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## 2024 Country Report - Bulgaria

***Accompanying the document***

**Recommendation for COUNCIL RECOMMENDATION**

**on the economic, social, employment, structural and budgetary policies of Bulgaria**

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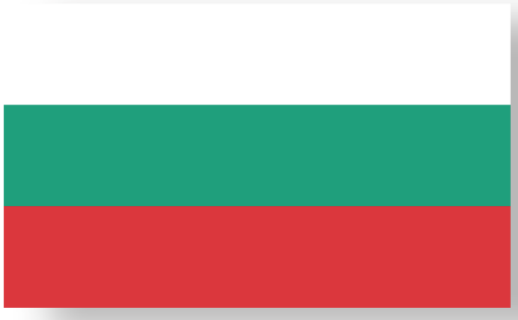
European Commission

# Bulgaria

## 2024 Country Report



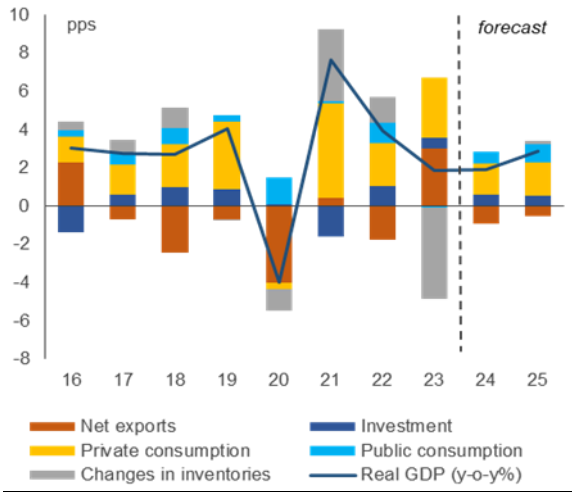
## The economy showed resilience in the face of external shocks, but significant challenges are ahead

**Economic activity faced weaker external demand and continued price pressures. ([1])** Inflation pressures from 2022 persisted at the beginning of 2023, but disinflation in food and energy prices helped to anchor inflation expectations. This helped avoiding a wage-price spiral. Looking forward, inflation in the services sector is also projected to decelerate, driven by second-round effects from input prices and a projected moderation in wages. Exports of goods contracted significantly, weighing on the volume of industrial production and sales. Faced with lower external demand, firms cut back on imports and invested considerably less in inventories.

**In parallel, firms kept high employment levels and increased nominal wages, albeit more moderately.** As a result, private consumption expanded, especially in the first half of 2023, supported by a strong labour market, improved consumer confidence, the decline in inflation and a strong lending activity to households (Graph 1.1).

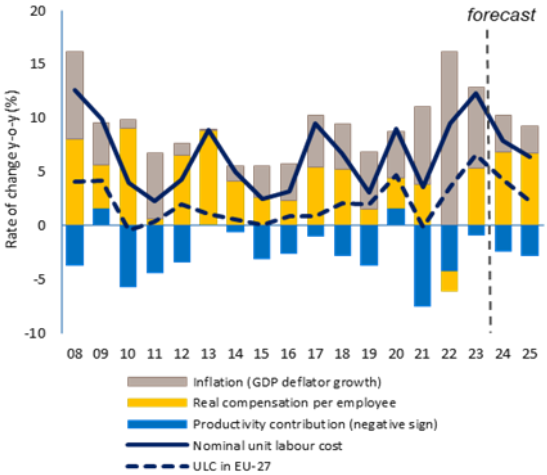
**Investment increased in 2023, supported by public investment and completion of construction projects.** The increase in public investment is linked to the end of the 2014-2020 cycle of the EU structural funds, for which funds were available until 2023 making it the last year of implementation. Future investment is assumed to be supported by EU-funded projects, including the ones under the Bulgarian recovery and resilience plan, but delays in implementation are increasingly putting this assumption at risk.

Graph 1.1: **Real GDP growth and contributions**




***Source:*** European Commission

Graph 1.2: **Decomposition of unit labour costs (ULC) growth**




***Source:*** European Commission

**Unit labour costs (ULCs) follow broadly the pattern for the EU-average with a premium due to long-term nominal convergence.** Annual nominal wage growth slowed down to around 10% at the end of 2023, close to the pre-pandemic growth rates

([1]) The cut-off date for the data used to prepare the 27 Country Reports was 15 May 2024.

(Graph 1.2). Public sector wages contributed sizably to the aggregate wage inflation in 2023. The relative wage moderation was facilitated by the decrease in inflation rates and enabled companies to curb the increase in production costs, while resuming real wage increases. The minimum wage was increased by almost 20% at the beginning of 2024.

**Continued high levels of lending activity in the housing sector may have channelled productive resources away from other economic activities.** Low interest rates on housing loans and continued high levels of lending activity broadly reflect domestic factors. Mortgage lending is linked to the deposit base, which continues to grow due to the increasing disposable income and the limited investment alternatives available to households. As a result, banks have ample cheap liquidity to channel to the housing market, leading to somewhat overvalued house prices.

**Bulgaria is taking consistent action to integrate further with the EU.** Joining the euro area is a long-standing political priority of Bulgaria and the current target date is in 2025. In April 2024, Bulgaria signed a Partnership Agreement with the Commission for the organisation of information and communication campaigns on the changeover to the euro. Bulgaria, together with Romania, joined the Schengen area by air and sea as of 31 March 2024, with land borders still not covered. The country is also in the process of joining the Organisation for Economic Co-operation and Development (OECD), implementing an action plan agreed with the organisation. The Council of Europe's MONEYVAL Committee carried out an assessment of the effectiveness of Bulgaria's framework for fighting money laundering and countering the financing of terrorism, which resulted in Bulgaria being subject to increased monitoring by the Financial Action Task Force (FATF) as of 27 October 2023 ([2]). The first progress report for Bulgaria was adopted by the FATF in February 2024 ([3]).

**The business environment is generally not supportive of investment, and institutional quality remains a challenge**. Business regulations and administrative barriers are hampering 58% of firms in making long-term investments (61% for the EU) ([4]). Moreover, 53% of investors are not confident that their investments are protected by law and courts in Bulgaria ([5]). According to the World Bank's Worldwide Governance Indicators (2022), Bulgaria ranks low for accountability, government effectiveness, rule of law and control of corruption compared with the average of the five euro area Member States with the lowest scores. In addition, the first pillar ('Institutions') remains among Bulgaria's least performing areas in the Global Competitiveness Index. On the Single Market Scoreboard, Bulgaria lags on the indicator for efficiency of insolvency procedures, which reduces the flexibility of the economy and possibly discourages market exit and entry.

**Bulgaria's business environment is also impeded by the significant state-owned enterprise (SOE) footprint on the economy, which is sizeable and concerns strategic sectors, such as energy, transport and water supply.** The performance of Bulgarian SOEs varies greatly, with overall relatively low profitability ([6]). Their governance framework has been persistently weak due to delays to the implementation of reforms, including under the recovery and resilience plan. Coupled with low labour productivity, it hinders the competitiveness of the Bulgarian economy.

([2]) Outcomes FATF Plenary, 25-27 October 2023 (https://www.fatf-gafi.org/en/publications/Fatfgeneral/outcomes-fatf-plenary-october-2023.html)

([3]) Jurisdictions under Increased Monitoring - 23 February 2024 (fatf-gafi.org)

([4]) EIB Investment Survey – European Union.

([5]) EU Justice Scoreboard.

([6]) https://state-owned-enterprises.worldbank.org/sites/soe/files/reports/Bulgaria%20-%20Integrated%20State-Owned%20Enterprises%20Framework%20%28iSOEF%29%20Assessment.pdf

**Ageing and shrinking workforce and a high proportion of economically inactive population among young people continue to constrain employment gains.** Activity rates for people aged 20-64 peaked at 79.6% in 2023. The inactive population varies significantly across regions and is particularly high among Roma, persons with disabilities and for those with lower educational attainment. In 2023, the employment rate increased to 76.2%, against the 2030 national target of 79%. Despite decreasing to 13.8%, the share of people not in education, employment or training (NEET) aged 15-29 remains higher than the EU average. Youth unemployment for 15-24 year olds increased to 12.1%, which indicates that young people face more obstacles to finding work. The population is ageing and declining, while the COVID-19 pandemic resulted in a sharp drop in life expectancy. The working-age population makes up 64% of the total population, with an increase in the percentage of employed people over the age of 55.

**About half of the young people lack basic skills, jeopardising long-term growth perspectives.** The results of the 2022 OECD Programme for International Student Assessment (PISA) show that about half of Bulgaria's 15-year-olds lack in skills in mathematics, reading or science (see Annex 15). Educational inequalities remain very high, including in early childhood education and care. This hinders access to quality education for students from disadvantaged backgrounds, including Roma, thus perpetuating poverty. The educational achievements of students are impacted by their financial and social status, their place of residence, as well as the type of school they attend.

Box 1:

### Bulgaria's competitiveness in brief

**Bulgaria's competitiveness has weakened in recent years** due to an unsupportive business environment and low government and business efficiency (see also Annex 12). On the positive side, labour productivity continued to increase, as did the country's trade within the Single Market. The Bulgarian RRP aims to tackle several challenges related to decarbonisation, fight against corruption and public procurement.

However, competitiveness challenges remain:

- **Education, training and skills shortages**, including among minorities and disadvantaged groups, which hold back productivity, labour supply and the green/digital transition.
- **Energy intensity and high energy costs, greening and storage** which impact cost competitiveness.
- **Weak public administration and regulation** which negatively affect the business environment and impede investment, innovation, and competition.

**Recent improvements in poverty and social inclusion are overshadowed by significant structural challenges, hampering upward social convergence.** Bulgaria's overall risk of poverty or social exclusion remains high at 32.2%, significantly higher than the EU average of 21.6%. However, progress has been made towards achieving the poverty reduction target under the European Pillar of Social Rights of 787 000 fewer people in poverty in 2030. Vulnerable groups such as persons with disabilities, those in rural areas, and the Roma population face a heightened risk of poverty. Old-age poverty also remains high at 35.6%, with a significant gap between men and women. In 2022, social transfers, except pensions, only reduced poverty by 24.4%. The housing cost overburden rate remains high (see Annex 14). Child poverty and social

exclusion in Bulgaria stands at 33.9% ([7]). However, Bulgaria has taken action to address the issue via its Child Guarantee national action plan, which, among others, focuses on providing better education and healthcare to children, especially from Roma and migrant backgrounds as well as children with a disability.

## The government deficit is set to remain close to the 3% threshold going forward

**The government deficit decreased further in 2023.** The general government deficit narrowed markedly from 2.9% of GDP in 2022 to 1.9% of GDP in 2023 ([8]), well below the 3% target set by Bulgaria for the same year. Amongst others, a 100% dividend for SOEs contributed to strengthening the revenue side, alongside a package of measures to strengthen revenue collection and fight tax fraud. The phasing-out of public measures to limit the economic consequences of high energy prices also played a role in decreasing the deficit, as well as a limited capacity to execute expenditure planned for the year. Altogether, these aspects mitigated the budget impact of recently legislated increases in pensions and wages, including in 2023.

**The general government deficit is set to stabilise over the medium term, but at a level close to the Treaty reference value of 3%.** Bulgaria adopted its 2024 budget with a considerable delay in December 2023. The new budget targets a fiscal deficit of 2.9% of GDP in 2024 and, according to the latest forecast by the Ministry of Finance and to the Convergence Programme, the deficit is expected at 3% in 2025, and at 2.8% In 2026. According to the Commission forecast, the deficit is expected to amount to 2.8% of GDP in 2024 and 2.9% of GDP in 2025. The 2024 budget maintains a strong emphasis on measures to increase revenue collection, including by checking goods with high fiscal risk. Positive impacts on the budget are also expected from: (i) social contributions due to the increase in the maximum insurance income threshold; (ii) the introduction of a domestic top-up tax on multinationals; and (iii) the elimination of some VAT rate reductions, such as for natural gas and central heating. The impulse from fiscal policy is expected to be slightly contractionary in 2024 (by 0.3% of GDP), primarily driven by nationally financed investment and by EU-financed expenditure (0.6% and 0.4% of GDP, respectively). Government debt remained low at around 23.1% of GDP in 2023 but is

Box 2: **UN Sustainable Development Goals (SDGs)**

**Bulgaria is lagging behind the EU average on most SDGs, including those related to competitiveness and productivity (SDGs 4, 8, 9). The objective of quality education, SDG 4, deserves particular attention.** Some improvement has been recorded on economic growth and the labour market (SDG 8), including higher employment and less youth outside education and work. Similarly, small increases are seen in SDG 9 related to innovation and sustainable industry. A marked increase in the share of population with access to high-speed internet, now above the EU average, is a necessary condition for improving digital skills, which many people are still lacking. Education outcomes covered by SDG 4 have worsened both in absolute terms and relative to the EU average (Annex 1).

**Out of the 17 indicators, 14 remain below the EU average.** Besides those highlighted above, these relate to social equality, poverty, health (SDGs 1, 2, 3, 5, 6, 10), climate, sustainability (SDGs 7, 11, 12, 13) and macroeconomic stability (SDG 16).

([7]) https://www.unicef.org/globalinsight/reports/report-card-18-child-poverty-amidst-wealth

([8]) Source: Eurostat https://ec.europa.eu/eurostat/databrowser/view/gov_10dd_edpt1/default/table?lang=en&category=gov.gov_gfs10.gov_10dd

expected to increase to 24.8 % of GDP and 24.6% of GDP in 2024 and 2025 respectively, according to the latest Commission forecast.

## Affordability of energy remains a key factor for competitiveness

**High energy prices continue to pose challenges for Bulgaria's competitiveness.** In 2023, energy prices eased from the record highs experienced during the 2022 crisis. However, they remained above the average recorded in the 2018-2022 period, which negatively affects Bulgaria's competitiveness, particularly due to the high energy intensity of its economy. The current market structure leads to inefficiencies in energy consumption and public spending, as support mechanisms compensate non-household consumers for electricity costs above EUR 102/MWh and households pay regulated electricity prices. A considerable portion of the population still grapples with energy poverty, highlighting a pressing social issue. Measures targeting energy-poor and vulnerable households that encourage efficient energy consumption would be more useful than the existing support measures.

# IMPLEMENTATION OF KEY REFORMS AND INVESTMENTS USING EU INSTRUMENTS

**Funding from the Recovery and Resilience Facility (RRF) and cohesion policy is mutually reinforcing Bulgaria's efforts to boost its competitiveness and stimulate sustainable growth.** In addition to the EUR 5.7 billion of RRF funding described in Annex 3, cohesion policy provides Bulgaria with EUR 10.7 billion for the 2021-2027 period. Support from these two instruments combined represents around 16.18% of the country's GDP in 2023, compared to the EU average of 5.38% of GDP (see Annex 4).

**The implementation of Bulgaria's recovery and resilience plan is significantly delayed due to substantial challenges.** Bulgaria has submitted two payment requests, corresponding to 84 milestones and targets in the plan and resulting in an overall disbursement of EUR 1.37 billion on 16 December 2022 (see Annex 3). Structural challenges linked to energy sector, sustainable transport, judicial system and education call for specific actions to ensure that reforms and investments can be completed on time. While some reforms (e.g. in the areas of anti-money laundering, education) and investments, (e.g., energy efficiency, renewable energy, smart industry, healthcare) have already started, the implementation of the Bulgarian plan would need to accelerate in order to meet the deadline of Q2 2026. Rapid finalisation of the REPowerEU chapter is key. Its inclusion in the recovery and resilience plan will allow additional reforms and investments to be financed in support of Bulgaria's strategic objectives in the field of energy and the green transition.

**Cohesion policy funding helps tackle Bulgaria's growth and competitiveness challenges and aims to reduce the country's territorial and social disparities.** During the 2014-2020 cohesion policy programming period, support focused on research and innovation, energy efficiency, employment, social inclusion, and education. In the current 2021-2027 programming period, financing aims to further support Bulgaria's competitiveness, green transition and social cohesion, improve the living and working conditions of Bulgaria's people, and promote regional and social convergence.

## Measures taken to improve the business environment

**Bulgaria has made progress in improving the justice system and business environment.** At the end of 2023, Parliament adopted amendments to the constitution, in particular on the restructuring of the previous Supreme Judicial Council into a Supreme Judicial Council as a management authority for the judges and a Supreme Prosecutorial Council for the prosecutors, reducing the powers of the Prosecutor General and widening the access to the Constitutional Court. However, the legislation necessary to ensure proper implementation of this reform is still being developed. Under the RRP, Bulgaria completed the first steps of key reforms that aim to ensure accessible, effective and predictable justice, strengthen the anti-money laundering framework and improve the quality of the legislative process. Bulgaria is also working on a reform under the RRP to promote entrepreneurship, which includes a visa for start-up entrepreneurs and a new type of commercial company, which is expected to provide more flexible instruments for business development. In addition, Bulgaria is working on another RRP reform, which aims to unlock the potential of e-government to reduce the administrative workload for both people and businesses, among other objectives. Furthermore, Bulgaria is working on reforms

under the RRP to introduce mandatory judicial mediation, including in some commercial disputes, and to strengthen insolvency and restructuring procedures.

**Bulgaria has yet to implement key business environment reforms under the RRP, including in the areas of rule of law, anti-corruption, governance of state-owned enterprises and public procurement.** These concern, in particular, the operational set-up of the anti-corruption commission, the transformation of statutory state-owned enterprises, and the reduction of the proportion of single-bidder contracts and of direct contracts awarded. These reforms would improve Bulgaria's business environment and, in consequence, would have a positive impact on the country's competitiveness.

## Unlocking investments for the green and digital transitions

**The RRP includes major reforms for the decarbonisation of the energy sector, but delays create significant risks to their implementation.** A first milestone was achieved with the set-up of the Energy Transition Commission, which prepared scenarios and recommendations for a roadmap to climate neutrality. However, the adoption of the roadmap has been delayed, hampering progress on other reforms and investments, and contributing to a lack of clarity for investors on the green transition. In addition, amendments to the Act on Renewable Energy Sources, along with associated secondary legislation, pave the way to simplified permitting and grid connection procedures for renewables and storage installations. As part of the amendments, dedicated 'go-to' areas for solar photovoltaics and wind are envisaged as well. Regulatory work on the liberalisation of the electricity markets is advancing slowly, casting uncertainty on the time frame for the reform to come into effect.

**Investments are being launched to boost renewable energy.** Bulgaria set up a scheme to support investments in renewable energy and storage that aims to support at least 300 MW of storage and 1 140 MW of renewable energy production, reducing the country's reliance on lignite for electricity production. Parallel investments are ongoing to digitalise the electricity transmission grid and enable the integration of new production capacity from renewable energy sources. This will be supplemented by support from the Just Transition Fund to rehabilitate land to develop industrial areas and build renewable energy capacity.

**The RRF and cohesion policy funds are supporting measures to improve the energy efficiency of buildings**. Dedicated schemes are supporting all types of buildings across the country, from residential buildings to public buildings and non-residential buildings in manufacturing, trade and services, as well as tourism sector buildings. This will improve people's quality of life, improve air quality, and reduce dependence on fossil fuels.

**Bulgaria took a first step towards more sustainable transport**. It put in place a national plan to develop combined transport by 2030 to make transport cleaner. It also signed contracts to extend the Sofia metro to provide clean, rapid and efficient public transport. Additionally, sustainable transport plans were adopted for several urban areas, setting the ground for investments in green public transport across the country.

**There has been progress on flagship measures linked to the digital transition.** This includes a reduction in the fees for spectrum use and an accelerated spectrum assignment process to encourage faster deployment of 5G networks in the country. It also includes legislative changes that support a favourable investment environment to boost the deployment of very high-capacity networks throughout the country. The government has also awarded contracts for developing, building and optimising the TETRA digital system and radio relay network managed by the Ministry of Interior.

## Investing in people for economic growth and social resilience

**All levels of the education system are undergoing reforms under the RRP.** This includes preschool, primary and secondary school, higher education and lifelong learning. In particular, Bulgaria adopted an action plan implementing the strategic framework for the development of education, training and learning, which aims, among other things, to improve access to quality education. Bulgaria also adopted legislative amendments to update the skills profile in vocational education and training in line with the needs of the labour market, and to increase the flexibility of training opportunities and the validation of professional skills. Further, a national science, technology, engineering and maths (STEM) centre was set up by Ordinance of the Minister of education to improve learning in these fields in Bulgarian schools, all of which will have STEM laboratories and high-tech classrooms by mid-2026. These are in synergy with certain aspects of the education programme under the European Social Fund Plus, which promotes a more inclusive education and the modernisation of the education system, including to better meet the needs of the labour market.

**Skills are instrumental to making workers more employable and improving labour productivity.** The available job vacancies, accompanied by slightly rising unemployment, shows that employers are having difficulty finding suitable staff, despite the existing pool of unemployed. In 2022, adult participation in learning over the past 12 months was 9.5%, significantly lower than the EU average of 39.5%. Under the RRF, Bulgaria has initiated a large-scale digital skills training campaign, which aims to further increase the number of people with basic digital skills (35.5% in 2023) and close the gap to the EU average of 55.5%.

**Bulgaria also took first steps towards strengthening social cohesion and modernising healthcare and social services.** Measures include legislation to gradually raise the minimum income by introducing annual indexation based on the at-risk-of-poverty threshold, and to expand the coverage of the minimum income, together with legislation that sets minimum quality standards for the provision of social services, including long-term care. Implementation of the European Child Guarantee is ongoing, with relatively ambitious targets. In the area of healthcare, Bulgaria adopted several national strategies, including to increase the access to and quality of services for children and young adults and to strengthen health education in schools, and action plans for their implementation. In addition, Bulgaria adopted a map of the long-term needs of the sector, to promote a balanced distribution of healthcare services over the territory, and legislative amendments to improve and expand the provision of e-health services to people, thus supporting access. Furthermore, Bulgaria is making progress in setting up an air ambulance system, with the first of six medical helicopters already having been delivered.

Box 3:

### Combined action for more impactful EU funds

To boost economic growth and maximise the impact of EU funding, Bulgaria's RRP includes reforms that support investments under other EU instruments, creating significant synergies and complementarities between the various funds. For example, the reform adopted under the RRP to amend the Financial Resources Management of the European Structural and Investment Funds Act paves the way for a new way of implementing local investments by empowering local communities in each region of the country in the management of EU funds. This new approach is used to implement the 2021-2027 Development of Regions programme under cohesion policy, which will maximise the impact of the funds in the regions.

# FURTHER PRIORITIES AHEAD

**Bulgaria faces challenges related to the green transition, the business environment, access to healthcare, education, shortages of workers, and social inclusion.** Tackling these challenges will help increase Bulgaria's long-term competitiveness and ensure the resilience of its economy. It will also help make further progress towards achieving the UN Sustainable Development Goals.

**It is important that the identified challenges are addressed at both national and regional level.** This will help reduce regional disparities and improve the administrative and investment capacity in a balanced way across the country.

## Accelerating the green transition can bolster competitiveness

**Bulgaria remains the EU's most carbon-intensive economy.** Greenhouse gas intensity is nearly four times the EU average ([9]). Creating further policy incentives to decarbonise the economy is of crucial importance for the long-term competitiveness of the economy. According to a report of Bulgaria's Energy Transition Commission, the accelerated phase-out of coal by 2030, coupled with the deployment of more renewables, would result in a lower levelised cost of electricity and lower system costs. As there is little time left for implementation, the REPowerEU chapter of the recovery and resilience plan (RRP) could focus on scaling up measures that help achieve the decarbonisation objectives, in particular when it comes to: (i) designating go-to areas for a faster deployment of renewables, including on degraded land; (ii) further strengthening the grid and ensuring transparency of the grid connection process; (iii) creating renewable energy communities; (iv) creating long-term instruments for co-financing of building renovations; and (v) setting up an effective mechanism to monitor and tackle energy poverty.

**Solar photovoltaics (PV) experience a surge, while wind installations continue to face delays.** In 2023, Bulgaria increased its renewable energy capacity by 23% compared to the year before, reaching 6 215 MW. This was driven by the rapid deployment of solar PV installations, including rooftop and grid-scale (see Annex 7). However, the installed onshore wind capacity (704 MW) has remained stagnant in the last 10 years, due to complex and lengthy permitting procedures. Bulgaria's estimated offshore wind potential of 26 GW of fixed and floating installations remains untapped ([10]). In this regard, full and swift implementation of EU legislation on renewable energy, along with the implementation of relevant RRP reforms, would facilitate and speed up permitting and deployment of renewables.

**Limited grid and storage capacity create significant bottlenecks for scaling up renewables.** While the RRP and the Modernisation Fund include financing for the upgrading of the transmission and distribution grid to integrate new generation capacities, there is still a large investment gap. Furthermore, due to the outage of the 864 MW Chaira pumped-storage hydropower plant and the lack of sufficient alternative grid-scale storage capacities, system

([9]) 2023 EU climate action progress report, https://climate.ec.europa.eu/document/download/60a04592-cf1f-4e31-865b-2b5b51b9d09f_en.

([10]) 2020 Offshore wind technical potential in Bulgaria, World Bank document.

balancing becomes an increasing challenge. At the same time, the planned RRP investment in the much-needed grid-scale electricity storage with 3 000 MWh of usable energy capacity is significantly delayed. To prevent the need for curtailment and avoid high system balancing costs, swift integration of energy storage installations is needed, including for providing ancillary services. More broadly, further action such as implementing the 2024 Central and South-Eastern Europe Energy Connectivity (CESEC) action plans on gases, renewables and electricity would boost the interconnectivity of the region and strengthen its security and resilience.

**There is a need for a long-term, sustainable mechanism for financing energy efficiency renovation** The required improvements to energy efficiency, notably of residential buildings, go far beyond what is planned under existing and envisaged policy measures. A sustainable financing solution could effectively address these needs, especially by reducing reliance on entirely grant-funded renovation support. Furthermore, to ensure that Bulgaria meets the updated targets under the revised Energy Efficiency Directive (Directive (EU) 2023/1791), broader-ranging measures are required, including financial support instruments. In this regard, it would be important to leverage the National Decarbonisation Fund envisioned as part of the RRP.

**Addressing delays related to investments in sustainable transport is key to Bulgaria's transition to a greener economy**. This involves implementing reforms that supplement those in the RRP, particularly by increasing the administrative capacity and funding for investments related to: (i) railway infrastructure; (ii) integration of different modes of transportation into both national and urban networks; and (iii) increasing the number of electric vehicles by expanding the availability of charging stations. Persistent delays in investment implementation could jeopardise the objectives of modal shift and decarbonisation of the transport sector (see Annex 6).

**There is untapped economic potential in Bulgaria's pace of transitioning to a circular economy.** Bulgaria's material footprint increased from 21.2 to 26.2 tonnes per capita between 2018 and 2022, among the EU's highest. Bulgaria is also one of the worst-performing countries as regards total waste generated per capita (see Annex 9). The country is also still one of the Member States with the highest landfilling rates and lowest recycling performance. Investments are needed to improve waste management – in particular to improve separate waste collection – and to bolster the uptake of new business models, moving away from a linear economy.

## Remaining barriers to the provision of adequate healthcare

**While the RRP includes major healthcare reforms, some challenges remain.** Reforms in the RRP aim to upgrade the strategic framework, develop e-health services, and address shortages of healthcare professionals. There are several barriers to access to adequate healthcare in Bulgaria: the low share of public health expenditure, the high level of out-of-pocket payments, insufficient prevention, and unavailability of adequate healthcare in many areas.

**Bulgaria still ranks low on key health outcomes.** Life expectancy at birth has recovered from the decline of the last few years, but it has not reached pre-pandemic levels yet and is still the lowest in the EU (see Annex 16). In 2020, Bulgaria recorded the second-highest standardised death rates for treatable diseases in the EU and the fifth-highest for preventable diseases; it also ranked fourth on overall avoidable mortality ([11]). Deep regional disparities between the capital region and the rest of the country aggravate the situation.

([11]) Source: Eurostat, treatable and preventable mortality of residents by cause and sex (hlth_cd_apr).

**The high financial burden on individuals remains.** Bulgaria has a high proportion of out-of-pocket payments for healthcare (34% in 2021), more than double the EU average. The low level of financial protection has adverse effects on access to healthcare, undermines health status, and deepens health and socio-economic inequalities.

**Low government spending on healthcare makes it difficult to improve quality and access, although cohesion policy is improving outcomes.** In 2021, Bulgaria spent less than half the EU average on health per capita. At 65%, government financing for healthcare is among the lowest in the EU (see Annex 16), which hinders investment in new facilities, equipment, and competitive pay for medical professionals. Although Bulgaria's RRP envisages significant healthcare investments, major delays have occurred, and specific results are not yet visible.

**Prevention is still underfunded.** Partly linked to generally low government healthcare spending, insufficient funds are currently allocated to prevention. Prevention stands below the EU average also as a share of government spending, while inpatient care still takes up an above-average share of the budget ([12]). Further action is necessary to strengthen prevention, also given the ageing population.

## Bulgaria faces challenges to upward social convergence

**Improvements in the areas of employment, wages and the adequacy of social assistance are largely the result of economic recovery and targeted reforms like the minimum income scheme under the RRP.** Positive developments in the labour market and social inclusion could be short-lived without improving the consistency between policy measures and stepping up investments in the field, in particular those focused on vulnerable groups.

**The country faces significant shortages of workers due to a shrinking workforce, high inactivity rates among vulnerable groups, lack of relevant skills and ineffective government measures.** Demographic projections indicate a potential loss of a third of the working-age population by 2050. Despite a low overall job vacancy rate compared to the EU average, employers struggle to find suitable workers, with a notable increase in demand for qualified workers in 2023 (see Annex 14). The inactive population varies significantly across regions and is particularly high for young people who are not in employment, education or training, for Roma, for people with a disability, and for those with lower educational attainment. The low level of skills (notably digital skills) and the relatively low worker mobility add to growing shortages of workers. Specific skills shortages in occupations crucial for the green transition are becoming more pertinent, while spending on active labour market policies remains limited, hindering long-term improvements in the quality of workers.

**Bulgaria has recorded lower results in the latest editions of national and international education assessments compared to results in past years.** This indicates that the root causes of the inability of the education system to ensure quality and equity in education have not been addressed effectively, nor have the substantial regional disparities in the education system. These include, for example, challenges linked to the teaching profession, the curricula, social segregation, and the strong impact of socio-economic factors on performance. The 2022 results of the Programme for International Student Assessment (PISA) of the Organisation for Economic Co-operation and Development (OECD) demonstrate that half of 15-year-olds do not have basic skills in reading, sciences or mathematics. The rate of low achievement is particularly high among students from disadvantaged backgrounds. The share of top performing students in the PISA test is low,

([12]) OECD / European Observatory on Health Systems and Policies (2023), Bulgaria: Country Health Profile 2023, State of Health in the EU, OECD Publishing, Paris / European Observatory on Health Systems and Policies, Brussels.

while the share of low scores is considerable even among students from advantaged backgrounds. This indicates that the deficiencies of the education system affect all students, thus hindering the competitiveness prospects of all segments of the economy. The rate of early leavers from education decreased from 12.2% in 2021 to 9.3% in 2023 but remains particularly high in rural areas and among the Roma communities. In 2023, participation in formal childcare of children under the age of 3, which affects the rate of women who are working or looking for a job, was 17.4%, the same figure as in 2022 (EU average: 35.7%). Furthermore, teachers are among the oldest in the EU and shortages are emerging. About 50% of schoolteachers are at least 50 years old (EU: 39%) and shortages already exist in certain subjects and for primary education teachers. Salaries were substantially raised and measures were taken to increase the attractiveness of the profession, resulting in an increased interest in teacher education programmes. However, the highest-performing graduates from upper secondary are not usually attracted to university programmes preparing teaching. A large share of graduates does not enter the profession and many novice teachers leave the profession (See Annex 15).

**Bulgaria grapples with significant poverty and inequality challenges, notably affecting vulnerable groups such as children, older people, people with disabilities, and Roma communities.** While there have been gradual decreases in severe material and social deprivation rates, overall poverty rates remain very high, with high income inequality persisting. Policy measures have aimed to improve support for vulnerable populations, including people with a disability, contributing to a broader social protection system in a country with traditionally low social transfers. Despite significant wage increases over the past two years, in-work poverty remains above the EU average partly because of high inflation, driven by rising energy and food prices. Bulgaria has initiated measures to address energy poverty, but support schemes are still in development. The long-term care system has one of the lowest coverage rates in the EU, but targeted large-scale investments to improve the quality of social services have been initiated. Also, implementing initiatives for upskilling/reskilling, notably the ones included in the RRP, can help facilitate labour mobility and boost wage growth for low earners over time.

**Addressing these challenges will help Bulgaria boost upward social convergence.** The second-stage analysis in line with the features of the Social Convergence Framework points to challenges for Bulgaria that may affect social convergence in relation to social protection and inclusion, education and skills ([13]).

## Bulgaria's unsupportive business environment and weak administration are major barriers to competitiveness

**The unsupportive business environment and lack of a level playing field act as a strong barrier to the economy's competitiveness.** The perception of government effectiveness is significantly below the EU average ([14]) (see also Annex 13). Improving the functioning of the public administration is essential to creating a favourable business environment. The attractiveness of the public administration as an employer is a major factor in this regard, given that nearly half of the central government vacancies have remained unfilled for more than 6 months ([15]). Improving the administrative capacity would also help enable swift and steady implementation of Bulgaria's RRP. Further action is necessary to implement reforms included in the business environment

([13]) European Commission, SWD(2024)132. The analysis relies on all the available quantitative and qualitative evidence and analysing the policy response undertaken and planned.

([14]) Worldwide Governance Indicators.

([15]) Report on the state of the administration, https://www.strategy.bg/FileHandler.ashx?fileId=33243.

component of the RRP, including in the areas of rule of law, digitalisation of public administration processes, and public procurement. The effectiveness of investigations and the country's performance in ensuring prosecution and final convictions in high-level cases of corruption, including the institutional reform of the Anti-Corruption Commission, continue to be a challenge. Some 53% of investors are not confident that their investments are being protected by law and courts in Bulgaria ([16]).

**Regulatory bodies continue to be ineffective and application of regulations appears uneven.** Business regulations and administrative barriers are hampering 49% of firms in making long-term investment ([17]), while 'regulation' issues appear among the most urgent problems for small to medium-sized enterprises ([18]). The independence of regulatory bodies has come into question even more as appointments have nearly stopped during the recent protracted periods of political instability, leaving dozens of posts unfilled or with an expired mandate ([19]). Furthermore, regulators have been slow to react in recent cases of high public importance, including price hikes at the onset of Russia's war of aggression against Ukraine, which could point to uneven enforcement of competition rules.

**State-owned enterprises (SOEs) continue to represent a major part of the economy in key sectors such as energy and transport, and the reform process has been protracted.** To boost Bulgaria's competitiveness, further action is needed to ensure implementation of the ongoing reforms. The Law on Public Enterprises adopted in 2019, set out important priorities, especially, to improve corporate governance structure, monitoring and transparency of corporate governance in line with OECD Guidelines on Corporate Governance of SOEs. The key reforms include the setting-up of the Public Enterprises and Control Agency as a central coordinating body, as well as commitments under the RRP and ERM II post commitments such as developing a state ownership policy, publishing annual aggregate reporting, laying down appropriate rules and procedures for competitive selection and appointment of SOE boards, and transforming statutory SOEs whose governance structure does not comply with the Commercial Law. Many of those have already been implemented, however, progress on some elements, notably, the transformation of statutory SOEs, has stalled. Beyond this, further measures could focus on addressing financial stability, especially of loss-making SOEs, and – given Bulgaria's decarbonisation commitments – on reviewing the performance of SOEs in the energy sector. Furthermore, accounting and disclosure requirements could be strengthened.

**Public and private R&D investments are still among the lowest in the EU.** In recent years, Bulgaria's innovation performance has slowly improved (see Annex 11), but the country's scientific and technological potential remains largely untapped. Low public and private R&D spending in combination with a fragmented governance of the Bulgarian research and innovation system is further negatively impacting the low quality of the public science base. This, in turn, hampers the country's innovation generation capabilities. While additional public and private investments in combination with reforms to address governance fragmentation are needed, Bulgaria is working on further developing its research and innovation system under EU cohesion policy. Moreover, the Research and Innovation Act, adopted as part of Bulgaria's RRP, is set to foster policy coordination by ensuring close links between businesses and academia.

**There is scope to increase the efficiency of public investment management.** Although strategic planning was significantly strengthened in 2018, project assessment and selection based on objective value-for-money indicators is not yet in place (see Annex 13). Bulgaria still has shortcomings in key areas

([16]) EU Justice Scoreboard.

([17]) EIB Investment Survey 2022 – EU overview.

([18]) 2023 survey on the access to finance of enterprises.

([19]) 2023 rule of law report, country chapter on the rule of law situation in Bulgaria, pp. 29-30.

Box 4:

### The mid-term review of cohesion policy funding for Bulgaria

The mid-term review of cohesion policy funds is an opportunity to assess cohesion policy programmes and tackle emerging needs and challenges in EU Member States and their regions. Member States are reviewing each programme taking into account, among other things, the challenges identified in the European Semester, including in the 2024 country-specific recommendations. This review forms the basis for a proposal by the Member State for the definitive allocation of 15% of EU funding included in each programme.

Bulgaria has made progress in implementing cohesion policy programmes and the European Pillar of Social Rights, but challenges remain as outlined in this report, including in Annexes 14 and 17. Bulgaria has been catching up with the EU on most indicators, but remains the EU Member State with the lowest GDP per capita and is experiencing a rapid population decline. The country faces significant territorial disparities and needs to prioritise investments and technical support also to address the particularly low development in the three northern regions. Against this background, it remains important to continue to implement the planned priorities, with particular attention to: (i) regional and local stakeholders' capacity to apply integrated approaches to investments at local level; (ii) regional and local support networks for research, innovation and entrepreneurship via targeted measures for technology transfer and commercialisation; (iii) rail and road infrastructure, boosting investments in sustainable transport and intermodality; (iv) supporting the implementation of the Territorial Just Transition Plans by ensuring effective governance, coordination and capacity of national, regional and local stakeholders; (v) water management, in particular drinking water supply and waste water treatment, as well as efficient waste and resource management; (vi) active labour market policy measures, especially for groups that face challenges to find work, and investment in skills acquisition, particularly for the green and digital transitions; (vii) ensuring a quality and inclusive education system, including by focusing on the implementation of the European Child Guarantee; and (viii) improving social inclusion of vulnerable groups such as Roma, including through the social economy, and promoting accessible, quality and affordable long-term care services.

Bulgaria could benefit from the opportunities provided by the Strategic Technologies for Europe Platform (STEP) ([20]) initiative, including by increasing investments in digitalisation, clean and resource-efficient technologies and green transformation of its industry. The STEP initiative could enable Bulgaria to implement its commitments to clean tech and a circular and low-carbon economy with its smart specialisation strategy and ensure a cohesive approach to advance industrial sustainability.

such as the alignment between investment decisions and long-term strategic goals, and the timely execution of capital expenditure.

**Action is needed to improve the attractiveness of the public administration as an employer.** Recent wage increases could be supplemented with talent management, training and exchange programmes to ensure that the appropriate skills and resources are available to implement the RRP and cohesion policy programmes. Over the last 5 years, the share of civil servants under the age of 39 has been falling, and close to half of the central government vacancies have remained unfilled for more than 6 months (see Annexes 2 and 13).

([20]) Regulation (EU) 2024/795

# KEY FINDINGS

**With its wide policy scope and substantial financial envelope, Bulgaria's recovery and resilience plan (RRP) includes measures to address a series of structural challenges, in synergy with other EU funds, including cohesion policy funds, by:**

- **Introducing the necessary reforms in the energy sector**, including by deploying renewable energy and storage capacity; adopting a roadmap to climate neutrality, liberalising the electricity market, and taking measures to tackle high levels of energy poverty.
- **Implementing important investments in sustainable transport** and rail infrastructure, including extending the Sofia metro.
- **Investing in the green transition**, notably in the area of biodiversity and in the water sector.
- **Promoting the accelerated deployment of 5G networks** and high-capacity networks.
- **Reforming the legal framework to promote entrepreneurship and e-governance**, introduce mandatory judicial mediation, and improve insolvency and restructuring procedures as well as reforms in the areas of the rule of law, public procurement, and the governance of state-owned enterprises.
- **Increasing the quality, labour-market relevance and inclusiveness of education** and training, including with a focus on Roma children, ensure competitiveness in the medium and long term.
- **Reforming the minimum income scheme** to improve its adequacy and coverage, tying the benefit to 30% of the risk-of-poverty threshold, and loosening eligibility criteria.

**The implementation of Bulgaria's recovery and resilience plan is facing significant delays and substantial challenges** which require decisive actions to ensure a successful implementation of all the measures of Bulgaria's recovery and resilience plan by August 2026.

**Beyond the reforms and investments in the RRP and cohesion policy programmes, Bulgaria would benefit from:**

- **Improving the business environment to boost competitiveness**, by ensuring the independence and increasing the quality of regulatory bodies and creating conditions conducive for research, development and innovation.
- **Strengthening the capacity of public administration**, also at local and regional level, to ensure the implementation of reforms and investments, including by attracting and retaining skilled staff.
- **Removing obstacles to the swift deployment and implementation of investments** funded by all EU instruments.
- **Speeding up the energy transition, by accelerating the deployment of renewables**, and wind installations in particular, accelerating the modernisation of the power grid, and increasing the energy storage capacity – there is significant potential for regional interconnectivity to accelerate the energy transition and boost regions' security and resilience.

- **To support upward social convergence, addressing shortages of workers, including by improving education outcomes**; recruiting and retaining capable and motivated teachers; fostering access to quality education for all; increasing adult learning participation, including for digital skills.

- **Introducing effective activation policies**; reducing the employment gap for persons with disabilities as well as further improving access to healthcare and social services, especially for disadvantaged groups such as Roma.

- **Addressing the risk of poverty and social exclusion,** in particular for children, by increasing participation in early childhood education and care, as well as curbing the burden of housing costs; reducing income inequality and increasing the impact of social transfers on reducing poverty.

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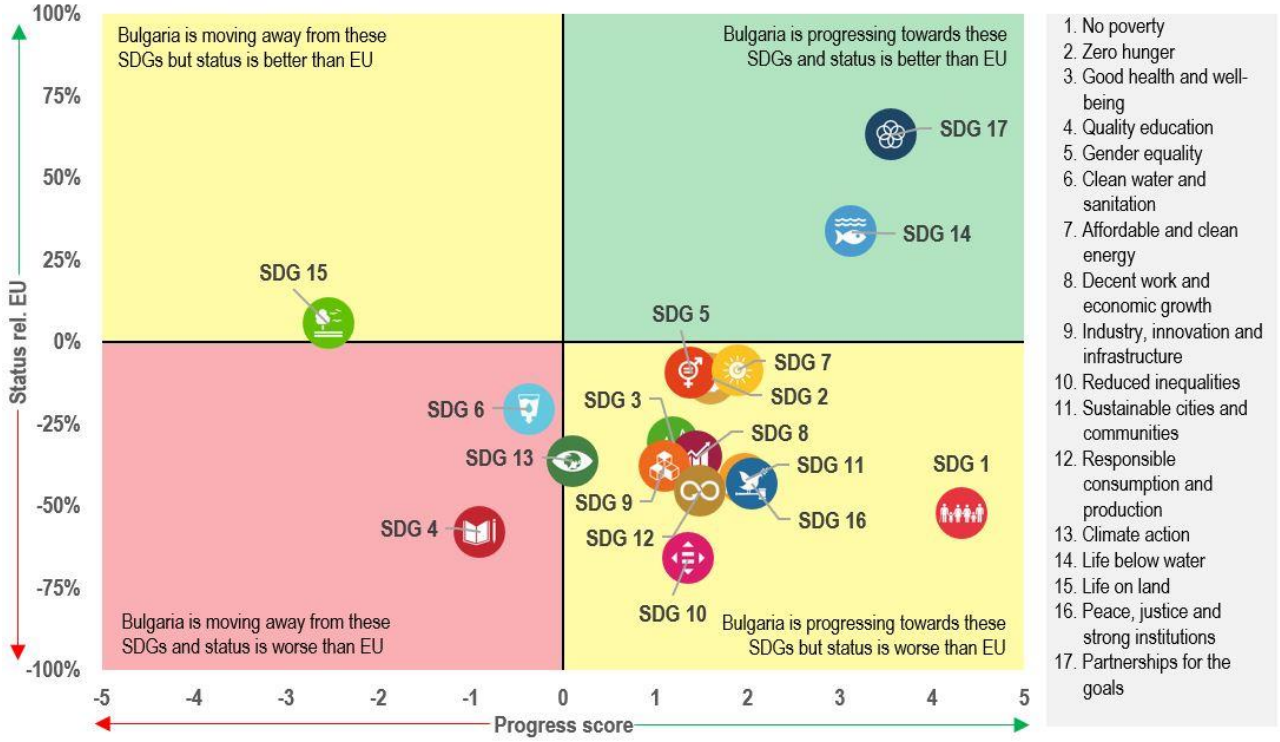
# ANNEX 1: SUSTAINABLE DEVELOPMENT GOALS

**This Annex assesses Bulgaria's progress on the Sustainable Development Goals (SDGs) along the four dimensions of competitive sustainability.** The 17 SDGs and their related indicators provide a policy framework under the UN's 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty, fight inequalities and tackle climate change and the environmental crisis, while ensuring that no one is left behind. The EU and its Member States are committed to this historic global framework agreement and to playing an active role in maximising progress on the SDGs. The graph below is based on the EU SDG indicator set developed to monitor progress on the SDGs in an EU context.

**Bulgaria needs to catch up with the EU on all SDG indicators related to *fairness*. While it is improving on several of them (SDGs 1, 3, 5, 7, 8, 10), Bulgaria has moved away on the indicators for quality education (SDG 4).** Although there has been an overall improvement towards SDG 1 (No poverty), some indicators deteriorated. In 2022, Bulgaria reduced its severe material and social deprivation rate and the percentage of the population aged 18 or over at in-work at-risk-of-poverty. However, the country is moving further away from the EU on the indicators for people at risk of poverty or social exclusion and on the housing cost overburden rate. Another area where Bulgaria is improving is SDG 3 (Good health and well-being) even though in some cases, such as premature deaths due to exposure to fine particulate matter, the starting point is very low (from 187 per 100 000 in 2016 to 158 in 2021). In addition, the country is improving its score on people with good or very good self-perceived health (66.7% in 2017, 68.2% in 2022). While Bulgaria is also improving on premature deaths due to exposure to fine particulate matter (SDG 3), its score in 2021 of 158 people per 100 000 was almost three times the EU average (57 per 100 000). One area where Bulgaria has the largest gap to close with the EU is quality education (SDG 4). In 2022, it was 68.8% below the EU

Graph A1.1: **Progress towards the SDGs in Bulgaria**




For detailed datasets on the various SDGs, see the annual Eurostat report 'Sustainable development in the European Union'; for details on extensive country-specific data on the short-term progress of Member States: Key findings – Sustainable development indicators - Eurostat (europa.eu). A high status does not mean that a country is close to reaching a specific SDG, but signals that it is doing better than the EU on average. The progress score is an absolute measure based on the indicator trends over the past 5 years. The calculation does not take into account any target values as most EU policy targets are only valid for the aggregate EU level. Depending on data availability for each goal, not all 17 SDGs are shown for each country.

***Source:*** Eurostat, latest update of 25 April 2024. Data refer mainly to the period 2017-2022 or 2018-2023. Data on SDGs may vary across the report and its annexes due to different cut-off dates.

average after further deterioration over the previous 5 years. The country is moving away from its 2018 score for low achieving 15-year-olds in reading (47.1% in 2018, 52.9% in 2022), which was around twice the EU average for 2022 (26.2%). While Bulgaria is below the EU average on leadership positions held by women (SDG 5), it is only 3 percentage points below the EU average for the gender employment gap for 2022 (7.7%; EU: 10.7%). Bulgaria is improving on SDG 8 (Decent work and economic growth) but at a lower rate than the EU average (25.2% behind in 2021, against 35.5% in 2022). For SDG 10 (Reduced inequalities), Bulgaria is making progress towards but was still 77% below the EU average in 2022. The Bulgarian European Social Fund Plus (ESF+) and recovery and resilience plan (RRP) include measures to address most of these challenges. In particular, the plan contains measures to improve the quality and effectiveness of education, strengthen the provision and availability of health services, improve the minimum income scheme and support social inclusion.

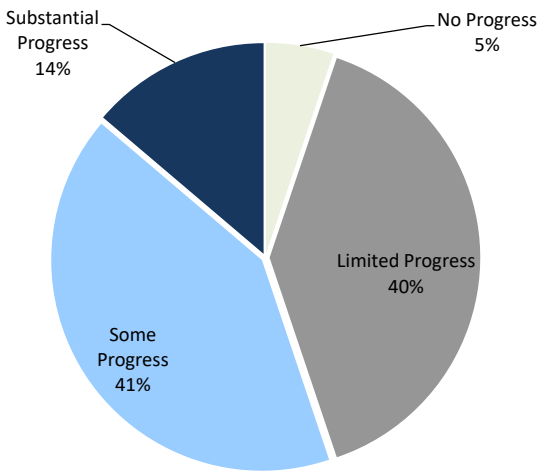
**Bulgaria is improving on indicators related to *productivity* (SDGs 8 and 9) but the gap to the EU average is increasing.** On SDG 8 (Decent work and economic growth), Bulgaria is improving, although it is moving away from the EU average. The country's long-term unemployment rate was slightly below the EU average for 2022 (2.3% vs 2.4%), an improvement from the 2017 score of 3.9%. Despite still lagging significantly behind the EU, Bulgaria has made some progress on R&D and innovation indicators (SDG 9), in particular on R&D personnel as a percentage of the active population (0.71% in 2017, 0.85% in 2022) and on gross domestic expenditure on R&D as a percentage of GDP (0.74% in 2017, 0.77% in 2022). Bulgaria is moving away from SDG 4 (Quality education) on basic education indicators and adult participation in learning but is making progress on digital skills: in 2023, 35.5% of adults had at least basic digital skills, up from 31.2% in 2021. The Bulgarian RRP includes significant measures to improve innovation. These include the adoption of a research and innovation act, provision of digital skills training and the establishment of an innovation board.

**Bulgaria is performing well on SDG 17 (Partnerships for the goals). It is improving on *macroeconomic stability* indicators (SDGs 8 and 16), but still needs to catch up with the EU.** Bulgaria performs 45.2% better than the EU average on SDG 17 (Partnerships for the goals) indicators. The Bulgarian debt-to-GDP ratio for 2022 was 22.6%, (EU average: 83.5%). While the trust in institutions (SDG 16) did **not change** between 2017 and 2022, the country is lagging behind the EU average (43% to 64% on the Corruption Perception Index for 2022). In addition, it needs to catch up with the EU on investment as share of GDP and real GDP per capita (SDG 8) even though the latter increased from EUR 6 120 in 2017 to EUR 7 680 in 2022.

As the SDGs form an overarching framework, any links to relevant SDGs are either explained or depicted with icons in the other annexes.

**The Commission has assessed the 2019-2023 country-specific recommendations (CSRs) ([21])** addressed to Bulgaria as part of the European Semester. These recommendations concern a wide range of policy areas that are related to 14 of the 17 Sustainable Development Goals (see Annexes 1 and 3). The assessment considers the policy action taken by Bulgaria to date ([22]) and the commitments in its recovery and resilience plan (RRP) ([23]). At this stage of RRP implementation, 55% of the CSRs focusing on structural issues from 2019-2023 have recorded at least 'some progress', while 40% recorded 'limited progress' (see Graph A2.1). As the RRP is implemented further, considerable progress in addressing structural CSRs is expected in the years to come.

Graph A2.1: **Bulgaria's progress on the 2019-2023 CSRs (2024 European Semester)**




***Source:*** European Commission

([21]) 2023 CSRs : EUR-Lex - 32023H0901(02) - EN - EUR-Lex (europa.eu)
2022 CSRs: EUR-Lex - C:2022:334:TOC - EN - EUR-Lex (europa.eu)
2021 CSRs: EUR-Lex - C:2021:304:TOC - EN - EUR-Lex (europa.eu)
2020 CSRs: EUR-Lex - 32020H0826(02) - EN - EUR-Lex (europa.eu)
2019 CSRs: EUR-Lex - 32019H0905(02) - EN - EUR-Lex (europa.eu)

([22]) Including policy action reported in the national reform programme and in Recovery and Resilience Facility (RRF) reporting (twice a year reporting on progress in implementing milestones and targets and resulting from the payment requests assessment).

([23]) Member States were asked to effectively address in their RRPs all or a significant subset of the relevant country-specific recommendations issued by the Council. The CSR assessment presented here considers the degree of implementation of the measures included in the RRP and of those carried out outside of the RRP at the time of assessment. Measures laid down in the Annex of the adopted Council Implementing Decision on approving the assessment of the RRP, which are not yet adopted or implemented but considered credibly announced, in line with the CSR assessment methodology, warrant 'limited progress'. Once implemented, these measures can lead to 'some/substantial progress or full implementation', depending on their relevance.

Table A2.1: **Summary table on 2019-2023 CSRs**

| Bulgaria | Assessment in May 2024 | RRP coverage of CSRs until 2026 | Relevant SDGs |
|---|---|---|---|
| **2019 CSR 1** | **Some progress** | | |
| *Improve tax collection through targeted measures in areas such as fuel and labour taxes.* | Some Progress | | SDG 8, 16 |
| *Upgrade the State-owned enterprise corporate governance by adopting and putting into effect the forthcoming legislation.* | Some Progress | Relevant RRP measures planned as of 2022 and 2023 | SDG 9 |
| **2019 CSR 2** | **Some Progress** | | |
| *Ensure the stability of the banking sector by reinforcing supervision* | Substantial Progress | | SDG 8 |
| *, promoting adequate valuation of assets, including bank collateral* | Substantial Progress | | SDG 8 |
| *, and promoting a functioning secondary market for non-performing loans.* | Some Progress | | SDG 8 |
| *Ensure effective supervision and the enforcement of the AML framework.* | Some Progress | Relevant RRP measures being implemented as of 2021 | SDG 8 |
| *Strengthen the non-banking financial sector by effectively enforcing risk-based supervision* | Substantial Progress | | SDG 8 |
| *, the recently adopted valuation guidelines* | Substantial Progress | | SDG 8 |
| *and group-level supervision.* | Some Progress | | SDG 8 |
| *Implement the forthcoming roadmap tackling the gaps identified in the insolvency framework.* | Some Progress | Relevant RRP measures planned as of 2023 | SDG 8 |
| *Foster the stability of the car insurance sector by addressing market challenges and remaining structural weaknesses.* | Some Progress | | SDG 8 |
| **2019 CSR 3** | **Limited Progress** | | |
| *Focus investment-related economic policy on research and innovation* | Limited Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2023 | SDG 9, 10, 11 |
| *, transport, in particular on its sustainability* | Limited Progress | Relevant RRP measures being implemented as of 2020 and planned as of 2023 | SDG 10, 11 |
| *, water, waste and energy infrastructure and energy efficiency, taking into account regional disparities,* | Limited Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2023 | SDG 6, 7, 9, 10, 11, 12, 13 |
| *and improving the business environment.* | Limited Progress | Relevant RRP measures being implemented as of 2022 and planned for 2023,2025,2026 | SDG 8, 9 |
| **2019 CSR 4** | **Limited Progress** | | |
| *Strengthen employability by reinforcing skills, including digital skills.* | Limited Progress | Relevant RRP measures being implemented as of 2020 and planned for 2023,2024,2026 | SDG 4, 8 |
| *Improve the quality, labour market relevance, and inclusiveness of education and training, in particular for Roma and other disadvantaged groups.* | Limited Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2025 | SDG 4, 8, 10 |
| *Address social inclusion through improved access to integrated employment and social services* | Limited Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2023 | SDG 1, 2, 10 |
| *and more effective minimum income support.* | Some Progress | Relevant RRP measures being implemented as of 2022 and planned for 2023,2024,2025,2026 | SDG 1, 2, 10 |
| *Improve access to health services, including by reducing out-of-pocket payments and addressing shortages of health professionals.* | Limited Progress | Relevant RRP measures being implemented as of 2022 and planned for 2023,2026 | SDG 3 |
| **2020 CSR 1** | **Limited Progress** | | |
| *In line with the general escape clause, take all necessary measures to effectively address the pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.* | Not relevant anymore | Not applicable | SDG 8, 16 |
| *Mobilise adequate financial resources to strengthen the resilience, accessibility and capacity of the health system, and ensure a balanced geographical distribution of health workers.* | Limited Progress | Relevant RRP measures being implemented as of 2022 and planned for 2023,2026 | SDG 3 |

*(Continued on the next page)*

*Table (continued)*

| | | | |
|---|---|---|---|
| **2020 CSR 2** | **Some Progress** | | |
| *Ensure adequate social protection and essential services for all* | Some Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2023 | SDG 1, 2, 10 |
| *and strengthen active labour market policies.* | Limited Progress | Relevant RRP measures being implemented as of 2020 and planned for 2022,2023,2024,2026 | SDG 8 |
| *Improve access to distance working* | Some Progress | Relevant RRP measures planned as of 2023 | SDG 8 |
| *and promote digital skills* | Limited Progress | Relevant RRP measures being implemented as of 2020 and planned for 2022,2023,2024,2026 | SDG 4 |
| *and equal access to education.* | Limited Progress | Relevant RRP measures being implemented as of 2020 and planned for 2022,2023,2024,2026 | SDG 4, 8, 10 |
| *Address the shortcomings in the adequacy of the minimum income scheme.* | Some Progress | Relevant RRP measures being implemented as of 2022 and planned for 2023,2024,2025,2026 | SDG 1, 2, 10 |
| **2020 CSR 3** | **Some Progress** | | |
| *Streamline and accelerate the procedures to provide effective support to small and medium-sized enterprises and self-employed,* | Substantial Progress | Relevant RRP measures being implemented as of 2022 | SDG 8, 9 |
| *also ensuring their continued access to finance and flexible payment arrangements.* | Some Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2023 | SDG 8, 9 |
| *Front-load mature public investment projects* | Limited Progress | | SDG 8, 16 |
| *and promote private investment to foster the economic recovery.* | Some Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2023 | SDG 8, 9 |
| *Focus investment on the green and digital transition, in particular on clean and efficient production and use of energy and resources,* | Some Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2023 | SDG 6, 7, 9, 12, 13, 15 |
| *environmental infrastructure* | Limited Progress | Relevant RRP measures planned as of 2023-2026 | SDG 7, 9, 13 |
| *and sustainable transport, contributing to a progressive decarbonisation of the economy, including in the coal regions.* | Limited Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2023 | SDG 10, 11 |
| **2020 CSR 4** | **Some Progress** | | |
| *Minimise administrative burden to companies by improving the effectiveness of public administration* | Some Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2023, 2024, 2026 | SDG 16 |
| *and reinforcing digital government.* | Some Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2023-2026 | SDG 9, 16 |
| *Ensure an effective functioning of the insolvency framework.* | Some Progress | Relevant RRP measures planned as of 2022, 2023, 2024 ,2025, 2026 | SDG 8 |
| *Step up the efforts to ensure adequate risk assessment, mitigation, effective supervision and enforcement of the anti-money laundering framework.* | Some Progress | Relevant RRP measures being implemented as of 2021 | SDG 8, 16 |
| **2021 CSR 1** | **Not relevant anymore** | | |
| *In 2022, pursue a supportive fiscal stance, including the impulse provided by the Recovery and Resilience Facility, and preserve nationally financed investment. Keep the growth of nationally financed current expenditure under control.* | Not relevant anymore | Not applicable | SDG 8, 16 |
| *When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.* | Not relevant anymore | Not applicable | SDG 8, 16 |
| *At the same time, enhance investment to boost growth potential. Pay particular attention to the composition of public finances, on both the revenue and expenditure sides of the budget, and to the quality of budgetary measures in order to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, in particular investment supporting the green and digital transition.* | Not relevant anymore | Not applicable | SDG 8, 16 |
| *Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including, where relevant, by strengthening the coverage, adequacy and sustainability of health and social protection systems for all.* | Not relevant anymore | Not applicable | SDG 8, 16 |

*(Continued on the next page)*

*Table (continued)*

| | | | |
|---|---|---|---|
| **2022 CSR 1** | **Some Progress** | | |
| *In 2023, ensure that the growth of nationally financed primary current expenditure is in line with an overall neutral policy stance, taking into account continued temporary and targeted support to households and firms most vulnerable to energy price hikes and to people fleeing Ukraine. Stand ready to adjust current spending to the evolving situation.* | Substantial Progress | Not applicable | SDG 8, 16 |
| *Expand public investment for the green and digital transitions, and for energy security taking into account the REPowerEU initiative, including by making use of the Recovery and Resilience Facility and other Union funds.* | Some Progress | Not applicable | SDG 8, 16 |
| *For the period beyond 2023, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions.* | Some Progress | Not applicable | SDG 8, 16 |
| **2022 CSR 2** | | | |
| *Proceed with the implementation of its recovery and resilience plan, in line with the milestones and targets included in the Council Implementing Decision of 4 May 2022.* | RRP implementation is monitored by assessing RRP payment requests and analysing reports published twice a year on the achievement of the milestones and targets. These are to be reflected in the country reports. | | |
| *Submit the 2021-2027 cohesion policy programming documents with a view to finalising the negotiations with the Commission and subsequently starting their implementation.* | Progress on the cohesion policy programming documents is monitored under the EU cohesion policy. | | |
| **2022 CSR 3** | **Limited Progress** | | |
| *Reduce overall reliance on fossil fuels and fossil fuel imports* | Limited Progress | Relevant RRP measures planned as of 2022-2026 | SDG 7, 9, 13 |
| *by accelerating the development of renewables,* | Some Progress | Relevant RRP measures planned as of 2022-2026 | SDG 7, 9, 13 |
| *and diversify gas supply sources and routes by increasing interconnections with neighbouring countries.* | Substantial Progress | Relevant RRP measures planned as of 2022-2026 | SDG 7, 9, 13 |
| *Step up efforts to reduce energy demand by increasing energy efficiency in industry and in private and public building stock.* | Limited Progress | Relevant RRP measures planned as of 2022-2026 | SDG 7 |
| *Promote new sustainable solutions in centralised district heating.* | No Progress | Relevant RRP measures planned as of 2022-2026 | SDG 7 |
| **2023 CSR 1** | **Some Progress** | | |
| *Wind down the emergency energy support measures in force, using the related savings to reduce the government deficit, as soon as possible in 2023 and 2024. Should renewed energy price increases necessitate new or continued support measures, ensure that such support measures are targeted at protecting vulnerable households and firms, are fiscally affordable and preserve incentives for energy savings.* | Substantial Progress | Not applicable | SDG 8, 16 |
| *Ensure prudent fiscal policy, in particular by limiting the nominal increase in nationally financed net primary expenditure in 2024 to not more than 4,6 %.* | Some Progress | Not applicable | SDG 8, 16 |
| *Preserve nationally financed public investment and ensure the effective absorption of grants under the Facility and of other Union funds, in particular to foster the green and digital transitions.* | No Progress | Not applicable | SDG 8, 16 |
| *For the period beyond 2024, continue to pursue a medium-term fiscal strategy of gradual and sustainable consolidation, combined with investments and reforms conducive to higher sustainable growth, in order to achieve a prudent medium-term fiscal position.* | Some Progress | Not applicable | SDG 8, 16 |

*(Continued on the next page)*

*Table (continued)*

| | | | |
|---|---|---|---|
| **2023 CSR 2** | | | |
| *Ensure an effective governance structure and strengthen the administrative capacity to allow for a swift and steady implementation of its recovery and resilience plan. Swiftly finalise the REPowerEU chapter with a view to rapidly starting its implementation. Proceed with the speedy implementation of cohesion policy programmes, in close complementarity and synergy with the recovery and resilience plan.* | RRP implementation is monitored through the assessment of RRP payment requests and analysis of the bi-annual reporting on the achievement of the milestones and targets, to be reflected in the country reports. Progress with the cohesion policy is monitored in the context of the Cohesion Policy of the European Union. | | |
| **2023 CSR 3** | Limited Progress | | |
| *Reduce reliance on fossil fuels and* | Limited Progress | Relevant RRP measures planned as of 2024 | SDG 7, 9, 13 |
| *accelerate the energy transition through faster deployment of renewable energy sources, while ensuring storage capacities to increase the flexibility of the energy system.* | Limited Progress | Relevant RRP measures planned as of 2024 | SDG 7, 9, 13 |
| *Strengthen the electricity grid infrastructure and improve the management thereof by streamlining the connection procedures and introducing smart grid elements.* | Limited Progress | Relevant RRP measures planned as of 2024 | SDG 7, 9, 13 |
| *Continue efforts to increase interconnection with neighbouring countries.* | Some Progress | | SDG 7, 9, 13 |
| *Accelerate building renovation in order to incentivise energy efficiency and address energy poverty.* | Limited Progress | Relevant RRP measures planned as of 2024 | SDG 1, 2, 7, 10 |
| *Promote new future-proof solutions in district heating and* | No Progress | | SDG 7 |
| *sustainable urban transport, and accelerate development of railway infrastructure.* | Limited Progress | Relevant RRP measures being implemented as of 2022 | SDG 11 |
| *Step up policy efforts aimed at the provision and acquisition of skills and competences needed for the green transition.* | Limited Progress | Relevant RRP measures being implemented as of 2022 | SDG 4 |

***Note:***

* See footnote ([23]).

** RRP measures included in this table contribute to the implementation of CSRs. Nevertheless, additional measures outside the RRP are necessary to fully implement CSRs and address their underlying challenges. Measures indicated as 'being implemented' are only those included in the RRF payment requests submitted and positively assessed by the European Commission.

***Source:*** European Commission

**This Annex provides a snapshot of Bulgaria's implementation of its recovery and resilience plan (RRP), past the mid-way point of the Recovery and Resilience Facility's (RRF) lifetime.** The RRF has proven central to the EU's recovery from the COVID-19 pandemic, helping speed up the twin green and digital transition, while adapting to geopolitical and economic developments and strengthening resilience against future shocks. The RRF is also helping implement the UN Sustainable Development Goals and address the country-specific recommendations (see Annex 2).

**The RRP paves the way for disbursing up to EUR 5.689 billion in grants under the RRF over the 2021-2026 period, representing 6.1% of Bulgaria's GDP ([24]).** As of mid-May 2024, EUR 1.369 billion has been disbursed to Bulgaria under the RRF.

**Bulgaria still has EUR 4.3 billion available in grants from the RRF.** This will be disbursed after the assessment of future fulfilment of the remaining 299 milestones and targets ([25]) included in the Council Implementing Decision ([26]) (CID), ahead of the 2026 deadline established for the RRF.

**Bulgaria's progress in implementing its plan is recorded in the Recovery and Resilience Scoreboard ([27])**. The scoreboard gives an overview of the progress made in implementing the RRF as a whole. Graph A3.1 shows the current state of play as reflected in the scoreboard.

**Bulgaria is working on the elaboration of a REPowerEU chapter to be added to its RRP, to phase out its dependency on Russian fossil fuels, diversify its energy supplies and produce more clean energy in the coming years**. Once submitted, assessed, and adopted, it will contribute to ensuring the supply of affordable, secure, and sustainable energy.

**The plan has a strong focus on the green transition, dedicating 57.1% of the available funds to measures that support climate objectives and 23.1% of its total allocation to support the digital transition**. It also retains a strong social dimension with social protection measures, especially related to health and long-term care.

Table A3.1: **Key facts of the Bulgarian RRP**

| | |
|---|---|
| Initial plan CID adoption date | 4 May 2022 |
| Scope | Revised Plan without REPowerEU chapter |
| Last major revision | 8 December 2023 |
| Total allocation | EUR 5.7 billion in grants (6.1% of 2023 GDP) |
| Investments and reforms | 50 investments and 47 reforms |
| Total number of milestones and targets | 321 |
| Fulfilled milestones and targets | 22 (6.9% of total) |

***Source:*** RRF Scoreboard

**With one payment request completed, Bulgaria's implementation of its RRP is significantly delayed.** The Commission gave a positive assessment of Bulgaria's payment request on 7 November 2022, taking into account the opinion of the Economic and Financial Committee. This led to EUR 1.37 billion being disbursed in financial support on 16 December 2022 ([28]). The related 22 milestones and targets covered reforms and investments towards decarbonising the energy sector, promoting large-scale deployment of digital infrastructure, reforming the judicial system, strengthening the anti-money laundering framework, digitalising the public sector, strengthening the adequacy and coverage of the minimum income scheme.

([24]) GDP information is based on 2023 data. Source: https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/index.html?lang=en

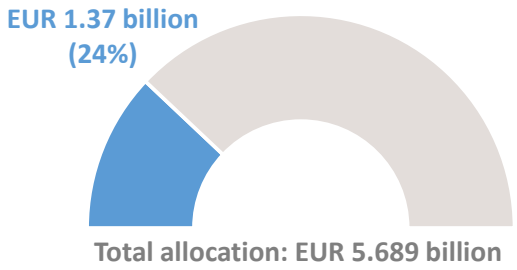
([25]) A milestone or target is satisfactorily fulfilled once a Member State has provided evidence to the Commission that it has reached the milestone or target and the Commission has assessed it positively in an implementing decision.

([26]) https://data.consilium.europa.eu/doc/document/ST-8091-2022-ADD-1/en/pdf

([27]) https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

([28]) https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

Graph A3.1: **Total grants disbursed under the RRF**




**Note:** This graph displays the amount of grants, including pre-financing, disbursed so far under the RRF. Grants are non-repayable financial contributions. The total amount of grants given to each Member State is determined by an allocation key and the total estimated cost of the respective RRP.
***Source:*** RRF Scoreboard

**As of 15 May 2024, the Commission is working in collaboration with Bulgaria to assess its second payment request.** Table A3.2 highlights some relevant measures achieved so far, and some that will be implemented before 2026 to keep making Bulgaria's economy greener, more digital, inclusive, and resilient.

Table A3.2: **Measures in Bulgaria's RRP**

| Reforms and investments implemented |
|---|
| • Strengthening of the anti-money laundering framework<br>• National Plan for the Development of Combined Transport in Bulgaria by 2030<br>• New Industrial Parks Act |
| **Upcoming reforms and investments** |
| • Establishment of the Innovation Board<br>• Legislation supporting the fast deployment of off-shore wind<br>• New zero-emission public transport vehicles |

***Source:*** FENIX

**EU funding instruments provide considerable resources for recovery and growth to the EU Member States**. In addition to the EUR 5.7 billion of Recovery and Resilience Facility (RRF) funding described in Annex 3, EU cohesion policy funds ([29]) provide EUR 10.7 billion to Bulgaria for the 2021-2027 period ([30]). Support from these two instruments combined represents around 16.18% of the country's 2023 GDP, compared to an EU average of 5.38% of GDP ([31]). Cohesion policy supports regional development, economic, social and territorial convergence, and competitiveness through long-term investment in line with EU priorities and with national and regional strategies.

**During the 2014-2020 programming period, cohesion policy funds boosted Bulgaria's competitiveness, with tangible achievements notably in research and innovation, energy efficiency, employment, social inclusion, and education**. By the end of the eligibility period in December 2023, 2014-2020 cohesion policy funds ([32]) had made EUR 7.9 billion available to Bulgaria ([33]), of which EUR 4.5 billion has been disbursed since March 2020, when the COVID-19 pandemic began ([34]). More than 40 000 SMEs have benefited from this support, which has helped stimulate growth, create jobs and improve competitiveness. The SAFE initiative has supported more than 100 000 SMEs and improved the resilience of businesses in the face of a challenging economic environment by compensating for increased electricity costs. Moreover, a total of 24 cutting-edge research complexes and laboratories have been set up with the help of European Regional Development Fund (ERDF) resources. This has helped create the necessary conditions for advancing research and development and creating new job opportunities in the field. During the same period, more than 890 000 people received support under measures for labour-market integration, upskilling and reskilling, and social inclusion, co-financed by the European Social Fund (ESF). Over 55 000 children and their families gained access to early childhood development services while 230 000 people received direct support to overcome the consequences of the COVID-19 pandemic. In the education system, both students (450 000) and pedagogic specialists (45 774) were supported to develop specific knowledge and skills, and the latter also increased their qualifications.

**In the current programming period (2021-2027), cohesion policy will provide a further boost to Bulgaria's competitiveness, to the green transition and to social cohesion, improving the living and working conditions of Bulgaria's people, and promoting regional and social convergence.** Bulgaria has allocated EUR 2.4 billion of its ERDF and European Social Fund Plus (ESF+) funding to climate-related priorities, with an emphasis on the green transition, including energy independence. These measures will help people, households and SMEs overcome the challenges of the green transition. Investments will, for instance, help tackle climate change and natural disaster risks, aiming to reduce the share of the population living at risk of disasters (floods, fires, etc.) by at least 35%. Cohesion policy will also invest in sustainable transport by supporting the deployment of more than 160 electric vehicle charging stations and infrastructure for alternative fuels in ports and along the national road network, as well as developing intermodality in urban areas. The focus in 2021-2027 is on enabling balanced regional development and helping regions with insufficient investment catch up. This is why Bulgaria has allocated 50% of its total ERDF, ESF+ and Cohesion Fund funding ([35]) to its three less developed northern regions (North-West, North-Central, and North-East). The Just Transition Fund will support reskilling and upskilling and the creation of new employment opportunities for over 15 000 workers in the three Bulgarian regions that

([29]) In 2021-2027, cohesion policy funds include the Cohesion Fund, the European Regional Development Fund, the European Social Fund Plus and the Just Transition Fund.

([30]) European territorial cooperation (ETC) programmes are excluded from the figure. In 2021-2027, the total investment, including national financing, amounts to EUR 12.9 billion.

([31]) RRF funding includes both grants and loans, where applicable. The EU average is calculated for cohesion policy funds excluding ETC programmes. GDP figures are based on Eurostat data for 2022.

([32]) In 2014-2020, cohesion policy funds included the Cohesion Fund, the European Regional Development Fund, the European Social Fund and the Youth Employment Initiative. REACT-EU allocations are included but ETC programmes are excluded.

([33]) In 2014-2020, the total investment, including national financing, amounted to EUR 9.2 billion.

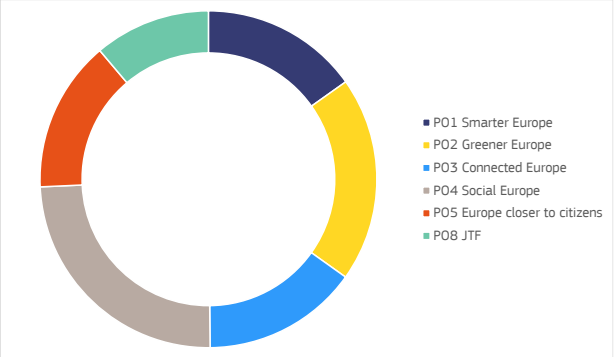
([34]) Cut-off date: 14 May 2024.

([35]) Excluding the funds for technical assistance and the Fund for European Aid to the Most Deprived.

are most affected by the transition (Stara Zagora, Kyustendil and Pernik). More than 2 190 hectares of land surface area will be rehabilitated to develop industrial areas and construct renewable energy infrastructure, such as photovoltaic parks, industrial parks for clean technologies, and a hydrogen-based value chain. With support from the ESF+, more than 212 000 employed and unemployed people will benefit from upskilling and reskilling initiatives, and another 160 000 will be supported to improve their digital skills, supporting the green and digital transition. Under the Child Guarantee, measures to reduce child poverty will benefit over 200 000 children will be supported under the Child Guarantee with measures to reduce child poverty. In education, ESF+ will target more than 760 000 children and students aiming to improve their educational outcomes and the inclusiveness of the educational system. In this regard, Cohesion policy substantially contributes to achieving the UN Sustainable Development Goals (SDGs) in Bulgaria, in particular SDG 9 (Industry, innovation, infrastructure), SDG 8 (Decent work and economic growth) and SDG 4 (Quality education).

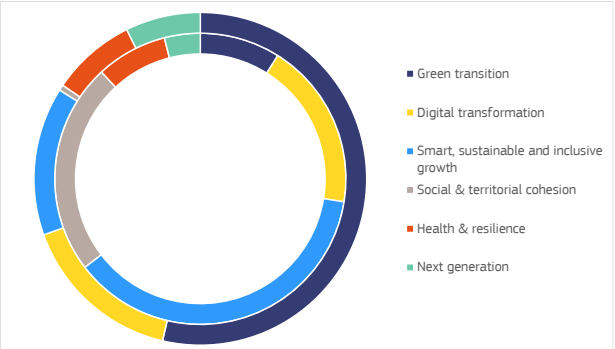
**Through combined action, cohesion policy and the recovery and resilience plan (RRP) have a mutually reinforcing impact of the EU support in Bulgaria.** For instance, in the area of digitalisation of SMEs, the RRP includes a voucher system, supporting the initial two stages of digitalisation (computerisation and connectivity), while cohesion policy funds support the four additional stages (visibility, transparency, forecast capacity, and adaptability), focusing on developing the necessary technologies for Industry 4.0. In the water sector as well, cohesion policy and the RRP will complement each other to maximise their impact on the ground: cohesion policy will invest in water supply and sanitation infrastructure in agglomerations with over 10 000 inhabitants, whereas the RRP will focus its investments on agglomerations between 5 000 and 10 000 inhabitants. Together, cohesion policy and the RRP also improve the sustainability of the Bulgarian transport system. The reform of the strategic transport system adopted under the RRP includes an independent audit of the organisation and technical capacity of the bodies responsible for transport investments, such as the National Railway Infrastructure Company, the Road Infrastructure Agency and the Ministry of Transport and Communications. At the same time, cohesion policy funds will support, amongst others, technical assistance to prepare and implement projects on trans-European transport network (TEN-T) railways and roads network. The contribution of cohesion policy and RRP funding by policy objective is illustrated by Graphs A4.1 and A4.2.

Graph A4.1: **Distribution of cohesion policy funding across policy objectives in Bulgaria**




***Source:*** European Commission

Graph A4.2: **Distribution of RRF funding by pillar in Bulgaria**




(1) Each RRP measure helps achieve the aims of two of the six policy pillars of the RRF. The primary contribution is shown in the outer circle while the secondary contribution is shown in the inner circle. Each contribution represents 100% of the RRF funds. Therefore, the total contribution to all pillars displayed on this chart amounts to 200% of the RRF funds allocated to Bulgaria.

***Source:*** European Commission

**The Technical Support Instrument (TSI) helps Bulgaria to strengthen public administration and to create a better enabling environment for EU and national investment.** The TSI has funded projects in Bulgaria to design and implement growth-enhancing reforms since 2016. The support provided in 2023 included action to create and implement regulatory mechanisms for the natural gas market, and improve the country's capabilities for risk-based anti-money laundering supervision. The TSI also helps Bulgaria to increase its capacity to implement specific reforms and

Table A4.1: **Support from EU instruments in Bulgaria**

| **EU grants** | | | |
|---|---|---|---|
| | Amount 2014-2020 (EUR million) | | Amount 2021-2027 (EUR million) |
| Cohesion policy | 7 924.3 | | 9 507.8 |
| RRF grants (1) | - | | 5 688.8 |
| Public sector loan facility (grant component) (2) | - | | 98.3 |
| Common agricultural policy (3) | 9 800.0 | | 5 640.0 |
| EMFF/EMFAF (4) | 80.8 | | 84.9 |
| Connecting Europe Facility (5) | 549.4 | | 354.8 |
| Horizon 2020 / Horizon Europe (6) | 161.9 | | 106.0 |
| LIFE programme (7) | 43.6 | | 39.9 |
| **EU guarantees** | | | |
| | EU Guarantee (EUR million) | | Volume of operations (EUR million) |
| European Fund for Strategic Investment 2015-2020 (8) | 251.0 | | 602.1 |
| InvestEU 2021-2027 (9) | 215.7 | | 334.5 |
| **EU loans** | | | |
| | Period | Total amount available (EUR million) | Disbursed amount (EUR million) |
| SURE (10) | 2020-2022 | 971.2 | 971.2 |

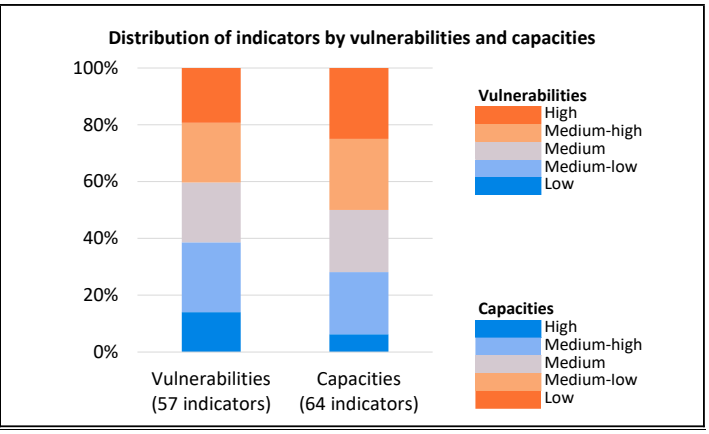
(1) RRF implementation period is 2021-2026.
(2) The public sector loan facility's programming period is 2021-2025 and the amount reflects the national share in its grant component reserved until the end of the period.
(3) Common agricultural policy programming periods are 2014-2022 and 2023-2027.
(4) EMFF – European Maritime and Fisheries Fund, EMFAF – European Maritime, Fisheries and Aquaculture Fund.
(5) Data on the Connecting Europe Facility covers transport and energy and has a cut-off date of 15 May 2024.
(6) Data on Horizon Europe (2021-2027) has a cut-off date of 13 May 2024.
(7) 2021-2027 data on the LIFE programme has a cut-off date of 15 May 2024.
(8) The amount of the EU guarantee signed under the EFSI Infrastructure and Innovation Window was derived based on the signed amount of the operations and the average internal multiplier, as reported by the EIB (cut-off date is 31 December 2023).
(9)The amount of the EU guarantee and of the volume of operations signed under InvestEU includes the EU compartment as well as the Member State compartments (cut-off date is 31 December 2023).
(10) SURE - European instrument for temporary support to mitigate unemployment risks in an emergency.
***Source:*** European Commission

investments included in its RRP by strengthening the strategic approach and innovation in the civil service.

Bulgaria also receives funding from several other EU instruments, including those listed in Table A4.1.

Table A5.1: **Resilience indices across dimensions for Bulgaria and the EU-27**

| Dimension | | BG 2023 RDB | BG 2024 RDB | EU-27 2024 RDB |
|---|---|---|---|---|
| Overall resilience | Vulnerabilities | | | |
| | Capacities | | | |
| Social and economic | Vulnerabilities | | | |
| | Capacities | | | |
| Green | Vulnerabilities | | | |
| | Capacities | | | |
| Digital | Vulnerabilities | | | |
| | Capacities | | | |
| Geopolitical | Vulnerabilities | | | |
| | Capacities | | | |




(1) The synthetic indices aggregate the relative resilience situation of countries across all considered indicators. For an indicator, each country's relative situation in the latest available year is compared with the collection of values of that indicator for all Member States and all years in the reference period.
***Source:*** Resilience Dashboards - version spring 2024, data up to 2022

**This Annex uses the Commission's resilience dashboards (RDB)** ([36]) to show Bulgaria's relative resilience capacities and vulnerabilities ([37]) that may be of relevance for societal, economic, digital, and green transformations, and for dealing with future shocks and geopolitical challenges. ([38])

**According to the set of resilience indicators in the RDB, Bulgaria has overall medium-average vulnerabilities (in line with the EU level) and medium-low capacities (compared to medium-high at EU level).** The situation regarding its vulnerabilities has improved while the capacity side has not changed from last year. Bulgaria's situation is also reflected in the distribution of indicators: around 40% of the vulnerability indicators are medium-high or high, while over 50% of all capacities are medium-low or low.

**Bulgaria has decreased its previously medium-high vulnerabilities in the social and economic dimension to a medium level.** It still has the highest income quintile share ratio in the EU and among the highest regional dispersion of household income. It also has an above-average at-risk-of-poverty-or-social exclusion (AROPE) rate and high vulnerabilities in the area of health ([39]). Bulgaria also has relatively low social and economic capacities, due to its low government expenditures on education, health, and social protection, its average PISA scores, and the ratio of government investments to GDP. These factors threaten to exacerbate the effects of transitions in all areas of the social and economic dimension.

**In the green dimension, Bulgaria has stable and relatively low vulnerabilities compared to the EU average**. Among the reasons for these are Bulgaria's consumption footprint per capita, the energy used in information and communication technology (ICT), or the soil sealing index. However, its capacities in the green dimension remain below the EU average, at medium-low, as a result of the low level of environmental patents per capita, energy productivity or organic farming.

([36]) https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight/2020-strategic-foresight-report/resilience-dashboards_en.
Resilience is defined as the ability not only to withstand and cope with challenges but also to undergo transitions, in a sustainable, fair, and democratic manner. 2020 Strategic Foresight Report: *Charting the course towards a more resilient Europe* (COM(2020) 493).

([37]) Vulnerabilities describe features that can exacerbate the negative impact of crises and transitions, or obstacles that may hinder the achievement of long-term strategic goals, while capacities refer to enablers or abilities to cope with crises and structural changes and to manage transitions.

([38]) This Annex is linked to Annex 1 on SDGs, Annex 6 on the green deal, Annex 8 on the fair transition to climate neutrality, Annex 9 on resource productivity, efficiency and circularity, Annex 10 on the digital transition and Annex 14 on the European pillar of social rights.

([39]) It ranks fourth highest for its antimicrobial resistance and highest in terms of the premature deaths due to particulate matter 2.5.

**In the digital dimension of resilience, Bulgaria maintains its medium-high vulnerabilities and medium-low capacities**. Among its main challenges are the limited and increasing proportion of employees who do not telework, the many businesses without ICT training programmes, individuals' limited access to digital public services, and an absence of cloud services compared to the EU average. As far as its digital capacities are concerned, the country has the lowest digital competence of adults and young people in the EU and the lowest level of cybersecurity awareness.

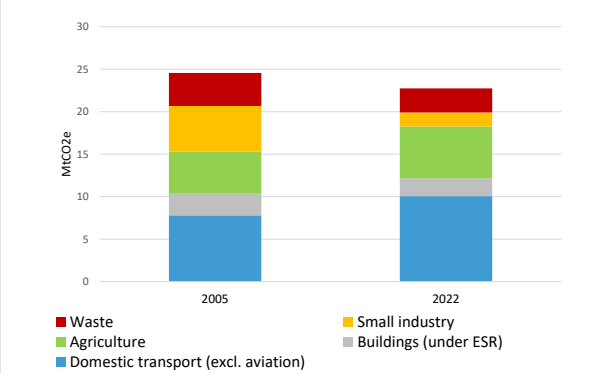
**In the geopolitical dimension, Bulgaria has medium vulnerabilities, comparable to the EU average, and it has medium-high capacities.** Among its vulnerabilities, the metal footprint per capita and its increasing employment gap (EU versus non-EU nationals) are relatively high, while on the capacity side the proportion of non-EU citizens in total employment is particularly low.

**Bulgaria's green transition needs more action** in several areas, including to specify the policies needed to reach the 2030 effort sharing target, to reduce emissions from road transport and buildings, to manage potential losses from climate hazards, improve the institutional framework for climate adaptation, and biodiversity and ecosystem protection. This Annex provides a snapshot of climate, energy, and environmental aspects of the transition in Bulgaria ([40]).

**In its draft updated national energy and climate plan (NECP) Bulgaria has not yet consistently mapped its investment needs and funding sources to achieve its 2030 climate and energy targets.** It only provides information on investment needs for a few selected measures such as natural gas infrastructure or energy storage projects. The investment needs are not separated into public and private. Besides, the plan only occasionally outlines the main sources of financing to implement the planned measures, and there is also no consolidated overview at NECP level. It is therefore not possible to identify potential funding gaps. For the smooth implementation of the policies and measures to reach the 2030 targets, specifying the investment needs and sources for implementation consistently and with complete and detailed coverage is key.

**Bulgaria's policies and measures planned are insufficient to reach its 2030 effort sharing target ([41]).** Bulgaria's 2022 greenhouse gas emissions from its effort sharing sectors are expected to come in at 2% above 2005 levels. With current policies, Bulgaria is projected to see emissions increase in the effort sharing sectors by 4% from 2005 levels by 2030. The additional policies planned by Bulgaria are projected to contain the increase at 2% compared to 2005 levels ([42]). Bulgaria is therefore projected to fall short of its effort sharing target, a 10% reduction compared to 2005 levels, by 12 percentage points. This highlights the importance of a higher level of ambition in the policies and measures planned in Bulgaria's final updated NECP, due by 30 June 2024.

Graph A6.1: **Greenhouse gas emissions from the effort sharing sectors in Mt CO2eq, 2005-2022**




***Source:*** European Environment Agency

**Greenhouse gas emissions from road transport and buildings are a significant concern for Bulgaria.** In 2022, greenhouse gas emissions from road transport increased by 29% compared to 2005 levels, and their share of the effort sharing emissions rose from 31.8% in 2005 to 44.2%. Between 2005 and 2022, emissions from buildings fell by 17.6%, well below the EU average of 27.6%. Appropriate policies and measures are yet to be specified in Bulgaria to curb greenhouse gas emissions in these sectors, given the shortfall from its 2030 effort sharing target. To prepare for the road transport and building sectors to be integrated in the emissions trading system in 2027, measures supporting vulnerable consumers appear most pertinent.

([40]) This Annex is complemented by Annex 7 on energy transition and competitiveness, Annex 8 on the fair transition to climate neutrality, Annex 9 on resource efficiency, circularity, and productivity, and relevant topics in other annexes to this country report.

([41]) The national greenhouse gas emission reduction target is laid down in Regulation (EU) 2023/857 (the Effort Sharing Regulation). The aim is to align the action in the sectors concerned with the objective to reach the EU-level economy-wide target of greenhouse gas reductions of at least 55% compared to 1990 levels. The target also applies to the sectors outside the current EU Emissions Trading System, notably buildings (heating and cooling), road transport, agriculture, waste, and small industry (known as the effort sharing sectors).

([42]) The effort sharing emissions for 2022 are based on approximated inventory data. The final data will be established in 2027 after a comprehensive review. Projections of effort sharing emissions 'with existing measures' (WEM) and 'with additional measures' (WAM) are based on the latest data reported by 15 March 2023 under Article 18 of Regulation 2018/1999 (the Governance Regulation).

**Bulgaria's renewable energy contribution** set in its draft updated national energy and climate plan (NECP), 34.1 % by 2030, is slightly above the required contribution under Annex II of the Governance Regulation ([43]). Furthermore, **Bulgaria's national contributions for energy efficiency** amount to 8.42 Mtoe (-10.7%) for final energy consumption and 12.4 Mtoe (-11.6%) for primary energy consumption. These contributions are set at an energy consumption level which is lower, and thus more ambitious, than the results of the EED recast Annex I formula.

**In Bulgaria, much remains to be done to contain greenhouse gas emissions, especially for passenger transport** (see above) ([44]). The use of passenger cars is high in Bulgaria, compared to buses and coaches. At just 0.1%, the share of battery electric vehicles in passenger cars is still very low, and in 2023, the number of publicly accessible charging points in Bulgaria was just above 1 400, or one charging point for every three e-vehicles (EU average of 1:10). At 24% of inland freight transport, Bulgaria has one of the highest shares of freight transport by inland waterway in the EU. 74% of railways are electrified, a relatively high share.

**Recent trends indicate that carbon removals from the atmosphere are falling in Bulgaria's land use, land-use change and forestry (LULUCF) sector.** To reach the 2030 target for LULUCF, additional removals of 1 163 kt $CO_2$eq are needed ([45]). Bulgaria's forests achieve a major share of its net carbon removals through land use.

**Bulgaria's challenges regarding the climate adaptation are the high climate protection gap ([46]) and institutional weaknesses.** Bulgaria is vulnerable to extreme climate events such as heatwaves and heavy rainfall. From 1980-2019, only 5% of losses caused by climate-related events were insured. Insurance coverage is below 50% for all climate-related risks. Bulgaria's vulnerability to floods is at medium levels, due to more intense and frequent extreme weather events. Bulgaria lacks coordination among authorities and has not yet aligned its monitoring and modelling to current measures and challenges. It has limited administrative capacity for action on adaptation, it has made little progress on international networks. It lacks subnational planning and reporting to align planning tools and help coordinate mechanisms to ensure that subnational policies are regularly reviewed and updated ([47]).

**Bulgaria has scope to improve biodiversity and nature protection and restoration.** At the end of 2021, it ranked 3rd in the EU for the share of protected land, with 35% of its land protected. Bulgaria continues the process of identifying and developing site-specific conservation objectives. In 2023, the Law on Biodiversity was amended to establish a new approach for management of the Natura 2000 network. The amendments however envisage that the necessary conservation measures are still to be put in place and their implementation is foreseen further in the future. According to these amendments, the management plans with measures for the protected areas are to be adopted four years after the entry into force of the provisions – i.e. by October 2027. Moreover, while 38% of species were reported to be in a favourable status against the EU average of 28%, only 12% of habitats were reported to be in favourable status compared to the EU average of 15%.

**Issues with water resource management persist.** The water exploitation index plus (WEI+), which tracks water use against renewable water resources, measured 1.6% in 2019 (EU average 3.6%). The wo9rst seasonal water scarcity conditions were recorded at 2.5% in Q1 of 2019. In 2020, Bulgaria's economy generated EUR 10 per cubic meter of water abstracted, the lowest figure in the EU. In 2020, Bulgaria abstracted 11.54% of water for agriculture (EU average: 32.12%). Based on reporting in the 2nd river basin

([43]) The EU target set out in the revised Renewable Energy Directive is to have 42.5% of gross final energy consumption coming from renewable energy sources by 2030, with the aspiration to reach 45%. The formula in Annex I to Directive (EU) 2023/1791 sets the indicative national contribution for Bulgaria at 13.7 Mtoe for primary energy consumption and 8.8 Mtoe for final energy consumption.

([44]) Unless otherwise indicated, data in this section refer to 2021. See European Commission, 2023, EU transport in figures, transport.ec.europa.eu.

([45]) National LULUCF targets of the Member States in line with Regulation (EU) 2023/839.

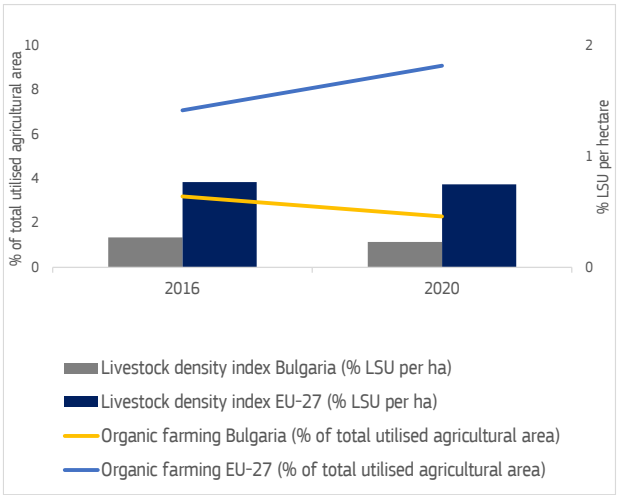
([46]) On the climate protection gap, see the annotations to Table A6.1.

([47]) See the Commission's 2023 recommendation on Bulgaria's progress on climate adaptation.

management plan, 46% of all surface water bodies achieved a good ecological status and 3% failed to achieve a good chemical status ([48]). Bulgaria is one of the few EU countries that has yet to adopt its 3rd river basin management plan. Its marine waters are not yet in a good environmental status as tracked by the descriptors used in the Marine Strategy Framework Directive. It has not yet communicated its programme of measures under the Directive, the programme being overdue since May 2022.

**Groundwater nitrate pollution is a source of concern.** The latest figures for the gross nitrogen balance on agricultural land in Bulgaria indicate an average surplus of 28.8kg of nitrogen per hectare in 2019. The content of nitrates in groundwater exceeds the EU average at 30.5 versus 20.5 mg nitrates/l. Over the reporting period from 2016-2019, 14.5% of groundwater monitoring stations recorded levels above the maximum 50 mg nitrates/l. By contrast, the gross phosphorus balance was -5.4 kg/ha in 2019. In 2020, 2.6% of monitoring sites were reported to have pesticide levels exceeding the thresholds set by the Groundwater Directive.

Graph A6.2: **Changes in livestock density and organic farming**




Livestock unit (LSU)/ha of UAA: it measures the stock of animals (cattle, sheep, goats, equidae, pigs, poultry and rabbits) converted in LSUs per hectare of UAA.
***Source:*** Eurostat

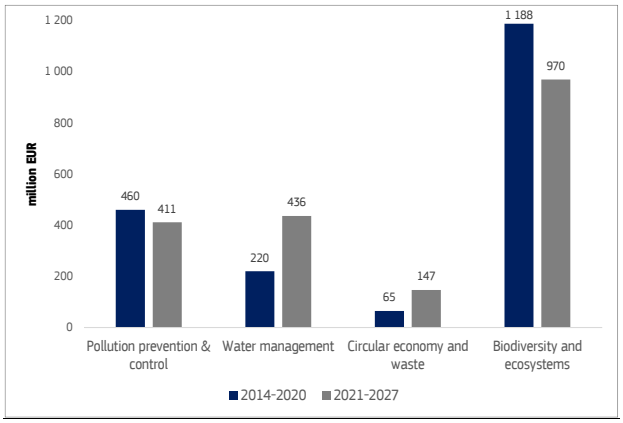
**The agri-food system has yet to shift to a more effective and efficient methods of managing food waste.** Bulgaria produces less food waste per person than the EU average, in 2021 producing 103 kg against the average 131 kg per person. Most waste was generated during manufacture of food products and beverages and household use. Bulgaria has legally binding national compost quality standards and a quality management system for compost produced from separately collected biowaste. Nevertheless, the composting and digestion rate of municipal waste fell from 43 kg per person in 2015 to 10 kg per person in 2021 to reach only 2% of all municipal waste. The low composting and digestion rates are considered key reasons for low biowaste recycling rates.

**There is scope to accelerate the uptake of sustainable agricultural practices.** The country has one of the lowest shares of organic farming in the EU, at 2.3% of total utilised agricultural area in 2020 against the EU average of 9.1% and the EU target of 25% by 2030. The share of organic farming has fallen since 2016 when it was 3.2%. Bulgaria's livestock density index barely changed between 2010 and 2020 and is well below the EU average at 0.75%. The application of organic nitrogen fertilizers (incl. urea), followed by animal manure, applied to soil, and diary and non-dairy cattle manure management, put the highest burden on the environment in terms of ammonia emissions into the air. The agricultural sector was responsible for generating 88.7% of all ammonia emissions against the EU average of 90.7%.

**Bulgaria would benefit from investing more in biodiversity and ecosystems, water management, pollution prevention and control, and the circular economy (including waste management).** Over the 2014-2020 period, the environmental investment gap was estimated at EUR 1.9 billion per year. The gap is estimated to be marginally increasing over the 2021-2027 period and approaching EUR 2 billion per year. There remains an opportunity to increase funding for biodiversity and ecosystems (a gap of EUR 970 million), water management (EUR 436 million) as well as pollution prevention and control (EUR 411 million). Bulgaria would also benefit from investing in circular economy, improving separate waste collection, and diverting waste from landfilling and incineration (EUR 147 million).

([48]) The chemical status of 64% of surface water bodies was unknown.

Graph A6.3: **Environmental investment gap, annual average**




The numbers are computed by the European Commission based on the latest internal reports, Eurostat, EIB and national data sources.
***Source:*** European Commission

Table A6.1: **Indicators tracking progress on the European Green Deal from a macroeconomic perspective**

| | | | | | | | Target | Distance | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2019 | 2020 | 2021 | 2022 | 2030 | WEM | WAM |
| **Progress to climate and energy policy targets** | | | | | | | | | |
| Greenhouse gas emission reductions in effort sharing sectors [1] | Mt $CO_{2eq}$, %, pp | 22 326.4 | 17% | 16% | 12% | 2% | -10% | -14 | -12 |
| Net greenhouse gas removals from LULUCF [2] | Kt CO2eq | -16 295 | -9 586 | -9 605 | -9 579 | -9 540 | -9 718 | n/a | n/a |
| Share of energy from renewable sources (1) [3] | % | 9% | 22% | 23% | 19% | 19% | 33% | - | - |
| Energy efficiency: primary energy consumption [3] | Mtoe | 19.2 | 18.0 | 17.1 | 18.6 | 18.9 | 13.7 | | |
| Energy efficiency: final energy consumption [3] | Mtoe | 10.1 | 9.9 | 9.5 | 10.2 | 9.9 | 8.423 | | |

| | | | | | | | EU-27 | | Projected |
|---|---|---|---|---|---|---|---|---|---|
| | | 2018 | 2019 | 2020 | 2021 | 2022 | 2021 | 2022 | 2030 |
| **Green transition: mobility** | | | | | | | | | |
| Greenhouse gas emissions: road transport | Mt CO2e | - | - | - | 9.9 | 10.1 | 769.0 | 786.6 | 9.7 |
| Share of zero-emission vehicles in new registrations [4] | % | 0.5 | 0.6 | 1.2 | 2.2 | 3.6 | 9 | 12.1 | n/a |
| Number of publicly accessible AC/DC charging points | | - | - | 161 | 614 | 1032 | 299178 | 446956 | n/a |
| Share of electrified railways | % | 71.2% | 71.2% | 71.3% | 74.4% | - | 56.1% | - | n/a |
| **Green transition: buildings** | | | | | | | | | |
| Greenhouse gas emissions: buildings | Mt CO2e | - | - | - | 2.1 | 2.1 | 537.0 | 486.7 | 1.5 |
| Final energy consumption in buildings | 2015=100 | 105.79% | 104.85% | 105.40% | 113.17% | 106.39% | 104.00% | 97.21% | |
| **Climate adaptation** | | | | | | | | | |
| Climate protection gap [5] | score 1-4 | - | - | 2.0 | 2.0 | 1.8 | 1.5 | 1.5 | n/a |

| | | 2018 | 2019 | 2020 | 2021 | 2022 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|
| **State of the environment** | | | | | | | | | |
| **Water \|** Water exploitation index (WEI+) (1) [6] | % of renewable freshwater | 1.4 | 1.6 | - | - | - | 3.6 | - | - |
| **Circular economy \|** Material footprint [7] | tonnes per person | 19.4 | 20.2 | 21.7 | 21.2 | 23.3 | 14.2 | 14.8 | 14.9 |
| **Pollution \|** Years of life lost due to air pollution by PM2.5 [8] | per 100.000 inhabitants | 1 836 | 1 524 | 1 554 | 1 443 | - | 545 | 584 | - |
| **Biodiversity \|** Habitats in good conservation status [9] | % | 12.2 | | | | | 14.7 | | |
| Common farmland bird index [10] | 2000=100 | - | - | - | - | - | 78 | - | - |
| **Green transition: agri-food sector** | | | | | | | | | |
| Organic farming | % of total utilised agricultural area | 2.56 | 2.34 | 2.3 | 1.71 | - | 9.1 | - | - |
| Nitrates in groundwater | mg $NO_3$/litre | 28.63 | 28.25 | 27.9 | - | - | 20.42 | - | - |
| Food waste per capita | Kg per capita | | | 108 | 103 | - | 130 | 131 | - |
| Share of soil in poor health [11] | % | | | | | 43 | | | 41 |
| Soil organic matter in agricultural land [12] | Mt per ha | 230 | - | - | - | - | 7 904 | - | - |

***Sources:*** (1) Member States' emission data for 2019 and 2020 are in global warming potential (GWP) values from the 4th Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC). Member States' 2005 base year emissions under Regulation (EU) 2018/842, emissions data for 2021 and 2022, and 2030 projections are in GWP values from the 5th Assessment Report (AR5) of the IPCC. 2021 data are based on the final inventory reports, 2022 data are based on approximated inventory reports and European Environmental Agency's calculation of effort sharing emissions. The final data for 2021 and 2022 will be established after a comprehensive review in 2027. The 2030 target is in percentage change of the 2005 base year emissions. Distance to target is the gap between the 2030 target and projected effort sharing emissions with existing measures (WEM) and with additional measures (WAM), in percentage change from the 2005 base year emissions. The measures included for the 2030 emission projections reflect the state of play as reported in Member States' draft updated national energy and climate plans or, if unavailable, as reported by 15 March 2023 as per Regulation 2018/1999. (2) Net removals are expressed in negative figures, net emissions in positive figures. Reported data are from the 2024 greenhouse gas inventory submission. 2030 value of net greenhouse gas removals as in Regulation (EU) 2023/839 – Annex IIa. (3) The 2030 national objectives for renewable energy and energy efficiency are indicative national contributions, in line with Regulation (EU) 2018/1999 (the Governance Regulation), the EU-level 2030 renewable energy target set out in Directive EU/2018/2001 amended by Directive EU/2023/2413 (the revised Renewable Energy Directive) – 42.5% of gross final energy consumption with the aspiration to reach 45% –, and the formula in Annex I to Directive (EU) 2023/1791 (the Energy Efficiency Directive). (4) Passenger battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV). (5) The climate protection gap refers to the share of non-insured economic losses caused by climate-related disasters, based on modelling of the risk from floods, wildfires, windstorms, and the insurance penetration rate. Scale: 0 (no protection gap) –4 (very high gap) (European Insurance and Occupational Pensions Authority, 2022). (6) Total water consumption in renewable freshwater resources available for a territory and period. (7) Material extractions for consumption and investment. (8) Years of potential life lost through premature death due to exposure to particulate matter with a diameter of less than 2.5 micrometres. (9) Share of habitats in good conservation status according to the records submitted under Art. 17 of the Habitats Directive (Directive 92/43/EEC) for 2013-2018. (10) Multi-species index measuring changes in population abundances of farmland bird species. (11) Source: annex 12 of the Commission's proposal for a soil monitoring law, SWD (2023) 417 final. (12) Estimates of organic carbon content in arable land.

**This Annex ([49]) sets out Bulgaria's progress and challenges in accelerating the net-zero energy transition while bolstering the EU's competitiveness in the clean energy sector ([50]).** It considers measures and targets put forward in the draft updated National Energy and Climate Plans (NECP) for 2030.

**Bulgaria displays good progress on diversification of energy sources but continued reliance on fossil fuels undermines the country's competitiveness.** Efforts to accelerate the deployment of renewable energy sources are yet to bear fruit and the potential of energy efficiency remains untapped.

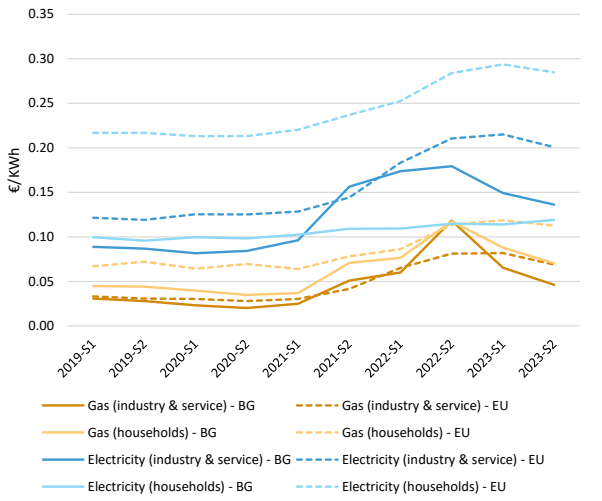
**While energy prices in Bulgaria smoothened over 2023 after a sharp peak during the crisis, and remained below the EU average, they did not fall back to their historic average, posing challenges for the country's competitiveness.** Gas prices for households in the second semester of 2023 were 20% lower than the beginning of the year and remained significantly lower (38%) than the EU average. For industry, gas prices were 30% lower at the end of 2023 compared to the first half of the year, remaining below the EU average by 33%. Electricity cost households 5% more in the second semester of 2023 compared to the beginning of the year. For industry, electricity prices in the second half of 2023 were 9% lower than in the first semester of 2023 and 32% below the EU average.

**Bulgaria decreased the use of coal in its electricity mix in 2023. ([51])** In 2023 coal as part of the electricity mix stood at 11.56 TWh and 28.91% share, whereas it was 21.79 TWh (43.39% of the mix) in 2022 and 17.09 TWh (36.19% of the mix) in 2021.

**For phase out of coal, Bulgaria outlined certain commitments in the Territorial Just Transition Plans**. However, the draft updated NECP and the regional commitments, including intermediary transition steps for 2026 and 2030, do not seem to be aligned towards a coal phase out deadline by 2038 ([52]).

**In 2023 regulated electricity prices protected Bulgarian households from the impact of price increases.** Energy support measures were not targeted: compensation was given to all non-household consumers, regardless of consumption, for electricity costs above EUR 102/MWh. Following its recovery and resilience plan, Bulgaria adopted a new Energy Act which is expected to liberalise its wholesale electricity market (as of July 2025 following a postponement from July 2024) and retail market (as of January 2026). ([53])

Graph A7.1: **Bulgaria's energy retail prices for households and industry & service**




(1) For industry, consumption bands are I3 for gas and IC for electricity, which refer to medium-sized consumers and provide an insight into affordability
(2) For households, the consumption bands are D2 for gas and DC for electricity
(3) Industry prices are shown without VAT and other recoverable taxes/levies/fees as non-household consumers are usually able to recover VAT and some other taxes
***Source:*** Eurostat

**In relative terms, electricity prices for non-household consumers have increased significantly compared to the US, Japan, and to a lesser extent, the UK**. Although there has been a slight decline since the first half of 2022,

([49]) It is complemented by Annex 6 as the European Green Deal focuses on the clean energy transition and by Annex 8 on the action taken to protect the most vulnerable groups, complementing ongoing efforts under the European Green Deal, REPowerEU and European Green Deal Industrial Plan.

([50]) In line with the Green Deal Industrial Plan and the Net-Zero Industry Act.

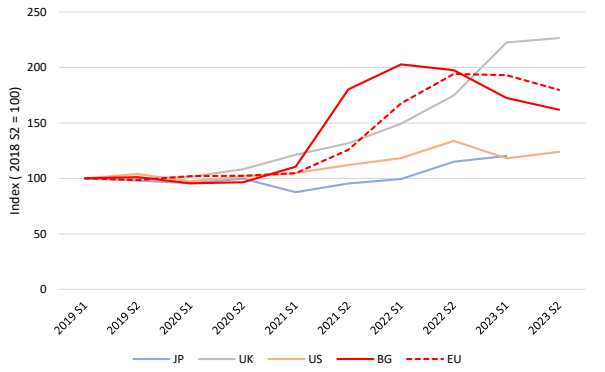
([51]) Ember data for 2021-2023.

([52]) See the Commission's assessment of the draft updated National Energy and Climate Plan

([53]) P. 34, draft updated National Energy and Climate Plan

Bulgaria's electricity prices have persisted above those of the US and Japan. This could potentially affect the international competitiveness of energy-intensive industries in the country.

Graph A7.2: **Trends in electricity prices for non-household consumers (EU and foreign partners)**



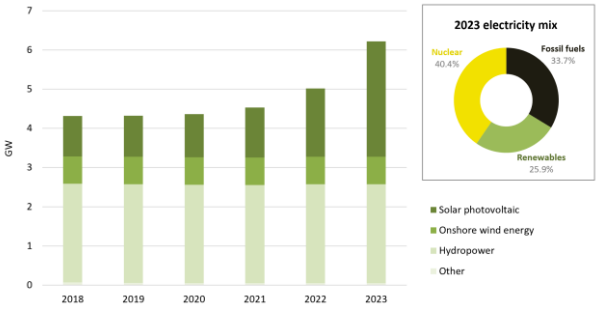

(1) For Eurostat data (EU and BG), the band consumption is ID referring to large-sized consumers with an annual consumption of between 2 000 MWh and 20 000 MWh, such as in electricity intensive manufacturing sectors, and gives an insight into international competitiveness
(2) JP = Japan
***Source:*** Eurostat, IEA

**In 2022-2023 Bulgaria showed strong progress in diversifying away from Russian gas**, including by completing the Project of Common Interest (PCI) Greece-Bulgaria gas interconnector (ICGB). Its further expansion from 3 to 5 bcm/year will further increase security of supply for the region. Bulgaria managed to reduce its gas demand between August 2022 and December 2023 by 17% in comparison to the average of the five previous years. Bulgaria operates one underground storage facility in Chiren with a total capacity of 0.55 bcm, representing around 20% of its total yearly demand and currently under expansion as a PCI. Bulgaria fulfilled its gas storage obligations last winter, reaching 97.6% by 1 November 2023, and ended the winter season with a storage filled at 44.22% by 1 April 2024. In 2023 the Bulgaria-Serbia gas interconnector PCI was inaugurated and is expected to become operational in 2024. The largest gas supplier, Bulgargaz, signed a contract with Türkiye's BOTAS and the Bulgarian TSO Bulgartransgaz. This was followed by an interconnection agreement in early 2024 between Bulgartransgaz and BOTAS.

**Electricity production in Bulgaria amounted to 50 TWh ([54]) in 2022, making the country a net exporter** (around 12 TWh). Bulgaria's Kozloduy nuclear power plant operates two WWER-1000 reactors, which contribute close to one-third of the national electricity generated. The plant signed diversification agreements with Westinghouse and Framatome for non-Russian nuclear fuel. The government announced the start of work on two new reactors at the same facility, the first of which is planned for 2033.

**Total renewable energy capacity in Bulgaria in 2023 stood at 6215 MW** (23% increase compared to 2022). ([55]) The total wind capacity in Bulgaria for 2023 was 702 MW (unchanged compared to 2022), all onshore. The total solar installed capacity in 2023 was 2937 MW, 69% increase compared to 2022 and all due to PVs.

Graph A7.3: **Bulgaria's installed renewable capacity (left) and electricity generation mix (right)**




(1) "Other" includes renewable municipal waste, solid biofuels, liquid biofuels and biogas.
***Source:*** IRENA, Ember

**In 2022, the self-consumption rate in Bulgaria was rather low in the residential sector (27%) and high in the industrial (70%) and utility (100%) sectors.** Smaller scale prosumers are indirectly subsidised by being excluded from the obligation to pay an injection tariff, which is applied to all producers connected to the transmission level.

**The revision of Bulgaria's Renewable Energy Act in 2023 takes steps to transpose the Renewable Energy Directive and accelerate the deployment of renewables.** It envisions the

([54]) Source: Enerdata Global Energy Research – Bulgaria

([55]) IRENA report 2024

designation of priority areas for wind energy development (onshore and offshore), where projects will benefit from accelerated permitting. The revision introduces definitions for renewable energy communities and renewable energy self-consumers. It simplifies the permitting process for renewables installations for own use of up to 1 MW, and renewable energy installations of up to 5 MW located on existing buildings connected to the grid. Finally, the revision introduced a legal basis for one-stop-shops for renewables. In 2024 the national regulatory authority adopted a new ordinance for connection to the grid of electricity sites, incl. renewables and storage, further facilitating their deployment. Bulgaria's relatively high share of renewables in heating and cooling (31.67% in 2022) is due to biomass use, which supplies half of the population.

**Bulgaria has not adopted measures to reduce energy import dependency by facilitating biomethane production and use.** The country's biogas production amounts to 0.07 BCM (50.12 ktoe) (2022). Bulgaria does not use biomethane in the transport sector (2021) or for injection into the natural gas grid ([56]). It is estimated that Bulgaria can replace about 21% of natural gas consumption with biomethane by 2030. ([57]), ([58])

**Despite strong electricity interconnection with its neighbours, including a new 400 kV line with Greece (PCI Maritsa East-Nea Santa), Bulgaria needs to improve its transmission and distribution grids.** In 2023 requests to connect renewable sources to the grid reached 40 000 MW. To free grid capacity, Bulgaria introduced a ~25 000 EUR reservation charge for each MW of planned projects.

**As part of its recovery and resilience plan, Bulgaria will develop an additional 1 200 MW of interconnection capacity with Romania and Greece by 2025 and will carry out investment to facilitate the integration of new renewable sources with 4 500 MW of capacity.** Bulgaria received EUR 197 million under the EU Modernisation Fund to upgrade its distribution grids and accelerate the deployment of smart meters. The Chaira pump hydro storage plant has a capacity of about 800 MW but has not been online since 2022, following an outage.

**Consumer empowerment constitutes untapped potential, as a significant portion of consumers are on fixed price contracts due to regulated prices.** The regulated segment comprises 40% of the Bulgarian energy market. ([59]) Switching rates for electricity stand at 25%, and for gas at 15%.

**Energy efficiency gains in Bulgaria slowed down despite untapped potential.** In 2022, Bulgaria had a primary energy consumption (PEC) of 18.9 Mtoe, a 2% increase compared to 2021, and a 6.2% increase compared to 2012. It had a final energy consumption (FEC) of 9.9 Mtoe, a 2.7% decrease compared to 2021, and a 7.6% increase compared to 2012. In 2023, the highest results came from the residential sector, which decreased FEC by 11%, while the lowest came from transport which increased its FEC by 2.5%.

**Bulgaria should take measures to reach its 2030 target for reducing energy consumption in buildings.** Heating and cooling ([60]) represent the highest share of FEC in residential buildings, at about 79% ([61]), with renewables supplying about 32% ([62]) of energy used in 2022 for heating and cooling. Between 2021 and 2030 Bulgaria plans to renovate about 8% of the total floor space of buildings and save about 2.9 TWh and around 1.3 Mt of CO2 emissions.

**Bulgaria missed the energy savings required by 2020 under the Energy Efficiency Directive by 8%.** For the new period 2021-2030, Bulgaria opted for a mix of seven policy measures, including an energy efficiency obligation scheme, similar to 2014-2020. Bulgaria notified the Commission of two energy saving measures under

([56]) Draft updated National Energy and Climate Plan

([57]) https://energy.ec.europa.eu/publications/2023-biomethane-country-fiches_en

([58]) https://energy.ec.europa.eu/system/files/2023-09/Biomethane_fiche_PT_web.pdf

([59]) P.70, Draft updated National Energy and Climate Plan

([60]) Space heating and cooling and domestic hot water

([61]) Eurostat, 2024. https://data.europa.eu/data/datasets/uvygjkxev6pywqwbgmgwyg?locale=en

([62]) Ministry of Energy, Bulgaria, 2022, A comprehensive assessment of the potential for high-efficiency cogeneration and for effective district heating and cooling systems in Bulgaria https://energy.ec.europa.eu/system/files/2022-01/BG%20CA%202020%20en.pdf

its recovery and resilience plan (starting year 2023) ([63]). New annual savings for 2021 are lower than needed to achieve the 2030 targets.

**The most common financing schemes for energy efficiency are grants, followed by debt and equity financing.** Most measures target the public or building sectors, with a balance across businesses, households and mixed. Less than 7% of EU cohesion policy funds allocated to Bulgaria cover energy efficiency investment.

**The share of heat pumps in heating and cooling is 3%, compared to 37% for heating boilers (incl. biomass boilers) ([64]).** In H1 2023, the ratio of residential electricity/natural gas prices ratio was 1.27, very favourable for the deployment of efficient heat pumps, while the non-residential electricity/natural gas price ratio was 2.45, slightly favourable to the deployment of efficient heat pumps ([65]) ([66]).

**A low level of market surveillance activities on products covered by ecodesign and energy labelling creates concerns about compliance levels.**

**To accelerate the region's energy transition and increase its resilience, Bulgaria undertook commitments under the Central and South-Eastern Europe energy connectivity (CESEC) forum.** Bulgaria plans to establish a Regional Renewable Hydrogen Cluster together with Greece and Romania ([67]). The development of a CCS facility in South Kavala and the construction of a hydrogen pipeline between Greece and Bulgaria are labelled as a Projects of Common Interest.

**Bulgaria has a track record of exporting batteries and shows potential in this sector.** Two lead-acid battery manufacturing plants and one recycling facility (38 400 t/y) are in operation under a Bulgarian battery producer. The company operating them has unveiled plans to establish a 1 GW bipolar lead-acid manufacturing plant.

**A Belgian battery producer has expressed an interest in developing a lithium-ion battery manufacturing facility (10 GW/y), a R&D center and a recycling plant (50 000 t/y) in Bulgaria.** And a Bulgarian-German joint-venture plans to create a Tier-1 PV panel manufacturing plant with an output capacity of 1 GW. Bulgaria also has a 10-20 MW manufacturing capacity for alkaline electrolysers.

([63]) 2023 national energy and climate progress report (NECPR)

([64]) Ministry of Energy, Bulgaria, 2022, A comprehensive assessment of the potential for high-efficiency cogeneration and for effective district heating and cooling systems in Bulgaria https://energy.ec.europa.eu/system/files/2022-01/BG%20CA%202020%20en.pdf

([65]) Eurostat, 2023 household gas prices: https://ec.europa.eu/eurostat/databrowser/view/nrg_pc_202/default/table?lang=en Non-residential gas prices: https://ec.europa.eu/eurostat/databrowser/view/nrg_pc_203/default/table?lang=en

([66]) EHPA, 2023.

([67]) MoU, 19.01.2024

Table A7.1: **Key Energy Indicators**

| | | Bulgaria | | | | EU | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2019 | 2020 | 2021 | 2022 | 2019 | 2020 | 2021 | 2022 |
| ENERGY DEPENDNCE | **Import Dependency [%]** | **38.5%** | **38.2%** | **36.2%** | **37.1%** | **60.5%** | **57.5%** | **55.5%** | **62.5%** |
| | of Solid fossil fuels | 7.5% | 9.6% | 10.5% | 11.6% | 43.3% | 35.8% | 37.3% | 45.8% |
| | of Oil and petroleum products | 102.6% | 97.5% | 97.2% | 106.1% | 96.7% | 96.8% | 91.7% | 97.7% |
| | of Natural Gas | 100.4% | 96.4% | 96.2% | 106.1% | 89.7% | 83.6% | 83.6% | 97.6% |
| | **Dependency from Russian Fossil Fuels [%]** | | | | | | | | |
| | of Natural Gas | 79.4% | 75.2% | 79.8% | 41.4% | 39.7% | 41.3% | 41.1% | 21.0% |
| | of Crude Oil | 62.7% | 2.0% | 2.4% | 1.4% | 28.8% | 26.7% | 26.4% | 19.5% |
| | of Hard Coal | 99.8% | 84.5% | 87.9% | 35.7% | 43.5% | 49.1% | 47.4% | 21.5% |

| | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|
| DIVERSIFICATION OF GAS SUPPLIES | **Gas Consumption (in bcm)** | **3.2** | **3.3** | **3.1** | **2.9** | **2.9** | **3.3** | **2.7** |
| | Gas Consumption year-on-year change [%] | 2.7% | 3.4% | -5.5% | -7.6% | 1.3% | 14.3% | -18.0% |
| | **Gas Imports - by type (in bcm)** | **3.1** | **3.3** | **3.1** | **2.9** | **2.9** | **3.3** | **2.9** |
| | Gas imports - pipeline | 3.1 | 3.3 | 3.1 | 2.9 | 2.9 | 3.3 | 2.5 |
| | Gas imports - LNG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| | **Gas Imports - by main source supplier (in bcm) (1)** | | | | | | | |
| | Russia | 3.1 | 3.3 | 3.1 | 2.3 | 2.2 | 2.6 | 1.2 |
| | Azerbaijan | - | - | - | - | 0.0 | 0.3 | 0.6 |
| | Greece | - | - | 0.0 | 0.6 | 0.6 | 0.4 | 0.8 |
| | United States | - | - | - | - | - | - | 0.4 |

| | | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| | **LNG Terminals - storage capacity m3 LNG** | | | | | |
| | Number of LNG Terminals | 0 | 0 | 0 | 0 | 0 |
| | LNG Storage capacity (m3 LNG) | 0 | 0 | 0 | 0 | 0 |
| | **Underground Storage** | | | | | |
| | Number of storage facilities | 1 | 1 | 1 | 1 | 1 |
| | Technical Capacity (bcm) | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 |

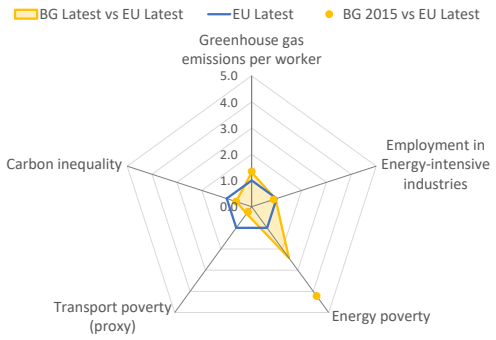
| | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|
| ELECTRICITY/ENERGY | **Gross Electricity Production (GWh) (2)** | **45,279** | **45,613** | **46,838** | **44,277** | **40,754** | **47,568** | **50,499** | - |
| | Combustible Fuels | 22,088 | 23,633 | 22,606 | 21,573 | 17,827 | 23,079 | 26,583 | - |
| | Nuclear | 15,776 | 15,545 | 16,125 | 16,555 | 16,626 | 16,487 | 16,462 | - |
| | Hydro | 4,568 | 3,493 | 5,423 | 3,383 | 3,320 | 5,067 | 3,833 | - |
| | Wind | 1,425 | 1,504 | 1,318 | 1,317 | 1,477 | 1,434 | 1,499 | - |
| | Solar | 1,388 | 1,403 | 1,343 | 1,417 | 1,469 | 1,467 | 2,094 | - |
| | Geothermal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - |
| | Other Sources | 34 | 34 | 22 | 31 | 36 | 35 | 28 | - |
| | **Gross Electricity Production [%]** | | | | | | | | |
| | Combustible Fuels | 48.8% | 51.8% | 48.3% | 48.7% | 43.7% | 48.5% | 52.6% | - |
| | Nuclear | 34.8% | 34.1% | 34.4% | 37.4% | 40.8% | 34.7% | 32.6% | - |
| | Hydro | 10.1% | 7.7% | 11.6% | 7.6% | 8.1% | 10.7% | 7.6% | - |
| | Wind | 3.1% | 3.3% | 2.8% | 3.0% | 3.6% | 3.0% | 3.0% | - |
| | Solar | 3.1% | 3.1% | 2.9% | 3.2% | 3.6% | 3.1% | 4.1% | - |
| | Geothermal | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | - |
| | Other Sources | 0.1% | 0.1% | 0.0% | 0.1% | 0.1% | 0.1% | 0.1% | - |
| | **Net Imports of Electricity (GWh)** | **- 6,372** | **- 5,480** | **- 7,807** | **- 5,810** | **- 3,408** | **- 8,778** | **- 12,195** | - |
| | As a % of electricity available for final consumption | -21.1% | -17.4% | -24.9% | -18.7% | -11.2% | -27.7% | -39.1% | - |
| | **Electricity Interconnection [%]** | - | **7.1%** | **9.3%** | **9.2%** | **11.3%** | **14.7%** | **23.5%** | **21.2%** |
| | **Share of renewable energy consumption - by sector [%]** | | | | | | | | |
| | Electricity | 19.1% | 19.0% | 22.4% | 23.5% | 23.6% | 21.4% | 20.2% | - |
| | Heating/cooling | 30.0% | 29.9% | 33.3% | 35.4% | 37.2% | 30.0% | 31.7% | - |
| | Transport | 7.2% | 7.3% | 8.1% | 7.9% | 9.1% | 7.6% | 7.7% | - |
| | Overall | 18.8% | 18.7% | 20.6% | 21.5% | 23.3% | 19.4% | 19.1% | - |

| | | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| CLEAN ENERGY | **VC investments in climate tech start-ups and scale-ups (EUR Mln)** | **-** | **0.03** | **-** | **18.83** | **2.01** |
| | as a % of total VC investment (3) in Bulgaria start-ups and scale-ups | - | 0.1% | 0.0% | 30.5% | 2.5% |
| | **Research & Innovation spending in Energy Union R&i priorites** | | | | | |
| | Public R&I (EUR mln) | - | - | - | - | - |
| | Public R&I (% GDP) | - | - | - | - | - |
| | Private R&I (EUR mln) | 2.7 | 2.8 | - | - | - |
| | Private R&I (% GDP) | 0.004% | 0.005% | - | - | - |

(1) The ranking of the main suppliers is based on the latest available figures (for 2022)
(2) Venture Capital investment includes Venture Capital deals (all stages), Small M&A deals and Private Equity (PE) growth deals (for companies that have previously been part of the portfolio of a VC investment firm or have received Angel or Seed funding).
***Source:*** Eurostat, Gas Infrastructure Europe, JRC elaboration based on PitchBook data (03/2024), JRC SETIS (2024)

**This Annex monitors Bulgaria's progress in ensuring a fair transition towards climate neutrality and environmental sustainability, particularly for workers and households in vulnerable situations.** Providing upskilling and reskilling schemes that are relevant for the green transition will help implement the Council Recommendation on ensuring a fair transition towards climate neutrality ([68]). The green economy is growing in Bulgaria. Between 2015 and 2021, total jobs in the environmental goods and services sector grew significantly, by 78.4% (to around 68 000) (EU: 18.2%), reaching 2.2% of total employment (EU: 2.7%). Also, between 2015 and 2022, the greenhouse gas (GHG) emission intensity of Bulgaria's workforce (see Graph A8.1 and Table A8.1) fell from 19.2 to 17.4 tonnes per worker. Although it remains above the EU average (14.3 tonnes per worker in 2022) ([69]), it indicates a positive trend in the green transition. Bulgaria's recovery and resilience plan envisages reforms and investment for a fair green transition, complemented by measures under the European Social Fund Plus (ESF+) and the Just Transition Fund (see Annex 4).

Graph A8.1: **Fair transition challenges in Bulgaria**




***Source:*** Eurostat, EU Labour Force Survey, EMPL-JRC GD-AMEDI/AMEDI+ and DISCO(H) projects (see Table A8.1).

**Employment in energy-intensive industries is stable.** In 2023, employment in Bulgaria's energy-intensive industries comprised 3.4% of total employment (3.5% in EU). Employment in mining and quarrying has decreased by -10.9% since 2015 (to around 22 900 workers in 2023). The job vacancy rate in construction (see Graph A8.2), a key sector for the green transition, is much lower than the EU average (0.5% vs 3.6% in the EU in 2023). Nevertheless, 90% of small and medium-sized enterprises (SMEs) in the sector reported that skills shortages are holding them back in general business activities ([70]). According to the European Labour Authority (ELA) ([71]), labour shortages were reported in 2023 for a number of occupations that required specific skills or knowledge for the green transition ([72]), including electrical engineers and heavy truck and lorry drivers.

**Upskilling and reskilling are key for smooth labour market transitions and promoting jobs in transforming sectors.** In Bulgaria, 36% of SMEs think that skills required for greening business activities are becoming more important (EU: 42%) ([70]). If Bulgaria matches its projected contribution to the EU's 2030 renewable energy target, between 700 and 1 700 additional skilled workers will be needed for the deployment of wind and solar energy ([73]), which may require an investment in skills of EUR 3.7-4.7 million ([74]). The ESF+ has made EUR 152 million available for measures promoting green skills and jobs (see Annex 14). It is expected that by 2029 more than 212 000 unemployed and employed people at risk of losing their job due to the restructuring of the economy will increase their skill level, including by acquiring green skills. In 2023, with the support of ESF+, Bulgaria launched several measures supporting the green transition. In particular, the 'Adapted Working Environment' measure aims to help enterprises meet the challenges related to the transition to a climate-neutral economy and

([68]) Council Recommendation of 16 June 2022 on ensuring a fair transition towards climate neutrality (2022/C 243/04) covers employment, skills, tax/benefit and social protection systems, essential services and housing.

([69]) Workforce-related calculations are based on the EU Labour Force Survey. Note, in the 2023 country report for Bulgaria, such indicators were calculated based on employment statistics in the national accounts. This may result in limited comparability across the two reports.

([70]) Eurobarometer on skills shortages, recruitment, and retention strategies in small and medium-sized enterprises.

([71]) Based on the European Labour Authority 2024 EURES Report on labour shortages and surpluses 2023, i.e. data submitted by the EURES National Coordination Offices.

([72]) Skills and knowledge requirements are based on the European Skills Competences and Occupations (ESCO) taxonomy on skills for the green transition.

([73]) EMPL-JRC AMEDI+ project.

([74]) National Statistical Institute, Monitoring Business Tendencies in the Industrial Sector, December 2022.

Table A8.1: **Key indicators for a fair transition in Bulgaria**

| Indicator | Description | BG 2015 | BG | EU |
|---|---|---|---|---|
| GHG per worker | Greenhouse gas emissions per worker – $CO_2$ equivalent tonnes | 19.2 | 18.6 (2022) | 14.3 (2022) |
| Employment EII | Employment share in energy-intensive industries, including mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24) and automotive (C29) | 3.1% | 3.4% (2023) | 3.5% (2023) |
| Energy poverty | Share of the total population living in a household unable to keep its home adequately warm | 39.2% | 22.5% (2022) | 9.3% (2022) |
| Transport poverty (proxy) | Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport | 9.1% | 12.2% (2023) | 37.1% (2023) |
| Carbon inequality | Ratio between the consumption footprint of the top 20% vs bottom 20% of the income distribution | 1.7 | 1.7 (2021) | 2.7 (2021) |

***Source:*** Eurostat (env_ac_ainah_r2, lfsa_egan2d, ilc_mdes01), EU Labour Force Survey (break in time series in 2021), EMPL-JRC GD-AMEDI/AMEDI+ and DISCO(H) projects.

provide relevant training programmes to more than 90 000 people.

**Energy poverty indicators slightly improved, but significant challenges remain.** The share of the population unable to keep their homes adequately warm decreased from 39.2% in 2015 to 22.5% in 2022, but it was still the highest in the EU, well above the EU average (9.3%) ([75]). The indicator decreased by 1.2 percentage points between 2021 and 2022, despite energy price increases due to supply constraints caused by the COVID-19 pandemic and Russia's war of aggression against Ukraine. This improvement was attributed to emergency measures implemented in Bulgaria. Nevertheless, 42.7% of the population at risk of poverty (AROP) (EU: 20.1%) and 20.9% of lower middle-income households (in deciles 4-5) (EU: 11.6%) were affected by energy poverty as they reported being unable to keep their home adequately warm in 2022. Bulgaria has adopted an official definition for energy poverty, but the related support schemes are not yet developed. The targeted heating allowance has been the main instrument to tackle energy poverty for the most vulnerable groups, but the scheme is limited in time and scope. In addition, in response to the energy crisis, Bulgaria took advantage of the SAFE initiative ([76]) in 2023 to provide a one-off benefit to over 365 000 households under the ESF to compensate them for the high energy prices. On the other hand, in January 2023, just 12.2% of the population at risk of poverty spent a considerable share of their budget (more than 6%) on private transport fuels (EU: 37.1%) ([77]).

**Air pollution remains an issue in Bulgaria, and income is influencing emissions' volume, leading to environmental inequalities.** The average levels of air pollution in Bulgaria stood above the EU average (15.1 vs 11.4 µg/m$^3$ PM2.5), with all regions exposed to critical levels of air pollution ([78]). This has led to a significant impact on health, affecting vulnerable groups in particular such as older people and people with pre-existing health conditions, and around 10 800 premature deaths annually ([79]). Despite performing better than the EU on average, environmental inequality can still be observed through the difference of the carbon consumption footprint of the richest 20% and poorest 20% of the population (in 2021, it was 1.7 times higher in Bulgaria vs 1.8 in the EU), showing that higher income groups contribute significantly more to GHG emissions and pollution ([80]).

([75]) Products defined according to the European Classification of Individual Consumption according to Purpose (ECOICOP): CP045.

([76]) Thanks to the Support Affordable Energy (SAFE) initiative, Member States can support vulnerable households to tackle rising energy prices.

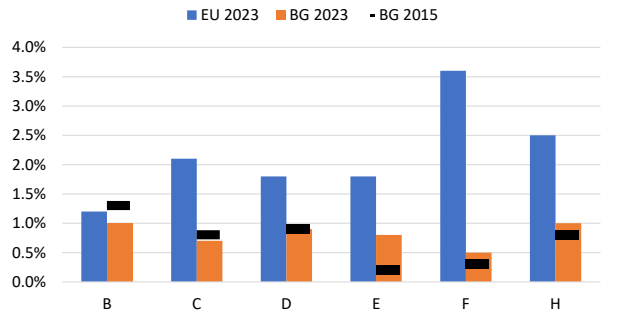
([77]) Affordability of private transport fuels is one key dimension of transport poverty. The indicator has been developed in the context of the EMPL-JRC GD-AMEDI/AMEDI+ projects. Methodology explained in Economic and distributional effects of higher energy prices on households in the EU.

([78]) Two times higher than the recommendations in the WHO Air Quality Guidelines (annual exposure of 5µg/m$^3$).

([79]) EEA- Air Quality Health Risk Assessment

([80]) Developed in the context of the EMPL-JRC DISCO(H) project. Methodology explained in Joint Research Centre, 2024. Carbon and environmental footprint inequality of household consumption in the EU. JRC137520. The EU average refers to EU27 without Italy (household income data not available for IT in the HBS)

Graph A8.2: **Job vacancy rate in transforming sectors and mining and quarrying**




B - Mining and quarrying
C - Manufacturing
D - Electricity, gas, steam and air conditioning supply
E - Water supply; sewerage, waste management and remediation activities
F - Construction
H - Transportation and storage
***Source:*** Eurostat jvs_a_rate_r2.

**Bulgaria lags in implementing measures enabling a fair transition to climate neutrality as the measures planned are still at an early stage of preparation.** The three territorial just transition plans to support the three main coal regions in the path towards climate neutrality were delayed and were only adopted at the end of 2023. Bulgaria set up an Advisory Council for the European Green Deal and provides specific support programmes for social entrepreneurship, e.g., for financing green and climate innovations. Further work, including on compensating for the delays in adopting the Just Transition Fund, is needed to create incentives for job-to-job transitions, upskilling and reskilling, and mobility across sectors, as well as to help key stakeholders achieve the transition objectives by 2030 ([81]).

([81]) Based on the monitoring review of the Council Recommendation on ensuring a fair transition towards climate neutrality, which took place in October 2023.

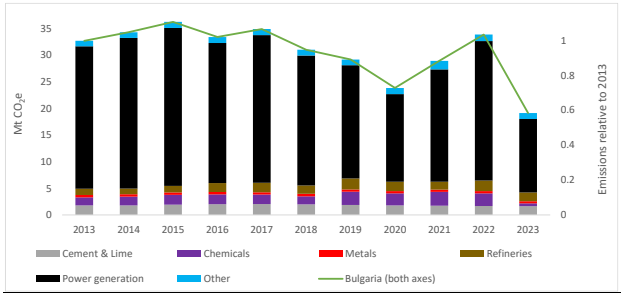
**The green transition of industry and the built environment, in particular decarbonisation, resource efficiency and circularity, is essential to boost Bulgaria's competitiveness ([82]).** In this regard, priorities for Bulgaria are waste management and the use of circular materials in industry and construction.

**The state of the environment in Bulgaria remains a source of concern, particularly in terms of circular economy and waste management.** The pace of Bulgaria's circular economy transition is insufficient to achieve the EU Circular Economy Action Plan goals and there is room for improvements in waste management and resource efficiency. The material footprint increased from 21.2 to 26.2 tonnes per capita between 2018 and 2022, remaining among the EU's highest. Total waste generated per capita has decreased over the last decade, however Bulgaria remains one of the worst-performing countries, producing 16.8 tonnes per capita in 2020 ([83]).

**Bulgaria is only at the start of its transition to a circular economy.** This is indicated by the large amounts of resources used and waste generated and the rather low share of secondary raw materials. With EUR 0.33 generated per kg of material consumed in 2021 (domestic material consumption of 23 tonnes per person), resource productivity in Bulgaria is below the EU average of EUR 2.09 per kg. In 2020, Bulgaria was the EU's second-largest waste generator, with 17 000 kg/capita (EU average: 5 000 kg/capita) and had the EU's highest percentage share of total hazardous waste generated (12%). Bulgaria's recovery and resilience plan (RRP) and cohesion policy tools support the uptake of circular economy solutions for companies to reduce the industry's resource intensity and address the energy transition.

**Despite some positive trends, poor air quality still seriously affects Bulgaria.** In 2021, the years of life lost due to exposure to PM2.5 and $NO_2$ stood well above the EU average, accounting for 1 443 and 294 years, respectively, per 100 000 inhabitants. The smog-precursor emission intensity dropped by 80% between 2008 and 2021, but still reached 3 300 tonnes/EUR versus an EU average of 0.86 tonnes/EUR. However, these indicators have decreased over time.

Graph A9.1: **ETS emissions by sector since 2013**




***Source:*** European Commission

**In 2023, Bulgaria's greenhouse gas emissions under the EU emissions trading system (ETS) ([84]) were 34% lower than in 2019.** About 72% of the greenhouse gases from Bulgaria's ETS installations came from power generation, significantly more than the EU average of 57%. Of the total emissions from all industry sectors, 31% came from the chemical industry, 31% each from refineries and from cement and lime production, 21% from other industries, and 8% from the metals industry. Since 2019, the power sector's emissions have declined by 35% ([85]). The industry sectors' emissions have declined by slightly less, 33%. Since 2013, greenhouse gas emissions have declined by 48% in power generation and by 10% in the industry sectors. Greenhouse gas emissions in both the power sector and the industry sectors showed both increases and decreases in that decade.

**The Bulgarian economy remains particularly exposed to waste management inefficiencies, despite municipal waste generation being below the EU average.** There is no significant progress on the 'polluter pays' principle, as

([82]) See also Annexes 6, 7 and 12

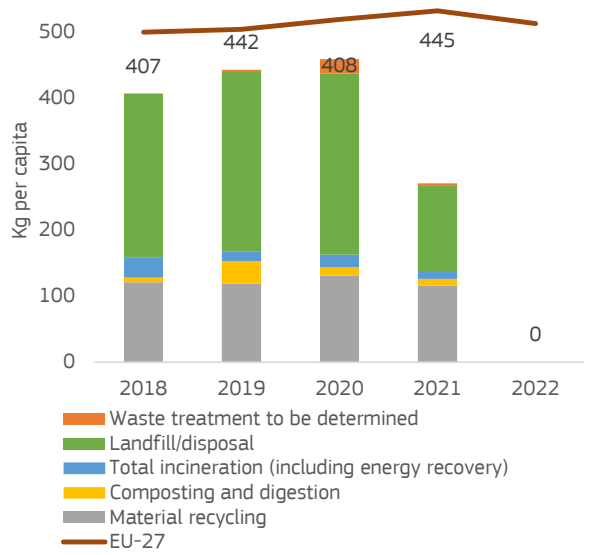
([83]) Bulgaria ranked second after Finland for most waste generated per capita in 2020.

([84]) This analysis excludes air travel. The data for 2023 reflects verified emissions as of 14 May 2024 and may still be revised due to late data submissions. For more details and the data sources, see Weitzel, M; van der Vorst, C. (2024), Uneven progress in reducing emissions in the EU ETS, JRC Science for policy brief, JRC138215, Joint Research Centre.

([85]) This includes a steep decrease of 19% year-on-year in 2020, and a steep rebound in the next 2 years, with an average increase of 19.5% year-on-year.

Bulgaria continues to postpone the application of a fairer calculation of waste collection fees after adopting the necessary legal basis. It would be beneficial to put into practice this fairer calculation of waste collection fees. Despite having one of the lowest levels of generation of municipal waste, Bulgaria remains one of the Member States with the highest landfilling rates and lowest recycling performance. Bulgaria did not meet the 2020 recycling target for municipal waste and is assessed to be at high risk of not meeting the 2025 recycling targets for municipal and packaging waste. In 2020, landfilling represented 61.7% of waste generated (compared to an EU average of 23%). There is room to make better use of the potential of the circular economy transition to support the decarbonisation of Bulgaria's industry.

Graph A9.2: **Treatment of municipal waste**




***Source:*** Eurostat

**The built environment continues to play a role in depleting resources, despite recent improvements.** Waste generated from construction and demolition activities almost doubled between 2010 and 2020, reaching 1.15 million tonnes. However, the figure per capita stands well below the EU average. The proportion of backfilling increased but remained well below the EU average – 52.6%. It stood at 7.7% in 2022. On construction and demolition waste, Bulgaria has a programme for meeting the targets for recycling and recovery of construction waste and waste from demolition of buildings', which is part of the national waste management plan for 2021-2028. The 2022 strategy and action plan for transition to the circular economy aim to implement 21 measures in the areas of sustainable plastic waste management, product design, innovation in production processes, and upgrading of the separate waste collection systems.

**There is still room to improve resource efficiency in the Bulgarian built environment system.** Between 2016 and 2020, Bulgaria's residential floor areas per capita increased to 36.11 m2 per capita, almost equalling the EU average of 36.48 m2. By contrast, non-residential floor areas remained well below the average – 10.11 m2 per capita versus 15.51 m2. The growth rate of both these building categories was higher than the EU average growth, especially in the residential sector. In 2020, Bulgaria submitted a long-term renovation strategy aiming to decarbonise the building stock. The adoption of circular economy principles is mentioned as part of the plan's main priorities.

Table A9.1: **Circularity indicators**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | EU-27 | Latest year |
|---|---|---|---|---|---|---|---|---|
| **Industry** | | | | | | | | |
| Resource productivity (purchasing power standard (PPS) per kilogram) | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | - | 2.5 | 2022 |
| Circular material use rate (%) | 2.5 | 4.1 | 5.9 | 4.8 | 4.8 | - | 11.5 | 2022 |
| Eco-innovation index (2013=100) | 36.9 | 39.1 | 44.4 | 55.9 | 57.7 | - | 121.5 | 2022 |
| Recycling of plastic packaging (%) | 59.2 | 50.6 | - | - | - | - | 40.7 | 2021 |
| Cost of air emissions from industry (EUR bn) | 11.6 | 9.1 | 8.1 | 11.5 | - | - | 352.7 | 2021 |
| **Built environment** | | | | | | | | |
| Recovery rate from construction and demolition waste (%) | 24.0 | - | 96.0 | - | - | - | 89.0 | 2020 |
| Soil sealing index (base year = 2006) | 103.0 | - | - | - | - | - | 103.4 | 2018 |
| Non-residential floor area ($m^2$ per capita) | 14.6 | 14.9 | 15.2 | - | - | - | 18.0 | 2020 |
| Waste backfilled (%) | - | - | - | - | - | - | 9.9 | 2020 |

***Source:*** Eurostat, European Environment Agency

**The Digital transformation is key to ensuring a resilient and competitive economy.** In line with the Digital Decade Policy Programme, and in particular with the targets for digital transformation by 2030, this Annex describes Bulgaria's performance on digital skills, digital infrastructure/connectivity and the digitalisation of businesses and public services. Where relevant, it makes reference to progress on implementing the Recovery and Resilience Plan (RRP). Bulgaria allocates 23.1% of its total RRP allocation to digital objectives (EUR 1.3 billion) ([86]). Under Cohesion Policy, an additional EUR 1.3 billion (13% of the country's total Cohesion Policy funding) is allocated to the country's digital transformation ([87]).

**The Digital Decade Policy Programme sets out a pathway for EU's successful digital transformation by 2030.** Bulgaria's national roadmap outlines the actions it intends to take to reach the objectives and targets at national level ([88]). The 2023 Report on the state of the Digital Decade highlighted the need to accelerate and deepen the collective efforts to reach the EU-wide targets and objectives ([89]). Among others, a digitally skilled population increases the development and adoption of digital technologies and leads to productivity gains and new business models. It also leads to higher inclusion and participation in an environment increasingly shaped by the digital transformation. Digital technologies, infrastructure and tools all play a role in addressing the current structural challenges, including strategic dependencies, cybersecurity and climate change.

([86]) The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation.

([87]) This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion Policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

([88]) Updated National Strategic Document "Digital Transformation of Bulgaria for the period 2024-2030", https://egov.government.bg/wps/portal/ministry-meu/strategies-policies/digital.transformation/itis-national-strategic-documents/national.strategic.document.digital.transformation

([89]) European Commission (2023): Report on the State of the Digital Decade 2023, 2023 Report on the state of the Digital Decade | Shaping Europe's digital future (europa.eu).

**Bulgaria scores low in relation to digital skills.** 35.5% of Bulgaria's population has basic digital skills, among the lowest in the EU. The percentage of ICT specialists is also one of the lowest in the EU, although the proportion of female ICT specialists is the highest. One of the priorities of Bulgaria's RRP is the improvement of digital skills, with significant investments to adapt the skill set of the workforce to new labour market needs, and setting up a national online platform for adult learning.

**Bulgaria has a mixed performance on digital infrastructure/connectivity.** The country is well above the EU average in its coverage by fixed very high-capacity networks (VHCN), but is below the EU average on mobile broadband coverage and the assignment of 5G spectrum (63% vs 68%). In addition, Bulgaria performs below the EU average on overall 5G coverage, and on 5G coverage on the 3.4-3.8 GHz spectrum band, which is essential for enabling advanced applications requiring large spectrum bandwidth. Under its RRP, Bulgaria has already implemented measures to improve connectivity, such as the reform on the creation of a favourable investment environment, and is making progress towards the efficient use of the radio frequency spectrum.

**Bulgaria scores very low on the digitalisation of businesses.** One key challenge is the adoption of digital technology in enterprises (mainly SMEs), where the percentage is one of the lowest in the EU. The adoption of advanced technologies (such as big data, cloud services and artificial intelligence) is also very low. Only 29% of Bulgarian enterprises have taken up at least one of these three technologies, below the EU average of 55% for 2023. Cloud adoption (14%) is remarkably low compared to the EU average (39%). Furthermore, the share of Bulgaria's SMEs with at least a basic level of digital intensity is 28%, well below the EU average (58%). Bulgaria's RRP includes measures such as a voucher scheme for the digitalisation of SMEs, supporting activities with, for example, web-based ICT services for platforms, and software solutions. The RRP will be complemented by targeted Cohesion Policy investments focusing on the development of necessary technologies for Industry 4.0 to support SMEs in achieving the last four levels of digitalisation. In 2022, 2% of enterprises in Bulgaria reported ICT service outage due to cyberattacks (e.g. ransomware attacks, denial of service attacks). Over the same year, 17.1% of

enterprises developed or reviewed their ICT security policy within the previous 12 months.

**Bulgaria has a very low level of performance in relation to the digitalisation of public services, although progress is expected as a result of the country's ongoing initiatives.** Bulgaria scores far below the EU average for digital public services for citizens (67 vs 79) but has reached above the EU average for businesses (92 vs 85). The percentage of e-government users has also stagnated in recent years, at 35.4% compared to the EU average of 75%. The country has one electronic identification (eID) scheme, which has been notified under the eIDAS Regulation. Bulgaria's RRP features measures that contribute to the digitalisation of public administration and the provision of digital public services in key areas such as justice, healthcare, employment and social protection ([90]).

([90]) European Commission (2023): Country reports - Digital Decade report 2023, https://digital-strategy.ec.europa.eu/en/library/country-reports-digital-decade-report-2023

Table A10.1:**Key Digital Decade targets monitored by the Digital Economy and Society Index indicators**

| | Bulgaria | | | EU | Digital Decade target by 2030 (EU) |
|---|---|---|---|---|---|
| | 2022 | 2023 | 2024 | 2024 | |
| **Digital skills** | | | | | |
| **At least basic digital skills** | **31%** | **31%** | **36%** | **56%** | **80%** |
| % individuals | 2021 | 2021 | 2023 | 2023 | 2030 |
| **ICT specialists ([1])** | **3.5%** | **3.8%** | **4.3%** | **4.8%** | **20 million** |
| % individuals in employment aged 15-74 | 2021 | 2022 | 2023 | 2023 | 2030 |
| **Digital infrastructure/connectivity** | | | | | |
| **Fixed very high capacity network (VHCN) coverage** | **81%** | **86%** | **89%** | **79%** | **100%** |
| % households | 2021 | 2022 | 2023 | 2023 | 2030 |
| **Fibre to the premises (FTTP) coverage ([2])** | **81%** | **86%** | **89%** | **64%** | **-** |
| % households | 2021 | 2022 | 2023 | 2023 | |
| **Overall 5G coverage** | **40%** | **67%** | **71%** | **89%** | **100%** |
| % populated areas | 2021 | 2022 | 2023 | 2023 | 2030 |
| **Digitalisation of businesses** | | | | | |
| **SMEs with at least a basic level of digital intensity** | **25%** | **NA** | **28%** | **58%** | **90%** |
| % SMEs | 2021 | | 2023 | 2023 | 2030 |
| **Data analytics** | **NA** | **NA** | **22%** | **33%** | **-** |
| % enterprises | | | 2023 | 2023 | |
| **Cloud** | **10%** | **10%** | **14%** | **39%** | **-** |
| % enterprises | 2021 | 2021 | 2023 | 2023 | |
| **Artificial intelligence** | **3%** | **3%** | **4%** | **8%** | **-** |
| % enterprises | 2021 | 2021 | 2023 | 2023 | |
| **AI or cloud or data analytics ([3])** | **NA** | **NA** | **29%** | **55%** | **75%** |
| % enterprises | | | 2023 | 2023 | 2030 |
| **Digitalisation of public services** | | | | | |
| **Digital public services for citizens** | **59** | **60** | **67** | **79** | **100** |
| Score (0 to 100) | 2021 | 2022 | 2023 | 2023 | 2030 |
| **Digital public services for businesses** | **76** | **81** | **92** | **85** | **100** |
| Score (0 to 100) | 2021 | 2022 | 2023 | 2023 | 2030 |
| **Access to e-health records** | **NA** | **77** | **77** | **79** | **100** |
| Score (0 to 100) | | 2022 | 2023 | 2023 | 2030 |

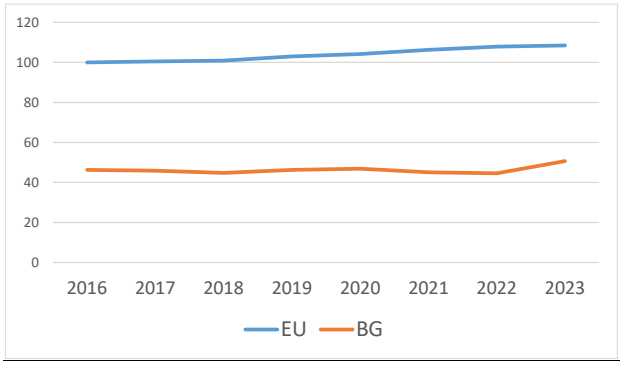
(1) The 20 million target represents about 10% of total employment.
(2) The fibre to the premises coverage indicator is included separately as its evolution will also be monitored separately and taken into consideration when interpreting VHCN coverage data in the Digital Decade.
(3) At least 75% of EU enterprises have taken up one or more of the following, in line with their business operations: (i) cloud computing services; (ii) big data; (iii) artificial intelligence.

***Source:*** Digital Economy and Society Index

**This Annex provides a general overview of the performance of Bulgaria's research and innovation system**, which is essential for delivering the twin transition and ensuring long-term competitiveness.

**Bulgaria remains an 'emerging innovator', with an innovation performance improving over time but at a pace slower than the EU's**. According to the 2023 edition of the European Innovation Scoreboard ([91]), Bulgaria's innovation performance markedly improved between 2022 and 2023. Sustaining this positive trend will be crucial for Bulgaria if the growing gap with the EU average is to be closed.

Graph A11.1: **Innovation performance 2016-2023**




***Source:*** European Innovation Scoreboard, 2023

**Public and private R&D investments remain amongst the lowest in the EU.** R&D intensity ([92]) stood at 0.77% in 2022, remaining at the same level from 2020 and still far from the European average (2.24%) ([93]). While R&D investment has been slowly increasing in recent years, in 2022 both public expenditure on R&D (0.24% of GDP) and business enterprise expenditure on R&D (0.52% of GDP) decreased, with both indicators remaining significantly below the EU averages of 0.73% and 1.48% respectively. Nevertheless, in 2022 Bulgaria had increased by almost 18% its R&D funding in terms of absolute expenditure (€647.119 million) ([94]). The national recovery and resilience plan (RRP) contains measures aimed at strengthening public and private investment in research and innovation (R&I). However, the plan's R&I component was downsized, as part of the amendment made in September 2023 to take into account the downward revision of the country's RRF allocation. In addition, the RRP will be reinforced by targeted cohesion policy investments of more than EUR 2 billion, aimed at further supporting the R&I ecosystem in Bulgaria. Going forward, sustaining budget commitments for R&D funding (to achieve the national strategic goal of 2% R&D intensity by 2025 ([95])) will be key.

**Due to the very low levels of public R&D investment, Bulgaria's scientific and technological potential continues to remain largely untapped**. Low public R&D spending is negatively impacting the quality of the public science base (as measured by the share of scientific publications among the top 10% most-cited publications worldwide), which is among the lowest in the EU. The consequences of the low levels of public R&D expenditure are further exacerbated by the fact that the limited public R&D budget is distributed over a large number of higher education institutions and research organisations, owing to the high degree of fragmentation of Bulgaria's research ecosystem.

**Fragmented governance of the Bulgarian R&I system and ineffective coordination between ministries and implementing agencies hinders effective policy development and implementation of reforms and R&I strategies.** This fragmented governance adversely affects the efficiency and performance of the national R&I ecosystem. To address this challenge, the authorities have introduced an important reform: a new law on the promotion of research and innovation, as provided for by the RRP. The law sets legislative parameters for the development and financing of R&I and regulates the role and responsibilities of each of the institutions involved in the policy cycle. The Bulgarian government plans to receive practical

([91]) 2023 European Innovation Scoreboard (EIS), country profile: Bulgaria https://ec.europa.eu/assets/rtd/eis/2023/ec_rtd_eis-country-profile-bg.pdf. The EIS provides a comparative analysis of innovation performance in EU countries, including the relative strengths and weaknesses of their national innovation systems (also compared to the EU average).

([92]) Defined as gross domestic expenditure on R&D as a percentage of GDP.

([93]) European benchmark target for R&D intensity: 3%.

([94]) https://ec.europa.eu/eurostat/databrowser/view/rd_e_gerdtot/default/table?lang=en.

([95]) https://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=1231.

Table A11.1:**Key innovation indicators**

| Bulgaria | 2010 | 2015 | 2020 | 2021 | 2022 | EU average (1) |
|---|---|---|---|---|---|---|
| **Key indicators** | | | | | | |
| R&D intensity (GERD as % of GDP) | 0.56 | 0.95 | 0.85 | 0.77 | 0.77 | 2.24 |
| Public expenditure on R&D as % of GDP | 0.28 | 0.25 | 0.27 | 0.26 | 0.24 | 0.73 |
| Business enterprise expenditure on R&D (BERD) as % of GDP | 0.28 | 0.70 | 0.57 | 0.51 | 0.52 | 1.48 |
| **Quality of the R&I system** | | | | | | |
| Scientific publications of the country within the top 10% most cited publications worldwide as % of total publications of the country | 3.2 | 2.6 | 2.34 | : | : | 9.6 |
| Patent Cooperation Treaty (PCT) patent applications per billion GDP (in PPS) | 0.4 | 0.6 | 0.49 | : | : | 3.4 |
| **Academia-business cooperation** | | | | | | |
| Public-private scientific co-publications as % of total publications | 4.7 | 6.1 | 4.5 | 5.1 | 5.4 | 7.6 |
| Public expenditure on R&D financed by business enterprise (national) as % of GDP | 0.016 | 0.017 | 0.029 | 0.026 | : | 0.054 |
| **Human capital and skills availability** | | | | | | |
| New graduates in science & engineering per thousand pop. aged 25-34 | 11.4 | 11.4 | 8.0 | 8.7 | : | 16.9 |
| **Public support for business enterprise expenditure on R&D (BERD)** | | | | | | |
| Total public sector support for BERD as % of GDP | : | 0.024 | : | 0.011 | : | 0.204 |
| R&D tax incentives: foregone revenues as % of GDP | | | | : | : | 0.104 |
| **Green innovation** | | | | | | |
| Share of environment-related patents in total patent applications filed under PCT (%) | 10.2 | 28.7 | 22.0 | : | : | 14.7 |
| **Finance for innovation and economic renewal** | | | | | | |
| Venture capital (market statistics) as % of GDP | 0.015 | 0.011 | 0.010 | 0.020 | 0.021 | 0.085 |
| Employment share of high growth enterprises measured in employment (%) | : | 18.6 | 14.16 | : | : | 12.51 |

(1) EU average for the last available year or the year with the largest number of country data
***Source:*** Eurostat, OECD, DG JRC, Science-Metrix (Scopus database and EPO's Patent Statistical Database), Invest EU

support to design, implement and evaluate reforms that address the fragmented research resources through the Horizon Policy Support Facility.

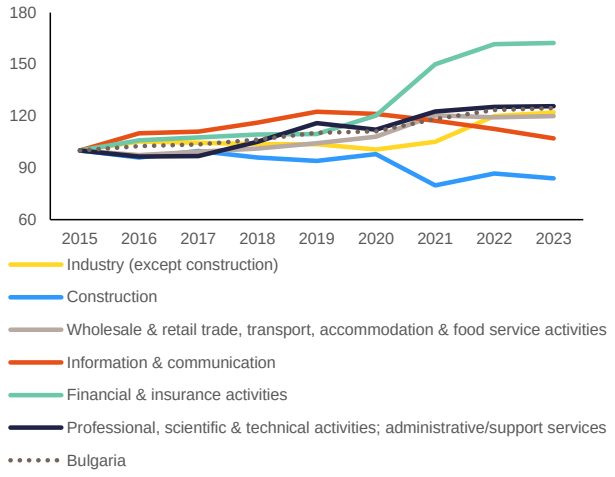
**Systemic loss of scientific capacities is hampering Bulgaria's competitiveness and transition towards a knowledge economy.** Bulgaria's pool of available human resources for R&I, as measured by the share of new graduates in science and engineering in the population, has been on a declining trend since 2010 and is well below the EU average. This is further exacerbated by one of the lowest shares of population aged 25-34 who have successfully completed tertiary education (33.8% against the EU average of 42%) (see also Annex 15) along with ageing ([96]) research workers, of whom there are too few owing to poor career prospects This is reflected in the low number of researchers (full-time equivalents) employed by the public sector per thousand of the active population, which has remained constantly among the lowest of all the EU countries (2.6 in 2021 compared to an EU average of 4.2).

**Limited academia-business links continue to be a serious obstacle to the commercialisation of research results**. Science-business cooperation, as reflected in the share of public-private scientific co-publications, remains at the low end of the scale, 5.4% compared to the EU average of 7.6%. Public expenditure on R&D financed by businesses is also well below the EU average, which suggests that Bulgarian businesses have little incentive to work with public research institutions, thus limiting technology transfer and innovation activities.

([96]) https://www.nsi.bg/bg/content.

**Bulgaria's productivity development have been favourable in recent years, although (geo)political uncertainty poses challenges to firms' productivity potential and competitiveness.** Real labour productivity has shown a stable increasing trend since 2012, which is driven mainly by the financial and insurance sector, but also the manufacturing sector (see Graph A12.1). According to Eurostat, however, nominal labour productivity per hour worked only reached 56.8% of the 2023 EU level (in purchasing power standards). Total factor productivity is accounted mainly to labour productivity growth between 2021 and 2023, while capital deepening (investment) contributed to a lesser extent. The uncertain economic environment, shortage of labour and insufficient demand (especially in manufacturing) were the most important factors hampering the economic activity of firms in 2023 ([97]). The contribution of investment to overall GDP growth remained substantially subdued in 2023, although private and public investment picked up slightly in the first half of the year. This was mainly driven by investment in machinery, equipment and weapon systems, as well as national-funded and EU co-financed investments.

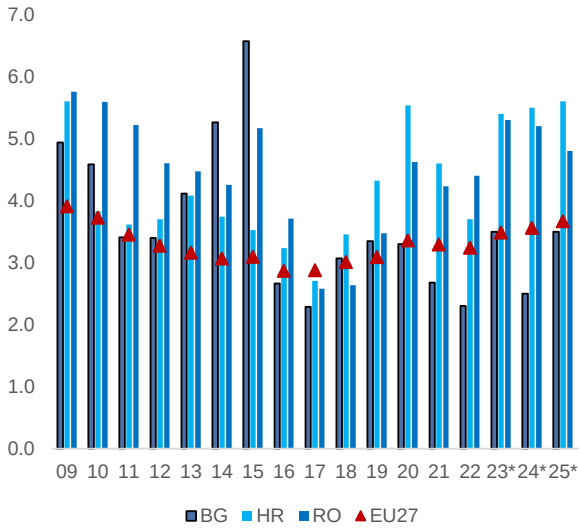
Graph A12.1: **Labour productivity (per hour worked) in different economic sectors (2015=100)**




***Source:*** European Commission.

**Public investment has slowly picked up after 2021 and remains largely driven by national and EU funding.** Public infrastructure projects (transport and digital connectivity, circular and low-carbon infrastructure) are carried out under the National Development Programme BULGARIA2030 and other national programmes. For 2024, a detailed national investment programme has been developed by central and municipal institutions. In addition, EU-funded programmes also provide sources for public investments. However, there is still a considerable gap when comparing government investment with peer countries such as Romania and Croatia (see Graph A12.2). According to the IMF Public Investment Management Assessment ([98]), there is a considerable efficiency gap, especially in project planning, procurement and follow-up audits. The OECD Public Governance Review provides recommendations on how to better implement policies, apply public funding efficiently and find alternative ways of financing (OECD 2023) ([99]).

Graph A12.2: **Government investment, % of GDP**




***Source:*** European Commission

**Deflationary developments on external markets have stabilised production costs for Bulgarian firms despite wage pressure due to labour shortages, especially in manufacturing and services.** According to Eurostat, the annual average of producer prices in industry decreased in 2023 (-9.1% vs 37.8% in

([97]) Bulgarian National Bank's seasonally adjusted short-term indicator.

([98]) Hallaert, J.J. and Primus, K. (2022), 'Strengthening Public Expenditure efficiency: Investment and Social Spending in Bulgaria', IMF WP/22/100.

([99]) OECD (2023), Public Investment in Bulgaria: Planning and Delivering Infrastructure, OECD Public Governance Reviews, OECD Publishing, Paris, https://doi.org/10.1787/b73ef3b4-en

2022), mainly driven by declining energy prices (-27% vs 81.6% in 2022) and lower prices for raw materials. Together with favourable developments in the nominal effective exchange rate of the lev, these price trends offset higher compensation of employees. Although material and labour shortages remain higher than the EU average, the divergent price developments stabilise the unit labour costs for firms on an aggregate level. On a sectoral level, unit labour costs increased strongly all main economic sectors: construction, industry and services.

**Bulgarian small and medium-sized enterprises (SMEs) are concerned about the shortage of (skilled) labour.** According to different short-term business indicators and discussions with stakeholders, the shortage of (skilled) labour and uncertain economic development were among the most cited factors hampering economic activities and are significant barriers to productivity growth. The availability of skilled staff represents a long-term barrier to investment for 88% of firms according to the EIB Investment Survey 2023 ([100]). Finding skilled staff and experienced managers as well as production/labour costs are the main problems for Bulgarian SMEs – 27% and 11% of SMEs respectively report these specific difficulties according to the Survey on access to finance of enterprises (SAFE) ([101]). Although a number of foreign investors consider their current and short-term situation to be good and are optimistic according to a survey by the German Foreign Chamber of Commerce, only 14% of responding investors are satisfied with the quality of academic education and only 15% with the quality of vocational education and training. Some firms have started developing their own solutions, such as on-the-job training, increased digitalisation, raising wages or strengthening their cooperation with educational institutions ([102]).

**On trade in goods, Bulgaria is fairly well integrated into the single market, but trade integration for services is lagging behind.** After the Bulgarian goods and services trade with EU countries reached about 61.9% of Bulgaria's overall trade in 2020, it declined to 57.9% in 2022. Germany, Italy and Romania are the main EU export partners. Bulgaria could increase its export market share in food products, base metals and stone, cement, ceramic products and glass products. Only 18% (13%) of Bulgaria's total EU exports (imports) are in services (mainly travel and transport services), and trade integration for services, with a share of 6%, is low compared to the EU average of 15%.

**Despite some improvements, Bulgaria remains one of the low performing countries when it comes to completely and correctly implementing single market legislation, as indicated by the transposition and conformity deficits.** In terms of implementing EU law, Bulgaria's transposition deficit (percentage of all directives not transposed into national law) improved to 1.8% in 2022 (2.1% in 2021). In addition, the conformity deficit (percentage of all directives transposed incorrectly) decreased slightly to 2.0% in 2022 (2.1% in 2021). However, Bulgaria still ranks 24th among EU countries for the transposition deficit and 22nd for the conformity deficit. The picture as regards handling SOLVIT cases as lead centre is on the contrary better. In 2023, Bulgaria solved all SOLVIT cases (19) it handled as lead centre, above the EU average of 88.3%.

**Administrative burden prevails in the areas of business regulation and permitting for installing renewable energy sources.** Business regulations and administrative barriers are hampering 58% of firms in long-term investment (EIB 2023), while 'regulation' (red tape) was named as one of the most pressing problems for SMEs (SAFE 2023). The confidence level declined in Bulgaria – only 42% of the investors surveyed ([103]) (in comparison to 43% in 2023)are confident that their investments are protected by law and courts in the country. More than half of the investors that are not confident give 'unpredictable, non-transparent administrative conduct, and difficulty to challenge administrative decisions in court' as reasons for their concerns. Although new laws and initiatives were adopted to increase the renewable energy source capacity as envisaged in the Bulgarian recovery and resilience

([100])EIB Investment Survey 2023: Bulgaria overview.

([101])European Commission (2023). Survey on access to finance for enterprises (SAFE), Analytical Report 2023.

([102])AHK Bulgarian, Konjunkturumfrage 2023: Die Probleme der Wirtschaft in Bulgarien: Mangel an Fachkräften und Unzufriedenheit bei der Bekämpfung von Korruption (ahk.de)

([103])2024 EU Justice Scoreboard.

plan (RRP), administrative burden could be further improved. Firms are specifically concerned about the administrative capacity of local authorities as well as the length of the permitting process.

**The Bulgarian public procurement system remains a concern, despite some progress and efforts in reforming the regulatory framework.** Competition in public procurement was further decreasing in Bulgaria in 2023, as shown by several indicators ([104]). The single bids indicator (number of procedures where a contract was awarded to the tenderer who submitted the single received offer) increased to 37%. In addition, 28% of all procedures were unsuccessful as no offer was submitted, and 20% of the contracts were awarded without competition, i.e. based on a negotiated procedure without publication. In general, Bulgarian public procurement law remains complex and relatively unstable. In the last year, Bulgaria revised its public procurement law to improve among other things the level of competition in public procurement, and specifically to reduce the number of contracts without a call for tender and single bid contracts. We should actively monitor whether the new law brings the desired effect.

**While late payments affect fewer Bulgarian SMEs than the EU average, most firms worry about the impact of the general economic trend on their own payments and those of their customers.** According to the SAFE survey, 31% of Bulgarian SMEs reported late payments as problematic, which is well below the average of 49% in the EU ([105]). Firms consider rising inflation (65%) to be the main barrier to their customers paying on time. Furthermore, late payment has a significant impact on firms in terms of generating income (33%), growth (31%) and financing costs (29%) ([106]).

**Bulgaria is in the preliminary stage of implementing the 'Once-Only' Technical System (OOTS) ([107]).** As part of the Single Digital Gateway Regulation ([108]), the system will enable the automated cross-border exchange of evidence between competent authorities, improving online access to information, administrative procedures and assistance within the EU. The onboarding of Bulgarian competent authorities is crucial for the system to function smoothly and to reduce administrative burden.

([104])The currently available data is preliminary. Due to the technical preparation of a new public procurement platform, only the regular data available in Tenders Electronic Daily (TED) has been taken into account.

([105])SAFE Survey (2023).

([106])INTRUM (2022). European Payment Report.

([107])Implementing Regulation (EU) 2022/1463.

([108])Regulation (EU) 2018/1724.

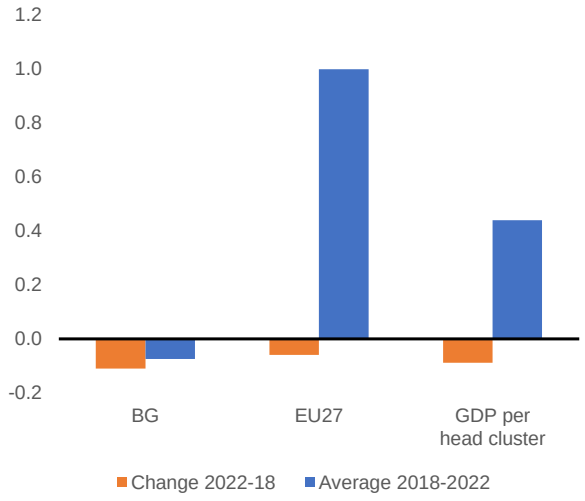
Table A12.1:**Industry and the Single Market**

| Bulgaria | | | | | | | |
|---|---|---|---|---|---|---|---|
| **POLICY AREA** | **INDICATOR NAME** | **2019** | **2020** | **2021** | **2022** | **2023** | **EU27 average*** |
| **HEADLINE INDICATORS** | | | | | | | |
| **Economic Structure** | Net Private investment, level of private capital stock, net of depreciation, % GDP[1] | 4,5 | 4,6 | 2,9 | 4,2 | 3,1 | **3,8** |
| | Net Public investment, level of public capital stock, net of depreciation, % GDP[1] | 0,7 | 0,6 | 0,1 | -0,3 | 1 | **1,2** |
| | Real labour productivity per person in industry (% yoy)[2] | 0,1 | -5,4 | 4,7 | 14,7 | 2,2 | **-1,24** |
| **Cost competitiveness** | Nominal unit labour cost in industry (% yoy)[2] | 5,9 | 13,1 | 5 | -0,7 | 20,2 | **9,83** |
| **SINGLE MARKET** | | | | | | | |
| **Single Market integration** | EU Trade integration, % (Average intra-EU imports + average intra EU exports)/GDP[2] | 37,8 | 34,2 | 37,3 | 40,7 | 35,4 | **42,9** |
| **Compliance** | Transposition deficit, % of all directives not transposed[3] | 0,6 | 1,6 | 2,2 | 1,8 | 1,7 | **0,7** |
| | Conformity deficit, % of all directives transposed incorrectly[3] | 1,6 | 1,9 | 2,1 | 2 | 1,6 | **1,1** |
| | SOLVIT, % resolution rate per country[3] | 95,2 | 100,0 | 95,0 | 100,0 | 100,0 | **88,3** |
| | Number of pending infringement proceedings[3] | 21 | 29 | 42 | 38 | 36 | **25,9** |
| **Restrictions** | EEA Services Trade Restrictiveness Index[4] | - | - | - | - | - | **0,05** |
| **Public procurement** | Single bids, % of total contractors[3] | 27 | 26 | 32 | 34 | 37 | **28,6** |
| | Direct Awards, %[3] | 29 | 29 | 25 | 23 | 20 | **8,1** |
| **ECONOMIC STRUCTURE** | | | | | | | |
| **Shortages** | Material Shortage (industry), firms facing constraints, %[5] | 3,5 | 4,4 | 7,3 | 12,3 | 11,6 | **17,2** |
| | Labour Shortage using survey data (industry), firms facing constraints, %[5] | 41,9 | 29,6 | 29,5 | 34,9 | 36,7 | **23,3** |
| | Vacancy rate, % of vacant posts to all available ones (vacant + occupied)[2] | 0,7 | 0,6 | 0,7 | 0,8 | 0,7 | **2,5** |
| **Strategic dependencies** | Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials[6] | 0,15 | 0,15 | 0,15 | 0,15 | 0,2 | **0,22** |
| | Installed renewables electricity capacity, % of total electricity produced[2] | 46,3 | 47,8 | 48,5 | 49,7 | 0,0 | **50** |
| **BUSINESS ENVIRONMENT - SMEs** | | | | | | | |
| **Investment obstacles** | Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle[7] | 28,1 | 20,6 | 24,9 | 19,0 | 21,0 | **22,2** |
| **Business demography** | Bankruptcies, Index (2015=100)[2] | 129,3 | 108,0 | 116,0 | 131,9 | 109,1 | **105,6** |
| | Business registrations, Index (2015=100)[2] | 93,7 | 70,9 | 79,8 | 80,6 | 81,6 | **120,2** |
| **Late payments** | Payment gap - corporates B2B, difference in days between offered and actual payment[8] | - | 17 | 14 | 14 | 17 | **15** |
| | Payment gap - public sector, difference in days between offered and actual payment[8] | - | 25 | 10 | 15 | 19 | **16** |
| | Share of SMEs experiencing late payments in past 6 months, %[9] | 34,5 | 30,3 | 32,4 | 25,1 | 30,7 | **48,7** |
| **Access to finance** | EIF Access to finance index - Loan, Composite: SME external financing over last 6 months, index values between 0 and 1[10] | 0,34 | 0,38 | 0,40 | 0,37 | - | **0,49** |
| | EIF Access to finance index - Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values between 0 and 1[10] | 0,05 | 0,06 | 0,05 | 0,07 | - | **0,17** |

***Source:*** (1) AMECO, (2) Eurostat, (3) Single Market Scoreboard, (4) OECD, (5) ECFIN BCS, (6) COMEXT and Commission calculations, (7) EIB Investment Survey, (8) Intrum Payment Report, (9) SAFE survey, (10) EIF SME Access to Finance Index.
* Own Commission calculations for the EU27 aver

**Bulgaria's public administration is essential for the economy's competitiveness by, in particular, shaping the conditions for the twin transitions and creating a favourable business environment.** The perception of government effectiveness is significantly below the EU average (Graph A13.1). Political instability in recent years delayed significant sectoral reforms and gave little room to address administrative underperformance. The recovery and resilience plan (RRP) focuses on priorities such as consolidating past digitalisation efforts to provide more digital services, improving public procurement, the governance of state-owned enterprises, and fighting corruption.

Graph A13.1: **Government effectiveness**




Average value over 2018-2022 and change over 2018-2022. The GDP per head bar shows the mean value of the government effectiveness indicator for the group of EU countries belonging to the same GDP per head cluster as Bulgaria (EU countries are ranked in terms of their GDP per head and grouped into three equally sized clusters).
***Source:*** Worldwide Governance Indicators

**Bulgaria has taken several steps to advance its e-government services**. In line with its RRP, in 2023 Bulgaria adopted measures to better allocate responsibilities for the country's digital transformation ([109]), stimulate the digitalisation of business processes, improve the management of registers ([110]) and use data in the public sector. However, digital skills, the share of internet users interacting with the government via websites and the overall maturity of digital public services remain below the EU average (Graph A13.2).

**Bulgaria is taking action to improve its policymaking by strengthening strategic planning** ([111]) **and *ex post* impact assessments**. Communities of practice have been created to improve coordination and planning and promote innovation. A review of the existing legal framework and methodology for strategic planning complement related reforms under the RRP. Past efforts to improve the legislative process in Parliament, however, have not been sustained ([112]).

**The attractiveness of the public administration as an employer is decreasing.** The share of civil servants under the age of 39 has been falling in the last 5 years, and close to half the vacancies in the central government have remained unfilled for more than 6 months ([113]). The participation of civil servants in adult learning is clearly lower than the EU average. This is a missed opportunity to improve skills in the context of increasing competition for talent with the private sector. There is also a clear trend of civil servants skipping obligatory induction training.

**The lack of data on the efficiency of civil and commercial cases does not allow for a proper evaluation of the overall efficiency of the judicial system**. On the length of proceedings, in 2022, administrative courts were among the most efficient in the EU (129 days at first, 57 days at second and 127 days at third instance). However, Bulgaria needs to improve the digitalisation of justice, even though court fees can be paid online in some situations and legal aid can be applied for online. The country is tackling judicial independence issues, but concerns remain ([114]).

([109]) https://www.strategy.bg/PublicConsultations/View.aspx?lang=bg-BG&Id=7881

([110]) Amendment of the E-Governance Act, https://www.parliament.bg/bg/desision/ID/164748 and Council of Ministers Decree 232, of 20 November 2023.

([111]) https://www.strategy.bg/PublicConsultations/View.aspx?lang=bg-BG&Id=8056

([112]) Study of the legislative activity of the 49th National assembly during the first two plenary sessions (*Изследване на законодателната дейност на 49-то Народно събрание през първите две парламентарни сесии*), https://www.parliament.bg/bg/ncpi.

([113]) Report on the state of the administration, https://www.strategy.bg/FileHandler.ashx?fileId=33243.

([114]) For a more detailed analysis, see the 2024 EU Justice Scoreboard and the 2024 Rule of Law Report (forthcoming).

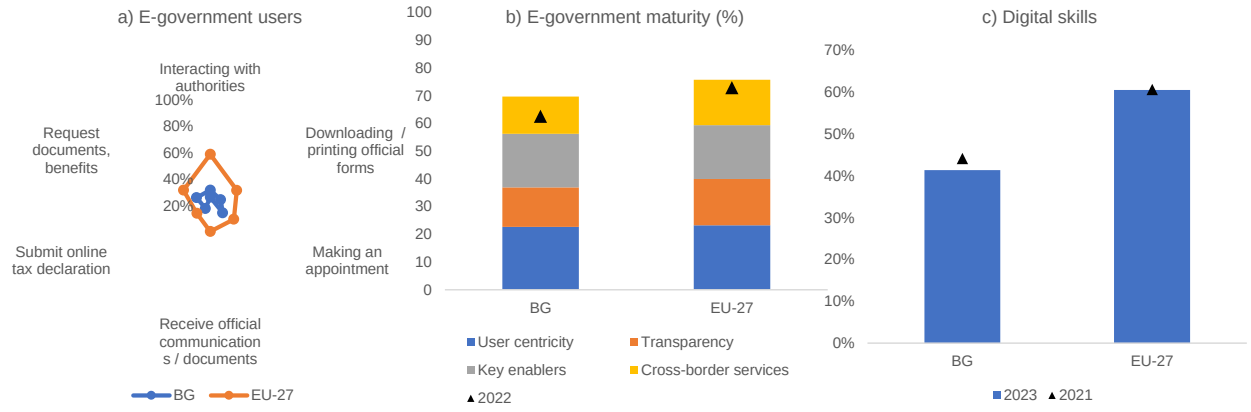
Table A13.1:**Public administration indicators**

| BG | Indicator ([1]) | 2019 | 2020 | 2021 | 2022 | 2023 | EU-27([2]) |
|---|---|---|---|---|---|---|---|
| **E-government and open government data** | | | | | | | |
| 1 | Share of internet users within the last year that used a public authority website or app | n/a | n/a | n/a | 31.7 | 35.4 | 75.0 |
| 2 | E-government benchmark overall score ([3]) | n/a | 59.8 | 61.4 | 62.6 | 69.7 | 75.8 |
| 3 | Open data and portal maturity index | 0.6 | 0.8 | 0.8 | 0.8 | 0.7 | 0.8 |
| **Educational attainment level, adult learning, gender parity and ageing** | | | | | | | |
| 4 | Share of public administration employees with higher education (levels 5-8, %) | 55.8 | 55.6 | 56.3 (b) | 57.3 (b) | 56.6 | 52.9 |
| 5 | Participation rate of public administration employees in adult learning (%) | 1.8 (u) | : (u) | 1.7 (bu) | 2.1 (bu) | 2.3 (u) | 17.9 |
| 6 | Gender parity in senior civil service positions ([4]) | 8.2 | 8.8 | 19.0 | 11.0 | 10.4 | 9.2 |
| 7 | Ratio of 25-49 to 50-64 year olds in NACE sector O | 1.9 | 2.0 | 1.9 (b) | 1.5 | 1.4 | 1.5 |
| **Public financial management** | | | | | | | |
| 8 | Medium-term budgetary framework index | 0.7 | 0.7 | 0.7 | 0.7 | n/a | 0.7 |
| 9 | Strength of fiscal rules index | 2.6 | 2.7 | 2.7 | 2.7 | n/a | 1.4 |
| **Evidence-based policy making** | | | | | | | |
| 10 | Regulatory governance | n/a | n/a | 1.83 | n/a | n/a | 1.7 |

([1]) High values denote a good performance, except for indicator # 6. ([2]) 2023 value. If unavailable, the latest value available is shown. ([3]) Measures the user centricity (including for cross-border services) and transparency of digital public services as well as the existence of key enablers for the provision of those services. ([4]) Defined as the absolute value of the difference between the percentage of men and women in senior civil service positions.
Flags: (b) break in time series; (d) definition differs; (u) low reliability.
***Source:*** E-government activities of individuals via websites, Eurostat (# 1); E-government benchmark report (# 2); Open data maturity report (# 3); Labour Force Survey, Eurostat (# 4, 5, 7); European Institute for Gender Equality (# 6); Fiscal Governance Database (# 8, 9); OECD Indicators of Regulatory Policy and Governance (# 10).

**The public investment management system has been recently reformed in Bulgaria**. The planning of public-private partnerships and transparency in project selection of investments financed from the state budget were strengthened in 2018 and 2022, respectively. However, project assessment and selection based on objective value-for-money indicators are not in place yet. Moreover, in 2023 the government set up a central unit in the Ministry of Finance specialised in evaluating public investment management and developing guidelines and training, but it still needs to become fully operational.

Graph A13.2: **a) Use of public authorities' websites or apps (left side); b) e-government maturity (centre); c) share of individuals with basic or above basic overall digital skills (right side)**




(1) 2023 data. Indicators a and c: % of individuals who used internet in the last year.
***Source:*** Eurostat and e-government benchmark report.

# ANNEX 14: EMPLOYMENT, SKILLS AND SOCIAL POLICY CHALLENGES IN LIGHT OF THE EUROPEAN PILLAR OF SOCIAL RIGHTS

**The European Pillar of Social Rights is the compass for upward convergence towards better working and living conditions in the EU.** This Annex provides an overview of Bulgaria's progress in implementing the Pillar's 20 principles and EU headline and national targets for 2030 on employment, skills and poverty reduction.

Table A14.1:**Social Scoreboard for Bulgaria**

| Policy area | Headline indicator | |
|---|---|---|
| Equal opportunities and access to the labour market | Adult participation in learning (during the last 12 months, excl. guided on the job training, % of the population aged 25-64, 2022) | 9.5 |
| | Early leavers from education and training (% of the population aged 18-24, 2023) | 9.3 |
| | Share of individuals who have basic or above basic overall digital skills (% of the population aged 16-74, 2023) | 35.5 |
| | Young people not in employment, education or training (% of the population aged 15-29, 2023) | 13.8 |
| | Gender employment gap (percentage points, population aged 20-64, 2023) | 7.3 |
| | Income quintile ratio (S80/S20, 2022) | 7.3 |
| Dynamic labour markets and fair working conditions | Employment rate (% of the population aged 20-64, 2023) | 76.2 |
| | Unemployment rate (% of the active population aged 15-74, 2023) | 4.3 |
| | Long term unemployment (% of the active population aged 15-74, 2023) | 2.3 |
| | Gross disposable household income (GDHI) per capita growth (index, 2008=100, 2022) | |
| Social protection and inclusion | At risk of poverty or social exclusion (AROPE) rate (% of the total population, 2022) | 32.2 |
| | At risk of poverty or social exclusion (AROPE) rate for children (% of the population aged 0-17, 2022) | 33.9 |
| | Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2022) | 24.42 |
| | Disability employment gap (percentage points, population aged 20-64, 2022) | 29.5 |
| | Housing cost overburden (% of the total population, 2022) | 15.1 |
| | Children aged less than 3 years in formal childcare (% of the under 3-years-old population, 2022) | 17.4 |
| | Self-reported unmet need for medical care (% of the population aged 16+, 2022) | 1 |

Critical situation | To watch | Weak but improving | Good but to monitor | On average | Better than average | Best performers

Update of 25 April 2024. Members States are categorised based on the Social Scoreboard according to a methodology agreed with the EMCO and SPC Committees. Please consult the Annex of the Joint Employment Report 2024 for details on the methodology.
***Source:*** Eurostat

**Bulgaria's labour market continued its strong performance in 2023, but challenges remain for people in vulnerable situations such as young people not in employment, education or training (NEETs), persons with disabilities, and the Roma population.** While economic growth continued to slow down in 2023, the employment rate (20-64 age group) continued to grow, reaching 76.2% in 2023, which is 0.9 percentage points (pps) above the EU average. After falling for 4 consecutive years, the disability employment gap rose to 29.5 pps in 2022 and then to 39.5 pps in 2023 and is among the widest in the EU. The employment rate of the low-skilled (ISCED 0-2), was 50.2% in 2023, below the EU average (58.3%), and was 40 pps lower than the rate for the high-skilled (ISCED 5-8). The unemployment rate remained ostensibly low at 4.3% in 2023, but with significant variation between regions, as well as urban versus rural areas. Youth unemployment (age 15-24) was 12.1% in 2023, almost three times more than the overall unemployment rate. The proportion of NEETs (age 15-29) was at 13.8% in 2023 (vs 11.2% in the EU). Only 47% of the Roma population was engaged in paid work in 2021 with an even lower rate for women (31%) ([115]).

**Labour and skills shortages remain a significant challenge and risk worsening because of the negative demographic trends.** Bulgaria lost 19.1% of its working-age population (age 15-64) between 2011 and 2021 ([116]), and the negative trend is expected to continue. This, combined with the high inactivity rates for Roma people, NEETs and persons with disabilities, poses challenges for economic growth and better social outcomes. However, integrating people who fled Russia's war of aggression against Ukraine can help overcome labour and skills shortages in Bulgaria. Employers continue to report difficulties in finding the right employees, with demand in 2024 expected to be the highest for workers with secondary and higher education. In 2023, employers indicated they would need 20.8% more workers compared to 2022 ([117]). The employment rate of those who had recently completed vocational education and training (VET) stood at 78.4% in 2023, which is below the EU average of 81%. With the support of the European Social Fund Plus (ESF+), a large-scale operation called 'I start work' provides a comprehensive package of measures to get people from vulnerable groups into work, helping to reach the national employment rate target of 79% by 2030.

**Skills are crucial to support inclusive labour market outcomes and ensure smooth green and digital transitions for all.** The low levels of adult participation in learning (9.5% in Bulgaria

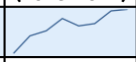
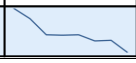
([115])European Union Agency for Fundamental Rights (2022), Roma Survey 2021.

([116])2021 Census statistics

([117])National Employment Agency, Employer Labour Needs Survey (2023)

vs 39.5% in the EU in 2022, with a decrease compared to 2016) ([118]) and the low levels of digital skills (35.5% vs 55.5% in the EU in 2023), have an impact on people's employability and productivity. In an EU-wide survey in 2023, 79% of SMEs in Bulgaria indicated that skills shortages hindered general business activities ([119]). Together with various demographic challenges, this undermines Bulgaria's potential to increase its economic competitiveness. With the support by the Recovery and Resilience Facility and the ESF+, a platform for adult learning is currently being developed and trainings in digital skills for at least 660 000 people are underway. Spending on active labour market policies (ALMPs) is among the lowest in the EU and is highly dependent on external funding and employment subsidies. Substantial training needs must be met to achieve the national target of 35.4% of adults participating in learning every year by 2030.

Table A14.2:**Situation of Bulgaria on 2030 employment, skills and poverty reduction targets**

| Indicators | Latest data | Trend (2016-2022) | 2030 target | EU target |
|---|---|---|---|---|
| Employment (%) | 76.2 (2023) |  | 79 | 78 |
| Adult learning[1] (%) | 9.5 (2022) | | 35.4 | 60 |
| Poverty reduction[2] (thousands) | -391 (2023) |  | -787 | -15,000 |

1. Adult Education Survey, special extraction: adults in learning in the past 12 months, special extraction excl. guided on-the-job training
2. Change in the number of persons at risk of poverty or social exclusion (AROPE), reference year 2019
***Source:*** Eurostat, DG EMPL

**Despite various efforts, there are important challenges to ensuring good quality and inclusive education.** The worsening rate of students underachieving in various basic skills, as measured by the PISA test, is worrying - especially for those from disadvantaged backgrounds (see Annex 15). The percentage of children under the age of 3 in formal childcare remains very low (17.4% in 2023, unchanged from 2022 when EU average was 35.7%). Early school leaving is decreasing (9.3% vs 9.5% EU in 2023) but it remains particularly high in rural areas and in the Roma population ([120]) (see also Annex 15). To tackle some of these challenges, the Bulgarian recovery and resilience plan (RRP) supports the creation of science, technology, engineering and mathematics (STEM) centres in 2 243 schools, while the training of 38 962 teachers will be covered by the ESF+.

**Bulgaria faces high levels of poverty and income inequality, especially among vulnerable groups.** In 2022, the income of the richest 20% of the population was 7.3 times higher than for the poorest 20% (vs 4.7 in the EU). In 2023 this has decreased to 6.6 times higher. The proportion of people at risk of poverty or social exclusion (AROPE) was 30% in 2023, slightly down from 32.2% in 2022, among the highest in the EU and peaking at 81% for the Roma population ([121]). Other particularly affected groups are persons with disabilities (49.9% AROPE vs 28.8% in the EU in 2022, down to 42.4% in 2023) and older people (45.5% AROPE vs 20.2% in the EU in 2022, down to 35.3% in 2023), with a persistent gap for older women (18.3 pps higher than for men in 2022). In terms of pensions, the aggregate replacement ratio is among the lowest in the EU and significantly below the EU average (36% vs 58% in 2022), but it increased to 44% in 2023. The AROPE rate for children is very high, at 33.9% in 2023, unchanged from 2022, when the EU average was 24.7%, accompanied by a high rate of severe material and social deprivation in 2022 (19.2% vs 8.4% in the EU). The risk of poverty (AROP) rate was 77% for Roma children in 2021 ([122]). In 2023, Bulgaria started implementing ESF+ funded measures as part of the Child Guarantee, to improve vulnerable children's access to social and health services. Poverty risks in Bulgaria have a strong regional dimension, with an AROPE rate in rural areas of 39.3% in 2023. At the same time, 15.1% of the population in Bulgaria was overburdened by housing costs (8.7% in the EU) in 2022. Some progress was made in 2023, as the rate decreased to 11.1% overall, and to 40% for people at risk of poverty. Also, 22.5% of the population was unable to keep their homes adequately warm (13.2 pps above the EU average - see Annex 8). A definition of energy poverty has been adopted, but the precise support measures

([118])In the last 12 months. - Adult Education Survey excluding on-the-job training.

([119])Report Flash Eurobarometer 529 European Year of Skills: Skills shortages, recruitment and retention strategies in small and medium-sized enterprises (europa.eu).

([120])European Union Agency for Fundamental Rights (2022)

([121])Bulgaria National Statistical Institute

([122])European Union Agency for Fundamental Rights (2022).

are still to be decided. Tackling these challenges will contribute to reaching the national target of 787 000 fewer people at risk of poverty or social exclusion by 2030, of which close to 197 000 children.

**Access to social services remains challenging for vulnerable groups despite measures to strengthen the social protection system.** The reform of the minimum income scheme, effective as of June 2023, is expected to strengthen social protection, linking the minimum support to 30% of the at-risk-of-poverty threshold. With the phasing-out of COVID-19 relief, Bulgaria recorded an increase in the impact of social transfers (other than pensions) on poverty reduction to 27.7% in 2023, vs 24.4% in 2022, when the gap with the EU average was 10.6 pps. The long-term care system has one of the lowest coverage rates in the EU. The available quantitative and qualitative evidence and the policy response undertaken and planned analysed in the second-stage analysis of the Social Convergence Framework of May 2024 (SWD(2024)132) point to challenges for Bulgaria that may affect social convergence in relation to social protection and inclusion, education and skills.

**This Annex outlines the main challenges of Bulgaria's education and training system** based on the 2023 Education and Training Monitor and the 2022 OECD Programme for International Student Assessment (PISA) results.

**The lack of basic skills among young people is a barrier for skills development and competitiveness.** The 2022 PISA study ([123]) showed that 53.6% of Bulgaria's 15-year-olds do not have a minimum level of proficiency in mathematics, 52.9% struggled in reading and 48% were low achievers in science. The proportions are among the highest in the EU and around double the EU averages, which have also deteriorated substantially (29.5% in mathematics, 26.2% in reading, 24.2% in science). Compared with 2012, the proportion of young Bulgarians without basic skills increased by more than the EU average, i.e. by 13.5 pps in reading (EU: 8.2 pps), by 11.1 pps in science (EU: 7.4 pps) and 9.8 pps in mathematics (EU: 7.3 pps). These results may reflect, for example, challenges linked to the teaching profession, the curricula, underfunding in education, social segregation in the Bulgarian education system, and the strong impact of socio-economic factors on performance. Results may also reflect challenges linked to school climate and discipline and the impact of school closures due to the pandemic.

**High rates of low achievement combined with few top performers in PISA reflect challenges for the quality and equity of education.** Only 3.1% of Bulgarian 15-year-olds demonstrated advanced skills in mathematics (EU: 7.9%), 2.2% in reading (EU: 6.5%) and 1.4% in science (EU: 6.9%). The low percentages of top-performing students represent an additional obstacle for increasing productivity and Bulgaria's innovation capacity going forward.

**Socio-economic background has a major impact on students' performance.** According to the PISA test**,** Bulgaria has one of the highest underachievement rates in the EU among students from disadvantaged backgrounds, with a staggering 77.2% lacking a minimum proficiency level in mathematics (EU: 48%). Nevertheless, underachievement is also high among advantaged students. The performance gap between advantaged and disadvantaged students is one of the highest in the EU (48 pps, EU: 37.2 pps). These trends are also confirmed by national standardised exams, which show large and growing inequalities of outcomes and strong social segregation in the Bulgarian education system ([124]).

**Interest in teacher education programmes is increasing but entry into the profession is low and retention difficult.** About 50% of schoolteachers are at least 50 years old (EU: 39%) and 31.3% are at least 55 (EU: 24.4%). Teacher shortages already exist, particularly in primary education and in certain subjects. Salaries were substantially raised and measures were taken to increase the attractiveness of the profession. As a result, between 2018 and 2022, the number of students in bachelor programmes in education increased by 25.2%, and by 40% at master's level. However, between 40-60% of graduates do not become teachers. Furthermore, the highest-performing graduates from upper secondary are not usually attracted to teaching ([125]). Many novice teachers leave the profession.

**Participation in early childhood education remains low**. In 2021, only 79.4% of Bulgarian children between 3 and the starting age for compulsory primary education were enrolled, significantly below the EU average of 92.5%. Nevertheless, more recent national data suggests that the figure could be understated, possibly due to emigration ([126]). The participation rate is especially low among Roma ([127]). Lack of places in Sofia and other large urban areas also affect participation.

**Early school leaving continues to decrease**. In 2023, the percentage of early leavers from education and training among 18-24-year-olds fell to 9.3%. The rate has been improving following

([123])OECD (2023), PISA 2022 Results (Volume I): The State of Learning and Equity in Education

([124])Ministry of Education and Science (2022), АНАЛИЗ НА РЕЗУЛТАТИТЕ НА НАЦИОНАЛНИТЕ ВЪНШНИ ОЦЕНЯВАНИЯ В ЧЕТВЪРТИ И СЕДМИ КЛАС ЗА 2017-2021 Г.

([125])World Bank Group, 2020, Bulgaria Teaching Workforce. Policy Note and Recommendations.

([126])Based on the revised 2021 census figures, the participation rate jumped to 88.8% in the 2022-2023 school year (National Statistical Institute).

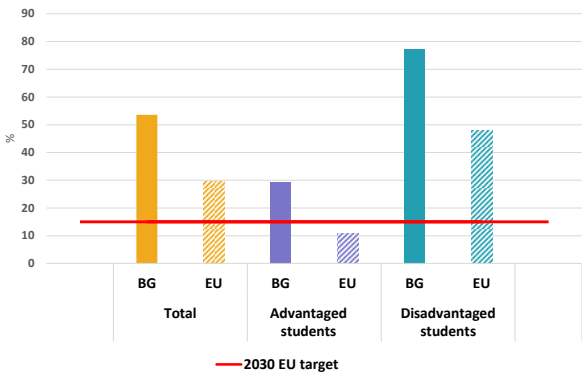
([127])Fundamental Rights Agency (FRA), 2022, Headline indicators for the EU Roma strategic framework for equality, inclusion and participation for 2020–2030.

Table A15.1:**EU-level targets and other contextual indicators under the European Education Area strategic framework**

| *Indicator* | | | Target | 2012 Bulgaria | 2012 EU-27 | 2018 Bulgaria | 2018 EU-27 | 2023 Bulgaria | 2023 EU-27 |
|---|---|---|---|---|---|---|---|---|---|
| [1]Participation in early childhood education (age 3+) | | | 96% | 83.8% 2013 | 91.8% 2013 | 79.8% | 92.2% | 79.4% 2021 | 92.5% 2021,d |
| [2]Low-achieving 15-year-olds in: | | Reading | < 15% | 39.4% | 18.0% | 47.1% | 22.5% | 52.9% 2022 | 26.2% 2022 |
| | | Mathematics | < 15% | 43.8% | 22.1% | 44.4% | 22.9% | 53.6% 2022 | 29.5% 2022 |
| | | Science | < 15% | 36.9% | 16.8% | 46.5% | 22.3% | 48.0% 2022 | 24.2% 2022 |
| Early leavers from education and training (age 18-24) | [3]Total | | < 9 % | 12.5% | 12.6% | 12.7% | 10.5% | 9.3% | 9.5% |
| | [3] By gender | Men | | 12.1% | 14.5% | 12.6% | 12.1% | 9.4% | 11.3% |
| | | Women | | 13.0% | 10.6% | 12.8% | 8.7% | 9.2% | 7.7% |
| | [4] By degree of urbanisation | Cities | | 5.3% b | 11.2% | 5.9% | 9.4% | 4.2% | 8.6% |
| | | Rural areas | | 26.8% b | 14.0% | 26.2% | 11.0% | 18.8% | 9.9% |
| | [5] By country of birth | Native | | 12.6% | 11.3% | 12.7% | 9.2% | 9.4% | 8.2% |
| | | EU-born | | : | 26.2% | : u | 22.4% | : u | 21.0% |
| | | Non EU-born | | : u | 30.1% | : u | 23.0% | : u | 21.6% |
| [6]Socio-economic gap (percentage points) | | | | 50.5 | : | 42.7 | 29.5 | 48.0 2022 | 37.2 2022 |
| [7]Exposure of VET graduates to work-based learning | | | ≥ 60% (2025) | : | : | : | : | : | 64.5% |
| Tertiary educational attainment (age 25-34) | [8]Total | | 45% | 27.2% | 34.1% | 34.0% | 38.7% | 35.8% | 43.1% |
| | [8] By gender | Men | | 20.9% | 29.1% | 27.3% | 33.3% | 28.7% | 37.6% |
| | | Women | | 34.0% | 39.2% | 41.1% | 44.2% | 43.3% | 48.8% |
| | [9] By degree of urbanisation | Cities | | 37.4% b | 43.5% | 46.2% | 49.0% | 49.1% | 53.3% |
| | | Rural areas | | 10.8% b | 24.8% | 13.7% | 27.7% | 15.1% | 31.7% |
| | [10] By country of birth | Native | | 27.2% | 35.4% | 33.9% | 39.7% | 35.8% | 44.2% |
| | | EU-born | | : | 29.3% | : u | 36.7% | : | 40.2% |
| | | Non EU-born | | : u | 24.2% | : u | 31.0% | : u | 37.1% |
| [11]Participation in adult learning (age 25-64) | | | ≥ 47% (2025) | : | : | 11.8% 2016 | 37.4% 2016 | 9.5% 2022 | 39.5% 2022 |
| [12]Share of school teachers (ISCED 1-3) who are 55 years or over | | | | 24.3% 2013 | 22.7% 2013 | 30.7% | 23.8% | 31.3% 2021 | 24.5% 2021 |

***Notes:*** b = break in time series; d = definition differs; e = estimated; p = provisional; u = low reliability; : = data not available.
***Source:*** 1,3,4,5,7,8,9,10,12=Eurostat; 11= Eurostat, Adult Education Survey; 2,6=OECD, PISA.

Graph A15.1: **Underachievement rates in mathematics by socio-economic background, PISA 2022**




***Source:*** OECD (2023).

efforts to prevent and reduce early school leaving, but is still above the EU-level target of 9% by 2030. It remains particularly high in rural areas (18.8%) and for the Roma ([128]).

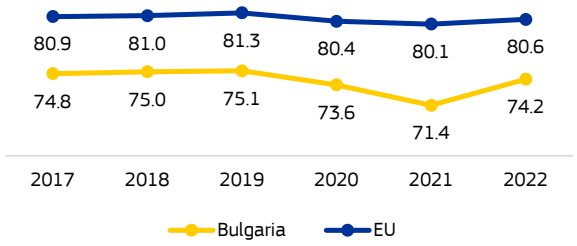
([128])ibid.

**Tertiary educational attainment is improving but remains low.** In 2023, 35.8% of Bulgarians aged 25-34 had a tertiary degree, significantly below the EU average (43.1%). The gender gap remains substantial, with 28.7% of men holding a tertiary degree compared with 43.3% of women. The percentage of graduates in science, technology, engineering and mathematics (STEM) tends to be rather low (20.3% compared with the EU average of 25.4%). In the period 2018-2022, student numbers dropped sharply in several programmes that could support Bulgaria's green transition. Student numbers have increased significantly in ICT (19.5%), education (25.2%) and health (5.9%). Nevertheless, they dropped by 28.8% in environmental programmes, 8.8% in physical, chemical and earth sciences, and 12.9% in engineering. These figures are a challenge in the context of existing skills shortages and low participation in adult learning (see Annex 14). Nevertheless, efforts to improve the quality and labour market relevance of higher education continue, including with the support of the European Social Fund Plus.

**A healthy population and an effective, accessible and resilient health system are prerequisites for a sustainable economy and society.** This Annex provides a snapshot of population health and the health system in Bulgaria.

**Life expectancy in Bulgaria recovered partly in 2022 after a sharp decline in the previous 2 years.** The decline was mostly due to the COVID-19 pandemic. As mortality from COVID-19 fell in 2022 from its 2021 level, life expectancy increased again, although not to pre-pandemic levels ([129]), and it continues to be the lowest in the EU. In 2021, the leading causes of death were diseases of the circulatory system followed by COVID-19 and cancer. The treatable mortality rate was well above the EU average in 2021. However, the cancer mortality rate was slightly below the EU average. Mortality in economically active age groups, as a proportion of total mortality and relative to the workforce size, was among the highest in the EU.

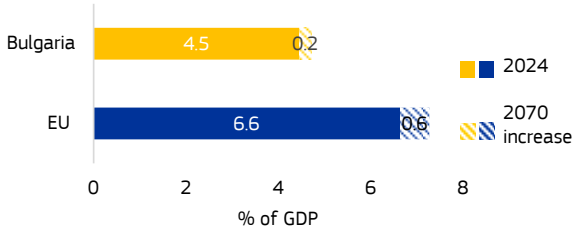
Graph A16.1: **Life expectancy at birth, years**




***Source:*** Eurostat

**Health spending relative to GDP in Bulgaria was 8.6% in 2021, well below the EU average of 10.9%.** Adjusted for purchasing power, health spending per capita in 2021 was amongst the lowest in the EU, less than half the EU average. Despite a consistent increase in recent years, public health spending as a proportion of total health expenditure was 64.7% in 2021, still well below the EU average of 81.1%. The high share of out-of-pocket payments for healthcare (34% in 2021, more than double the EU average of 14.5%) remains a major challenge. Bulgaria also ranks among the countries with the highest proportion of households experiencing catastrophic health spending. Based on the age profile of the Bulgarian population, public spending on health is projected to increase by 0.2 percentage points (pps) of GDP by 2070, compared to 0.6 pps for the EU overall (see Graph A16.2 and Annex 21).

Graph A16.2: **Projected increase in public expenditure on healthcare over 2024-2070**




Baseline scenario
***Source:*** European Commission / EPC (2024)

**Spending on inpatient care made up the largest share of health expenditure in Bulgaria.** Around 40% of health spending went to inpatient care in 2021, well above the EU average of 25%. Together with the highest number of hospital beds in the EU (792 per 100 000 population in 2021), this points towards a highly hospital-centred care model. Correspondingly, spending on outpatient care in Bulgaria, at 19% of total spending, was well below the EU average. Spending on medical goods (mainly pharmaceuticals) in outpatient settings accounts for almost a third of health expenditure, amongst the highest in the EU.

**Spending on prevention in Bulgaria amounted to 3.3% of total healthcare spending in 2021, compared to 6% for the EU overall.** Between 2019 and 2021, spending on prevention in Bulgaria increased by around 10%, much lower than the 106% increase for the EU overall. Between 2019 and 2021, Bulgaria reported a proportional increase in spending on epidemiological surveillance, risk and disease control and early disease detection programmes. Proportionally, budget shares for prevention across the EU increased most for emergency response, disease detection and immunisation programmes. In 2022, the consumption of antibacterials in Bulgaria reached 25.7 daily defined doses per 1 000 population a day – 24% higher than in 2019 and well above the EU average of 19.4 (in

([129]) Based on data provided directly by Member States to the European Centre for Disease Prevention and Control, under the European Surveillance System.

Table A16.1:**Key health indicators**

| | 2018 | 2019 | 2020 | 2021 | 2022 | EU average (latest year) |
|---|---|---|---|---|---|---|
| Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare) | 188,3 | 189,0 | 213,0 | 225,1 | NA | 93.3 (2021) |
| Cancer mortality per 100 000 population | 232,5 | 242,2 | 245,3 | 229,4 | NA | 235.4 (2021) |
| Current expenditure on health, % GDP | 7,3 | 7,1 | 8,5 | 8,6 | NA | 10.9 (2021) |
| Public share of health expenditure, % of current health expenditure | 59,1 | 60,6 | 63,1 | 64,7 | NA | 81.1 (2021) |
| Spending on prevention, % of current health expenditure | 2,8 | 3,0 | 2,8 | 3,3 | NA | 6.0 (2021) |
| Available hospital beds per 100 000 population | 757 | 774 | 782 | 792 | NA | 525 (2021) |
| Doctors per 1 000 population | 4,2 | 4,2 | 4,3 | 4,3 | NA | 4.1 (2021)* |
| Nurses per 1 000 population | 4,4 | 4,4 | 4,2 | 4,2 | NA | 7.9 (2021) |
| Total consumption of antibacterials for systemic use, daily defined dose per 1 000 inhabitants per day *** | 21,1 | 20,7 | 22,7 | 24,4 | 25,7 | 19.4 (2022) |

Note: The EU average is weighted for all indicators except for doctors and nurses per 1 000 population, for which the EU simple average is used. Doctors' density data refer to practising doctors in all countries except Greece, Portugal (licensed to practise) and Slovakia (professionally active). Nurses' density data refer to practising nurses in all countries except Ireland, France, Portugal, Slovakia (professionally active) and Greece (hospital only).

***Source:*** Eurostat Database; except: * OECD, ** Joint Questionnaire on non-monetary healthcare statistics, *** ECDC, **** Council Recommendation on stepping up EU actions to combat antimicrobial resistance in a One Health approach.

2022). This raises public health concerns about antimicrobial resistance.

**The Bulgarian health system faces shortages of nurses and general practitioners.** The number of nurses per 1 000 population was 4.2 in 2021, much lower than the EU average of 7.9. In addition, Bulgaria has a comparatively low number of nursing graduates in relation to its population, while around 40% of nursing staff are 55 years old or older. The number of doctors per 1 000 population was 4.3 (in 2021), slightly above the EU average of 4.1. However, general practitioners comprised only 13.4% of all physicians in 2021, down from 16.5% in 2011, one of the lowest levels in the EU. Over half of physicians are 55 years old or older. Furthermore, the Labour Force Survey recently showed that employment in healthcare dropped by 3% between the first quarter of 2020 and the second quarter of 2023 (while it increased in the EU on average by 9%).

**Self-reported unmet needs for medical care in Bulgaria have declined markedly.** Around 1% of the Bulgarian population reported such unmet needs in 2022, down from 15% in 2008. However, there are significant disparities in unmet needs by income group. Unmet needs reported by low-income households (3.1%) were roughly 30 times higher than those among high-income households (0.1%). Furthermore, comparatively higher unmet needs for medical care in rural areas were reported. The main factors for unmet needs include high out-of-pocket payments, insurance coverage gaps, referral quotas and uneven distribution of facilities and human resources.

**Historically, investment in healthcare in Bulgaria has lagged behind the EU average, but EU funds are providing substantial support.** Among EU countries, a comparatively low percentage of Bulgarian GDP has been invested in gross capital formation in healthcare. Through its recovery and resilience plan (RRP), Bulgaria plans to invest EUR 287 million (5% of the RRP's total value) in healthcare. The reforms contained in the RRP's health component include an update of the strategic framework for the health sector, and measures to upgrade e-health and the National Health Information System and to address health workforce challenges. Investments under the RRP include the modernisation of medical facilities providing paediatric, oncological and psychiatric care. Other measures support the construction of outpatient care units, a new national digital platform for medical diagnostics and a new air ambulance system. Furthermore, complementary investments of EUR 220 million are planned under the EU cohesion policy funds for 2021-2027, mainly in health infrastructure, health equipment, health mobile assets and digitalisation of healthcare ([130]). In general, such investments may help Bulgaria overcome its slow uptake of digital health solutions, as evidenced, for example, by the relatively low number of individuals accessing personal health records online in Bulgaria, compared with the EU average.

([130])The EU cohesion policy data reflect the status as of 13 May 2024.

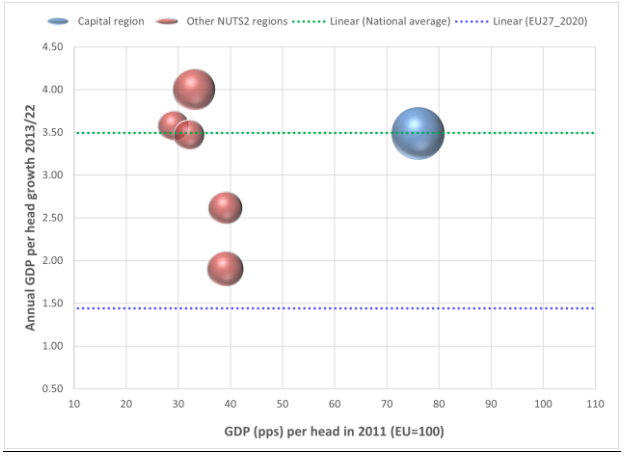
**Annex 17 showcases the economic and social regional dynamics in Bulgaria.** It provides an analysis of economic, social and territorial cohesion in the Bulgarian regions and assesses emerging investment needs and subnational reform needs to foster economic growth, social development and competitiveness in the country.

## Overview of economic and social performance at regional level

**Regional disparities in terms of GDP per capita remain very high in Bulgaria despite a perceived convergence towards the EU average** (Graph A17.1). In 2022, regional disparities remained at the same level as in the previous decade. They are characterised in terms of GDP and labour productivity, demographics, education and training employment, infrastructures, competitiveness and R&I performance. These indicators were all typically worse in the northern parts of the country (table A17.1). GDP per capita in the Yugozapaden region corresponds to 96% of the EU average, mainly due to the contribution of the country's capital, Sofia. The other regions lag far behind and score 40-56% of the EU average, although the country's average stands at 62%. The Yugozapaden region generates half of the national GDP, despite being home to just 31% of the population. While performing significantly better than the other Bulgarian regions, the Yugozapaden region is characterised by substantial intra-regional disparities and the development gap between the capital city and the rest of the region remains an issue.

**While labour productivity has steadily increased in Bulgaria, it is still lagging behind the EU and significant regional disparities persist** (Graph 17.2). Bulgaria has lowest labour productivity that equated in 2022 to around 55% of EU average. Labour productivity is the highest in the Yugozapaden region at 71%, almost twice as high as in Severen Tsentralen, the least productive region. The Severoiztochen region showed the lowest growth (1.5%).

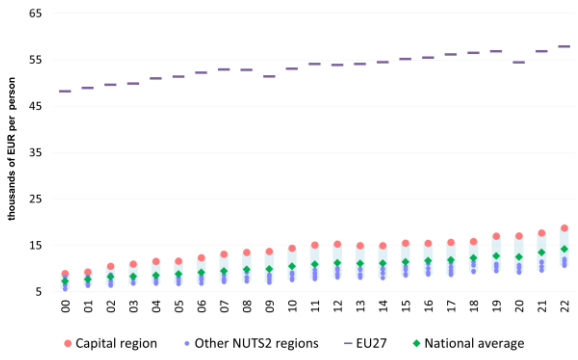
Graph A17.1: **GDP per capita (2012) and GDP growth (2013-2022), Bulgaria (NUTS-2 regions)**




***Source:*** DG REGIO calculations based on JRC (ARDECO) and Eurostat data

**Overall, the unemployment rate in Bulgaria is lower than in the EU, but there are wide regional variations.** In 2023, the unemployment rate was as low as 3.1% in Yuzhen Tsentralen and 3.5% in the capital region, and as high as 7.8% in one of the least developed regions, Severozapaden, where the employment rate was also particularly low (67.2% against the national average of 76.2%).

Graph A17.2: **Labour productivity (real GVA per worker), EU-27, Bulgaria (NUTS 2 regions), 2000-2022**




***Source:*** ARDECO, DG REGIO elaboration

**Bulgaria and some of its less developed regions rapidly lose population.** Between 2013 and 2021, Bulgaria's population declined by almost 7.0%. Population decline is extremely high in Severozapaden (population shrank by 17.6%), and in Severen Tsentralen (13.1%). In contrast, the Yugozapaden region's population declined by only 3.1%, which is again due to the contribution of the capital city, Sofia.

Table A17.1:**Selected indicators at regional level in Bulgaria**

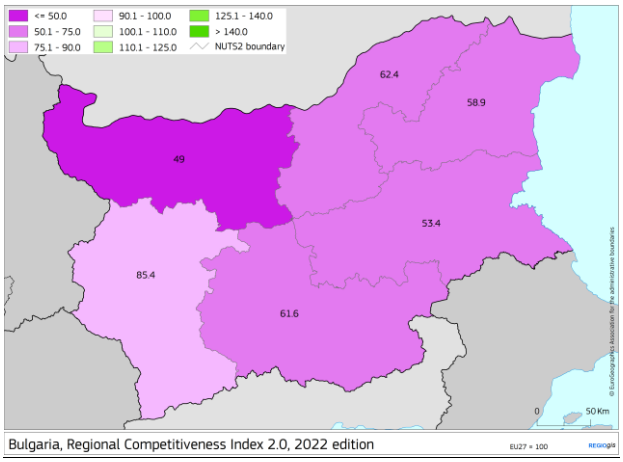
| NUTS region name | GDP per head (PPS) | Productivity (GVA (PPS) per person employed) | Population growth | Life expectancy at birth | Infant mortality | Unemployment rate | Population aged 30-34 with high educational attainment | R&D expenditure | Transport performance by car | EU Regional Competitiveness Index 2.0 - 2022 edition |
|---|---|---|---|---|---|---|---|---|---|---|
| | Index, EU27 = 100 (2022) | Index, EU27 = 100 (2022) | Average annual change per 1 000 residents (2013 - 2021) | Years (2022) | Deaths under 1 year of age per 1 000 births (2021) | % of labour force (2023) | % of population aged 30-34 (2023) | % of GDP (2021) | % of population in a 120 km radius that can be reached within 1h30 (2021) | Index, EU-27 = 100 |
| European Union (27 MS) | 100 | 100 | 1.9 | | 3.3 | 6.1 | 43.9 | 2.3 | 77.2 | 100 |
| Bulgaria | 62 | 54.9 | -7 | 74.2 | 5.6 | 4.3 | 35 | 0.8 | 55.1 | 66 |
| Severozapaden | 40 | 45.8 | -17.6 | 72.3 | 7.1 | 7.8 | 23 | 0.4 | 30.3 | 49 |
| Severen Tsentralen | 42 | 40.3 | -13.1 | 73.2 | 6.4 | 6 | 30.6 | 0.3 | 35.6 | 62.4 |
| Severoiztochen | 48 | 46.3 | -5.2 | 74.1 | 5.8 | 4.5 | 32.7 | 0.4 | 46.4 | 58.9 |
| Yugoiztochen | 56 | 54.1 | -6.2 | 73.7 | 9.6 | 4.6 | 24.3 | 0.3 | 55.2 | 53.4 |
| Yugozapaden | 97 | 70.7 | -3.1 | 75.2 | 3.1 | 3.5 | 47.1 | 1.2 | 74.4 | 85.4 |
| Yuzhen Tsentralen | 43 | 40.5 | -5.6 | 74.6 | 5.1 | 3.1 | 31.1 | 0.5 | 54.5 | 61.6 |

***Source:*** Eurostat, EDGAR database

**Except for the Bulgarian capital region, all regions are in a talent development trap.** These regions are faced with a sharp drop in the working age population and a low and stagnating share of people with a tertiary education (post-secondary education/higher education). In some Bulgarian regions, less than one in four people aged 25-64 held a tertiary degree in 2023: Severozapaden (21%), Yugoiztochen (22.9%), and Yuzhen tsentralen (24.9%).

**Endowment in key assets such as transport infrastructure and human capital is still lacking in many of the country's less developed regions.** In the capital region, 74% of the population in a 120 km radius can be reached in less than 90 minutes by car. This ratio is considerably lower in the three northern regions of Severozopaden (30%), Severen Tsentralen (36%), and Severoiztochen (46%).

Map A17.1: **Competitiveness in Bulgarian regions**




Bulgaria, Regional Competitiveness Index 2.0, 2022 edition

***Source:*** DG REGIO, JRC

**All Bulgarian regions rank below the EU average in terms of competitiveness** (Map A17.1). The Regional Competitiveness Index (RCI) value is highest in the capital region (85) and lowest in Yugoiztochen (53) and Severozopaden (49). The divide is particularly striking for the innovation sub-index, where the capital region's value reaches 75, compared to only 28 in Yugoiztochen and Severozopaden.

**There is an urgent need to promote convergence between the capital and the other regions.** Further to these inter-regional disparities, the intra-regional disparities within the Yugozapaden region also need to be addressed. Public policies and targeted investments are to aim at boosting upward convergence, enabling less developed regions to improve their performance and narrow the gap. It is crucial that regional and local policies take into account the specific territorial characteristics and demands of each region. Tailoring investments will create conditions for better absorption capacity at local level and ensure more efficient measures in addressing the regional disparities.

**It is necessary to accelerate the smart and digital transition and increase the capacity for companies to deliver in less developed regions.** Investments need to strengthen research infrastructure, stimulate innovation ecosystems, facilitate the integration of digital technologies across all sectors of the economy, business and society. It is necessary to provide support for the innovative and productive investments of small and medium sized enterprises (SMEs), and in particular for the uptake of advanced technologies tailored to the regional potential for development outlined in the innovation strategy for smart specialisation.

**Bulgarian regions need support to reach green transition objectives.** It is necessary to ensure the seamless deployment of technologies easing the transition to a circular and low-carbon economy. This requires investments in energy efficiency measures, and the promotion of a more sustainable use of resources. Further focus is needed on waste recycling targets, disaster risk management and biodiversity protection. Additionally, Bulgaria could also benefit from facilitating investments in net-zero technologies, by making use of the Strategic Technologies for Europe Platform (STEP) initiative.

**The density and quality of rail and road infrastructure in Bulgaria are below the EU average,** and the northern regions lag behind the southern ones. There is a need to boost investments in the country's railway network and sustainable urban transport. Bulgaria needs to strengthen the planning and step up the implementation of sustainable urban mobility at local level.

**Ensuring support tailored to the needs of the local and regional beneficiaries will improve their capacity and will contribute to the Bulgaria's territorial convergence.** Beneficiaries need help to develop long-term partnerships for the implementation of EU-funded projects. This will create conditions for better absorption capacity at all levels. It is necessary to support small business (micro-enterprises and SMEs). Due to their limited administrative capacity, they face challenges in applying for EU funding and successfully implementing projects.

**Addressing territorial disparities is one of the high-level objectives laid down in the 2021-2027 Partnership Agreement of Bulgaria.** The implementation of the integrated territorial approach could help advance this priority, requiring collective efforts on all governance and administrative levels.

**Urban municipalities need to strengthen their capacity for integrated planning and programming, including sustainable urban mobility planning.** The implementation of integrated territorial investments requires promoting the territorial approach at regional level. Better coordination mechanisms between the managing authorities of different EU co-funded programmes and the Regional Development Councils (RDCs) are necessary. RDCs can participate in the decision-making process and facilitate cross-jurisdiction cooperation. It is important to explore the means for empowering the RDCs and connecting them both to the local and national administrations.

**Strengthening Bulgaria's governance mechanism and speeding up the implementation of measures financed by the Just Transition Fund to facilitate the clean energy transformation and the transition to a climate-neutral economy need to be prioritised.** The Territorial Just Transition Plans in the three regions of Stara Zagora, Kyustendil and Pernik should enable Bulgaria to address the socio-economic impacts of the transition and the gradual phase-down of coal.

**Both the cohesion policy programmes and the RRP for Bulgaria invest in the water and sanitation sector, where substantial needs have been identified and despite the efforts underway some still remain to be addressed.** Agglomerations in a number of regions continue to lack adequate infrastructure for the collection, disposal and treatment of wastewaters while ageing water supply infrastructure negatively affects both the water quality and its efficacy, because of substantial water losses caused by leakages. Further action is needed to ensure that the necessary conditions are put in place on the ground to ensure that regional water operators can be established and effectively take up their functions in the remaining non-consolidated regions and to ensure quality water supply and urban waste-water treatment.

**Bulgaria must intensify efforts in establishing regional and local support networks for research, innovation, and entrepreneurship.** Regional and local-level support should aim to raise awareness, improve technical capabilities, and strengthen collaboration among local stakeholders, which is crucial for aligning funds with regional needs (see Annex 11). Leveraging regional information centres can also improve effectiveness.

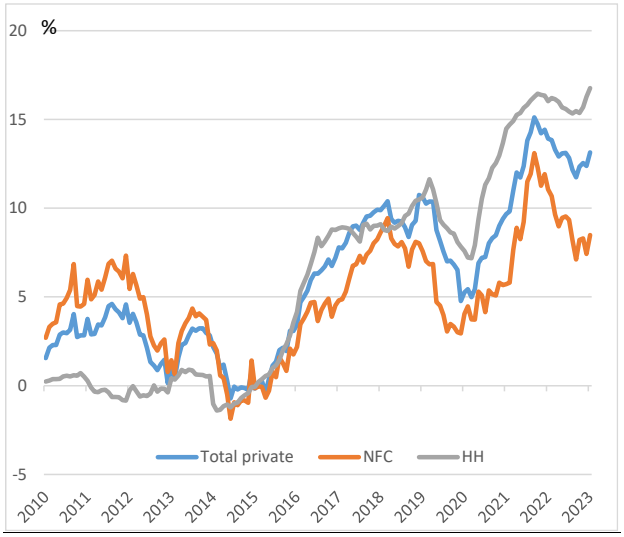
**Moreover, creating an enabling environment for technology transfer is vital to unleashing the full potential of centres of competence and excellence, positioning them as key drivers for regional development and high-**

**value job creation.** This involves encouraging collaboration among universities, research organisations, and the business sector while overcoming fragmentation in the research and innovation ecosystem.

**Bulgaria has a small financial sector dominated by banks, as well as a rapidly growing fintech industry.** The ratio of banks' total assets to GDP was close to 95% in 2023, with the top five lenders holding approximately 68% of total banking-sector assets in 2022 (Table A18.1). Bulgaria's banking sector is dominated by subsidiaries and branches of euro area banks. Domestic banks accounted for only 27% of total assets in 2023, somewhat higher than pre-pandemic levels. The number of bank branches relative to the population is more than double the EU average. At the same time, Bulgaria's fintech sector, despite still being relatively underdeveloped, has continued its strong expansion, mainly driven by growth in the digital payments sector and supported by developments in the alternative-credit, data-analytics and digital-asset-exchange segments. Bulgaria's capital markets remain comparatively small and play only a limited role in financing local firms. In particular, the market-funding ratio has been on a downward path in recent years, and stood at 11.9% in 2022, well below the EU average of 50.8%. Thus, companies' access to non-bank funding, notably the use of listed shares and debt securities, remains very limited. Sustainable finance initiatives in Bulgaria remain mainly supported by public policies and public investment funds.

**In an environment of high inflation and rising net interest income, the banking sector's profitability and solvency have remained robust.** The system-wide capital adequacy ratio was 22.5% in September 2023, above the EU average of 19.6%. After the profitability of banks in Bulgaria reached pre-pandemic levels in 2022, additional strong increases in return on equity were recorded in 2023. The cost-to-income-ratio, at 36.1% in September 2023, was well below both its levels in recent years and the EU average (52.8%). The loan-to-deposit ratio increased to 74.3% in September 2023, from 69.5% in December 2022, driven by continued growth in lending. At 3.2% in Q3-2023, non-performing loans (NPLs) remained comparatively high, and stood above the EU average of 1.8%, as the pace of NPL reduction in Bulgaria has slowed down. Since 2017, the overall NPL ratio has been on a downward trend across individual banks and lending segments, due to loan write-offs and sales. NPLs to non-financial corporations have also fallen in recent years, but still stood at 5.7% of total loans and advances in the middle of 2023 (compared with 6.8% a year earlier). In 2023, the share of 'Stage 2' (loans that have deteriorated significantly in credit quality since initial recognition under the International Financial Reporting Standard (IFRS) 9) was among the highest in the EU and indicated increased credit risk.

Graph A18.1: **Evolution of credit activity**




***Source:*** ECB

**Lending activity was very strong in 2022 and remained buoyant in 2023, especially in the household sector.** So far, increases in interest rates have mainly been observed for new NFC lending, reflecting the dynamics of benchmark indices on the euro area interbank market. In 2023, interest rates on new loans to households remained broadly unchanged year-on-year, for both consumer and mortgage loans. By the end of 2023, year-on-year growth in lending to non-financial corporations was 8.5% (Graph A18.1) while lending to households grew by 16.8%. The slowdown in corporate lending growth in the second half of 2023 was due to tightening financing conditions and moderate demand for working capital. At the same time, credit activity in the household sector was supported by the favourable credit conditions offered by banks, which resulted in additional credit demand.

Table A18.1:**Financial soundness indicators**

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | EU | Median |
|---|---|---|---|---|---|---|---|---|---|
| **Total assets of the banking sector (% of GDP)** | 101.6 | 101.7 | 100.0 | 107.8 | 101.3 | 95.6 | 94.8 | 257.0 | 184.6 |
| **Share (total assets) of the five largest banks (%)** | 56.5 | 59.7 | 62.5 | 67.1 | 67.2 | 67.6 | - | - | 69.6 |
| **Share (total assets) of domestic credit institutions (%)[1]** | 23.6 | 22.1 | 22.3 | 22.8 | 28.4 | 27.6 | 27.1 | - | 62.9 |
| **NFC credit growth (year-on-year % change)** | 4.8 | 8.6 | 7.6 | 4.0 | 5.7 | 11.1 | 8.5 | - | 2.4 |
| **HH credit growth (year-on-year % change)** | 8.9 | 9.1 | 10.6 | 7.6 | 14.5 | 16.0 | 16.8 | - | 1.4 |
| **Financial soundness indicators:[1]** | | | | | | | | | |
| **- non-performing loans (% of total loans)** | 10.2 | 7.7 | 6.5 | 5.9 | 4.8 | 3.7 | 3.2 | 1.8 | 1.8 |
| **- capital adequacy ratio (%)** | 21.8 | 20.6 | 19.5 | 23.1 | 22.9 | 21.3 | 22.5 | 19.6 | 20.1 |
| **- return on equity (%)[2]** | 10.2 | 11.8 | 11.2 | 4.9 | 8.8 | 11.2 | 17.3 | 9.9 | 13.2 |
| **Cost-to-income ratio (%)[1]** | 45.1 | 45.3 | 46.8 | 47.2 | 45.0 | 44.1 | 36.1 | 52.8 | 44.9 |
| **Loan-to-deposit ratio (%)[1]** | 72.6 | 75.5 | 78.0 | 69.7 | 68.8 | 69.5 | 74.3 | 93.3 | 80.2 |
| **Central bank liquidity as % of liabilities** | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.7 |
| **Private sector debt (% of GDP)** | 98.7 | 95.0 | 90.8 | 92.1 | 84.0 | 74.6 | - | 133.0 | 118.4 |
| **Long-term interest rate spread versus Bund (basis points)** | 128.5 | 49.6 | 68.2 | 76.5 | 56.3 | 38.9 | 131.9 | 107.7 | 104.2 |
| **Market funding ratio (%)** | 17.1 | 15.5 | 15.4 | 13.7 | 12.4 | 11.9 | - | 50.8 | 39.8 |
| **Green bonds outstanding to all bonds (%)[3]** | - | - | - | - | - | - | - | 4.0 | 2.7 |

**1-3** **4-10** **11-17** **18-24** **24-27** Colours indicate performance ranking among 27 EU Member States.

(1) Last data: Q3 2023.
(2) Data are annualised.
(3) Data available for EA countries only, EU average refers to EA area.
***Source:*** ECB, Eurostat.

**The accumulation of potential risks to the resilience of Bulgaria's banking system has triggered a policy response.** Higher energy prices and adverse economic developments in Bulgaria's main trading partners may adversely affect the real economy and the debt-servicing ability of borrowers. High liquidity and strong competition in the banking sector during 2023, resulted in a slow transmission of the tighter euro area monetary policy stance to the interest rates on deposits and loans in Bulgaria, especially in the household sector. The persistence of these trends and the associated potential risks prompted the Bulgarian National Bank (BNB) to raise the percentage of minimum required reserves (MRR) in two steps ([131]), with the aim of absorbing some of the excess liquidity in the banking system and limiting banks' resources to extend loans.

**The booming housing market and strong growth in mortgage lending continued in 2023.** Eurostat's house price index for Bulgaria has increased by around 90% since 2015, reflecting a low interest rate environment in the past decade coupled with income growth. Annual growth in mortgage lending has accelerated significantly in recent years, peaking at 18.9% year-on-year in Q3-2023. This growth, and the risks stemming from possible unfavourable developments in the economic outlook and potential increases in lending rates, prompted BNB to increase the countercyclical capital buffer (CCyB) from 1.5% to 2% from 1 October 2023.

**Bulgaria has taken steps to strengthen its anti-money laundering (AML/CFT) framework but more work remains to be done**. Bulgaria has taken action to improve the AML/CFT framework by (i) amending the Law on Measures Against Money Laundering; (ii) updating the national risk assessment of money laundering and terrorist financing; and (iii) issuing three sectoral risk assessments covering the non-profit organisations' sector, virtual assets and the investor citizenship scheme. Steps are also being taken to: (i) improve the functioning of the beneficial ownership registers in the country by improving the adequacy and accuracy of the information contained therein; (ii) strengthen the analytical capacity of the country's Financial Intelligence Unit to make better use of suspicious transaction reports; (iii) increase the use of financial intelligence; and (iv) improve cooperation with investigative and prosecutorial authorities to increase the usefulness of financial intelligence. Further efforts are needed to improve the capacity of competent authorities to effectively investigate and prosecute money laundering and related crimes. Bulgaria's AML/CFT framework was assessed against the relevant international standards in 2022 by MONEYVAL, covering the period 2014-2021, which resulted in recommended action-plan items developed by the Financial Action Task Force (FATF) in coordination with Bulgaria which have to be addressed.

([131])As of 1 June 2023, the percentage of the MRR on funds attracted by banks from non-residents was raised from 5% to 10%; and as of 1 July 2023, the MRR on funds from both residents and non-residents was raised to 12%.

**This annex provides an indicator-based overview of Bulgaria's tax system.** It includes information on the tax structure (the types of tax that Bulgaria derives most of its revenue from), the tax burden on workers, and the progressivity and redistributive effect of the tax system. It also provides information on tax collection and compliance.

**Bulgaria's tax revenue is relatively low in relation to its GDP, with the highest contribution coming from consumption taxation.** The low tax environment with respect to direct taxes benefits economic activity because it encourages investment and labour supply. Table A19.1 shows that Bulgaria's tax revenue as a percentage of GDP was considerably below the EU aggregate in 2022, with a slight increase by 0.3 pps, and almost the same as in 2020 (+0.6 pps). The share of consumption taxes as a proportion of total tax revenue was significantly above the EU aggregate (41.4% compared with 27.3%), but revenue from labour taxes was significantly below the EU aggregate, as a share of both GDP and total taxation (see Table A19.1 and Graph A19.1).

**Environmental taxes are higher than the EU average but could still be expanded.** They represented 15.3% of total taxation in 2022, which was the highest rate in the EU-27. This was mostly due to energy taxes (for more on policies related to environmental sustainability, see Annex 6). For example, the Recovery and Resilience Facility includes a measure to promote electric mobility by warranting lower registration costs for electric vehicles. Nevertheless, pollution and resources taxes only account for 0.1% of total tax revenue, indicating that there is potential to strengthen the application of the 'polluter pays' principle. Bulgaria has implemented one of the six possible types of pollution and resources taxes (i.e. taxes on NOx emissions) but not yet the other types (i.e. taxes on incineration and landfilling, waste discharge into water, fertilisers, pesticides and plastic products).

**Bulgaria is below the EU average for property and corporate taxation.** Revenue from property taxes was relatively low as a percentage of both GDP and of total tax revenue. The same holds for revenues from recurrent property taxes, which are considered a particularly growth-friendly type of taxation. There is therefore room to increase recurrent property taxes to help address potential fiscal sustainability challenges. The average forward-looking effective tax rate on corporate income was considerably below the EU average in 2022. In December 2023, Bulgaria adopted the Pillar 2 global minimum tax of 15% for large Bulgarian companies and branches of large multinationals, applicable from January

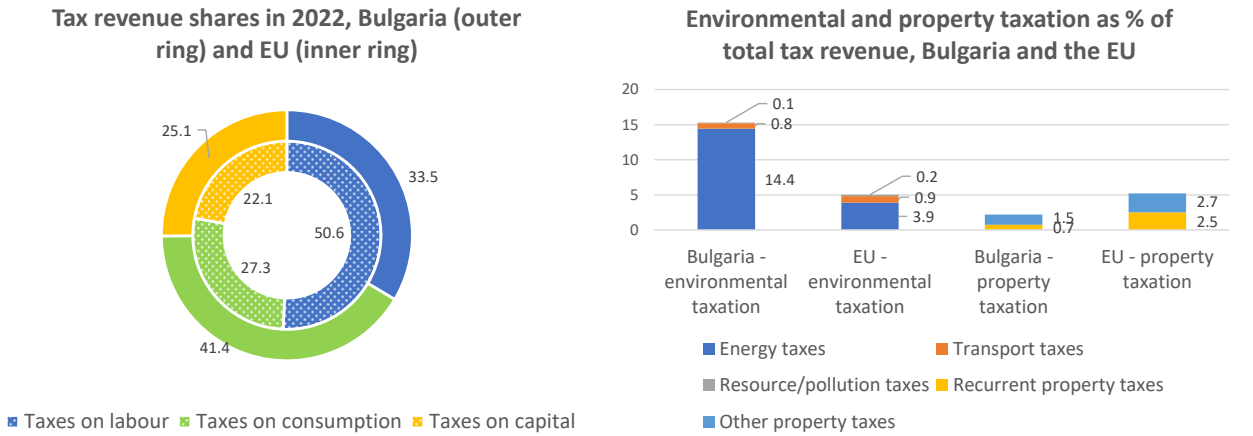
Table A19.1:**Taxation indicators**

| | | Bulgaria | | | | | EU-27 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2010 | 2020 | 2021 | 2022 | 2023 | 2010 | 2020 | 2021 | 2022 | 2023 |
| Tax structure | Total taxes (including compulsory actual social contributions) (% of GDP) | 25.4 | 30.5 | 30.8 | 31.1 | | 37.9 | 40.0 | 40.4 | 40.2 | |
| | Labour taxes (as % of GDP) | 8.4 | 11.5 | 11.1 | 10.4 | | 20.0 | 21.3 | 20.7 | 20.3 | |
| | Consumption taxes (as % of GDP) | 13.4 | 14.0 | 14.1 | 12.9 | | 10.8 | 10.7 | 11.2 | 11.0 | |
| | Capital taxes (as % of GDP) | 3.6 | 5.0 | 5.6 | 7.8 | | 7.1 | 8.0 | 8.6 | 8.9 | |
| | Of which, on income of corporations (as % of GDP) | 2.0 | 2.2 | 2.9 | 3.0 | | 2.4 | 2.5 | 3.0 | 3.4 | |
| | Total property taxes (as % of GDP) | 0.5 | 0.7 | 0.8 | 0.7 | | 1.9 | 2.3 | 2.2 | 2.1 | |
| | Recurrent taxes on immovable property (as % of GDP) | 0.3 | 0.3 | 0.3 | 0.2 | | 1.1 | 1.2 | 1.1 | 1.0 | |
| | Environmental taxes as % of GDP | 2.7 | 3.0 | 2.8 | 4.8 | | 2.4 | 2.2 | 2.3 | 2.0 | |
| Progressivity & fairness | Tax wedge at 50% of average wage (Single person) (*) | 32.5 | 34.9 | 34.9 | 34.9 | 34.9 | 33.9 | 31.7 | 32.1 | 31.8 | 31.7 |
| | Tax wedge at 100% of average wage (Single person) (*) | 32.5 | 34.9 | 34.9 | 34.9 | 34.9 | 41.0 | 40.1 | 39.9 | 40.0 | 40.2 |
| | Corporate income tax - effective average tax rates (1) (*) | | 9.2 | 9.2 | 9.2 | | | 19.5 | 19.0 | 19.0 | |
| | Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*) | 3.6 | 4.1 | 4.7 | 4.4 | | 8.6 | 8.1 | 8.2 | 7.9 | |
| Tax administration & compliance | Outstanding tax arrears: total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*) | | 100.8 | 81.0 | | | | 40.9 | 35.5 | | |
| | VAT Gap (% of VAT total tax liability, VTTL)(**) | 24.3 | 7.3 | 4.9 | 5.6 | | | 9.7 | 5.4 | | |

(1) Forward-looking effective tax rate (OECD).
(2) A higher value indicates a stronger redistributive impact of taxation.
(*) EU-27 simple average.
(**) Forecast value for 2022, if available. For more details on the VAT gap, see European Commission, Directorate-General for Taxation and Customs Union, *VAT gap in the EU*, 2023, https://data.europa.eu/doi/10.2778/911698.
For more data on tax revenues as well as the methodology applied, see the Data on Taxation webpage: https://ec.europa.eu/taxation_customs/taxation-1/economic-analysis-taxation/data-taxation_en

***Source:*** European Commission and OECD

Graph A19.1: **Tax revenues from different tax types, % of total revenue**

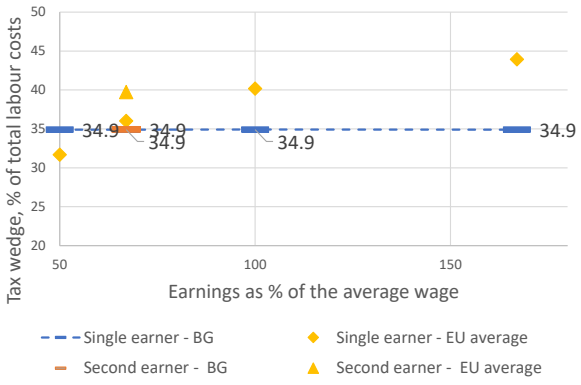



***Source:*** European Commission

2024. ([132])

**Bulgaria has a flat-rate tax system, which is not progressive (unlike the EU average).** Bulgaria has a flat-rate tax system with one of the lowest personal income tax rates in the EU (only 10%). Unlike some Member States with a flat income tax rate, there is no basic tax allowance, which further limits the progressivity of the tax system ([133]). The tax wedge is therefore relatively high for low-income earners and relatively low for high-income earners (Graph A19.2). This may reduce labour demand for low-skilled workers. The lack of progressivity in the tax system also contributes to the low ability of the tax and benefit system to redistribute income. The tax and benefit system reduced the Gini coefficient (a measure of income inequality) in 2022 by only 4.4 pps, which was well below the EU average of 7.9 pps (see Table A19.1). EUROMOD simulations based on 2017 data and policies suggest that an annual basic tax allowance of EUR 2 800 for low incomes financed by an increase in the statutory tax rate could reduce relative poverty by around 0.6 pps and inequality by 0.8 Gini points ([134]).

Graph A19.2: **Tax wedge for single and second earners as a % of total labour costs, 2023**




The second earner tax wedge assumes a first earner at 100% of the average wage and no children. For the methodology of the tax wedge for second earners, see OECD, 2016, *Taxing Wages 2014-2015*.
***Source:*** European Commission

**Some challenges regarding the efficiency of tax administration persist**. 2021 tax compliance (the gap between revenues collected and the theoretical tax liability) is below the EU-27 average, as in previous years. Overall, there is still considerable room for improvement as concerns the efficiency of the tax administration. Outstanding tax arrears decreased by 19.8 pps to 81% of total revenue collected between 2020 and 2021 but remained among the highest in the EU (the EU average is 35.5%). Bulgaria is lagging

([132])https://dv.parliament.bg/DVWeb/showMaterialDV.jsp?idMat=201970

([133])The maximum monthly social security contribution was increased from BGN 3 ,400 (EUR 1,738) to BGN 3,750 since the start of 2024, meaning that the marginal tax rate is regressive, and the tax wedge is then relatively high for low-income earners. However, the income tax base of employees can be reduced by BGN 6 ,000 (EUR 3 ,067) annually per child, up to BGN 12, 000 for two children and BGN 18 ,000 for three children or more children. The tax relief for disabled children is increased by an additional BGN 12, 000 (EUR 6,135.5). The income tax base of any person who has lost 50 per cent and more than 50 per cent of the working capacity can be reduced by BGN 7, 920 (EUR 4 ,049) annually.

([134])Barrios, S. et al., 2020, 'Progressive Tax Reforms in Flat Tax Countries', Eastern European Economics, Vol. 58/2, pp. 83-107.

behind other Member States in terms of the degree to which tax returns are pre-filled, which may be considered as an indicator of the compliance costs that taxpayers face ([135]). The electronic filing rates for personal income tax returns have improved but are still lower than in other Member States. Bulgaria's Recovery and Resilience Plan does not include tax reforms, despite 2019 and 2020 CSRs related to taxation. However, there are some measures to prevent money laundering by persons providing professional company services (including accountants and tax advisors) and others providing incentives for electric mobility.

([135])Source: TaxTech - Forum on Tax Administration (oecd.org), Table DM2.

Table A20.1:**Key economic and financial indicators**

| | 2004-07 | 2008-12 | 2013-20 | 2021 | 2022 | 2023 | forecast 2024 | forecast 2025 |
|---|---|---|---|---|---|---|---|---|
| Real GDP (y-o-y) | 6.8 | 1.4 | 1.8 | 7.7 | 3.9 | 1.8 | 1.9 | 2.9 |
| Potential growth (y-o-y) | . | 1.8 | 2.4 | 2.4 | 2.5 | 2.3 | 2.7 | 2.1 |
| Private consumption (y-o-y) | 9.2 | 1.4 | 2.6 | 8.5 | 3.8 | 5.4 | 2.7 | 2.9 |
| Public consumption (y-o-y) | 2.5 | -0.3 | 3.4 | 0.4 | 5.5 | -0.4 | 3.5 | 5.0 |
| Gross fixed capital formation (y-o-y) | 16.5 | -4.2 | 1.8 | -8.3 | 6.5 | 3.3 | 3.5 | 3.0 |
| Exports of goods and services (y-o-y) | 15.0 | 2.9 | 2.6 | 11.2 | 11.6 | -1.9 | 1.5 | 3.2 |
| Imports of goods and services (y-o-y) | 19.7 | -1.1 | 4.1 | 10.7 | 15.0 | -6.3 | 3.2 | 4.3 |
| Contribution to GDP growth: | | | | | | | | |
| Domestic demand (y-o-y) | 10.5 | -0.3 | 2.5 | 3.4 | 4.3 | 3.6 | 2.9 | 3.2 |
| Inventories (y-o-y) | 0.7 | -0.7 | 0.2 | 3.8 | 1.4 | -4.8 | 0.0 | 0.2 |
| Net exports (y-o-y) | -4.5 | 2.2 | -0.9 | 0.4 | -1.8 | 3.0 | -0.9 | -0.5 |
| Contribution to potential GDP growth: | | | | | | | | |
| Total Labour (hours) (y-o-y) | . | -1.0 | 0.1 | -0.3 | -0.3 | -0.4 | 0.1 | -0.4 |
| Capital accumulation (y-o-y) | . | 1.7 | 0.8 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 |
| Total factor productivity (y-o-y) | . | 1.1 | 1.6 | 2.2 | 2.2 | 2.0 | 1.9 | 1.8 |
| Output gap | 1.5 | 0.7 | -1.2 | 0.0 | 1.4 | 1.0 | 0.2 | 1.0 |
| Unemployment rate | 11.1 | 10.3 | 8.0 | 5.3 | 4.2 | 4.3 | 4.3 | 4.0 |
| GDP deflator (y-o-y) | 7.5 | 4.0 | 3.7 | 7.1 | 16.2 | 7.5 | 3.3 | 2.5 |
| Harmonised index of consumer prices (HICP, y-o-y) | 6.8 | 4.6 | 0.5 | 2.8 | 13.0 | 8.6 | 3.1 | 2.6 |
| HICP excluding energy and unprocessed food (y-o-y) | 6.5 | 4.4 | 0.7 | 1.9 | 10.4 | 9.8 | 3.4 | 3.0 |
| Nominal compensation per employee (y-o-y) | 8.6 | 9.8 | 7.3 | 11.3 | 14.2 | 13.3 | 10.4 | 9.4 |
| Labour productivity (real, hours worked, y-o-y) | 3.5 | 3.2 | 2.0 | 6.5 | 4.4 | 0.8 | 2.4 | 2.8 |
| Unit labour costs (ULC, whole economy, y-o-y) | 4.7 | 6.6 | 5.5 | 3.6 | 9.5 | 12.3 | 7.9 | 6.4 |
| Real unit labour costs (y-o-y) | -2.6 | 2.5 | 1.7 | -3.3 | -5.8 | 4.5 | 4.4 | 3.8 |
| Real effective exchange rate (ULC, y-o-y) | 2.8 | 4.5 | 3.8 | 3.7 | 5.4 | 4.6 | 2.9 | 3.8 |
| Real effective exchange rate (HICP, y-o-y) | 3.9 | 2.1 | 0.2 | 1.0 | 3.2 | 3.1 | . | . |
| Net savings rate of households (net saving as percentage of net disposable income) | . | -2.6 | . | . | . | . | . | . |
| Private credit flow, consolidated (% of GDP) | 28.0 | 8.4 | 2.8 | 4.9 | 5.9 | . | . | . |
| Private sector debt, consolidated (% of GDP) | 86.7 | 134.7 | 102.1 | 84.0 | 74.6 | . | . | . |
| of which household debt, consolidated (% of GDP) | 18.0 | 27.9 | 23.4 | 23.8 | 22.5 | . | . | . |
| of which non-financial corporate debt, consolidated (% of GDP) | 68.7 | 106.8 | 78.7 | 60.1 | 52.1 | . | . | . |
| Gross non-performing debt (% of total debt instruments and total loans and advances) (1) | 3.3 | 14.7 | 9.3 | 4.0 | 3.2 | . | . | . |
| Corporations, net lending (+) or net borrowing (-) (% of GDP) | . | -0.6 | . | . | . | . | . | . |
| Corporations, gross operating surplus (% of GDP) | . | 28.6 | . | . | . | . | . | . |
| Households, net lending (+) or net borrowing (-) (% of GDP) | . | -2.7 | . | . | . | . | . | . |
| Deflated house price index (y-o-y) | 24.8 | -6.5 | 3.2 | 2.5 | -2.1 | 2.7 | . | . |
| Residential investment (% of GDP) | 3.9 | 3.4 | 2.4 | 2.8 | 2.8 | 2.8 | . | . |
| Current account balance (% of GDP), balance of payments | -14.6 | -6.5 | 1.5 | -1.7 | -1.4 | -0.3 | 0.4 | -0.2 |
| Trade balance (% of GDP), balance of payments | -15.4 | -6.7 | 2.5 | 1.8 | 0.2 | 3.3 | . | . |
| Terms of trade of goods and services (y-o-y) | 2.8 | 1.2 | 2.1 | -0.9 | 0.2 | 0.5 | -0.5 | 0.3 |
| Capital account balance (% of GDP) | 0.2 | 1.1 | 1.8 | 0.7 | 0.9 | 1.6 | . | . |
| Net international investment position (% of GDP) | -51.2 | -88.5 | -45.3 | -18.6 | -12.9 | -7.6 | . | . |
| NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2) | . | . | 31.4 | 47.4 | 44.4 | 46.4 | . | . |
| IIP liabilities excluding non-defaultable instruments (% of GDP) (2) | . | . | 49.0 | 39.3 | 35.6 | 34.0 | . | . |
| Export performance vs. advanced countries (% change over 5 years) | . | . | 13.0 | 15.9 | 19.4 | 16.7 | . | . |
| Export market share, goods and services (y-o-y) | 6.3 | -0.2 | 2.0 | 4.4 | 8.5 | -2.9 | -2.0 | -0.4 |
| Net FDI flows (% of GDP) | -18.5 | -6.1 | -2.3 | -1.8 | -2.4 | -3.3 | . | . |
| General government balance (% of GDP) | 1.5 | -1.8 | -0.7 | -3.9 | -2.9 | -1.9 | -2.8 | -2.9 |
| Structural budget balance (% of GDP) | . | . | 0.1 | -3.9 | -3.3 | -2.2 | -2.8 | -3.2 |
| General government gross debt (% of GDP) | 24.9 | 14.7 | 24.8 | 23.9 | 22.6 | 23.1 | 24.8 | 24.6 |

(1) domestic banking groups and stand-alone banks, EU and non-EU foreign-controlled subsidiaries and EU and non-EU foreign-controlled branches.
(2) NIIP excluding direct investment and portfolio equity shares.
***Source:*** Eurostat and ECB as of 2024-5-17, where available; European Commission for forecast figures (Spring forecast 2024).

**This annex assesses fiscal sustainability risks for Bulgaria over the short, medium and long term.** It follows the multi-dimensional approach of the European Commission's 2023 Debt Sustainability Monitor, updated based on the Commission 2024 spring forecast.

**1 – Short-term risks to fiscal sustainability are low.** The Commission's early-detection indicator (S0) does not point to any major short-term fiscal risks (Table A21.2) ([136]). Government gross financing needs are expected to decrease to around 4% of GDP on average over 2024-2025 (Table A21.1, Table 1). The sovereign credit rating has been steadily improving and has returned to investment grade at three of the four major rating agencies by the cut-off date of this report.

**2 – Medium-term fiscal sustainability risks appear medium.** The DSA baseline shows that the government debt ratio is expected to increase, but remain at a low level over the medium term (around 41% of GDP in 2034) (Graph 1, Table 1) ([137]). The debt reduction is supported by the assumed structural primary deficit (excluding changes in cost of ageing) of 2.3% of GDP as of 2024. Compared to historical data, this appears plausible as all the past fiscal positions were more stringent than the one assumed in the baseline (Table A21.2) ([138]). The debt decline also benefits from a slightly favourable but declining snowball effect of around -0.3 pp. of GDP annually on average over 2025-2034, which is supported by the impact of Next Generation EU.

**The baseline projections are stress-tested against four alternative deterministic scenarios to assess the impact of changes in key assumptions relative to the baseline** (Graph 1). Under the *historical structural primary balance (SPB) scenario* (i.e. the SPB returns to its historical 15-year averageof -0.5% of GDP) the debt ratio would be lower than under the baseline by about 16 pps. in 2034. However, under the *adverse interest-growth rate differential scenario* (i.e. the interest-growth rate differential deteriorates by 1 pp. compared with the baseline), the debt ratio would be higher than under the baseline by around 3 pps. in 2034. Under the *financial stress scenario* (i.e. interest rates temporarily increase by 1 pp. compared with the baseline) the government debt ratio would be broadly unchanged compared with the baseline in 2034. Finally, under the *lower structural primary balance scenario* (i.e. the projected cumulative improvement in the SPB over 2023-2024 is halved) the debt ratio would be higher than under the baseline by 3 pps. in 2034.

**The stochastic projections indicate medium risk, pointing to the moderate sensitivity of these projections to plausible unforeseen events ([139]).** These stochastic simulations indicate a 65% probability that the debt ratio will be higher in 2028 than in 2023, implying low risks given the low debt level. However, the uncertainty surrounding the baseline debt projections (as measured by the difference between the 10th and 90th debt distribution percentiles), is high, reaching around 50 pps. of GDP in five years' time (Graph 2).

**3 – Long-term fiscal sustainability risks appear overall medium.** This assessment is based on the combination of two fiscal gap indicators, capturing the required fiscal effort to

([136]) The S0 is a composite indicator of short-term risk of fiscal stress. It is based on a wide range of fiscal and financial-competitiveness indicators that have proven to be a good predictor of emerging fiscal stress in the past.

([137]) The assumptions underlying the Commission's 'no-fiscal policy change' baseline include in particular: (i) a structural primary surplus, before changes in ageing costs, of 2.3% of GDP from 2024 onwards; (ii) inflation converging linearly towards the 10-year forward inflation-linked swap rate 10 years ahead (which refers to the 10-year inflation expectations 10 years ahead); (iii) the nominal short- and long-term interest rates on new and rolled over debt converging linearly from current values to market-based forward nominal rates by T+10; (iv) real GDP growth rates from the Commission 2024 spring forecast, followed by the EPC/OGWG 'T+10 methodology projections between T+3 and T+10 (average of 1.8%); (v) ageing costs in line with the 2024 Ageing Report (European Commission, Institutional Paper 279, April 2024). For information on the methodology, see the 2023 Debt Sustainability Monitor (European Commission, Institutional Paper 271, March 2024).

([138]) This assessment is based on the fiscal consolidation space indicator, which measures the frequency with which a tighter fiscal position than assumed in a given scenario has been observed in the past. Technically, this consists in looking at the percentile rank of the projected SPB within the distribution of SPBs observed in the past in the country, taking into account all available data from 1980 to 2023.

([139]) The stochastic projections show the joint impact on debt of 10,000 different shocks affecting the government's budgetary position, economic growth, interest rates and exchange rates. This covers 80% of all the simulated debt paths and therefore excludes tail events.

stabilise debt (S2 indicator) and bring to 60% of GDP (S1 indicator) over the long term ([140]). This assessment is driven by the unfavourable initial budgetary position, partly offset by a projected decline in ageing costs.

**The S2 indicator points to medium fiscal sustainability risks.** The indicator shows that, relative to the baseline, the SPB would need to improve by 2 pps. of GDP in 2025 to ensure debt stabilisation over the long term. This result is underpinned by an unfavourable initial budgetary position (+2.5 pps.), slightly offset by the projected decline in ageing-related costs (contribution of --0.5 pps.). Ageing costs' developments are primarily driven by a projected decrease in public pension expenditure (--1 pp), only partly offset by a projected increase in health-care (+0.3 pp.) and long-term care spending (+0.2 pp.) (Table A21.1, Table 2).

**The S1 indicator points to low fiscal sustainability risks.** The indicator shows that the country would need to further improve its fiscal position by 1.3 pps. of GDP to reduce its debt to 60% of GDP by 2070. This result is mainly driven by the current unfavourable initial budgetary position (contribution of +2.4 pps.), partly offset by the projected decline in age-related public spending (--0.4 pp.). The current distance of the Bulgarian government debt ratio from the 60% reference value increases the fiscal room for manoeuvre (contribution of -0.7 pp.) (Table A21.1, Table 2).

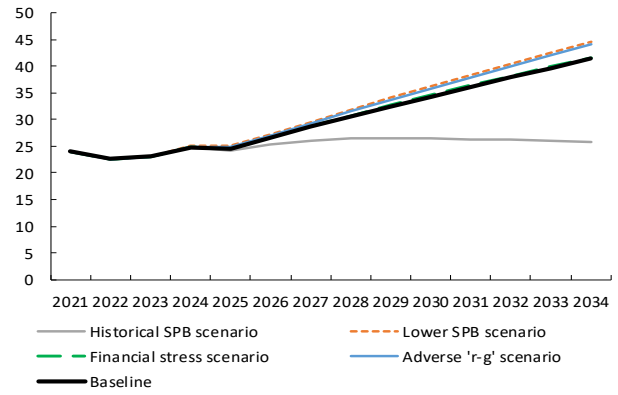
**4 – Finally, several additional risk factors need to be considered in the assessment.** On the one hand, risk-increasing factors are related to the structure of the government debt, particularly the high share of debt denominated in foreign currency and the moderate share held by non-residents. Contingent liability risks stemming from the banking sector pose additional fiscal risks. On the other hand, risk-mitigating factors are related to the low share of short-term government debt and the favourable net international investment position.

([140])The S2 fiscal sustainability indicator measures the permanent SPB adjustment in 2025 that would be required to stabilise public debt in the long term. It is complemented by the S1 indicator, which measures the permanent SPB adjustment in 2025 to bring the debt ratio to 60% by 2070. For both the S1 and S2 indicators, the risk assessment depends on the amount of fiscal consolidation needed: 'high risk' if the required effort exceeds 6 % of GDP, 'medium risk' if it is between 2% and 6% of GDP, and 'low risk' if the effort is negative or below 2% of GDP. The overall long-term risk classification combines the risk categories derived from S1 and S2. S1 may notch up the risk category derived from S2 if it signals a higher risk than S2. See the 2023 Debt Sustainability Monitor for further details.

## Table A21.1:**Debt sustainability analysis – Bulgaria**

| **Table 1. Baseline debt projections** | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gross debt ratio** (% of GDP) | **23.9** | **22.6** | **23.1** | **24.8** | **24.6** | **26.6** | **28.6** | **30.6** | **32.5** | **34.3** | **36.2** | **37.9** | **39.7** | **41.4** |
| Changes in the ratio | -0.6 | -1.4 | 0.5 | 1.8 | -0.2 | 1.9 | 2.1 | 2.0 | 1.9 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 |
| *of which* | | | | | | | | | | | | | | |
| *Primary deficit* | 3.5 | 2.5 | 1.4 | 2.3 | 2.4 | 2.4 | 2.5 | 2.4 | 2.2 | 2.1 | 2.1 | 2.0 | 1.9 | 1.8 |
| *Snowball effect* | -2.8 | -3.7 | -1.5 | -0.7 | -0.7 | -0.5 | -0.4 | -0.4 | -0.4 | -0.3 | -0.2 | -0.2 | -0.1 | -0.1 |
| *Stock-flow adjustments* | -1.3 | -0.2 | 0.6 | 0.2 | -1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Gross financing needs (% of GDP) | 3.2 | 4.4 | 4.0 | 4.7 | 2.9 | 4.8 | 5.0 | 5.1 | 5.2 | 5.2 | 5.3 | 5.4 | 5.4 | 5.5 |

**Graph 1. Deterministic debt projections**




**Graph 2. Stochastic debt projections 2024-2028**

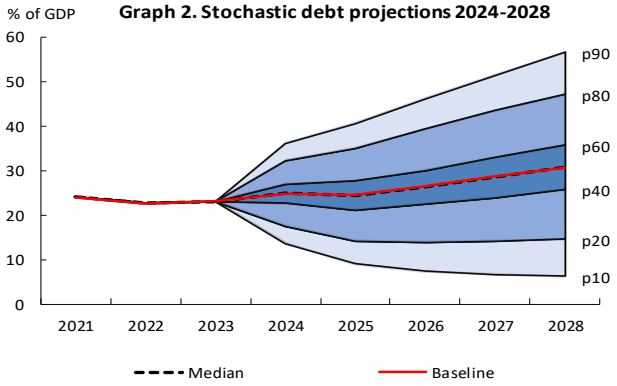



**Table 2. Breakdown of the S1 and S2 sustainability gap indicators**

| | | **S1** | **S2** |
|---|---|---|---|
| **Overall index** (pps. of GDP) | | **1.3** | **2.0** |
| *of which* | | | |
| Initial budgetary position | | 2.4 | 2.5 |
| Debt requirement | | -0.7 | |
| Ageing costs | | -0.4 | -0.5 |
| *of which* | *Pensions* | -0.9 | -1.0 |
| | *Health care* | 0.3 | 0.3 |
| | *Long-term care* | 0.1 | 0.2 |
| | *Education* | 0.0 | 0.0 |

***Source:*** Commission services.

## Table A21.2:**Heat map of fiscal sustainability risks – Bulgaria**

| **Short term** | **Medium term - Debt sustainability analysis (DSA)** | | | | | | | | **Long term** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Deterministic scenarios** | | | | | | | | |
| **Overall (S0)** | **Overall** | | Baseline | Historical SPB | Lower SPB | Adverse 'r-g' | Financial stress | **Stochastic projections** | **S2** | **S1** | **Overall (S1 + S2)** |
| **LOW** | **MEDIUM** | Overall | **LOW** | **LOW** | **LOW** | **LOW** | **LOW** | **MEDIUM** | **MEDIUM** | **LOW** | **MEDIUM** |
| | | Debt level (2034), % GDP | 41.4 | 25.8 | 44.5 | 44.1 | 41.6 | | | | |
| | | Debt peak year | 2034 | 2029 | 2034 | 2034 | 2034 | | | | |
| | | Fiscal consolidation space | 100% | 81% | 100% | 100% | 100% | | | | |
| | | Probability of debt ratio exceeding in 2028 its 2023 level | | | | | | 65% | | | |
| | | Difference between 90th and 10th percentiles (pps. GDP) | | | | | | 50.4 | | | |

(1) Debt level in 2034. Green: below 60% of GDP. Yellow: between 60% and 90%. Red: above 90%. (2) The debt peak year indicates whether debt is projected to increase overall over the next decade. Green: debt peaks early. Yellow: peak towards the middle of the projection period. Red: late peak. (3) Fiscal consolidation space measures the share of past fiscal positions in the country that were more stringent than the one assumed in the baseline. Green: high value, i.e. the assumed fiscal position is plausible by historical standards and leaves room for corrective measures if needed. Yellow: intermediate. Red: low. (4) Probability of debt ratio exceeding in 2028 its 2023 level. Green: low probability. Yellow: intermediate. Red: high (also reflecting the initial debt level). (5) the difference between the 90th and 10th percentiles measures uncertainty, based on the debt distribution under 10000 different shocks. Green, yellow and red cells indicate increasing uncertainty. (For further details on the Commission's multidimensional approach, see the 2023 Debt Sustainability Monitor)

***Source:*** Commission services.