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2023 Country Report - Romania

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Recommendation for a COUNCIL RECOMMENDATION

on the 2023 National Reform Programme of Romania and delivering a Council opinion on the 2023 Convergence Programme of Romania

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European
Commission

Romania

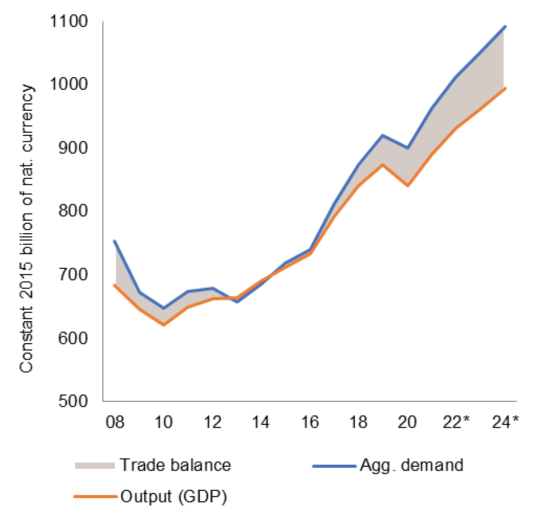
2023 Country Report

ECONOMIC AND EMPLOYMENT SNAPSHOT

Romania is growing fast, but economic vulnerabilities are building-up

Romania's economy weathered the fallout from Russia's invasion of Ukraine well. In 2022, real GDP increased by 4.7%. Despite high inflation and continuous monetary tightening, private consumption and investment grew, on the back of unleashed pent-up demand and government support. This more than compensated for the contraction in some energy-intensive sectors like chemicals, mining, and metallurgy (see Annex 12). Imports grew more than exports (see Graph 1.1) and the current account deficit widened to 9.3% of GDP.

Graph 1.1: **Demand, output and trade Balance**



Source: European Commission

Growth is expected to be resilient, but slower. Due to the deceleration in the euro area, ongoing high inflation and tight financing conditions, real GDP is projected to grow around 3-3.5% in 2023 and 2024. Activity is expected to be supported by investment financed by EU funds, including the Recovery and Resilience Facility (RRF). Exports are set to grow at a slower pace due to subdued activity by Romania's main trading partners, thus maintaining the gap with respect to imports and fuelling trade and current account deficits.

Inflation has peaked but remains high. The annual inflation rate averaged 12% in 2022. Energy and food prices contributed most, due to their high shares in the consumer goods basket. In 2023, price levels are expected to increase at a slower rate of 9.7%, as energy prices have fallen and are capped until 2025. Nevertheless, inflationary pressures have broadened, affecting wages and core HICP components such as services and non-energy industrial goods, hence a reversal of the inflationary trend, back closer to the Romanian central bank target levels (2.5%±1 pp.). is going to take longer.

The fiscal deficit declined to 6.2% of GDP in 2022. The reduction in the deficit in the past two years reflected very fast growth in government revenues, boosted by strong activity and high inflation. Fiscal support packages helped shield the economy against the consequences of the pandemic and the energy shock (Box 1.1). Overall, these measures were necessary, but could have been better targeted. The deficit is projected to decline further in 2023-24. However, going below 3% of GDP by 2024, in line with the ongoing excessive deficit procedure, will be challenging without further corrective measures. Romania currently has the second highest bond yield spread in the EU and its debt is just at investment-grade level.

Box 1.1: **Energy policy response**

Romania adopted various support measures to cushion the impact of energy price inflation on households and businesses. For 2023, their net budget costs are projected in the Commission 2023 spring forecast to amount to 0.3 % of GDP. Many measures have the effect of removing the price signal as an incentive for consumers to use less energy and are rather untargeted. About half of the measures adopted represent interventions in the wholesale and the retail market, and most are short-term measures.

Measures aiming to support vulnerable households include subsidies for electricity and gas bills, covering around 6 million families (approximately 85% of the Romanian population). Several measures aimed at preventing excessive increases in energy prices were introduced in the form of ceilings on household and industrial electricity prices, as well as a ceiling on natural gas price for households and industrial customers, both initially introduced for one year starting in April 2022, but later extended to31 March 2025.

The interventions in the market caused serious concerns among energy companies: in September 2022 a 98% tax was introduced, which applied retroactively to wholesale electricity and gas market participants, and a 100% windfall tax on electricity, applied on the difference between the reference price set at Lei 450.00/MWh (€93.00/MWh) and the actual price.

Romania applies the EU solidarity contribution in application of Council Regulation (EU) 2022/1854. Due to its own domestic production of natural gas, and a reasonably balanced energy mix, Romania's dependence on Russian natural gas is rather low. The measures taken to reduce gas consumption (such as temporarily restarting stopped coal-fired power plants, and a solidarity tax of 60% imposed on the additional revenues made by energy producers and other participants in the value chain such as traders and suppliers, with the contributions going directly to the energy transition fund), helped to further reduce this dependency.

Regional disparities remain high, driven mainly by labour productivity gaps between regions. In 2021, productivity was below the EU average (at 86%) and varied extensively between regions, from 162% of the EU average in the Bucharest-Ilfov capital region to 51% in Nord-Est (see Annex 17). The less developed regions lack key assets such as transport infrastructure or skilled workers and have been more strongly affected by depopulation.

Labour market activity slightly improved. The employment rate increased, from 67.1% in 2021 to 68.5% in 2022, due to strong growth and the phasing out of pandemic restrictions, allowing the services sector to scale up employment. Still, the employment rate remains one of the lowest in the EU. The unemployment rate (5.6% in 2022) is below the EU average and is forecast to stay constant as growth slows.

Nominal wages increased significantly in 2022, but slightly behind inflation. Nominal wage growth was 13.4% ([1]) in 2022, but due to high inflation, real wages ([2]) fell slightly. In early 2023, the government raised the minimum gross salary to RON 3 000 (approx. EUR 610) and to RON 4 000 (approx. EUR 813) for construction workers, with both increases being above the inflation rate. However, in-work at-risk-of-poverty in 2021 was the highest in the EU, affecting 15.2% of employees, especially due to the high tax burden on low-income earners. The increase in public wages was kept well below inflation last year but should re-accelerate in 2023. Wage growth is expected to remain elevated in 2023, to compensate for the loss in purchasing power and ongoing high inflation.

([1]) National Statistical Institute.

([2]) Proxied by compensation per employee, adjusted for inflation.

Challenges persist in several areas

The energy crisis is likely to increase demand for social services and social protection. Levels of income inequality and the risk of poverty and social exclusion remain among the highest in the EU (see Annex 14). Moreover, with more than 10% of the population already unable to keep their homes warm in 2021, higher energy prices likely increased the risk of poverty. Access to social services should be made easier and the shortfall in long-term care and unmet medical needs, among the highest in the EU (see Annex 16), should be improved.

Poor quality education, and unequal access to it, persist, and vulnerable groups face labour market challenges. The education sector would benefit from improving the skills of teachers and increasing the attractiveness of the teaching profession. Only 8.4% of vocational education and training graduates were exposed to work-based learning in 2022 and the employment rate for recent graduates (57.5%) is well below the EU average and decreasing (76.7% in 2022). The skills of graduates from the VET and higher education streams are not sufficiently aligned to labour market needs, requiring changes to the curriculum [3]. The rate of young people neither in employment nor in education or training is among the highest in the EU, at 19.8% in 2022. The gender employment gap was among the highest in the EU in 2022. In 2021 only 41% of the Roma population were in paid work. Better capacity to provide effective active labour market policies is key to supporting these groups.

Several challenges continue to hamper competitiveness, as also assessed in the in-depth review for Romania. [4] While certain progress has been made, the judiciary staffing issues continue to pose a risk for the quality and efficiency of the system, which impacts the business environment. Competition in procurement could be stronger. Markets for professional services remain highly restricted, while firms' access to finance and innovation is limited and with regional asymmetries (see Annex 12). Administrative capacity, especially at local and regional level, needs to be strengthened. In addition, an incomplete land register continues to undermine the security of property rights. The shortage of skilled labour remains a key challenge in light of the twin transition. Finally, the lack of basic infrastructure in several regions reduces their attractiveness for firms and citizens.

Romania's green transition requires continued action on several aspects, including renewables, sustainable transport and air quality, and climate adaptation. Challenges remain in decarbonisation and energy efficiency. The Romanian Decarbonisation Law, investment in renewable energy production and prioritising green energy deployment are essential (see Annex 8). Lower greenhouse gas emissions in the building and transport sectors are needed to achieve national targets (see Annexes 6, 7 and 8).

Romania's circular economy transition is insufficient and needs accelerating to meet the EU's circular economy goals. Irregular and substandard landfills are still widespread and present serious risks for health and the environment. Recycling rates are stagnant and remain below EU targets. Romania risks missing the 2025 targets for re-use and recycling of municipal waste and packaging waste recycling (see Annex 9).

Digitalisation challenges, as captured by the Digital Economy and Society Index (DESI), persist. Romania has been a long-time laggard in the DESI index [5], the EU's monitoring tool for digital transformation. However, the country performs relatively well on fixed connectivity. And progress is expected

(3) Thematic Review 2023 and OECD Economic Surveys: Romania 2022

(4) European Commission (2023), In-Depth Review for Romania, Commission staff working document (COM(2023) 642 final),

(5) Digital Economy and Society Index, European Commission, 2022.

in 5G deployment, due to measures taken in 2022 including a spectrum auction. Still, digitalisation of public services (such as cloud, e-government services and telemedicine) is low, in spite of recent RRP measures implemented in 2022. Finally, small and medium-sized Romanian firms need to adopt e-commerce, e-invoicing and use of AI and other advanced digital technologies (see Annex 10).

Romania is making progress on most of the UN's Sustainable Development Goals (SDGs), but challenges remain. The country is moving away from several targets, in particular on climate action and affordable and clean energy, as well as responsible consumption and production (see Annex 1). Significant progress is also needed to catch up with the EU average on three SDGs: education, clean water and sanitation and poverty. Poor quality and low expenditure in research, development and innovation continue to affect industrial capabilities.

THE RECOVERY AND RESILIENCE PLAN IS UNDERWAY

Romania's recovery and resilience plan (RRP) aims to address the key challenges related to the green and digital transitions and economic and social resilience. It consists of 64 reforms and 107 investments that are supported by EUR 14.24 billion in grants and EUR 14.94 billion in loans, representing 12.15% of GDP (see Annex 3 for more details).

The implementation of Romania's recovery and resilience plan is underway, however with increasing risk of delays. Romania submitted two payment requests, corresponding to 72 milestones and targets in the plan and resulting in a disbursement of EUR 2.6 billion net of pre-financing for the first payment request, while the assessment of the second one is ongoing. Measures under the RRP adopted since December 2021 include several reforms in the areas of digital transition, sustainable mobility, decarbonisation, audit and control, education and health, as well as preliminary steps in tax and pension reforms. Still, there are risks of significant delays with the implementation of the plan due to the weak governance and limited capacity of the public administration. Tackling these issues, including through securing adequate human resources, is key for a better coordination of the plan and a timely implementation of investments. Moreover, the completion of important structural reforms will need continued political commitment and ownership. Given the considerable macroeconomic and fiscal relevance of the plan, a timely and full implementation of the measures would be crucial to contain external and fiscal vulnerabilities. The plan is expected to be revised in 2023, to include among others a REPowerEU chapter, while taking into account the reduced non-repayable support due to Romania's strong economic recovery. Discussions to this end are ongoing.

The following, more detailed review of measures being implemented under the RRP in no way implies formal Commission approval or rejection of any payment requests.

Green transition

There is progress in establishing the Renovation Wave funds to reduce building energy consumption. The publication of the guidelines and calls will trigger financial support to renovate a significant number of public and private buildings across the country (ranging from moderate to deep renovations), to significantly improve their energy efficiency and seismic resistance (see Annex 7).

The implementation of reforms related to sustainable transport, decarbonisation and road safety is advancing. Romania has adopted new strategies to develop railway infrastructure and road safety. Their implementation is expected to reduce road accidents and improve the efficiency and competitiveness of railways. The use of clear performance indicators and corporate governance standards in road construction companies should improve their performance and the quality of projects. The REPowerEU initiative provides a unique opportunity to scale up and support energy-related measures to further enhance Romania's decarbonisation objectives.

Romania took the first steps towards reforming the management system for protected natural areas. It set up an inter-ministerial committee to analyse the legal framework applicable to sectors with an impact on biodiversity. This committee will propose amendments to the legal framework based on up-to-date information on the distribution and conservation status of species and habitats.

Digitalisation of the public administration

Romania is progressing in key reforms to digitalise the public administration, paving the way for modern public digital services without unnecessary bureaucratic barriers. Relevant milestones include the adoption of a National Cybersecurity Strategy, a 5G network security law, an interoperability law and a unitary framework for developing a government cloud system, this being a pioneering piece of legislation in Europe.

Fiscal and pension reform

Romania has advanced in implementing investment to address key tax challenges. More than 500 000 cash registers have been connected to the National Agency for Fiscal Administration's electronic system. The full connection of cash registers will ensure that transactions performed by cash registers are tracked and stored electronically. This will help address fraud in trade and ultimately help reduce the VAT gap.

Initial steps have also been taken to implement the comprehensive pension system reform, a central element of the plan. Romania has contracted technical assistance to prepare the analysis and proposals for reforming the pension system, including both the general and special regimes, in line with the principles set out in the RRP. A monitoring committee with experts from relevant ministries and independent institutions has also been established to review policy interventions in the pension system. This comprehensive reform aims to ensure fiscal sustainability in an environment of ageing population and to correct inequities.

Education and social policies

The implementation of reforms and investment in the education and social sectors is progressing, thereby helping implement the European Pillar of Social Rights. Romania has adopted updated legislation to ensure the design, endowment, and operation of schools in the context of the transition to green buildings. Contracts were signed to construct energy-efficient crèches, to increase access and participation in early childhood education and care.

The national programme to reduce early school leaving was launched, with 1 409 projects being implemented to help pupils transition from lower to upper secondary education. A technical assistance contract was signed to analyse the governance of the pre-university education system. Romania also adopted a set of minimum standards for technical equipment for schools, to ensure the quality of online educational activities, alongside a legal framework setting out a digital skills profile for teachers. In addition, 61 universities were granted funds to finance better digital infrastructure and develop the skills of students and university staff.

The plan also tackles poverty and inequality in Romania, which is among the highest in the EU. Romania passed the methodological norms for implementing the minimum inclusion income reform. This aims to lift 1.5 million people out of severe material deprivation by promoting adequate income support for vulnerable families, coupled with measures to promote labour market integration for those who can work. It also took the first steps to create a new legal framework to prevent the separation of children from their families, including by launching a call for 150-day service centres. Furthermore, Romania approved a law establishing a labour voucher system to boost formal employment for domestic workers who are currently recorded as unemployed or inactive. Additionally, the adopted social dialogue law has the potential to enhance the role of social partners' in improving labour market outcomes.

Health resilience

A first set of reforms have been adopted, which aim to improve the healthcare system. An Agency for the Development of Health Infrastructure has been set up to manage priority public health infrastructure investment projects. New legislative frameworks have entered into force to increase the skills of employees in healthcare services management, promote the overall development of human resources and increase the capacities and cost effectiveness of the health sector. Moreover, a methodology was adopted prioritising investment in integrated community centres in marginalised communities, aiming to increase access to primary and community healthcare services.

Public administration

Romania has continued to maintain a positive track record in combating corruption, to increase the independence, quality and efficiency of the justice system and to support better law-making. Measures to provide effective protection to whistleblowers have entered into force. Further reforms include streamlined public procurement rules, a strengthened role for the National Agency for the Management of Seized Assets and a new inter-ministerial climate committee to coordinate climate action. To improve the quality of policy-making, Romania introduced new requirements for government strategies, procedures for budget programming and an effective regulatory control mechanism.

Business support, research, development and innovation (R&D&I)

The first steps were taken to promote private investment to improve the research, development and innovation system. A number of financial instruments were launched, including portfolio guarantees to small and medium firms, equity support for start-ups, loans for large companies for climate and digital objectives and guarantees to promote energy efficiency in the residential buildings sector. A call for support for Important Projects of Common European Interest in semiconductors was also launched.

Box 2.1: Key deliverables under the recovery and resilience plan 2023-24

- Signature of contracts for modernising and renewing railway infrastructure and making road infrastructure sustainable in the TEN-T network.
- Entry into force of the legislative acts amending and supplementing the existing legislation on forests.
- Entry into force of the legislative package implementing the 'Educated Romania' project.
- Entry into force of the law setting out the National Digital Skills Reference Framework for pre-university education.
- Publication and implementation of a Governance Reform Action Plan, including a training and coaching programme for managers and inspectors.
- Complementary services set up, equipped and operational, to provide educational support to disadvantaged groups.
- Entry into force of updated legislation for state-owned companies.
- Amendment of the Criminal Code and Criminal Procedure Code.
- Amendment of the "Justice laws" (laws on the status of magistrates, judicial organisation, Superior Council of Magistracy).
- Entry into force of legislative amendments creating a favourable environment for public and private investment in research, development and innovation.
- Entry into force of a new mechanism to objectively set the minimum wage level in a systematic manner, in consultation with social partners.
- Entry into force of the new law on the pension system.
- Entry into force of amendments to the Fiscal Code, to reduce and/or eliminate tax incentives and legislation to expand green taxation.
- Entry into force of a new Energy Law to implement the contracts for difference, establish renewable power purchasing agreements and simplify licensing and permitting procedures for renewables investment.
- Entry into force of the amendments to the regulatory framework based on the National Hydrogen Strategy and the related action plan.
- Signature of contracts for the energy-efficiency and integrated renovation of public buildings

FURTHER PRIORITIES AHEAD

Beyond the major challenges tackled in the RRP, Romania faces additional issues. Highly restricted markets for professional services, an incomplete land register, the lack of skills for the twin transition and ineffective public procurement may hamper private sector competitiveness, innovation and the efficient deployment of EU funds. In addition, access to quality education for disadvantaged groups, especially in rural areas and for the Roma, remains a challenge and spending on active labour market policies is low. Finally, infrastructure development will also be crucial, to boost renewable energy development and energy efficiency. Addressing these challenges will also help to make further progress in achieving the SDGs related to quality education (SDG 4), climate action (SDG 13), affordable and clean energy (SDG 7), responsible consumption and production (SDG 12), and sustainable development (SDG 9) (see Annex 1). EU funds can contribute significantly to addressing these challenges, but improved governance and strong administrative capacity will be needed to ensure they are used effectively.

External sustainability risks increased

Strong domestic demand pushed by fiscal expansion is fuelling external vulnerabilities. The current account deficit widened to 9.3% of GDP in 2022, second highest in the EU, due to fast-growing domestic absorption and high fiscal spending, as trade in goods and primary income balances deteriorated further. Transitory factors such as the energy price shock also played a role, although Romania is less dependent on energy imports than other EU Member States. The financing of the current account deficit seems safe for now, but protracted high external deficits, especially during volatile and uncertain periods, create risks. Due to its high fiscal deficit, Romania is under an excessive deficit procedure (EDP), while macroeconomic vulnerabilities linked to the high and persistent external deficit have been identified by the Commission through the Macroeconomic Imbalance Procedure [6] (see Annex 22).

Fiscal adjustment combined with structural reforms and investment should be the preferred way to address the macroeconomic vulnerabilities. Going forward, reducing the fiscal deficit would bring demand more into line with supply and contain domestic and external deficits. This would also avoid unnecessarily burdening other macro policy instruments and would reduce the medium-term cost of adjustment. Full implementation of many relevant reforms (such as tax and pension) and investment contained in the RRP, and adherence to fiscal targets under the EDP, would go a long way to reducing current trends.

Romania continues to face competitiveness challenges

Facilitating firms' access to finance and innovation could spur competitiveness and support the digital transformation. Access to finance remains an issue for companies, especially smaller ones, that are scaling up. Science-industry partnerships are uncommon. However, measures already included in the RRP will help facilitate access

[6] European Commission (2023), In-Depth Review for Romania, Commission staff working document (COM(2023) 642 final).

to finance, scale-ups and business-researcher partnerships.

Administrative capacity, especially at local level, remains a challenge. Coordination across institutions and collaboration across levels of government need to be strengthened. The capacity of the public administration in Romania to provide services and carry out reforms is limited, and government effectiveness is significantly below the EU average (see Annex 13).

An incomplete cadastre continues to affect the security of property rights in Romania. Only around 42% of properties are registered in the integrated IT system for the cadastre and land book. Filling in the gaps in the cadastre could help attract investment. It would also broaden the tax base and local authorities' revenues from taxes on buildings and land. These taxes are the main source of own resources for local authorities, which enjoy some discretion in setting rates, within an allowable range set out in the tax code. Revenues from property tax remain small (see Annex 18). The reform of the tax framework included in the RRP aims to identify distortions and areas where relevant legislation should be adjusted in the area of property taxes, among other things.

Regulatory restrictions in professions, such as lawyers and civil engineers, are stricter in Romania than the EU average. Lawyers are subject to legal form, incompatibility rules and multidisciplinary restrictions, all of which could affect the potential of this sector for innovation. The fragmented system regulating civil engineers and their activities seems to be a barrier to their free movement and hampers the efficiency of service provision.

Public procurement could be strengthened. The high levels of single bids (42% of contracts in 2022), direct awards (23%), unsuccessful bids (40%, highest in the EU) and price-only award criteria (86%) signal a lack of competition resulting potentially in low value for money in public procurement in Romania. The staffing and administrative capacity of public procurement authorities, including the National Agency for Public Procurement, should be strengthened.

Skills shortages remain sizeable, especially in view of the green and digital transitions. Despite recent efforts, such as the introduction of the post of 'sustainable-development expert' within the public administration, specific skills are missing across all professions, in particular in those related to the digital and green transitions. Less than a third of the adult population has basic or above basic digital skills, compared to 54% in the EU. According to the European Skills Index Romania is among the worst performers, especially in skills development and activation ([7]). Only 24.7% of people aged 25-34 had a tertiary-education degree in 2022 and less than a third of the population aged 16-74 demonstrate basic or above-basic digital skills. While Romania has a higher proportion of ICT graduates than the EU average (6.7% of all graduates, vs EU 3.9%), the proportion of ICT specialists as part of the active workforce is significantly below the EU average (2.6% versus 4.5%).

Labour shortages in most key sectors have increased, as people with relevant skills are missing, creating bottlenecks in the transition to a net-zero economy. In 2022, labour shortages were reported in Romania for 27 occupations that required specific skills or knowledge for the green transition, including insulation workers, civil engineers and construction managers. ([8]) Business reported these shortages as a factor constraining production in industry (for 11.6% of firms) and construction (for 17.4% of firms). ([9]) Upskilling and reskilling for the green transition, and promoting inclusive labour markets, are essential policy levers for

([7]) European skills index | CEDEFOP (europa.eu).

([8]) European Labour Authority (2023), *EURES Report on labour shortages and surpluses 2022*. Skills and knowledge requirements are based on the ESCO (European Skills Competences and Occupations) taxonomy of skills for the green transition (for occupations at ISCO 4-digit level of which there are 436 in total). Examples are identified based on their ESCO 'greenness' score and relevant sectors.

([9]) European Business and Consumer Survey accelerating the transition to net-zero and ensuring it is fair (see Annex 8).

Active labour market, education and social policies still do not fully address disparities

Labour and skills shortages and mismatches remain a pressing challenge for employability. Around 18% of employers in the construction sector reported labour shortages in 2022, while health and public administration are the sectors with the most difficulties in filling positions. According to latest available data [10], 36.6% of people aged 15-34 with at least upper secondary education worked outside their field of study and 16.6% of workers with higher education qualifications were employed in occupations that did not require that level of qualification. The share of adults participating in learning activities stood at just 5.4% in 2022. This indicates the need to improve quality, better align education and training with labour demand and boost efforts to upskill and re-skill workers – for example through vocational education and training (VET) and second-chance education programmes. Such measures would help achieve the 2030 national target for the participation of adults in learning.

Focusing on effective active labour market policies remains a key priority. Spending on active labour market policies, including reskilling and upskilling, is very low, preventing higher labour market participation. This is further aggravated by the low effectiveness of the public employment services. Access to active labour market policies is even lower in rural areas and among disadvantaged groups. Public employment services could deliver effective active labour market policies (and thereby help implement the European Pillar of Social Rights) by using digital tools for services and internal processes and implementing skills forecasting models, complemented with intensive individual support and assistance to those furthest from the labour market. Better engagement of the social partners can also improve labour market conditions, enabling stronger and more inclusive growth. Addressing these challenges would help Romania reach its national employment rate target by 2030 (see Annex 14).

The teaching profession faces significant challenges. Initial teacher education offers very little preparation in the core domains of pedagogics. Among a number of factors, low entry requirements for teacher education programmes and traditionally low salaries have reduced the attractiveness of the profession [11]. Incentives to attract highly qualified teachers to disadvantaged schools are limited, particularly in rural areas, where working conditions are more challenging. To complete their teaching norm, teachers in rural areas often cover subjects for which they are not qualified, which affects the quality of education there.

Raising the quality of education depends on improving the policies related to the teaching profession. 30% of Romania's school teachers are older than 50, and the overall number of teachers is expected to decline in line with the student population. Therefore, any reform of recruitment or initial teacher education will affect only a minority of the profession in the coming decades [12]. So raising teaching quality involves working primarily with existing teachers. A high percentage of teachers take part in professional development, but the content and delivery of courses is not perceived as sufficiently adapted to their needs [13]. In the

(10) Skills - Experimental statistics - Eurostat (europa.eu);

(11) OECD (2017), Reviews of Evaluation and Assessment in Education, Kitchen, H., et al., Romania 2017. http://dx.doi.org/10.1787/9789264274051-en

(12) OECD (2019), Policy brief: Improving the teaching profession in Romania https://doi.org/10.1787/5cc2d673-en

(13) IȘE (2018), Institutul pentru Științe ale Educației, Analiza de nevoi a cadrelor didactice din învățământul primar și gimnazial. Raport al investigației realizate în cadrul proiectului CRED http://www.ise.ro/wp-content/uploads/2018/06/Raport-final-analiza-nevoi.pdf

last few years, specially during the pandemic, Romanian teachers have reported a high need for the development of ICT skills, for teaching students with special educational needs and cross-curricular skills [14]. Some steps were taken to address these needs, including through the CRED project and RRP measures expected to meet training needs, including digital skills. Some of the challenges for the teaching profession might be addressed by the ongoing revision of the education act.

Addressing widespread poverty and the need for access to social and essential services remains a key challenge. Romania has one of the highest rates of both adults and children at risk of poverty and social exclusion within the EU. The situation is expected to worsen due to the current high inflation environment, which is putting further pressure on low-income households. Ensuring adequate measures targeted at mitigating the effects of increased prices on those at risk of poverty will therefore remain a key challenge.

The coverage of social services remains low, with significant gaps between rural and urban areas (and between different regions). The insufficient provision of non-residential community-based care services is also delaying the deinstitutionalisation of people with disabilities. EU-funded programmes for 2021-27 contain significant investment in this area, with almost EUR 680 million allocated to the delivery of integrated services for 2 000 disadvantaged rural communities. Other investments target improved access to health and employment services, with a focus on vulnerable groups, including people with disabilities and those from remote areas or marginalised communities.

Energy-related challenges linked to decarbonisation remain

Romania faces decarbonisation-related challenges, as the country still relies significantly on fossil fuels. The share of fossil fuels (coal, oil and gas) slightly increased in 2021 compared to 2020 and stood at a significant share of 72% in 2021, while the share of renewable sources represents only about 20% (see Annex 6). Romania is the second largest gas producer in the EU, serving mostly the domestic market (see Annexes 7 and 12). A focus on an effective rollout of renewables and a significantly more energy-efficient residential sector (given the updated and increased targets in the building sector as part of effort sharing national targets) would significantly help the country meet increasingly ambitious EU/national energy and climate targets for 2030, as set out in the fit-for-55 package.

In the building sector, poor access to finance and information on energy renovations and renewable energy installations seriously hamper further improvements. The Romanian RRP envisages the renovation of 2.4 million m^2 of public buildings and 4.4 million m^2 of residential ones, while cohesion policy has earmarked funding for 1.6 million m^2 of renovation in both sectors. Higher national targets for 2030 require additional financing for the country's building stock. Notably, better access to finance by private households and smaller firms, to increase energy efficiency, would significantly help reduce the country's dependency on fossil fuels (see Annex 6). Additionally, this endeavour would benefit from better information dissemination by regional and local authorities on how to access energy renovation funds and what type of small renewable energy installations could be deployed in buildings and private households.

Increasing grid capacity is essential for a speedy deployment of new renewables capacity. Decommissioned coal and lignite-power capacity, planned to be completed by 2032, as committed in the RRP, should be

([14]) IŞE (2018), OECD (2019a), OECD (2019), Results (Volume I): Teachers and School Leaders as Lifelong Learners, TALIS replaced by renewable energy sources. However, the transmission infrastructure limits the absorption of new renewables capacity. There are currently bottlenecks in the grid that hinder the deployment of renewable energy. Sufficient and advanced integrated system planning for grid upgrades and expansion (both at transmission and distribution level) is needed to respond to demand and flexibility needs in time for the capacity being on the ground. Additionally, permitting rules could be significantly simplified by the designation of go-to-areas and further streamlining of related procedures. This would improve the current situation, where obtaining permits for installing renewable power plants is relatively easy, but obtaining the necessary permits to connect them to the grid is more challenging.

Between 1980 and 2020, only around 1% of disaster losses were insured in Romania, which appears to be particularly vulnerable to floods. The current protection gap for floods in Romania suggests that the insurance coverage remains low compared to projected risk, and this could result in losses to be covered by the public sector, thereby potentially posing a risk to public finances.

KEY FINDINGS

Romania's recovery and resilience plan includes measures to address a series of structural challenges through:

- Reforms aimed at boosting tax collection, improving public expenditure management and increasing the fiscal sustainability of the public pension system, while increasing its fairness. More than 500 000 cash registers have been connected to the National Agency for Fiscal Administration's electronic system, to reduce fraud and increase tax collection.

- A commitment to phase out coal and lignite-fired power production by 2032 and concrete targets for increased renewable energy production. 1 695 MW of coal-fired installed electricity production capacity have been decommissioned so far.

- Financing of the "Renovation Wave" to reduce Romania's building energy consumption and related reforms, for which Romania published guidelines and calls for proposals.

- Digitalisation of public administration and public services, including the creation of a government cloud. Romania adopted a National Cybersecurity Strategy, a 5G network security law and an interoperability law, among other reforms.

- Reform of the pension system and the minimum wage. Romania has implemented a first set of measures on pension reform.

- Romania should ensure an effective governance structure and strengthen the administrative capacity to allow for a continued swift and steady implementation of the recovery and resilience plan and swiftly finalise the REPowerEU chapter with a view to rapidly starting its implementation.

Beyond the reforms and investment in the RRP, Romania would benefit from:

- Taking the necessary fiscal measures to put an end to the excessive deficit situation by 2024 at the latest, while enhancing the quality of public finances and reinforcing the growth potential of the economy.

- Removing unnecessary regulatory restrictions in certain professions, including lawyers, civil engineers, architects, accountants and notaries. Completing the cadastre. Improving skills development for the digital and green transitions.

- Improving the staffing and administrative capacity of public procurement authorities, to increase competition.

- Addressing skills shortages and mismatches by aligning education and training with the needs of the labour market, including through improved teacher policies, and by increasing the attractiveness of adult learning.

- Strengthening the capacity of the public employment services to provide targeted and integrated support, in particular for vulnerable groups such as Roma, and increasing the effectiveness of active labour market policies.

- Improving the situation of vulnerable groups such as Roma by addressing high levels of poverty, inequality, and material deprivation, including by improving access to social, educational, health and employment services.

- Reducing overall reliance on fossil fuels, accelerating the rollout of renewable energy, upgrading high- and medium-voltage transmission infrastructure and streamlining permitting, to connect green capacities to the grid.

- Improving access to finance and information for energy renovation and renewable energy installations.

ANNEXES

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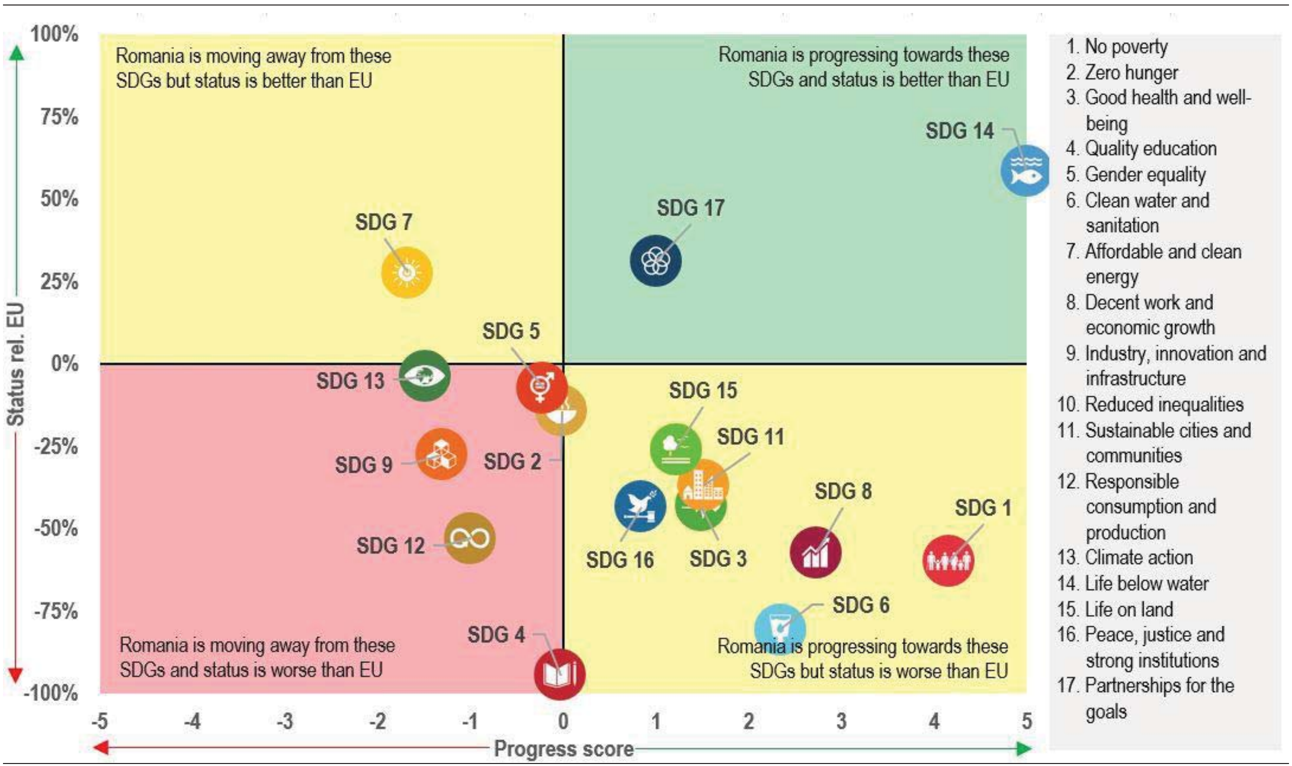
This Annex assesses Romania's progress on the Sustainable Development Goals (SDGs) along the four dimensions of competitive sustainability. The 17 SDGs and their related indicators provide a policy framework under the UN's 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty, 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.

Romania is moving away from the targets on SDG 13 (Climate action), SDG 7 (Affordable and clean energy) and SDG 12 (Responsible consumption and production). While Romania is improving on several SDG indicators related to *environmental sustainability* (SDGs 11, 14, 15) and clean water and sanitation (SDG 6), it needs to catch up with the EU average in most of these (SDGs 6, 11 and 14). Romania has been moving away from SDG 13 on climate action including the share of renewable energy in gross final energy consumption (from 25% in 2016 to 23.6% in 2021) and net greenhouse gas emissions (from 4 tonnes per capita in 2016 to 4.3 tonnes per capita in 2021). As for affordable energy (SDG 7), Romania has been moving away from the goal, and the percentage of the Romanian population unable to keep their homes adequately warm is higher than the EU average (10.1% against the EU average of 6.9% in 2021). Romania's recovery and resilience plan (RRP) includes measures to address some of the energy-related challenges, namely decarbonisation of energy production, energy renovation of buildings, and creating a circular economy.

While Romania has made significant progress

Graph A1.1: **Progress towards the SDGs in Romania in the last 5 years**



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). The status of each SDG in a country is the aggregation of all the indicators for the specific goal compared to the EU average. 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 early April 2023, except for the EU Labour Force Survey (LFS) indicators released on 27 April 2023. Data mainly refer to 2016-2021 or 2017-2022.

on some SDG indicators related to *fairness* (SDGs 1, 3, 8), it is moving away from SDG 5 (Gender equality) and is moving away from and still needs to catch up on SDG 4 (Quality education). In general, poverty and deprivation decreased and basic health outcomes improved between 2016 and 2021. However, Romania's track record on gender equality is concerning as women's participation in the labour market remains low: between 2016 and 2021, the gender employment gap widened from 17.7 percentage points (pps) to 17.3 pps while it remained stable at around 11 pps in the EU. Romania also needs to catch up on SDG 4 (Quality education) as participation in early childhood education decreased by 6.4 pps between 2015 and 2020 (against no change for the EU). Measures in the RRP to digitalise education and a system of grants to reduce the drop-out rate intend to address these challenges.

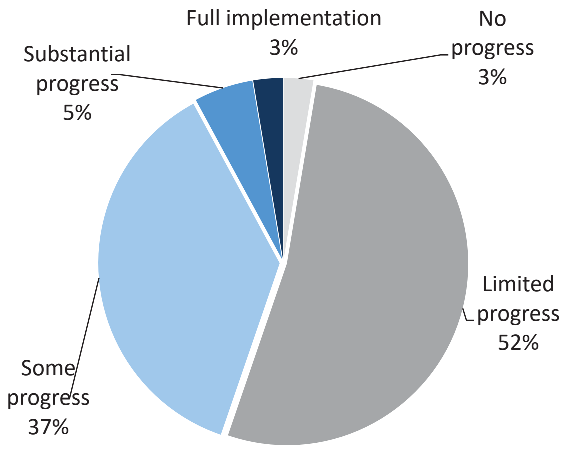
While Romania is improving on SDG 8 (Decent work and economic growth), it still needs to improve on some SDGs on *productivity* (SDGs 4 and 9). In 2022, Romania's long-term unemployment rate remained below the EU average (2.2% vs 2.4%). However, public expenditure on R&D was low and static (0.47% in 2021 vs an EU average of 2.3%) which affects industrial capabilities and its and its ability to develop products to be patented Tertiary educational achievement (at 24.7% in 2022) has slightly declined compared to the general growth in the EU over the past 5 years. To address challenges linked to productivity, the RRP plans to upgrade and digitalise university infrastructure, by means of giving grants for IT laboratories and technological hubs, developing open educational resources, and supporting research, development and innovation.

Weaknesses on access to justice and trust in institutions persist (SDG 16), while Romania is improving on SDG indicators related to *macroeconomic stability* (SDGs 8, 16, 17). Romania's real GDP per capita (SDG 8) increased from EUR 8 360 in 2017 to EUR 10 110 in 2022 (EU average: EUR 28 820). However, the country faces challenges in relation to the sustainability of public finances. The Romanian RRP includes several measures related to taxation and the effectiveness of public spending, which are expected to improve the sustainability of public finances. The situation is mixed regarding institutions and the respect for the rule of law. The RRP is expected to further improve the quality of legislation, increase the effectiveness of the judicial system and the fight against corruption and help increase trust in public administration.

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 2019-2022 country-specific recommendations (CSRs) ([30]) addressed to Romania 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 Romania to date ([31]) and the commitments in its recovery and resilience plan (RRP) ([32]). At this stage of RRP implementation, 45% of the CSRs focusing on structural issues from 2019-2022 have recorded at least 'some progress', while 52% 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: **Romania's progress on the 2019-2022 CSRs (2023 European Semester)**



Source: European Commission.

([30]) 2022 CSRs: [EUR-Lex - 32022H0901(23) - EN - EUR-Lex (europa.eu)]
2021 CSRs: [EUR-Lex - 32021H0729(23) - EN - EUR-Lex (europa.eu)]
2020 CSRs: [EUR-Lex - 32020H0826(23) - EN - EUR-Lex (europa.eu)]
2019 CSRs: [EUR-Lex - 32019H0905(23) - EN - EUR-Lex (europa.eu)]

([31]) 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).

([32]) Member States were asked to effectively address all or a significant subset of the relevant country-specific recommendations issued by the Council in 2019 and 2020 in their RRPs. 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 2019-2022 CSRs**

Romania	Assessment in May 2023*	RRP coverage of CSRs until 2026**	Relevant SDGs
2019 CSR 1	**Limited progress**		
Ensure compliance with the Council recommendation of 14 June 2019 with a view to correcting the significant deviation from the adjustment path toward the medium-term budgetary objective.	Not relevant anymore	Not applicable	SDG 8, 16
Ensure the full application of the fiscal framework.	No progress		SDG 8, 16
Strengthen tax compliance and collection.	Limited progress	Relevant RRP measures planned as of 2022	SDG 8, 16
2019 CSR 2	**Some progress**		
Safeguard financial stability and the robustness of the banking sector.	Substantial progress		SDG 8
Ensure the sustainability of the public pension system and	Limited progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023	SDG 8
the long-term viability of the second pillar pension funds.	Some progress		SDG 8
2019 CSR 3	**Limited progress**		
Improve the quality and inclusiveness of education, in particular for Roma and other disadvantaged groups.	Limited progress	Relevant RRP measures being implemented as of 2021 and 2022	SDG 4, 8, 10
Improve skills, including digital, notably by increasing the labour market relevance of vocational education and training and higher education.	Limited progress	Relevant RRP measures being implemented as of 2022	SDG 4
Increase the coverage and quality of social services and	Limited progress	Relevant RRP measures planned as of 2022	SDG 1, 2,10
complete the minimum inclusion income reform.	Some progress	Relevant RRP measures planned as of 2022	SDG 1, 2, 10
Improve the functioning of social dialogue.	Some progress	Relevant RRP measures planned as of 2022	SDG 8
Ensure minimum wage setting based on objective criteria, consistent with job creation and competitiveness.	Limited progress	Relevant RRP measures planned as of 2024	SDG 8
Improve access to and cost-efficiency of healthcare, including through the shift to outpatient care.	Limited progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023	SDG 3
2019 CSR 4	**Some progress**		
Focus investment-related economic policy on transport, notably on its sustainability, low carbon energy and energy efficiency, environmental infrastructure as well as innovation, taking into account regional disparities.	Some progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023	SDG 6, 7, 9, 10, 11, 12, 13
Improve preparation and prioritisation of large projects and accelerate their implementation.	Some progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023	SDG 16
Improve the efficiency of public procurement and ensure full and sustainable implementation of the national public procurement strategy.	Some progress	Relevant RRP measures planned as of 2023	SDG 9
2019 CSR 5	**Limited progress**		
Ensure that legilsative initiatives do not undermine legal certainty by improving the quality and predictability of decision-making, including by appropriate stakeholder consultations, effective impact assessments and streamlined administrative procedures.	Limited progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022	SDG 16
Strengthen the corporate governance of state-owned enterprises.	Limited progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023	SDG 9
2020 CSR 1	**Limited progress**		
Pursue fiscal policies in line with the Council's recommendation of 3 April 2020, while taking all necessary measures to effectively address the pandemic, sustain the economy and support the ensuing recovery.	Not relevant anymore	Not applicable	SDG 8, 16
Avoid the implementation of permanent measures that would endanger fiscal sustainability.	Limited progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022	SDG 8, 16
Strengthen the resilience of the health system, including in the areas of health workers and medical products, and improve access to health services.	Limited progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022	SDG 3
2020 CSR 2	**Limited progress**		
Provide adequate income replacement and	Substantial progress		SDG 1, 2, 10
extend social protection measures and	Limited progress	Relevant RRP measures planned as of 2022	SDG 1, 2, 10
extend access to essential services for all.	Limited progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023	SDG 1, 2, 10
Mitigate the employment impact of the crisis by developing flexible working arrangements and activation measures.	Some progress	Relevant RRP measures planned as of 2024	SDG 8
Strengthen skills and digital learning and	Limited progress	Relevant RRP measures being implemented as of 2022	SDG 4
ensure equal access to education.	Limited progress	Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2023	SDG 4, 8, 10

(Continued on the next page)

Table (continued)

2020 CSR 3	**Some progress**		
Ensure liquidity support to the economy benefiting businesses and households, particularly small and medium-sized enterprises and the self-employed.	Full implementation	Relevant RRP measures being implemented as of 2021 and planned as of 2022	SDG 8, 9
Front-load mature public investment projects and	Limited progress	Relevant RRP measures planned as of 2022 and 2023	SDG 8, 16
promote private investment to foster the economic recovery.	Some progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022	SDG 8, 9
Focus investment on the green and digital transition, in particular on sustainable transport,	Some progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022	SDG 11
digital service infrastructure,	Some progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023	SDG 9
clean and efficient production and use of energy and environmental infrastructure, including in the coal regions.	Limited progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023	SDG 6, 7, 9, 10, 11, 12, 13
2020 CSR 4	**Limited progress**		
Improve the quality and effectiveness of public administration and	Some progress	Relevant RRP measures planned as of 2022 and 2023	SDG 16
improve the predictability of decision-making, including through an adequate involvement of social partners.	Limited progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022	SDG 16
2021 CSR 1	**Not relevant anymore**		
Pursue fiscal policies in line with the Council Recommendation of 18 June 2021 with a view to bringing an end to the situation of an excessive government deficit in Romania.	Not relevant anymore	Not applicable	SDG 8, 16
2022 CSR 1	**Some progress**		
Pursue fiscal policies in line with the Council Recommendation of 18 June 2021 with a view to bringing an end to the situation of an excessive government deficit in Romania.	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 3 November 2021.	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.		
Swiftly finalise the negotiations with the Commission on the 2021-2027 cohesion policy programming documents with a view to starting their implementation.	Progress on the cohesion policy programming documents is monitored under the EU cohesion policy.		
2022 CSR 3	**Some progress**		
Reduce overall reliance on fossil fuels.	Some progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 13
Facilitate the further expansion of sustainable energy production by accelerating the development of renewables,	Limited progress	Relevant RRP measures planned as of 2022	SDG 7, 9, 13
upgrading energy transmission grids and increasing interconnection with neighboring Member States.	Limited progress	Not applicable	SDG 7, 9, 13
Increase the pace and ambition of renovations to advance the energy efficiency of the building stock.	Some progress	Relevant RRP measures planned as of 2022	SDG 7

Note:

* See footnote (31).

** RRP measures included in this table contribute to the implementation of CSRs. Nevertheless, additional measures outside the RRP may be 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. Measures included in the second payment request under assessment are classified as planned.

Source: European Commission.

The Recovery and Resilience Facility (RRF) is the centrepiece of the EU's efforts to help it recover from the COVID-19 pandemic, speed up the twin transition and strengthen resilience against future shocks. The RRF also contributes to implementation of the SDGs and helps to address the Country Specific Recommendations (see Annex 4). Romania submitted its initial recovery and resilience plan (RRP) on 31 May 2021. The Commission's positive assessment on 28 September 2021 and Council's approval on 29 October 2021 paved the way for disbursing EUR 14.2 billion in grants and EUR 14.9 billion in loans under the RRF over the 2021-2026 period.

Since the entry into force of the RRF Regulation and the assessment of the national recovery and resilience plans, geopolitical and economic developments have caused major disruptions across the EU. In order to effectively address these disruptions, the (adjusted) RRF Regulation allows Member States to amend their recovery and resilience plan for a variety of reasons. In line with article 11(2) of the RRF, the maximum financial contribution for Romania was moreover updated on 30 June 2022 to an amount of EUR 12.1 billion in grants.

Table A3.1:**Key elements of the Romanian RRP('s)**

	Current RRP
Scope	Initial plan
CID adoption date	29 October 2021
Total allocation	EUR 14.2 billion in grants and EUR 14.9 billion in loans (12.15% of 2021 GDP)
Investments and reforms	122 investments and 64 reforms
Total number of milestones and targets	507

Source: European Commission

Romania's progress in implementing its plan is published in the Recovery and Resilience Scoreboard ([18]). The Scoreboard also gives an overview of the progress made in implementing the RRF as a whole, in a transparent manner. The graphs in this Annex show the current state of play of the milestones and targets to be reached by Romania and subsequently assessed as satisfactorily fulfilled by the Commission. No revision was submitted at the time of publication of this country report yet.

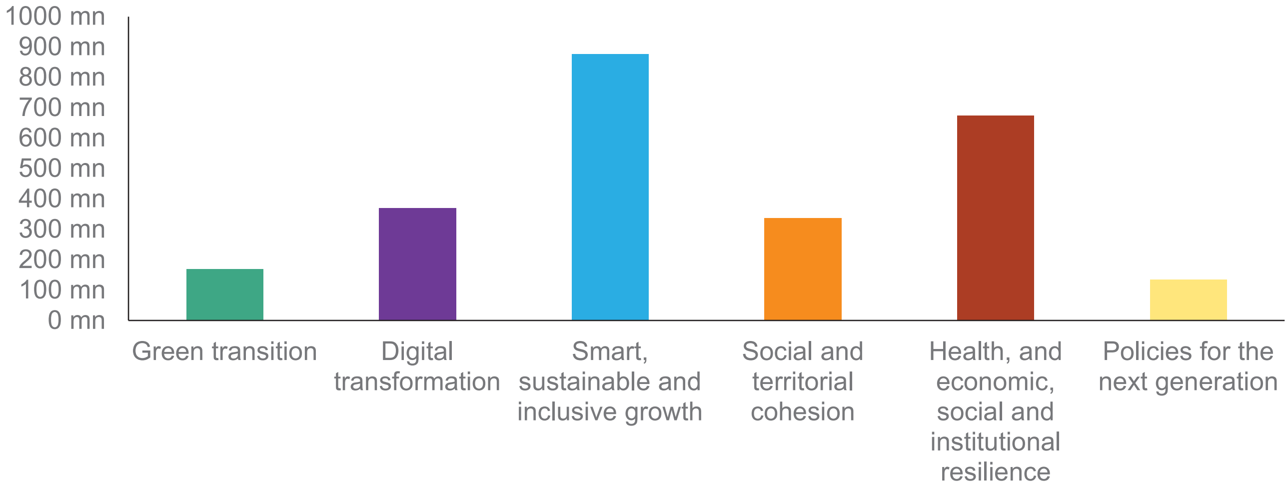
EUR 6.3 billion has so far been disbursed to Romania under the RRF. The Commission disbursed EUR 3.79 billion to Romania in pre-financing on 2 December 2021 (for the grants) and 13 January 2022 (for the loan), equivalent to 13% of the financial allocation.

Romania's first payment request was positively assessed by the Commission, taking into account the opinion of the Economic and Financial Committee, leading to EUR 2.6 billion being disbursed in financial support (net of pre-financing) on 27 October 2022. The related 21 milestones and targets cover reforms contributing to the digital transition, as well as reforms in the areas of sustainable mobility, decarbonisation, audit and control, education and health, and preliminary steps in tax and pension reforms. Measures to support businesses and to ensure the country's good governance are also included.

In December 2022, Romania submitted its second payment request, for which the Commission's assessment is ongoing. Overall, Romania reports a timely implementation of the milestones and targets covered by the second payment request, which does not however prejudge the timing of the submission of subsequent payment requests or the Commission's formal assessment of the fulfilment of the relevant milestones and targets.

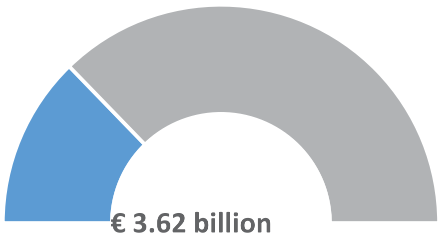
([18]) https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

Graph A3.1: **Disbursements per pillar**



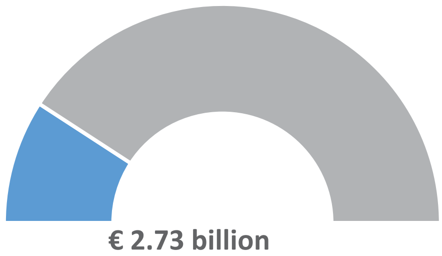
Note: Each disbursement reflects progress in the implementation of the RRF, across the six policy pillars. This graph displays how disbursements under the RRF (excluding pre-financing) relate to the pillars. The amounts were calculated by linking the milestones and targets covered by a given disbursement to the pillar tagging (primary and secondary) of their respective measures.
Source: Recovery and Resilience Scoreboard

Graph A3.2: **Total grants disbursed under the RRF**



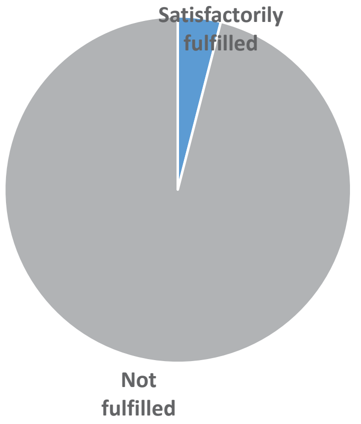
Note: This graph displays the amount of grants disbursed so far under the RRF. Grants are non-repayable financial contributions. The total amount of grants given to each Member State is determined by an allocation key and the total estimated cost of the respective RRP.
Source: Recovery and Resilience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

Graph A3.3: **Total loans disbursed under the RRF**



Note: This graph displays the amount of loans disbursed so far under the RRF. Loans are repayable financial contributions. The total amount of loans given to each Member State is determined by the assessment of its loan request and cannot exceed 6.8% of its 2019 GNI.
Source: Recovery and Resilience Scoreboard

Graph A3.4: **Fulfilment status of milestones and targets**

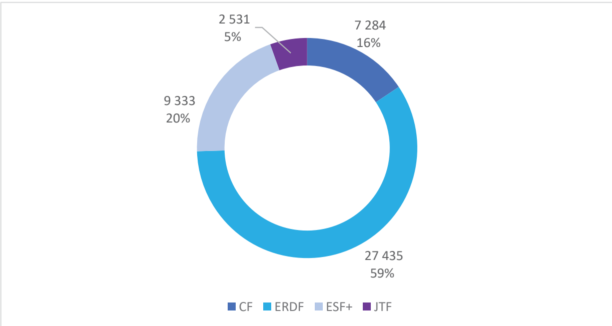


This graph displays the share of satisfactorily fulfilled milestones and targets. A milestone or target is satisfactorily fulfilled once a Member State has provided evidence to the Commission that it has reached the milestone or target and the Commission has assessed it positively in an implementing decision.

Source: Recovery and Resilience Scoreboard

The EU budget of over EUR 1.2 trillion for 2021-2027 is geared towards implementing the EU's main priorities. Cohesion policy investment amounts to EUR 392 billion across the EU and represents almost a third of the overall EU budget, including around EUR 48 billion invested in line with REPowerEU objectives.

Graph A4.1: **Cohesion policy funds 2021-2027 in Romania: budget by fund**

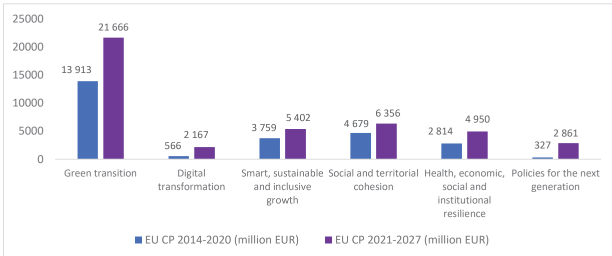


(1) million EUR in current prices, % of total; (total amount including EU and national co-financing)
Source: European Commission, Cohesion Open Data

In 2021-2027, in Romania, cohesion policy funds ([19]) will invest EUR 21.7 billion in the green transition and EUR 2.2 billion in the digital transformation as part of the country's total allocation of EUR 46.6 billion. In particular, the European Regional Development Fund (ERDF) will boost R&D, innovation and digitalisation by supporting more than 32 000 companies. Significant investments (EUR 1.5 billion of ERDF and EUR 200 million of Cohesion Fund) will support energy efficiency and the reduction of carbon emissions. Particular attention should be paid to the project planning and administrative and organisational capacities of key beneficiaries, through tailor-made capacity building roadmaps. The Just Transition Fund (JTF) will provide economic diversification for the regions most affected by the energy transition, enabling productive investment in SMEs and the development of business support infrastructure and services. The JTF will help create 11 000 jobs and provide reskilling and active labour market support for about 30 000 workers. This will help Romania fulfil its commitment to phase out the use of coal by 2032. Under the European Social Fund Plus (ESF+), Romania allocates more than EUR 2.2 billion to promote social inclusion and implement the Child Guarantee. Benefits will include integrated community centres helping 2 000 rural communities access essential social, educational and health services. In addition, almost EUR 900 million will fund basic material assistance to those most in need, and EUR 2 billion will facilitate access to quality education.

Of the investments mentioned above, EUR 2.8 billion will be invested in line with REPowerEU objectives. This is on top of the EUR 1.5 billion dedicated to REPowerEU under the 2014-2020 budget**.** EUR 2 billion (2021-2027) and EUR 1.1 billion (2014-2020) is for improving energy efficiency; EUR 79 million (2021-2027) and EUR 429 million (2014-2020) is for renewable energy and low-carbon R&I; and EUR 631 million (2021-2027) is for smart energy systems.

Graph A4.2: **Synergies between cohesion policy funds and the RRF six pillars in Romania**



(1) million EUR in current prices (total amount, including EU and national co-financing)
Source: European Commission

In 2014-2020, cohesion policy funds made EUR 24 billion available to Romania ([20]), with an absorption of 77% ([21]). Including national financing, the total investment amounts to EUR 28.5 billion - around 2.2% of GDP for 2014-2020.

Romania continues to benefit from cohesion policy flexibility to support recovery, step up convergence and provide vital support to regions following the COVID-19 pandemic.

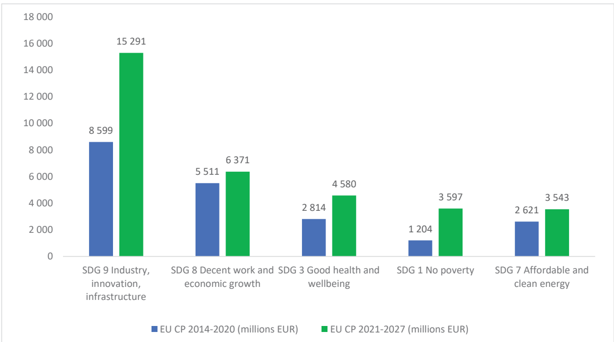
([19]) European Regional Development Fund (ERDF), Cohesion Fund (CF) European Social Fund+ (ESF+), Just Transition Fund (JTF), excluding Interreg programmes. The total amount includes national and EU contributions. Data source: Cohesion Open Data.

([20]) Cohesion policy funds include the ERDF, CF, ESF and the Youth Employment Initiative (YEI). ETC programmes are excluded here. According to the 'N+3 rule', the funds committed for 2014-2020 must be spent by 2023. REACT-EU is included in all figures. The total amount includes EU and national co-financing. Data source: Cohesion Open Data.

([21]) 2014-2020 Cohesion policy EU payments by MS is updated daily on Cohesion Open Data.

The Recovery Assistance for Cohesion and the Territories of Europe instrument (REACT-EU) ([22]) under NextGenerationEU provides EUR 1.5 billion on top of the 2014-2020 cohesion policy allocation for Romania. It included over EUR 210 million in health equipment and over EUR 50 million in IT for online education. It also supported over 15 000 SMEs, and renewable energy production received EUR 105 million. In addition, Cohesion's Action for Refugees in Europe (CARE) supports Romania and its regions in providing emergency assistance to people fleeing from Russia's invasion of Ukraine with a total budget of EUR 118.4 million. With SAFE (Supporting Affordable Energy), the 2014-2020 cohesion policy funds may also be mobilised to support vulnerable households, jobs and companies particularly affected by high energy prices.

Graph A4.3: **Cohesion policy funds contribution to the SDGs in 2014-2020 and 2021-2027 in Romania**



(1) 5 largest contributions to SDGs in million (EUR) current prices
Source: European Commission

In both 2014-2020 and 2021-2027, cohesion policy funds have contributed substantially to the Sustainable Development Goals (SDGs). These funds support 11 of the 17 SDGs, notably SDG 9 'Industry, innovation and infrastructure' and SDG 8 'Decent work and economic growth' ([23]).

Other EU funds make significant resources available for Romania. The common agricultural policy (CAP) made EUR 25.7 billion available in 2014-2022, and will continue to support Romania with EUR 15 billion in 2023-2027. The two CAP Funds (European Agricultural Guarantee Fund and European Agricultural Fund for Rural Development), contribute to the European Green Deal while ensuring long-term food security. They promote social, environmental and economic sustainability and innovation in agriculture and rural areas, in coordination with other EU funds. The European Maritime and Fisheries Fund made EUR 168 million available to Romania in 2014-2020 and the European Maritime, Fisheries and Aquaculture Fund allocates EUR 162 million in 2021-2027.

Romania also benefits from other EU programmes, notably the Connecting Europe Facility having allocated EUR 1.090 billion under CEF 2 (2021-2027) from the Cohesion fund. Priorities are oriented for finalising the main railway transport corridors, Rhine-Danube and Orient/East-Med (Baltic - Black - Aegean Seas). Similarly, Horizon Europe has so far allocated nearly EUR 74 million to Romanian R&I on top of the EUR 302 million earmarked under the previous programme (Horizon 2020). The Public Sector Loan Facility set up under the Just Transition Mechanism makes EUR 162 million of grant support from the Commission available for projects located in Romania for 2021-2027, which will be combined with loans from the EIB, to support investments by public sector entities in just transition regions.

Romania received support under the European instrument for temporary support to mitigate unemployment risks in an emergency (SURE) to finance short-time work schemes, similar measures, and ancillary health-related measures, to mitigate the impact of COVID-19. The Council granted financial assistance to Romania of EUR 4.099 billion in loans, which supported around 15% of workers and 10% of firms in 2020, and around 2% of workers and 1% of firms in 2021.

The Technical Support Instrument (TSI) supports Romania in designing and implementing growth-enhancing reforms, including those set out in its recovery and resilience plan (RRP). Romania has received significant support since 2016. Examples ([24])

([22]) REACT-EU allocation on Cohesion Open Data.

([23]) Other EU funds contribute to the SDGs. In 2014-2022, they include the European Agricultural Fund for Rural Development (EARDF) and the European Maritime and Fisheries Fund (EMFF).

([24]) Country factsheets on reform support are available here.

include support to strengthen the education system; to improve digital competencies for health and care providers, and to identify the most suitable reforms and investments for decreasing dependency on fossil fuels from Russia in line with the REPowerEU plan.

This Annex illustrates Romania's relative resilience capacities and vulnerabilities using the Commission's resilience dashboards (RDB) ([25]). Comprising a set of 124 quantitative indicators, the RDB provide broad indications of Member States' ability to make progress across four interrelated dimensions: social and economic, green, digital, and geopolitical. The indicators show vulnerabilities ([26]) and capacities ([27]) that can become increasingly relevant, both to navigate ongoing transitions and to cope with potential future shocks. To this end, the RDB help to identify areas that need further efforts to build stronger and more resilient economies and societies. They are summarised in Table A5.1 as synthetic resilience indices, which illustrate the overall relative situation for each of the four dimensions and their underlying areas for Romania and the EU-27 ([28]).

According to the set of resilience indicators under the RDB, Romania generally displays a similar level of vulnerabilities compared to the EU average. Romania shows medium-high vulnerabilities in the social and economic and digital dimensions of the RDB, medium vulnerabilities in the green dimension, and low vulnerabilities in the geopolitical dimension. It has higher vulnerabilities than the EU average in the areas of 'inequalities and social impact of the transitions', 'health, education and work', 'sustainable use of resources', 'digitalisation' and 'financial globalisation'. Romania has relatively low vulnerabilities in relation to 'economic and financial stability and sustainability', 'climate change mitigation and adaptation', 'raw material and energy supply' and 'security and demography'.

Compared to the EU average, Romania shows an overall lower level of capacities across all RDB indicators. It has medium-low resilience capacities in the green, digital and geopolitical dimensions, and low capacities in the social and economic dimension. Romania shows stronger or similar capacities than the EU average in none of the resilience areas. There is ample room for improving capacities compared to the EU in relation to 'inequalities and social impact of the transitions', 'health, education and work', 'sustainable use of resources', 'ecosystems, biodiversity and sustainable agriculture', all areas of the digital dimension, as well as 'security and demography'.

Table A5.1: **Resilience indices summarising the situation across RDB dimensions and areas**

Dimension/Area	Vulnerabilities		Capacities	
	RO	EU-27	RO	EU-27
Social and economic				
Inequalities and social impact of the transitions				
Health, education and work				
Economic & financial stability and sustainability				
Green				
Climate change mitigation & adaptation				
Sustainable use of resources				
Ecosystems, biodiversity, sustainable agriculture				
Digital				
Digital for personal space				
Digital for industry				
Digital for public space				
Cybersecurity				
Geopolitical				
Raw material and energy supply				
Value chains and trade				
Financial globalisation				
Security and demography				

Vulnerabilities Index
High
Medium-high
Medium
Medium-low
Low
Not available

Capacities Index
High
Medium-high
Medium
Medium-low
Low
Not available

(1) Data are for 2021, and EU-27 refers to the value for the EU as a whole. Data underlying EU-27 vulnerabilities in the area 'value chains and trade' are not available as they comprise partner concentration measures that are not comparable with Member States' level values.
Source: JRC Resilience Dashboards - European Commission

([25]) For details see https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight/2020-strategic-foresight-report/resilience-dashboards_en; see also 2020 Strategic Foresight Report (COM(2020) 493).

([26]) 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.

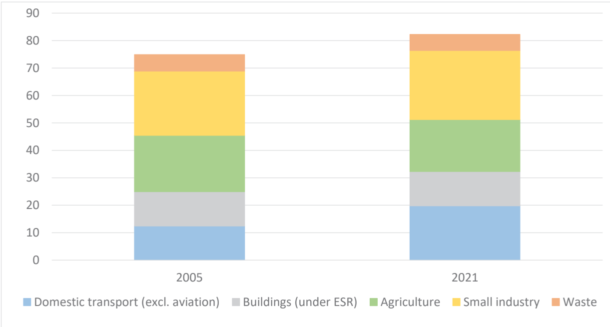
([27]) Capacities refer to enablers or abilities to cope with crises and structural changes and to manage the transitions.

([28]) 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.

Romania's green transition requires continued action on several aspects, including renewables, sustainable transport and air quality, and climate adaptation. Implementation of the European Green Deal is underway in Romania; this Annex provides a snapshot of the key areas involved ([29]).

Romania has not yet defined all the climate policy measures it needs to reach its 2030 climate target for the effort sharing sectors ([30]). Data for 2021 on greenhouse gas emissions in these sectors are expected to show the country generated less than its annual emission allocations ([31]). Current policies in Romania are projected to keep the increase of these emissions contained at 5% relative to 2005 levels in 2030. The additional measures tabled would contain them at an increase of 2%. This still too high to comply with the effort sharing target even before the target was made more ambitious to meet the EU's 55% objective, let alone Romania's new target to reduce emissions by 12.7% ([32]). In its recovery and resilience plan (RRP), Romania has attributed 41 % of its Recovery and Resilience Facility allocation to key reforms and investments to attain climate objectives ([33]). Romania's decarbonisation law aims to permanently close coal power plants and mines by 2030.

Graph A6.1: **Thematic – greenhouse gas emissions from the effort sharing sectors in Mt CO2eq, 2005-2021**



Source: European Environmental Agency.

Greenhouse gas removals through Romania's land use sector exceed agricultural emissions. For 2030, Romania's land use, land-use change and forestry (LULUCF) net removals target implies net removals of 25 665 kt CO_2eq (see Table A6.1) ([34]). In recent years, removals through the land use sector have been higher than the amount of agricultural emissions, therefore resulting in small net removals in the combined land sector. Under current land management practices, however, Romania is projected to see decreasing net removals by 2030.

Fossil fuels still play a substantial role in Romania's energy mix, while, in 2021, the share of renewable energy decreased. The share of natural gas in Romania's energy mix has been stable, from 31% in 2011 to 29% in 2021. The share of coal and coal products in Romania's energy mix dropped from 23% in 2011 to 12% in 2021. On the other hand, the share of oil increased significantly, from 24% in 2011 to 31% in 2021. While the share of renewable energy was

([29]) The overview in this Annex is complemented by the information in Annex 7 on energy security and affordability, Aannex 8 on the fair transition to climate neutrality and environmental sustainability, Aannex 9 on resource productivity, efficiency and circularity, Aannex 11 on innovation, and Annex 19 on taxation.

([30]) Member States' greenhouse gas emission targets for 2030 ('effort sharing targets') were increased by Regulation (EU) 2023/857 (the Effort Sharing Regulation) amending Regulation (EU) 2018/842, aligning the action in the concerned sectors with the objective to reach EU-level, economy-wide greenhouse gas emission reductions of at least 55% relative to 1990 levels. The Regulation sets national targets for sectors outside the current EU Emissions Trading System, notably: buildings (heating and cooling), road transport, agriculture, waste, and small industry. Emissions covered by the EU ETS and the Effort Sharing Regulation are complemented by net removals in the land use sector, regulated by Regulation (EU) 2018/841 (the Land Use, Land Use Change and Forestry (LULUCF) Regulation) amended by Regulation (EU) 2023/839.

([31]) Romania's annual emission allocations for 2021 were some 86.1 Mt CO_2eq, and its approximated 2021 emissions were at 82.3 Mt (see European Commission, *Accelerating the transition to climate neutrality for Europe's security and prosperity: EU Climate Action Progress Report 2022*, SWD(2022)343).

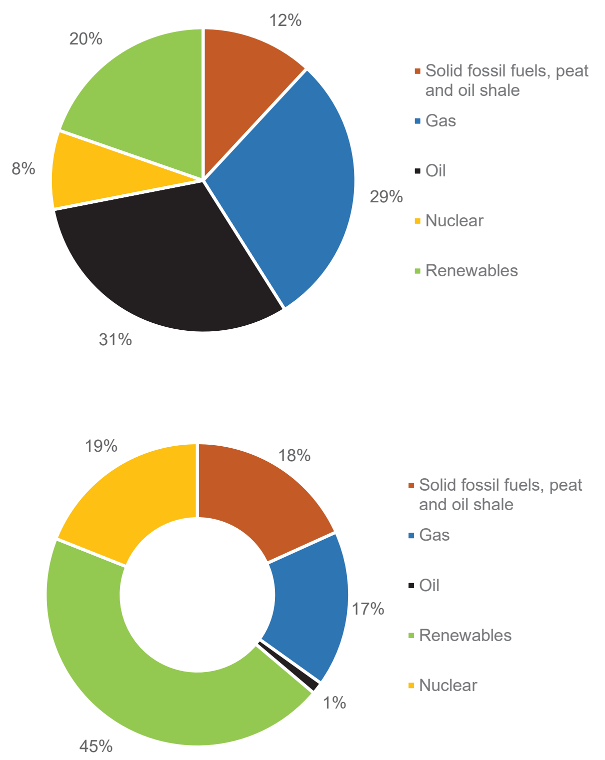
([32]) See the information on the distance to the 2030 climate policy target in Table A6.1. Existing and additional measures as of 15 March 2021.

([33]) For example, energy- and climate-related measures and flagship reforms on the phasing-out of coal and the decarbonisation of road transport, energy efficiency of private and public buildings, electric charging infrastructures, climate adaptation, and the circular economy.

([34]) This value is indicative and will be updated in 2025 (as mandated by Regulation (EU) 2023/839).

close to 20% of the national energy mix in 2021, it has remained stable in the previous 7 years. Nuclear energy completes the picture, comprising 8% of the national energy mix. Romania envisages phasing out coal and decommissioning the coal power plants by 2032. However, more efforts are necessary to ensure the renewable energy plays a much more important role in the national energy mix.

Graph A6.2: **Energy mix (top) and electricity mix (bottom), 2021**



The energy mix is based on gross inland consumption, and excludes heat and electricity. The share of renewables includes biofuels and non-renewable waste.
Source: Eurostat

Renewable energy plays an important role in decarbonising Romania's energy system. Romania's target of 30.7% of share of energy from renewable sources in gross final energy consumption by 2030 included in its NECP was considered unambitious in the 2020 assessment by the Commission. Romania will need to substantially strengthen its renewable energy target in the updated NECP to reflect the more ambitious EU climate and energy targets in the Fit for 55 Package and in the REPowerEU Plan. Clean energy production, based on the deployment of renewables as well as related production processes, and hydrogen (and notably green hydrogen), combined with the phasing-out of coal and lignite power production makes up a sizeable component of the Romania's RRP. The main measures included in this component will allow for: i) the permitting procedures for renewables to be simplified, ii) at least 3 GW of renewable energy (wind and solar) to be installed by 30 June 2026, iii) at least 240 MW of new electricity renewable storage capacity to be added by end 2025, iv) green hydrogen to be generated (at least 100 MW in electrolysers), and v) the coal capacity to be reduced by 85% by end 2025, with full phase-out by 2032.

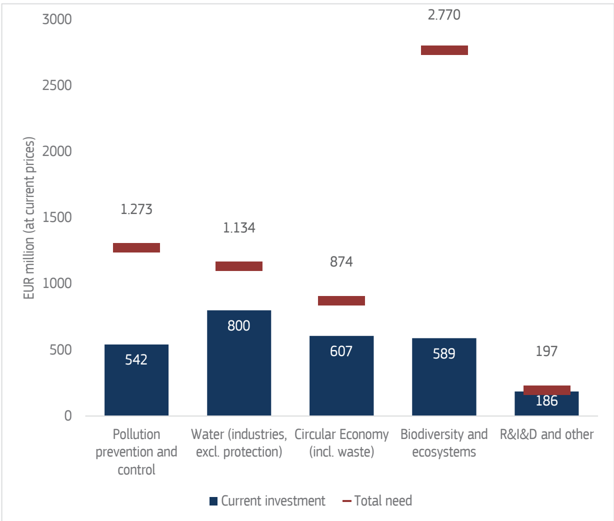
The ambitious energy efficiency actions included in the RRP call for swift implementation. Romania's NECP targets for primary energy consumption (PEC) and final energy consumption (FEC) in 2030 were considered to reflect a low, and respectively a very low level of ambition in the 2020 Commission assessment. Moreover, based on the energy consumption trajectory for 2018-2021, Romania is not expected to be on track to meet its 2030 target for PEC, nor for FEC, as these were notified in its NECP ([35]). Romania's RRP includes many energy efficiency measures: i) moderate and deep energy and seismic renovation of public buildings (2.4 million m^2) and private buildings (4.4 million m^2); ii) reform of district heating by developing flexible and highly efficient gas-fired electricity and heat cogeneration, with at least 300 MW electricity production capacity, and iii) reforms to increase decarbonisation of the heating-cooling sector.

The transformation of Romania's transport system has to be accelerated, while air quality remains a grave concern. On mobility, the share of zero-emission vehicles in new car registration has increased substantially over recent years but is still only around half the EU average. In terms of the number, power capacity and territorial coverage of public charging points, Romania has room for improvement. Only slightly more than a third of the rail network is electrified, but nearly all the Romanian section of the Trans-

([35]) After the conclusion of the negotiations for a recast EED, the ambition of both the EU and national targets as well as of the national measures for energy efficiency to meet these targets is expected to increase.

European Transport network, where most traffic is concentrated. Individual transport exacerbates seasonal problems with air pollution and traffic congestion, with significant health and economic costs. Air quality continues to give cause for grave concern (see Table A6.5). In exceedances of applicable air quality, limits were registered for nitrogen dioxide (NO_2) in three air quality zones and for particulate matter (PM10) in four zones. Target values for ozone concentration were surpassed in several air quality zones. Romania also has shortcomings in its air quality monitoring system and has to implement its national air pollution control programme that was adopted only recently.

Graph A6.3: **Thematic – environmental investment needs and current investment**



Source: European Commission.

Romania would benefit from investing more in environmental protection and in measures protecting biodiversity and addressing pollution ([36]). Between 2014 and 2020, environmental investment needs were estimated to be at least EUR 6.2 billion while investment stood at about EUR 2.7 billion, leaving a gap of at least EUR 3.5 billion, per year (see Graph A6.3) ([37]). Romania legally protects 23.4% of its land areas and 21.5% of its marine areas ([38]). It hosts 606 Natura 2000 sites but still needs to complete the network, specify management plans for many sites, and make progress with effective management, including through allocating sufficient resources.

Impacts of climate change in Romania call for a strategic approach to adaptation ([39]). Romania faces several challenges from climate change, particularly river and coastal flooding and a higher incidence of droughts, projected to increase in the coming years. However, Romania has no up-to-date climate adaptation strategy ([40]). Its RRP contains measures on water disposal and storage, the reduction of flood risks, and the adaptation of forest ecosystems. Romania has a pronounced gap in insurance protection for floods that could pose a risk to public finances if insurance penetration remains low ([41]).

Romania still provides fossil fuel and other environmentally harmful subsidies that could be considered for reform, while ensuring food and energy security and mitigating social effects. Fossil fuel subsidies in Romania amounted to EUR 970 million in 2021, a 14% increase since 2015, which puts low carbon alternatives at a disadvantage. Environmentally harmful subsidies have been identified, via an initial assessment, in the agriculture, forestry and fishing, electricity, gas, steam and air conditioning, transportation and storage sectors. Examples of such subsidies include the reduced VAT rate for fertilisers and pesticides ([42]). A mapping of all

([36]) Environmental objectives include pollution prevention and control, water management and industries, circular economy and waste, biodiversity and ecosystems (European Commission, 2022, Environmental Implementation Review, country report Romania)

([37]) When also accounting for needs estimated at EU level only (e.g., water protection, higher circularity, biodiversity strategy).

([38]) In 2021, Romania had 23.4% terrestrial protected areas (Natura 2000 and nationally designated areas), against the EU average of 26.4% (European Environment Agency, 2023, Natura 2000 Barometer).

([39]) European Environmental Agency, Advancing towards climate resilience in Europe, forthcoming.

([40]) An update and extension of the national climate change strategy 2013–2020 needs to be carried out in light of recent developments. The latest projections from the Intergovernmental Panel on Climate Change indicate that the climate will warm over this century and precipitation in the region will change, making the winters wetter and summers drier. In addition, an expected rise in the Black Sea's water level will affect the country.

([41]) European Insurance and Occupational Pensions Authority (EIOPA) dashboard on insurance protection gap for natural catastrophes.

([42]) Fossil fuel figures in EUR of 2021 from the 2022 State of the Energy Union report. Initial assessment of environmentally harmful subsidies done by the Commission environmentally harmful subsidies by Romania would help prioritise candidates for reform.

There is potential for increased environmental taxes in Romania. Romania has the potential to rely more on environmental taxes to further internalise the cost of air pollution, to promote waste reduction and to limit water pollution ([43]) (see Annex 19), for example, through 'pay-as-you-throw' schemes to increase reuse and recycling rates. Romania has introduced a deposit refund system for reusable packaging. It also has a system of tariffs for water supply and sewage. The RRP recognised the need for a shift in taxation. An analysis of the tax framework in light of expanding green taxation and shifting taxation towards green taxes, taking distributional impact into account, is planned.

By earmarking a higher share of EU Emissions Trading System (ETS) revenue for climate action, Romania could reduce its exposure to the cost of carbon. In 2021, its revenue from the EU ETS amounted to almost EUR 490 million. Since 2017, the amount of this revenue that Romania has spent on climate and energy-related purposes has not reached 50%, the minimum set by the ETS Directive, with significant shortfalls up until 2021.

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in the 2022 toolbox for reforming environmentally harmful subsidies in Europe, using OECD definitions, and based on the following datasets: OECD Agriculture Policy Monitoring and Evaluations; OECD Policy Instruments for the Environment (PINE) Database; OECD Statistical Database for Fossil Fuels Support; IMF country-level energy subsidy estimates. Annex 4 of the toolbox contains detailed examples of subsidies on the candidates for reform.

([43]) European Commission, 2021, Green taxation and other economic instruments – Internalising environmental costs to make the polluter pay, Ensuring that polluters pay.

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

	Indicator	Unit	2005	2017	2018	2019	2020	2021	'Fit for 55' 2030 target/value	Distance WEM	Distance WAM
Progress to policy targets	Greenhouse gas emission reductions in effort sharing sectors (1)	Mt CO_2eq; %; pp	75,5	0%	3%	0%	2%	-	-12,7%	-17,7	-14,7
	Net carbon removals from LULUCF (2)	kt CO_2eq	-33.494	-50.533	-48.208	-48.223	-50.407	-49.258	-25665	n/a	n/a

	Indicator	Unit	2005	2017	2018	2019	2020	2021	National contribution to 2030 EU target
Progress to policy targets	Share of energy from renewable sources in gross final consumption of energy (3)	%	18%	24%	24%	24%	24%	24%	31%
	Energy efficiency: primary energy consumption (3)	Mtoe	36,1	32,5	32,6	32,1	30,9	33,1	32,3
	Energy efficiency: final energy consumption (3)	Mtoe	24,6	23,3	23,6	23,9	23,5	25,4	25,7

	Indicator	Unit	Romania 2016	2017	2018	2019	2020	2021	EU 2019	2020	2021
Fiscal and financial indicators	Environmental taxes (% of GDP)	% of GDP	2,4	2,0	2,0	2,1	1,9	2,0	2,4	2,2	2,2
	Environmental taxes (% of total taxation) (4)	% of taxation	9,3	7,8	7,6	8,1	7,3	7,4	5,9	5,6	5,5
	Government expenditure on environmental protection	% of total exp.	1,8	1,5	2,1	2,0	1,6	1,8	1,7	1,6	1,6
	Investment in environmental protection (5)	% of GDP	0,4	0,2	0,3	0,3	-	-	0,4	0,4	0,4
	Fossil fuel subsidies (6)	EUR2021bn	1,1	1,0	1,0	0,6	0,8	1,0	53,0	50,0	-
	Climate protection gap (7)	score 1-4					1,7	2,1			1,5
Climate	Net greenhouse gas emissions	1990 = 100	46,0	44,0	44,0	43,0	41,0	46,0	76,0	69,0	72,0
	Greenhouse gas emission intensity of the economy	kg/EUR'10	0,77	0,74	0,71	0,66	0,65	-	0,31	0,30	0,26
	Energy intensity of the economy	kgoe/EUR'10	0,21	0,21	0,20	0,19	0,19	-	0,11	0,11	-
Energy	Final energy consumption (FEC)	2015=100	101,8	16,8	108,0	109,3	107,7	116,1	102,9	94,6	-
	FEC in residential building sector	2015=100	100,5	104,8	105,4	105,1	108,6	118,8	101,3	101,3	106,8
	FEC in services building sector	2015=100	102,5	105,5	112,2	111,4	104,1	105,2	100,1	94,4	100,7
Pollution	Smog-precursor emission intensity (to GDP) (8)	tonne/EUR'10	2,32	2,08	1,98	1,95	1,86	-	0,9	0,9	-
	Years of life lost due to air pollution by PM2.5	per 100.000 inh.	1271,4	1369,4	1369,1	1120,4	1210,9	-	581,6	544,5	-
	Years of life lost due to air pollution by NO_2	per 100.000 inh.	225,6	258,0	274,8	286,0	174,7	-	309,6	218,8	-
	Nitrates in ground water	mg NO_3/litre	-	-	-	-	-	-	21,0	20,8	-
Biodiversity	Land protected areas	% of total	22,2	23,4	-	23,4	23,4	23,4	26,2	26,4	26,4
	Marine protected areas	% of total	21,4	-	-	21,5	-	21,4	10,7	-	12,1
	Organic farming	% of total utilised agricultural area	1,7	1,9	2,4	2,9	3,6	4,4	8,5	9,1	-

	Indicator	Unit	2017	2018	2019	2020	2021	2022	EU 2020	2021	2022
Mobility	Share of zero-emission vehicles (9)	% in new registrations	0,2	0,4	1,0	2,3	5,3	8,1	5,4	8,9	10,7
	Number of AC/DC recharging points (AFIR categorisation)		-	-	-	478	1212	1518	188626	330028	432518
	Share of electrified railways	%	37,4	37,4	37,4	37,4	37,4	37,5	56,6	n/a	56,6
	Hours of congestion per commuting driver per year		31,9	30,5	32,4	32,7	n/a	n/a	28,7	n/a	n/a

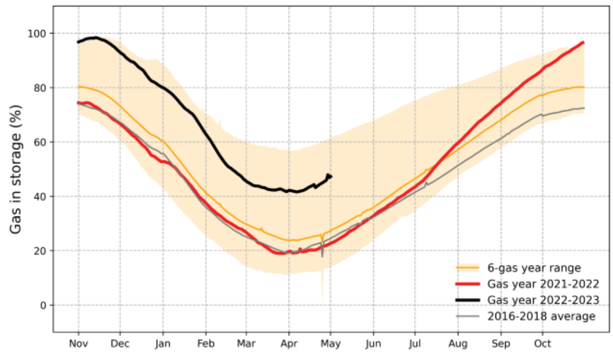
Sources: (1) Historical and projected emissions, as well as Member States' climate policy targets and 2005 base year emissions under the Effort Sharing Decision (for 2020) are measured in global warming potential (GWP) values from the 4th Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC). Member States' climate policy targets and 2005 base year emissions under the Effort Sharing Regulation (for 2030) are in GWP values from the 5th Assessment Report (AR5). The table above shows the base year emissions 2005 under the Effort Sharing Decision, using AR4 GWP values. Emissions for 2017-2021 are expressed in percentage change from 2005 base year emissions, with AR4 GWP values. 2021 data are preliminary. The table shows the 2030 target under Regulation (EU) 2023/857 that aligns it with the EU's 55% objective, in percentage change from 2005 base year emissions (AR5 GWP). Distance to target is the gap between Member States' 2030 target (with AR5 GWP values) and projected emissions with existing measures (WEM) and with additional measures (WAM) (with AR4 GWP values), in percentage change from the 2005 base year emissions. Due to the difference in global warming potential values, the distance to target is only illustrative. The measures included reflect the state of play as of 15 March 2021.
(2) Net removals are expressed in negative figures, net emissions in positive figures. Reported data are from the 2023 greenhouse gas inventory submission. 2030 value of net greenhouse gas removals as in Regulation (EU) 2023/839 amending Regulation (EU) 2018/841 (LULUCF Regulation) – Annex IIa, kilotons of CO2 equivalent, based on 2020 submissions.
(3) Renewable energy and energy efficiency targets and national contributions are in line with the methodology established under Regulation (EU) 2018/1999 (Governance Regulation).
(4) Percentage of total revenue from taxes and social contributions (excluding imputed social contributions). Revenue from the EU Emissions Trading System is included in environmental tax revenue.
(5) Expenditure on gross fixed capital formation for the production of environmental protection services (abatement and prevention of pollution) covering government, industry, and specialised providers.
(6) European Commission, Study on energy subsidies and other government interventions in the European Union, 2022 edition.
(7) The climate protection gap refers to the share of non-insured economic losses caused by climate-related disasters. This indicator is based on modelling of the current risk from floods, wildfires and windstorms as well as earthquakes, and an estimation of the current insurance penetration rate. The indicator does not provide information on the split between the private/public costs of climate-related disasters. A score of 0 means no protection gap, while a score of 4 corresponds to a very high gap (EIOPA, 2022).
(8) Sulphur oxides (SO2 equivalent), ammonia, particulates < 10 µm, nitrogen oxides in total economy (divided by GDP).
(9) Battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV).

Thanks to its significant internal production of natural gas, Romania is less exposed to Russian gas than many other Member States. However, it is highly dependent on fossil fuels in general, in particular for oil, and the economy has been severely hit by energy price developments, requiring Romania to step up efforts on the energy transition and protect vulnerable consumers. This Annex ([44]) sets out actions carried out by Romania to achieve the REPowerEU objectives, including through the implementation of its recovery and resilience plan, in order to improve energy security and affordability while accelerating the clean energy transition, and contributing to enhancing the EU's competitiveness in the clean energy sector ([45]).

Romania is the second largest gas producer in the EU after the Netherlands, able to generate a large part (up to 80%) of the natural gas it needs and importing the difference during peak demand periods in winter mainly from Russia. Gas production has been decreasing since 2017 to 8.8 billion cubic metres (bcm) in 2021 (-4.5%/year); the downward trend was reversed in 2022 (+2.5% as against 2021), with a contribution from tapping offshore reserves. Production covered 76% of consumption in 2021, while imports increased to 3.6 bcm. Particularly during the winter season, Romania depends on Russian gas.

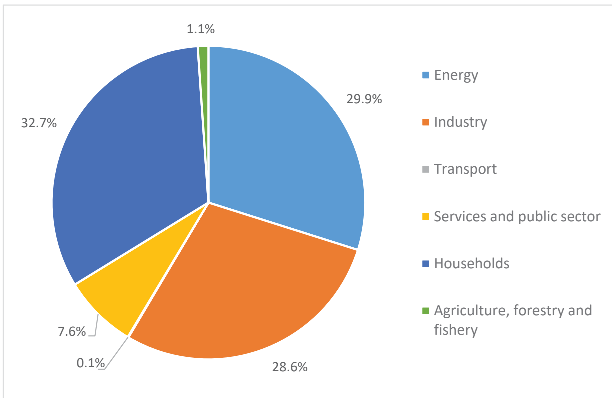
Romania's storage facilities significantly contribute to ensuring the security of its gas supply in case of gas disruptions. Romania fulfilled its gas storage obligations last winter, reaching 96.78% by 1 November (more than 16 percentage points above its legal obligation), and ended the heating season with a filling gas storage at 42.92% at 15 April 2023 ([46]). Romania operates seven underground gas storage facilities ([47]) with a gas storage capacity of 3.36 bcm (covering around one quarter of its annual consumption, and almost the equivalent of its total gas imports in 2021).

Graph A7.1: **Underground gas storage levels in Romania**



Source: JRC calculation based on AGSI+ Transparency Platform, 2022 (Last update 2 May 2023)

Graph A7.2: **Share of gas consumption per sector, 2021**



Source: Eurostat

Romania has a well-developed natural gas infrastructure (transmission and storage infrastructure), including cross-border connections, but no liquefied natural gas terminal for storage or regasification. Its gas storage capacity is expected to increase by 1.6 bcm by 2029. There are several gas projects

([44]) It is complemented by Annex 6 as the European Green Deal focuses on the clean energy transition, by Annex 8 on the actions taken to mitigate energy poverty and protect the most vulnerable ones, by Annex 9 as the transition to a circular economy will unlock significant energy and resource savings, further strengthening energy security and affordability; and by Annex 12 on industry and single market complementing ongoing efforts under the European Green Deal and REPowerEU.

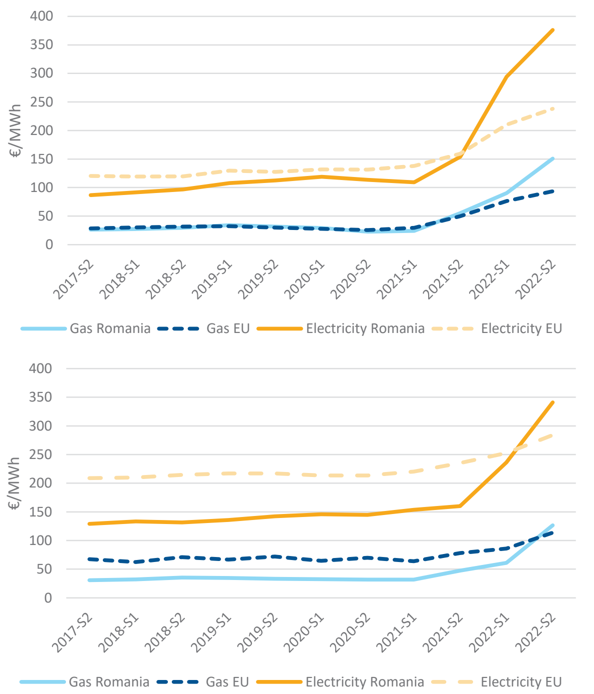
([45]) in line with the Green Deal Industrial Plan COM(2023) 62 final, and the proposed Net-Zero Industry Act COM(2023) 161 final

([46]) Regulation of the European Parliament and of the Council amending Regulations (EU) 2017/1938 and (EC) No 715/2009 with regard to gas storage and Implementing Regulation (EU) 2022/2301 of 23 November 2022 setting the filling trajectory with intermediary targets for 2023 for each Member State with underground gas storage facilities on its territory and directly interconnected to its market area.

([47]) Two storage operators manage the underground storage facilities: Depomures 0.3 bcm (UGS Târgu Mureş) and Depogaz Ploiesti 2.87 bcm (UGS Bălăceanca – 0.05 bcm, Bilciuresti – 1.31 bcm, Cetatea de Baltă, Ghercesti – 0.15 bcm, Sărmăşel – 0.9 bcm, Urziceni – 0.36 bcm).

involving Romania, pending commissioning, in the fifth list of Projects of Common Interest (PCIs): increase underground gas storage in Depomures, expanding in Bilciuresti, and BRUA phase II, a project aimed at expanding internal transmission capacity towards Hungary and taking over Black sea gas.

Graph A7.3: **Romania´s retail energy prices for industry (top) and households (bottom)**



(1) On electricity, the band consumption is DC for households and ID for industry
(2) On gas, the band consumption is D2 for households and I4 for industry
Source: Eurostat

Recent measures adopted by Romania and the high energy prices led to a gas demand reduction of about 20% over the period August 2022 – March 2023, when compared to the previous 5-years average. The energy demand reduction has been achieved exclusively based on voluntary measures, most of them being induced by the high level of the prices. The measures implemented by Romania include temporarily restarting stopped coal-fired power plants, and compensation measures for households and non-household consumers until August 2023. Romania has also introduced a measure cutting additional revenues made by energy producers and other participants in the value chain such as traders and suppliers, with the contributions going directly to the energy transition fund, used to finance measures for consumers and incentives for the green energy transition.

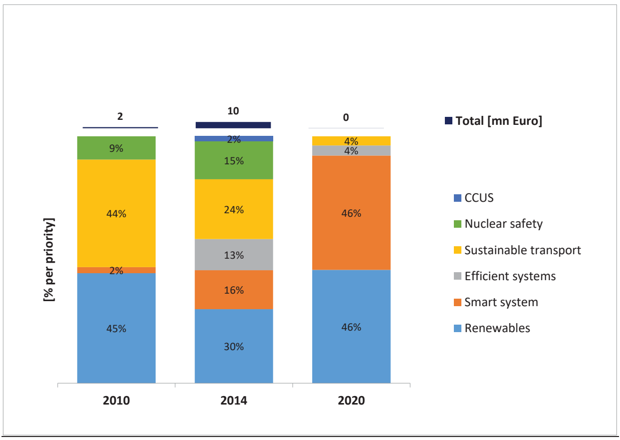
Romania has made good progress on the auctions, and on adapting the legislative and regulatory framework, for the renovation component of its recovery and resilience plan. The financial support provided by the authorities for the renovation of multi-family blocks of flats and public buildings is often a 100% grant limiting the impact and trigger less the continuation at market level. There is less financial support for the renovation of single-family houses, and yet they represent the bulk of residential building stock. There is also only limited support for renewable energy technology and heat pumps for heating in buildings. Although energy renovation of the building stock is high on the agenda, the current pace of it would need to be stepped up for Romania to reach the 2030 target of a 3.4%/year renovation rate and make the associated energy and greenhouse gas emission savings indicated in the long-term renovation strategy. The structural improvement of the buildings sector will not only deliver on decarbonisation goals. It will also shield households and businesses from high energy prices, while improving indoor comfort and contributing to the alleviation of energy poverty. Additional training and education activities related to energy renovation and renewable energy integration into buildings are not developed enough to result in the estimated job creation potential and ensure the proper implementation of measures to avoid lock-in effects due to the improper execution of works.

Following the dramatic increase in energy prices after October 2021, Romania adopted several measures to mitigate the impact of rising energy prices on vulnerable household and non-household consumers. The measures provide compensation for energy bills under certain conditions, to domestic consumers, but also to non-household consumers (e.g. small and medium-sized enterprises, public institutions). They are expected to alleviate the impact of soaring energy prices on households, in particular low-income families, and industries as energy poverty affects 10.1% of the population according to data collected in 2021 on the self-assessed inability to keep one's home adequately warm, and 7.3% of households who declare arrears in utility bills.

Romania's deployment of renewable energy reached a total of 11138 MW in 2021, increasing by 0.15% from 2020 ([48]). Most of this growth was in solar energy (+1% in 2021). Romania currently has no offshore wind electricity, and there were no new onshore wind installations in 2021. A tender was launched in 2022 for the deployment of approximately 950 MW of renewable energy capacity (solar and wind energy). Romania has also taken measures to clarify the status of renewable self-consumers and to simplify permit-granting procedures for renewable energy projects, including the introduction of a simple notification procedure. A national hydrogen strategy and action plan is being developed and a State aid scheme has been launched to commission capacity of at least 100 MW in electrolysis installations.

Romania invests very little in research and innovation (R&I) supporting Energy Union priorities. Public R&I investments ([49]) have been in continuous decline in recent years: EUR 8.9 million in 2017 (equivalent to 0.005% of GDP), EUR 6.9 million in 2018, EUR 1.2 million in 2019 and EUR 200 000 in 2020 (less than 0.001% of GDP). Romania has one of the lowest rates of participation (notably in energy) in the EU's Horizon Europe programme. At the same time, private R&I investments ([50]) were EUR 18.1, 32 and 26.1 million respectively ([51]) (representing expenditure of roughly one order of magnitude higher as a share of GDP than public expenditure). Venture capital investments in climate tech start-ups totalled EUR 0.7 million in 2019, only 2.4% of total venture capital investments. The number of patent families filed in 2019 for clean technologies was 41 ([52]), with about one third for renewables, one third for sustainable transport, and the rest for other technologies (e.g. energy efficiency or smart energy systems). This represents a little over 2 patent families per million inhabitants, or 10 times less than the EU average. Romania is not carrying out checks on products covered by ecodesing and energy labelling. This generates serious concerns with respect to the level playing field among economic operators and uncertainty as to the compliance levels of the concerned products, , and therefore possible missed energy and CO2 savings. ([53])

Graph A7.4: **Public R&I investment in Energy Union R&I priorities**



Source: JRC SETIS (2022)

([48]) Renewable energy generation capacity has increased, but the share of renewable energy in total energy consumption decreased in 2021, mainly as a result of the significantly lower share of hydropower.

([49]) Source: JRC SETIS (2022). The figures do not include EU funding.

([50]) Idem.

([51]) No figure available for 2020.

([52]) Ibidem.

([53]) The internet-supported information and communication system for the pan-European market surveillance

Table A7.1:**Key energy indicators**

ENERGY DEPENDENCE

	ROMANIA				EU			
	2018	2019	2020	2021	2018	2019	2020	2021
	24%	30%	28%	32%	58%	61%	57%	56%
of Solid fossil fuels	18%	22%	22%	23%	44%	44%	36%	37%
of Oil and petroleum products	63%	65%	65%	68%	95%	97%	97%	92%
of Natural Gas	12%	23%	17%	23%	83%	90%	84%	83%
Dependency from Russian Fossil Fuels [%]								
of Hard Coal	93%	99%	99%	99%	40%	44%	49%	47%
of Crude Oil	43%	39%	32%	27%	30%	27%	26%	25%
of Natural Gas	87%	37%	45%	78%	40%	40%	38%	41%

ELECTRICITY

	2015	2016	2017	2018	2019	2020	2021	2022
Gross Electricity Production (GWh)	66,296	65,103	64,296	64,876	59,623	55,935	59,470	-
Combustible Fuels	28,604	26,871	28,672	27,308	23,787	20,088	22,162	-
Nuclear	11,640	11,286	11,509	11,377	11,280	11,466	11,284	-
Hydro	17,007	18,536	14,853	18,097	16,006	15,701	17,745	-
Wind	7,063	6,590	7,407	6,322	6,773	6,945	6,576	-
Solar	1,982	1,820	1,856	1,771	1,778	1,733	1,703	-
Geothermal	0	0	0	0	0	0	0	-
Other Sources	0	0	0	0	0	0	0	-
Net Imports of Electricity (GWh)	-6,728	-5,017	-2,894	-2,544	1,518	2,792	2,199	-
As a % of electricity available for final consumption	-14%	-11%	-6%	-5%	3%	6%	4%	-
Electricity Interconnection (%)	-	-	6.90%	10.02%	9.1%	9.3%	7.6%	14.6%

DIVERSIFICATION OF GAS SUPPLIES

	2015	2016	2017	2018	2019	2020	2021	2022
Gas Consumption (in bcm)	11.2	11.4	12.3	12.0	11.2	11.8	12.1	10.2
Gas Imports - by type (in bcm)	0.2	1.5	1.2	1.5	2.7	2.1	3.6	-
Gas imports - pipeline	0.2	1.5	1.2	1.5	2.7	2.1	3.6	-
Gas imports - LNG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
Gas Imports - by main source supplier (in bcm)* (1)								
Russia	0.2	1.5	1.2	1.3	1.0	1.0	2.8	-
Bulgaria	0.0	0.0	0.0	0.0	0.1	0.1	0.7	-
Hungary	0.0	0.0	0.0	0.2	1.6	1.1	0.1	-
Greece	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-

	2019	2020	2021	2022
LNG Terminals				
Number of LNG Terminals (2)	0	0	0	0
LNG Storage capacity (m3 LNG)	0	0	0	0
Underground Storage				
Number of storage facilities	7	7	7	7
Operational Storage Capacity (bcm)	3.4	3.4	3.4	3.4

CLEAN ENERGY

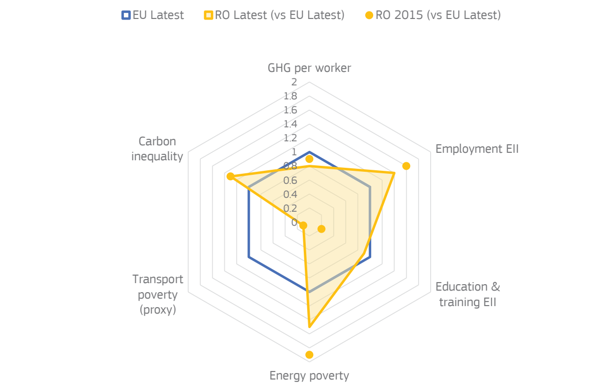
	2019	2020	2021	2022
VC investments in climate tech start-ups and scale-ups (EUR Mln) (3)	0.7	0.4	0.0	n.a.
as a % of total VC investments in Romania	2.4%	1.9%	0.0%	n.a.
Research & Innovation spending in Energy Union R&i priorites (2)				
Public R&I (EUR mln)	1.2	0.2	n.a.	n.a.
Public R&I (% GDP)	0.001%	0.000%	n.a.	n.a.
Private R&I (EUR mln)	26.1	n.a.	n.a.	n.a.
Private R&I (% GDP)	0.01%	n.a.	n.a.	n.a.

(1) The ranking of the main supliers is based on the latest available figures (for 2021)
(2) FSRU included
(3) Venture Capital investments include Venture Capital deals (all stages) and Private Equity Growth/Expansion deals (for companies that have previously been part of the portfolio of a VC investment firm).
Source: Eurostat, Gas Infrastructure Europe (Storage and LNG Transparency Platform), JRC SETIS (2022), JRC elaboration based on PitchBook data (06/2022)

This Annex monitors Romania's progress in ensuring a fair transition towards climate neutrality and environmental sustainability, notably for workers and households in vulnerable situations. To ensure a fair green transition in line with the Council Recommendation ([54]), upskilling and reskilling of workers in declining and transforming sectors is key and has increased strongly in Romania. The sizable share of jobs in energy-intensive sectors in total employment highlights the need for continued investment in skills to support the fair transition and the implementation of REPowerEU. Under Romania's recovery and resilience plan (RRP), investment will support the development of certification schemes in the area of energy performance of buildings for specialists and qualifications for construction workers. ([55]). The European Social Fund Plus (ESF+) contributes to green skills and jobs through investment in education and training.

Employment in sectors most affected by the green transition remains stable and the green economy is expanding, but workers in declining activities need active support. The greenhouse gas (GHG) emissions intensity of Romania's workforce declined between 2015 and 2021, and stands at 11.5 tonnes per worker, below the EU average of 13.7 tonnes (see Graph A8.1 and Table A8.1). Employment in energy-intensive industries represented a declining share of total employment and stood at 4.3% in 2020 (compared to an EU average of 3.0%). Employment in mining and quarrying has decreased by 20.7% since 2015. Total jobs in the environmental goods and services sector grew by 2.1% during 2015-19 (EU: +8.3%), reaching 1.9% of total employment, close to the EU average (see Annex 9 for circular jobs specifically). The job vacancy rate is relatively low, including in construction, a key sector for the green transition (0.4% vs 4.0% in EU in 2022) ([56]). The National Strategy for Green Jobs (2018-2025) sets the policy analysis framework for the transformative effects of the green transition on the labour market, including on the demand for new skills. Over 32 000 jobs are expected to be lost due to the impact of the transition on declining and transforming sectors in the six counties with the most carbon-intensive industries. Workers in the affected regions will need active support to acquire new qualifications.

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



Source: Eurostat, EMPL-JRC GD-AMEDI/AMEDI+ projects and World Inequality Database (see Table A8.1).

Upskilling and reskilling in declining and transforming sectors strongly increased. Skills are key for smooth labour market transitions and preserving jobs in transforming sectors. In energy-intensive industries, workers' participation in education and training has strongly increased from 2.3% in 2015 to 9.4% in 2022 , but is still below the EU average (10.4%). In Romania, 47% of citizens believe they do not have the necessary skills to contribute to the green transition (EU: 38%) ([57]). Romania's RRP will strengthen professional skills for energy and resource efficiency intervention on historic buildings and support the training of public officials as sustainable development experts at central and local level. The Just Transition Mechanism provides training for reskilling of workers in regions affected by the transition, together with a broader training offer at national level and flexibility mechanisms to encourage in-company training. In Romania, EUR 117.5 million of ESF+ funding contributes to green skills and jobs through the 'Education and Employment' programme, providing training and professional guidance to step up the development of green skills and related jobs.

([54]) 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, as well as essential services and housing.

([55]) See 2022 Country Report (Annex 6) and Annex 3 for an overview.

([56]) Eurostat (JVS_A_RATE_R2)

([57]) Special Eurobarometer 527. Fairness perceptions of the green transition (survey in May – June 2022).

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

Indicator	Description	RO 2015	RO Latest	EU Latest
GHG per worker	Greenhouse gas emissions per worker - CO2 equivalent tonnes	11.8	11.5 (2021)	13.7 (2021)
Employment EII	Employment share in energy-intensive industries, including mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24), automotive (C29) - %	4.7	4.3 (2020)	3 (2020)
Education & training EII	Adult participation in education and training (last 4 weeks) in energy-intensive industries - %	2.3	9.4 (2022)	10.4 (2022)
Energy poverty	Share of the total population living in a household unable to keep its home adequately warm - %	13.1	10.1 (2021)	6.9 (2021)
Transport poverty (proxy)	Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport - %	3.2	4.3 (2023)	37.1 (2023)
Carbon inequality	Average emissions per capita of top 10% of emitters vs bottom 50% of emitters	6.4	6.5 (2020)	5 (2020)

Source: Eurostat (env_ac_ainah_r2, nama_10_a64_e, ilc_mdes01), EU Labour Force Survey (break in time series in 2021), EMPL-JRC GD-AMEDI/AMEDI+ projects and World Inequality Database (WID).

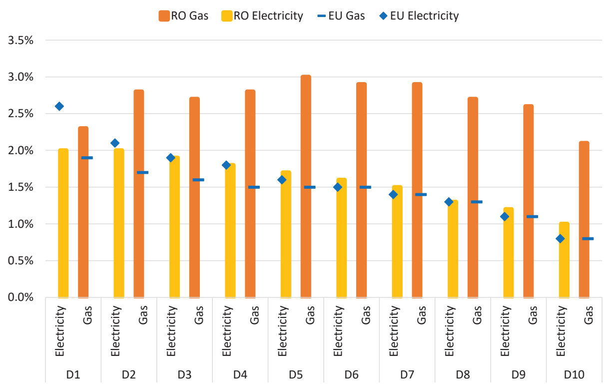
Despite improvements in recent years, Romania had a relatively high share of households affected by energy poverty already before the recent spike in energy prices, and this can be expected to aggravate the situation. The share of the population unable to keep their homes adequately warm declined from 13.1% in 2015 to 10.1% in 2021 (still above the EU average of 6.9%) ([58]). In particular, 21.9% of the population at risk of poverty were affected in 2021 (EU: 16.4% in 2021), as were 9.3% of lower middle-income households (in deciles 4-5) in 2021 (EU: 8.2% in 2021). Before the energy price hikes, an estimated 53.2% of the total population and 52.4% of the (expenditure-based) at-risk-of-poverty (AROP) population had residential expenditure budget shares on electricity, gas, and other fuels ([59]) above 10% of their household budget (above the estimated EU averages of 26.9% and 48.2%, respectively). A list of actions to improve social protection for vulnerable categories of energy poverty were listed in the national long term renovation strategy ([60]). They include the extension of the definition of vulnerable groups, preparation of an action plan for energy poverty and the implementation of buildings renovation programmes with measures aiming to ensure access to finance for socially vulnerable groups.

([58]) Energy poverty is a multi-dimensional concept. The indicator used focuses on an outcome of energy poverty. Further indicators are available at the Energy Poverty Advisory Hub.

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

([60]) Assessment of the first long-term renovation strategies under the Energy Performance of Building Directive (Art. 2a).

Graph A8.2: **Distributional impacts of energy prices due to rising energy expenditure (2021-2023)**



Mean change of energy expenditure as a percentage (%) of total expenditure per income decile (D) due to observed price changes (August 2021 – January 2023 relative to the 18 months prior), excl. policy support and behavioural responses.
Source: EMPL-JRC GD-AMEDI/AMEDI+ projects, based on Household Budget Survey 2015 and Eurostat inflation data for CP0451 and CP0452.

The increased energy prices in 2021-2023 negatively affect household budgets, in particular for low-income groups. As a result of price changes during August 2021 to January 2023 period relative to the 18 months prior (cf. Annex 7), in the absence of policy support and behavioural responses, the share of individuals living in households which spend more than 10% of their budget on energy would have increased by 16.0 pps for the whole population and by 14.7 pps among the (expenditure-based) AROP population, slightly less than the EU-level increases (16.4 pps and 19.1 pps, respectively) ([61]). Expenditure shares of low and lower-middle income groups would have increased the most for electricity, while for gas the medium deciles would have been the most affected, as shown in Graph A8.2. Among the (expenditure-based) AROP population, the share of individuals living in households with budget shares

([61]) EMPL-JRC GD-AMEDI/AMEDI+ ; see details in the related technical brief.

for private transport fuels [62] above 6% would have increased less than the EU average (1.0 pps vs 5.3 pps) and stands at 4.3% in January 2023 due to the increase in transport fuel prices, significantly below the EU average (37.9%). The RRP includes measures to integrate energy-efficiency technologies into educational and social infrastructure.

Access to public transport displays an urban-rural divide. Citizens perceive public transport to be relatively available (57% vs 55% in the EU), affordable (58% vs 54%) and of good quality (55% vs 60%). As regards these perceptions, rural areas in Romania perform worse than urban areas, but are, overall, at a similar level as rural areas in the EU [63]. The average carbon footprint of the top 10% of emitters among the population in Romania is about 6.5 times higher than that of the bottom 50% (see Graph A8.1), more pronounced than the EU average (5.0 times). In Romania, the average levels of air pollution in 2020 stood above the EU average (15.2 vs 11.2 µg/m PM2.5), with all regions exposed to critical levels of air pollution [64], leading to significant health impacts, in particular on vulnerable groups, and 21 560 premature deaths annually [65].

[62] ECOICOP: CP0722.

[63] EU (rural): 46%, 48% and 56% respectively. Special Eurobarometer 527.

[64] Two times higher than the recommendations in the WHO Air Quality Guidelines (annual exposure of 5µg/m3)

[65] EEA- Air Quality Health Risk Assessment

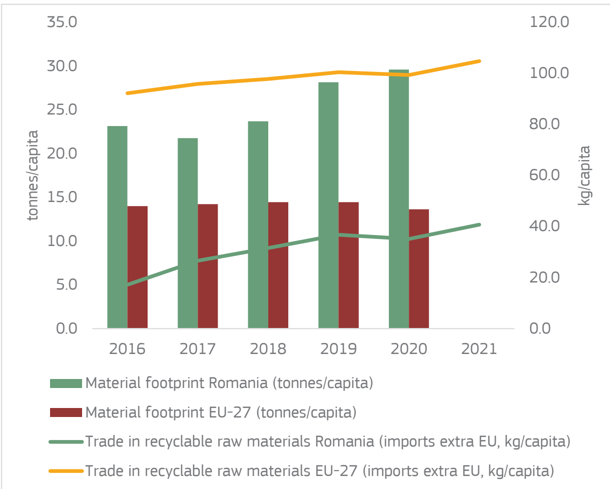
The circular economy transition is key to delivering on the EU's climate and environmental goals and provides large socio-economic benefits. It spurs job growth, innovation and competitiveness and fosters resilience and resource security. The circularity transition of industry, the built environment and agri-food can generate significant environmental improvements (see Annex 6), as they rank among the most resource-intensive systems.

Romania's circular economy transition is insufficient and needs accelerating to meet the EU's circular economy goals. The EU's 2020 circular economy action plan (CEAP) aims at doubling the circular material use rate between 2020 and 2030. The circular (secondary) use of material in Romania declined from 1.7% in 2016 to 1.4% in 2021. It is very low compared to the EU average of 11.7% and has deteriorated since 2017. The CEAP also aims to significantly decrease the EU's material footprint. In 2020, Romania's material footprint (29.6 tonnes per head) was well above the 2020 EU-27 average (13.7 tonnes per head) and confirms the upward trend since 2017. The labour market benefits of the circular transition remain limited, with minor growth in direct circular jobs in 2019. As regards health and safety in circular jobs, fatal accidents in waste management and materials recovery are above the average of all economic sectors and above the EU average ([66]).

Romania recently adopted new policies to address circular economy challenges, but more measures are needed. In September 2022 it published a national strategy for circular economy that was developed with the support of the Technical Instrument Facility (TSI), as part of the RRP. Progress was noted with the adoption in 2021 of the 41 county waste management plans and the Bucharest municipality waste management plan. The 2017 national waste prevention programme and waste management plan still need revising.

Romania's recycling performance has stagnated over recent years, remaining well below the EU's binding targets. With a municipal waste recycling rate of 11.3% in 2021, Romania missed the EU target for recycling 50% by 2020. Romania is at risk of missing the EU's recycling targets for packaging and municipal waste for 2025 and is at a significant distance from the landfill reduction target of 10% for 2035. In 2021, Romania landfilled 75.5% of its municipal waste, a rate over three times the EU average of 23%. The recycling rate did not show significant progress in the last 5 years (from 13.4% in 2016 to 11.3% in 2021). Romania needs to make considerable efforts to meet the EU's recycling targets through improvements in separate collection and treatment of waste with a view to recycling and improvements in waste data management in order to present coherent and verifiable data sets. Illegal or sub-standard landfilling is still widespread, diverting materials and resources that could be reused, remanufactured or recycled.

Graph A9.1: **Trend in material use**

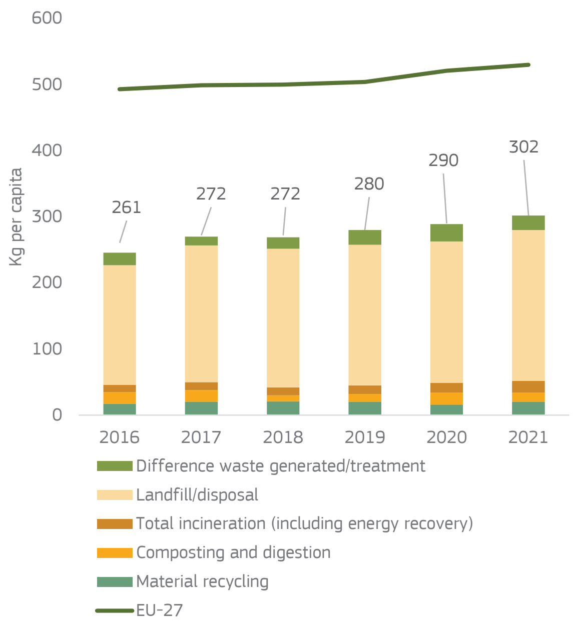


Source: Eurostat

The industrial system is not sufficiently circular. The Romanian economy, particularly industry, is less efficient at using materials than the EU average, with a resource productivity of 0.8 purchasing power standard per kilogramme vs 2.3 for the EU in 2021. This is an impediment to Romania's resilience (see Annex 5). Resource productivity has remained stable but low since 2016, indicating significant potential to boost repair, reuse and the use of secondary raw materials. The consumption footprint is increasing, but remains below the EU average. The national strategy for circular economy sets a general

([66]) Eurostat [HSW_N2_02] for NACE Rev. 2 sector E38; 13.8 fatal accidents p. 100 000 employed in 2018-2020 in Romania vs 3.5 for all sectors in RO; 6.3 in the EU for E38 direction for accelerating the transition from a linear to a circular economy model, providing an overview of 14 economic sectors in Romania in terms of their circularity potential. 7 were identified as having the highest potential.

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



Source: Eurostat

The built environment system continues to exacerbate the depletion of resources despite recent improvements. The recovery rate of construction and demolition waste increased in 2020 and was close to the EU average (88% vs 89%). However, data are not available for 2017 and 2019. Soil sealing progressed between 2016 and 2018. There is scope for renovating existing buildings and improving their use instead of building new ones, and for increasing the share of secondary raw materials used in construction.

The agri-food system has yet to progress towards circularity. Romania's composting and anaerobic digestion per head remains well below the EU average, with 14 kg per capita vs 100 kg per capita. Romania should step up efforts to increase composting and anaerobic digestion to make its circular economy more efficient and enhance its strategic autonomy by generating biomethane and/or producing organic fertilisers. The Romanian CAP strategic plan includes funds for circular economy in the agri-food sector.

There remains a financing gap in the circular economy, including waste management. Additional investments will be required to address growing needs. The financing gap was estimated at EUR 267 million per year between 2014 and 2020. Over this period, investment needs were estimated to be at least EUR 874 million per year, while investment baselines were EUR 607 million per year (see Annex 6).

Table A9.1: **Overall and systemic indicators on circularity**

AREA	2016	2017	2018	2019	2020	2021	EU-27	Latest year EU-27
Overall state of the circular economy								
Material footprint (tonnes/capita)	23.2	21.8	23.7	28.2	29.6	-	13.7	2020
YoY growth in persons employed in the circular economy (%)[1]	2.6	-2.5	-0.6	1.3	-	-	2.9	2019
Water exploitation index plus (WEI+) (%)	15.0	22.0	19.4	9.0	-	-	3.6	2019
Industry								
Resource productivity (purchasing power standard (PPS) per kilogram)	0.7	0.9	0.9	0.8	0.8	0.8	2.3	2021
Circular material use rate (%)[2]	1.7	1.7	1.5	1.3	1.5	1.4	11.7	2021
Recycling rate (% of municipal waste)	13.4	14.0	11.1	11.5	11.9	11.3	49.6	2021
Built environment								
Recovery rate from construction and demolition waste (%)[3]	85.0	-	74.0	-	88.0	-	89.0	2020
Soil sealing index (base year = 2006)[4]	106.0	-	109.3	-	-	-	108.3	2018
Agri-food								
Food waste (kg per capita)[5]	-	-	-	-	-	-	131.0	2020
Composting and digestion (kg per capita)	18.0	18.0	9.0	12.0	18.0	14.0	100.0	2021

(1) Persons employed in the circular economy only tracks direct jobs in selected sub-sectors of NACE codes E, C, G and S; (2) the circular material use rate measures the share of material recovered and fed back into the economy in overall material use; (3) the recovery rate of construction and demolition waste includes waste which is prepared for reuse, recycled or subject to material recovery, including through backfilling operations; (4) soil sealing: 2016 column refers to 2015 data; (5) food waste includes primary production, processing and manufacturing, retail and distribution, restaurants and food services, and households.
Source: Eurostat, European Environment Agency

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 in that Programme for digital transformation by 2030, this Annex describes Romania'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). Romania allocates 20.5% of its total RRP budget to digital (EUR 6 billion) ([67]).

The Digital Decade Policy Programme sets out a pathway for Europe's successful digital transformation by 2030. The Programme provides a framework for assessing the EU's and Member States' digital transformation, notably via the Digital Economy and Society Index (DESI). It also provides a way for the EU and its Member States to work together, including via multi-country projects, to accelerate progress towards the Digital Decade digital targets and general objectives ([68]). More generally, several aspects of digital transformation are particularly relevant in the current context. In 2023, the European Year of Skills, building the appropriate skillset to make full use of the opportunities that digital transformation offers is a priority. A digitally skilled population increases the development and adoption of digital technologies and leads to productivity gains ([69]). Digital technologies, infrastructure and tools all play a role in the fundamental transformation needed to adapt the energy system to the current structural challenges ([70]).

A lack of basic digital skills and ICT specialists are key challenges for Romania. The country scores considerably below the EU average on both indicators. Only 28% of people aged between 16 and 74 have at least basic digital skills, compared with an EU average of 54%. The proportion of ICT specialists as part of the workforce is 2.6%, an ascending trend but still much lower than the 4.5% EU average. It should however be noted that Romania scores second highest in the EU regarding the proportion of ICT graduates (6.7% among all higher education graduates) and that the proportion of female ICT specialists is also one of the highest in the EU. This discrepancy is explained to a large extent by the brain drain. Romania is already implementing a number of RRP measures expected to contribute to progress in this area, such as a new legislative framework for the digitalisation of education, a grant scheme to support digital skills in SMEs, support for libraries to become hubs for digital skills, support for the digitalization of universities.

Digital connectivity is the area in which Romania scores best. The country scores significantly above the EU average and keeps progressing quickly for very high capacity network (VHCN) (96% compared to 73% EU average) and fibre to the premises (FTTP) coverage (96% compared to 56%). Take up has also evolved positively, and is significantly above the EU average, including for connections of or above 1GbPs. These results are due to a mix of market dynamics and public intervention. On the other hand, 5G coverage is well below the EU average, both when it comes to the overall 5G coverage (27% compared to the 81% EU average) and to coverage in the 3.4-3.8 GHz band, essential for enabling advanced applications requiring large spectrum bandwidth (26% compared to the 41% EU average). Several measures implemented under the RRP are expected to lead to progress, including an auction for 5G licenses, the new 5G network security law, the adoption of the national cybersecurity strategy, and the implementation of various recommendations set out in the EU connectivity toolbox. However, this progress is expected to be slow due to a variety of factors, including lack of market demand.

Romania scores very poorly on the digitalisation of businesses. The share of SMEs with at least a basic level of digital intensity as well as the take-up of advanced technologies like cloud computing services, artificial intelligence and big data remain considerably below the EU average. Only 53% of SMEs have at least a basic level of digital intensity, compared to an EU

([67]) The share of financial allocations that contribute to digital objectives has been calculated using Annex VII of the RRF Regulation.

([68]) The Digital Decade targets as measured by DESI indicators and complementary data sources are integrated to the extent currently available and/or considered particularly relevant in the MS-specific context.

([69]) See for example OECD (2019): OECD Economic Outlook, Digitalisation and productivity: A story of complementarities, OECD Economic Outlook, Volume 2019 Issue 1 | OECD iLibrary (oecd-ilibrary.org).

([70]) The need and possible actions for a digitalisation of the energy system are laid out in the Communication 'Digitalisation the energy system – EU action plan' (COM(2022)552.

average of 69%, while the gap with the EU average is even wider for the indicators showing the uptake of advanced digital technologies. Several ongoing RRP measures are expected to lead to progress in this area, including Romania's participation in the Important Project of Common European Interest (IPCEI) on low power processors and semiconductor chips, as well as various direct support schemes, for the digitalisation of businesses, via grants and financial instruments.

Digital public services are a key challenge for the country. Romania scores significantly below the EU average on the availability of digital public services for citizens as well as for businesses. Moreover, only 24% of Romanian online users engage actively with e-government services, compared with an EU average of 74%. Various RRP measures are expected to make progress in this area, for example the entry into force of the legislative framework necessary for creating a government cloud, including an Emergency Ordinance setting up the governmental cloud and the Interoperability Law. Currently, no electronic identification (eID) scheme is notified by Romania. However, the RRP includes measures to deliver electronic ID cards to 8 million citizens until 2026. Romania also is involved via public and private entities in two large-scale pilot projects testing the European Digital Identity Wallet in a number of everyday use cases. Finally, Romania scores also significantly below the EU average regarding access to electronic health records. A centralised access service for citizens exists, but the health data available could be significantly extended, and access services should be further rolled out across the entire population, and to different types of healthcare providers. The RRP foresees significant investments in eHealth infrastructure and telemedicine services connecting patients and caregivers.

Table A10.1: **Key Digital Decade targets monitored by DESI indicators**

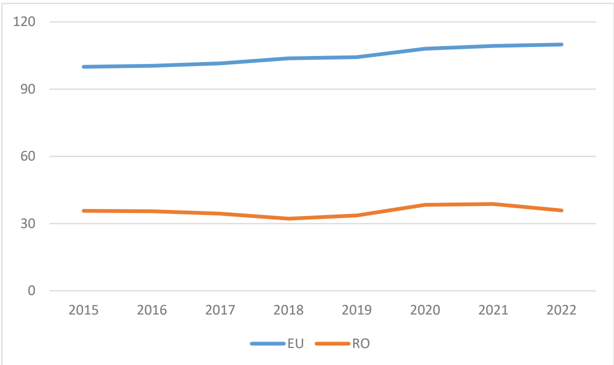
	Romania DESI 2021	Romania DESI 2022	Romania DESI 2023	EU DESI 2023	Digital Decade target by 2030 (EU)
Digital skills					
At least basic digital skills	**NA**	**28%**	**28%**	**54%**	**80%**
% individuals		2021	2021	2021	2030
ICT specialists (1)	**2.4%**	**2.6%**	**2.6%**	**4.5%**	**20 million**
% individuals in employment aged 15-74	2020	2021	2021	2021	2030
Digital infrastructure/connectivity					
Fixed Very High Capacity Network (VHCN) coverage	**76%**	**87%**	**96%**	**73%**	**100%**
% households	2020	2021	2022	2022	2030
Fibre to the Premises (FTTP) coverage (2)	**76%**	**87%**	**96%**	**56%**	**-**
% households	2020	2021	2022	2022	2030
Overall 5G coverage	**12%**	**25%**	**27%**	**81%**	**100%**
% populated areas	2020	2021	2022	2022	2030
5G coverage on the 3.4-3.8 GHz spectrum band	**NA**	**NA**	**26%**	**41%**	**-**
% populated areas			2022	2022	2030
Digitalisation of businesses					
SMEs with at least a basic level of digital intensity	**NA**	**NA**	**53%**	**69%**	**90%**
% SMEs			2022	2022	2030
Big data (3)	**5%**	**5%**	**5%**	**14%**	**75%**
% enterprises	2020	2020	2020	2020	2030
Cloud (3)	**NA**	**11%**	**11%**	**34%**	**75%**
% enterprises		2021	2021	2021	2030
Artificial Intelligence (3)	**NA**	**1%**	**1%**	**8%**	**75%**
% enterprises		2021	2021	2021	2030
Digitalisation of public services					
Digital public services for citizens	**NA**	**44**	**48**	**77**	**100**
Score (0 to 100)		2021	2022	2022	2030
Digital public services for businesses	**NA**	**42**	**45**	**84**	**100**
Score (0 to 100)		2021	2022	2022	2030
Access to e-health records	**NA**	**NA**	**57**	**71**	**100**
Score (0 to 100)			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 evaluation will also be monitored separately and taken into consideration when interpreting VHCN coverage data in the Digital Decade.
(3) At least 75 % of Union 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 Romania's research and innovation system, which is essential for delivering the twin green and digital transition.

Romania is an 'emerging innovator' with the weakest innovation performance in the EU. According to the 2022 European Innovation Scoreboard [71] Romania's innovation performance is just 50% of the emerging innovators' average and the gap between Romania's performance and the EU's is widening.

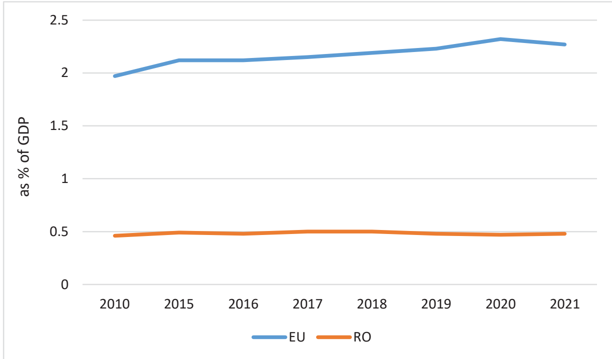
Graph A11.1: **Innovation performance 2015-2022**



Source: European Innovation Scoreboard, 2022

Romania's total R&D intensity [72] is the lowest in the EU. At 0.48% of GDP in 2021, it remains far below EU average (2.26%) and below Romania's own target of 2% (by 2020). In particular, public expenditure on R&D has been decreasing in recent years and was 0.19% of GDP in 2021, just a quarter of the EU average (0.76%). This reflects a profound underfunding. The absence of multi-annual budgetint creates further unpredictabelity for the research and innovation (R&I) community [73]. A promising sign for the future is the government's reaffirmation of its intention to increase public R&D expenditure to 1% of GDP by 2027 [74] and its commitment to introducing a biannual funding mechanism.

Graph A11.2: **R&D intensity 2010-2021**



Source: Eurostat, 2022

The high degree of fragmentation in the Romanian public research system has led to a weak public science base. The system consists of four different types of research institutions [75], all with certain degree of autonomy, different funding rules and are under the responsibility of different ministries. They have not been subject to a regular evaluation process or performance-based funding. The Romanian recovery and resilience plan (RRP) aims to address the fragmentation by introducing a regular evaluation mechanism and by encouraging research institutions to merge. Both the National Plan for Research Development and Innovation and the draft law on higher education include elements for performance-based funding of research.

The lack of human capital for R&I is holding back Romania's competitiveness and its move towards a knowledge economy. The number of researchers (full-time equivalents) employed by the public sector per thousand active population is stagnating well below EU average at the bottom end of all countries (1.6 in Romania in 2020 compared to an EU average of 4.0). This problem is exacerbated by the lowest share of population aged 25-34 who have successfully

(71) 2022 European Innovation Scoreboard (EIS), Country profile: Romania https://ec.europa.eu/assets/rtd/eis/2022/ec_rtd_eis-country-profile-ro.pd fThe 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).

(72) Defined as gross domestic expenditure (GERD) on R&D as a percentage of GDP

(73) European Commission (2022): PSF Country review of the Romanian Research and Innovation System. https://ec.europa.eu/research-and-innovation/en/statistics/policy-support-facility/psf-country/psf-country-review-romanian-research-and-innovation-ri-system

(74) See National Strategy for Research, Innovation and Intelligent Specialisation 2022-2027 and National RDI Plan 2022-2027- PNCDI IV.

(75) They are: National R&D institutes (INCDs); Research units of the Romanian Academy; branch academies of the different ministries, higher education research institutions. Higher education institutions do not have any visible core research budget.

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

Romania	2010	2015	2019	2020	2021	EU average (1)
Key indicators						
R&D intensity (GERD as % of GDP)	0.46	0.49	0.48	0.47	0.48	2.26
Public expenditure on R&D as % of GDP	0.28	0.27	0.20	0.19	0.19	0.76
Business enterprise expenditure on R&D (BERD) as % of GDP	0.18	0.21	0.28	0.27	0.29	1.49
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	3.5	5.6	:	:	9.8
PCT (Patent Cooperation Treaty) patent applications per billion GDP (in PPS)	0.2	0.3	0.1	:	:	3.5
Academia-business cooperation						
Public-private scientific co-publications as % of total publications	3.9	4.2	6.2	5.8	6.1	7.1
Human capital and skills availability						
New graduates in science & engineering per thousand pop. aged 25-34	18.4	11.2	10.9	12	:	16
Public support for business enterprise expenditure on R&D (BERD)						
Total public sector support for BERD as % of GDP	0.057	0.045	0.018	:	:	0.194
Green innovation						
Share of environment-related patents in total patent applications filed under PCT (%)	12.9	6.4	8.2	:	:	13.3
Finance for innovation and economic renewal						
Venture capital (market statistics) as % of GDP	0.013	0.002	0.005	0.005	0.009	0.074
Employment in fast-growing enterprises in 50% most innovative sectors	2.1	2.6	2	:	:	5.5

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

completed tertiary education (76) as well as poor working conditions and career prospects for researchers. The Romanian RRP includes various reform and investment measures to retain researchers in the country.

Weak science-industry collaboration remains a challenge. Public-private scientific co-publications as a percentage of total number of publications have been increasing over the past decade but remain below the EU average (6.1% compared to 7.1% in 2020). Public expenditure on R&D financed by business enterprise (national) has fallen significantly in recent years. Public research institutions are not incentivised or well-equipped enough to seek industry collaborators, as they possess neither in-house resources nor the entrepreneurial culture to access public funding for collaborative projects (77).

While the RRP includes measures to improve the regulatory framework to incentivise collaboration, it still needs to encourage the higher education institutions to engage in entrepreneurial activities and technology and knowledge transfer (78).

Innovation activity and R&D absorption capacity at company level are limited. Business enterprise expenditure on R&D (BERD) has been stagnating in recent years and, at 0.29% of BERD as % of GDP, is around one fifth of the EU average of 1.53% in 2020. It is concentrated in a few big companies and lacks direct government support (79). Regarding commercialisation of innovation, Romania's performance in terms of patents applications has been decreasing and is

(76) In 2021, 23.3% of the population aged 25-34 completed successfully tertiary education against the EU average of 41.2%.

(77) Source: ibid.

(78) Source: ibid.

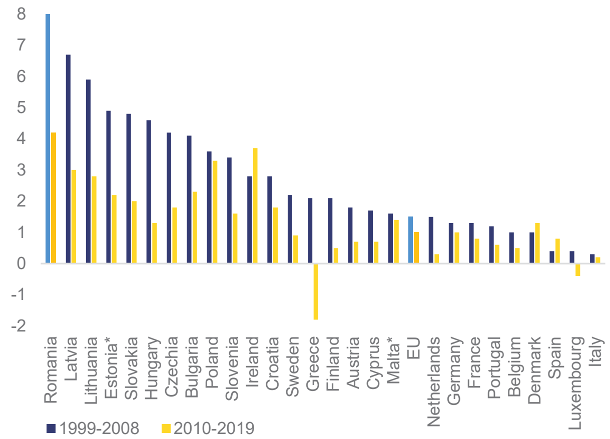
(79) https://www.oecd.org/sti/rd-tax-stats-romania.pdf

the lowest in the EU. Also, the scaling up of innovative domestic firms is hindered by the limited size of the local venture capital market. [80]

[80] Eurostat: Venture Capital (market statistics) as % of GDP.

Romania is one of the EU top performers in terms of productivity growth. The productivity growth of the Romanian economy was the highest in the EU over the last 20 years ([81]). Productivity grew less quickly during the two years of the pandemic but rebounded strongly in 2022 (4.6 %, third best in the EU). The low starting point is important, but the consistent performance over a long period allowed a significant catching up in terms of real GDP per capita, from below 40 % of EU average at the time of joining the EU to 77 % in 2022 according to Eurostat. Investment is a major contributing factor to this performance, as both net private and public investment are well above the EU average. The capital intensity of the Romanian economy went up by an average of 4.5 % per year between 2010 and 2019, the second highest increase in the EU ([82]).

Graph A12.1: **Real labour productivity per hour worked, annual average growth rate by country, 1999-2008 and 2010-2019**

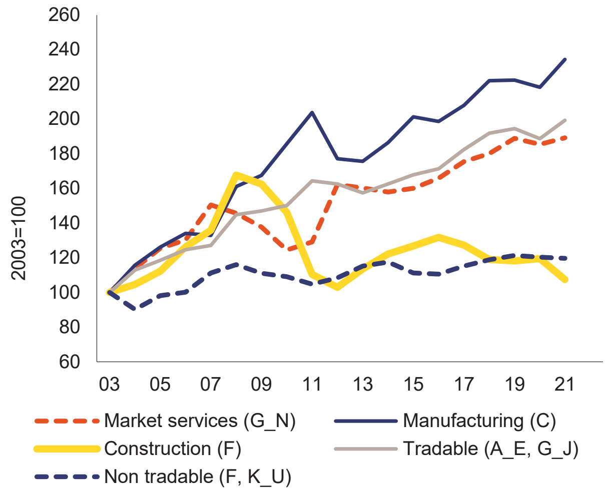


* *1999 not available, calculation based on data from 2000 to 2008

Source: Eurostat

Industry represents a relatively high share of GDP and contributes to the diversification, resilience and productivity performance of the economy. In 2021, the share of industry (including construction) in GDP was 26.7 %, well above the EU average of 22.8 % ([83]). Industry employs 31 % of the workforce in the private sector and accounts for 34 % of gross investment ([84]) It also leads as regards the productivity metrics (see graph A12.2). Real labour productivity per person in industry decreased in 2019 and 2020, recovered forcefully in 2021 (6.5 %) and went down again in 2022 (- 2.7 %).

Graph A12.2: **Productivity by sector**



Source: European Commission.

Industry was hit hard by the high energy prices, even though the country is a leading natural gas producer in the EU. In the first half of 2022, electricity prices in Romania were higher than the EU average for both households and non-households, according to Eurostat. They reached the fourth highest level in the EU for non-households. For gas, the price for non-households was also above the EU average and the sixth highest in the EU ([85]). Gas consumption decreased over the whole economy by 35 % in January-November compared to the same period of 2017-21 ([86]). Company closures and reduced activity are the main factors behind this significant drop. Industrial production volume, measured by the industrial production index, was 1.8 % lower in 2022 compared to 2021. The drops in the energy intensive industries were severe – 22.1 % for

([81]) See graph 1 and the 2023 Commission Spring Forecast, Statistical Annex, Table 28.

([82]) CPB Netherlands, 2021 Annual Report.

([83]) World Bank. For 2022, National Statistical Institute gives a GDP share for industry of 22.5 % and 6.3 % for construction.

([84]) National Statistical Institute, https://insse.ro/cms/sites/default/files/com_presa/com_pdf/actv_intrep_2021r.pdf.

([85]) Eurostat.

([86]) Eurostat, https://ec.europa.eu/eurostat/web/products-eurostat-news/w/DDN-20221220-3#:~:text = The%20EU%20consumption%20of%20natural,November)%20between%202017 %20and%202021 .

chemicals, 15.1 % for metalworking. [87] The energy support provided by the authorities was limited to households, SMEs, public institutions, and food companies. The electricity and gas price caps agreed in December 2022 are higher than those in force in other Member States. No strategy seems to be in place to safeguard the country's strategic industry players and avoid deindustrialisation. 90 % of the Romanian companies reported high energy costs as the main barrier to long-term investment, above the EU average of 82 % [88].

Decarbonisation of industry will be based on renewables and nuclear. Eurostat statistics show that in 2020, Romania had the third lowest CO2 emissions per capita in the EU and the lowest energy use per capita [89]. The sweeping deindustrialisation that took place during the 1990s, rather than energy efficiency, is the factor explaining this performance. Installed renewables electricity capacity is almost 60 % of electricity consumption, above the EU average (50 %). Renewables stakeholders state that the key issue for expanding the presence of renewables in the energy mix is connection to the grid. To improve renewables generation, two studies are under preparation, led by the Competition Council. Significant investment is under way in nuclear, which will boost its share in the energy mix from the current 20 % to 36 % by 2030.

Romania has the potential to help reduce the EU's strategic dependencies. The government has announced the adoption of a new strategy on mineral resources and a new law on mining. As a country with promising critical resources (e.g. lithium, copper, magnesium), the new framework, if rightly designed, can incentivise the extraction and refining of those resources.

Access to the Single Market is an opportunity that many SMEs in Romania could better exploit. Romania's trade integration into the Single Market is below the EU average (33.3 % of GDP vs 45.8 % of GDP). The bulk of intra-EU exports in value terms (70 %, above the EU average) came from large companies [90], which means that SMEs are not as present as they should be on the Single Market. The fact that Romania has still not been admitted to the Schengen area – while meeting the technical criteria since 2011 – is a significant obstacle for the business environment and for attracting foreign investment.

Acting on the restrictive regulated professions may boost productivity. Regulatory restrictiveness of regulated professions in Romania is higher than the EU average for civil engineers, architects, accountants/tax advisers, tourist guides. Lawyers in Romania are subject to incompatibility rules and multidisciplinary restrictions, that could affect the potential of this sector for innovation and to roll out digital solutions and new business models. The fragmented system regulating civil engineers could hinder the free movement of professionals and the rules spreading responsibility over different categories of professionals in the same area of activity could impact on the efficiency of service provision. [91]

Public procurement plays an important role in the deployment of EU and national funds. Romania is a significant beneficiary of the Recovery and Resilience Facility and European cohesion policy funds. To maximise the benefits of these funds, several important milestones related to public procurement must be achieved. In this regard, the amendment of the legislation on remedies has already entered into force. Progress has also been made towards operationalising the use of standard electronic forms and establishing the updated National Public Procurement Strategy. The level of stability of staff resources and the administrative capacities of public procurement authorities, including the National Agency for Public Procurement, remain insufficient. This must be addressed, as these are key to ensuring not only the implementation of the procurement strategy, but also strategic planning and efficiency in the public procurement system. In addition, the rate of single bids – after a slight decrease in the

[87] National Statistical Institute, Industrial Production Indices, press release, 14 February 2023.

[88] EIB Investment Survey 2022.

[89] https://ourworldindata.org/per-capita-energy

[90] Eurostat, https://ec.europa.eu/eurostat/statistics-explained/index.php?title = File:Value_of_exports_of_goods_by_size_class,_intra-EU,_2020.png

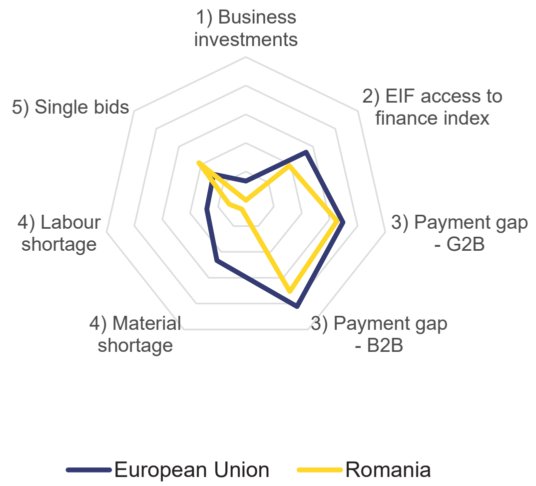
[91] Communication on updating the reform recommendations for regulation in professional services, COM(2021)385.

past year – has risen to one of the highest in the EU (42 % in 2022). The rate of direct awards has also gone up to 23 % (2022), a value that is also considered one of the highest in the EU.

Dispute resolution networks, such as SOLVIT, help companies in times of disruption to the single market. The capacity of the Romanian public administration to apply EU rules on the single market can still be improved by ensuring that all authorities in Romania co-operate with their national SOLVIT centre and respond promptly to its requests.

Business environment and SMEs are key to improving the productivity level of the economy by boosting investment, especially for SMEs. As highlighted above, productivity has improved but it is still well behind the EU average (74 %). Figures for business registration show that the business environment is dynamic. The same picture is conveyed by the broader business birth and death figures for 2020 ([92]). However, as shown by the 2022 EIB Investment Survey, business conditions are negatively affected by such factors as energy costs (reported by 90 % of companies, well above the EU average of 82 %), uncertainty (87 % vs 78 % EU) and transport infrastructure (71 % vs 48 % EU). One significant indicator for the quality of the business environment is the level of FDI. Even if the last two years have seen a notable increase in FDI inflows (see National Bank of Romania, FDI in Romania in 2021), the yearly flow and stock of FDI is still modest (9 billion inflow in 2021, 100 billion stock). This is the same level as Hungary, which has half the population of Romania, and 40 % of the level of Poland ([93]). Around 40 % of the FDI stock was invested in industry. The number of SMEs per inhabitant (29 per 1000 inhabitants in Romania) has been well below the EU average of 58 SMEs per 1000 inhabitants. ([94]) 99.7 % of Romanian companies are SMEs (vs 99.8 % in the EU), and their productivity is around 40 % lower than that of large companies ([95]). As shown above, SMEs carry out only about 30 % of Romania's total exports.

Graph A12.3: **Business environment and productivity drivers**



Source: 1) % of GDP, 2021 Eurostat;
2) composite indicator, 2021 European Investment Fund access to finance index;
3) average payment delay in number of days, 2022 Intrum;
4) % of firms in manufacturing facing constraints, 2022 European Commission business consumer survey;
5) proportion of contracts awarded with a single bidder, 2022 Single Market Scoreboard.

Access to finance remains an issue for scaling up companies, especially SMEs. In order to grow and go both green and digital, SMEs need resources. At first glance, Romanian SMEs do not appear to be primarily concerned about financing. The 2021 EIF access to finance for SMEs index ranks Romania 20th, largely because the public support provided during the pandemic eased access to finance – two-thirds (65 %) of firms received financial support in response to COVID-19, above the EU average of 56 %. In the last non-pandemic year (2019), the country ranked 26th. Romania has the fourth highest share of finance-constrained firms in the EU, according to the EIB Investment Survey 2022. The bank loan segment especially offers scope for improvement. In 2021, the share of companies that did not apply for a loan remained high, at 77 % ([96]). Only 16 % have applied for such financing and have received

([92]) Eurostat, Enterprise Demography, 2020: births: 10.8 % RO, 8.9 % EU; deaths 7.6 vs. 7.2.

([93]) OECD, https://data.oecd.org/fdi/fdi-stocks.htm

([94]) Annual Report on SMEs, 2019. The number cannot however be correlated to other significant indicators such as per capita income.

([95]) SME Performance Review 2022 and own calculation, based on value added per employee.

([96]) National Bank of Romania, Survey on access to finance for non-financial corporations, June 2021.

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

	POLICY AREA	INDICATOR NAME	2018	2019	2020	2021	2022	EU27 average (*)
HEADLINE INDICATORS	Economic Structure	Net private investment, level of private capital stock, net of depreciation, % GDP [(1)]	3.5	4.7	5.6	5.8	6.5	**3.7**
		Net public investment, level of public capital stock, net of depreciation, % GDP [(1)]	0.7	1.5	2.6	2.1	2.4	**0.4**
		Real labour productivity per person in industry (% yoy)[(2)]	7.6	-0.2	-1.1	6.8	-2.7	**1.4**
	Cost competitive-ness	Nominal unit labour cost in industry (% yoy)[(2)]	-2.7	9	3	-4.5	14.7	**2.9**
RESILIENCE	Shortages	Material shortage (industry), firms facing constraints, % [(3)]	2	2	3	7	7	**47**
		Labour shortage using survey data (industry), firms facing constraints, % [(3)]	11	13	8	10	12	**28**
		Vacancy rate (business economy)[(4)]	1.1	1	0.6	0.8	0.9	**3.1**
	Strategic dependencies	Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials [(5)]	0.16	0.17	0.18	0.19	0.19	**0.18**
		Installed renewables electricity capacity, % of total electricity produced [(6)]	50	56.6	57.2	63.6	n.a.	**50.9**
SINGLE MARKET	Single Market integration	EU trade integration, % [(7)]	31.4	30.6	28.7	31.6	33.3	**45.8**
	Restrictions	EEA Services Trade Restrictiveness Index [(8)]	n.a.	n.a.	n.a.	n.a.		**0.05**
	Public procurement	Single bids, % of total contractors [(9)]	36	31	41	33	42	**29**
BUSINESS ENVIRONMENT - SMEs	Investment obstacles	Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle [(10)]	30.5	26.7	29.1	16.8	25.8	**29.6**
	Business demography	Bankruptcies, Index (2015=100)[(11)]	59.8	70.6	66.8	86.7	36.9	**86.8**
		Business registrations, Index (2015=100) [(11)]	130	147.7	122.4	161.1	182.5	**121.2**
	Late payments	Payment gap - corporates B2B, difference in days between offered and actual payment [(12)]	-1	8	13	12	12	**13**
		Payment gap - public sector, difference in days between offered and actual payment [(12)]	-5	17	13	9	15	**15**
		Share of SMEs experiencing late payments in past 6 months, % [(13)]	n.a.	53.1	52	52.6	45.2	**43**
	Access to finance	EIF Access to finance index - Loan, Composite: SME external financing over last 6 months, index values between 0 and 1 [(14)]	0.27	0.2	0.21	0.27	n.a.	**0.46**
		EIF Access to finance index - Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values between 0 and 1 [(14)]	0.08	0.09	0.06	0.1	n.a.	**0.23**

(*) Last available year
Source: (1) AMECO, (2) Eurostat, (3) ECFIN BCS, (4) Eurostat, (5) COMEXT and Commission calculations, (6) Eurostat, (7) Eurostat, (8) OECD, (9) Single Market Scoreboard, (10) EIB survey, (11) Eurostat: (12) Intrum, (13) SAFE Survey, (14) EIF SME Access to Finance Index.

approval for the entire amount requested. Banks in Romania focus on government debt (the highest exposure in the EU) and property loans. The share of private sector loans in GDP was 27.3 % in 2021 (Poland 52%, Hungary 40%). Companies generally mistrust banks. SMEs have the lowest degree of confidence in the banking sector. Romanian companies have structural problems that prevent them accessing loans (e.g. the number of companies with negative capital is the second largest in Europe with only 20 % of active companies being bankable) ([97]). This may explain why trade credit is at times intensively used by Romanian companies as a way of financing. In 2021, trade credit of non-financial companies amounted to 337 billion lei (68 billion EUR), which is 2.3 times the outstanding value of banking loans granted to non-financial companies (148.5 billion lei).

([97]) EIB, Investment: What Holds Romania Back? August, 2019; National Bank of Romania, Survey on access to finance for non-financial corporations, June 2021.

This Annex outlines the performance of Romania's public administration, which is essential for providing services and carrying out reforms. Government effectiveness in Romania is significantly below the EU average. Despite some improvements, in 2021 it remained below the 2017 score (-0.06 in 2017 and -0.13 in 2021, within a range -2.5 to +2.5) ([98]). The recovery and resilience plan (RRP) defines a range of reforms in the public sector and the judiciary. It intendeds to: (i) improve decision-making; (ii) create a new national recruitment and promotion system for civil servants; (iii) design a new multiannual recruitment planning system; (iv) reform civil servants' pay; (v) create a new competency framework and competition methodology. There are also measures aimed at improving the public procurement process, including digitalisation and capacity building.

Romania is significantly below the EU-27 average in the use and maturity of digital public services (Table A13.1 and Annex 10). Only 17% of Romanian citizens use the internet to interact with public authorities, 11% to obtain public information, 9% to download administrative forms and 9% to submit these forms when completed. The trend in these indicators has been positive over the past 5 years, but progress has been slow. The trend in the provision of public services improved from 36% in 2017 to 38% in 2019. Data from the Authority for the Digitalisation of Romania ([99]) show that practical steps are being taken to develop digital services, including the use of the European Social Fund Plus and the launch of the 2020 national strategy on the digital agenda for Romania. Reforms and investment in the RRP to reduce fragmentation, improve interoperability and remove bureaucratic barriers are ongoing. A significant gap remains between Romania and the EU-27 average in the provision of digital public services.

Regulatory governance in Romania scores around the EU average. The regular impact assessment of new draft proposals has been established in recent years. The presentation of costs and benefits however varies in quality. Frequent legislative initiatives weaken legal certainty. Romania also lacks a systemic approach to *ex post* evaluation of existing regulations (Graph A13.1).

The participation of civil servants in adult learning is low compared to the EU average. This applies to workers in the public administration, but also to those in the education and healthcare sectors (Graph A13.2).

The efficiency of justice has improved, while some remaining aspects as regards the quality of justice and the fight against corruption need further action. Romania performs efficiently overall and improved across all indicators in 2021. The time it takes to resolve administrative cases decreased, in particular at first instance where it dropped from 690 days in 2020 to 293 days in 2021. The clearance rate for civil and commercial cases improved, significantly so for administrative cases at first instance, from 48.4% in 2020 to 96.6% in 2021. The quality of the justice system is overall good, despite the shortages in human resources. Digitalisation of justice can be improved, though digital tools are widely used in courts. However, some concerns about judicial independence persist ([100])

Romania has a relatively large state-owned enterprise (SOE) sector. A recent overview ([101]) of the governance of Romania's SOEs reveals several weaknesses. First, the ownership framework remains dispersed across line ministries with a weak coordination function placed in the Ministry of Finance. Second, the selection procedures of board members depart from the principles of transparency and professionalism. Third, some SOEs are protected by law from insolvency procedures, which means that they do not operate on a level playing field with private companies. Against this backdrop, planned amendments to Romania's legislation on SOEs aim to ensure that SOEs operate on a level playing field with privately-owned companies, strengthen the financial and non-financial

([98]) Worldwide governance indicators, 2021 data (http://info.worldbank.org/governance/wgi/).

([99]) Authority for the Digitalisation of Romania (https://www.poc.research.gov.ro/uploads/2021-2027/conditie-favorizanta/bariere-digitalizare.pdf).

([100]) For a more detailed analysis of the performance of the justice system in Romania, see the 2023 EU Justice Scoreboard (forthcoming) and the country chapter for Romania in the 2023 Rule of Law Report (forthcoming).

([101]) OECD (2023), OECD Review of the Corporate Governance of State-Owned Enterprises in Romania, Corporate Governance, OECD Publishing, Paris, https://doi.org/10.1787/fabf20a8-en..

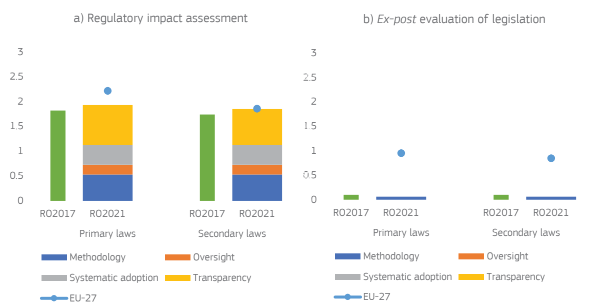
Table A13.1:**Public administration indicators**

RO	Indicator ([1])	2017	2018	2019	2020	2021	2022	EU-27([2])
	E-government and open government data							
1	Share of individuals who used the internet within the last year to interact with public authorities (%)	12.6	12.1	14.6	15.9	16.7	n/a	64.8
2	E-government benchmark overall score ([3])	n/a	n/a	n/a	40.1	41.8	45.8	72.9
3	Open data and portal maturity index	n/a	0.6	0.6	0.7	0.8	0.7	0.8
	Educational attainment level, adult learning, gender parity and ageing							
4	Share of public administration employees with tertiary education (levels 5-8, %)	54.2	55.3	56.7	54.9	53.6 (b)	54.2	52.0
5	Participation rate of public administration employees in adult learning (%)	: (u)	: (u)	: (u)	: (u)	6.9 (b)	8.1	16.9
6	Gender parity in senior civil service positions ([4])	3.8	0.8	7.0	8.6	7.8	0.4	11.0
7	Ratio of 25-49 to 50-64 year olds in NACE sector O	4.2	3.9	3.2	2.9	2.6 (b)	2.4	1.5
	Public financial management							
8	Medium term budgetary framework index	0.7	0.7	0.7	0.8	0.8	n/a	0.7
9	Strength of fiscal rules index	1.8	1.8	2.3	2.3	2.3	n/a	1.5
	Evidence-based policy making							
10	Regulatory governance	1.39	n/a	n/a	n/a	1.47	n/a	1.7

([1]) High values denote a good performance, except for indicator # 6. ([2]) 2022 value. If not available, the 2021 value 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: ICT use survey, 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).

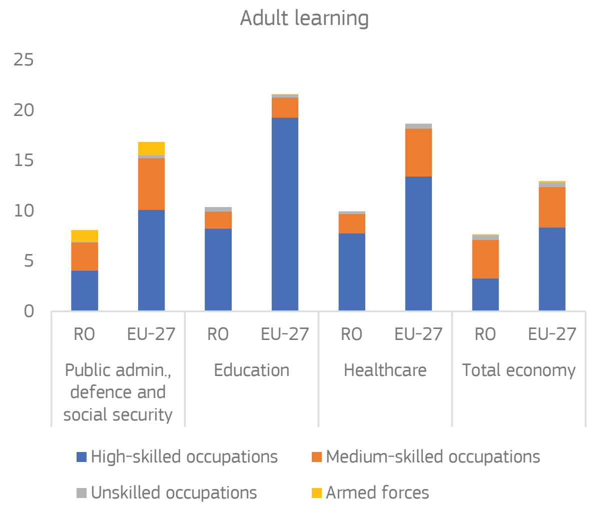
reporting of SOEs and professionalise their boards of directors. In addition, the RRP sets out targets for restructuring/listing SOEs on the Romanian stock exchange.

Graph A13.1: **Romania: a) Regulatory impact assessment and b) ex post evaluation of legislation**



Source: OECD. Indicators of Regulatory Policy and Governance Surveys 2017 and 2021 (http://oe.cd/ireg).

Graph A13.2: **Romania. Participation rate of 25-64 year olds in adult learning (%) by sector and occupation**



(1) 2022 data
Source: European Commission, based on the Labour Force Survey

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 Romania'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 Romania**

Policy area	Headline indicator	
Equal opportunities and access to the labour market	Early leavers from education and training (% of population aged 18-24, 2022)	15.6
	Share of individuals who have basic or above basic overall digital skills (% of population aged 16-74, 2021)	27.8
	Youth NEET rate (% of population aged 15-29, 2022)	19.8
	Gender employment gap (percentage points, 2022)	18.6
	Income quintile ratio (S80/S20, 2021)	7.14
Dynamic labour markets and fair working conditions	Employment rate (% of population aged 20-64, 2022)	68.5
	Unemployment rate (% of active population aged 15-74, 2022)	5.6
	Long term unemployment (% of active population aged 15-74, 2022)	2.2
	GDHI per capita growth (2008=100, 2020)	142.79
Social protection and inclusion	At risk of poverty or social exclusion rate (% of total population, 2021)	34.5
	At risk of poverty or social exclusion rate for children (% of population aged 0-17, 2021)	41.7
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2021)	17.88
	Disability employment gap (percentage points, 2021)	32.6
	Housing cost overburden (% of total population, 2021)	7.6
	Children aged less than 3 years in formal childcare (% of population under 3-years-old, 2021)	9.5
	Self-reported unmet need for medical care (% of population 16+, 2021)	4.4

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

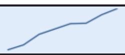
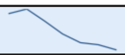
Update of 27 April 2023. Members States are classified on the Social Scoreboard according to a statistical methodology agreed with the EMCO and SPC Committees. It looks jointly at levels and changes of the indicators in comparison with the respective EU averages and classifies Member States in seven categories. For methodological details, please consult the Joint Employment Report 2023. Due to changes in the definition of the individuals' level of digital skills in 2021, exceptionally only levels are used in the assessment of this indicator; NEET: neither in employment nor in education and training; GDHI: gross disposable household income (per capita growth indicator not yet available for 2021).
Source: Eurostat

The labour market is facing serious challenges. The employment rate has been steadily increasing in line with the strong economic growth over the past decade. It reached 68.5% in 2022 but remains one of the lowest in the EU. The unemployment rate (5.6% in 2022) is below the EU average, though above the pre-pandemic level. Participation in the labour market of women, young people, persons with disabilities, low-skilled people and Roma remains limited. The gender employment gap was among the highest in the EU in 2022 (18.6 percentage points (pps) vs 10.6 pps in the EU). The low labour market participation of women is mainly due to care responsibilities and lack of employment opportunities in rural areas. Under the European Social Fund Plus (ESF+), Romania adopted measures to support employers to set up childcare facilities and make flexible forms of work available. After declining before the pandemic, youth unemployment is on the rise, and the rate of young people not in education, employment or training is one of the highest in the EU (19.8% in 2022 vs 11.7%). Challenges also persist for low qualified people, whose employment rate was far from the EU average at 44.9% in 2022 and significantly lower than for people with tertiary education. Moreover, the disability employment gap (32.6 pps) is significantly higher than the EU average (23.1 pps in 2021) and rising. Only 41% of Roma were engaged in any form of paid work in 2021, with more than half of Roma youth not in education, employment or training.

Strengthening active labour market policies is crucial to tackle labour shortages and employment gaps of underrepresented groups. Spending on active labour market policies is very low (EUR 227 million in 2020, representing 0.1% of GDP) with a high share of employment subsidies that are poorly targeted and do not sufficiently support training. Low activity rates also highlight the need to increase the effectiveness of public employment services (PES). In addition, the high number of displaced people from Ukraine who need to be integrated into the labour market poses new challenges. The digitalisation of the PES under the recovery and resilience plan (RRP) and substantial ESF+ investments are expected to improve labour market integration. The role of social partners in the design and implementation of policies continues to be limited. Addressing all these challenges would support activation and employability, thereby contributing to reaching the national employment rate target of 74.7% by 2030.

Labour and skills shortages and mismatches remain pressing challenges worsened by negative demographic trends. The projected rapid decline of the working-age population (by 8.8% in 2030) risks creating significant labour shortages and undermining the economy's growth potential. Low levels of digital skills (27.8% of people aged 16-74 with at least basic skills) and participation in adult learning (5.4% over the past 4 weeks in 2022 vs 11.9% in the EU) affect people's employability. Only 8.4% of vocational education and training VET graduates were exposed to work-based learning in 2022 (vs 60.1% at EU level), which highlights the weak links between the education and training system and labour market needs. The RRP and the ESF+ plan measures to improve the quality and labour market relevance of VET and higher education and participation in lifelong learning. This is expected to contribute to achieving the national target of at least 17.4% of adults participating in learning every year by 2030. However, further efforts to up- and reskill the population will be necessary, considering demographic trends and the labour market impact of the green and digital transitions.

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

Indicators	Latest data	Trend (2015-2022)	National target by 2030	EU target by 2030
Employment (%)	68.5 (2022)		75	78
Adult learning[1] (%)	5.8 (2016)		17	60
Poverty reduction[2] (thousands)	-446 (2021)		-2 532	-15 000

(1) Adult Education Survey, adults in learning in the past 12 months
(2) Number of persons at risk of poverty or social exclusion (AROPE), reference year 2019
Source: Eurostat, DG EMPL

Poor quality and unequal access to education and training persist. Participation of children aged less than 3 years in formal childcare is very low (9.5% vs 36.2% in the EU in 2021) and has deteriorated in the past 5 years. Only 27% of Roma children (aged 3 to 6) attended early childhood education and care in 2021. The country has made limited progress in improving the rate of early school leavers over the past decade (from 18.1% in 2011 to 15.6% in 2022) and is still considerably higher than the EU average; children in rural areas and Roma pupils are at a disproportionate risk. The employment rate of recent graduates (57.5% in 2022) is one of the lowest in the EU, which highlights a misalignment with labour market needs. Support from the Recovery and Resilience Facility and the ESF+ totalling over EUR 5 billion is expected to help Romania transform its education and training system (see Annex 15).

Although decreasing, Romania is still facing high poverty risks and inequality. Income inequality remains among the highest in the EU and increased in 2021. The share of people at risk of poverty or social exclusion (AROPE) continues to be among the highest in the EU too (34.4% in 2021 vs 21.7%). People living in rural areas, marginalised communities, and vulnerable groups, including persons with disabilities and Roma, are particularly affected. For example, 7 out of 10 poor people in Romania live in rural areas. The AROPE rate among children was one of the highest in the EU at 41.5% in 2021, with 28.2% of children experiencing severe material and social deprivation. The share of older people at risk of poverty or social exclusion is also still among the highest. The impact of social transfers (excluding pensions) on reducing poverty is one of the lowest in the EU, while pension adequacy and adequacy and coverage of minimum income are also low. The minimum inclusion income reform under the RRP is expected to help address this issue. Gaps in access to social protection remain widespread and affect unemployed people and those in non-standard forms of employment the most.

Poor access to social and health services, notably for disadvantaged groups, contribute to deepening disparities. Marginalised groups, such as those from remote rural areas, persons with disabilities and the Roma, are among the most affected. 70% of the Roma suffer housing deprivation, compared to 28% of the general population. Many Romanians still do not have medical insurance, especially those in rural areas and those without identity cards. Disparities in timely access to care are also due to an uneven geographical distribution of and significant shortages in the healthcare workforce. Unmet medical care needs have declined but remain one of the highest in EU, with significant differences between income groups, urban and rural areas, and regions. Unmet needs for long-term care are significantly higher than the EU average. Deinstitutionalisation continues but progress is slow, especially for adults with disabilities, due to the limited availability of integrated services. Under the RRP, Romania undertook to accelerate the deinstitutionalisation process [102]. Implementing the RRP and the ESF+ will contribute to improving the situation and help meet the 2030 target of reducing the number of people at risk of poverty or social exclusion by 2.5 million.

([102]) A National Strategy on Preventing the Institutionalization of Adults with Disabilities and the Law on supporting the process of deinstitutionalization of adults with disabilities and on implementing measures to accelerate it were approved, accompanied by a Guide accelerating the deinstitutionalisation process.

ANNEX 15: EDUCATION AND TRAINING

This Annex outlines the main challenges for Romania's education and training system in light of the EU-level targets and other contextual indicators under the European Education Area strategic framework, based on the 2022 Education and Training Monitor.

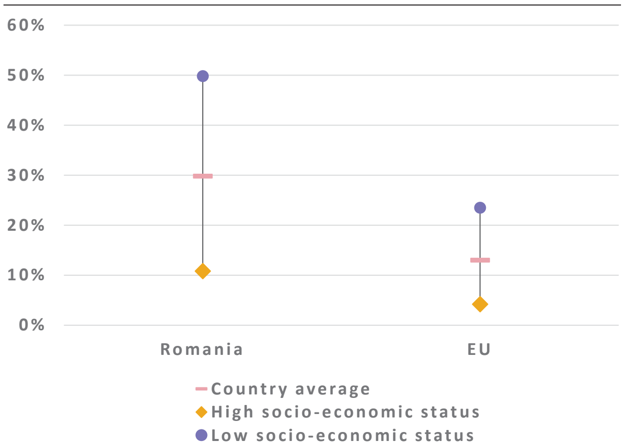
Overall, poor performance of the education and training system is a key obstacle for equipping people with the right skills. Educational attainment is one of the lowest in the EU and educational outcomes are greatly impacted by socio-economic factors. Vocational education and training (VET) and higher education are not sufficiently attuned to the labour market. Although adult participation in learning has improved, it remains low (4.9% in 2021, EU average: 10.8%). These long-standing challenges translate into continuing skills shortages and mismatches (see Annex 14). Government expenditure on education is also low (3.7% of GDP in 2020, EU average: 5%).

Participation in early childhood education and care (ECEC) is low and declining. The enrolment rate for children between 3 years and the starting age of compulsory primary education is one of the lowest in the EU (78.2% compared with the EU average of 93%). Participation rates are generally worse for disadvantaged groups, Roma ([103]) and in rural areas ([104]). Participation in childcare for children aged 0-3 was also low compared with the EU average (9.5% vs 36.6%), in part due to a lack of nurseries. With support from the Recovery and Resilience Facility (RRF), Romania is expanding infrastructure capacities for ECEC, training staff and improving legislation.

Improving teacher policies is a pressing issue. Many reports ([105]) identify the teaching profession as fundamental for improving Romania's low educational outcomes. In spite of some measures ([106]), key challenges in the sector remain largely unaddressed. The attractiveness of the profession is rather low; attracting highly qualified teachers to disadvantaged schools is especially challenging. In particular, this affects rural areas, where teachers often teach subjects for which they are not qualified, in order to complete their teaching norm of 18h/week. Initial and continuous teacher education are insufficiently aligned with classroom needs, and teacher appraisal is not effective. The ongoing revision of the education act is expected to address some of these points.

Early school leaving remains high. In 2022, the rate of early leavers from education and training among 18-24-year-olds increased slightly to 15.6% and remains significantly above the EU average (9.6%). Early school leaving is particularly high among Roma and in rural areas (24.5%). A National Programme for Reducing School Dropout was rolled out in 2022 with funding from the RRF.

Graph A15.1: **The share of underachievers in reading, maths and science (combined) by socio-economic status, PISA 2018**



Source: OECD (PISA 2018).

A large proportion of Romanian students lack basic skills. The 2018 OECD Programme for International Student Assessment (PISA) found that 40.8% of 15-year-old students did not have basic skills in reading, 46.6% in mathematics and 43.9% in science. Lack of basic skills is particularly acute among disadvantaged students (e.g. 62% underperform in reading vs 19% among advantaged peers). The percentage of disadvantaged pupils underachieving in all three tested subjects in PISA is one of the highest in the EU. The gap in underachievement between students from advantaged and disadvantaged backgrounds is the highest (39 pps, against the EU average of 19.3 pps) (see Graph A15.1).

([103]) According to estimations by the Council of Europe, Roma represent around 9% of Romania's population

([104]) Gross enrolment rate (ages 3-5) of 80% in rural areas and 89% in urban areas (National Institute for Statistics).

([105]) See Presidential Administration (2021), Educated Romania Report , OECD (2017), Review of Evaluation and Assessment in Education, and OECD (2020), Improving the Teaching Profession in Romania.

([106]) See European Commission, Education and Training Monitor 2020, 2021 and 2022.

Furthermore, in 2021, only 50% of those aged 16-19 had at least basic digital skills (EU average: 69%) (107). The RRF supports school laboratories and computer labs in both general and VET schools, digital skills training for 100.000 teachers, and digitalisation measures in 61 universities.

The rural-urban gap and the situation of Roma in education remain critical. 79% (108) of Roma children aged 0-17 are at risk of poverty, leading to educational disadvantage due to socio-economic and minority status. PISA data show that disadvantaged students tend to concentrate in certain schools, resulting in segregation. In 2020, 51% of Roma children aged 6-15 attended schools where 'all or most of schoolmates are Roma' (ibid.). Reflecting lower quality of education and socio-economic aspects, all educational indicators are typically worse in rural areas, where more than 40% of the population lives.

The rate of tertiary educational attainment increased but is still the lowest in the EU. In 2022, the rate improved but only 24.7% of Romanians aged 25-34 had a tertiary degree (EU average: 42%). Hence, despite the high proportions of graduates in information and communications technology (ICT) and science, technology, engineering and mathematics (STEM) (109), the number of professionals trained is low. The skills of graduates from VET and higher education do not meet employer expectations. Employers view the curricula of secondary and tertiary education as being too abstract, and insufficiently focused on the practical application of knowledge and problem solving (110).

(107) Digital Economy and Society Index (DESI) 2021, Romania.

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

(109) For ICT, 6.7% (EU average: 3.9%) and for STEM, 29.1% (EU average: 24.9%), according to latest data available.

(110) World Bank (2020), Markets and People: Romania Country Economic Memorandum. International Development in Focus.

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

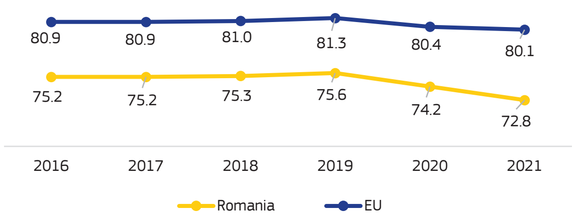
Indicator			Target	2015 Romania	2015 EU27	2022 Romania	2022 EU27
[1]Participation in early childhood education (age 3+)			96%	84.6%	91.9%	78.2% [2020]	93.0% [2020]
[2]Low achieving 15-year-olds in:		Reading	< 15%	38.7%	20.0%	40.8% [2018]	22.5% [2018]
		Mathematics	< 15%	39.9%	22.3%	46.6% [2018]	22.9% [2018]
		Science	< 15%	38.5%	21.1%	43.9% [2018]	22.3% [2018]
Early leavers from education and training (age 18-24)	[3]Total		< 9 %	19.1%	11.0%	15.6%	9.6%
	[3] *By gender*	*Men*		19.5%	12.5%	16.2%	11.1%
		Women		18.5%	9.4%	15.0%	8.0%
	[4] *By degree of urbanisation*	*Cities*		5.9%	9.6%	3.9%	8.6%
		Rural areas		27.8%	12.2%	24.5%	10.0%
	[5] *By country of birth*	*Native*		19.1%	10.0%	15.6%	8.3%
		EU-born		: [u]	20.7%	: [u]	20.3%
		Non EU-born		: [u]	23.4%	: [u]	22.1%
[6]Equity indicator (percentage points)				:	:	39 [2018]	19.3 [2018]
[7]Exposure of VET graduates to work based learning	Total		≥ 60% (2025)	:	:	8.4%	60.1%
Tertiary educational attainment (age 25-34)	[8]Total		45%	25.5%	36.5%	24.7%	42.0%
	[8] *By gender*	*Men*		22.9%	31.2%	21.2%	36.5%
		Women		28.3%	41.8%	28.4%	47.6%
	[9] *By degree of urbanisation*	*Cities*		44.7%	46.2%	46.5%	52.2%
		Rural areas		8.6%	26.9%	9.2%	30.2%
	[10] *By country of birth*	*Native*		25.5%	37.7%	24.6%	43.0%
		EU-born		:	32.7%	: [u]	39.5%
		Non EU-born		: [u]	27.0%	: [u]	35.7%
[11]Share of school teachers (ISCED 1-3) who are 50 years or over				28.6%	38.3%	30.5% [2020]	39.2% [2020]

Source: (1,3,4,5,7,8,9,10,11) = Eurostat; 2 = OECD (PISA); 6 = European Commission (Joint Research Centre). Notes: Data is not yet available for the remaining EU-level targets under the European Education Area strategic framework, covering underachievement in digital skills and participation of adults in learning. The equity indicator shows the gap in the share of underachievement in reading, mathematics and science (combined) among 15-year-olds between the lowest and highest quarters of socio-economic status.

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 Romania.

Life expectancy at birth in Romania is the second lowest in the EU, with a significant gender gap. In 2021, a steep increase (more than doubled) in reported COVID-19 mortality ([111]) led to one of the largest year-on-year drops in life expectancy of all EU countries, with a reduction by 1.3 years (Graph A16.1). In 2020 leading causes of death were diseases of the circulatory systems ("cardiovascular diseases" with the ischaemic disease death rate being more than double the EU average) followed by cancer. . The cancer mortality rate is above the EU average , driven by lung cancer and in recent years by colorectal cancer. This points to possible weaknesses in diagnostic procedures and treatment outcomes in oncology.

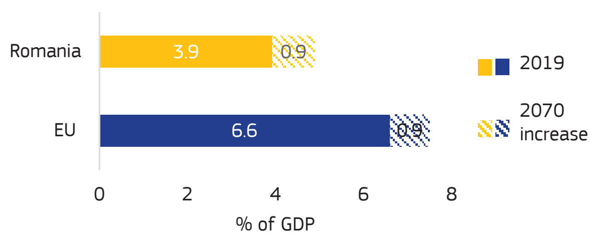
Graph A16.1: **Life expectancy at birth, years**



Source: Eurostat

Total health spending per capita in 2020 was the lowest of the EU despite a significant increase in the last 5 years. The share of government healthcare expenditure in total government expenditure is slightly below the EU average (and decreased during the COVID-19 pandemic). The health system is characterised by an overuse of hospital services (having a relatively large number of hospitals beds for acute care) driving spending on inpatient care (as a share of total healthcare expenditure) to above the EU average. Low spending on primary and ambulatory care – the second lowest in the EU in both relative and absolute terms – is associated with an underdeveloped role of primary care as a 'gatekeeper' for referrals to second-line (specialist) care. At around 19% of total current health expenditure, the share of household out-of-pocket costs is above the EU average. Public spending on health is projected to increase by 0.9 percentage points of GDP by 2070, in line with the EU average (see Annex 11 and Graph A16.2).

Graph A16.2: **Projected increase in public expenditure on healthcare over 2019-2070**



AWG reference scenario
Source: European Commission / EPC (2021)

In 2020, spending on prevention in Romania amounted to only 2% of total spending on healthcare (compared to 3.4% for the EU overall). This is low, with six other Member States also reporting a level up to 2%. Between 2020 and 2019, spending on prevention in Romania increased by 28% (compared to a 26% increase for the EU overall). Across the EU, this increase was primarily driven by spending on disease detection, surveillance, control and response programmes as part of the public health response to COVID-19. This low spending on prevention is associated with reported challenges in specific areas such as cancer or maternal and child health. Evidently, it points to the overall elevated avoidable mortality in the population. Antibiotics consumption is significantly higher than EU average and is increasing (going against the overall decreasing trend in the EU). This raises further public health concerns about the build-up of antimicrobial resistance.

Lagging accessibility of healthcare poses a challenge to the health system and is linked to staff shortages and underdeveloped primary care. At 4.4%, Romania has one of the highest rate of unmet needs in EU (see Annex 14), with differences between income groups and regions. Low funding levels, reflected in low availability of staff and high out-of-pocket costs for households, hamper access to quality healthcare. The number of consultations in primary

([111])"Based on data provided directly by Member States to ECDC under the European Surveillance System (data current as of 13 April 2023)"

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

	2017	2018	2019	2020	2021	EU average (latest year)
Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare)	206.0	210.6	208.6	235.1	NA	91.7 (2020)
Cancer mortality per 100 000 population	275.6	273.2	264.1	260.3	NA	242.2 (2020)
Current expenditure on health, % GDP	5.2	5.6	5.7	6.3	NA	10.9 (2020)
Public share of health expenditure, % of current health expenditure	78.7	79.7	80.5	80.3	NA	81.2 (2020)
Spending on prevention, % of current health expenditure	1.8	1.4	1.5	2.0	NA	3.4 (2020)
Acute care beds per 100 000 population	525	529	533	556	NA	387.4 (2019)
Doctors per 1 000 population *	2.9	3.0	3.2	3.3	NA	3.9 (2020)
Nurses per 1 000 population *	7.0	7.2	7.5	7.7	NA	8.3 (2020)
Consumption of antibacterials for systemic use in the community, daily defined dose per 1 000 inhabitants per day (total consumption for CY and CZ) **	NA	NA	24.0	23.7	24.3	14.5 (2021)

Note: The EU average is weighted for all indicators, except for (*) and (**), for which the EU simple average is used. The simple average for (*) uses data for 2020 or most recent year if former not available. Doctors' density data refer to practising doctors in all countries except EL, PT (licensed to practice) and SK (professionally active). Nurses' density data refer to practising nurses in all countries except FR, PT, SK (professionally active) and EL (nurses working in hospitals only).
Source: Eurostat; except: ** ECDC

and ambulatory care per person per year in Romania is among the lowest in the EU (4.6 vs 7). Access to care is influenced by significant shortages and territorial imbalances (not only in rural areas) of healthcare staff. Despite high numbers of new medical graduates, the availability of healthcare professionals is below the EU average. This is likely explained by the high rate of workforce emigration. Romanian-trained doctors and nurses are estimated to make up 12% and 11%, respectively, of health workforce emigration in the EU ([112]). Moreover, the lack of integration of different care settings poses risks to the success of planned future health reforms.

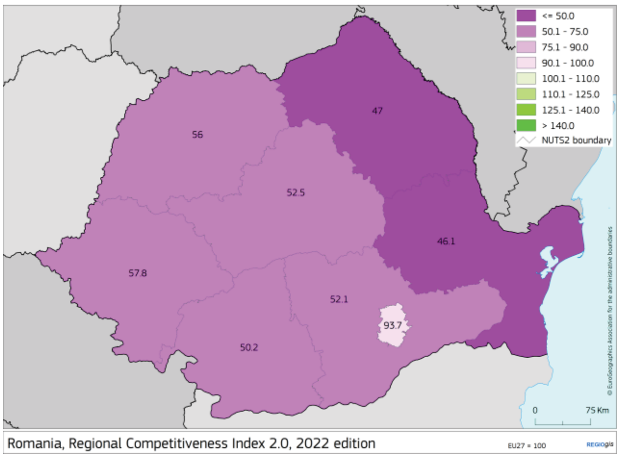
Romania allocated 9.8% of the resources under its recovery and resilience plan to health investments. An ambitious set of reforms and investments worth around EUR 2.85 billion is earmarked to strengthen the physical and digital infrastructure (measures related to e-health and telemedicine) and improve healthcare quality, accessibility and efficiency. A framework for developing human resources in health and professionalising healthcare management is planned to help fill the gaps in human resources in the healthcare sector. By setting up the National Agency for Development of Health Infrastructure (ANDIS), Romania aims to improve the planning, managing and monitoring capacity for large-scale strategic investments in developing the healthcare infrastructure. Overall, investments are intended to underpin a balanced reform agenda by providing appropriate outpatient and ambulatory infrastructure. This should help ensure an increased access to better care (especially in primary care) and a more territorially-balanced development of health services (better covering underserved areas or communities).

([112])See: Regulated Professions Database, https://ec.europa.eu/growth/toolsdatabases/regprof/home.

This Annex showcases the economic and social regional dynamics in Romania, providing an update on economic, social and territorial cohesion in and among the Romanian regions compared with the EU as a whole and the main regional economic recovery challenges.

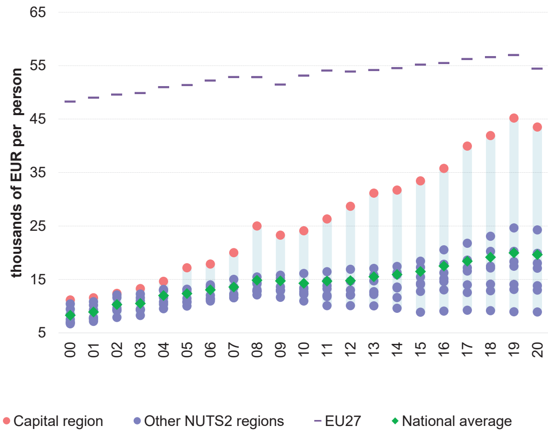
Regional disparities in Romania remain very high. This is due to labour productivity, investment and employment gaps between the capital and the other regions. Romanian regions have however been catching up in terms of GDP per capita and converging on the EU average (from 52% of the EU per capita average in 2010 to 74% in 2021), but regional disparities persist. In the capital region, GDP per capita is 166% of the EU average, followed by the Vest region with 75%. GDP per capita ranges from 49% to 71% of the EU average in the other regions. Although five regions, including the capital region, grew faster than the EU average, one of the three poorest regions, Nord-Est, saw its GDP per capita fall between 2010 and 2021.

Map A17.1: **Regional Competitiveness Index in Romanian Regions (2022)**



Disparities in GDP per capita between the capital and the rest of the country reflect disparities in labour productivity. In 2020, labour productivity in Romania was below the EU average (at 76%). It varied extensively between regions, from 143% in the capital region of București-Ilfov to 43% in Nord-Est, Romania's least developed region. There are also significant differences in productivity growth. Real productivity grew fastest in 2011-2020 in the Vest region (6.28%), followed by the capital region (6.09%). The other regions experienced lower productivity growth but, with the exception of Sud-Muntenia and Sud-Vest Oltenia, still grew faster than the EU average (productivity shrank in the least developed region of Nord-Est). The evolution of labour productivity (see Graph A17.1) shows that all regions are catching up with the EU average, with the capital region converging at the fastest rate (133% in 2018; 143% in 2020) and Nord-Est the slowest (39% in 2018; 43% in 2020). One obstacle to territorial development is the lack of key assets, such as transport infrastructure and skilled workers, in the less developed regions, combined with lack of administrative capacity in all regions. In some regions, over 20% of the population aged 18-24 leave school early, and employment in high-technology sectors and R&D expenditure is extremely low.

Graph A17.1: **Evolution of labour productivity (real GVA per worker) in Romania (2000-2020)**



Source: EUROSTAT

Innovation performance is weak and investment in R&D (0.5% of GDP in 2019) remains far below the EU average of 2.3%. Only the capital region has a higher R&D intensity than the national average (1.1% of GDP), due to higher employment rates in high-technology sectors and knowledge-intensive services. 10% of employment in the capital region was in high-technology sectors in 2020 and 44.7% of employment in the capital region was in knowledge-intensive services in 2021. Both these figures are above the EU average.

Digital disparities persist between Romania's regions. ICT uptake is low. Romania ranks last in the EU in the 2022 edition of the digital economy and society index (DESI) while also having the lowest annual growth in the EU. In 2021, only 15% of the population used the internet to interact with public authorities compared with an EU average of

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

Region name	GDP per head (purchasing power standard/PPS)	Productivity (Gross value added (PPS) per person employed)	Real productivity growth	GDP per head growth	Population growth	Unemployment rate	People at risk of poverty or social exclusion	Early school leavers	R&D expenditure	Internet use by individuals: interaction with public authorities	Regional Competitiveness Index
	EU27=100, 2021	EU27=100, 2021	Avg % change on preceding year, 2011-2020	Avg % change on preceding year, 2010-2020	Total % change, 2011-2020	% of active population, 2021	% of active population, 2021	% of population aged 18-24, 2021	% of GDP, 2019	% of individuals in the last 12 months, 2021	Range 0-100, 2022
European Union	100	100	0.23	0.60	1.7	7.0	21.70	9.7	2.32	58	100.0
România	74	86	3.24	3.48	-5.1	5.6	22.60	15.3	0.48	15	56.4
Nord-Vest	70	79	3.97	4.78	-2.6	3.1	14.10	16.3	0.18	13	56.0
Centru	71	94	2.13	3.09	-2.6	5.1	20.20	20.2	0.31	17	52.5
Nord-Est (RO)	49	51	-2.03	-0.28	-4.1	6.8	35.60	15.3	0.30	12	47.0
Sud-Est	59	75	3.32	4.10	-8.1	6.0	30.50	22.9	0.08	13	46.1
Sud - Muntenia	57	70	0.32	0.56	-9.1	7.7	23.00	15.1	0.36	10	52.1
București - Ilfov	166	162	6.09	6.80	2.0	3.5	2.90	7.9	1.07	28	93.7
Sud-Vest Oltenia	58	66	0.27	0.63	-9.4	9.2	30.50	10.5	0.12	14	50.2
Vest	75	96	6.28	6.23	-4.2	3.5	20.70	10.3	0.38	12	57.8

Source: EUROSTAT

58%. This share is 28% in Bucuresti-Ilfov but very low in all the less developed regions, ranging from 10% in Sud-Muntenia to 17% in Centru.

All the less developed regions have experienced depopulation. The population in all the less developed regions shrank to a varying extent in 2011-2020. The two worst affected regions were Sud-Muntenia and Sud-Vest Oltenia, whose populations fells by 9.1% and 9.4% respectively. These falls were due both to negative natural change and to negative net out-migration, with the highest share of people leaving the three poorest less developed regions.

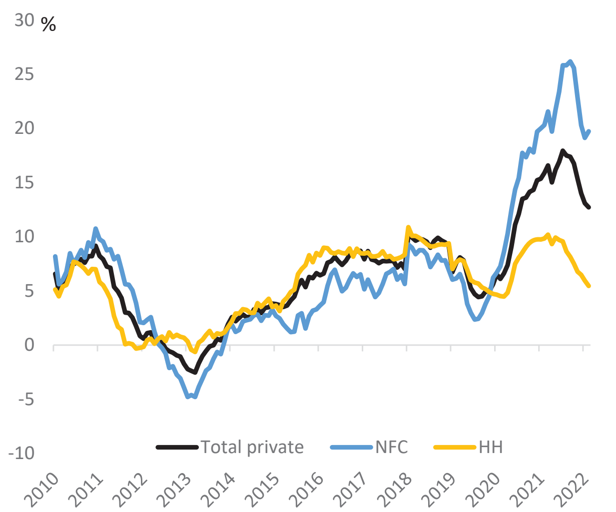
The share of the population at risk of poverty or social exclusion (AROPE) is the highest in the EU with major disparities between the less developed regions (shares ranged from 25% in Nord-Vest to 50.3% in Sud-Est) and the capital region with a share of 16.4%. Salaries are relatively low and poverty rates are high in regions where a high share of the workforce is concentrated in low productivity sectors. This has a negative impact on social cohesion. The differences in productivity, investment, education and poverty are only partially reflected in labour market figures. Unemployment in 2021 was low (5.6% overall) ranging from 3.1% in Nord-Vest to 7.7% in Sud-Muntenia and 9.2% in Sud-Vest Oltenia, the only two regions above the EU average. Persistently low population growth and the outward migration of skilled labour generate significant workforce shortages. The rural-urban divide is considerable. The unemployment rate in 2021 was 8.4% in rural areas compared with 2.8% in cities, and the rate of early school leavers was 23.2% in rural areas compared with 4.5% in cities.

All Romania's regions were affected by the COVID-19 pandemic. The socio-economic consequences of the pandemic seem to have been more severe not only in regions that are highly dependent on tourism and border regions, but also in the capital region. GDP per capita dropped in all Romanian regions in 2019-2020. The impact of the pandemic was most severe in the most developed region of the country, Bucureşti-Ilfov (-1.9%) but milder in the less developed regions (the fall ranged from -1.1% in Centru to -0.2% in Nord-Est and Sud-Vest Oltenia). Regional disparities in terms of GDP per capita therefore slightly decreased in Romania compared with the pre-pandemic period.

Romania has a small banking sector, with a low overall degree of financial intermediation. In Q3-2022, the total assets of monetary financial institutions were equivalent to 54.6% of GDP, the lowest ratio in the EU, where the average is 276.8%. This is partially explained by: (i) the large share of undercapitalised firms in Romania; (ii) the weak payment discipline in the real economy; and (iii) the elevated share of loans from shareholders and trade credit in total company debt. Low levels of financial literacy among borrowers and inadequate digitalisation ([113]) further impede the development of financial intermediation in Romania.

The banking sector in Romania is stable overall and it weathered the uncertainties of the COVID-19 pandemic relatively well, but vulnerabilities remain. Banking-sector capitalisation has been relatively stable for several years, with the capital adequacy ratio at 20.5% in Q3-2022, above the EU average of 18.6% and marginally below pre-pandemic levels. The slight decrease in the capital adequacy ratio from a year before is due mainly to: (i) the marking-to-market of losses from financial instruments measured at fair value following the upward shift in the interest rate; and (ii) the distribution of dividends. The revised Capital Requirements Regulation (CRR 'quick fix') had a positive impact on capital, as Romanian banks have a high share of assets invested in sovereign debt instruments (21.8% in Q3-2022 ([114])). The revised CRR supported banks' liquidity, but increased the risk of the sovereign-bank nexus weighing on capital. Although loan-loss provisions increased during the pandemic, profitability remained resilient throughout the pandemic period, and improved further in the first three quarters of 2022 thanks to higher net interest income and growing lending activity. Lending activity increased faster than deposit growth, resulting in a higher than in 2021 loan-to-deposit ratio by Q3-2022 (71.8%), which is similar to pre-pandemic levels. Bank's return on equity reached their highest level since 2017 in Q3-2022 (16.2%). Banks' operational activity improved on the back of both increased digitalisation and fewer employees and branches, so that their cost-to-income decreased to 48.4% by Q3-2022, the lowest level since 2017. Second-round effects from the war in Ukraine pose risks to the sector, due to the war's adverse macroeconomic impact. In addition, the risk of cyber-attacks has also increased in recent years.

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



Source: ECB.

Following the progressive tightening of the monetary policy stance and increased economic uncertainty, it is important to preserve the banking sector's soundness and a healthy flow of credit to the real economy. Lending activity for households and especially for non-financial corporations (NFCs) grew significantly during the pandemic, on the back of governmental support measures ([115]), low interest rates, and moratoria on private debt repayment. Lending activity for households increased by 6% in Q3-2022 compared to Q3-2021, while lending to NFCs jumped by 19%. The credit expansion generated higher profits for banks, while increasing their ties to the sovereign. At the same time, the quality of the assets held by Romanian banks continued to improve, as non-performing loans (NPLs) have declined steadily in recent years. The system-wide NPL ratio stood at 2.9% in Q3-2022, less than half the level of 2017, but still above the EU average of 1.8%. This trend might reverse if macroeconomic conditions deteriorate. Indeed, some macroeconomic deterioration can

([113])Digital Economy and Society Index, 2021.

([114])NBR, Financial Stability Report, December 2022.

([115])Two state guarantee schemes are currently in place; https://www.fngcimm.ro/.

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

	2017	2018	2019	2020	2021	2022	EU	Median
Total assets of the banking sector (% of GDP)	53.0	50.6	49.8	56.5	58.4	54.6	276.8	207.9
Share (total assets) of the five largest banks (%)	59.5	61.6	62.6	62.4	62.5	-	-	68.7
Share (total assets) of domestic credit institutions (%)[1]	22.7	25.1	26.4	29.4	31.8	31.9	-	60.2
NFC credit growth (year-on-year % change)	5.1	9.3	6.0	6.7	20.0	19.1	-	9.1
HH credit growth (year-on-year % change)	8.5	10.9	7.0	4.7	9.7	6.0	-	5.4
Financial soundness indicators:[1]								
- non-performing loans (% of total loans)	6.6	5.0	4.3	3.9	3.4	2.9	1.8	1.8
- capital adequacy ratio (%)	19.4	19.7	21.0	23.5	22.2	20.5	18.6	19.8
- return on equity (%)[2]	11.7	13.6	12.3	9.0	13.1	16.2	6.1	6.6
Cost-to-income ratio (%)[1]	54.9	53.5	53.4	51.4	51.1	48.4	60.6	51.8
Loan-to-deposit ratio (%)[1]	69.2	71.7	72.0	67.6	68.6	71.8	88.6	78.0
Central bank liquidity as % of liabilities	-	0.0	0.0	0.1	1.2	0.0	-	2.9
Private sector debt (% of GDP)	51.3	47.1	46.5	48.0	47.9	-	-	120.7
Long-term interest rate spread versus Bund (basis points)	364.1	429.0	479.2	440.3	399.8	634.0	-	93.3
Market funding ratio (%)	29.7	27.5	27.2	27.8	25.5	-	50.8	40.0
Green bonds issued to all bonds (%)	-	-	-	-	0.4	0.5	3.9	2.3

1-3 | **4-10** | **11-17** | **18-24** | **25-27** Colours indicate performance ranking among 27 EU Member States.

(1) Last data: Q3 2022.
(2) Data is annualized.
Source: ECB, Eurostat, S&P Global Capital IQ Pro

already be seen in the slight increase in the impaired loans ratio (116) as of July 2022. In addition, according to the macroeconomic baseline scenario of the country's central bank, the National Bank of Romania (NBR) (117), the average probability of default for NFCs that took bank loans is estimated to be almost twice that of the previous period. The NBR also stresses that a significant share of mortgage loans is exposed to interest-rate risks. These risks could be further aggravated by the current legislative framework, which is not conducive to loan sales. In future, banks also anticipate more restrictive lending conditions (118). Together with the NBR tightening monetary policy in response to high inflation, these stricter lending conditions could contribute to a cooling in lending activity. Amid deteriorating prospects for global economic growth and the significant imbalances in Romania's economy, the National Committee for Macroprudential Oversight decided to raise the countercyclical buffer by 0.5 percentage points to 1% as of October 2023.

The private pension market has grown strongly, despite episodes of volatility over the years. Non-banking financial-sector assets represented 11.87% of GDP in Q3-2022, over half of which were owned by private pension funds. Their total asset value reached RON 92 bn (about EUR 18.8 bn) in Q3-2022, slightly lower in nominal terms than their value at the end of 2021, and also less relative to GDP (in Q3-2022, pension assets were 6.78% of GDP vs 7.83% of GDP at the end of 2021 (119)). In terms of structure, 63% of the investments were in government bonds in September 2022, 3 percentage points more concentrated in government bonds than in December 2021, which could explain the declining rate of return. All pension funds in Romania recorded lower annualised rates of return in 2022 due to considerable exposure to government bonds, which lost value due to increased inflation and interest rates. More effective balancing of risk and return could be achieved by diversifying pension portfolios, but such a strategy is not supported by the limited development of the domestic securities market. In addition, current legislation limits pension funds from holding certain classes of assets. These limits might prevent funds from taking excessive risk but at the same time they also limit the funds' diversification options.

The insurance sector is facing again increased risks following the recent failure of one the largest non-life insurer. After the failure of the main car insurance company in 2021 and the deficiencies noticed in the second largest

(116)NBR, Monthly Bulletin, October 2022.

(117)NBR, Financial Stability Report, December 2022.

(118)NBR, Bank November Survey, September 2022.

(119)Monthly Report, ASF Romania.

insurer [120], the market appeared to have weathered the crisis. Although lower than in 2021, the sector's eligible own funds were sufficient to cover the solvency capital requirements (SCR) in Q2-2022, while gross written premiums increased by approximately 37% between Q2-2021 and Q2-2022. However, the market continued to be characterised by a high degree of concentration – both in terms of exposure by type of insurance and in terms of number of undertakings. 83% of total gross written premiums in June 2022 were recorded by non-life insurance (of which 65% was car insurance). In September 2022 the two main providers of motor third party liability insurance had a combined market share of 51.66%, of which Euroins Romania had 31.04%. Following several control actions inititated by the Romanian superivor, it was concluded that, among other irregularities, the insurer failed to meet the required eligible funds to cover the SCR and the minimum capital requirement (MCR). Therefore, the Council of the ASF decided to withdraw the operating authorization of Euroins Romania, and to open the bankruptcy proceedings [121]. The duties of the company's management were suspended and, until the appointment of the judicial liquidator, the Insurance Guarantee Fund (FGA) was appointed as interim administrator of the company, having the task to secure the administration and management of the insurer's activity and the adoption of the necessary measures for the preservation of the patrimony.

[120] The first two insurers, City Insurance and Euroins Romania, accumulated approximately 75% of the MTPL insurance portfolio in Romania in 2020.

[121] https://asfromania.ro/ro/a/2710/autoritatea-de-supraveghere-financiara-retrage-autorizatia-de-functionare-a--euroins-romania-si-constata-starea-de-insolventa-a-societatii

This Annex provides an indicator-based overview of Romania's tax system. It includes information on the tax structure (the types of tax that Romania 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.

Romania's tax revenues across all major revenue sources are relatively low in relation to its GDP. Table A19.1 shows that Romania's tax revenues as a percentage of GDP were considerably below the EU aggregate in 2021, even though they increased slightly for consumption and capital taxes compared with 2020. The ratio of labour tax revenues to total tax revenues was significantly below the EU aggregate (see Graph A19.1). All major tax revenue sources (expressed as % of GDP) were below the EU aggregate. This indicates that there is scope to make more use of tax bases across the board. Revenues from property taxes and from recurrent property taxes, which are among the taxes least detrimental to growth, were comparatively low (expressed as % of GDP and % of total taxation). The performance of the tax system should be viewed in the context of worsening public finances. This suggests that there may be scope to make greater use of underused tax types, such as labour and recurrent property taxes.

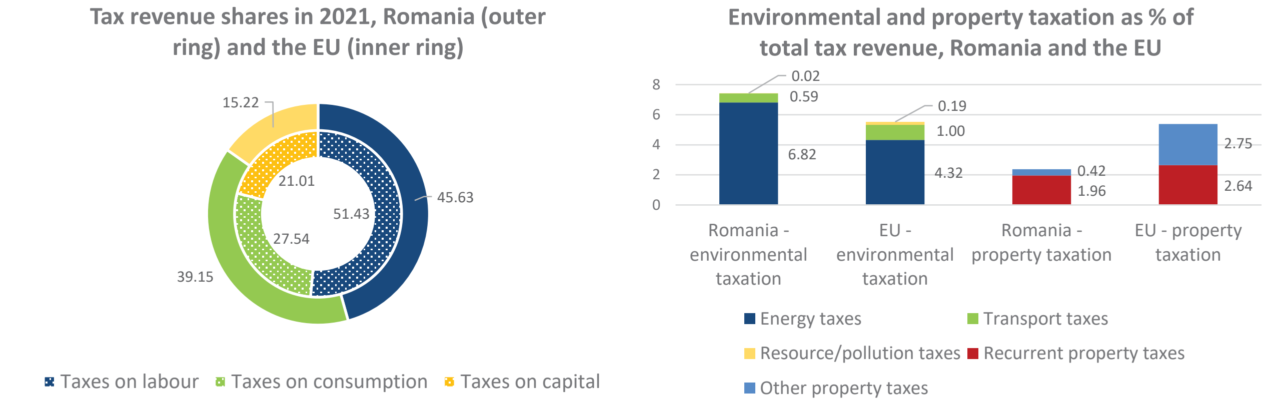
Romania's Recovery and Resilience Plan (RRP) includes a review of the tax framework. The review of the tax system in the Plan will identify distortions and areas where relevant tax legislation should be adjusted, in particular for corporate taxation, personal income tax and social security contributions as well as property taxation, so as to inform decisions for a gradual withdrawal of excessive tax incentives. In addition, the Plan foresees a new taxation system to support road decarbonisation in line with the polluter pays principle and other principles of environmental taxation. The reform of the tax code adopted in July 2022, introduced a higher taxation of dividends, increased some of the reduced VAT rates and contributed to reduce the size of the fiscal facility provided to micro-enterprises and firms in specific sectors. However, the reform also introduced a review of the system of granting personal deductions for taxpayers who earn income from wages, introducing other exemptions in the system. Finally, the part of the reform on property taxation, which would have had a positive effect on government revenue, has not been adopted.

Table A19.1:**Taxation indicators**

		Romania					EU-27				
		2010	2019	2020	2021	2022	2010	2019	2020	2021	2022
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	25.8	25.9	26.1	26.5		37.9	39.9	40.0	40.6	
	Labour taxes (as % of GDP)	10.8	12.0	12.8	12.1		20.0	20.7	21.3	20.9	
	Consumption taxes (as % of GDP)	11.1	10.1	9.9	10.4		10.8	11.1	10.7	11.2	
	Capital taxes (as % of GDP)	4.0	3.8	3.3	4.0		7.1	8.1	8.0	8.5	
	Total property taxes (as % of GDP)	0.8	0.6	0.6	0.6		1.9	2.2	2.2	2.2	
	Recurrent taxes on immovable property (as % of GDP)	0.7	0.5	0.5	0.5		1.1	1.2	1.2	1.1	
	Environmental taxes as % of GDP	2.1	2.1	1.9	2.0		2.4	2.4	2.2	2.2	
Progressivity & fairness	Tax wedge at 50% of average wage (Single person) (*)	42.3	36.6	36.9	37.2	37.6	33.9	32.3	31.9	32.1	31.7
	Tax wedge at 100% of average wage (Single person) (*)	44.6	38.3	38.3	38.3	38.3	41.0	40.1	39.9	39.7	39.7
	Corporate income tax - effective average tax rates (1) (*)		14.4	14.4	14.4			19.5	19.4	19.1	
	Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*)	6.3	6.8	6.9	6.4		8.6	7.7	8.1	7.8	
Tax administration & compliance	Outstanding tax arrears: total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*)		41.2	48.0				31.6	40.7		
	VAT Gap (% of VAT total tax liability, VTTL)		35.5	35.7				11.0	9.1		

(1) Forward-looking effective tax rate (OECD).
(2) A higher value indicates a stronger redistributive impact of taxation.
(*) EU-27 simple average
For more data on tax revenues as well as the methodology applied, see European Commission, Directorate-General for Taxation and Customs Union, *Taxation trends in the European Union: data for the EU Member States, Iceland, Norway and United Kingdom: 2021 edition*, Publications Office of the European Union, 2021, https://data.europa.eu/doi/10.2778/843047 and the *Data on Taxation* webpage, https://ec.europa.eu/taxation_customs/taxation-1/economic-analysis-taxation/data-taxation_en.
For more details on the VAT gap, see European Commission, Directorate-General for Taxation and Customs Union, *VAT gap in the EU: report 2022*, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2778/109823.
Source: European Commission, OECD.

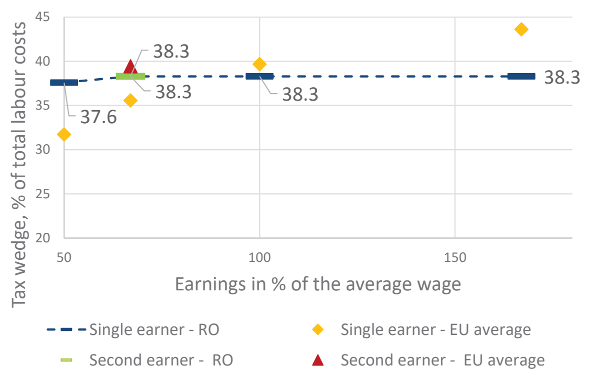
Graph A19.1: **Tax revenues from different tax types as % of total taxation**



Source: European Commission

Romania has a flat-rate tax system, which is barely progressive, unlike the EU average. Romania has a flat-rate tax system with one of the lowest personal income tax rate in the EU (only 10%). Graph A19.2 shows that the labour tax wedge for Romania in 2021 was higher than the EU average for single people at 50% of the level of the average wage, close to the EU average at average wage levels and below the EU average for higher levels of income. Second earners at a wage level of 67% of the average wage, whose spouses earn the average wage, were subject to a tax wedge that was close to the EU average. A relatively high tax wedge for low-wage earners may reduce labour demand for low-skilled workers. The limited progressivity of the tax system contributes also to the low ability of the tax and benefit system to redistribute income. The tax and benefit reduced the Gini-coefficient (measure for income inequality) in 2021 only by 6.4 pps, which is well below the EU average of 7.8 pps (see Table A19.1).

Graph A19.2: **Tax wedge for single and second earners as a % of total labour costs, 2022**



Second earner tax wedge assumes first earner at 100% of the average wage and no children.
Source: European Commission

There is room to increase compliance and improve the performance of the Romanian tax administration. In 2020, the VAT compliance gap (the gap between revenues actually collected and the theoretical tax liability) increased to 35.7 % of the total VAT liability. Romania continues to have the highest VAT gap in the EU. In order to improve tax administration and tax compliance, Romania's Recovery and Resilience Plan (RRP) includes measures to strengthen the capacity and effectiveness of tax control systems, including by enhancing the digitalisation of its tax administration (e.g. introducing digital reporting and VAT online cash registers, and digitalising interaction with tax administration by expanding virtual private space). In addition, future RRP initiatives will include a Big Data platform to analyse large amounts of data accurately and timely and unification of different databases to feed the integrated tax risk management system.

ANNEX 20: TABLE WITH ECONOMIC AND FINANCIAL INDICATORS

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

	2004-07	2008-12	2013-19	2020	2021	2022	forecast 2023	forecast 2024
Real GDP (y-o-y)	7.6	1.1	4.0	-3.7	5.8	4.7	3.2	3.5
Potential growth (y-o-y)	6.4	2.5	3.6	3.4	2.8	2.9	3.3	3.2
Private consumption (y-o-y)	12.8	0.6	5.0	-3.9	8.1	5.5	3.8	3.2
Public consumption (y-o-y)	1.9	1.2	2.2	1.1	1.3	4.3	-0.9	3.1
Gross fixed capital formation (y-o-y)	23.6	-3.3	3.2	1.1	1.9	8.0	7.0	8.0
Exports of goods and services (y-o-y)	13.9	7.0	9.6	-9.5	12.6	9.6	4.0	4.8
Imports of goods and services (y-o-y)	27.9	1.3	10.2	-5.2	14.9	9.9	5.1	5.5
Contribution to GDP growth:								
Domestic demand (y-o-y)	15.2	-0.6	4.1	-2.0	5.6	6.1	4.0	4.5
Inventories (y-o-y)	-1.4	-0.1	0.3	-0.2	1.7	-0.6	0.0	-0.5
Net exports (y-o-y)	-6.4	1.3	-0.5	-1.5	-1.5	-0.7	-0.8	-0.6
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	-0.8	-1.1	-0.1	0.1	0.0	0.0	0.3	-0.1
Capital accumulation (y-o-y)	2.0	2.3	1.0	1.5	1.4	1.6	1.7	1.8
Total factor productivity (y-o-y)	5.1	1.3	2.7	1.8	1.3	1.3	1.3	1.4
Output gap	4.5	-0.6	-0.6	-5.6	-2.9	-1.1	-1.2	-0.9
Unemployment rate	8.9	8.5	7.1	6.1	5.6	5.6	5.4	5.1
GDP deflator (y-o-y)	13.4	6.7	3.8	4.1	5.2	13.4	10.7	5.8
Harmonised index of consumer prices (HICP, y-o-y)	8.1	5.7	1.7	2.3	4.1	12.0	9.7	4.6
HICP excluding energy and unprocessed food (y-o-y)	7.4	5.8	1.7	3.3	3.1	8.8	10.9	6.2
Nominal compensation per employee (y-o-y)	15.8	7.8	9.5	4.0	1.9	11.1	9.6	6.7
Labour productivity (real, hours worked, y-o-y)	7.8	3.3	4.1	1.0	1.1	4.4	3.2	3.1
Unit labour costs (ULC, whole economy, y-o-y)	7.4	4.6	5.2	5.8	-1.9	6.2	5.9	3.2
Real unit labour costs (y-o-y)	-5.3	-1.9	1.4	1.6	-6.8	-6.3	-4.3	-2.5
Real effective exchange rate (ULC, y-o-y)	9.0	-3.4	3.0	-0.4	-4.1	2.1	-0.2	-0.6
Real effective exchange rate (HICP, y-o-y)	8.8	-2.6	0.2	0.8	0.0	2.2	.	.
Net savings rate of households (net saving as percentage of net disposable income)	.	.	.	.	.	.	.	.
Private credit flow, consolidated (% of GDP)	14.0	3.0	0.4	1.3	3.8	.	.	.
Private sector debt, consolidated (% of GDP)	43.7	69.0	55.3	48.0	47.9	.	.	.
of which household debt, consolidated (% of GDP)	12.0	20.9	17.0	16.1	15.8	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	31.8	48.1	38.2	32.0	32.1	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (1)	1.4	.	9.2	3.0	2.6	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	-2.7	7.8	11.4	11.8	13.8	17.6	20.2	19.8
Corporations, gross operating surplus (% of GDP)	26.6	31.0	30.7	28.2	31.4	36.9	39.6	41.1
Households, net lending (+) or net borrowing (-) (% of GDP)	.	.	.	.	-14.8	-21.2	-23.5	-22.9
Deflated house price index (y-o-y)	.	.	0.7	2.3	-0.8	-6.2	.	.
Residential investment (% of GDP)	2.0	2.9	2.4	2.4	2.5	2.7	.	.
Current account balance (% of GDP), balance of payments	-10.3	-6.2	-2.3	-4.9	-7.2	-9.3	-8.1	-7.9
Trade balance (% of GDP), balance of payments	-11.4	-7.3	-1.9	-4.3	-5.7	-6.9	.	.
Terms of trade of goods and services (y-o-y)	7.5	0.9	1.0	3.4	0.0	-1.4	3.7	0.4
Capital account balance (% of GDP)	0.5	0.6	1.9	1.9	2.2	2.5	.	.
Net international investment position (% of GDP)	-37.4	-60.2	-51.4	-47.6	-47.1	-41.0	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2)	-5.0	-21.6	-9.7	-7.0	-6.5	-4.2	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (2)	36.1	56.3	42.4	41.7	40.3	35.1	.	.
Export performance vs. advanced countries (% change over 5 years)	82.1	69.2	24.3	20.5	15.7	.	.	.
Export market share, goods and services (y-o-y)	13.9	2.3	5.6	1.9	0.5	5.5	1.3	1.0
Net FDI flows (% of GDP)	.	-2.8	.	-1.3	-3.7	-3.4	.	.
General government balance (% of GDP)	-1.7	-6.3	-2.3	-9.2	-7.1	-6.2	-4.7	-4.4
Structural budget balance (% of GDP)	.	.	-2.0	-7.4	-6.2	-5.8	-4.3	-4.1
General government gross debt (% of GDP)	14.8	26.2	36.8	46.9	48.6	47.3	45.6	46.1

(1) Domestic banking groups and stand-alone banks, EU and non-EU foreign-controlled subsidiaries and EU and non-EU foreign-controlled branches.
(2) Net international investment position (NIIP) excluding direct investment and portfolio equity shares.
Source: Eurostat and ECB as of 2 May 2023, where available; European Commission for forecast figures (Spring forecast 2023).

This Annex assesses fiscal sustainability risks for Romania over the short, medium and long term. It follows the same multi-dimensional approach as the European Commission's 2022 Debt Sustainability Monitor, updated based on the Commission 2023 spring forecast.

1 - Short-term risks to fiscal sustainability are low overall. The Commission's early-detection indicator (S0) does not signal major short-term fiscal risks (Table A21.2). [122] Gross financing needs are expected to remain manageable, at around 9% of GDP in the short term (2023-2024), below the recent peak in 2020 (Table 1 of Table A21.1). Financial markets' perceptions of sovereign risk is stable, as confirmed by the ratings of the main agencies.

2 - Medium-term risks to fiscal sustainability are medium overall.

The baseline DSA for Romania shows that the government debt-to-GDP ratio is projected to increase continuously over the medium term, to about 65% in 2033 (Graph 1). [123] [124] The assumed structural primary balance (a deficit of 2.4% of GDP) contributes to these developments. It appears low compared with past fiscal performance, indicating that the country has room for corrective action. In addition, the baseline projections up to 2029 benefit from a favourable (although declining) snowball effect, with real GDP growth averaging 2.4% in 2025-2033. Government gross financing needs are expected to rise over the projection period, to almost 15% of GDP in 2033, compared to 9% forecast for 2024.

The baseline projections are stress tested against four alternative scenarios to assess the impact of changes in key assumptions (Graph A1). Reverting to historical fiscal trajectories under the 'historical structural primary balance (SPB)' scenario would increase the projected debt ratio in 2033 only slightly compared with the baseline since the baseline SPB assumption is close to the historical average of -2.7% of GDP. A permanent worsening of the macro-financial conditions, as reflected under the 'adverse interest-growth rate differential' scenario (i.e. 1 pp. higher than the baseline) would result in a 5 pps. higher government debt-to-GDP ratio by 2033 as compared with the baseline. A temporary worsening of financial conditions, as reflected in the 'financial stress' scenario, would result in a debt-to-GDP ratio similar to the baseline projection. The 'lower structural primary balance (SPB)' scenario (i.e. SPB level permanently reduced by half of the cumulative forecast change) would lead to a significantly higher debt-to-GDP ratio compared with the baseline (+12 pps.).

Additionally, stochastic debt projections indicate medium risks (Graph 2). [125] These stochastic simulations point to a 57% probability of the debt ratio in 2027 being greater than in 2022, entailing low risk given the initial low debt level. However, such shocks point to substantial uncertainty (i.e. the difference between the 10th and 90th debt distribution percentiles) surrounding the government debt baseline projections.

(122) The S0 is a composite indicator of short-term risk of fiscal stress. It is based on a wide range of macro-financial and fiscal variables that have proven to perform well in the past in detecting situations of upcoming fiscal stress.

(123) The assumptions underlying the Commission's 'no-fiscal policy change' baseline notably comprise: (i) a structural primary deficit, before ageing costs, of 2.4% of GDP as of 2024; (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 from now); (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 (as for all Member States); (iv) real GDP growth rates from the Commission 2023 spring forecast until 2024, followed by EPC/OGWG 'T+10 methodology projections between T+3 and T+10, i.e. for 2025-2033 (on average 2.4%); (v) ageing costs in line with the 2021 Ageing Report (European Commission, Institutional Paper 148, May 2021). For information on the methodology, see the 2022 Debt Sustainability Monitor (European Commission, Institutional Paper 199, April 2023).

(124) Table 1 shows the baseline debt projections and its breakdown into the primary balance, the snowball effect (the combined impact of interest payments and nominal GDP growth on the debt dynamics) and the stock-flow adjustment.

(125) These projections show the impact on debt of 2000 different shocks affecting the government's primary balance, economic growth, interest rates and exchange rates. The cone covers 80% of all simulated debt paths, therefore excluding tail events.

3 - Long-term risks to fiscal sustainability are medium overall. **(**[126]**)**

The S2 sustainability gap indicator (at 3.3 pps. of GDP) points to medium risks, suggesting that Romania would need to significantly improve its structural primary balance to ensure debt stabilisation over the long term. This results mainly from the unfavourable initial budgetary position (3 pps. of GDP) and the projected increase in health care costs (0.7 pps.) and long-term care spending (0.3 pps.) (Table 2; the impact of pension measures taken since 2020 is not included in the ageing projections). A number of investments and reforms in the RRP contribute to supporting the efficiency of the Romanian health care system, so it will be important to carefully monitor their implementation.

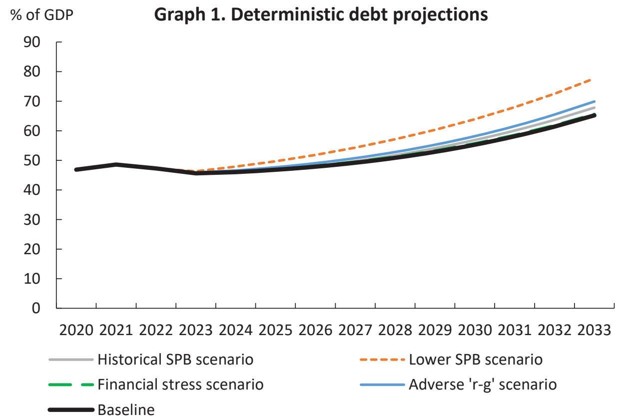
Combined with debt vulnerabilities, as highlighted by the S1 indicator, overall long-term risks are assessed as medium. Indeed, the S1 sustainability gap indicator signals that a significant consolidation effort of 3.9 pps. of GDP would be needed to bring debt to 60% of GDP by 2070. This result is driven by the unfavourable initial budgetary position (2.9 pps. of GDP) and the projected rise in ageing costs (1.2 pps.) (Table 2).

Finally, several additional risk factors need to be considered in the assessment. On the one hand, risk-increasing factors are related to the recent increase in interest rates, the share of debt held by non-residents, the currency denomination of debt, and the country's negative net international investment position. On the other hand, risk-mitigating factors include the lengthening of debt maturity in recent years and the low share of short-term debt. In addition, the structural reforms under the NGEU/RRF, if fully implemented, could have a further positive impact on GDP growth in the coming years, and therefore help to mitigate debt sustainability risks.

([126])The S2 fiscal sustainability gap indicator measures the permanent fiscal effort (SPB adjustment) in 2024 that would be required to stabilise public debt over the long term. It is complemented by the S1 fiscal sustainability gap indicator, which measures the permanent fiscal effort required in 2024 to bring the debt-to-GDP ratio to 60% in the long term (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 pps. of GDP, 'medium risk' if it lies between 2 pps. and 6 pps. of GDP, and 'low risk' if the effort is negative or below 2 pps. of GDP. The overall long-term risk classification brings together the risk categories derived from S1 and S2. S1 may notch up the risk category derived from S2 when it signals a higher risk than S2. See the 2022 Debt Sustainability Monitor for further details.

Table A21.1: **Debt sustainability analysis - Romania**

Table 1. Baseline debt projections	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Gross debt ratio (% of GDP)	**46.9**	**48.6**	**47.3**	**45.6**	**46.1**	**46.9**	**47.9**	**49.2**	**50.9**	**52.9**	**55.3**	**58.2**	**61.4**	**65.2**
Changes in the ratio	11.7	1.8	-1.4	-1.6	0.4	0.8	1.0	1.3	1.7	2.0	2.4	2.8	3.3	3.8
of which														
Primary deficit	8.0	6.0	5.0	2.9	2.7	2.6	2.4	2.3	2.3	2.3	2.4	2.5	2.7	2.9
Snowball effect	1.1	-3.6	-6.5	-4.1	-2.3	-1.7	-1.3	-1.0	-0.6	-0.3	0.0	0.3	0.6	0.9
Stock-flow adjustments	2.6	-0.6	0.1	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross financing needs (% of GDP)	15.6	10.5	10.7	9.2	9.3	9.6	9.9	10.2	10.7	11.3	12.0	12.8	13.7	14.7



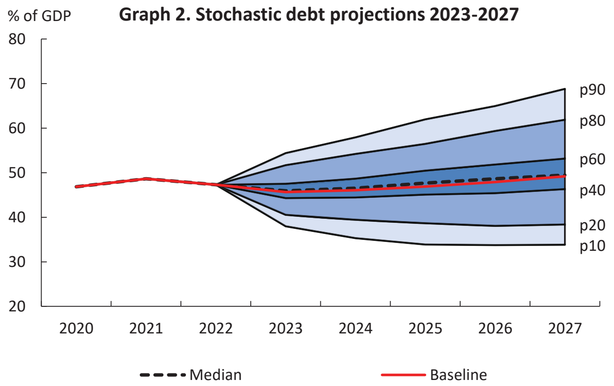


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

		S1	S2
Overall index (pps. of GDP)		**3.9**	**3.3**
of which			
Initial budgetary position		2.9	3.0
Debt requirement		-0.2	
Ageing costs		1.2	0.3
of which	*Pensions*	0.5	-0.7
	Health care	0.5	0.7
	Long-term care	0.2	0.3
	Others	-0.1	-0.1

Source: Commission services.

Table A21.2: **Heat map of fiscal sustainability risks - Romania**

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	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM
		Debt level (2033), % GDP	65.2	67.9	77.7	69.9	65.7				
		Debt peak year	2033	2033	2033	2033	2033				
		Fiscal consolidation space	68%	76%	81%	68%	68%				
		Probability of debt ratio exceeding in 2027 its 2022 level						57%			
		Difference between 90th and 10th percentiles (pps. GDP)						35.0			

(1) *Debt level* in 2033. 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 2027 its 2022 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 2000 different shocks. Green, yellow and red cells indicate increasing uncertainty.

Source: Commission services.

The Macroeconomic Imbalance Procedure matrix presents the main elements of the in-depth review undertaken for Romania ([127]). Romania was selected for an in-depth review in the 2023 Alert Mechanism Report. This in-depth review on the prevention and correction of macroeconomic imbalances presents the main findings on the gravity and evolution of the challenges identified, as well as policy responses and potential policy needs. Findings cover all areas of vulnerability assessed in the in-depth review.

Romania is facing vulnerabilities related to a widening current account deficit against the background of high fiscal spending and strong domestic demand. The current account deficit reached 9.3% of GDP in 2022 (levels not seen since the Great Financial Crisis), from 7.3% in 2021 and 4.9% in 2020, as both trade in goods and primary income balances dipped further into negative territory. The energy shock had an impact, but smaller compared to EU peers. The worsening comes on the back of strong domestic demand, which grew considerably more than GDP and is linked to high fiscal spending, which in 2022, despite a reduction in the deficit, increased by more than 20%. Households' savings played a key role as well, decreasing considerably since their peak during the pandemic, thus affecting the savings-investment balance. Financing of the external deficit seems stable, with about a third of the external deficit financed by FDI inflows in 2022. Low overall debt levels and a robust banking system continue to reassure investors. Furthermore, sizeable entries of EU funds are reducing the net borrowing needs of the economy (which in 2022 stood at 6.9% of GDP). However, protracted large external deficits, especially during periods of high uncertainty and financial tightening, are a significant source of concern. Romania should address the external imbalances, also considering the large reduction in EU transfers at the end of the recovery and resilience plan (RRP) period.

Going forward, vulnerabilities are expected to improve only marginally. As the energy price shock gradually dissipates, the current account balance is projected to improve, but only slightly, as certain issues persist. Domestic demand is projected to stay strong, fuelled by the latest wage and pension increases, while exports growth is projected to be more muted on the back of the sluggish growth prospects in the rest of the EU. The savings-investment balance is still expected to remain clearly negative given the high propensity to consume of the Romanian households and the still high fiscal deficit projected for 2023.

Policies and reforms, especially geared towards fiscal sustainability can help to reduce macroeconomic vulnerabilities. Monetary policy was tightened to fight off inflation, in 2022 the policy rate increasing 8 times from 1.75% to 6.75%. Policy preference for exchange rate stability however, lead to an overvalued domestic currency according to several metrics, hampering the export capacity of the economy. Fiscal consolidation should be the main tool to reduce external imbalances. Sticking to the EDP targets would go a long way in containing current dynamics. The mix of reforms and investments under the RRP, particularly the ones geared towards better fiscal standings, such as tax and pensions reforms, have the potential to allign demand with supply. Furthermore, other RRP measures are conducive to higher productivity and exports, and to improving cost and non-cost competitiveness. In 2022, under the RRP, Romania implemented relevant reforms and investments in the areas of sustainable transport, road safety, digitalization, improving tax and tax administration processes, stepping up the fight against corruption, and the compulsory education system to prevent and reduce early school leaving.

Based on this assessment, the Commission considered in its communication European Semester – 2023 Spring Package (COM(2023) 600 final) that Romania continues to experience imbalances.

([127]) European Commission (2023), In-Depth Review for Romania, Commission staff working document (COM(2023) 642 final), in accordance with Article 5 of Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances.

Table A22.1:**Assessment of macroeconomic**

	Gravity of the challenge	Evolution and prospects	Policy response
	Unsustainable trends, vulnerabilities and associated risks		
External position	Romania's current account deficit widened in recent years, reaching 9.3% of GDP in 2022, up from 7.2% of GDP in 2021. It is below the current account implied by economic fundamentals, which is estimated at around zero, and below the level required to stabilise the net international investment position (NIIP), above or close to prudential NIIP benchmark, over the next 10 years. Romania's external deficits are unsustainable in the medium to long term. The NIIP remains negative at -41% of GDP in 2022 and is well below fundamental-based benchmarks.	Romania's current account continues to reflect the significant government deficit, which reached 6.2% of GDP in 2022. The widening of the current account deficit was also driven by a strong increase in absorption more generally. Terms of trade developments played a role as well, given significant increases in imported energy and food prices. The trade in goods and primary income balances worsened, which was only partially offset by positive balances in trade in services and current transfers. Over the next two years, the current account deficit is expected to improve only marginally to around 8% of GDP. The energy price shock is expected to slowly abate, but fast growth in domestic absorption should keep imports growth at an elevated level. Financing has been stable for now, as Romania's strong fundamentals (low overall debt levels, robust banking system) continue to reassure investors but a volatile global context and tight financing conditions in developed economies pose risks to the outlook.	Monetary policy tightened to counter inflation, but exchange rate is overvalued according to several metrics, and its lack of flexibility limits the shock absorption capacity. Continued large government deficits account for most of the external financing needs and tackling them would go a long way in reducing vulnerabilities related to the large external financing needs of the economy as a whole. Some marginal progress under recovery and resilience plan (RRP) on sustainable transport, road safety, digitalization, tax administration, fight against corruption, and the compulsory education system has been made in 2022 and the full implementation of the reforms and investments under the RRP have the potential to further boost productivity, exports, ensure the sustainability of public finances and improve external balances.
Competitiveness	Cost competitiveness developments persist, with nominal unit labour cost increasing by 6.2% in 2022 and by 10.1% since 2019, while real effective exchange rate (HICP deflated) appreciated by 2.2%. The Romania - EU inflation differential increased in 2022, with Romania's HICP inflation being 2.8 ppts higher vs. EU27 and 3.6 ppts vs. the euro area. Most of the widening in inflation differentials is explained by domestic factors. Furthermore, long standing non-cost competitiveness issues persist.	In 2022, the average nominal wage increased by 13.4%, below the national CPI inflation of 16.4%, but above the average HICP (12%), with divergences between public and private sectors. Private sector wages largely kept up with price level increases and are expected to do so in 2023, as demand for labour is high. ULC registered a steep advance, of 6.2% on the back of high nominal wage increases. Inflation is projected to remain higher than in the rest of the EU, as domestic inflationary pressures have moved into core components and wage increases are projected to be high.	Further policy progress may be needed in response to the identified competitiveness concerns. In January 2023 the government increased by 17.7% the gross minimum wage (33% in the construction sector) and by 10% the wages for several public sector categories. Such measures help households cope with inflation developments, but they also fuel demand and add to cost competitiveness issues. In 2022, progress made under RRP on sustainable transport, digitalization, fight against corruption, and education helped against some of the non-cost competitiveness issues, but more is to be done.

Source: European Commission