hard coal](#) reserves and extensive [lignite](#) deposits. In 2020, coal accounted for 41 % of Poland's [total energy supply](#), and for 59 % of energy-related CO₂ emissions in 2019. In 2020, 69 % of Poland's electricity came from coal. The share of coal in Poland's energy system has been declining gradually. The coal share of the total energy supply fell by 17.6 percentage points between 2005 and 2019, while it dropped 22 percentagepoints in electricity generation in the 2005-2020 period. The use of natural gas (+40 %) and oil (+34 %) has grown during this period, while the use of biofuels has more than doubled to reach a 9.4 % share in 2020. Wind and solar energy account for only 1.7 % of Poland's total energy supply.



The Łódź region [plans](#) to shut down Europe's largest coal power plant in Bełchatów by 2036.

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



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

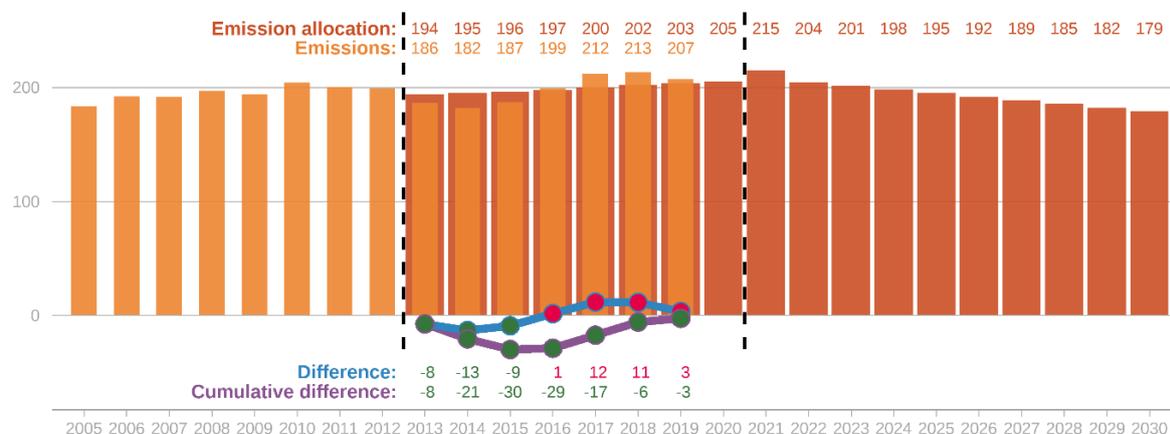
The 'Other emissions' sector, which comprises primarily buildings and the tertiary industry, has the second-largest share of total emissions (20%). This sector's emissions have remained almost stable, as have emissions from industrial processes and product use. Manufacturing industries and construction decreased emissions by almost 9%. Conversely, transport sector emissions grew by 84% over the 2005-2019 period, and the sector's share almost doubled from 9% to 17%. Agriculture was the only other sector with rising emissions (8%) over the period. Waste management, the sector with the least emissions, delivered the largest reductions (41%).

The EU-wide [emissions trading system](#) (ETS) covers emissions from electricity generation and industry. Poland will benefit from a share of 43.41 % of the total resources available under the ETS-financed [Modernisation Fund](#) and will channel these resources, along with the revenue from the country's own auctioning of ETS allowances, towards investments in nuclear energy, energy storage, and investments to improve energy efficiency and promote electromobility and the use of hydrogen fuels, according to the Polish [NECP](#).

Effort-sharing achievements

EU effort-sharing legislation covers emissions from sectors not included in the ETS, such as transport, buildings, agriculture and waste. The Effort-sharing Decision (ESD) period (2013-2020) allowed Poland to increase its non-ETS GHG emissions by 14%, compared with 2005. Poland's emissions were above allocation levels from 2016 to 2019, although the cumulative difference keeps the country within the ESD limit. For the [Effort-sharing Regulation](#) (ESR) period from 2021 to 2030, Poland must reduce emissions by 7% against 2005 levels.

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



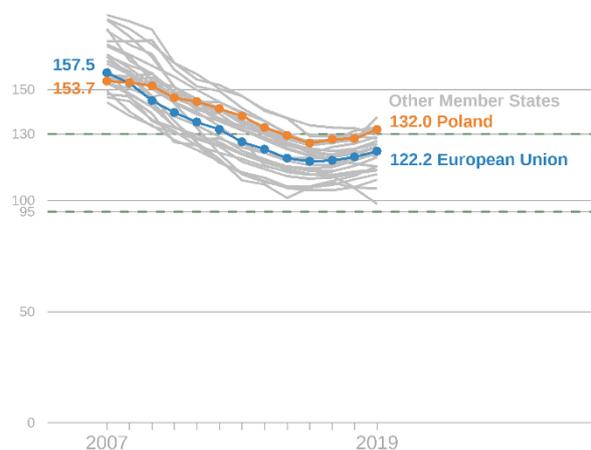
Data source: Commission [ESD allocation](#), [EUR-Lex](#) and [EEA](#), figures display rounded data.

Poland [intends](#) to use certain mechanisms of the ESR that allow for more flexibility in meeting the targets (LULUCF flexibility, transfers from other Member States and the safety reserve), if necessary. The European Commission recognises that Poland has a set of measures to achieve the target, but lacks details on annual estimated emissions and the projected performance over this period. Poland plans to develop a dedicated national strategy with a more detailed approach for reducing emissions in effort sharing sectors, to be completed by 2022.

Transport constitutes the largest effort-sharing sector in Poland. To address transport emissions, Poland plans to invest in infrastructure for liquified natural gas, electrification and a shift to public and low-emission transport. Poland's sustainable transport strategy sets a [target](#) to reduce CO₂ average emissions from new passenger cars and vans by 15 % by 2025, compared with 2021 levels and to achieve a reduction of 37.5 % for cars and 31 % for vans by 2030 – setting the [EU-wide limits](#) as national targets.

The average CO₂ [emissions of new passenger cars](#) in Poland decreased every year between 2007 and 2016, but started rising again in 2017, following the overall EU trend. Between 2015 and 2018, they remained below the EU-wide target ceiling of 130 g CO₂/km that had applied since 2015. In 2019, they rose to 132 g CO₂/km, slightly above the EU-wide target, and still a considerable distance from the new EU-wide target of 95 g CO₂/km that applies from 2021.

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



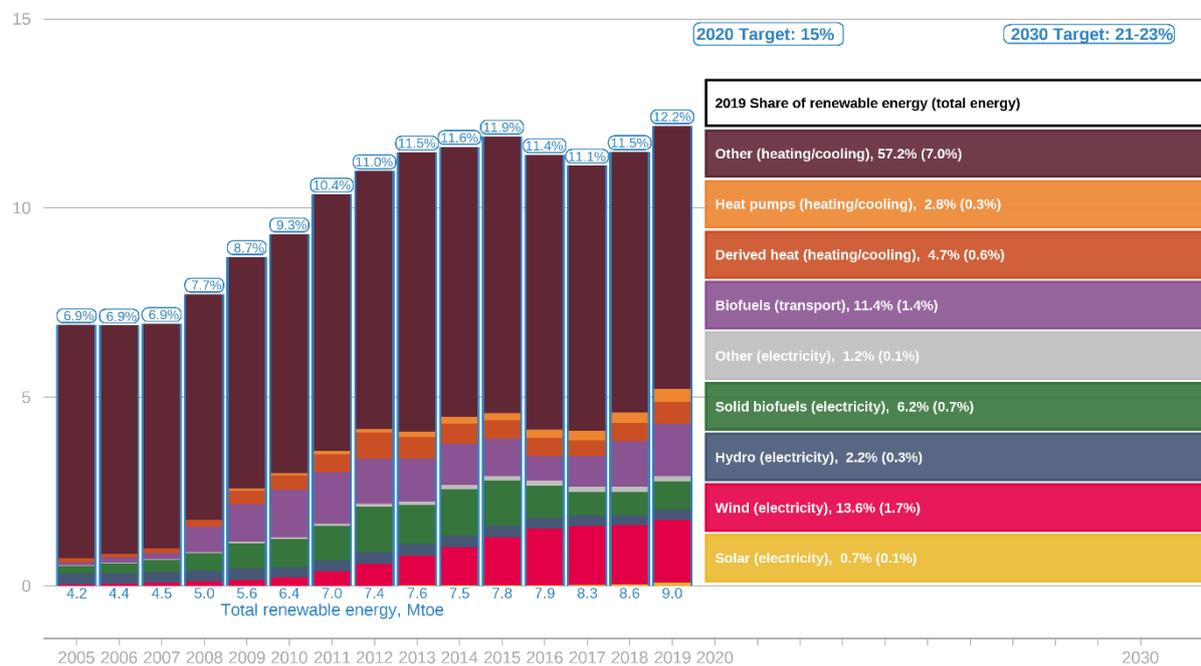
Data source: [EEA](#) and Eurostat sdg_12_30.

Energy transition

Renewable energy

Between 2005 and 2019, the share of renewable energy sources (RES) in Poland almost doubled, reaching 12.2%, although it was still below the country's 2020 target of 15%. Onshore wind energy grew strongly until 2015, when a new rule requiring a [minimum distance](#) between windmills and residential areas made it difficult to find sites for onshore wind development.

Figure 7 – Renewable energy share of gross final energy consumption



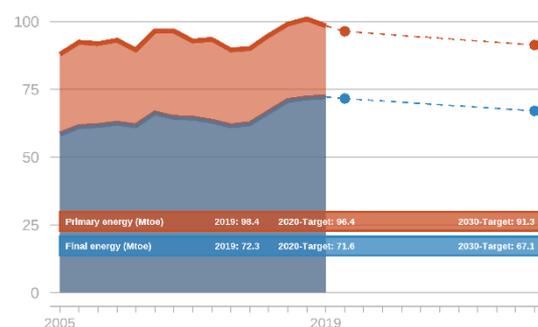
Data source: Eurostat ([shares tool](#)), [NECP 2030 targets](#) and [EEA](#).

[Poland's energy policy up to 2040](#), approved in February 2021, sets a target of at least a 23% RES share by 2030. In electricity generation, the 2030 RES share should reach at least 32% while the share of coal should not exceed 56%. Offshore wind capacity should reach 5.9 gigawatts (GW) in 2030, and photovoltaics 7GW. The heating sector should reach a RES share of 28%, and the transport sector 14%, with a strong contribution from electromobility. Nevertheless, in its NECP assessment, the Commission finds Poland's 2030 RES target to be [unambitious](#).

Energy efficiency

The European Commission has [assessed](#) Poland's 2030 target to be of modest ambition as regards both primary energy and final energy consumption, but recognises the greater effort when compared with the 2020 target. The NECP [lists](#) a wide range of measures including energy efficiency obligation schemes, smart grids, support to improve efficiency in co-generation plants and gas transmission networks, and support for energy service companies. The Commission assessment [notes](#) a lack of detail regarding the expected impacts of the measures.

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

For Poland to shift to a low-carbon economy it will need to restructure its energy sector, notably coal mining, a major employer in some Polish regions. At the 2018 climate conference (COP24) in Katowice, the Polish government highlighted the need for a [just transition](#) for coal-dependent regions. In April 2021, the Polish government and the miners' unions agreed on a [social contract](#) to start phasing out coal mining in 2021 and close the last coal mine in 2049. In June 2021, the [Łódź region](#) issued a 'territorial just transition plan' to end lignite mining and shut down the Bełchatów coal power plant, with support from the EU [Just Transition Fund](#). Poland's plans to expand the Turów lignite mine near the Czech border sparked a [legal dispute](#) between the two countries.

To secure its future electricity supply, Poland [plans](#) to construct six nuclear power plants. The first nuclear power plant with a capacity of about 1-1.6 GW should start operating in 2033, and nuclear power units are to be built every two to three years. The site and the contractor have yet to be chosen however. Meanwhile, copper producer KHGM, Poland's second-largest electricity consumer, [plans](#) to install four 77 MW small modular reactors to power its operations by the end of 2030.

A 2020 Polish Economic Institute study [concludes](#) that Poland could become climate-neutral by 2056 according to an optimistic scenario, while it may take until 2067 under other assumptions. The consultancy McKinsey has meanwhile presented a [cost-effective pathway](#) for Poland to achieve climate neutrality by 2050. In June 2021, the Centre for Climate and Energy Analyses published a [roadmap](#) that considers large-scale implementation of carbon capture, utilisation and storage, combined with bioenergy, industrial electrification, hydrogen use, electromobility and structural changes in agriculture to be prerequisites if Poland is to achieve climate neutrality by 2050.

MAIN REFERENCES

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