Regional Outlook 2021 - Country notes

Czech Republic

Progress in the net zero transition

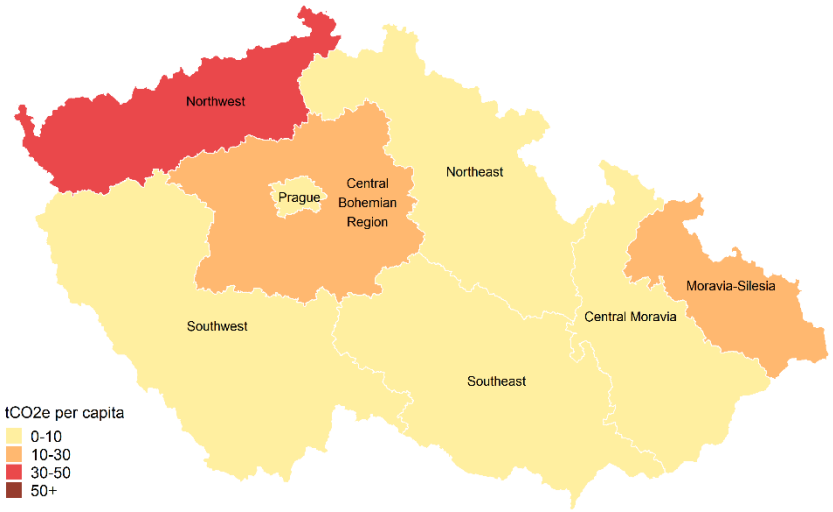
EMISSIONS

2018 OECD average:	2018 Czech average:	EU target:
11.5 tCO_2e/capita	12.0 tCO_2e/capita	net zero GHG emissions by 2050

Large regions (TL2)

Figure 1. Estimated regional greenhouse gas emissions per capita

Tons CO_2 equivalent (tCO_2e), large regions (TL2), 2018



Greenhouse gas (GHG) emissions per capita generated in the majority of Czech large regions are below 10 tCO_2e per capita. Only Central Bohemian Region, Moravia-Silesia and Northwest have higher emissions per capita than the OECD average of 11.5 tCO_2e.

Estimated emissions per capita in Northwest are more than twelve times higher than in Prague.

Small regions (TL3)

Figure 2. Contribution to estimated GHG emissions

By type of small region, 2018

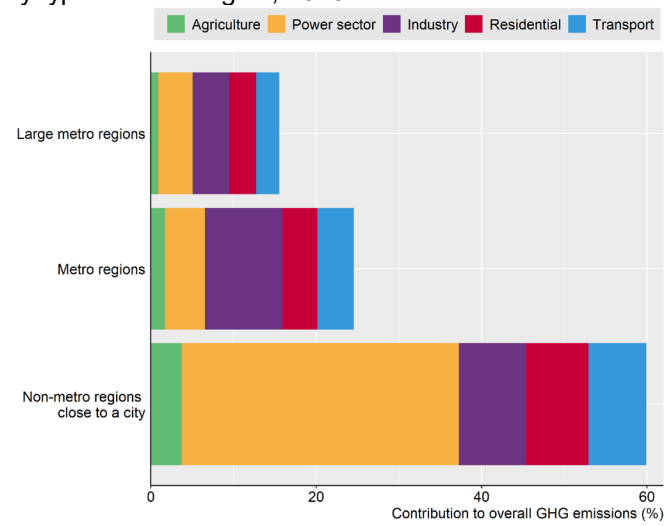
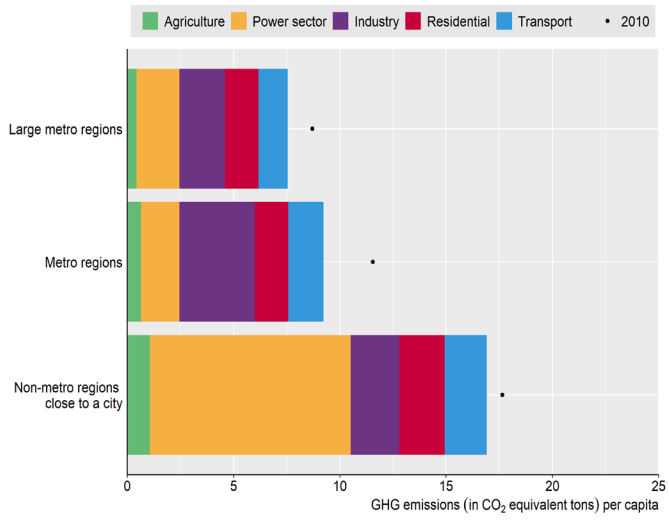


Figure 3. Estimated GHG emissions per capita

By type of small region, 2018



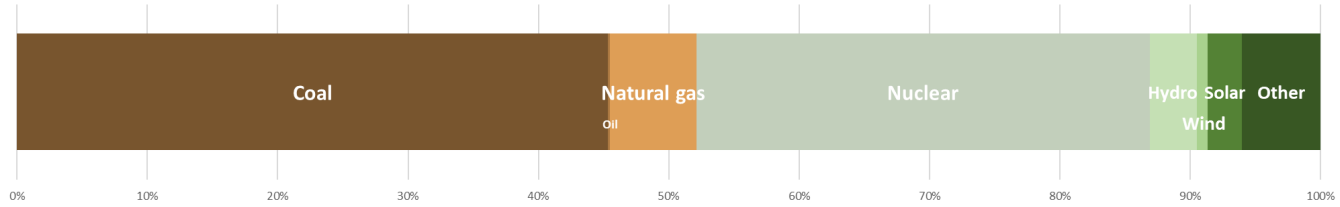
In the Czech Republic metropolitan regions emit less greenhouse gases than non-metro regions, unlike in the average OECD country. Per capita emissions in Czech non-metro regions are also highest. All region types have reduced production-based emissions per capita between 2010 and 2018.

Figure notes: Figures 1, 2, 3 and the OECD average show OECD calculations based on estimated greenhouse gas emissions data from the European Commission's Joint Research Centre (ECJRC). The Emissions Database for Global Atmospheric Research of the ECJRC allocates national greenhouse gas emissions to locations according to about 300 proxies. See Box 3.7 in the 2021 *OECD Regional Outlook* for more details.

ENERGY

Czech Republic electricity mix

Figure 4. National electricity generation by energy source in 2019

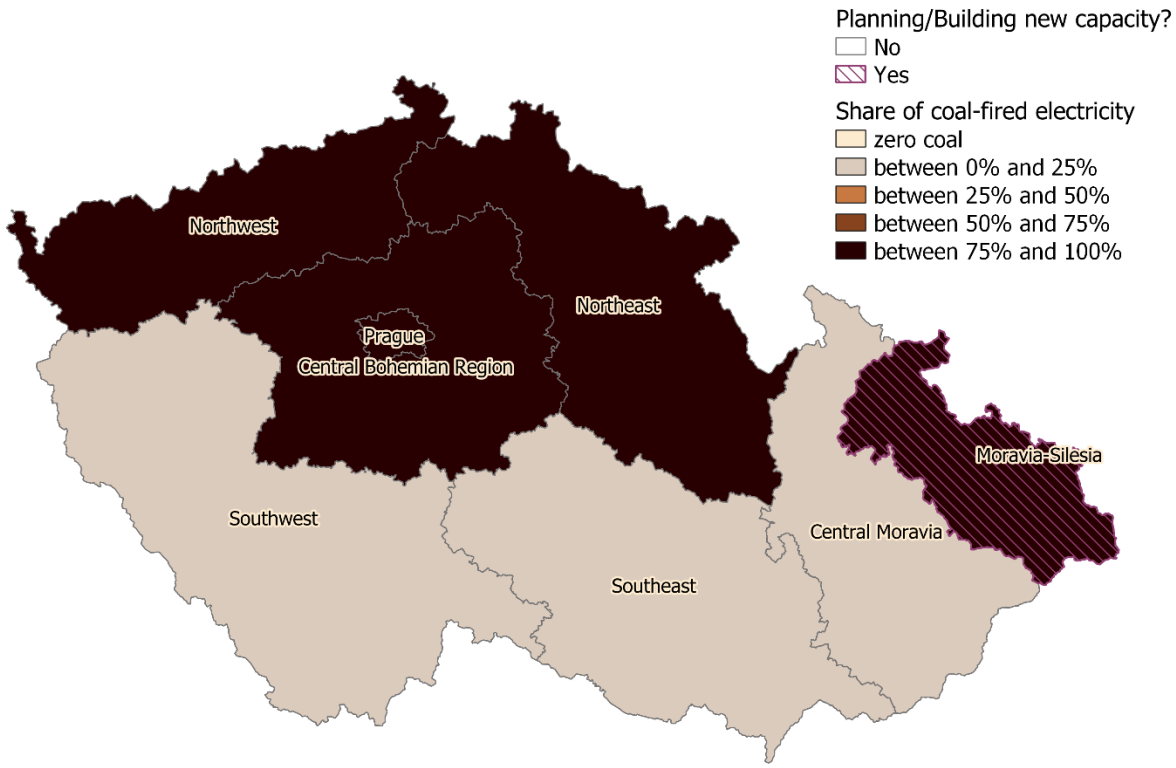


Share of coal-fired electricity generation

2019 OECD average: 23%	**2019 Czech average: 45%**	**2030 well below 2°C benchmark for the EU: <2%** **2030 1.5°C benchmark for OECD countries: 0%**

Figure 5. Regional coal-fired electricity generation estimates

Per cent of total electricity generation, large regions (TL2), 2017



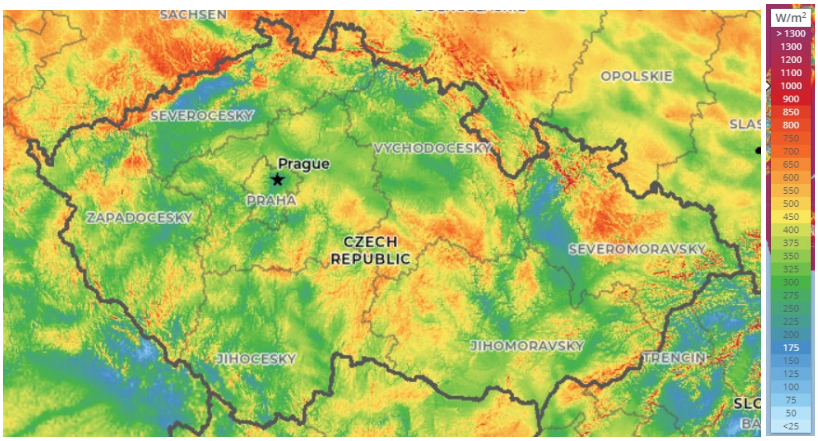
All regions use coal in electricity generation. Some regions rely largely on coal. For example, Prague exclusively depends on coal for its electricity generation. New capacity is permitted in Moravia-Silesia (Global Coal Plant Tracker, last accessed in April 2021). In march 2021, it was announced that the permitted unit will burn biomass instead of coal.[1] Since OECD regions should be phasing out coal by 2030 and the average lifespan of a coal power plant is 40 years, adding new capacity would expose regions to stranded asset risks, resulting in financial market risks and economic costs.

Wind power

2019 OECD average: 8%	2019 Czech average: 1%	2030 well below 2°C benchmark for the EU: >29%

Figure 6. Wind power potential

Mean wind power density (W/m²)



Source: Map produced by The Global Wind Atlas

Solar power

2019 OECD average: 3%	2019 Czech average: 3%	2030 well below 2°C benchmark for the EU: >14%

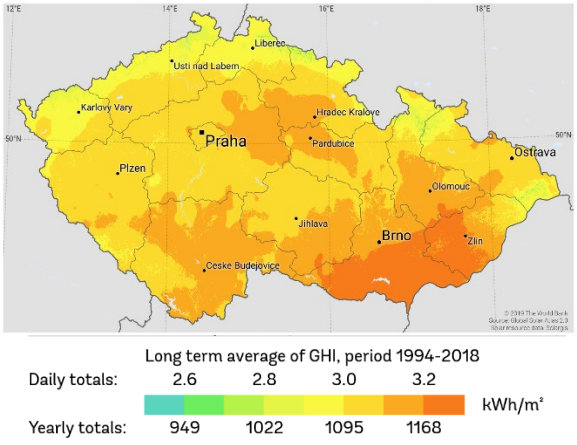
Figure 7. Regional solar power generation estimates

Per cent of total electricity generation, large regions (TL2), 2017

Regional solar electricity generation is estimated using facility level data for 56% of Czech Republic's solar capacity.

Figure 8. Solar power potential

Global horizontal irradiation (kWh/m²)



Source: Map produced by The Global Solar Atlas

The national average shares are still far below the 2030 benchmarks. Wind power intensity is strong in some regions. Solar power potential is modest overall but higher in southern regions.

Benchmark notes: The well-below 2 degrees benchmarks show IEA Sustainable Development Scenario (SDS) numbers. The SDS models how the global energy system can evolve in alignment with the Paris Agreement's objective to keep the global average temperature increase well below 2°C above pre-industrial levels. According to the Powering Past Coal Alliance (PPCA), a phase-out of unabated coal by 2030 for OECD countries is cost-effective to limit global warming to 1.5°C.

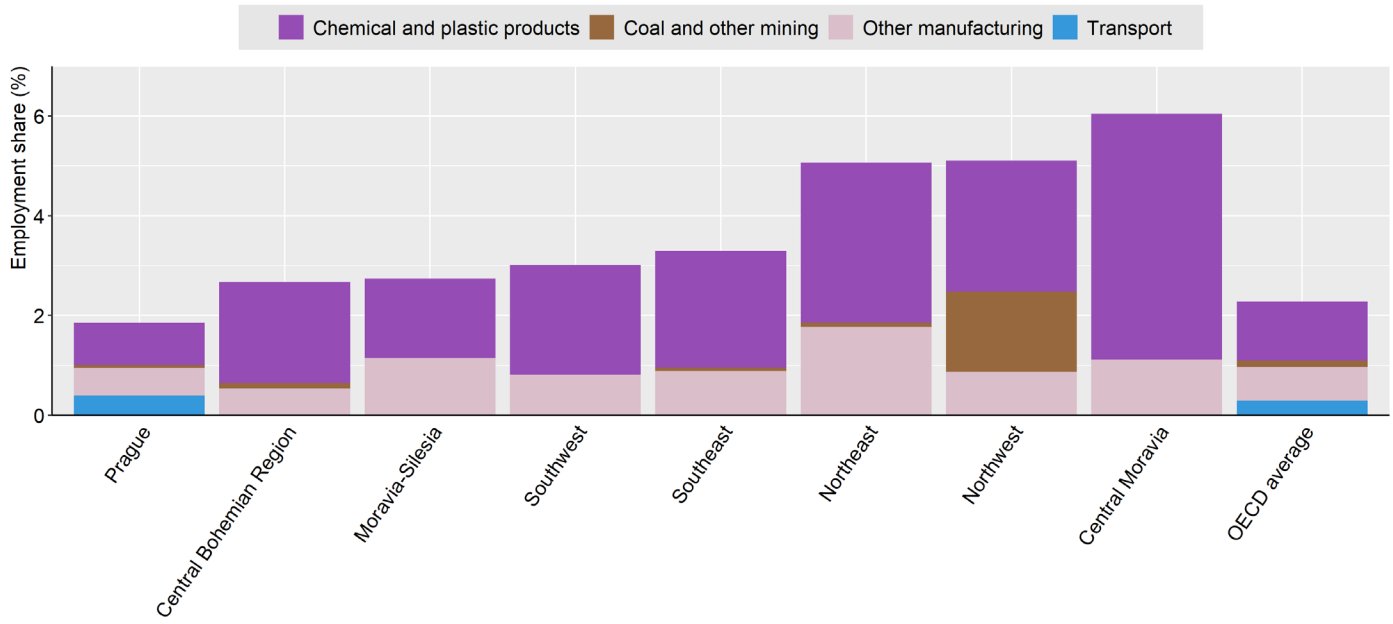
Figure notes: Figure 4 shows data from the IEA (2020). Figures 5 and 7 show OECD calculations based on the Power Plants Database from the WRI. The database captures electricity generation from the power plants connected to the national power grid. As a result, small electricity generation facilities disconnected from the national power grid might not be captured. See here for more details. Figure 5 also includes coal plans (defined as new capacity announced, pre-permit, permit or in construction) from the Global Coal Plant Tracker published by Global Energy Monitor. Figures 6 and 8 show the power potential of solar and wind. Mean wind power density (WPD) is a measure of wind power available, expressed in Watt per square meter (W/m²). Global horizontal irradiation (GHI) is the sum of direct and diffuse irradiation received by a horizontal surface, measured in kilowatt hours per square metre (kWh/m²).

Reference note: [1] see https://www.gem.wiki/Karvina_power_station.

SECTORAL EMPLOYMENT RISKS

Figure 9. Employment in selected sectors which may be subject to employment loss by 2040 if emissions are reduced in line with the Paris climate agreement

Per cent of total regional employment, large regions (TL2), 2017



There will be both employment gains and losses due to the transition to net zero greenhouse gas emissions. They may not be distributed in the same way across regions. Employment in sectors that may be subject to some job loss by 2040 as a result of policies to reduce emissions in line with the climate objectives in the Paris Agreement amounts to less than 6.5% in all Czech regions. Most Czech regions have more employment in these sectors than the OECD average. Central Moravia has a larger share, largely driven by chemicals. The selection of sectors is broad and based on employment effects simulated across OECD countries (Box 3.9 of the 2021 *OECD Regional Outlook*). It does not take specific local characteristics into account.

Figure notes: Figure 9 is based on data from OECD Statistics. Sectors are selected based on macroeconomic simulations of a scenario limiting global warming to well below 2 degrees. See Box 3.9 in the 2021 *OECD Regional Outlook* for more details.

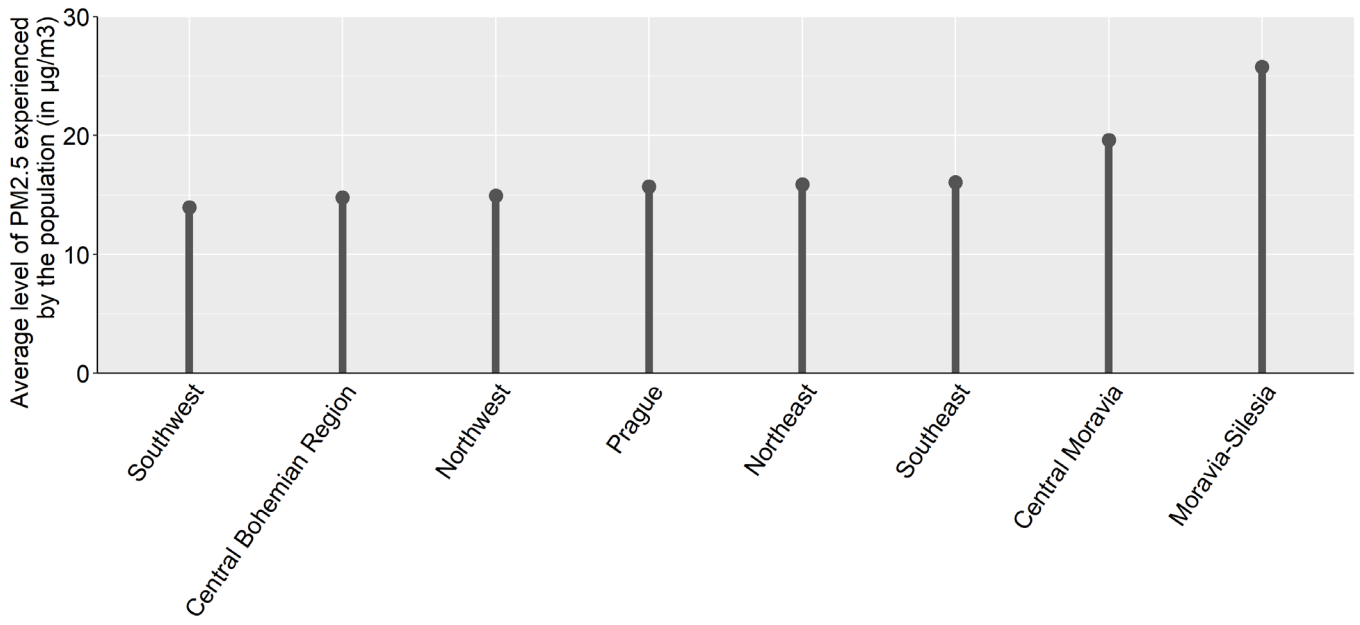
AIR POLLUTION

Large regions (TL2)

2019 OECD share of population exposed above the WHO-recommended threshold: 62%	2019 Czech share of population exposed above the WHO-recommended threshold: 100%	WHO-recommended air quality threshold: PM2.5 annual mean concentration < 10 µg/m^3

Figure 10. Average level of air pollution in PM2.5 experienced by the population

In µg/m^3, large regions (TL2), 2019



Policies towards net-zero greenhouse gas emissions can bring many benefits beyond halting climate change. They include reduced air and noise pollution, reduced traffic congestion, healthier diets, enhanced health due to increased active mobility, health benefits through thermal insulation, and improved water, soil and biodiversity protection. Some are hard to quantify.

Small particulate matter (PM2.5) is the biggest cause of human mortality induced by air pollution. Major disease effects include stroke, cardiovascular and respiratory disease. Air pollution amplifies respiratory infectious disease such as Covid-19. It affects children the most. It reduces their educational outcomes as well as worker productivity. Average exposure to small particulate matter air pollution is above the maximum threshold recommended by the World Health Organisation in all regions.

Figure notes: Figure 10 is based on data from OECD Statistics.