

Regional Outlook 2021 - Country notes

Bulgaria

Progress in the net zero transition



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EMISSIONS

2018 OECD average:

11.5 tCO₂e/capita

2018 Bulgarian average:

8.2 tCO₂e/capita

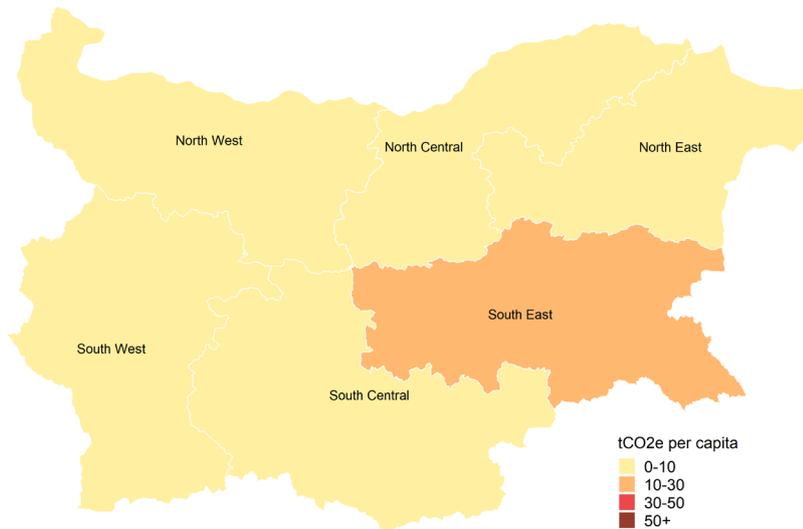
EU target:

net zero emissions by 2050

Large regions (TL2)

Figure 1. Regional greenhouse gas emissions per capita

Tons CO₂ equivalent (tCO₂e), large regions (TL2), 2018



Greenhouse gas (GHG) emissions per capita generated in most Bulgarian large regions are below 10 tCO₂e per capita. Only South East has higher emissions per capita than the OECD average of 11.5 tCO₂e.

Estimated emissions per capita in South East are over three times higher than in North Central.

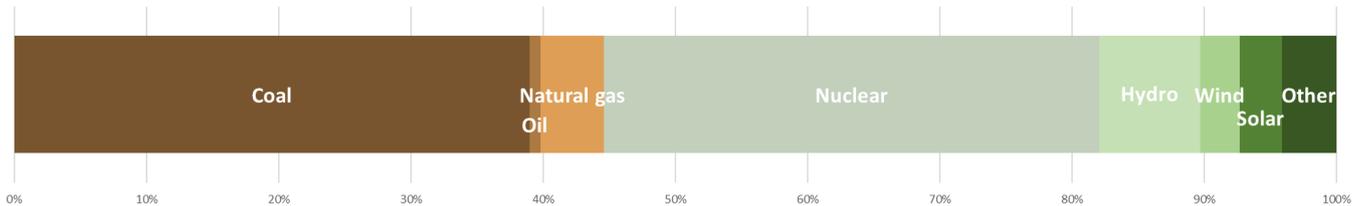
Target notes: Emissions targets included in the Net Zero Tracker database from ECIU before January 25, 2021 are considered.

Figure notes: Figure 1, the national 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

Bulgarian electricity mix

Figure 2. National electricity generation by energy source in 2019



Share of coal-fired electricity generation

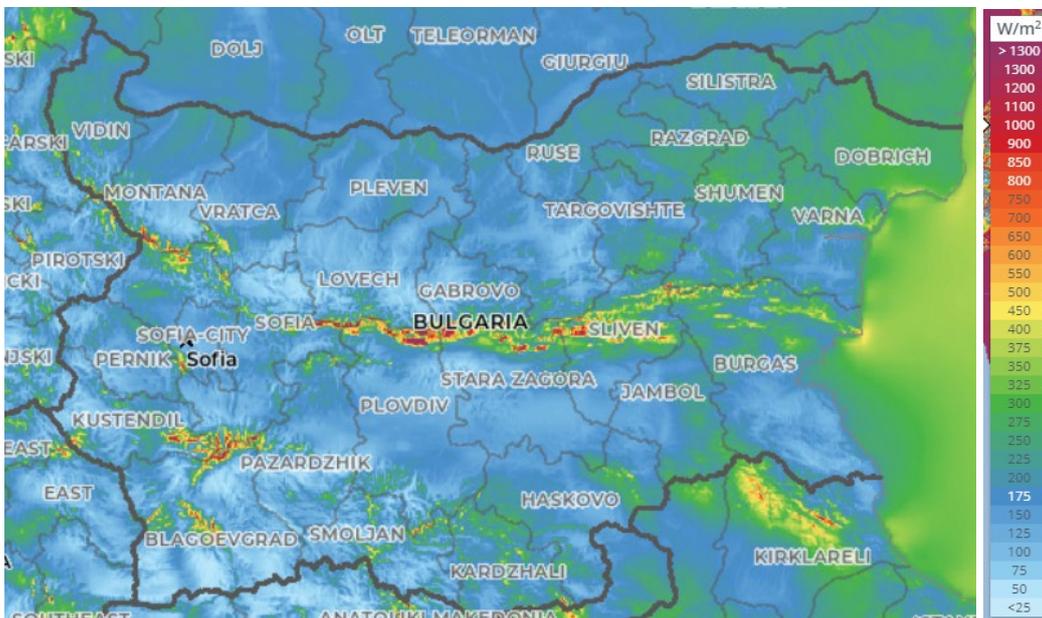
2019 OECD average: 23%	2019 Bulgarian average: 39%	2030 well below 2°C benchmark for the EU: <2% 2030 1.5°C benchmark for OECD countries: 0%
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Wind power

2019 OECD average: 8%	2019 Bulgarian average: 3%	2030 well below 2°C benchmark for the EU: >29%
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Figure 3. Wind power potential

Mean wind power density (W/m²)



Source: Map produced by The Global Wind Atlas

Solar power

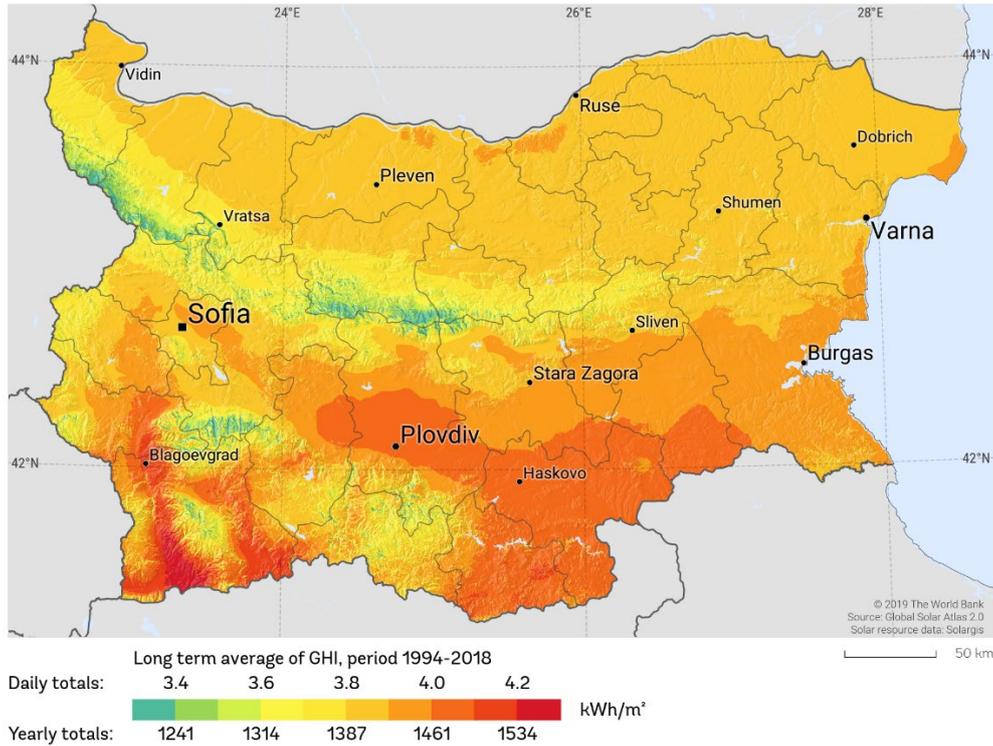
2019 OECD average: 3%

2019 Bulgarian average: 3%

2030 well below 2°C benchmark for the EU: >14%

Figure 4. Solar power potential

Global horizontal irradiation (kWh/m²)



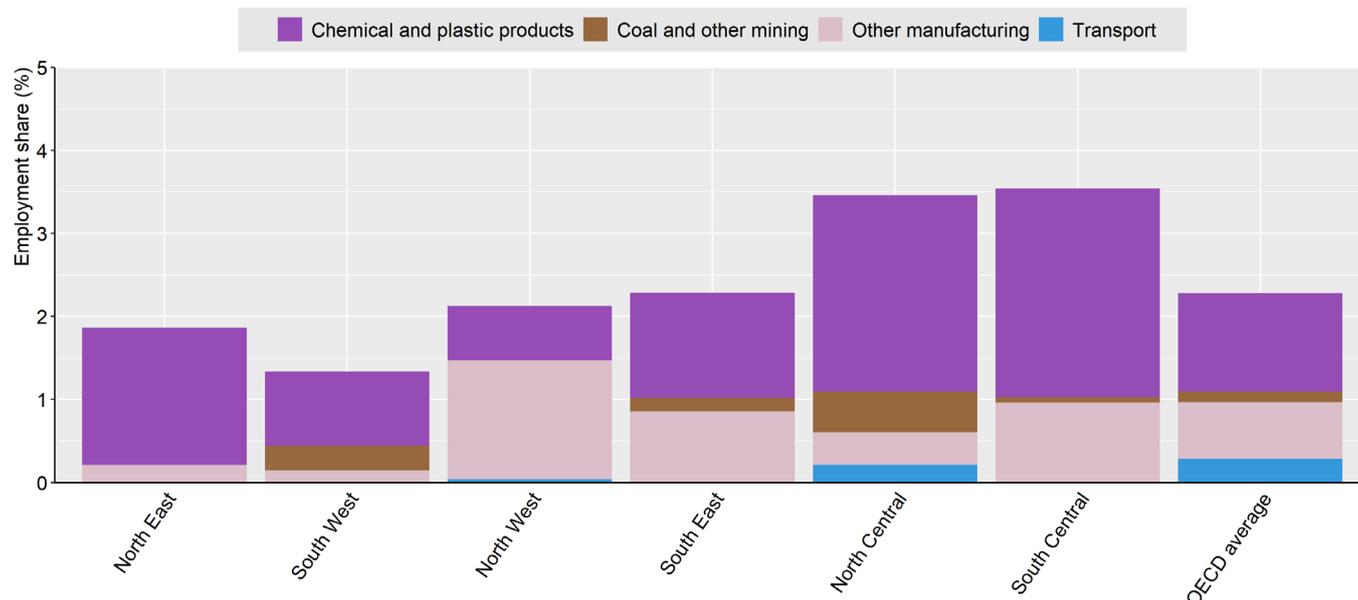
Bulgaria still relies on coal for a large share of its electricity generation. OECD regions should be phasing out coal by 2030 to align with the Paris Climate Agreement. The national average shares for wind and solar power are still far below the 2030 benchmarks. However, Bulgaria has a large share of zero emissions electricity generation through nuclear and hydro power. Solar power potential is 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 2 shows data from the IEA (2020). Figures 3 and 4 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 5. 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 3.5% in all Bulgarian regions. North and South Central have the largest shares, 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 5 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. For South East and North Central data on coal mining employment is confidential, while for South-West other mining employment is missing for confidentiality reasons. Other mining refers to "Quarrying of stone, sand and clay" and "Mining and quarrying not elsewhere classified".

AIR POLLUTION

Large regions (TL2)

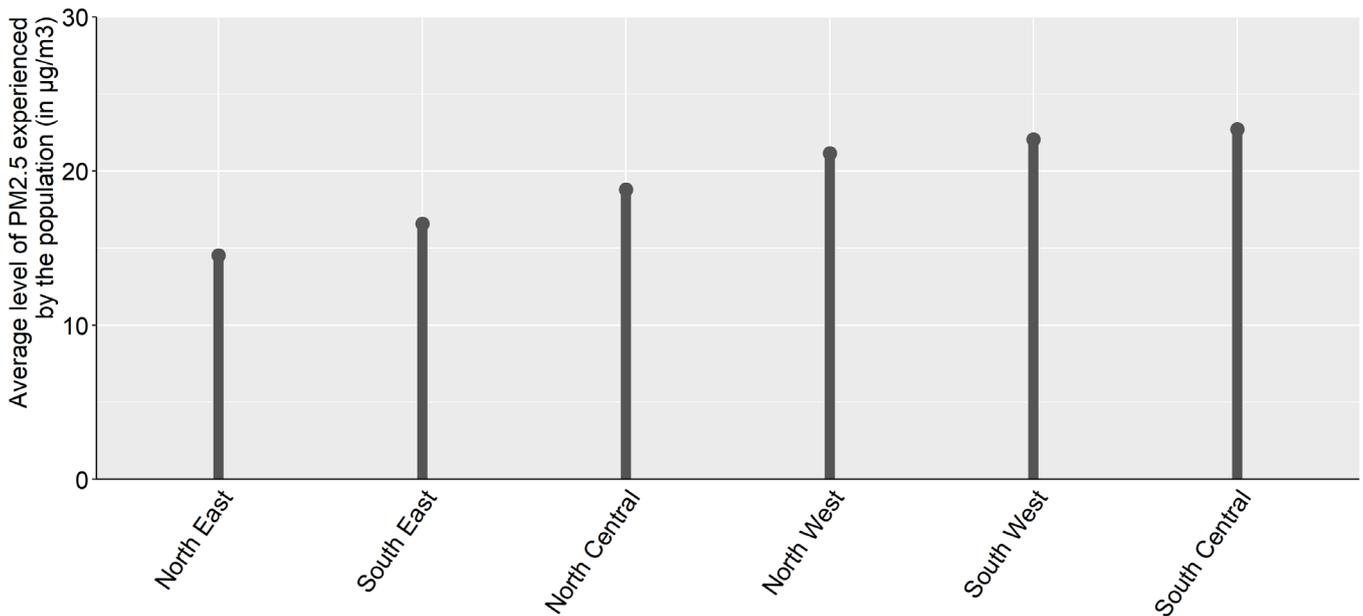
2019 OECD share of population exposed above the WHO-recommended threshold: 62%

2019 Bulgarian share of population exposed above the WHO-recommended threshold: 100%

WHO-recommended air quality threshold: PM2.5 annual mean concentration < 10 µg/m³

Figure 6. Average level of air pollution in PM2.5 experienced by the population

In µg/m³, 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.

In all regions the population is on average exposed to small particulate matter pollution above the maximum level recommended by the World Health Organisation.

Figure notes: Figure 6 is based on data from OECD Statistics.