Regional Outlook 2021 - Country notes

Slovak Republic

Progress in the net zero transition

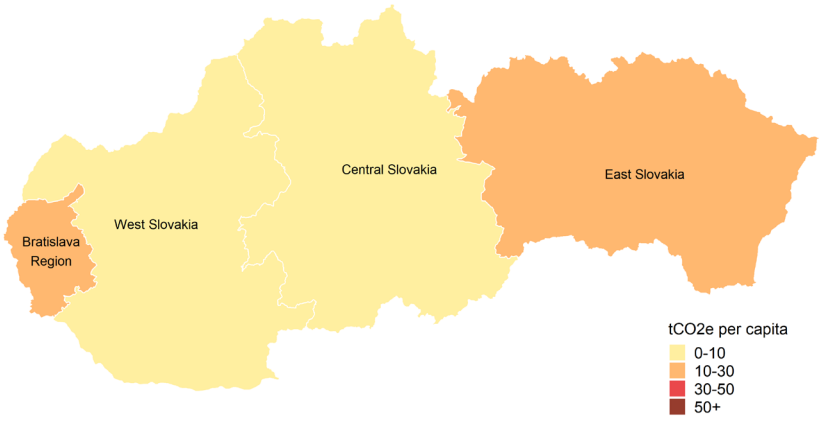
EMISSIONS

2018 OECD average:	2018 Slovak average:	EU target:
11.5 tCO_2e/capita	7.9 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 half of Slovak large regions are below 10 tCO_2e per capita. All Slovak large regions have lower emissions per capita than the OECD average of 11.5 tCO_2e per capita.

Estimated emissions per capita in East Slovakia are more than two times higher than in Central Slovakia.

Small regions (TL3)

Figure 2. Contribution to estimated GHG emissions

By type of small region, 2018

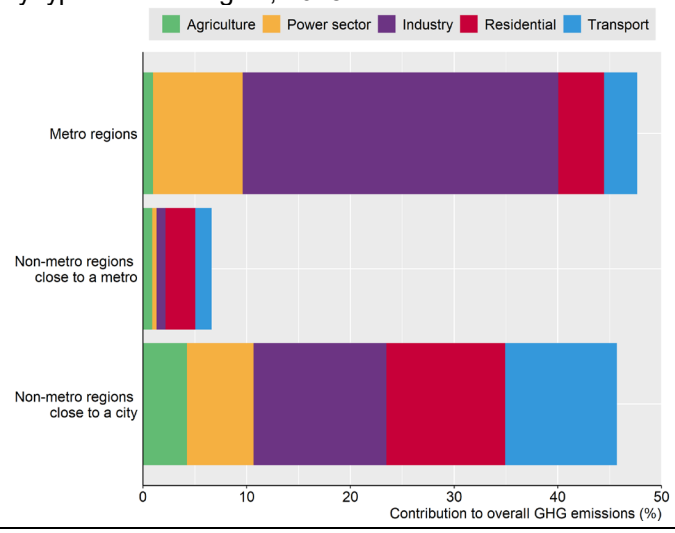
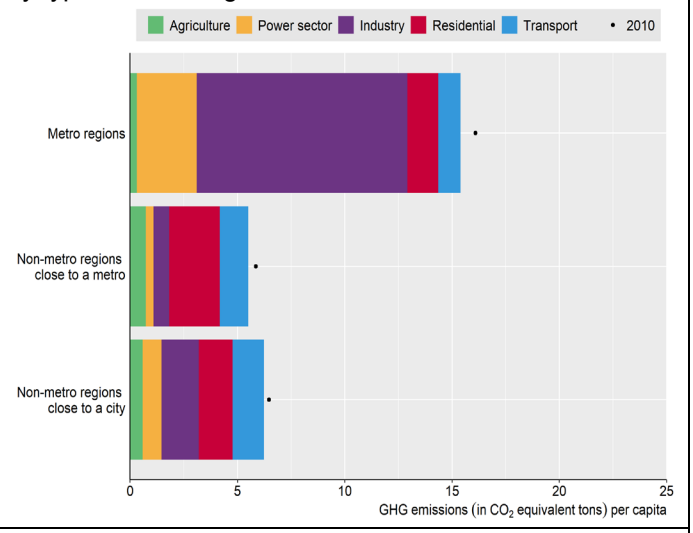


Figure 3. Estimated GHG emissions per capita

By type of small region, 2018



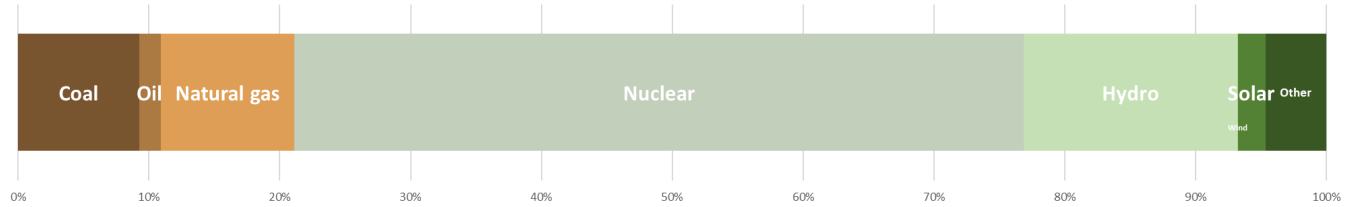
In Slovak Republic, metropolitan regions emit slightly less greenhouse gases than non-metro regions. Emissions per capita in Slovak non-metro regions are lower than in metropolitan regions.

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

Slovak electricity mix

Figure 4. National electricity generation by energy source in 2019

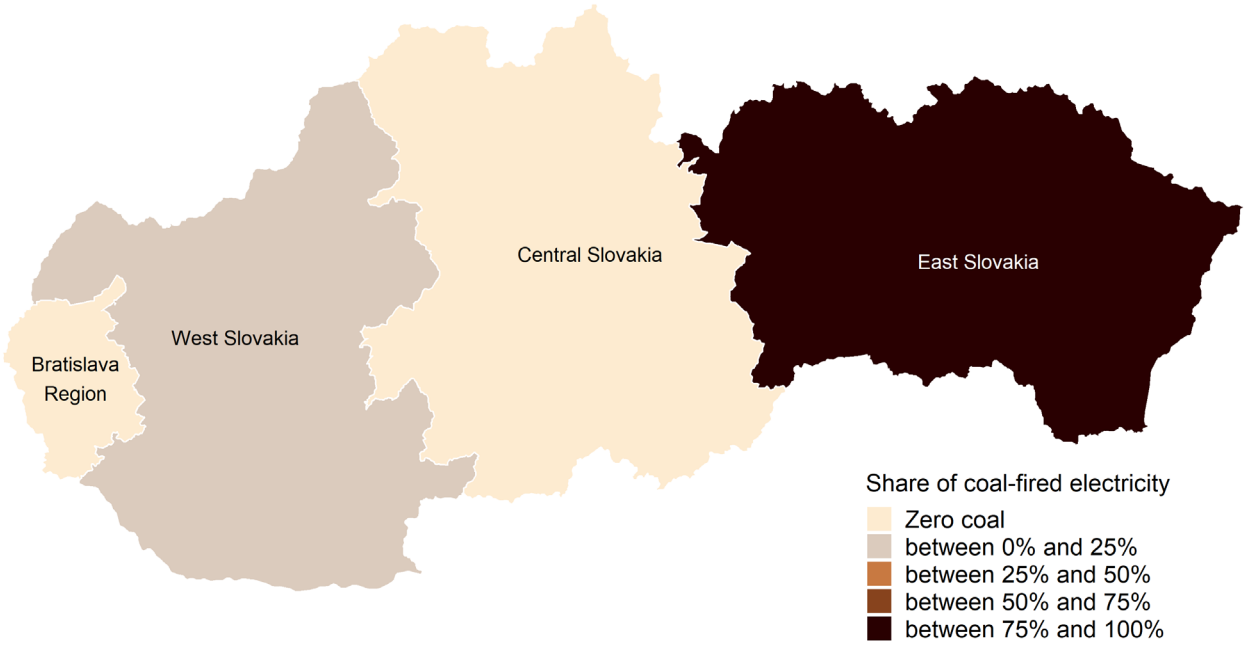


Share of coal-fired electricity generation

2019 OECD average: 23%	**2019 Slovak average: 9%**	**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



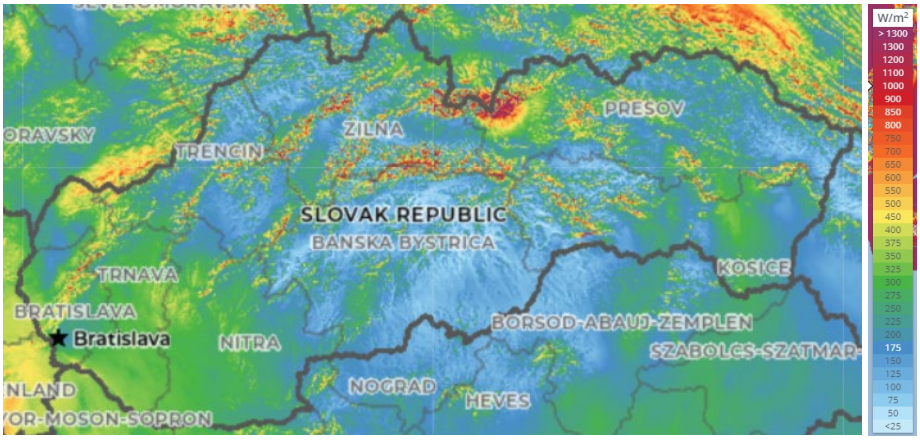
Bratislava Region and Central Slovakia do not use coal in electricity generation. West Slovakia generated just under 7% of its electricity using coal, while East Slovakia depended on coal for 95% of its electricity generation in 2017. No new capacity is planned or being build.

Wind power

2019 OECD average: 8%	2019 Slovak average: 0.02%	2030 well below 2°C benchmark for the EU: >29%

Figure 6. Wind power potential

Mean wind power density (W/m²)



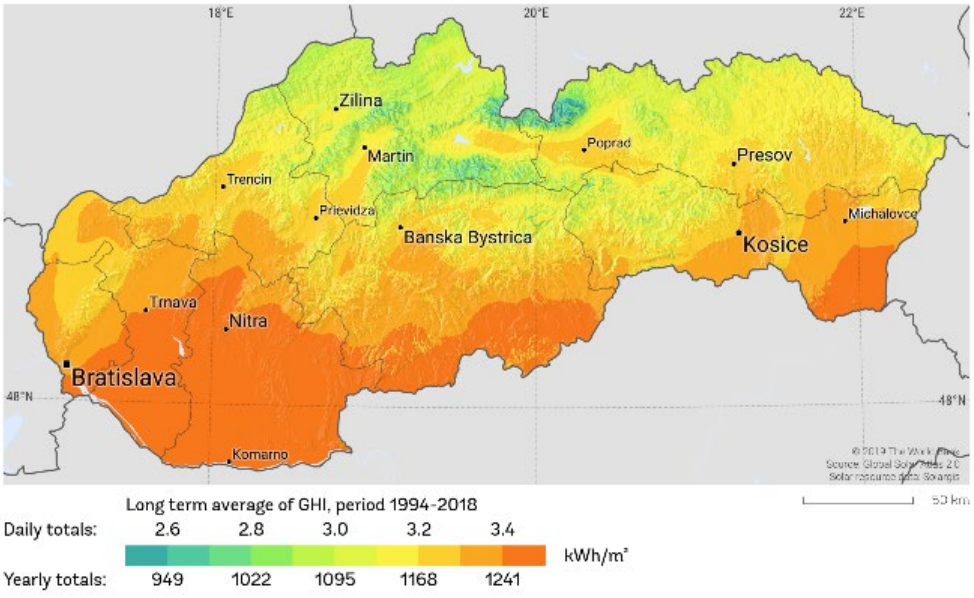
Source: Map produced by The Global Wind Atlas

Solar power

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

Figure 7. Solar power potential

Global horizontal irradiation (kWh/m²)



Source: Map produced by The Global Solar Atlas

Although wind and solar shares are low, Slovak Republic has a large share of zero-emission electricity generation due to nuclear power and hydropower. Solar power potential is higher in the south and wind power density in the west.

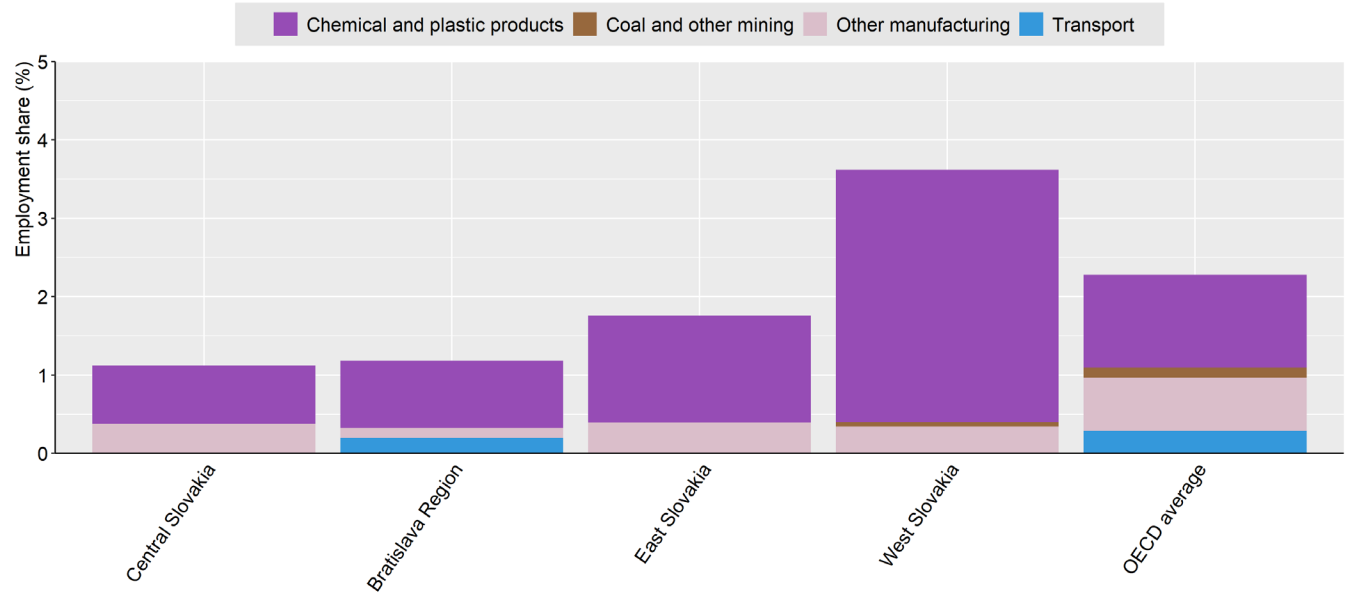
Benchmark notes: The well-below 2 degrees benchmarks show IEA Sustainable Development Scenario (SDS) numbers. The SDS models how the global energy system can evolve in alignment with the Paris Agreement's objective to keep the global average temperature increase well below 2°C above pre-industrial levels. 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). Figure 5 shows 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. Figures 6 and 7 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).

SECTORAL EMPLOYMENT RISKS

Figure 8. 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 4% in all Slovak regions. All Slovak regions, except for West Slovakia, have less employment in these sectors than the OECD average. West Sovakia has the highest share, largely driven by chemicals. The selection of sectors is broad and based on employment effects simulated across OECD countries (See Box 3.9 of the 2021 *OECD Regional Outlook*). It does not take specific local characteristics into account.

Figure notes: Figure 8 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.

TRANSPORT

Electrification of passenger cars

2018 Slovak average rate of full-electric road motor vehicles stock: <1 per 1000 vehicles	Benchmarks for new zero-emission passenger car sales: IEA well-below 2°C benchmark: 100% by 2040. Aligned with net zero emissions by 2050: 100% by 2035 at the latest. 2030 cost-effective.	Slovak target sales of zero emission new passenger cars: No full phase out date of internal combustion cars yet

Figure 9. Full-electric road motor vehicles stock

For 1000 vehicles, large regions (TL2), 2018

In 2018, no Slovak region had over 1 full-electric vehicle per 1000 vehicles.

Regions with a net zero target by 2050 will need to phase out sales of new conventional car by 2035 at the latest (also considering cars have an average useful life of 15 years). A phase-out by 2030 is more cost-effective.

Benchmark notes: In the IEA's Sustainable Development Scenario, OECD countries (such as the European Union, Japan and the United States) as well as China fully phase out conventional car sales by 2040. This scenario is aligned with the Paris Agreement's objective to keep the global average temperature increase well below 2°C above pre-industrial levels. The UK Committee on Climate Change finds that all new cars and vans should be electric (or use a low carbon alternative such as hydrogen) by 2035 at the latest to reach net zero GHG emission targets by 2050. A more cost-effective date from the point of view of users is 2030.
Figure notes: Figure 9 is based on data from OECD Statistics.

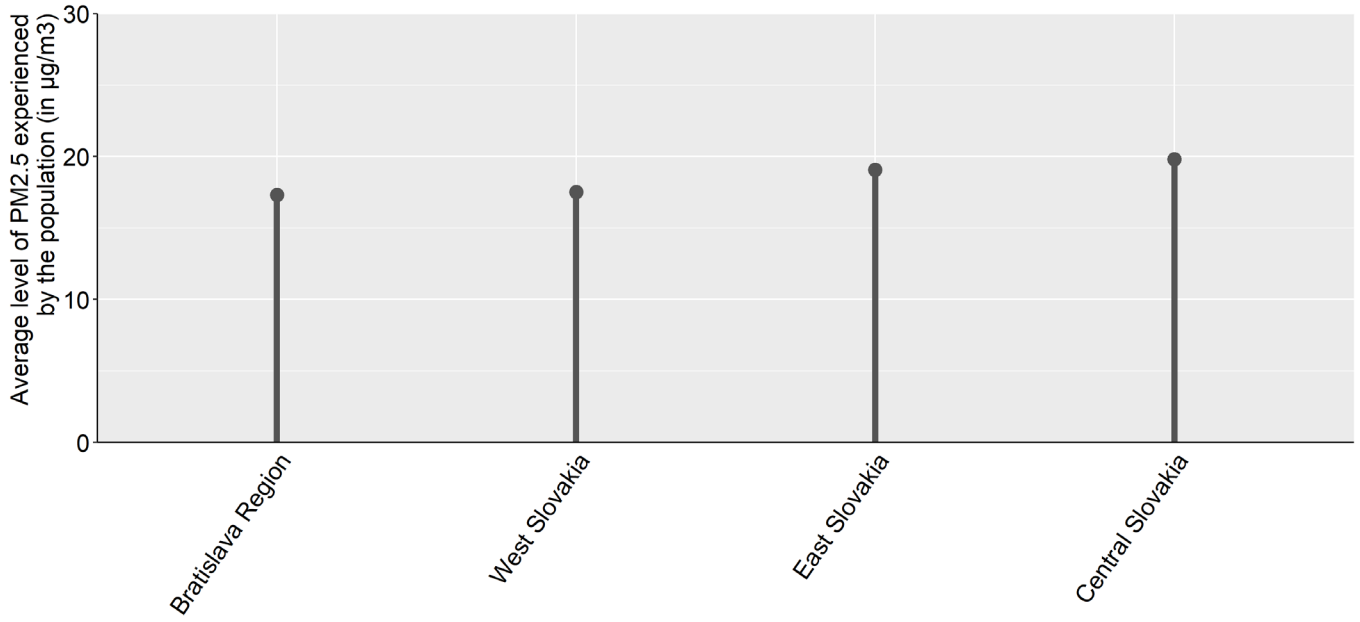
AIR POLLUTION

Large regions (TL2)

2019 OECD share of population exposed above the WHO-recommended threshold: 62%	2019 Slovak 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.