

Climate action in Czechia

Latest state of play

The EU 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. Czechia generates 3.5 % of the EU's total greenhouse gas (GHG) emissions and has reduced emissions at a slower pace than the EU average since 2005. With high levels of energy-intensive industry in the Czech economy, the country's emissions intensity is significantly higher than the EU average, though it is on a downward trend. A high proportion of Czechs (70 %) expect national governments to tackle climate change.

Energy industries, manufacturing and industrial processes account for 60 % of the Czechia's total emissions. Energy industry emissions have fallen by almost 20 % since 2005, reducing this sector's share of total emissions by 8 %. The Czech economy is heavily reliant on coal and nuclear energy is seen as an essential part of the transition process. Three regions are designated coal regions within the country's RESTART transition programme. Under EU effort-sharing legislation, Czechia was allowed to increase emissions until 2020 and will seek to reduce these emissions by 14 % relative to 2005 by 2030.

Czechia achieved a 15 % share of renewable energy sources in 2018. The country's 2030 target of a 22 % share are focused mainly on advanced biofuels, with some solar and wind. Energy efficiency measures centre on building stock, cogeneration and support measures for industry and households.

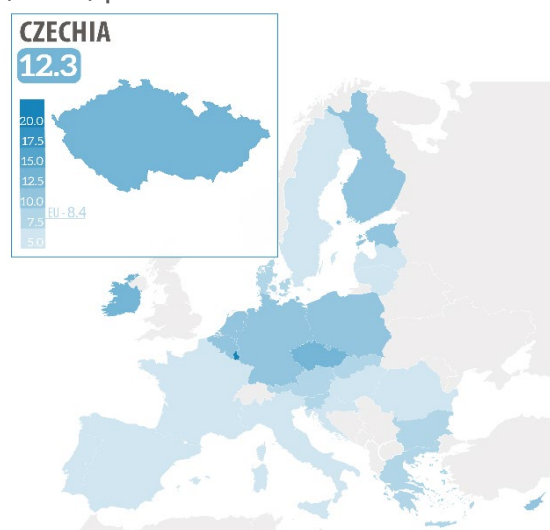
Emissions and demographics

In 2019, Czechia had 10.6 million inhabitants, representing 2.4 % of the total EU [population](#).

The figures for 2019 per capita emissions were the third highest in the Union. Although Czechia's per capita emissions level decreased at a similar rate as the overall EU rate between 2005 and 2018, per capita emissions in Czechia rose slightly in 2019, going against the EU trend. The difference has however remained stable, at 4 tCO₂equivalent (CO₂e) per capita above the EU average in 2005 and 3.9 tCO₂e per capita above in 2019.

According to [projections](#), the Czech population will remain relatively stable and follow the overall EU downward trend from 2025.

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



Source: EPRS graphic using Eurostat demo_pjan and EEA data ([GHG trends](#), [GHG estimates](#), [UNFCCC reporting](#)).

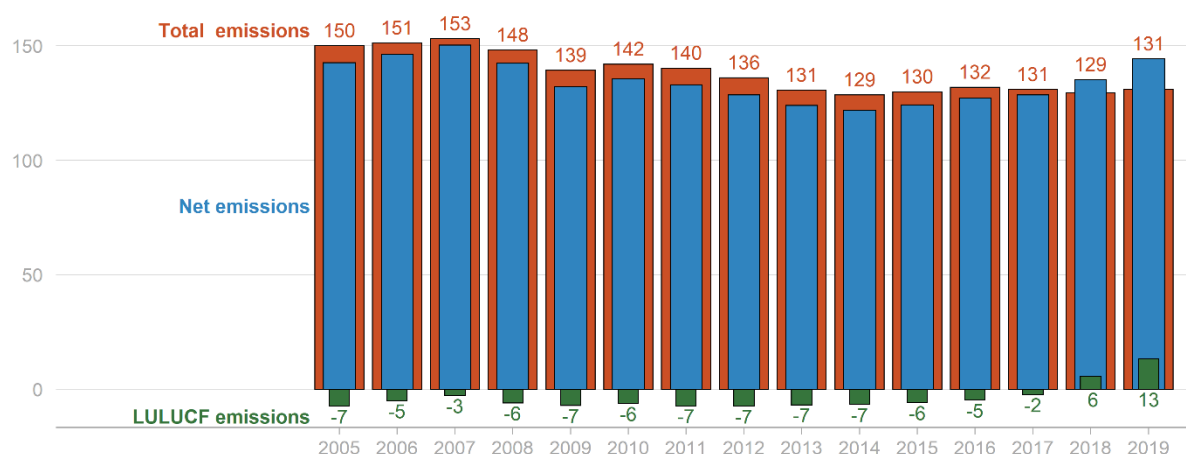
This briefing is one in a series covering all EU Member States.

Czechia's progress so far

Czechia was responsible for emissions of 131 MtCO₂e in 2019. The country's emissions account for 3.5 % of the EU total and have fallen by almost 13 % since 2005. This is below the EU-wide emissions reduction of 19 % in the same period. Czechia's net emissions have shown an overall increase of 1.2 % on account of land use, land use change and forestry (LULUCF) developments.

Since 2015, Czechia has been dealing with a [bark beetle outbreak](#), resulting in unprecedented deforestation, turning the overall LULUCF stable carbon sink functions into an emissions source since 2018. [Salvage logging](#) increased from 15.5 million cubic meters (MCM) in 2014 to 32.6 MCM in 2019. It is expected that the Czech LULUCF sector will remain a source of emissions for the coming decade. LULUCF measures include forest resilience, afforestation, organic farming and nitrogen retention measures.

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



Source: EPRS graphic based on EEA data ([GHG trends](#), [GHG estimates](#), [UNFCCC reporting](#)).

With a 2030 total emissions reduction target of 30 % compared with 2005 levels, Czechia needs to reduce its emissions by another 20 %, not counting the impact of LULUCF developments.

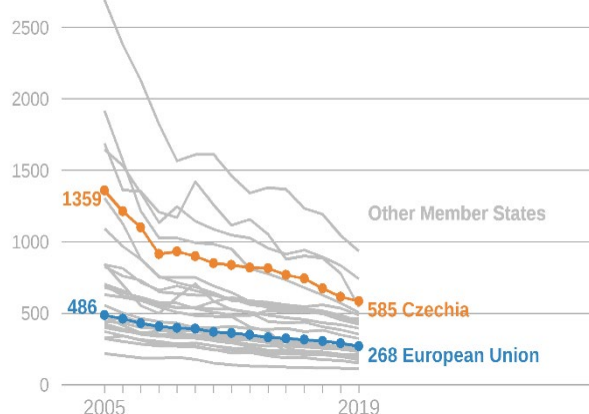
The Czech NECP focuses heavily on shifting from coal to nuclear power, using [combined heat and power](#) (CHP) and increasing the role of bioenergy for renewable energy production.

Emissions intensity

Historically, the dismantling of the Eastern socialist bloc and the decline in heavy industry has resulted in [drastic emissions reductions](#) since 1990. Industry still accounts for a larger share of the Czech economy [compared](#) with the EU average (30 % versus 19 % of gross added value), impacting on emissions intensity. In 2019, Czechia became the Member State with the third highest GHG emissions per GDP, as shown in Figure 3.

Between 2005 and 2008, emissions fell steeply in Czechia. This trend slowed down as a result of the impact of the financial crisis on [GDP](#) from 2008. Over the 14-year period from 2005, Czechia reduced its emissions intensity per GDP by close to 57 % against an EU average reduction of 45 %.

Figure 3 – Carbon intensity of the economy: GHG emissions (gCO₂e) per GDP (euro)



Source: EPRS graphic using Eurostat Nama_10_gdp and EEA data ([GHG trends](#), [GHG estimates](#), [UNFCCC reporting](#)).

Emissions across the economy

Energy industries continue to account for the bulk of Czechia's GHG emissions. In 2005, the sector had a 42 % share of the total. Energy industry emissions fell by almost 20 % in the 2005-2019 period, reducing their share of total emissions by 8 %. With plans to phase out [coal and lignite](#), which account for nearly 50 % of electricity production and 60 % when it comes to heating, it is likely that energy industry emissions will decrease further in the coming decades.

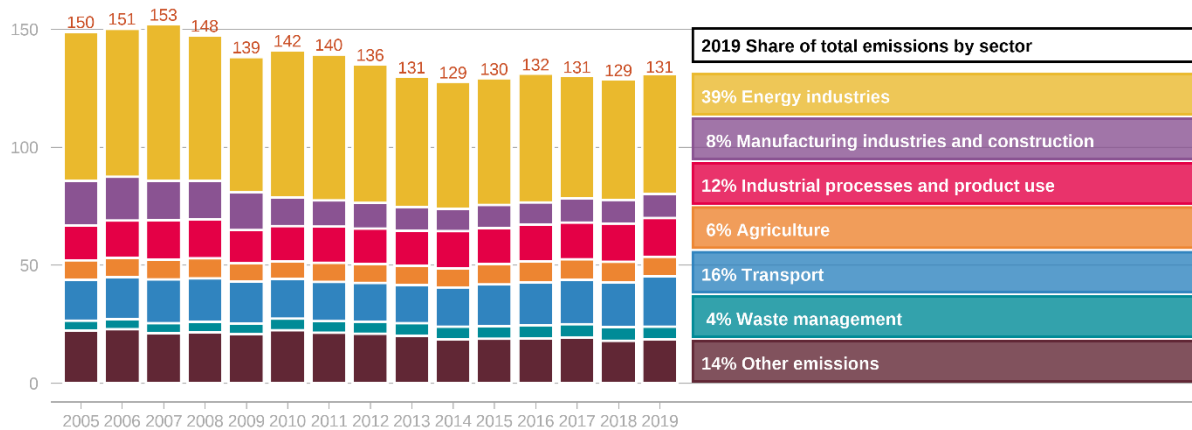


Nuclear power is key to Czechia's emission cutting strategy.

The biggest reduction has been in the manufacturing industries and construction, which reduced their share of total emissions over the period from 12.6 % to 7.8 %. This represents a 45 % reduction in emissions since 2005 or just under 9MtCO_{2e}.

The waste and transport sectors recorded the biggest increases in emissions over the period (24 % and 23 % respectively). Emissions linked to industrial processes and product use rose by 10 %. These sectors' combined share of total emissions grew from 24 % in 2005 to 33 % in 2018.

Figure 4 – Total GHG by sector (MtCO_{2e}) (rounded data)



Source: EPRS graphic based on EEA data ([GHG trends](#), [GHG estimates](#), [UNFCCC reporting](#)).

The EU-wide [emissions trading system](#) (ETS) covers emissions from electricity generation and industry. Energy-intensive industries, such as iron, steel and chemical production and mining of minerals and coal, are prominent in the Czech economy. The [Czech Coal Commission](#) recently recommended phasing out coal by 2038. Three regions are designated coal regions in the country's [RESTART](#) transition programme. In 2020 alone, a reduction of 5.7 MtCO_{2e} was expected from the decommissioning of [coal gasworks](#).

The cost of low-carbon technologies raises concerns for industry competitiveness, but the [McKinsey Pathways report](#) puts forward various options for cost-optimal emissions reduction including carbon capture and storage (CCS), shifting to biomass feedstock and using electric furnaces and heat pump technologies for lower temperature processes. Better utilisation of waste heat from energy industries and industrial processes for district heating purposes, as pointed out in the NECP, will further help to reduce the overall carbon footprint.

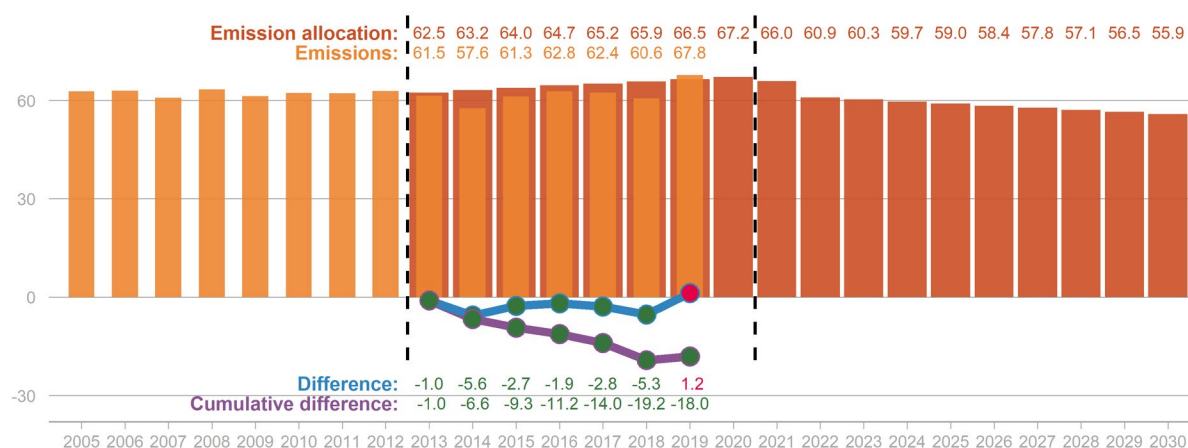
The [NECP](#) points to a functioning ETS and EU legislation on pollution prevention as key drivers to aid transition and reduce emissions from ETS sectors.

Effort-sharing sectors

EU effort-sharing (ES) 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 Czechia to increase its non-ETS GHG emissions by 9 %, compared with 2005. Although Czechia surpassed its annual ESD allocation in 2019, the accumulated difference from previous years keeps the country below target. For the [Effort-sharing Regulation](#) (ESR) period 2021-2030, Czechia must reduce emissions by 14 % against 2005 levels. The Commission warns that without additional measures Czechia is likely to achieve only 12.5 % GHG emissions reduction in ES areas by 2030.

Transport and buildings are the biggest sources of emissions. The NECP mentions building renovation as a key step, initially focused on the public building stock. A subsidy programme for private home renovation is to be continued, but no quantitative target for private renovations is mentioned. Furthermore, the NECP also envisages action on replacing coal boilers and public awareness campaigns targeting households regarding both energy efficiency and heating sources and their appropriate use to [reduce air pollution](#).

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



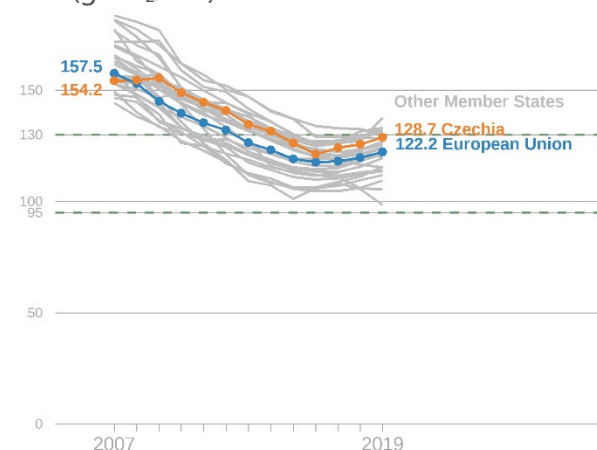
Source: EPRS graphic using Commission [ESD allocation](#), [EUR-Lex](#) and [EEA](#) data, figures display rounded data.

When it comes to transport emissions, Czechia's [Clean Mobility](#) action plan includes targets and initiatives covering public transport and freight, including low-emission zones. Renewables are to account for 14 % of transport energy in 2030, against 8.8 % in 2020. To reach this goal, advanced biofuels are expected to grow from zero today to 40 % of the renewable energy in transport in 2030.

NECP projections show an increase in battery-powered electric vehicles (BEV) and charging points, but the [NECP assessment report](#) has pointed out that financial incentives are lacking. Moreover BEVs are unlikely to be powered by renewables, considering the 2030 target of only a 16.9 % renewable electricity share in the total energy mix.

The average [emissions of new passenger cars](#) have been below the EU-wide target of 130g CO₂/km since 2015, following the European trend. However, Czechia remains above the EU average. With numbers rising since 2016, Czechia remains a considerable distance from the new EU-wide target of 95gCO₂/km by 2021.

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



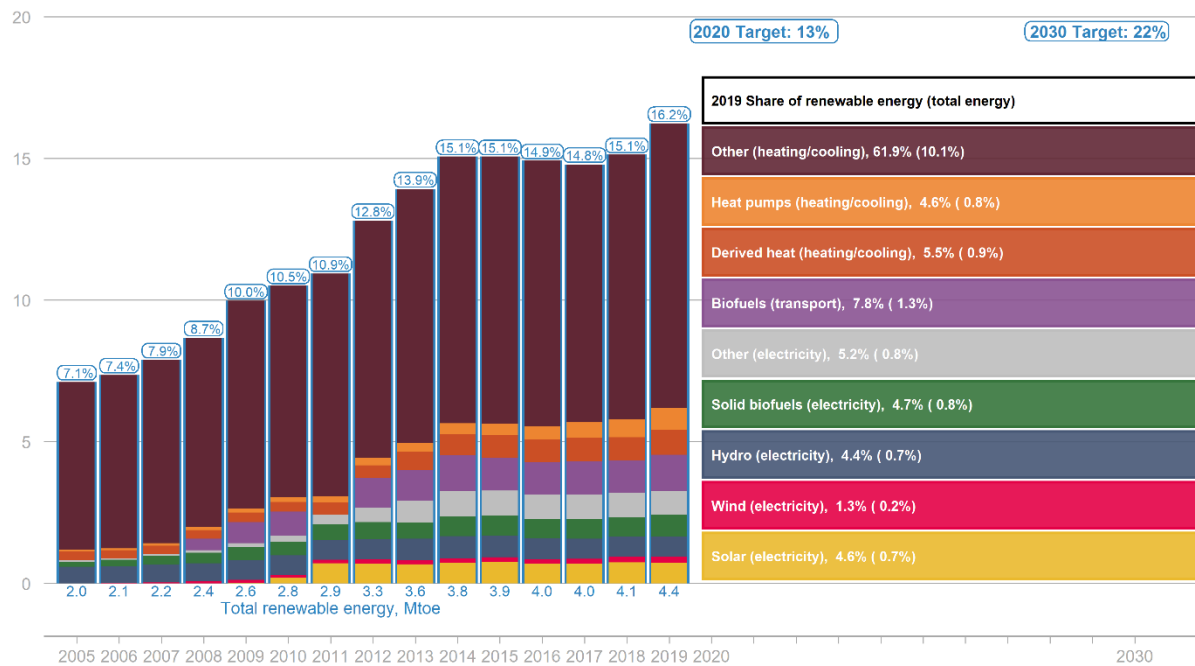
Source: EPRS graphic ([EEA](#) and Eurostat sgd_12_30).

Energy transition

Renewable energy

Czechia doubled its [renewable electricity](#) share between 2009 and 2019, but for the coming decade aims to increase this by just 3.3 %. The European Commission finds Czechia's 2030 indicative target of 22 % renewable energy (RE) in the energy mix unambitious. With the Czech focus on advanced biofuels in both heating and cooling as well as transport, the Commission has pointed to risks of land use pressures and possible a lack of structural change towards electrification for transport.

Figure 7 – Share of renewable energy of total energy consumption



Source: EPRS graphic using Eurostat ([shares tool](#)), [NECP 2030 targets](#) and [EEA data](#).

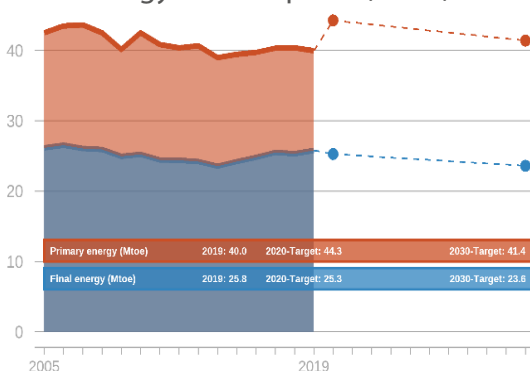
Between 2016 and 2030, Czechia [expects](#) to double its solar power capacity, more than triple wind power and build up geothermal energy as well as biomethane production from organic waste. The overall shares however remain low. The Commission has pointed out the risk of delays, with most of the support programmes operational by 2022 only, and has voiced concerns about the current stagnation in the renewable energy share.

Energy efficiency

The European Commission has judged Czechia's 2030 ambition to be modest as concerns final energy consumption and low for primary energy.

The NECP mentions waste heat recovery and an increase in CHP as key energy efficiency measures. Significant final energy consumption savings are expected from building stock renovation, transport modality shifts and industry reductions, with various legislative, fiscal and behavioural measures mentioned in the NECP.

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



Source: EPRS graphic based on Eurostat [nrg_bal_s](#), [NECP 2020 + 2030 targets](#) and [EEA data](#).

Outlook: Plans and policies

The main policies and strategies on which the NECP is based were developed between 2012 and 2017. The EU's climate governance framework and the 2030 targets were updated in 2018, and therefore not taken into consideration in some of the sectoral policy documents. Czechia's 2015 energy policy was adopted for a 25-year period and is evaluated at least every five years.

The NECP refers to work ongoing in 2019 to update the Clean Mobility action plan from 2015. Furthermore, revision of the renewable energy law of the Czech Republic is underway and expected to be finalised by late 2021 or early 2022.

The national energy and climate plan replaces existing policies in the areas of renewable energy and energy efficiency for the 2021 to 2030 period. The national action plan for smart grids was updated in 2019, taking into account distribution and production capability and cybersecurity.

The Czech NECP also refers to EU-wide regulation on pollution prevention and the ETS as drivers for the transition of Czechia's economy.

A November 2020 pro bono report on pathways to decarbonising Czechia, developed by the McKinsey & Company consultancy, is the most recent analysis. The consultancy states the purpose of the pathways reports as an effort to provide the most optimal route to achieving the European Green Deal, by analysing the costs and implications of current decarbonisation efforts.

MAIN REFERENCES

Czech Republic, [National Energy and Climate Plan of the Czech Republic](#), November 2019.

Czech Republic, [State Energy Policy of the Czech Republic](#), December 2014.

European Commission, Assessment of the final national energy and climate plan of Czechia, [SWD\(2020\) 902 final](#).

McKinsey & Company, [Pathways to decarbonize the Czech Republic - Carbon-neutral Czech Republic 2050](#), November 2020.

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