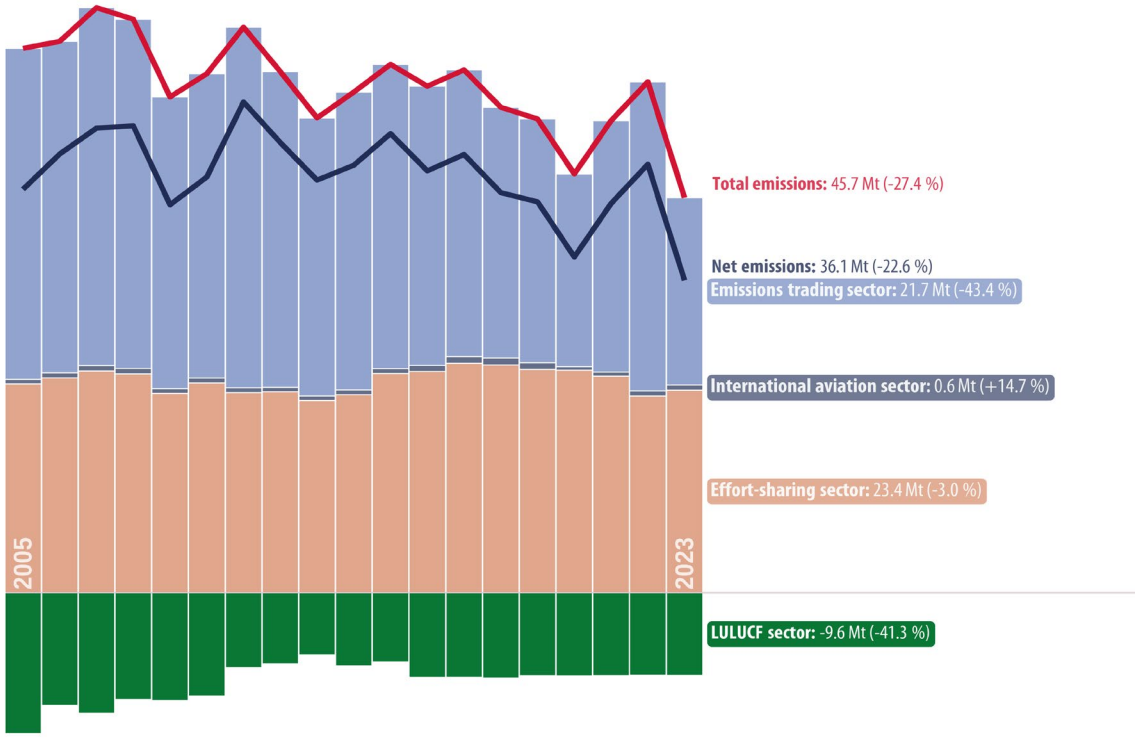
European Parliament

Bulgaria's climate action strategy

In 2023, Bulgaria accounted for around 1.2 % of the EU's net greenhouse gas (GHG) emissions, and achieved a net emissions reduction of 22.6 % compared with 2005. The country's total emissions decreased by 27.4 % between 2005 and 2023, while its net carbon removals in the land use, land-use change and forestry (LULUCF) sector declined by 41.3 % (Figure 1). Emissions from sectors covered by the effort-sharing legislation decreased by 3 % since 2005 and were higher than those from sectors under the EU emissions trading system (ETS), which fell by 43.4 %. In 2023, Bulgaria still had the most carbon-intensive economy in the EU; the European Commission considers that the country's green transition could be slowed significantly by the lack of long-term climate commitments, heavy dependence on coal, and the high energy intensity of its economy. Bulgaria submitted its draft updated national energy and climate plan (NECP) in February 2024. The Commission assessed it and made recommendations for the final plan, which was due in June 2024.

In a 2023 survey, only 22 % of Bulgarians, compared with a 46 % EU average, identified climate change as of the four most serious problems facing the world. Most expect national government (48 %) and/or the EU (39 %) to tackle climate change. Only 17 % find it to be a personal responsibility.

Figure 1 – Bulgaria's greenhouse gas emissions in million tonnes (Mt), 2005-2023



Data source: European Environment Agency (EEA), 2024.

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

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Bulgaria's starting point

In 2014, Bulgaria adopted a Climate Change Mitigation Act, last amended in May 2024, which integrates international and EU obligations into national legislation and sets the legal and institutional framework for the country's climate action governance. The climate law mainly implements Bulgaria's share of the EU objectives, without specifying further national climate targets. In 2019, the Bulgarian government approved a national climate change adaptation strategy and action plan until 2030, which identifies nine sectors with the highest vulnerability and need for adaptation actions. The document also includes an analysis of the macroeconomic effects of climate change, and a disaster risk management assessment. In October 2022, the country published its long-term climate change mitigation strategy by 2050 comprising five decarbonisation scenarios. Furthermore, Bulgaria adopted a climate neutrality roadmap (last updated in July 2024) based on a report with scenarios and recommendations prepared by the Energy Transition Commission in September 2023. Following the infringement procedure opened by the Commission on 21 December 2023, Bulgaria in February 2024 submitted the draft update of its NECP. The Commission assessed the draft, noting that Bulgaria had confirmed its commitment to achieving climate neutrality by 2050.

In 2005, Bulgaria accounted for total emissions of around 63 million tonnes of CO_2 equivalent (MtCO2e). In 2023, these emissions were 27.4 % lower than the 2005 level. Bulgaria achieved its 2020 objective under the Effort-sharing Decision, as its emissions were only 6.55 % higher than in 2005. As regards the share of energy from renewables, the country exceeded its legally binding target of 16% for 2020, but failed to take steps towards a coal phase-out in 2023. Bulgaria's per capita GHG emissions fluctuated below the EU average until 2022, when they reached 9.1 tonnes and exceeded the EU average of 7.8 tonnes. In 2023, GHG emissions amounted to 7.1 tonnes per capita, falling again below the EU average of 7.2 tonnes; this was also a 13.5 % reduction compared with 2005. Between 2005 and 2023, the Bulgarian economy's carbon intensity decreased by 54 %, but was 3.5 times the EU average. However, the country performed better than the EU, which reduced the carbon intensity of its economy by 44 % over the same period.

Bulgaria is ranked 50th in the 2025 Climate Change Performance Index (CCPI), receiving 'low', 'very low', and 'medium' ratings in GHG emissions and climate policy, energy use, and renewable energy, respectively. The CCPI ranks countries based on their climate protection performance using primarily quantitative data, with experts providing qualitative evaluation of a country's forward-looking climate policies.

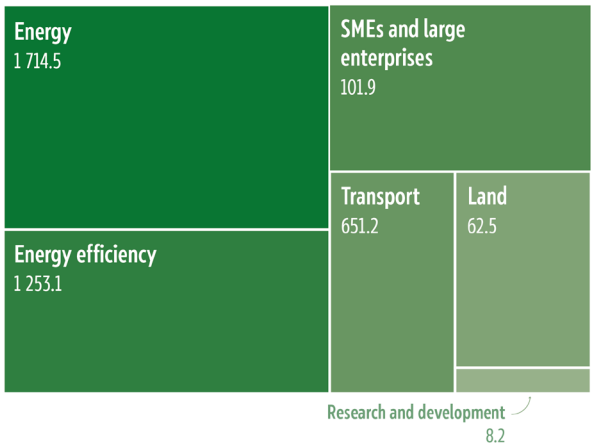
Climate action governance

Under Bulgaria's climate law, the minister of environment and water is the competent authority to carry out the state policy on climate change mitigation, supported by the Executive Environment Agency. Jointly with other competent ministers, he prepares drafts of national strategies for basic climate change adaptation measures. The climate law establishes a National Expert Council on Climate Change as an advisory body to the minister of environment and water. The expert council comprises representatives from ministries and government agencies, academia, local authorities and non-governmental organisations (NGOs). Analysts and environmental activists have questioned this body's independence, as its activity is regulated by rules of procedure approved by an order of the minister of environment and water. The Climate Change Mitigation Act has been criticised for setting neither clear national priorities nor a long-term goal, and for not regulating the process of adopting sectoral objectives and decarbonisation trajectories. Bulgaria lacks a national adaptation policy, coordination among authorities, and subnational planning and reporting. Analysts stress the need to improve the institutional framework regarding accountability, monitoring and control mechanisms. An advisory board to the Council of Ministers – the European Green Advisory Council – has been set up, with the aim of exercising consulting, coordination and support activities for the implementation of government policy relating to the European Green Deal.

Climate action in the national recovery and resilience plan

Bulgaria submitted its national recovery and resilience plan (NRRP) to the Commission on 15 October 2021. Following the 2022 revision of allocations, the plan was amended in 2023. The estimated total cost is € 6.2 billion, with a maximum grant allocation from the Recovery and Resilience Facility of € 5.7 billion. Around € 1.37 billion has been disbursed so far. Bulgaria's plan dedicates most of the funds to the green transition, with 57.5 % of grants allocated to measures supporting climate objectives (Figure 2). The largest share of climate grants is for investment in the decarbonisation of the energy sector. The NRRP includes binding targets for reducing GHG emissions in the country's power sector and a reform intended to phase out coal. The largest projects are aimed at expanding the national infrastructure for storage of electricity from renewables, and at renovating residential buildings. To meet the 2026 deadline, Bulgaria has to speed up implementation of its NRRP, delayed significantly because of major challenges, and finalise the REPowerEU chapter.

Figure 2 – NRRP climate dimension (€ million)

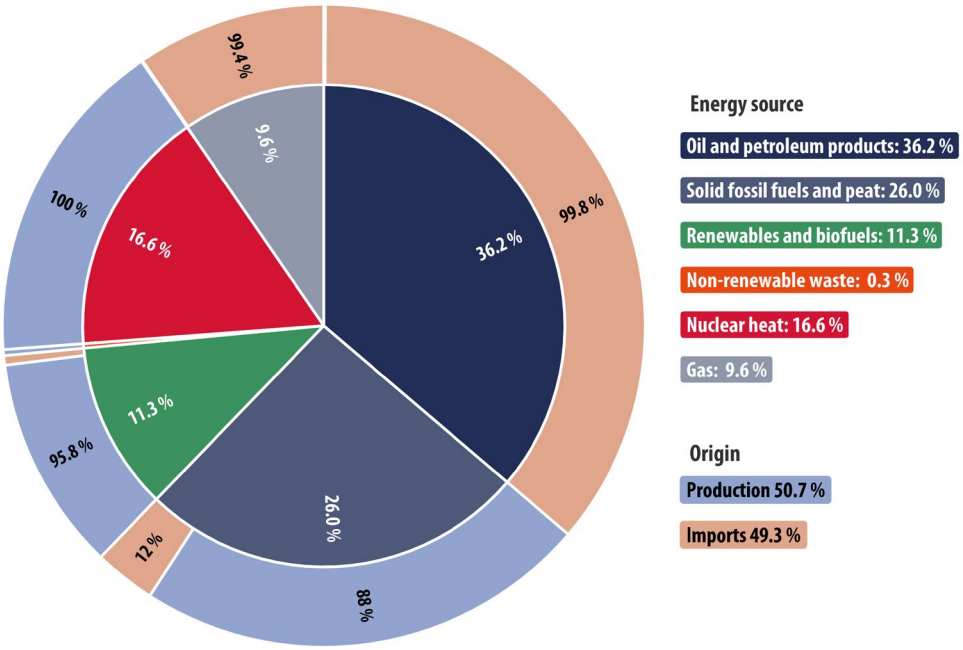


Data source: European Commission, 2023; graphic by Lucille Killmayer, EPRS.

Energy situation

The largest share of Bulgaria's energy mix, 36.2 % in 2022, consisted of oil and petroleum products, almost all of which imported (Figure 3). Bulgaria exempt from the EU ban on Russian oil exports, but decided to lift the exemption from 1 March 2024, urging a shift towards alternative imports and energy sources. The greatest share of produced energy stemmed from solid fossil fuels (mostly coal), making up 26 % of the total energy mix.

Figure 3 – Energy mix and import dependency, 2022

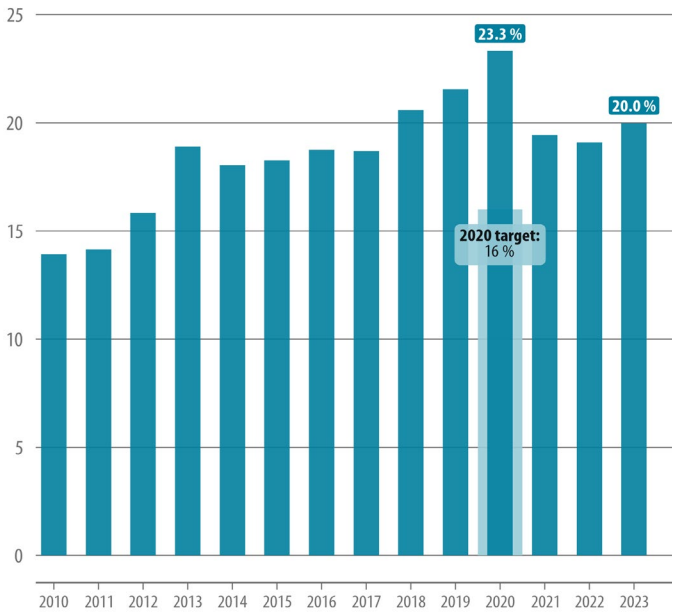


Data source: Eurostat (nrg_bal_sd), 2024.

In October 2023, Bulgaria revised its climate neutrality roadmap, allowing coal-fired power plants to operate without restrictions until at least 2038. In December 2023, the country received an allocation of € 1.2 billion from the Just Transition Fund, to facilitate the transition from coal and support reskilling and upskilling with new job opportunities for over 15 000 people in the three most coal-intensive regions. Nuclear energy was the second largest source of produced energy in 2022, representing a 16.6 % share in the country's energy mix, followed by renewables (11.3 %). In October 2023, Bulgaria launched the construction of two new nuclear reactors in Kozloduy, potentially doubling current capacities.

In 2023, renewable energy had a 20 % share in final energy consumption (Figure 4). In recent years, the country has expanded its renewable energy capacity, traditionally dominated by hydropower. While solar photovoltaic has seen rapid growth, installed wind capacity stagnated in 2023. Bulgaria is now seeking to speed up the expansion of solar energy, for instance by streamlining permitting processes and subsidies for household installations of solar panels or boilers. In 2023, Bulgaria surpassed its 2020 renewable energy target by 4 percentage points. The country set a national target of 34.1 % renewable share in 2030 (slightly above the indicative objective of 33 % under EU legislation), to be achieved in the heating and cooling, electricity, and transport sectors. Biomass use (particularly in heating and cooling) will continue long term, while the use of renewable hydrogen produced with electricity from wind and solar is envisaged as an innovation.

Figure 4 – Renewable energy share in final energy consumption



Data source: Eurostat (nrg_ind_ren), 2024.

Sectoral challenges and strategies

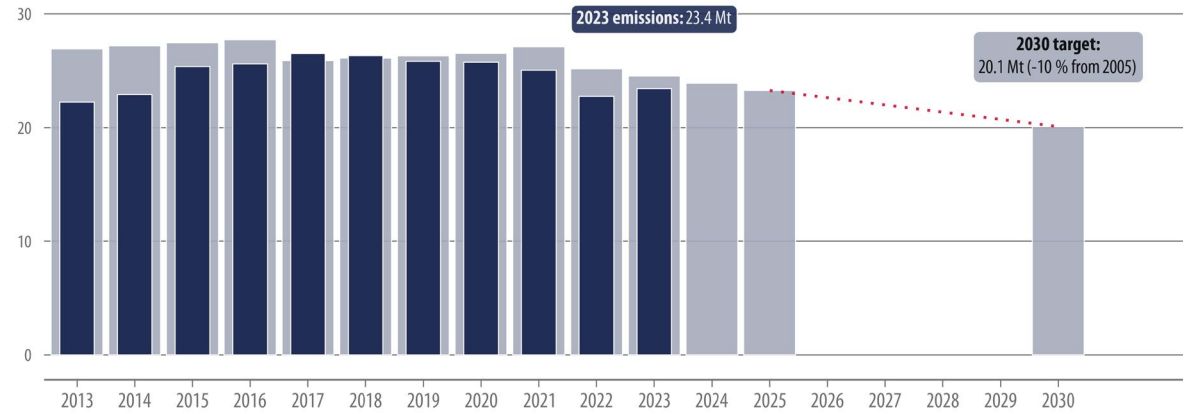
In 2023, energy industries remained the main source of GHG emissions in Bulgaria with the highest share in total emissions (30.2 %), followed by transport (22.7 %), industry (18.4 %), agriculture (13 %), and the buildings and tertiary sector (9.6 %). Waste management made up the smallest share in the country's total emissions (6.15 %). Almost all sectors reduced their emissions in 2023 compared with 2005 (led by the energy industries, which almost halved them), except for transport and agriculture, where emissions were 32.4 % and 19.7 % higher respectively than in 2005.

Emissions in the energy sector are largely due to electricity and heat production from coal. One of the main developments towards decarbonising the sector will therefore include efficient use of conventional and alternative energy resources, and progressive replacement of fossil fuels with new low-emissions technologies. Several measures also target industry, for instance to increase energy efficiency and the use of natural gas and alternative fuels, and to encourage investment in net-zero technologies. To reduce the industry's resource intensity and address the energy transition, circular economy solutions will be needed, as well.

Emissions from sectors not included in the EU ETS, such as agriculture, transport, buildings, small industrial installations, and waste, are covered by the EU effort-sharing legislation, which establishes

binding emissions reduction targets for each Member State and sets up annual emission allocations (AEAs) (Figure 5). The revision of the Effort-sharing Regulation (ESR) in 2023 raised the national targets for 2030. Bulgaria has been assigned a 2030 reduction target of 10 % compared with 2005. In 2023, Bulgaria's emissions from the effort-sharing sectors were 3 % higher than in 2005. In the 2013-2020 period, the country exceeded its AEAs in 2017 and 2018, and had to use banked surpluses from previous years. From 2019 to 2023, the emissions remained within the AEAs. The Commission estimates that this trend will continue in 2024; from 2025, emissions will likely exceed annual limits, and Bulgaria would have to use the flexibilities available under the ESR in the 2026-2030 period. Current projections indicate that the country will miss its national 2030 binding target.

Figure 5 – Bulgaria's emissions under the Effort-sharing Decision/Regulation

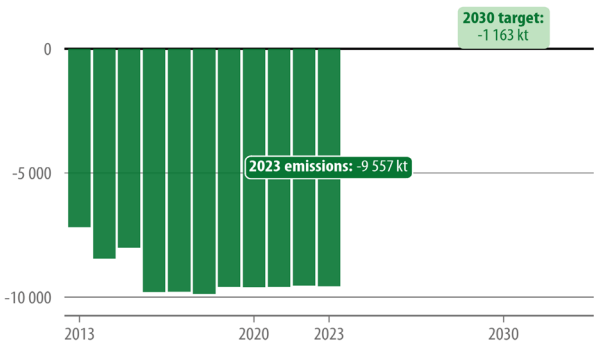


Data source: EEA, 2024.

GHG emissions from road transport and buildings are a significant concern for Bulgaria. To achieve the transition to low-emissions transport, the country envisages measures to increase the share of public electric transport and encourage the use of electric and hybrid vehicles, as well as the use of advanced biofuels. Planned investments aim to improve the quality of railway infrastructure and further develop intelligent transport systems. As for buildings, Bulgaria aims to achieve a renovated area of 7.9 % and 19.08 % by 2030 and 2050 respectively. Other objectives set in the draft updated NECP are to increase the number of nearly zero-energy buildings, and improve the energy performance of at least 5 % of the state-owned building stock's total floor area. Sustainable solutions for heating will be applied, such as connection to district networks and use of solar panels and heat pumps. The development of efficient district heating and cooling systems is also planned. To reduce emissions from agriculture, measures such as crop rotation, improved manure use and storage, and biological re-cultivation of degraded agricultural land are considered.

Bulgaria's LULUCF sector is a net carbon sink, absorbing more GHG than it emits. The revised LULUCF Regulation sets an EU land-based net GHG removals target to be implemented by 2030 through binding national targets. By 2030, the country must reduce its LULUCF emissions by 1 163 kilotonnes of CO_2e (ktCO2e) compared with its average emissions in 2016, 2017 and 2018 (where accounting adjustments may occur). In 2020, this baseline was -8 554 $ktCO_2e$. The forest sector accounts for a major share of the country's net carbon removals; but Bulgaria's forests' capacity as carbon sinks is declining

Figure 6 – LULUCF emissions in Bulgaria



Data source: EEA (2030 target is based on 2016-2018 baseline), 2024.

because of forest aging and reduced growth rates. This is accompanied by a slight increase in emissions from cropland. The Commission considers that the information provided in the draft updated NECP is not sufficient to assess whether the country will achieve its 2030 LULUCF target.

Latest policy developments

As part of the 2024 European Semester, the Council in October 2024 approved country-specific recommendations for Bulgaria based on the Commission country report of June 2024. According to the recommendations, the main challenges facing Bulgaria in terms of the green transition relate to the decarbonisation of the economy and energy production, and the development of sustainable transport. To accelerate the clean energy transition, the country needs to shift to renewable energy in district heating systems, currently based on natural gas or coal, ensure sufficient energy storage, and improve grid management by introducing smart grid elements. As for transport, the increase in emissions from road transport, the slow deployment of a sustainable urban transport and rail network, and the insufficient charging infrastructure for electric cars are of particular concern.

The Commission recommendation for the final updated NECP points to the lack of emissions projections and evidence regarding the achievement of the national GHG emissions reduction targets. On adaptation, the draft plan neither includes national goals nor an analysis of climate vulnerabilities and risks. Bulgaria does not set a phase-out date for coal-fired power generation, but prepares the phase-out under the EU just transition mechanism. On energy efficiency, the country still needs to set out policies and measures to achieve the 2030 contributions set in the draft. In May 2024, two Bulgarian NGOs issued their position on the draft updated NECP, identifying problems and deficiencies, in particular the missing sectoral targets. The paper also provides general comments on the plan, and targeted analysis on the transport sector and the development of renewables. In November 2024, the Commission opened an infringement procedure by sending a letter of formal notice to Bulgaria for failing to submit its final updated NECP by June 2024.

On 29 November 2024, the Commission adopted its preliminary assessment of the country's second payment request under the Recovery and Resilience Facility, and informed national authorities that some key measures in the NRRP, such as improving electricity generation from renewables and the roadmap to climate neutrality, have not yet been fulfilled satisfactorily. Indeed, the former Bulgarian parliament failed to adopt changes to the climate neutrality roadmap, in particular regarding the future of the coal-fired power plants.

MAIN REFERENCES

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