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# 2023 Country report - Czechia

***Accompanying the document***

**Recommendation for a COUNCIL RECOMMENDATION**

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

{COM(2023) 603 final}

European Commission

# Czechia

## 2023 Country Report



# ECONOMIC AND EMPLOYMENT SNAPSHOT

## The Czech economic recovery is hampered by global challenges

**Czechia's post-pandemic recovery was disrupted by the Russian war of aggression against Ukraine.** In 2022, the Czech economy grew by 2.5%, dampened by the worsening financial situation of households, slowing external demand and receding problems in global value chains. Economic activity is estimated to have increased by 0.1% quarter-on-quarter in the first quarter of 2023, but is forecast to regain momentum after that, surpassing its pre-pandemic level towards the end of this year. GDP growth is forecast at 0.2% in 2023 and 2.6% in 2024.

**Investment activity is set to benefit from cohesion policy and Recovery and Resilience Facility funds.** Investment growth and foreign demand are expected to be the main drivers of economic activity in 2023, despite investment being negatively impacted by a deterioration in firms' financial situation and tightening financial conditions. Household consumption is expected to stagnate in 2023 on the back of a decline in real disposable income. However, it is set to be the main growth driver again in 2024.

**Despite challenging economic conditions, a gradual correction of macroeconomic vulnerabilities is underway.** The challenging macroeconomic context has contributed to the emergence of a number of vulnerabilities related to housing prices and competitiveness that are assessed in the in-depth review for Czechia ([1]).House price increases are having a negative impact on housing affordability, with Czechia having the least affordable housing in the EU in the past 5 years. Low housing affordability entails significant economic efficiency costs as it prevents an optimal allocation of resources (see section 'Further priorities ahead').

**Czechia is progressing towards all UN Sustainable Development Goals (SDGs), but still lags behind the EU average in some areas, mainly in SDG targets related to environmental sustainability.** There is room to improve in particular on indicators related to climate action (SDG 13). In contrast to the EU's overall trends, Czechia's share of net greenhouse gas emissions keeps increasing. On the other hand, the country performs extremely well on SDG targets related to fairness, such as no poverty (SDG 1), decent work and economic growth (SDG 8), and reduced inequalities (SDG 10).

## The consequences of Russia's invasion of Ukraine weigh on the economy

**Czechia's economy has been heavily exposed to the effects of Russia's invasion of Ukraine.** Consumer price inflation increased to 14.8% in 2022, driven by fast-growing prices for commodities and production inputs.

**Czechia has been facing cost competitiveness pressures.** As a small, highly open economy with the highest share of exporting firms among EU Member States, particularly in the manufacturing sector, Czechia is vulnerable to external shocks due to its high integration in global value chains. Because of higher commodity prices and unit labour costs, Czechia's cost competitiveness

([1]) European Commission (2023), In-Depth Review for Czechia, Commission staff working document (COM(2023) 628 final).

has declined. However, cost pressures are set to ease in 2023, supported by government-imposed caps on energy prices and related indirect effects. At the same time, a decline in real income and a tight monetary policy are expected to prevail in 2023, amid stagnating economic growth. This will bring the average annual increase in the Harmonised Index of Consumer Prices (HICP) to 11.9% in 2023 and 3.4% in 2024.

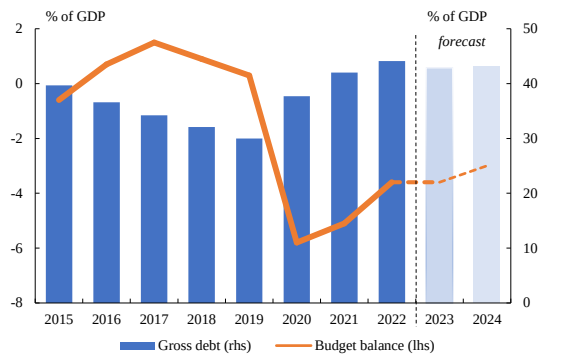
**Nominal wage growth has been strong in Czechia.** While already high before the pandemic, it rose sharply in 2022 and is expected to remain high over the next 2 years. Nominal compensation per employee increased by 7.6% in 2022. However, real wages declined in 2022 as a result of high inflation, after having grown strongly in the past 3 years.

**Energy dependency remains a major vulnerability.** Czechia's high reliance on fossil fuels calls for a faster roll-out of renewables and energy efficiency investments, as well as diversification of its supply sources. A broad range of technologies, including solar, wind, geothermal, hydrogen and biomethane, could be developed further as a substitute for natural gas imports, particularly in households and industry. Czechia will face increasing challenges resulting from natural hazards related to droughts and water stress. This will require more efforts in forest and water management.

## A return to prudent fiscal policy

**Expansionary fiscal policy, especially in 2020 and 2021, has weakened a strong public finance position.** Faced with the challenges arising from the pandemic and the energy crisis resulting from Russia's invasion of Ukraine, Czechia has used fiscal policy to sustain the economy. This includes measures to support the most affected sectors, maintain employment and boost economic recovery. As the energy crisis unfolded, public spending on social protection was increased to help the population cope with a higher cost of living. Energy price caps have been implemented to help households, small and medium-sized enterprises (SMEs) and companies deal with the hike in energy prices. Given the high inflation and its negative effects on the low-income population, targeted measures to provide support to the most vulnerable should be a priority for the fiscal policy. However, some of the measures taken in the past 3 years have not been of a temporary or targeted nature. For example, lowering the personal income tax added around 1.5% of GDP permanently to the structural deficit. The indexation of social security benefits has also been higher than the growth in corresponding revenues. As a result, the budget deficit is likely to remain above pre-pandemic levels with 3.6% of GDP in 2022, 3.6% in 2023 and 3.0% in 2024. The general government debt-to-GDP ratio is forecast to increase from 42.0% in 2021 to 43.1% in 2024, still low compared to the EU average. To tackle the deficit, the government presented a package of measures aimed at lowering the deficit by around 1 percentage point of GDP in 2024, but the exact details are still not finalised.

Graph 1.1: **Key fiscal indicators**




***Source:*** Eurostat, European Commission

**Fiscal challenges are set to increase in the long run.** According to the Commission's latest Debt Sustainability Analysis (see Annex 21), the debt-to-GDP ratio is expected to remain on an increasing path by 2033, though starting from a relatively low level compared to other EU countries. In the medium and long term, given the projected increase in age-related spending, these debt developments could increase the fiscal sustainability risks. According to the Commission's 2021 Ageing Report, a projected doubling of the old-age dependency ratio, the capping of the Czech

retirement age as well as a still high number of people taking early retirement would lead to an expected increase in total ageing costs of around 6 percentage points by 2070, split between spending on pensions, healthcare and long-term care. These challenges will need to be addressed to safeguard the long-term sustainability of public finances, while maintaining adequate pensions.

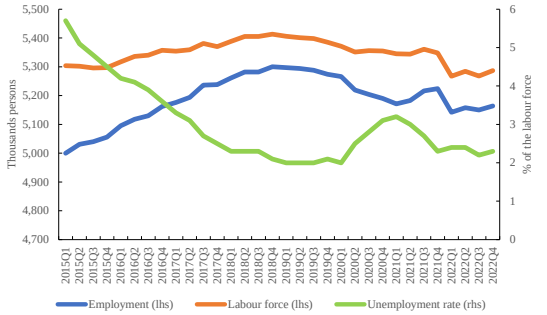
## Unlocking the potential of the Czech economy

**Addressing the risks of widening regional disparities can boost economic and social progress in Czechia.** While more developed regions suffer from unaffordable housing and pressures on the suburban transport networks, less developed regions face issues arising from demographic pressures, social exclusion and insufficient focus on key areas such as energy transition innovation and digitalisation (see Annex 17). Prague is the only region classified as a strong innovator.

**In addition to support from the Recovery and Resilience Facility (see section 'The recovery and resilience plan is underway'), Czechia benefits from sizeable EU cohesion funds.** Implementation of cohesion policy funds is well advanced both for the 2014-2020 programming period as well as the 2021-2027 programming period. In 2021-2027, the Just Transition Fund will enable further economic diversification and modernisation of Czechia's three coal regions (Karlovarský, Ústecký and Moravskoslezký). This, together with structural funds, could help address the challenges linked to regional disparities.

**The Czech labour market continued to improve, though labour shortages and the impact of the energy crisis raise some concerns.** Employment in Czechia has been increasing since 2020, albeit at a slow rate, bringing the employment rate to 81.3% in 2022 (above 74.6% for the EU). The unemployment rate is set to remain low, increasing from 2.2% in 2022 to an estimated 2.8% in 2023 and 2.6% in 2024. The share of economically active population has increased steadily over the last few years, from 78% in 2014 (Graph 1.2).

Graph 1.2: **Labour market indicators**




***Source:*** Eurostat

**There are disparities in labour market and social outcomes between population groups.** Further attracting certain groups to the labour market can ease existing labour and skills shortages. The gender pay and employment gaps remain high, driven partly by the limited availability of and participation in early childhood education and care (see Annexes 14 and 15).

**Strengthening active labour market policies plays a key role.** In particular upskilling and career guidance, increasing access to childcare and providing more flexible working arrangements, can unlock the untapped potential of young people, women and low-skilled workers in Czechia. It can also help support the implementation of the European Pillar of Social Rights (see Annex 14) and reach the national employment target by 2030. The proportion of people at risk of poverty or social exclusion is among the lowest in the EU, though it remains high for specific groups (e.g. Roma, women above 65) and regions (e.g. Severozápad). Dedicated support through the European Social Fund Plus (ESF+) continues to promote the employment of disadvantaged groups and address skills needs.

**Skills mismatches weigh on the potential of the Czech labour market, on the back of changing business needs and the green and digital transition.** Regional and sector divergences remain present (see Annex 8). The

education and training system face challenges to reduce socio-economic inequalities that affect educational outcomes, especially for Roma pupils (see Annex 15). Adult participation in learning is below both the EU average and the national target by 2030 (see Annex 14). While 60% of the Czech population has at least basic digital skills, there is significant scope for achieving the national target on skills (80%) by 2030. Tertiary educational attainment is among the lowest in the EU (see Annex 15). The labour market potential of people displaced from Ukraine remains underused, with 80% of Ukrainian-born workers performing low-qualified jobs ([2]).

## Social policy developments

**While the overall risk of poverty for the Czech population is low, some households struggle to make ends meet ([3]).** In 2021, the share of people at risk of poverty or social exclusion was 10.7%, well below the EU average of 21.7%. The lack of affordable housing and social housing and the high rate of insolvencies and foreclosures (affecting 7.8% of the Czech population) are factors behind this risk (see Annex 14). Limited access to housing also affects people displaced from Ukraine, with around half of them still living in private accommodation provided on a solidarity basis and one-third of Roma coming from Ukraine facing material deprivation ([4]).

**There is limited access to and varying quality of community-based services.** Population ageing affects the provision of healthcare and long-term care servi also face shortages of profess particular paediatricians (see Annex 16). Moreover, language barriers and unfamiliarity with the Czech system make it difficult for Ukrainian refugees to access healthcare, especially mental health services. More targeted action for low-income households, including for community-based high-quality social services, can help Czechia reach the national poverty target by 2030.

**A total of 326 000 displaced people from Ukraine received temporary protection in Czechia, making the country one of the biggest recipients per capita in the EU ([5]).** The country has taken important measures to make it easier to integrate them in the short term ([6]). However, limited school places and the shortage of qualified teachers in some regions make it difficult to accommodate the large number of pupils arriving from Ukraine (over 50 000 in September 2022) in formal education and training ([7]). The ESF+ contributes to a total EUR 16.5 million for training and EUR 14 million for housing support to Ukrainian refugees.

**While incomes have supported house price rises, lower interest rates have also played a significant role in increasing demand for housing in previous years.** However, the price pressures seem to have eased in part thanks to an increase in the number of homes being built as well as a rise in interest rates for mortgages. To improve the housing situation, there is a need for a legislation to be adopted on social and affordable housing as well as for more suitable territorial planning, higher fund absorption capacity of municipalities, and investment in social housing refurbishment. The prevention of evictions will help avoid homelessness.

## Competitiveness

**Czechia lags behind the EU average in higher education rates.** This is crucial for

([2]) European Commission (2022), Czech Republic: Refugees from Ukraine face precarious situations in the labour market, European Website on Integration.

([3]) Housing Initiative: Housing Exclusion Report 2021

([4]) PAQ research (2022): The Voice of Ukrainians.

([5]) Ministry of the Interior of Czechia, Statistics related to the war in Ukraine, April 2023.

([6]) European Commission (2022), Integration of refugees from Ukraine in the Czech Republic 2022, European Website on Integration.

([7]) European Commission (2022), Education and Training Monitor, Country Report, Czechia.

skills and human capital development, innovation and competitiveness. The share of those aged 25-34 holding a tertiary degree is close to the national target of 35%, but remains below the EU average of 42% and the EU-level target of 45% by 2030. Furthermore, the dropout rate is also high as almost half of all studies are not completed. The employment rate of tertiary education graduates (86.7%) is only slightly above that of upper secondary education graduates (81.2%), the smallest difference in the EU. The wage premium is also small (16% vs EU-22 +25%), illustrating the low value placed on qualifications in the Czech economy.

**Progress in boosting the competitiveness and labour market relevance of higher education is slow.** Higher education struggles to equip young people with the skills demanded by the labour market. For example, 76% of Czech businesses report difficulties in finding ICT specialists, the highest share in the EU. Higher education has also experienced lower budgetary resources in the past decade. Although the last systemic reform of higher education took place in 2016, further efforts are needed to increase the labour market relevance and innovation potential of higher education and support the transition towards a knowledge-driven economy.

**Czechia is an open economy and well-integrated into the single market.** Its trade integration in the EU is one of the highest, supported by trade in goods (the fourth highest as a percentage of GDP in the EU). While Czechia's growth engine, industry is vulnerable to external shocks due to its high level of integration in global value chains. Regulatory restrictiveness in Czechia is higher than the EU average for the regulated professions of architect, civil engineer, lawyer and estate agent. Other pressing concerns related to Czechia's business environment are the administrative and regulatory burden together with access to skills and late payments, which represent a major obstacle to investment. Late payments (around 30% higher compared to the EU average) continue to be a major impediment to SME resilience and growth. There is still scope to boost competition on the public procurement market and improve public procurement practices in terms of quality-based competition. In 2022, 42% of contracts awarded had just a single bidder, the fourth worst in the EU, and around 81% of contracts were awarded without using the quality-based criterion.

**The numerous crises pose new challenges for firms' competitiveness and productivity.** The Czech economy is highly dependent on manufacturing and exports, and its energy-intensive and automotive industries have been affected by higher energy prices and supply chain bottlenecks in key raw materials. Overall labour productivity remains subdued in Czechia, reaching 85% per person in purchasing power standards of the EU average in 2021. For industry, real labour productivity per person increased by 4.1% in 2021, below the EU average of 7%. This indicates further potential for productivity growth. In addition, strengthening weak science business links and with it improving the transfer of technology and knowledge could also boost Czechia's industrial competitiveness.

Box 1:

## Energy policy response in Czechia

Czechia has adopted several support measures to cushion the impact of energy price inflation on households and businesses. The Commission's 2023 Spring Forecast projects the country's gross budgetary costs to amount to 1.8% of GDP in 2023. Most measures do not preserve the price signal and appear to be untargeted.

Notable measures include price caps on electricity and gas, support for energy-intensive companies, partial compensation for household energy bills for October-December 2022, support for heating plants to reduce household heating prices or temporarily covering the surcharges for renewables from the state budget. The largest measure is a cap on electricity (EUR 200 per MWh excluding VAT) and on gas prices (EUR 100 per MWh excluding VAT) from January 2023 onwards for households, SMEs as well as for large companies. The measure is in place until the end of 2023.

Czechia applies national measures in implementation of the Council Regulation (EU) 2022/1854. These include a levy on the energy revenues above certain price levels differentiated by sources ([8]) and a levy on surplus profits of companies in the energy sector ([9]). The levy applies to companies in the crude petroleum, natural gas, coal and refinery sectors, but also to certain companies in the financial sector.

To improve the security of energy supply, Czechia reached its gas storage level obligations and activated the 'use it or lose it' mechanism to withdraw the Gazprom storage capacity at the Damborice site under the state's special auction measures. It took emergency heating measures to cut gas demand and issued a handbook to guide the Czech state institutions towards achieving energy savings, contributing to a 17.7% reduction in natural gas consumption from August 2022 to January 2023. Moreover, Czechia is updating its electricity load distribution (loadshedding) rules, has sought to diversify its fossil fuel imports, has launched an energy savings campaign, and has started revising the legislative framework to incentivise the uptake of renewable energy sources.

([8]) For example EUR 180/MWh for wind, solar and geothermal, EUR 70/MWh for nuclear or EUR 170/MWh for lignite.

([9]) Member States can keep or introduce national measures that are equivalent to the solidarity contribution set in Council Regulation (EU) 2022/1854 provided they are compatible with the objectives of the Regulation and generate higher or comparable proceeds. These measures must also cover the extraordinary and unexpected profits of businesses active in the crude petroleum, natural gas, coal and refinery sectors.

# THE RECOVERY AND RESILIENCE PLAN IS UNDERWAY

**Czechia's recovery and resilience plan (RRP) aims to address the key challenges related to digital transformation, the green transition, the education and labour market, public administration, research and innovation and healthcare.** It consists of 37 reforms and 85 investments that are supported by more than EUR 7 billion in grants, representing over 3% of 2021 GDP (see Annex 3 for more details) to help the country tackle pressing social and economic challenges.

**The implementation of Czechia's recovery and resilience plan is underway, however with risk of some delays.** Czechia submitted one payment request, corresponding to 37 milestones and targets in the plan and resulting in an overall disbursement of EUR 928 million. Further improvement to administrative capacity and prioritisation of the key reforms and investments are needed for timely implementation of the plan. Czechia has not yet submitted a proposal for the amendment of its plan, nor a REPowerEU chapter, but discussions between Czechia and the Commission are ongoing. In addition, Czechia also indicated its intention to submit an additional loan request. 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.

**Czechia's green transition is in progress, with 42% of its total allocation measures devoted to climate objectives.** The government has adopted the Circular Czechia 2040 strategy, which sets the goals and principles crucial to Czechia's transition to a circular economy. Projects to make public buildings and lightning systems more energy efficient and electrify railways are well advanced, in line with Czechia's country specific recommendation of 2022 (CSR 4). On disaster prevention, achievements include the completion of 450 projects to increase the water retention of watercourses and reservoirs. In the coming years, Czechia will take further steps towards the green transition, for example by reforming waste management, modernising further railway lines and installing renewable energy sources for households.

**Czechia is moving forward with the digital transformation of its economy and of public administration in line with the recommendation of 2020 (CSR 3).** The Central European Digital Media Observatory was launched, which will provide analysis and digital tools to combat the spread of disinformation online and improve media literacy. Progress has also been made in the public sector in digitalising the permitting procedure in the construction sector. The reform will simplify and accelerate the process of issuing building permits. Moreover, a framework of rules and standards has been adopted for developing and providing e-health and telemedicine services. Czechia's digital transformation will continue in the next few years by making new digital public administration services available to citizens, completing a use case for European Blockchain Services Infrastructure and deploying the demonstrative application of 5G technology for cities and industrial areas.

**New measures support Czechia's smart, sustainable and inclusive growth.** The introduction of new financial instruments by the Czech National Development Bank addresses the challenges facing small and medium-sized enterprises in accessing sustainable financing, in line with the recommendation of 2020 (CSR 3). A new investment will support five R&D consortia in medical and related social sciences. At the same time, the newly established National Coordination Group for Support for Industrial Research will harmonise the industrial R&D

support policies in line with the recommendations of 2019 and 2020 (CSR 3). Further support to businesses that implement circular solutions and water saving measures in the industry will stimulate smart and sustainable growth in Czechia.

**Czechia's social and territorial cohesion is supported by achievements financed from the Recovery and Resilience Facility.** These include the completion of 45 level crossings with increased protection, 25 kilometres of cycle paths, sidewalks and barrier-free routes, and 3 modernised railway bridges and tunnels. On labour market policy, the tripartite Re-skilling and Upskilling Committee will coordinate the development of lifelong learning programmes in Czechia. These will be accompanied by a reform of childcare financing and by the creation of a public database, including reskilling and upskilling courses to support lifelong learning.

**The RRP delivers on strengthening Czechia's health, economic, social and institutional resilience.** Eight of the milestones achieved constitute improvements in the control and audit environment, in line with the recommendation of 2019 (CSR 1). In particular, Czechia took action to safeguard the financial interests of the EU during the implementation of the Recovery and Resilience Facility. The parliament adopted among others an amendment to the law on the registration of beneficial owners so that it is in line with the EU Anti-Money Laundering Directive. Another amendment was made to the Courts and Judges Act to strengthen institutional resilience. This improves the transparent and uniform system for recruiting and selecting judges and court officials. Institutional resilience will be further supported this year by systematically collecting and analysing data on corruption in the country.

**Czechia has also improved its health resilience by completing important reforms and investments related to its healthcare system, in line with the recommendations of 2019 (CSR 1) and 2020 (CSR 1), as well as Europe's Beating Cancer Plan.** For instance, the new 2022-2030 National Oncological Programme sets out the scope and quality screening programmes for cancer prevention. Health resilience will be further strengthened in the coming years by reforming long-term care and by projects to improve the education of healthcare professionals.

**Investments and reforms support the future of the next generations.** The curricula of primary schools, lower secondary schools and gymnázia have been revised to strengthen the digital literacy and computational thinking skills of pupils, in line with the recommendations of 2019 and 2020 (CSR 2). In addition, more than 70 000 digital devices were purchased by schools for distance learning in primary and secondary schools. In the tertiary education system, a new call was launched that will support Czech universities in their transformation to adapt to new forms of learning and changing labour market needs. Policies for future generations will continue to make a difference by equipping schools with IT devices to implement the new curricula and by starting to develop new university facilities.

Box 2: **Key deliverables under the RRP in 2023-2024**

- Reforms of waste management and mobility plans
- Long-term care reform
- Investments in modernising district heating systems and railway transport
- Investment in digital school equipment to implement the new IT curricula and in digital services offered to citizens

# FURTHER PRIORITIES AHEAD

**Beyond the challenges tackled in its recovery and resilience plan, Czechia faces additional ones.** Policy attention and further progress are required in particular related to the long-term sustainability of public finances, the housing market, administrative capacity as well as improving green and digital skills. Addressing these challenges will also help make further progress in achieving the SDGs, where Czechia currently has room for further improvement, namely SDG 4 (Quality education), SDG 9 (Industry, innovation and infrastructure) and SDG 13 (Climate action).

## Long-term sustainability of public finances, including pension and healthcare systems

**While the public debt level is still low, the structural deficit and medium-term risks increased in the last 3 years.** Capitalising on a history of fiscal discipline, Czechia still has a low public debt-to-GDP ratio compared to other EU countries (44.1% of GDP in 2022 compared to the EU average of 85.3%). However, the past 3 years have brought a significant increase in the headline budget deficit compared to pre-pandemic levels. The reasons for this include a mixture of temporary COVID-19 support measures, measures to address the cost of living crisis, and permanent measures that increased the structural deficit (such as a cut in the personal income tax not offset by other revenues). Debt sustainability challenges are expected to intensify in the long run due to an ageing population and the associated increase in spending on pensions, healthcare and long-term care. The old-age dependency ratio (the ratio of people over 65 to people of working age 20-64) is expected to double from 33% in 2019 to a peak of 59.2% by 2060 according to the Commission 2021 Ageing Report ([10]).

**Pension spending is expected to rise especially after 2030, but challenges also remain in the short term.** While the pension age is still increasing until 2030, in the absence of any future change, public pension spending is expected to increase from 8.8% of GDP in 2030 to 11.8% in 2060 according to the 2021 Ageing Report. However, challenges also remain in the short term. The automatic indexation of pensions in line with high inflation surpassed the growth in pension contributions as salaries have grown less than inflation, leading to a deficit in the pension system.

**Measures are needed to address fiscal sustainability.** The Czech government aims to present a comprehensive plan for improving fiscal sustainability and a pension reform in 2023. It has also approved reductions in social security contributions to promote part-time work for specific groups such as older people, young parents, students and people with disabilities with the aim to increase the participation rates of these groups in the labour market. Other possible measures to address the sustainability of the system include adjusting the retirement age in line with the increase in life expectancy, incentivising the increase in participation rates of people over 60 (where these are below the EU average), adjusting pension indexation rates to take into consideration the fiscal sustainability of the pension system or taking measures to increase the labour supply. Measures to increase fiscal revenues are also an option, as the overall tax revenue is low in relation to Czechia's GDP (35.9% of GDP compared to 40.6% EU average). This can

([10]) European Commission, 2021, https://economy-finance.ec.europa.eu/publications/2021-ageing-report-economic-and-budgetary-projections-eu-member-states-2019-2070_en

include making more use of taxes less detrimental to growth like recurrent property taxation, capital taxes other than corporate income tax or environmental taxes (see Annex 19). Improving tax compliance could also help strengthen tax revenues as a VAT gap at 11.9% (as of 2020), is still above the EU-wide gap of 9.1%.

**Healthcare and long-term care sustainability also represent a challenge due to population ageing and system inefficiency.** Despite significant improvements, Czechia still performs below the EU average in many areas related to health status and healthcare outcomes (see Annex 16). Czechia remains in the lower half of EU countries on life expectancy at birth, and treatable mortality is higher than the EU average. Large disparities remain in health outcomes across regions and in socio-economic status. The share of in-patient health services and long-term in-patient care in total health services provided is still high compared to the EU average. There is scope for improving home care and community-based care as well as strengthening the role of doctors as gatekeepers. With an ageing population, it is expected that health needs related to chronic diseases will also increase. Public expenditure on healthcare is projected to increase by 0.9 percentage points of GDP by 2070, adding to the costs associated with an ageing population.

## Strengthening the capacity of public administration and efficiency of public procurement

**Over the next decade, Czechia is expected to absorb around EUR 40 billion of EU funds.** This will help address the key development challenges outlined in the country-specific recommendations addressed to Czechia. All the 2021-2027 cohesion programmes adopted the 2014-2020 programming period, Czechia has progressed with implementation, and no loss of funds is expected.

**On the implementation of EU funds, specific challenges remain at both national and regional level.** The two largest funding sources (see Annexes 3 and 4) – the Recovery and Resilience Facility and cohesion policy funds (EUR 25.7 billion) – will require increased implementation capacity and efficient procedures to prepare and successfully deliver public sector investment projects. The two largest funding sources, the RRF (grants of EUR 7 billion in the recovery and resilience plan already adopted, with a potential for further substantial increase (up to EUR 11 billion) as part of the revision of the plan, including the uptake of the loans) and cohesion policy funds (summing up to EUR 25.7 billion), will require increased capacity and efficient procedures to prepare and successfully implement public sector investment projects (more details in Annexes 3 and 4), especially if investment growth is expected to be the main driver of economic activity also in 2023. As in 2022, the absorption of funds still faced challenges in the areas of digitalisation of the economy and public administration as well as energy efficiency. Sufficient implementation capacity is needed to address the twin transition and successfully use the opportunities created by the European Green Deal and the Digital Europe Programme.

**At central government level, several layers of administrative capacity require further attention.** Overall, Czechia's public sector performance and government effectiveness has increased to around the average in the EU-27 (see Annex 13). The country approved the 'Client-oriented Public Administration 2030' strategy to improve the quality of public services. In addition, the Civil Service Act was amended in 2022. However, there is a general lack of data the performance of the civil service.

**There is a need for Czechia to improve its policymaking cycle.** Greater emphasis put on evidence-informed policymaking and strategic planning, as well as on strengthening inter-ministerial coordination across and between tiers of government could improve the quality of policy making. Specific skills and competences need to be strengthened,

particularly in the field of green and digital projects. Strategic planning would need to build on the synergies between local needs and central objectives, as well as on the increased analytical capacity of public administration.

**The public procurement framework is a crucial element for timely and efficient public investment.** Czechia is below the EU average of some performance indicators such as the proportion of contracts awarded to a single bidder. While this has improved over time, there is still scope for improvement.

**Targeted efforts could make regions and municipalities more efficient, including in EU fund implementation.** Support for municipalities, cities and regions with low investment absorption rates is critical, otherwise there is a risk of the socio-economic situation getting worse due to the consequences of the COVID-19 pandemic and the Russian war of aggression against Ukraine. The example of the North-West region (Severozápad), the only region not converging to the EU average GDP (still below 65% in 2020), shows that low absorption capacity is a contributing factor to the growing disparities between the North-West and other regions. To this end, targeted technical assistance could be provided to municipalities and territorial partners in regions with the lowest absorption rates.

## Housing market faces challenges

**Housing supply lags behind the strong demand, which worsens the availability of housing and contributes to the growth of housing prices.** While incomes have supported house price rises, lower interest rates have also played a significant role in increasing demand for housing. However, the price pressures seem to be partially mitigated by an increase in residential construction, as well as a rise in interest rates for housing loans. The improvement of the housing situation requires the adoption of legislation on social and affordable housing as well as adequate territorial planning, higher absorption capacity of municipalities, and investment in refurbishment of social housing. The prevention of evictions will help to avoid homelessness.

**Housing affordability in Czechia continues to be weak, despite lower demand caused by increased interest rates.** Comparing house price increase to income shows a sharp acceleration compared to a decade ago ([11]). Acquiring property is difficult especially for low and middle-income groups, feeding the demand for rental property, the affordability of which is also declining. According to the OECD housing survey ([12]), the limited mobilisation of available land reserves weighs on housing development opportunities at local level in Czechia. Municipal rental stock is very limited and there are still no incentives for rental or cooperative housing, which would increase the supply of affordable housing. Moreover, the integration of people fleeing from Ukraine and staying in Czechia could further increase the demand for housing.

**Housing affordability is more acute for low-income groups due to the absence of a legal framework to provide systemic social housing support.** The lack of a definition of roles at national and regional level impedes a comprehensive approach to social housing. The proportion of social housing out of the total stock of rental properties is 0.4% in Czechia, well below the EU average of 7-8% ([13]). In recent years, investment in new social housing has relied mostly on EU funding. As a result, the number of households in need of housing is currently estimated to be 35 000 to 62 000 ([14]).

([11]) European Commission, 2023, https://economy-finance.ec.europa.eu/system/files/2023-04/ip197_en_1.pdf

([12]) OECD, 2021, Housing Affordability in Cities in the Czech Republic, OECD Urban Studies, OECD Publishing, Paris, https://doi.org/10.1787/bcddcf4a-en.

([13]) OECD, 2020, OECD Affordable Housing Database, OECD, Paris.

([14]) Report on Housing Exclusion 2021 and Social Housing in the Czech Republic (Platform for Social Housing), 2021.

**Broad reform is needed to ensure adequate and affordable housing in Czechia.** As part of the reform efforts, incentivising the availability of land suitable for building homes at municipal level, and rebuilding and refurbishing existing housing units can have positive effects on housing supply and prices. For instance, recent estimates show that reforms that incentivise the renting and private development of housing could boost utilisation of vacant properties, currently at 22% in rural areas and 10% in urban areas. Effective coordination between different public bodies would be key to building and providing affordable and quality housing, including rental housing. Czechia's RRP addresses supply of housing only partially with measures related to the new construction law and digitalisation of construction permits.

## Managing security of energy supply and stepping up diversification efforts

**Since the start of the Russian invasion of Ukraine, Czechia has reduced its strong reliance on fossil fuel imports from Russia.** The country almost fully replaced its Russian gas supplies with gas imports from Norway and overseas liquefied natural gas (LNG) imports. Yet, further efforts towards diversification are needed to ensure security of supply. Energy security risks remain given the uncertainties in global LNG demand conditions and the country's reliance on natural gas. Fossil fuels remain a key component in Czechia's energy mix, reaching 69% in 2020, with natural gas accounting for 18%. More than 30% of Czech households still use gas for heating and another third relies on district heating, which is also heavily dependent on gas. Oil use currently accounts for 22% of the Czech energy mix. Reducing Czechia's reliance on fossil fuels is an essential part of ensuring security of supply.

**Coal and nuclear remain important for Czechia's energy mix for electricity.** However, the share of coal in power generation has been decreasing in recent years (from 50.4% in 2016 to 41% in 2021). In the heating sector, there has been a gradual switch from coal reliance towards the use of natural gas, although this still makes the energy system highly reliant on fossil fuels. The Czech government is committed to creating conditions conducive to a coal phase-out by 2033. Given the level of dependency on fossil fuels, including Russian oil, Czechia has been exposed to a high risk of supply disruption and price spikes, with major negative effects for households and industry (see Annex 7).

**With the price spikes in gas and electricity costs last year, improving energy efficiency and rolling out new measures have become a major priority in Czechia to manage supply security.** In response, Czechia was quick to abolish subsidies for condensing gas boilers in households. Moreover, the New Green Savings Programme has succeeded in making energy savings in residential buildings and helping older people and low-income households address energy poverty. Continuous efforts to reduce gas demand through energy efficiency actions would reduce the possibility of price spikes and limit the cost of gas purchases. Finally, while energy prices have decreased, uncertainty remains regarding next winter, which requires continued efforts to structurally reduce gas demand.

## Advancing the green transition

**Further action is needed to improve energy efficiency in both the residential and industrial sectors.** Challenges remain linked to complex administrative procedures for accessing subsidies. This includes a lack of information in general and lack of a skilled workforce to support the country's renovation wave objectives (enabling skills and capabilities for the green transition), including administrative staff. Overall, additional measures are needed to increase awareness on energy efficiency projects and prepare for them. Around 8.7% of the Czech population

lives in energy poverty. Besides the financial support to carry out energy efficiency investments for the most vulnerable, Czechia should also put in place a nationwide network of advisors on energy and climate measures to offer support to the most vulnerable.

**Labour shortages in key sectors related to the green transition have increased in recent years.** This is also linked to a lack of relevant skills creating bottlenecks in the transition to a net-zero economy. In 2022, labour shortages were reported in Czechia for seven occupations that require specific skills related to the green transition (e.g. plumbers pipefitters, electricians and electrical mechanics) ([15]). In addition, labour shortages were reported as a factor constraining production in industry (for 23.6% of firms) and construction (for 46.6% of firms). Upskilling and reskilling for the green transition, including for those most affected, and promoting inclusive labour markets are essential policy levers to accelerate the transition to net-zero and ensure its fairness (see Annex 8).

**Renewables penetration has not increased significantly, and further action is needed to tackle existing regulatory challenges to the deployment of renewables.** The development of renewable energy sources as well as the production of electricity from renewables have been stagnating. The regulatory framework and the lack of subsidy support have been identified as the main obstacles to renewables deployment. While there is considerable potential for updating and streamlining administrative and permitting procedures (see Annexes 7 and 12), there have been some improvements: Czechia has amended its Energy Act ('Lex RES 1') to raise the limit for installing photovoltaic plants without a licence, with changes also made to the Construction Act to facilitate installation. Further work is needed to empower energy communities ('LEX RES 2') and introduce a one-stop shop for renewables to ensure possibilities for grid connections and grid expansion. The introduction of 'go-to areas' would also help develop renewables.

**Czechia needs to ensure a higher level of investment in grid capacity, especially in distribution grids, to accommodate the uptake of renewables.** Unlocking major new investments to upgrade grid capacity and addressing challenges linked to the overbooking of available capacities will be needed to rapidly deploy renewables in the future Czech energy mix. A supportive regulatory environment could further boost the deployment of renewables in the country by encouraging grid expansion, the installation of small systems and smart metering.

**The deployment of renewables and clean technologies is essential for reducing high fossil fuel use in the industry sector.** The further deployment of solar power plants and overall modernisation has the potential to contribute to greater energy efficiency in the industry sector (28% of 2021 final energy consumption). Given Czechia's dependence on non-renewable energy sources and its high level of industrialisation, the industry sector (in particular the automotive sector) is expected to face considerable challenges in implementing the green transition.

**Simplifying and speeding up the permitting procedure are key actions for the manufacturing of net-zero technologies and their components, as well as facilitating the market access of these products.** Investments in the industrial transition towards net-zero emissions, in manufacturing capacities for clean technologies, in research and innovation and in skills are crucial for strengthening industrial competitiveness, as laid out in the Commission's Green Deal Industrial Plan.

**Investments in renewable gases can increase energy supply security and ensure a competitive economy with new business and economic opportunities.** Czechia has still not defined hydrogen as an

([15]) Based on the European Labour Authority 2023 EURES Report on labour shortages and surpluses 2022, i.e. data submitted by the EURES National Coordination Offices. Skills and knowledge requirements are based on the European Skills Competences and Occupations (ESCO) taxonomy on skills for the green transition. Examples are analysed on the basis of the share of ESCO green skills in relevant sectors. Data is not comparable across countries and covers a wide variety of sectors.

energy carrier in its national legislation, and has therefore still not recognised its use for energy purposes. Moreover, support for developing biomethane could also help reduce dependence on natural gas. There is currently only one operating biomethane station in Czechia, and the transformation of biogas stations to biomethane is falling short of expectations. The REPowerEU initiative provides a unique opportunity to scale up and support energy-related measures in order to further promote Czechia's decarbonisation objectives.

**Investment in sustainable mobility needs to be accelerated, particularly in zero-emission vehicles and required infrastructure, as well as digitalising and electrifying rail.** The deployment of zero-emission road mobility has been very modest in Czechia to date, with the share of new electric vehicle registrations reaching 3.8% ([16]). The expected roll-out of zero-emission vehicles such as trucks will require the deployment of dedicated charging and refuelling infrastructure in the coming years. A revision of the National Action Plan for Clean Mobility could target these outstanding challenges.

**The transition towards a green economy needs to be coupled with sufficient environmental protection ambitions.** Czechia would benefit from investing more in tackling environmental protection and climate adaptation challenges ([17]). Between 2014 and 2020, environmental investment needs in Czechia were estimated to be at least EUR 4.4 billion, while investment stood at around EUR 2.9 billion, leaving a gap of at least EUR 1.5 billion per year ([18]). The gap in investments is further exacerbated by climate change, putting pressure on water management, the agricultural sector and carbon sinks.

([16]) European Alternative Fuels Observatory (europa.eu)

([17]) Environmental objectives include pollution prevention and control, water management and industries, circular economy and waste, biodiversity and ecosystems (Environmental Implementation Review 2022 – country report Czechia and factsheet).

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

# KEY FINDINGS

**Czechia's RRP includes measures to address a series of structural challenges through**:

- facilitating the digital transition by digitalising public administration and businesses, deploying digital technologies and supporting digital skills education;
- advancing the green transition by renovating buildings and making them more energy efficient, incentivising the use of sustainable transport, investing in cleaner, more efficient energy sources and recycling infrastructure, and by supporting biodiversity;
- addressing social challenges by investing in healthcare and long-term care infrastructure and improving the excellence of research in medical sciences;
- addressing labour market challenges by implementing new schooling curricula, promoting adult learning and promoting female labour force participation by extending childcare facilities' capacity.
- strengthening institutional resilience by improving its anti-corruption framework;
- boosting the innovation capacity of domestic businesses, strengthening the connection with the public research sector and improving access to finance for SMEs;
- having already implemented reforms and investments that address part of the identified challenges, while also maintaining efforts towards completing the whole recovery plan.

Czechia should accelerate the implementation of its RRP and swiftly finalise the REPowerEU chapter, with a view to rapidly initiating its implementation.

**Beyond the reforms and investments in the RRP, Czechia would benefit from:**

- restoring the long-term fiscal sustainability of public finances by addressing challenges to the sustainability of the pension system and the healthcare system;
- strengthening the capacity of public administration, both at central and regional level, and the efficiency of public procurement, especially in the context of implementing the RRP and cohesion policy;
- accelerating the decarbonisation of its economy and reducing gas demand through increased investment in renewables and energy efficiency, coupled with an improved regulatory and permitting framework for new renewable installations and upgrade of grid infrastructure;
- reducing fossil fuel dependence by making investments and reforms that facilitate the uptake of renewable energy, expanding grid capacity, increasing energy savings and energy efficiency, and supporting investments in net-zero technologies manufacturing, including by simplification and speeding up of permitting procedures for net-zero manufacturing projects;
- increasing the supply of affordable housing, including by establishing an overarching policy and legislative framework;
- supporting growth in labour productivity by addressing skills mismatches and investing in green and digital skills, especially in the regions affected by the green transition;
- strengthening social inclusion by addressing regional disparities in access to social services and essential infrastructure.

# ANNEXES

# LIST OF ANNEXES


Cross-cutting indicators 22

A1. Sustainable Development Goals 22

A2. Progress in the implementation of country-specific recommendations 24

A3. Recovery and resilience plan - overview 27

A4. Other EU instruments for recovery and growth 29

A5. Resilience 31

Environmental sustainability 32

A6. European Green Deal 32

A7. Energy security and affordability 37

A8. Fair transition to climate neutrality 42

Productivity 44

A9. Resource productivity, efficiency and circularity 44

A10. Digital transformation 46

A11. Innovation 49

A12. Industry and single market 51

A13. Public administration 55

Fairness 57

A14. Employment, skills and social policy challenges in light of the European Pillar of Social Rights 57

A15. Education and training 59

A16. Health and health systems 61

A17. Economic and social performance at regional level 63

Macroeconomic stability 65

A18. Key financial sector developments 65

A19. Taxation 67

A20. Table with economic and financial indicators 69

A21. Debt sustainability analysis 70

A22. Macroeconomic imbalance procedure assessment matrix 73

# LIST OF TABLES


A2.1. Summary table on 2019-2022 CSRs 25
A3.1. Key elements of Czechia's RRP 27
A5.1. Resilience indices summarising the situation across RDB dimensions and areas 31
A6.1. Indicators tracking progress on the European Green Deal from a macroeconomic perspective 32
A7.1. Key Energy Indicators 37
A8.1. Key indicators for a fair transition in Czechia 42
A9.1. Overall and systemic indicators on circularity 45
A10.1. Key Digital Decade targets monitored by DESI indicators 46
A11.1. Key innovation indicators 50
A12.1. Industry and the Single Market 51
A13.1. Public administration indicators 55
A14.1. Situation of Czechia on 2030 employment, skills and poverty reduction targets 58
A15.1. EU-level targets and other contextual indicators under the European Education Area strategic framework. 59
A16.1. Key health indicators 61
A17.1. Selected indicators at regional level in Czechia 63
A18.1. Financial soundness indicators 65
A19.1. Taxation indicators 67
A20.1. Key economic and financial indicators 69
A21.1. Debt sustainability analysis - Czechia 71
A21.2. Heat map of fiscal sustainability risks - Czechia 72
A22.1. Assessment of macroecnomic imbalances matrix 73


# LIST OF GRAPHS


A1.1. Progress towards the SDGs in Czechia in the last 5 years 23
A2.1. Czechia's progress on the 2019-2022 CSRs (2023 European Semester) 24
A3.2. Disbursements per pillar 27
A3.1. Total grants disbursed under the RRF 27
A3.3. Fulfilment status of milestones and targets 28
A4.1. Cohesion policy funds 2021-2027 in Czechia: budget by fund 29
A4.2. Synergies between cohesion policy funds and the RRF with its six pillars in Czechia 29
A4.3. Cohesion policy funds contribution to the SDGs in 2014-2020 and 2021-2027 in Czechia 30
A6.1. Thematic – greenhouse gas emissions from the effort sharing sectors in Mt CO2eq, 2005-2021 32
A6.2. Energy mix (top) and electricity mix (bottom), 2021 33
A6.3. Thematic – environmental investment needs and current investment, p.a. 2014-2020 34
A7.1. Underground gas storage levels in Czechia 37
A7.2. Gas Consumption per sector, 2021 38
A7.3. Gas consumption per industrial sector, 2021 (% of total gas consumption in industry) 38
A7.4. Czechia's retail energy prices for industry (top) and households (bottom) 39
A7.5. Public R&I investment in Energy Union R&I priorities 40
A8.1. Fair transition challenges in Czechia 42
A8.2. Distributional impacts of energy prices due to rising energy expenditure (2021-2023) 43
A9.1. Trend in material use 44
A9.2. Treatment of municipal waste 44
A11.1. New graduates in science and engineering per thousand population aged 25-34 in 2020 50
A12.1. Labour productivity per person (in PPS and in % of the EU) 51
A12.2. Total factor productivity 51
A12.3. Business environment and productivity drivers 52
A13.1. a) Public administration: share of men and women in senior positions, b) Higher education attainment, c) Adult learning 56
A15.1. Isolation index of disadvantaged students and low-achieving students, PISA 2018 59
A16.1. Life expectancy at birth, years 61
A16.2. Projected increase in public expenditure on healthcare over 2019-2070 61
A17.1. GDP per capita (2010) and GDP per capita growth (2011-2020) 63
A19.1. Tax revenue from different tax types, % of total tax revenue 68
A19.2. Tax wedge for single and second earners, % of total labour costs, 2022 68

# LIST OF MAPS

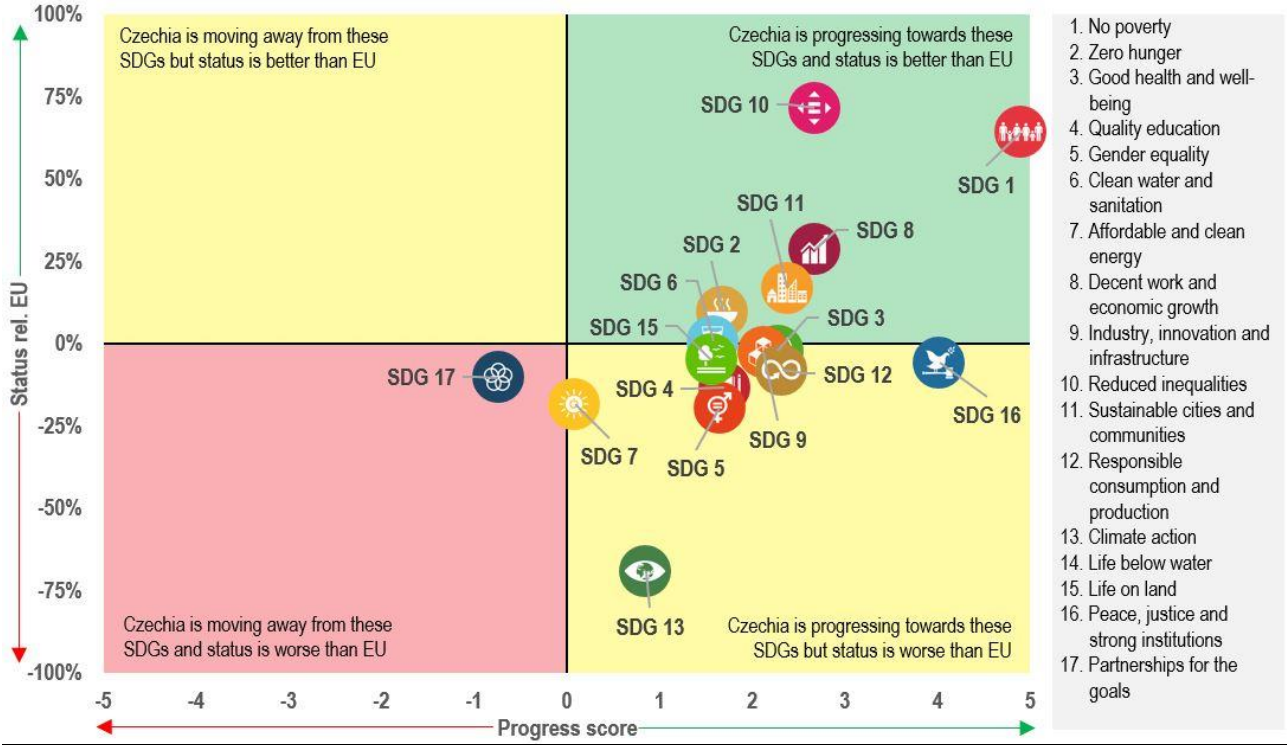
A17.1. Change in GDP per capita index in Czech NUTS 2 regions (2010-2020) 63

**This Annex assesses Czechia'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.

**While Czechia has improved on almost all of SDGs related to environmental sustainability, it is lagging behind the EU average on SDG 13 (Climate action).** Another worrying trend is that Czechia's net greenhouse gas emissions keep increasing (SDG 13; from 11.9 tonnes per capita in 2016 to 12.1 tonnes in 2021), in stark contrast to the decrease in emissions in the EU on average (from 8.2 tonnes per capita in 2016 to 7.4 tonnes in 2021). Czechia's negative trend towards rising pollution is further reflected in the indicators on the material footprint (SDG 12; from 16.6 tonnes per inhabitant in 2016 to 15.6 tonnes in 2020) and generation of waste (SDG 12; from 2.402 kg per capita in 2016 to 3.598 kg in 2020). On a more positive note, the country is taking positive steps to decarbonise its energy mix by increasing its share of renewable energy (SDG 7; from 14.9% in 2016 to 17.7% in 2021).

**Czechia continues to improve and performs very well on a number of SDGs related to fairness (SDGs 1 and 10), while it needs to catch up on some other SDGs (SDGs 3, 4, 7), above all on SDG 5 (Gender equality).** Czechia performs particularly well on SDG 1 (No poverty) and SDG 10 (Reduced inequalities), with both

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

significantly above the EU average (SDG 1: 64.3% and SDG 10: 71.5%). Czechia's positive stance on reducing poverty (SDG 1) is reflected in a number of indicators such as people at risk of poverty or social exclusion, the severe material and social deprivation rate, or the in work at-risk-of-poverty rate, all of which significantly outperform the EU average. Czechia's share of the population unable to keep their homes adequately warm (SDG 7; from 3.8% of the population in 2016 to 2.2% in 2021) keeps decreasing, which is another positive sign. However, there is some room for improvement, mainly on SDG 5 (Gender equality). On the positive side, there have already been some positive trends in closing the gender gap in tertiary educational attainment and the gender pay gap in unadjusted form (from 21.5% of average gross hourly earnings of men in 2016 to 15.0% in 2021).

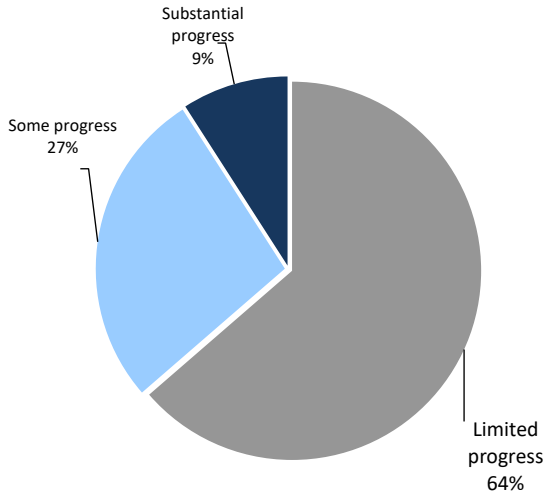
**Czechia performs particularly well on SDG 8 (Decent work and economic growth), although it still needs to catch up with the EU average in other SDGs related to productivity (SDGs 4 and 9).** Czechia's long-term unemployment rate (SDG 8) continues to fall (from 1.7% of the active population in 2016 to 0.6% in 2022), well below the EU average (2.4% in 2022). Czechia also recorded a positive trend in the share of households with a high-speed internet connection (SDG 9; from 21% of households in 2016 to 52.5% in 2021), gradually catching up with the EU average (70.2% of households in 2021). However, there is still some room for improvement in the indicators related to tertiary educational attainment (SDG 9; 34.9% in 2021, EU average 41.2% in 2021).

**Czechia continues to improve on all SDGs related to macroeconomic stability (SDGs 8, 16, 17), but still needs to catch up with the EU average on certain aspects (SDGs 16 and 17).** The Czech government is encouraged to invest more financial resources in general government total expenditure on law courts (SDG 16; EUR 67.9 per capita in 2021, against the EU average of EUR 107.0 in 2021). The country's Corruption Perceptions Index score (SDG 16) of 56 in 2022 is also relatively high compared to the EU average of 66, on a scale from 0 (highly corrupt) to 100 (very clean). Czechia maintains very positive macroeconomic standards, reflected mainly in low general government gross debt (SDG 17; 44.1% in 2022), which is significantly below the EU average (84% in 2022). Czechia could do more in particular on official development assistance (SDG 17; 0.13% of gross national income, EU average 0.50% in 2021).

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) ([19]) addressed to Czechia as part of the European Semester.** These recommendations concern a wide range of policy areas that are related to 12 of the 17 Sustainable Development Goals (see Annexes 1 and 3). The assessment considers the policy action taken by Czechia to date ([20]) and the commitments in its recovery and resilience plan (RRP) ([21]). At this stage of RRP implementation, 36% of the CSRs focusing on structural issues from 2019-2022 have recorded at least 'some progress', while 64% 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: **Czechia's progress on the 2019-2022 CSRs (2023 European Semester)**




***Source:*** European Commission.

([19]) 2022 CSRs: EUR-Lex - 32022H0901(03) - EN - EUR-Lex (europa.eu)
2021 CSRs: EUR-Lex - 32021H0729(03) - EN - EUR-Lex (europa.eu)
2020 CSRs: EUR-Lex - 32020H0826(03) - EN - EUR-Lex (europa.eu)
2019 CSRs: EUR-Lex - 32019H0905(03) - EN - EUR-Lex (europa.eu)

([20]) 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).

([21]) 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**

| Table 2.1: Summary table on 2019-2022 CSRs | | | |
|---|---|---|---|
| **Czechia** | **Assessment in May 2023*** | **RRP coverage of CSRs until 2026**** | **Revelant SDGs** |
| **2019 CSR 1** | **Limited Progress** | | |
| *Improve long-term fiscal sustainability of the pension and health-care systems.* | Limited Progress | | SDG 3, 8, 16 |
| *Adopt pending anti-corruption measures.* | Limited Progress | Relevant RRP measures being implemented as of 2021 and planned as of 2023, 2024 and 2026. | SDG 16 |
| **2019 CSR 2** | **Some Progress** | | |
| *Foster the employment of women with young children, including by improving access to affordable childcare, and of disadvantaged groups.* | Limited Progress | Relevant RRP measures planned as of 2022, 2023, 2024 and 2025. | SDG 4, 5, 8, 10 |
| *Increase the quality and inclusiveness of the education and training systems, including by fostering technical and digital skills and promoting the teaching profession.* | Some Progress | Relevant RRP measures being implemented as of 2020, 2022 and planned as of 2025. | SDG 4, 8, 10 |
| **2019 CSR 3** | **Some Progress** | | |
| *Focus investment-related economic policy on transport, notably on its sustainability* | Some Progress | Relevant RRP measures being implemented as of 2022 and 2025. | SDG 10, 11 |
| *, digital infrastructure* | Some Progress | Relevant RRP measures being implemented as of 2021, 2022 and planned as of 2025. | SDG 9, 10, 11 |
| *, and low carbon and energy transition, including energy efficiency , taking into account regional disparities.* | Limited Progress | Relevant measures being implemented as of 2021, 2022 and planned as of 2024 and 2026. | SDG 7, 9, 10, 11, 13 |
| *Reduce the administrative burden on investment* | Limited Progress | Relevant RRP measures being implemented as of 2021 and planned as of 2023 and 2026. | SDG 8, 9 |
| *and support more quality-based competition in public procurement.* | Limited Progress | | SDG 9 |
| *Remove the barriers hampering the development of a fully functioning innovation ecosystem.* | Limited Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2025. | SDG 9 |
| **2020 CSR 1** | **Some Progress** | | |
| *In line with the general escape clause, take all necessary measures to effectively address the pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.* | Not relevant anymore | Not applicable | SDG 8, 16 |
| *Ensure the resilience of the health system, strengthen the availability of health workers, primary care and the integration of care, and deployment of e-health services.* | Some Progress | Relevant RRP measures being implemented as of 2021, 2022 and planned as of 2024. | SDG 3 |
| **2020 CSR 2** | **Some Progress** | | |
| *Support employment through active labour market policies,* | Some Progress | Relevant RRP measures being implemented as for 2022 and planned as of 2025. | SDG 8 |
| *the provision of skills, including digital skills, and access to digital learning.* | Limited Progress | Relevant RRP measures being implemented as of 2020, 2021 and planned as of 2024 and 2025. | SDG 4 |
| **2020 CSR 3** | **Some Progress** | | |
| *Support small and medium-sized enterprises by making greater use of financial instruments to ensure liquidity support,* | Limited Progress | Relevant RRP measures being implemented as of 2022. | SDG 8, 9 |
| *reducing the administrative burden and improving e-government.* | Some Progress | Relevant RRP measures being implemented as of 2021, 2022 and planned as of 2023. | SDG 8, 9, 16 |
| *Front-load mature public investment projects and* | Some Progress | | SDG 8, 16 |
| *promote private investment to foster the economic recovery.* | Limited Progress | Relevant RRP measures planned as of 2023. | SDG 8, 9 |
| *Focus investment on the green and digital transition, in particular on high-capacity digital infrastructure and technologies,* | Limited Progress | Relevant RRP measures being implemented as of 2021, 2022 and planned as of 2025. | SDG 9 |
| *clean and efficient production and use of energy,* | Limited Progress | Relevant measures being implemented as of 2021, 2022 and planned as of 2024 and 2026. | SDG 7, 9, 13 |
| *and sustainable transport infrastructure, including in the coal regions.* | Limited Progress | Relevant RRP measures being implemented as of 2022 and 2025. | SDG 10, 11 |
| *Ensure access to finance for innovative firms and improve public-private cooperation in research and development.* | Limited Progress | Relevant RRP measures being implemented as of 2022 and planned as of 2025. | SDG 8, 9 |
| **2021 CSR 1** | **Some Progress** | | |
| *In 2022, maintain a supportive fiscal stance, including the impulse provided by the Recovery and Resilience Facility, and preserve nationally financed investment.* | Substantial Progress | Not applicable | SDG 8, 16 |
| *When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.* | Some Progress | Not applicable | SDG 8, 16 |
| *At the same time, enhance investment to boost growth potential. Pay particular attention to the composition of public finances, on both the revenue and expenditure sides of the budget, and to the quality of budgetary measures in order to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, in particular investment supporting the green and digital transition.* | Substantial Progress | Not applicable | SDG 8, 16 |
| *Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including, where relevant, by strengthening the coverage, adequacy and sustainability of health and social protection systems for all.* | Limited Progress | Not applicable | SDG 8, 16 |

*(Continued on the next page)*

*Table (continued)*

| | | | |
|---|---|---|---|
| **2022 CSR 1** | **Some Progress** | | |
| *In 2023, ensure that the growth of nationally financed primary current expenditure is in line with an overall neutral policy stance, taking into account continued temporary and targeted support to households and firms most vulnerable to energy price hikes and to people fleeing Ukraine. Stand ready to adjust current spending to the evolving situation.* | Substantial Progress | Not applicable | SDG 8, 16 |
| *Expand public investment for the green and digital transitions, and for energy security taking into account the REPowerEU initiative, including by making use of the Recovery and Resilience Facility and other Union funds.* | Limited Progress | Not applicable | SDG 8, 16 |
| *For the period beyond 2023, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions.* | Some Progress | Not applicable | SDG 8, 16 |
| *Take measures to ensure the long-term fiscal sustainability of public finances, including the sustainability of the pension system.* | Limited Progress | | SDG 8 |
| **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 8 September 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 of 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** | **Limited Progress** | | |
| *Strengthen the provision of social and affordable housing, including by adopting a specific legislative framework for social housing and improved coordination between different public bodies.* | Limited Progress | | SDG 1, 2, 10, 16 |
| **2022 CSR 4** | **Limited Progress** | | |
| *Reduce overall reliance on fossil fuels and diversify imports of fossil fuel.* | Limited Progress | Relevant RRP measures planned as of 2023, 2024 and 2026. | SDG 7, 9, 13 |
| *Accelerate the deployment of renewables, streamline permit procedures and make grid access easier.* | Limited Progress | Relevant RRP measures planned as of 2023 and 2026. | SDG 7, 8, 9, 13 |
| *Increase the energy efficiency of district heating systems and of the building stock by incentivising deep renovations and renewable heat sources.* | Limited Progress | Relevant RRP measures planned as of 2023 and 2024. | SDG 7 |

***Note:***

* See footnote ([20]).

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

***Source:*** European Commission.

**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 2). Czechia submitted its current recovery and resilience plan (RRP) on 2 June 2021. The Commission's positive assessment on 19 July 2021 and Council's approval on 8 September 2021 paved the way for disbursing EUR 7 billion in grants 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 plans for a variety of reasons. In line with article 11(2) of the RRF, the maximum financial contribution for Czechia was moreover updated on 30 June 2022 to an amount of EUR 7.7 billion in grants. No revision was submitted at the time of publication of this country report yet.

**Czechia's progress in implementing its plan is published in the Recovery and Resilience Scoreboard** ([22]). The Scoreboard also gives an overview of the progress made in implementing the RRF as a whole, in a transparent manner. The graphs below show the current state of play as reflected on the Scoreboard.

**EUR 1.84 billion has so far been disbursed to Czechia under the RRF.** The Commission disbursed EUR 915 million to Czechia in pre-financing on 28 September 2021, equivalent to 13% of the financial allocation. Czechia's first payment request was positively assessed by the Commission, taking into account the opinion of the Economic and Financial Committee, leading to EUR 928.2 million being disbursed in financial support (net of pre-financing) on 22 March 2023. The related 37 milestones and targets cover reforms of school curricula to promote digital literacy and digital skills, eHealth, the country's audit and control system for the implementation of the RRF and law on the registration of beneficial owners, as well as investments for the reconstruction of three railway bridges, 45 safer railway level crossings and digital tools for education.

Table A3.1:**Key elements of Czechia's RRP**

| | Current RRP |
|---|---|
| Scope | Initial plan |
| CID adoption date | 8 September 2021 |
| Total allocation | EUR 7 billion in grants (3% of 2021 GDP) |
| Investments and reforms | 85 investments and 37 reforms |
| Total number of milestones and targets | 244 |

***Source:*** RRF Scoreboard

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

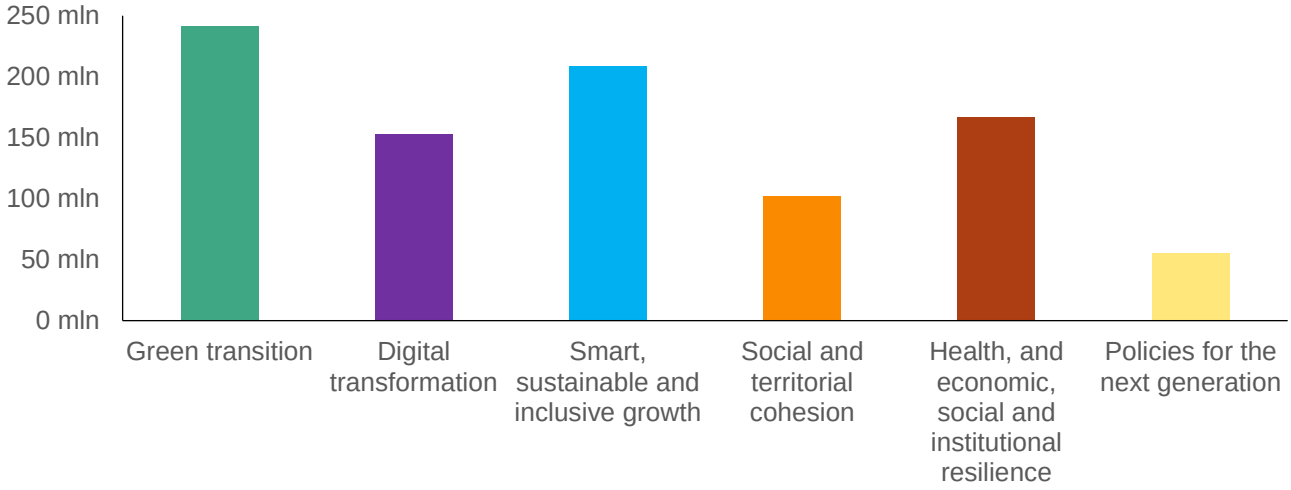


**€ 1.84 billion**

**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:*** RRF Scoreboard

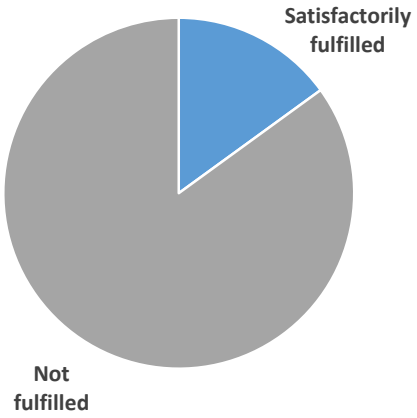
([22]) https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

Graph A3.2: **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:*** RRF Scoreboard

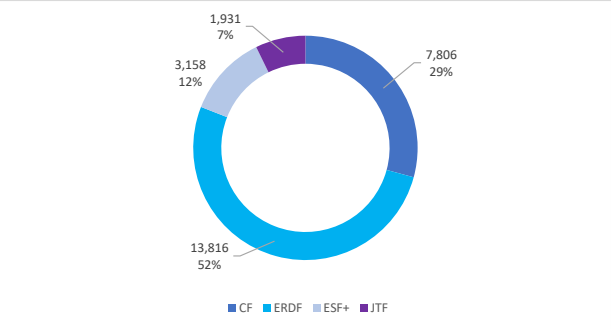
Graph A3.3: **Fulfilment status of milestones and targets**




**Note**: 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:*** RRF 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 Czechia: budget by fund**

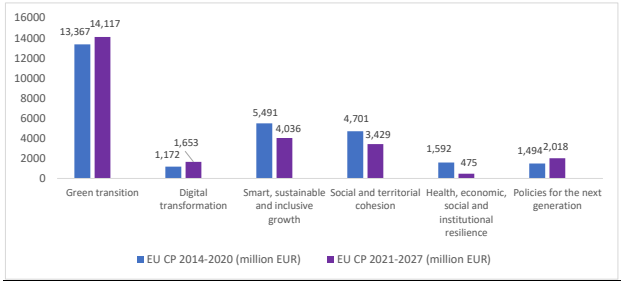



Million EUR in current prices, % of total; (total amount including EU and national co-financing)
***Source:*** European Commission, Cohesion Open Data

**In 2021-2027 in Czechia cohesion policy funds** ([23]) **will invest EUR 14.1 billion in the green transition and EUR 1.7 billion in the digital transformation, as part of the country's total allocation of EUR 26.7 billion.** In particular, the European Regional Development Fund (ERDF) will be instrumental in promoting energy efficiency and will help to improve the energy performance of around 754 852 square meters of public buildings, as well as the energy performance of 1 260 commercial buildings. The Cohesion Fund will support climate adaptation measures enhancing water retention, resulting in 2 156 hectares of green infrastructure being built or upgraded. Particular attention needs to be paid to accelerating the building of very high capacity networks across Czechia's regions, as deep digital divides persist between urban and rural areas in terms of coverage and exploitation. The Just Transition Fund will enable further economic diversification and modernisation of Czechia's three coal regions (Karlovarský, Ústecký and Moravskoslezký). Nearly 50% of the programme is allocated to 35 projects 'of strategic importance', which should transform the country's coal regions through their diverse focus (on employment, education, research, regeneration of brownfields, etc.). The European Social Fund Plus (ESF+) allocates EUR 2.7 billion to enhance the resilience of the labour market, enable access to community-based social services and increase the inclusiveness of the education and training. Inter alia, ESF+ will provide access to early childhood education and care (ECEC) for 5 000 children and support 20 000 teachers in developing their competencies.

**Of the investments mentioned above, EUR 2.2 billion will be invested in line with REPowerEU objectives.** This is on top of the EUR 1.9 billion dedicated to REPowerEU under the 2014-2020 budget. EUR 1.3 billion (2021-2027) and EUR [1.6] billion (2014-2020) is for improving energy efficiency; EUR [0.6] billion (2021-2027) and EUR [0.3] billion (2014-2020) for renewable energy and low-carbon R&I; and EUR [0.4] billion (2021-2027) for smart energy systems.

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




Million EUR in current prices (CP funds: total amount, including EU and national co-financing; RRF primary pillars)
***Source:*** European Commission

**In 2014-2020, cohesion policy funds made EUR 22.7 billion available to Czechia** ([24]), with an absorption of 84% ([25]). Including national financing, the total investment amounted to EUR 29.6 billion – around 2.2% of GDP for 2014-2020.

**Czechia continues to benefit from cohesion policy flexibility to support economic recovery, step up convergence and provide**

([23]) 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.

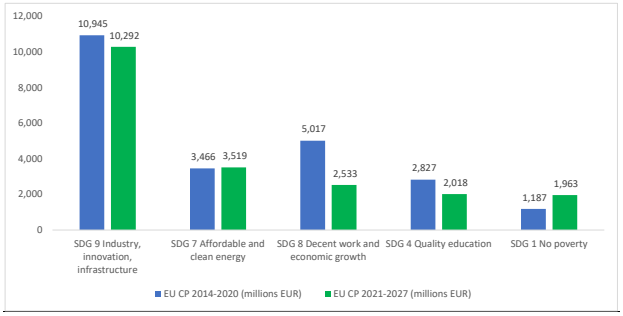
([24]) Cohesion policy funds include the ERDF, CF, ESF and the Youth Employment Initiative (YEI), excluding ETC programmes. According to the 'N+3 rule', the funds committed for 2014-2020 must be spent by 2023. REACT-EU is included in all figures. The total amount includes EU and national co-financing.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

([25]) 2014-2020 Cohesion policy EU payments by MS is updated daily on Cohesion Open Data.

**vital support to regions following the COVID-19 pandemic.** The Recovery Assistance for Cohesion and the Territories of Europe instrument (REACT-EU) ([26]) under NextGenerationEU provides EUR 1.2 billion on top of the 2014-2020 cohesion policy allocation for Czechia. REACT-EU financed 2 066 new beds for COVID-19 patients and 1 356 sets of technical equipment for integrated rescue systems to better address the impacts of the crisis and to provide prompt and efficient assistance to people in need. With SAFE (Supporting Affordable Energy), the 2014-2020 cohesion policy funds may also be mobilised by Czechia to support vulnerable households, jobs and companies particularly affected by high energy prices.

**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 7 (affordable and clean energy) ([27]).

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




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

**Other EU funds make significant resources available for Czechia.** The common agricultural policy (CAP) made available EUR 10.9 billion in 2014-2022. It will keep supporting Czechia with EUR 5.6 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, Fisheries and Aquaculture Fund allocates EUR 30 million to Czechia in 2021-2027.

**Czechia also benefits from other EU programmes**, notably the Connecting Europe Facility, which under CEF 2 (2021-2027) has so far allocated EU funding of EUR 462.6 million to 17 specific projects on strategic transport networks. Similarly, Horizon Europe has so far allocated more than EUR 127 million for Czech R&I on top of the EUR 512 million earmarked under the previous programme (Horizon 2020). The Public Sector Loan Facility set up under the Just Transition Mechanism makes EUR 125 million of grant support from the Commission available for projects located in Czechia for 2021-2027, which will be combined with EIB loans to support investments by public sector entities in just transition regions.

**Czechia received support under the European instrument for temporary support to mitigate unemployment risks in an emergency (SURE)** to finance short-time work schemes and similar measures to mitigate the impact of COVID-19. The Council granted financial assistance to Czechia of EUR 4.5 billion in loans, which supported around 31% of workers and 23% of firms in 2020.

**The Technical Support Instrument (TSI) supports Czechia in designing and implementing growth-enhancing reforms, including those set out in its recovery and resilience plan (RRP).** Czechia has received significant support since 2016. Some examples ([28]) include the diversification of energy sources and decarbonisation, in line with the REPowerEU plan, and building capacity for evidence-based policymaking in the public administration. The TSI is also helping Czechia roll out specific reforms and investments included in its RRP, e.g. support for a fully digitalised and integrated administration system for foreigners to ensure their prompt integration in the labour market.

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

([27]) Other EU funds contribute to the implementation of the SDGs. In 2014-2022, this includes both the European Agricultural Fund for Rural Development (EARDF) and the European Maritime and Fisheries Fund (EMFF).

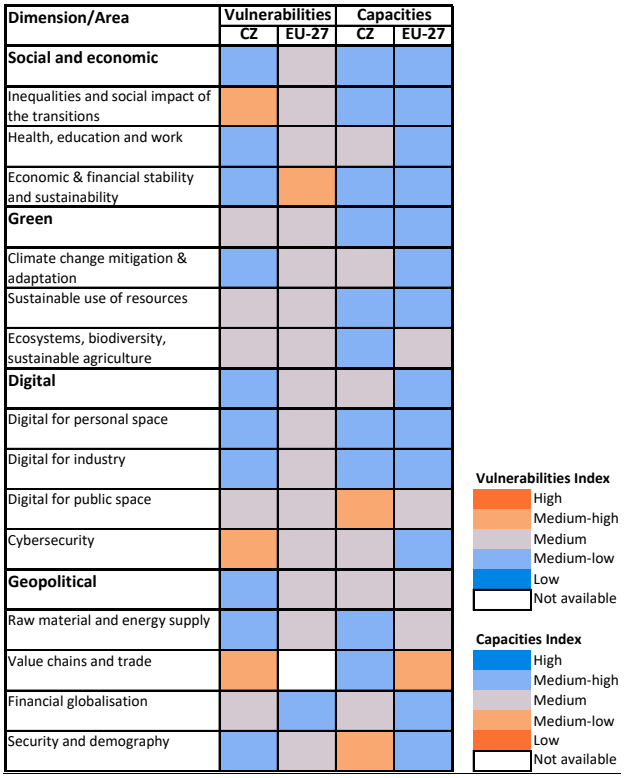
([28]) Country factsheets on reform support are available here.

**This Annex illustrates Czechia's relative resilience capacities and vulnerabilities using the Commission's resilience dashboards (RDB)** ([29]). 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 ([30]) and capacities ([31]) 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 Czechia and the EU-27 ([32]).

**According to the set of resilience indicators under the RDB, Czechia displays generally a similar level of vulnerabilities compared to the EU average.** Czechia shows medium vulnerabilities in the green dimension of the RDB and medium-low vulnerabilities in the social and economic, the digital and the geopolitical dimensions. More specifically, Czechia has medium-high vulnerabilities related to 'inequalities and the social impact of the transitions' and 'value chains and trade'. It also shows higher vulnerabilities compared to the EU in the areas 'cybersecurity' (mainly due to ICT security incidents in enterprises) and 'financial globalisation', while it displays lower vulnerabilities in the areas 'health, education and work' ([33]), 'economic and financial stability and sustainability', 'climate change mitigation and adaptation' and some areas in the digital and geopolitical dimensions.

**Compared to the EU average, Czechia shows an overall lower level of capacities across all RDB indicators.** It has medium resilience capacities in the digital and the geopolitical dimensions, but medium-high capacities in the social and economic and green dimensions. Czechia shows stronger capacities than the EU average in the areas 'value chains and trade', 'raw material and energy supply' and 'ecosystems, biodiversity, sustainable agriculture' ([34]), while there is room for improving capacities in the areas 'security and demography' and 'health, education and work' (in relation to treatable and preventable mortality, formal childcare access and adult learning). Czechia also displays below-average capacities when it comes to 'climate change mitigation and adaptation' (regarding environmental patents and renewable energy consumption), 'digital for public space', 'cybersecurity' and 'financial globalisation'.

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




(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

([29]) 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).

([30]) 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.

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

([32]) 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.

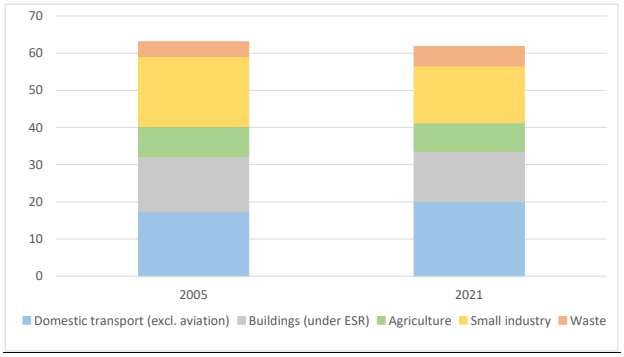
([33]) Due to its low levels of self-reported unmet need for medical care, NEET and the long-term unemployment rate.

([34]) Mainly driven by extensive organic farming and intra-EU trade openness.

**Czechia's green transition requires continued action on energy efficiency, sustainable transport, and sustainable water management among others.** The implementation of the European Green Deal is underway in Czechia. This annex offers a snapshot of its key elements ([35]).

**Czechia is projected to reach its new 2030 climate target for the effort sharing sectors, if it implements the additional measures planned** ([36])**.** Data for 2021 on greenhouse gas emissions in these sectors are expected to show the country has generated slightly more than its annual emission allocations ([37]). Current policies in Czechia are projected to reduce these emissions by 22% relative to 2005 levels in 2030. This is more than sufficient to reach the current effort sharing target. The additional measures tabled would bring a sharper reduction in emissions to 37%, exceeding the new target (raised to meet the EU's 55% objective) for reductions of 26% ([38]). In its recovery and resilience plan (RRP), Czechia has allocated 41.6 % of its Recovery and Resilience Facility grants to key reforms and investments to attain climate objectives ([39]). Compared to 2005 levels, Czechia's own climate ambition is to reduce economy-wide greenhouse gas emissions by 30% by 2030 ([40]).

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




***Source:*** European Environmental Agency.

**Czechia is not on track to meet its net carbon removals target for 2030 in the land use sector.** Czechia's forests have been emitting growing amounts of greenhouse gases since 2018. Overall greenhouse gas emissions from Czechia's land use sector reached 8.35 Mt $CO_2$eq in 2021. For 2030, Czechia's land use, land-use change and forestry (LULUCF) target implies to remove 1 228 kt $CO_2$eq (see Table A6.1) ([41]). Czechia's land use sector is projected to remain a source of net emissions until 2026.

**Fossil fuels still play a major role in Czechia's energy mix.** In 2021, solid fossil fuels accounted for 30% of Czechia's energy mix, and natural gas for 18% (see Graph A6.2). While the share of coal in the energy mix has been decreasing in the last decade (40% in 2011), the share of gas has been kept quite stable (17% in 2010). The share of renewable sources has been

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

([36]) 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.

([37]) Czechia's annual emission allocations for 2021 were some 60.9 Mt $CO_2$eq, and its approximated 2021 emissions were at 61.8 Mt $CO_2$eq (see European Commission, *Accelerating the transition to climate neutrality for Europe's security and prosperity: EU Climate Action Progress Report 2022*, SWD(2022)343). Greenhouse gas emissions in the effort sharing sectors above the annual emission allocations do not imply non-compliance with the Effort Sharing Regulation, as the latter provides for specific flexibility instruments that may be used for compliance.

([38]) 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.

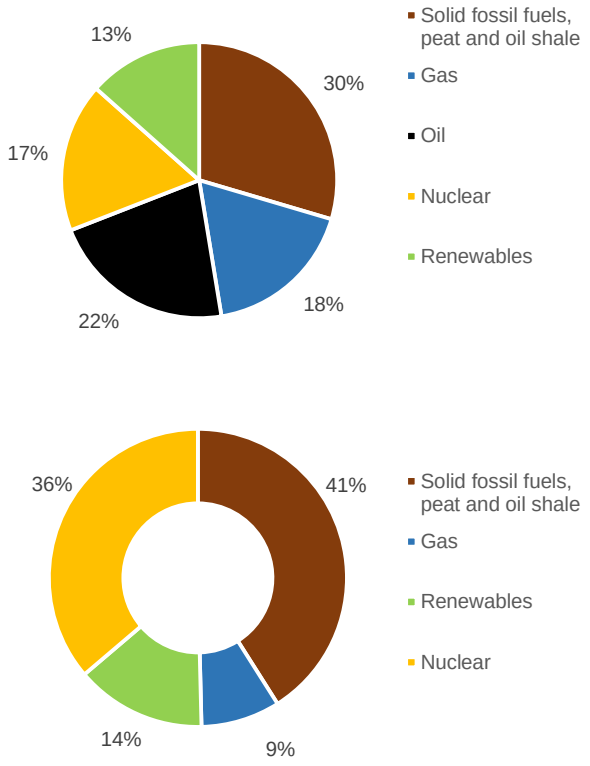
([39]) For example, investments in sustainable, secure and connected mobility and hydrological planning to tackle water scarcity. Several measures planned for 2021 and 2022 were completed, including reforms on circular economy and investments on road and rail safety.

([40]) Under Czechia's national energy and climate plan (NECP). An update of the plan, mandated by Regulation (EU) 2018/1999 (the Governance Regulation), is underway.

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

increasing but at a very slow rate, reaching 13% in 2021 (an increase of 6pp in comparison with 2010). Czechia's electricity mix is also quite dependent on fossil fuels, which made up around 50% of the electricity mix in 2021, compared with renewable sources which made up 14% (see Graph A6.2).

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.

**Increasing the pace at which renewable energy is deployed is crucial to decarbonising Czechia's energy system and addressing its dependency on Russian fossil fuels.** Czechia's target of 22% of share of energy from renewable sources in gross final energy consumption by 2030, included in NECP, was considered unambitious in the 2020 assessment by the Commission. Czechia 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. Czechia's RRP aims to install a capacity of 270 MW photovoltaics in companies by 2026 and to create opportunities for the municipalities and the public to actively contribute to the energy transition, as it contains the objective of establishing 40 new energy communities. District heating systems in Czechia are still mostly based on fossil fuels. Further incentives to modernise and rehabilitate these systems and integrate renewable heating sources into them, complemented by energy efficiency investments, would accelerate their transformation.

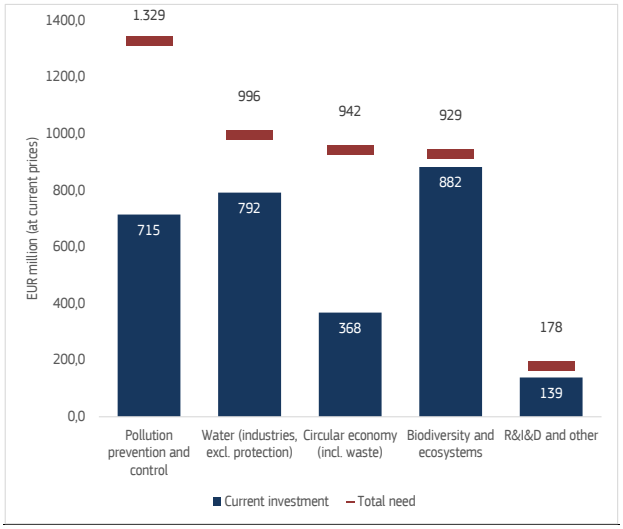
**Despite the ongoing measures to increase energy savings, there is still a wide investment gap in energy efficiency given the expected upwards revision of energy-saving targets as part of the REPowerEU plan.** Czechia's NECP targets for primary and final energy consumption (PEC and FEC) were considered low and modest ambition respectively in the 2020 Commission assessment. Based on the energy consumption trajectory for 2018-2021, Czechia is expected to be on track to meet its 2030 target for PEC, and is not expected to be on track to meet its 2030 target for FEC, as these were notified in its NECP ([42]). Czechia achieved only 71% of the energy savings required under Article 7 of the Energy Efficiency Directive. The RRP's three energy components, containing measures to support energy efficiency in state and residential buildings, public lighting, and decarbonisation of district heating help put Czechia on the path towards decarbonisation. However, they only represent around 10% of the required investments under the 2030 long-term renovation strategy. Overall, the RRP did not bring additional financing to energy efficiency in Czechia, as shortly before its adoption significant national funds from the revenue from the EU Emissions Trading System (ETS) were withdrawn from energy efficiency financing and inserted into the general budget. Energy efficiency is also financed from Cohesion Funds and the national budget. Czechia has failed on increasing substantially awareness of energy saving opportunities among the population (e.g. the Smart Choice campaign running only between October

([42]) 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

2020 and May 2021), and there is no comprehensive framework to incentivise private investment. Czechia has limited administrative resources and skills for energy efficiency; more specifically, it does not have an energy agency that would roll out energy efficiency programmes.

**In terms of sustainable mobility, Czechia has room for improvement.** The market development for zero-emission road mobility has been very modest in Czechia to date but seemingly has picked up pace in recent years. Only a third of the Czech railway network is electrified. In 2020, Czechia exceeded applicable limits for particulate matter (PM10) in two air quality zones in the country. Furthermore, several air quality zones had an ozone concentration that is too high.

Graph A6.3: **Thematic – environmental investment needs and current investment, p.a. 2014-2020**




***Source:*** European Commission.

**Czechia would benefit from investing more into environmental protection, promoting circular economy, and addressing pollution** ([43]). Between 2014 and 2020, environmental investment needs in Czechia were estimated to be at least EUR 4.4 billion while investment stood at about EUR 2.9 billion, leaving a gap of at least EUR 1.5 billion per year (see Graph A6.3) ([44]). Czechia's environmental financing for investments relies on national financing in over two thirds of cases. Czechia also has the potential to rely more on environmental taxes to limit water pollution, to promote waste management and to internalise the cost of air pollution ([45]) (see Annex 19).

**Climate change is affecting many sectors in Czechia ([46]), implying challenges especially to water and forest management.** Affected systems include agriculture, biodiversity, energy, forestry, mobility, urban areas, and civil protection. The RRP has measures on water management and flood protection. Nevertheless, there is scope for increasing the use of nature-based solutions and to prioritise sustainable water management by restoring terrestrial and freshwater ecosystems. Agriculture is one of the systems that puts significant pressure on surface waters and puts the most pressure on ground waters. Czechia is among the Member States with the highest portions of groundwater bodies that do not have a good chemical status, mainly due to nitrates. 47% of Czechia's agricultural land is threatened by water erosion, and 49% suffers from high soil compaction due to the large proportion of erosion-sensitive crops in crop rotation, large monocropped parcels, missing small-scale landscape variation, and the effects of regulation of water streams. Large areas of spruce forest are being felled due to the presence of bark beetles.

**Czechia provides fossil fuel and other environmentally harmful subsidies that could be considered for reform, while ensuring food and energy security and mitigating social effects.** In 2020, Czechia spent EUR 0.5 billion on fossil fuel subsidies, putting low-carbon alternatives to a disadvantage. Environmentally harmful subsidies have been identified, via an initial assessment, in the agriculture, forestry and fishing, electricity, gas, steam and air conditioning, services, water supply, sewerage and waste and construction sectors. Examples of such subsidies include the excise tax refund for diesel fuel used in agriculture, the reduced energy tax rate for light fuel oil used in mobile machinery, the excise tax

([43]) 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 Czechia)

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

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

([46]) See Czechia's submissions under Article 19(1) of the Governance Regulation, available at the Climate Adapt website of the European Environment Agency.

exemption on the use of natural gas, the excise tax exemption and tax relief for natural gas for industrial consumers or the reduced CO2 tax rate on diesel used in agriculture ([47]). A mapping of all environmentally harmful subsidies by Czechia would help prioritise candidates for reform.

**By earmarking a higher share of the ETS revenue for climate action, Czechia could reduce its exposure to the cost of carbon.** In 2021, Czechia's revenue from the ETS amounted to some EUR 604 million. In 2020 and 2021, its spending on climate and energy-related purposes was below 50%, the minimum set out under the ETS Directive.

([47]) 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 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.

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

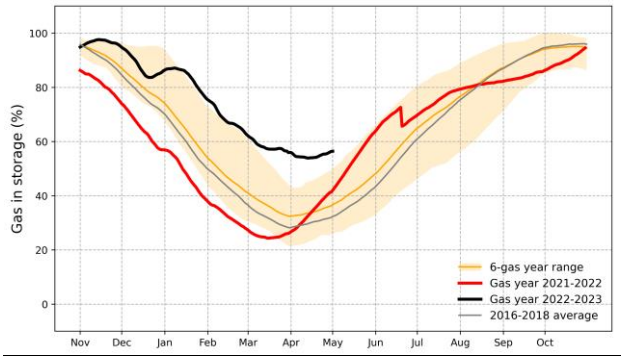
| | | | | | | | | | 'Fit for 55' 2030 target/value | 'Fit for 55' Distance WEM | 'Fit for 55' Distance WAM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2005 | 2017 | 2018 | 2019 | 2020 | 2021 | | | |
| Progress to policy targets | Greenhouse gas emission reductions in effort sharing sectors [1] | Mt $CO_2$eq; %; pp | 61,7 | 1% | -2% | -2% | -5% | - | -26,0% | -4 | 11 |
| | Net carbon removals from LULUCF [2] | kt $CO_2$eq | -8.258 | -4.499 | 1.002 | 7.778 | 11.268 | 8.358 | -1228 | n/a | n/a |
| | | | 2005 | 2017 | 2018 | 2019 | 2020 | 2021 | National contribution to 2030 EU target | | |
| | Share of energy from renewable sources in gross final consumption of energy [3] | % | 7% | 15% | 15% | 16% | 17% | 18% | 22% | | |
| | Energy efficiency: primary energy consumption [3] | Mtoe | 42,5 | 40,4 | 40,5 | 39,8 | 37,5 | 39,6 | 41,4 | | |
| | Energy efficiency: final energy consumption [3] | Mtoe | 26,1 | 25,5 | 25,3 | 25,3 | 24,5 | 26,2 | 23,7 | | |
| | | | Czechia | | | | | | EU | | |
| | | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2019 | 2020 | 2021 |
| Fiscal and financial indicators | Environmental taxes (% of GDP) | % of GDP | 2,1 | 2,0 | 2,0 | 2,0 | 1,9 | 1,8 | 2,4 | 2,2 | 2,2 |
| | Environmental taxes (% of total taxation) [4] | % of taxation | 6,0 | 5,7 | 5,4 | 5,7 | 5,4 | 5,1 | 5,9 | 5,6 | 5,5 |
| | Government expenditure on environmental protection | % of total exp. | 1,9 | 2,1 | 2,1 | 2,0 | 1,9 | 2,0 | 1,7 | 1,6 | 1,6 |
| | Investment in environmental protection [5] | % of GDP | 0,6 | 0,7 | 0,8 | 0,7 | - | - | 0,4 | 0,4 | 0,4 |
| | Fossil fuel subsidies [6] | EUR2021bn | 0,5 | 0,5 | 0,6 | 0,5 | 0,5 | - | 53,0 | 50,0 | - |
| | Climate protection gap [7] | score 1-4 | - | - | - | - | 1,9 | 1,2 | | | 1,5 |
| Climate | Net greenhouse gas emissions | 1990 = 100 | 65,0 | 66,0 | 65,0 | 62,0 | 60,0 | 60,0 | 76,0 | 69,0 | 72,0 |
| | Greenhouse gas emission intensity of the economy | kg/EUR'10 | 0,68 | 0,64 | 0,62 | 0,57 | 0,59 | - | 0,31 | 0,30 | - |
| | Energy intensity of the economy | kgoe/EUR'10 | 0,24 | 0,23 | 0,23 | 0,22 | 0,22 | - | 0,11 | 0,11 | - |
| Energy | Final energy consumption (FEC) | 2015=100 | 102,6 | 105,4 | 104,7 | 104,4 | 101,2 | 108,3 | 102,9 | 94,6 | 101,1 |
| | FEC in residential building sector | 2015=100 | 104,7 | 106,4 | 104,0 | 102,9 | 105,6 | 116,9 | 101,3 | 101,3 | 106,8 |
| | FEC in services building sector | 2015=100 | 103,8 | 106,8 | 105,1 | 107,2 | 100,3 | 99,6 | 100,1 | 94,3 | 100,7 |
| Pollution | Smog-precursor emission intensity (to GDP) [8] | tonne/EUR'10 | 1,46 | 1,36 | 1,23 | 1,11 | 1,05 | - | 0,9 | 0,9 | - |
| | Years of life lost due to air pollution by PM2.5 | per 100.000 inh. | 938,9 | 979,2 | 1079,4 | 729,5 | 642,8 | - | 581,6 | 544,5 | - |
| | Years of life lost due to air pollution by $NO_2$ | per 100.000 inh. | 117,2 | 117,5 | 124,0 | 100,9 | 68,5 | - | 309,6 | 218,8 | - |
| | Nitrates in ground water | mg $NO_3$/litre | 18,7 | 18,4 | 18,1 | 17,7 | 18,7 | - | 21,0 | 20,8 | - |
| Biodiversity | Land protected areas | % of total | 21,1 | 21,9 | - | 21,9 | 21,9 | 21,9 | 26,2 | 26,4 | 26,4 |
| | Marine protected areas | % of total | - | - | - | - | - | - | 10,7 | - | 12,1 |
| | Organic farming | % of total utilised agricultural area | 14,0 | 14,1 | 14,8 | 15,2 | 15,3 | 15,6 | 8,5 | 9,1 | - |
| | | | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2020 | 2021 | 2022 |
| Mobility | Share of zero-emission vehicles [9] | % in new registrations | 0,1 | 0,3 | 0,3 | 1,6 | 1,3 | 2,0 | 5,4 | 8,9 | 10,7 |
| | Number of AC/DC recharging points (AFIR categorisation) | | - | - | - | 1131 | 2275 | 3915 | 188626 | 330028 | 432518 |
| | Share of electrified railways | % | 34,2 | 34,2 | 34,2 | 34,2 | 34,2 | 34,3 | 56,6 | n/a | 56,6 |
| | Hours of congestion per commuting driver per year | | 23,4 | 22,8 | 23,3 | 23,0 | 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).

**Being fully dependent on Russian gas before Russia's invasion of Ukraine, Czechia decreased Russian gas dependence significantly and aims to be dependent from Russian energy supplies in the short term.** Renewables still play a minor role in the energy system and an ambitious roll-out of renewables requires upgrades to its energy system. Continuous energy efficiency measures, in particular for the most vulnerable, have helped ensure energy security in Czechia. This Annex ([48]) sets out actions carried out by Czechia 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 ([49]).

**The Czech gas transmission system plays a key role in supplying gas in the region and increased regional cooperation would help in the event of security of supply issues.** Czechia fulfilled its gas storage obligations last winter, reaching 94.88% by 1 November 2022 (almost 15 percentage points above its legal obligation), and ended the heating season with a filling gas storage at 54% on 15 April 2023 (see Graph A7.1) ([50]). Its gas transmission system has been used to transport Russian gas coming to Europe via Slovakia and Germany. Czechia is therefore well interconnected with these two Member States and has a robust internal gas network. Moreover, it has a Stork I unidirectional interconnector with Poland, which means it can supply up to 1 billion cubic metres (bcm) per year of natural gas to the Polish region of Silesia. Czechia can also import gas from Poland via the Poland-Slovakia interconnector and existing infrastructure between Slovakia and Czechia. All existing cross-border gas pipelines would be sufficient to meet the country's yearly gas demand (8-9 bcm/year). As part of the diversification of natural gas supplies, Czechia replaced part of its Russian gas with gas imports from Norway and liquefied natural gas (LNG) imports from overseas, which are distributed to the country through the Dutch LNG terminal in Eemshaven. Moreover, Czechia has eight underground storage facilities ([51]) with a total capacity of around 3.54 bcm, representing more than a third of its total yearly demand. Since 2022, the underground storage facility in Dolni Bojanovice, which previously only supplied Slovakia, is now connected to the Czech gas market. An oil supply disruption via the Druzhba pipeline (still representing around half of Czech oil consumption) would affect the supply in the country and in the region. The IKL pipeline (the other crude oil pipeline in the country) and TAL pipelines (which receive oil via the oil port in Trieste and are connected to IKL) provide an alternative supply route for the country's oil imports.

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




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

**Fossil fuels, particularly coal, still dominate the electricity generation mix, and the current energy crisis has brought additional challenges.** The commitment to phase out coal by 2038 means that the electricity system faces significant challenges. Before the gas price spikes,

([48]) 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, including 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.

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

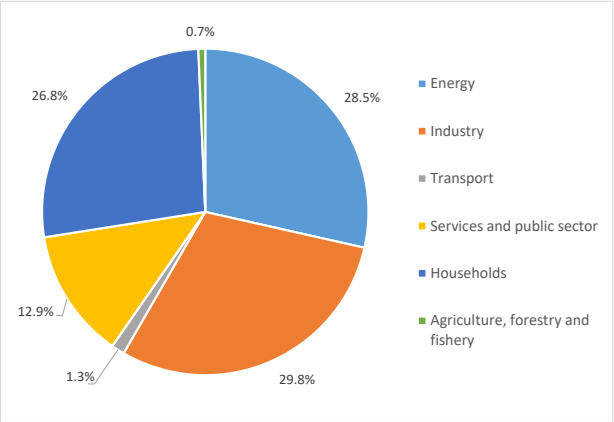
([50]) Regulation of the European Parliament and of the Council amending Regulations (EU) 2017/1938 and (EC) No 715/2009 with regard to gas storage and Implementing Regulation (EU) 2022/2301 of 23 November 2022 setting the filling trajectory with intermediary targets for 2023 for each Member State with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

([51]) Czechia has eight underground storage facilities managed by four storage system operators: Dambořice (managed by Moravia Gas Storage), Uhřice (managed by MND Energy Storage), Háje, Třanovice, Štramberk, Tvrdonice, Dolni Dunajovice, Lobodice (managed by RWE Gas Storage) and Dolni Bojanovice (managed by SPP Storage).

Czechia counted on an energy transition from coal to gas. Coal-fired power plants started closing as a first sign of spontaneous energy transition. However, it is difficult to close a coal power plant or boiler where district heating is connected to it, as Czechia lacks a plan to decarbonise district heating. Given the situation in the gas markets, Czechia was quick in abolishing subsidies for condensation gas boilers in households and it has been subsidising the change from coal boilers to heat pumps or biomass boilers. Energy efficiency measures have been contributing to energy security in Czechia, as the government concentrated on quick information campaigns and guidelines for public buildings. Moreover, the New Green Savings Programme has been one of the most effective programmes for energy savings in family houses and apartment buildings. It supports the reduction of energy intensity in residential buildings, the construction of houses with very low energy intensity, the environmentally friendly and efficient use of energy sources and renewable energy sources. At the end of 2022, the New Green Savings Light Programme intended to support simple measures to reduce energy consumption and support insulation in low-income households (see Annex 8). In its first phase, the program will provide a total of EUR 63 million (CZK 1.5 billion). Each applicant can receive a maximum of EUR 6,350 (CZK 150,000). Over the period August 2022 – March 2023, 17% of gas consumption has been saved in Czechia compared to the previous 5-years average.

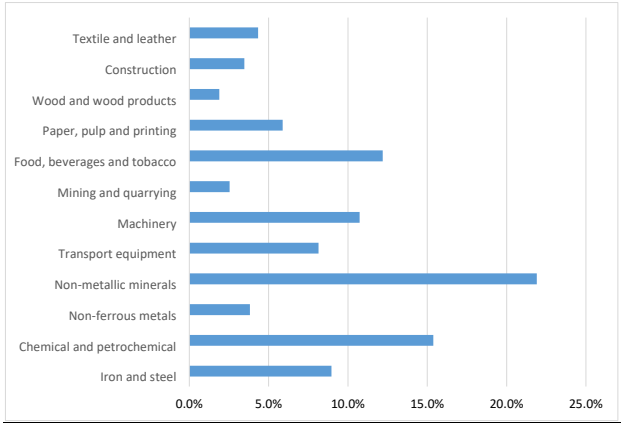
**While being one of the most well interconnected transmission networks, national grids need to be upgraded to allow a higher penetration of renewable energy sources.** Being connected to the systems of neighbouring countries, Czechia's transmission system plays an important role in maintaining grid stability in Central Europe. Czechia is one of the few net exporter countries of electricity in Europe and has a high level of interconnectivity (see Table A7.1). With renewable energy production playing a greater role in the electricity system, an increase of the capacity of the grids would be deemed. Existing bottlenecks in the integration of renewables, such as the grid connection capacity booking system for renewables and the current structure of electricity charges, are not making the installation of small systems more attractive and do not provide the framework to create better conditions for higher penetration of decentralised sources of electricity.

Graph A7.2: **Gas Consumption per sector, 2021**




***Source:*** Eurostat

Graph A7.3: **Gas consumption per industrial sector, 2021 (% of total gas consumption in industry)**



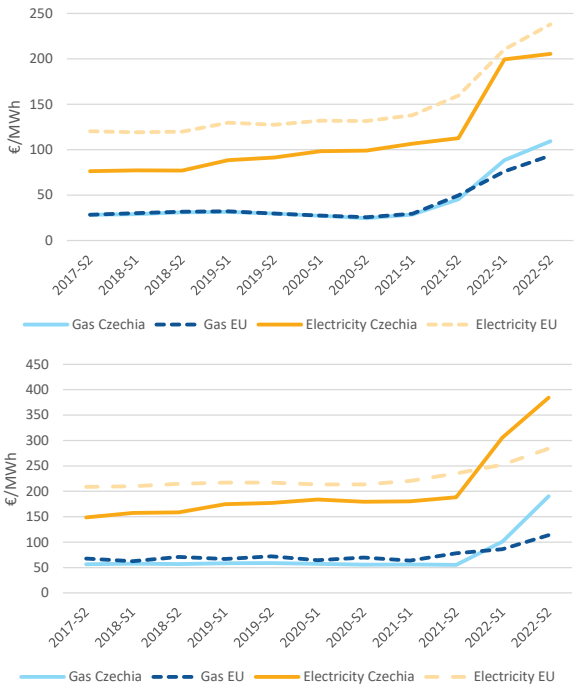

***Source:*** Eurostat

**Households and industry in Czechia witnessed unprecedented energy price increases, risking irreversible negative effects on the Czech industrial sector.** More than a third of Czech households still use gas for heating and another third use district heating, where gas also plays a significant role. To shield consumers connected to low-voltage distribution networks (households, small businesses as well as some public institutions) from soaring prices, the government decided to cap electricity and gas prices ([52]). The Czech economy is highly dependent on manufacturing and exports, which primarily go to Germany and other EU Member States. As one of the most energy-intensive economies in the EU, plastics, chemical production, metallurgical and steel industries have not only been impacted by higher energy prices, but also the supply of key

([52]) Vláda schválila zastropování cen energií. Pomůže jak domácnostem, tak firmám | MPO

raw materials has shaken the Czech industrial model.

Graph A7.4: **Czechia'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

**Renewable energy does not play a major role in the Czech electricity system and its ambitions for 2030 are modest.** According to IRENA, Czechia's deployment of renewable energy reached a total of 4934 MW in 2022, but increased only slightly in recent years (an increase of 720MW compared to 2015). The cumulative capacity of both solar and wind in 2022 represented around 2.99 GW or 13.5% of total electricity capacity. Since 2019, there are no new installations of wind energy. On solar PV, 381 MW were installed in 2022, an annual increase of 16.9% (still below of the EU average – 21.8%) ([53]). In 2022, the amendment to the Act on Supported Energy Sources came into force and an auction-based subsidy scheme was launched for electricity generated from renewable energy sources (biogas, small hydropower plants and wind farms), targeting 42 MW. The Czech authorities are assessing the results and plan to launch a second call. In addition, Czechia has introduced an amendment to the Energy Act to raise the limit for installing solar farms without a licence. There is still potential for measures to simplify and streamline permit procedures, such as identifying suitable areas for developing renewable energy. Czechia still lacks the main legal instrument for establishing energy communities, supporting decentralisation and enabling consumers to actively participate in the energy transition. The use of renewable and decarbonised gases in Czechia is rather low, and the efforts needed to reach the decarbonisation goals in this area are therefore high. Only low carbon hydrogen with electricity from nuclear power plants is produced in Czechia. Regarding biomethane, Czechia has a potential of 3.7 bcm/year and the development of biomethane can contribute to reducing dependence on Russian natural gas.

**The lack of technical and administrative assistance could put at risk the deployment of significant funds for the energy renovation of public, education and residential buildings**. The ambitious transformation of building stock requires a workforce trained in construction and integrated renovation, including heating appliance installers in sufficient numbers and with the relevant skill sets. Czechia is not carrying out checks on products covered by ecodesign 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 ([54]).

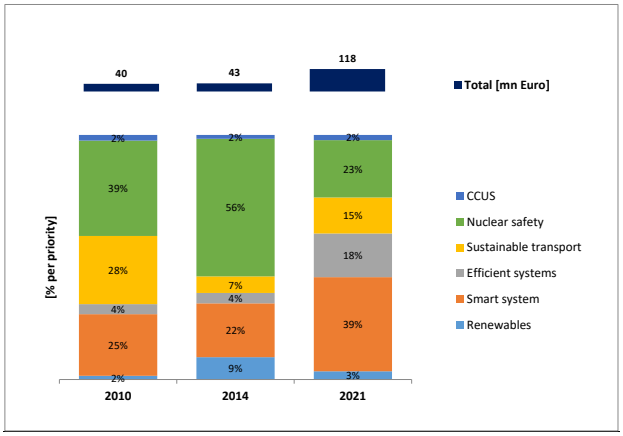
**Czechia improved its energy research and innovation (R&I) between 2014 and 2020, but still lags behind the EU R&I investment target and remains one of the countries with the lowest investment in renewables.** Public investment in R&I increased from 0.026% in 2014 to 0.037% in 2020 (as a share of GDP). A positive change was also noted in private investment. However, this increase was significantly smaller, ending in 0.047% of Czech GDP. Over the same time span, patents related to the Energy Union almost tripled, with 4.1 patent families per million inhabitants in 2019. The distribution of public and private investments and patents continues to be dominated by traditional fields of interest: nuclear safety, sustainable transport, efficient and smart

([53]) IRENA - Renewable capacity statistics 2023

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

systems. In the last 5 years, while the overall amount increased, there has been a clear shift in prioritisation of public spending as 20% less has been attributed to nuclear safety in terms of total investment. The government has started investing more in digitalisation, in particular in smart system solutions.

Graph A7.5: **Public R&I investment in Energy Union R&I priorities**




***Source:*** JRC SETIS (2022)

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

| | | CZECH REPUBLIC | | | | EU | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **2018** | **2019** | **2020** | **2021** | **2018** | **2019** | **2020** | **2021** |
| ENERGY DEPENDENCE | **Import Dependency [%]** | **37%** | **41%** | **39%** | **40%** | **58%** | **61%** | **57%** | **56%** |
| | of Solid fossil fuels | 6% | 9% | 13% | 14% | 44% | 44% | 36% | 37% |
| | of Oil and petroleum products | 99% | 98% | 101% | 97% | 95% | 97% | 97% | 92% |
| | of Natural Gas | 97% | 110% | 86% | 92% | 83% | 90% | 84% | 83% |
| | **Dependency from Russian Fossil Fuels [%]** | | | | | | | | |
| | of Hard Coal | 11% | 11% | 9% | 4% | 40% | 44% | 49% | 47% |
| | of Crude Oil | 54% | 49% | 49% | 50% | 30% | 27% | 26% | 25% |
| | of Natural Gas | 100% | 100% | 100% | 100% | 40% | 40% | 38% | 41% |

| | | **2015** | ***2016*** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** |
|---|---|---|---|---|---|---|---|---|---|
| ELECTRICITY | **Gross Electricity Production (GWh)** | 83892 | 83309 | 87056 | 88038 | 87056 | 81568 | 85082 | - |
| | Combustible Fuels | 51063 | 53279 | 52783 | 52338 | 50474 | 44933 | 47677 | - |
| | Nuclear | 26841 | 24104 | 28340 | 29921 | 30246 | 30043 | 30731 | - |
| | Hydro | 3071 | 3202 | 3040 | 2679 | 3175 | 3437 | 3620 | - |
| | Wind | 573 | 497 | 591 | 609 | 700 | 699 | 602 | - |
| | Solar | 2264 | 2131 | 2199 | 2365 | 2337 | 2338 | 2316 | - |
| | Geothermal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - |
| | Other Sources | 80 | 96 | 103 | 125 | 124 | 118 | 136 | - |
| | **Net Imports of Electricity (GWh)** | -12515 | -10974 | -13037 | -13907 | -13097 | -10153 | -11075 | - |
| | As a % of electricity available for final consumption | -21.3% | -18.4% | -21.4% | -22.7% | -21.4% | -17.2% | -17.8% | - |
| | **Electricity Interconnection (%)** | | | 19.3% | 21.7% | 25.4% | 27.5% | 24.3% | 28.6% |

| | | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** |
|---|---|---|---|---|---|---|---|---|---|
| DIVERSIFICATION OF GAS SUPPLIES | **Gas Consumption (in bcm)** | 7.9 | 8.5 | 8.7 | 8.3 | 8.7 | 8.8 | 9.5 | 8.5 |
| | **Gas Imports - by type (in bcm)** | 7.5 | 8.1 | 8.9 | 8.0 | 9.5 | 7.6 | 8.7 | n.a. |
| | Gas imports - pipeline | 7.5 | 8.1 | 8.9 | 8.0 | 9.5 | 7.6 | 8.7 | n.a. |
| | Gas imports - LNG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | n.a. |
| | **Gas Imports - by main source supplier (in bcm) (1)** | | | | | | | | |
| | Russia | 7.5 | 8.1 | 8.8 | 8.0 | 9.5 | 7.6 | 8.7 | n.a. |
| | Norway | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | n.a. |

| | | **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 | 9 | 9 | 9 | 10 |
| | Operational Storage Capacity (bcm) | 3.7 | 3.7 | 3.7 | 4.5 |

| | | **2019** | **2020** | **2021** | **2022** |
|---|---|---|---|---|---|
| CLEAN ENERGY | **VC investments in climate tech start-ups and scale-ups (EUR Mln) (3)** | n.a. | n.a. | n.a. | n.a. |
| | as a % of total VC investments in Czech Republic | n.a. | n.a. | n.a. | n.a. |
| | **Research & Innovation spending in Energy Union R&i priorites (2)** | | | | |
| | Public R&I (EUR mln) | 124.1 | 91.3 | 117.9 | n.a. |
| | Public R&I (% GDP) | 0.055% | 0.042% | 0.049% | n.a. |
| | Private R&I (EUR mln) | 102.3 | n.a. | n.a. | n.a. |
| | Private R&I (% GDP) | 0.05% | n.a. | n.a. | n.a. |

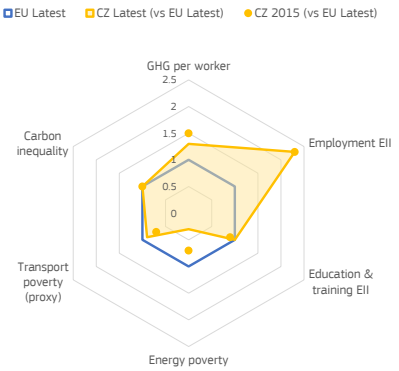
(1) The ranking of the main suppliers is based on the latest available figures (for 2021)
(2) FSRU included
***Source:*** Eurostat, Gas Infrastructure Europe (Storage and LNG Transparency Platform), JRC SETIS (2022), JRC elaboration based on PitchBook data (06/2022)

**This Annex monitors progress of Czechia in ensuring a fair transition towards climate neutrality and environmental sustainability, notably for workers and households in vulnerable situations.** The Council Recommendation on fair transition ([55]) guides Czechia's efforts to tackle the employment and social aspects of climate, energy, and environmental policies, adding to the territorial just transition plans and projects supported by the European Social Fund Plus (ESF+). Czechia's recovery and resilience plan (RRP) outlines reforms and investments for the green transition ([56]). Together, these funds will ensure that carbon neutrality in Czechia goes hand in hand with new job opportunities and improved well-being for affected regions and their citizens ([57]).

**Czechia has a high employment share in declining and transforming sectors, but also a significant labour shortage in the construction sector.** The greenhouse gas (GHG) emissions intensity of the Czech workforce declined from 20.1 to 17.7 tonnes per worker between 2015 and 2021, but it is still above the EU average of 13.7 tonnes (see Graph A8.1 and Table A8.1). Employment in Czechia's energy-intensive industries (EII) represented 6.7% of total employment in 2021 (in 2020, 6.8% vs 3.0% in the EU). In 2021, the three coal regions in Czechia had the highest share of employment in energy-intensive industries and the highest long-term unemployment in the country. Employment in mining and quarrying decreased by 29% between 2015 and 2021 ([58]). Up to 36 000 job positions in the mining industry are at risk of disappearing by 2025 ([59]). Over the same period, manufacturing jobs in the automotive sector increased by 9.7%, while they decreased by 6.5% in the basic metals sector. This trend may accentuate the reliance on foreign workforce and increase the impact of automation. Total jobs in the environmental goods and services sector (EGSS) grew by only 2.5% during 2015-2019 (versus 8.3% in the EU), reaching 2.3% of total employment, slightly above the EU average (see Annex 9). Czechia's high job vacancy rate in construction (10.8% vs 4.0% in the EU in 2022), professional, scientific and technical activities (5.7% vs 3.9% in the EU) ([60]) could hamper the successful transition to sustainable and greener infrastructure and buildings.

**Upskilling and reskilling are key for smooth labour market transitions and preserving jobs in transforming sectors.** In the energy-intensive industries, workers' participation in education and training has increased from 9.5% in 2015 to 10.3% in 2022, just below the EU average (10.4%). 37% of citizens believe they do not have the necessary skills to contribute to the green transition, compared to 38% in the EU ([61]). The Just Transition programme provides EUR 68 million to support the adaptation of workers, enterprises, and entrepreneurs. The 'Kompas' project, co-financed by the ESF, helps predict labour market trends, which allows the requalification courses to be better targeted.

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




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

**Energy poverty has declined in recent years, but for vulnerable households the burden of energy costs was already high since 2021.** The share of the population unable to keep their homes adequately warm declined from 5% in 2015 to 2.2% in 2021 (EU: 6.9%) ([62]). In particular,

([55]) Council Recommendation of 16 June 2022 on ensuring a fair transition towards climate neutrality, 2022/C 243/04.

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

([57]) As part of the Czech Just Transition Fund (JTF) programme adopted in September 2022, the regions of Karlovarsky, Ustecky and Moravskoslezky will now have at their disposal EUR 1.64 billion in EU grants to implement a just transition of their local economy. Source: DotaceEU - Home

([58]) Eurostat online codes [nama_10_a64_e] and [env_ac_egss1]

([59]) Territorial Just Transition Fund programme of Czechia. Source: DotaceEU – Home.

([60]) Eurostat (JVS_A_RATE_R2)

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

([62]) 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.

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

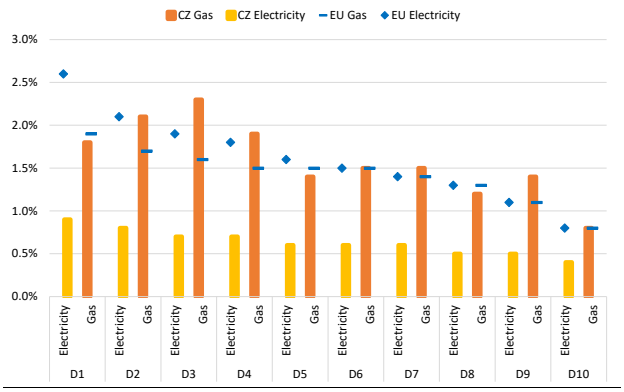
| Indicator | Description | CZ 2015 | CZ Latest | EU Latest |
|---|---|---|---|---|
| GHG per worker | Greenhouse gas emissions per worker - CO2 equivalent tonnes | 20.1 | 17.7 (2021) | 13.7 (2021) |
| Employment EII | Employment share in energy-intensive industries, including mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24), automotive (C29) - % | 6.9 | 6.8 (2020) | 3 (2020) |
| Education & training EII | Adult participation in education and training (last 4 weeks) in energy-intensive industries - % | 9.5 | 10.3 (2022) | 10.4 (2022) |
| Energy poverty | Share of the total population living in a household unable to keep its home adequately warm - % | 5 | 2.2 (2021) | 6.9 (2021) |
| Transport poverty (proxy) | Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport - % | 24.2 | 32.4 (2023) | 37.1 (2023) |
| Carbon inequality | Average emissions per capita of top 10% of emitters vs bottom 50% of emitters | 4.9 | 4.8 (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).

7.7% of the population at risk of poverty was affected in 2021 (EU: 16.4% in 2021), and 1.8% of lower-middle-income households (in deciles 4-5) in 2021 (EU: 8.2% in 2021). Before the energy price hikes, 59.2% of the total population and 82.7% of the (expenditure-based) at-risk-of-poverty (AROP) population had residential expenditure budget shares on electricity, gas, and other fuels above 10% of their household budget ([63]). This is well above the EU averages of 26.9% and 48.2%, respectively, and it highlights the need to improve the energy efficiency of housing stock. The elderly, single parents and Roma are especially at risk of falling through the safety net.

**Energy support measures taken in 2021 and 2022 were not always targeted to vulnerable groups.** As a result of energy price changes from August 2021 to January 2023, relative to the 18 months prior (see Annex 7), the fraction of individuals living in households that spend more than 10% of their budget on energy would have increased by 11.5 pp for the whole population in the absence of policy support and behavioural responses, and by 5.0 pp for those at risk of poverty (expenditure-based), well below the EU average (16.4 pp and 19.1 pp) ([64]). Expenditure shares of low- and lower-middle-income groups would have increased the most, notably for gas at levels comparable to the EU average (see Graph A8.2). Among the (expenditure-based) AROP population, the share of individuals living in households with budget shares for private transport fuels above 6% stood at 32.4% in January 2023 (versus 37.1% in the EU), an increase by 8.1 pp due to the increase in transport fuel prices since August 2021 (compared to 5.3 pp in the EU) ([65]). The RRP includes support for almost 5 000 projects aimed at developing awareness and knowledge regarding energy savings and the reduction of emissions.

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.

**Public transport can play a key role in reducing air pollution.** Citizens in Czechia perceive public transport to be available (74% vs EU: 55%), affordable (74% vs EU: 54%) and of good quality (81% vs EU: 60%). The average carbon footprint of the top 10% of emitters among the population in Czechia is 4.8 times higher than that of the bottom 50% (see Graph A8.1). In Czechia, the average levels of air pollution in 2020 stood above the EU average (12.5 vs 11.2 µg/m PM2.5), with 91% of the population living in regions exposed to critical levels of air pollution ([66]), leading to significant health impacts, notably on vulnerable groups, and 6 901 premature deaths annually ([67]).

([63]) Based on the European Classification of Individual Consumption according to Purpose (ECOICOP): CP045.

([64]) EMPL-JRC GD-AMEDI/AMEDI+ see technical brief.

([65]) ECOICOP Metadata, CP0722.

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

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

# ANNEX 9: RESOURCE PRODUCTIVITY, EFFICIENCY AND CIRCULARITY

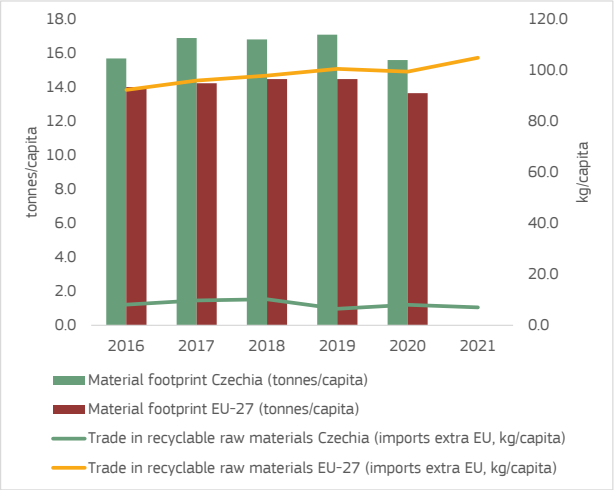
**The circular economy transition is key to delivering on the EU's climate and environmental goals and provides large socio-economic benefits.** It spurs job growth, innovation and competitiveness and fosters resilience and resource security. The circularity transition of industry, the built environment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

**Czechia's circular economy transition needs improving 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. Czechia's use of circular materials increased from 7.5% in 2016 to 11.4% in 2021, closing the gap with the EU's 2021 average of 11.7%. The CEAP also aims to significantly decrease the EU's material footprint. In 2020 Czechia's material footprint (15.6 tonnes per head) was above the 2020 EU-27 average (13.7 tonnes per head). 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 in Czechia ([68]).

**Czechia recently adopted new policies to address circular economy challenges, but more measures are needed.** A strategic framework for Czechia's transition to a circular economy by 2040 ('Circular Czechia 2040') was adopted by the Czech government in December 2021. The implementing action plan for 2022-2027, currently under preparation, is one of the important reforms included in the national RRP. The main priorities are improving waste management, improving security of supply and reducing dependence on material resources imported from outside the EU, increasing the competitiveness of enterprises, and reducing fossil fuel consumption.

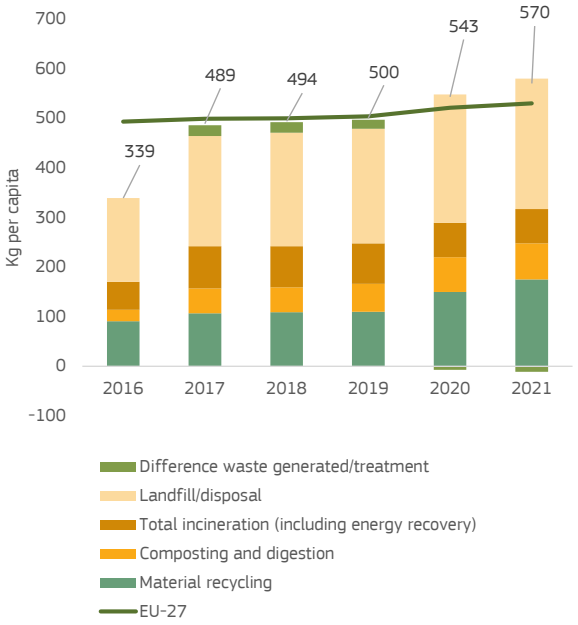
**Czechia is improving its waste management practices and recycling performance, but further effort is still needed.** Some 46% of Czechia's municipal waste was still landfilled in 2021, almost more than double the EU average (23%). While Czechia has not met the 2020 recycling target for municipal waste, it is not assessed as being at risk of missing the EU 2025 targets for the recycling of municipal and packaging waste, although it will need to make further efforts to meet the more ambitious recycling targets for the period of up to 2035 through improvements in separate collection and treatment of waste with a view to recycling.

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




***Source:*** Eurostat

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




***Source:*** Eurostat

**The industrial system is not yet circular.** The economy, particularly industry, is less efficient at using materials than the EU average, with a resource productivity of 1.9 purchasing power

([68]) Eurostat [HSW_N2_02] for NACE Rev. 2 sector E38; 9.17 fatal accidents p. 100 000 employed in 2018-2020 vs 2.30 for all sectors in CZ; 6.33 in the EU-27 for sector E38

standard per kilogramme compared to the EU average of 2.3 in 2021 (see Annex 5). However, resource productivity has increased since 2016, indicating significant potential to boost repair, reuse and the use of secondary raw materials. The government introduced a reduction of value added tax (VAT) from 21% to 10% on the repair of bicycles, shoes, clothing and textile products from 1 May 2020. Primary raw materials remain cheaper than circular materials, reducing incentives for industry and citizens to use circular materials.

**The built environment system continues to exacerbate the depletion of resources despite recent improvements.** The recovery rate of construction and demolition waste has increased since 2016 and remains above the EU average in 2020 (96% versus 89%). Under public procurement law, from 1 January 2021, contracting authorities must comply with social, environmental and innovative requirements when purchasing goods and services. However, the law does not establish any concrete requirements. As such, it is up to procurers to decide which requirements they fulfil and how they define them.

**The agri-food system has yet to design out food waste and efficiently manage water resources.** Czechia's food waste is below the EU average, with 91 kg per head versus 131 kg per head in 2020. Czechia's composting and anaerobic digestion per head has significantly increased since 2016, but remained below the EU average in 2021 at 73 kg per head versus 100 kg. Czechia is struggling to meet EU targets on diverting biodegradable waste away from landfills, as biowaste accounted about 30% of mixed municipal waste in 2020 and was landfilled or incinerated. Increasing anaerobic digestion could enhance Czechia's strategic autonomy by generating biomethane and/or producing organic fertilisers. Relevant measures to limit soil erosion are identified as: increasing crop biodiversity by limiting the size of one crop, supporting grassland management and introducing landscape features (field boundaries, hedges).

**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 574 million per year between 2014 and 2020. Over this period, investment needs were estimated to be at least EUR 942 million per year, while investment baselines were EUR 368 million per year (see Annex 6). Czechia is already using funds from the ERDF and the RRF, but further investments are needed.

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) | 15.7 | 16.9 | 16.8 | 17.1 | 15.6 | - | 13.7 | 2020 |
| YoY growth in persons employed in the circular economy (%)[1] | - | - | - | - | - | - | 2.9 | 2019 |
| Water exploitation index plus (WEI+) (%) | 10.7 | 13.6 | 10.7 | 12.1 | - | - | 3.6 | 2019 |
| **Industry** | | | | | | | | |
| Resource productivity (purchasing power standard (PPS) per kilogram) | 1.6 | 1.7 | 1.8 | 1.8 | 1.9 | 1.9 | 2.3 | 2021 |
| Circular material use rate (%)[2] | 7.5 | 9.1 | 10.5 | 11.3 | 11.6 | 11.4 | 11.7 | 2021 |
| Recycling rate (% of municipal waste) | 33.6 | 32.1 | 32.2 | 33.3 | 40.5 | 43.3 | 49.6 | 2021 |
| **Built environment** | | | | | | | | |
| Recovery rate from construction and demolition waste (%)[3] | 92.0 | - | - | - | 96.0 | - | 89.0 | 2020 |
| Soil sealing index (base year = 2006)[4] | 103.4 | - | 106.5 | - | - | - | 108.3 | 2018 |
| **Agri-food** | | | | | | | | |
| Food waste (kg per capita)[5] | - | - | - | - | 91.0 | - | 131.0 | 2020 |
| Composting and digestion (kg per capita) | 23.0 | 50.0 | 50.0 | 56.0 | 70.0 | 73.0 | 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, including composting and digestion; (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 Czechia'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). Czechia allocates 22% of its total RRP budget to digital targets (EUR 1.6 billion) ([69]).

**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 ([70]). 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 ([71]). Digital technologies, infrastructure and tools all play a role in the fundamental transformation needed to adapt the energy system to the current structural challenges ([72]).

**A relatively large proportion of the Czech population has at least basic digital skills, but the current lack of digital experts hampers the digital transformation of the economy.** In 2023, three out of five individuals have at least basic digital skills, which is above the EU average of 54%. The share of ICT specialists as a proportion of total employment is in line with the EU average (4.6% versus EU average of 4.5%). However, only 10% of ICT specialists in Czechia are women – the lowest score in the EU. Nevertheless, 76% of Czech enterprises report difficulties in hiring ICT specialists ([73]). The ongoing education reform (supported by the Recovery and Resilience Facility) is expected to stimulate interest in advanced digital technologies already in primary schools. The government provides programmes to bring additional ICT specialists to Czechia from outside the EU, in particular from Ukraine ([74]). Czechia is home to the Central European Digital Media Observatory (CEDMO), a project supported by the RRF – this initiative monitors the spread of disinformation and aims to limit its impact.

**Czechia faces challenges in digital infrastructure/connectivity.** The country's improvement in its very high capacity network (VHCN) coverage recently stalled and only 37% of households are covered by Fibre to the Premises (FTTP), while the EU average is 56%. Moreover, the take-up of fast and gigabit broadband remains one of the lowest in the EU. Concerning mobile broadband, high prices to consumers ([75]) are the main deterrent for take-up, this trend is amplified by the inflation rate as some telecom operators raised their prices in January 2023. The mobile broadband take-up is slightly below the EU average (85% of individuals in Czechia versus EU average of 87%). Telecom operators are increasing their overall 5G coverage (83% of populated areas covered versus 49% last year), focusing mainly on cities and the main transport routes. Czechia scores around the EU average for overall 5G coverage and for 5G coverage on the 3.4-3.8 GHz spectrum band.

**Czech SMEs are almost in line with the EU average on digital transformation.** The country performs well in online sales but the turnover from e-commerce is stagnating. Czech enterprises are above the EU average in their use of cloud solutions. However, Czechia is below the

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

([70]) 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.

([71]) 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).

([72]) 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.

([73]) Please refer to the Annex 12

([74]) https://www.mvcr.cz/clanek/kvoty-pro-ekonomickou-migraci-programy-schvalene-vladou-za-ucelem-dosazeni-ekonomickeho-prinosu-pro-cr.aspx

([75]) Study on Mobile and Fixed Broadband Prices in Europe 2021, EC, 2022.

EU average in using artificial intelligence and big data. According to a study by SAP and Ipsos ([76]), more than half of medium and large Czech enterprises have a team dedicated to digital transformation. The Czech start-up scene is growing. According to a report by Mavericks ([77]), 200 start-ups received venture capital investments in 2022. Czechia contributes to European research and experimentation in digital technologies. In 2022, a leading technological centre in Ostrava – IT4Innovations – installed a new supercomputer (Karolina), which is one of the 30 most powerful supercomputers in Europe.

**Czechia continues to make progress on the digitalisation of public services.** A new government agency is expected to steer the digitalisation of the central administration. Czechia has 3 electronic identification (eID) means notified to the European Commission under the eIDAS Regulation. The country is following an ambitious strategy and is planning to increase the use and popularity of e-government solutions by allowing citizens to carry ID cards or driving licences in a mobile app instead of physical cards. However, the access to e-health records is low with a score of 47 out of 100, whereas the EU average score is 71.

([76]) https://news.sap.com/cz/2022/12/firmy-v-cesku-planuji-investovat-pres-60-miliard-korun-do-digitalizace-do-roku-2025/

([77]) https://www.mavericks.legal/

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

| | Czechia | | | EU | Digital Decade target by 2030 (EU) |
|---|---|---|---|---|---|
| | DESI 2021 | DESI 2022 | DESI 2023 | DESI 2023 | |
| **Digital skills** | | | | | |
| **At least basic digital skills** | **NA** | **60%** | **60%** | **54%** | **80%** |
| % individuals | | 2021 | 2021 | 2021 | 2030 |
| **ICT specialists ([1])** | **4.2%** | **4.6%** | **4.6%** | **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** | **33%** | **52%** | **53%** | **73%** | **100%** |
| % households | 2020 | 2021 | 2022 | 2022 | 2030 |
| **Fibre to the Premises (FTTP) coverage ([2])** | **33%** | **36%** | **37%** | **56%** | **-** |
| % households | 2020 | 2021 | 2022 | 2022 | 2030 |
| **Overall 5G coverage** | **0%** | **49%** | **83%** | **81%** | **100%** |
| % populated areas | 2020 | 2021 | 2022 | 2022 | 2030 |
| **5G coverage on the 3.4-3.8 GHz spectrum band** | **NA** | **NA** | **42%** | **41%** | **-** |
| % populated areas | | | 2022 | 2022 | 2030 |
| **Digitalisation of businesses** | | | | | |
| **SMEs with at least a basic level of digital intensity** | **NA** | **NA** | **68%** | **69%** | **90%** |
| % SMEs | | | 2022 | 2022 | 2030 |
| **Big data ([3])** | **9%** | **9%** | **9%** | **14%** | **75%** |
| % enterprises | 2020 | 2020 | 2020 | 2020 | 2030 |
| **Cloud ([3])** | **NA** | **40%** | **40%** | **34%** | **75%** |
| % enterprises | | 2021 | 2021 | 2021 | 2030 |
| **Artificial Intelligence ([3])** | **NA** | **5%** | **5%** | **8%** | **75%** |
| % enterprises | | 2021 | 2021 | 2021 | 2030 |
| **Digitalisation of public services** | | | | | |
| **Digital public services for citizens** | **NA** | **75** | **76** | **77** | **100** |
| Score (0 to 100) | | 2021 | 2022 | 2022 | 2030 |
| **Digital public services for businesses** | **NA** | **81** | **84** | **84** | **100** |
| Score (0 to 100) | | 2021 | 2022 | 2022 | 2030 |
| **Access to e-health records** | **NA** | **NA** | **47** | **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 Czechia's research and innovation system, which is essential for delivering the twin green and digital transition.

**Czechia is a 'moderate innovation performer' but the gap between its performance and the EU average is narrowing.** According to the 2022 edition of the European Innovation Scoreboard ([78]), its innovation performance increased by 19.8 percentage points, at a higher rate than the EU's (9.9 pp). Despite this improvement, its overall performance is still slightly below the EU average (92.6% of the EU performance).

**R&D intensity ([79]) remains below the EU average but it is steadily increasing.** R&D intensity increased the fastest between 2010 and 2014 (from 1.33% of GDP in 2010 to 1.96% in 2014) and stabilised thereafter, reaching 2% in 2021. Business enterprise expenditure on R&D (BERD) followed the same trend (from 0.77% of GDP in 2010 to 1.10% in 2014) reaching 1.25% in 2021. In contrast, public expenditure on R&D as a percentage of GDP reached its peak in 2015 (0.87%) and then decreased to 0.74% in 2021, slightly below the EU average of 0.76% ([80]).

**In terms of the quality of scientific and technological outputs, Czechia is performing below the EU average.** The share of scientific publications among the top 10% most cited publications is increasing but is still only around half of the EU average (4.5% in 2019 versus 9.8%). Czechia performs below the EU average with regards to international co-publications as percentage of total number of publications. In addition, patent applications remain well below the EU average, with no sign of improvement over time (0.8 per billion of GDP in 2009, in comparison to 0.7 in 2019). These values show the need to improve the quality of the science and technology system to make investments more productive. While providing investments, the recovery and resilience plan (RRP) does not introduce significant reforms to this end and reform processes need to be pursued in line with the national research and innovation (R&I) strategies.

**Conditions for business innovation need improving.** Venture capital as a percentage of GDP has increased in the past 5 years but remains below the EU average (0.022% in 2021 versus EU average of 0.074%). There are insufficient incentives for creating spin-offs and regulatory barriers ([81]). Also, innovators wanting to start up a company face difficulties due to low levels of investment in early stages (pre-seed, seed, start-up and later-stage venture). Investment in these stages appears to be high-risk for investors and banks, mainly due to the absence of relevant corporate history, lack of collateral or lack of information for assessing firms' credit risk or the valuation of their intangible assets ([82]). The RRP includes investments to facilitate access to finance for innovative small and medium-sized enterprises (SMEs) and start-ups, measures to support SME internationalisation and the launch of a new quasi-equity instrument for the promotion of entrepreneurship.

**R&I performance is hampered by persistent difficulties in developing a highly skilled workforce in science and engineering.** The number of tertiary education graduates in science and engineering is sharply decreasing (14.5 per thousand population aged 25-35 in 2010 versus 10.6 in 2020), an area where the country already performs well below the EU average of 16 in 2020. In addition, Czechia scores 23rd within EU-27 in terms of the share of population aged 25-34 who have successfully completed tertiary education. Labour force shortages and skills mismatches are often identified as one of the biggest hurdles for innovation diffusion ([83]). Gender gaps among researchers in all sectors persist and Czechia ranks well below the EU average ([84]). Across the 24 EU Member States and Associated Countries with available data, Czechia was among the Member States with the lowest percentage of self-employed women among

([78]) 2022 European Innovation Scoreboard, Country profile: Czechia ec_rtd_eis-country-profile-cz.pdf (europa.eu). The EIS provides a comparative analysis of innovation performance in EU countries, including the relative strengths and weaknesses of their national innovation systems (also compared to the EU average).

([79]) R&D intensity is defined as gross domestic expenditure on R&D as a percentage of GDP.

([80]) Czechia's innovation strategy for 2019-2030 sets targets for increasing R&D funding (by 2% by 2020, 2.5% by 2025 and 3% by 2030).

([81]) OECD Report on Innovation Diffusion in the Czech Republic, 2020.

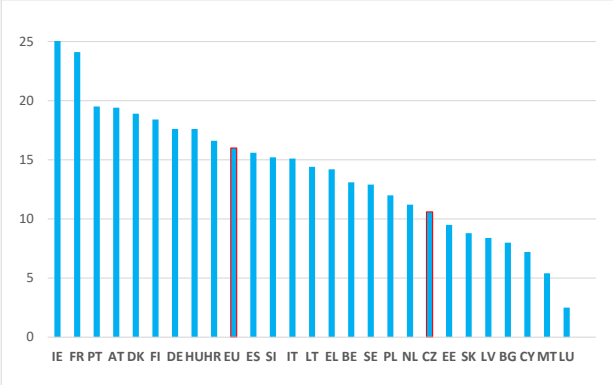
([82]) OECD Financing SMSs and Entrepreneurs, 2022.

([83]) OECD Report on Innovation Diffusion in the Czech Republic, 2020.

([84]) Statistics | Eurostat (europa.eu)

science and engineering and information and communications technology professionals, according to the Commission's 2021 She Figures report. The RRP helps to address these problems with measures to improve the relevance of education to the changing needs of the labour market.

Graph A11.1: **New graduates in science and engineering per thousand population aged 25-34 in 2020**




***Source:*** Eurostat

**Science-business linkages are weak and the full potential to foster stronger collaboration remains untapped.** Public expenditure on R&D financed by domestic business enterprises as percentage of total public expenditure on R&D remains around half of the EU average (3.22% in 2020 compared with the EU average of 7.45%) and has declined over time. Also, Czechia lags behind the EU average in terms of researchers employed by businesses (4.3 per thousand active population against the EU average 5.1 in 2020). The RRP aims to incentivise stronger science-business linkages, chiefly by continuing the existing support schemes, but it does not plan any major administrative and regulatory simplification of the collaborative processes.

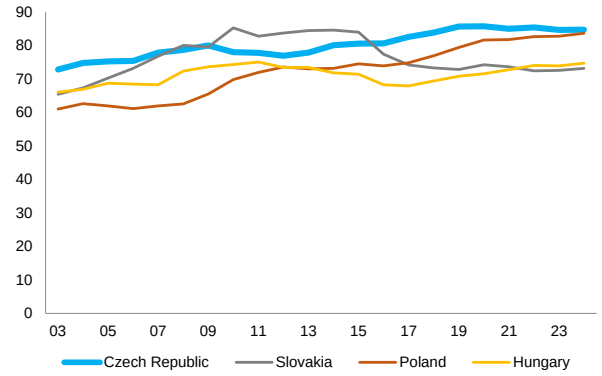
Table A11.1:**Key innovation indicators**

| **Czechia** | **2010** | **2015** | **2019** | **2020** | **2021** | **EU average (1)** |
|---|---|---|---|---|---|---|
| **Key indicators** | | | | | | |
| R&D intensity (GERD as % of GDP) | 1.33 | 1.92 | 1.93 | 1.99 | 2 | *2.26* |
| Public expenditure on R&D as % of GDP | 0.55 | 0.87 | 0.73 | 0.77 | 0.74 | *0.76* |
| Business enterprise expenditure on R&D (BERD) as % of GDP | 0.77 | 1.04 | 1.19 | 1.21 | 1.25 | *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 | 4.6 | 4.4 | 5 | : | : | *9.8* |
| PCT (Patent Cooperation Treaty) patent applications per billion GDP (in PPS) | 0.7 | 1 | 0.7 | : | : | *3.3* |
| **Academia-business cooperation** | | | | | | |
| Public-private scientific co-publications as % of total publications | 4.7 | 5.5 | 6.7 | 6.7 | : | *7.1* |
| Public expenditure on R&D financed by business enterprise (national) as % of GDP | 0.016 | 0.03 | 0.027 | 0.025 | : | *0.054* |
| **Human capital and skills availability** | | | | | | |
| New graduates in science & engineering per thousand pop. aged 25-34 | 14.5 | 13.1 | 10.9 | 10.6 | : | *16* |
| **Public support for business enterprise expenditure on R&D (BERD)** | | | | | | |
| Total public sector support for BERD as % of GDP | 0.163 | 0.18 | 0.16 | : | : | *0.194* |
| R&D tax incentives: foregone revenues as % of GDP | 0.033 | 0.055 | 0.048 | : | : | *0.1* |
| **Green innovation** | | | | | | |
| Share of environment-related patents in total patent applications filed under PCT (%) | 15.1 | 7.1 | 11.3 | : | : | *13.3* |
| **Finance for innovation and economic renewal** | | | | | | |
| Venture capital (market statistics) as % of GDP | 0.02 | 0.003 | 0.007 | 0.009 | 0.022 | *0.074* |
| Employment in fast-growing enterprises in 50% most innovative sectors | 6.7 | 6.5 | 6.1 | : | : | *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

**The multiple crises impose new challenges for firms' competitiveness.** The disruptions to production and supply chains have already affected labour productivity in industry in 2020. Even though it recovered in 2021, Russia's invasion of Ukraine has further exacerbated problems in global supply chains. The rise in prices of energy and raw materials are causing considerable new disruptions and are having a severe impact on both SMEs and industry, in particular energy intensive industries, manufacturing, and construction. A high level of economic and geopolitical uncertainty affects Czech businesses in their investment plans and threatens their competitiveness.

Graph A12.1: **Labour productivity per person (in PPS and in % of the EU)**

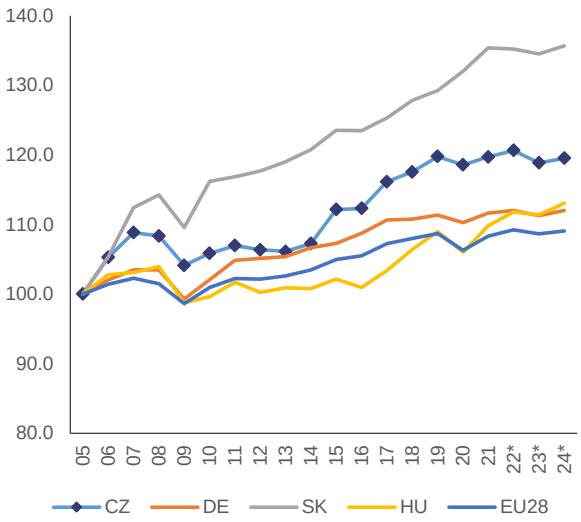



***Source:*** European Commission calculations, based on AMECO

**Overall labour productivity continues to be subdued in Czechia, reaching 85% per person in PPS of the EU average in 2021.** In 2021 and 2022 Czechia's added value growth relied on employment growth, but a stronger contribution is needed from productivity through investment in digitalisation, innovation, education, and skills. Real labour productivity per person employed increased by 0.7% in 2022 after the pandemic-related decline of 3.9% in 2020 ([85]). Productivity growth in manufacturing is considerably higher than in services and construction. However, for industry, real labour productivity growth per person decreased to 0.8% in 2022 (compared to 4.1% in 2021), below the EU average of 1.4%. Total factor productivity performance continues to be above the EU average, but remains below its direct peer Slovakia, illustrating further potential for productivity growth (Graph A12.2). Moreover, reforms are needed to address skills shortages and fast changing labour market needs. 76% of Czech businesses report difficulties in finding ICT specialists, the highest share in the EU (55%) ([86]).

The measures in the Czech recovery and resilience plan (RRP) aimed at supporting higher education institutions have potential to strengthen their role in boosting advanced skills, driving innovation and economic growth, and improving labour productivity.

Graph A12.2: **Total factor productivity**




***Source:*** European Commission calculations based on AMECO

**Czech businesses are well integrated into the Single Market and global value chains.** Czechia's trade integration in the EU is one of the highest among all Member States, expressed as a share of national GDP (50.4% in CZ vs the EU average of 42%). However, the Czech economy is vulnerable to external shocks, due to its dependence on industry, exports, and high degree of integration into global value chains. 36% of Czech firms reported shortages of material or equipment in November 2022, in comparison with 10% at the beginning of 2020 ([87]). According to the Czech Purchasing Managers' Index, the manufacturing performance in November 2022 showed the biggest contraction since May 2020. The overall decline stemmed from steep contractions in output and new orders, amid challenging demand conditions in domestic and external markets ([88]). Most industrial companies in Czechia expect recession in the coming months in

([85]) Eurostat, NAMA_10_LP_ULC

([86]) Digital Economy and Society Index (DESI) 2022

([87]) OECD Economic Outlook, November 2022

([88]) Czechia Manufacturing PMI - November 2022

2023, a third of companies fear losses and 78% are preparing for a drop in profits ([89]).

**Czechia could play an important role in addressing strategic dependencies by developing value chains in critical raw materials.** Given the strong importance of the automotive industry for the Czech economy, Czechia has recognised e-mobility and the battery industry as a new strategic sector for the economy. The primary lithium reserves together with secondary manganese reserves located in Czechia could enable it to develop the full value chain, from lithium/manganese mining and processing through battery and electric vehicle manufacturing to recycling processes (see also Annex 7). Intensifying the public dialogue on the conditions under which the raw materials could be sustainably extracted, processed, and recycled would help raise awareness about the importance of raw materials for the green and digital transition in Czechia and the EU.

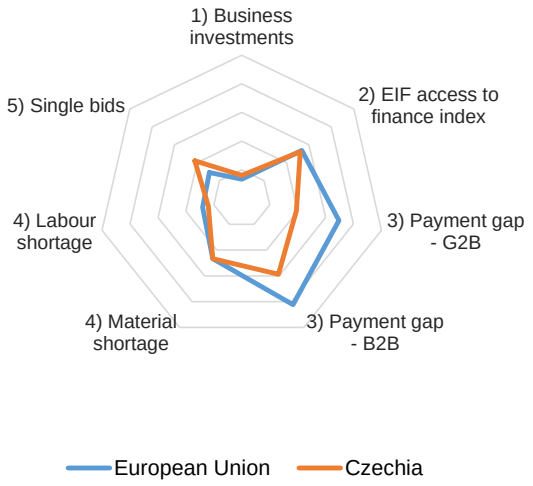
**Czechia could further benefit from the Single Market.** The Single Market Scoreboard indicates scope for further improvement, in particular regarding the number and duration of ongoing infringement procedures, as well as transposition performance, delaying the implementation of the Single Market rules ([90]). Regulatory restrictiveness in Czechia is higher than the EU average for the regulated professions of architect, civil engineer, lawyer, and estate agent ([91]). Lawyers in Czechia are subject to legal form, incompatibility rules and multidisciplinary restrictions, all of which could affect the potential of this sector to innovate and roll out digital solutions and new business models. It is also important to consider the impact of the shareholding and/or company form restrictions for architects. The property services currently exclusively reserved for estate agents would benefit from the possibility of opening access to other professionals. 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 the efficiency of service provision.

([89]) National Centre for Industry 4.0

([90]) Single Market Scoreboard, 2022

([91]) European Commission recommendation on professional regulations, COM(2021)385

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.

**The Czech business environment performs below the EU average, mainly due to administrative and regulatory burdens.** Setting up a company (which takes up to 25 days, one of the longest times in the EU) as well as the administrative burden related to construction permits, are reasons why Czechia ranked 134$^{th}$ out of 190 countries in a global comparison ([92]). The complexity of administrative procedures governed mainly by the Environmental Impact Assessment Act and the Construction Act, is one of the main obstacles to the development of the RES projects, including solar and wind power plants in Czechia. The adoption of the new construction law in 2021 (a reform under the RRP) with the full effect planned from mid-2023, digitalisation of the entire permitting process and creation of a one-stop shop could speed up and simplify permitting procedures in the construction sector, including permitting procedures for renewables, and thus improve the business environment in Czechia.

**Late payments continue to be a key barrier to SMEs' resilience and growth.** In 2022, 61% of companies experienced late payments in the past 6 months compared with the EU average of

([92]) World Bank, Doing business 2020

43%. According to an OECD assessment ([93]), many Czech firms see administrative and regulatory procedures as a major obstacle to investment. Together with fast-changing legislation, they remain a major barrier to doing business. There are multiple measures in the Czech RRP to reduce the administrative burden, but it does not address some key regulatory weaknesses, such as simplification and evaluation of regulations, administrative burden on start-ups or professional services. The relevant RRP measures aiming at reforming the Czech-Moravian Guarantee and Development Bank as a National Development Bank or establishing new quasi-equity instruments for the promotion of entrepreneurship have potential to improve access to finance for businesses. However, further improvement is needed regarding loan and venture capital. The EIF loan index is well below the EU average (0.37% versus 0.46%), and the trend is declining since 2014. In addition, SMEs in Czechia report the largest net deteriorations in terms of the level of interest rates in 2021 (-27% in Czechia versus -6% in the EU) ([94]). There is also only a relatively small number of start-ups in Czechia, with 131 start-ups per million inhabitants, which equates to the 21st place in the EU ([95]). The venture capital investments needed for these innovative, albeit riskier, companies were below the EU average in 2021, at 0.324% versus 0.476% (see also Annex 11). Supporting the establishment of ambitious start-ups could help the Czech economy bring innovation, especially in the field of technology, and become more competitive through the knowledge economy.

**There is still scope to enhance competition on the public procurement market and improve public procurement practices in terms of quality-based competition.** In 2022, 42% of contracts awarded had just a single bidder, the 4th worst in the EU, and about 81% contracts were awarded without using quality-based criteria. Public procurement efficiency could be strengthened and optimised by using tools such as centralised purchasing and joint procurement. Centralisation techniques will help Czechia pursue broader economic goals, such as promoting innovation, creating competitive markets, and sustaining development. Pursuing efforts in professionalisation of public buyers could further drive efficiency.

([93]) OECD, Product Market Regulation Indicators 2022

([94]) SAFE 2021

([95]) Czech Index Prosperity 2022

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] | 6.2 | 6.6 | 4.2 | 4 | 5.2 | **3.7** |
| | | Net public investment, level of public capital stock, net of depreciation, % GDP [1] | 0.3 | 0.6 | 0.8 | 0.7 | 0.6 | **0.4** |
| | | Real labour productivity per person in industry (% yoy)[2] | 0.7 | 2.8 | -6.6 | 4.1 | 0.8 | **1.4** |
| | Cost competitive-ness | Nominal unit labour cost in industry (% yoy)[2] | 9.2 | 2.7 | 4.8 | 3.3 | 9.6 | **2.9** |
| RESILIENCE | Shortages | Material shortage (industry), firms facing constraints, % [3] | 15 | 21 | 11 | 36 | 47 | **47** |
| | | Labour shortage using survey data (industry), firms facing constraints, % [3] | 44 | 38 | 19 | 23 | 24 | **28** |
| | | Vacancy rate (business economy)[4] | 6.8 | 7.8 | 6.8 | 6.4 | 6 | **3.1** |
| | Strategic dependencies | Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials [5] | 0.19 | 0.19 | 0.17 | 0.2 | 0.22 | **0.18** |
| | | Installed renewables electricity capacity, % of total electricity produced [6] | 22 | 22.5 | 23.4 | 24.3 | n.a. | **50.9** |
| SINGLE MARKET | Single Market integration | EU trade integration, % [7] | 52.7 | 50.4 | 47.4 | 50.4 | 52.1 | **45.8** |
| | Restrictions | EEA Services Trade Restrictiveness Index [8] | 0.05 | 0.04 | 0.04 | 0.04 | 0.04 | **0.05** |
| | Public procurement | Single bids, % of total contractors [9] | 49 | 50 | 41 | 40 | 42 | **29** |
| BUSINESS ENVIRONMENT - SMEs | Investment obstacles | Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle [10] | 17.8 | 17.2 | 21.7 | 14.6 | 17.8 | **29.6** |
| | Business demography | Bankruptcies, Index (2015=100)[11] | n.a. | n.a. | n.a. | n.a. | n.a. | **86.8** |
| | | Business registrations, Index (2015=100) [11] | n.a. | n.a. | n.a. | n.a. | n.a. | **121.2** |
| | Late payments | Payment gap - corporates B2B, difference in days between offered and actual payment [12] | 5 | 7 | 4 | 11 | 10 | **13** |
| | | Payment gap - public sector, difference in days between offered and actual payment [12] | 1 | 2 | -1 | 10 | 9 | **15** |
| | | Share of SMEs experiencing late payments in past 6 months, % [13] | n.a. | 74.2 | 55.8 | 62.3 | 61.1 | **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] | 0.71 | 0.46 | 0.33 | 0.37 | 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] | 0.12 | 0.06 | 0.05 | 0.17 | n.a. | **0.23** |

(*) Last available year

***Source:*** (1) AMECO, (2) Eurostat: NAMA_10_LP_A21, (3) ECFIN BCS, (4) Eurostat: jvs_a_rate_r2, (5) COMEXT, (6) Eurostat: nrg_inf_epc, (7) Eurostat: BOP_C6_A, (8) OECD, (9) Single Market Scoreboard, (10) EIB survey, (11) Eurostat: sts_rb_a, (12) Intrum (13) SAFE Survey, (14) EIF SME Access to Finance Index.

**This Annex outlines the performance of Czechia's public administration, which is essential for providing services and carrying out reforms**. The overall perceived effectiveness of the public administration in Czechia has increased to around the average level in the EU-27 ([96]). The digital transformation of the public administration has progressed, guided by the client-oriented public administration 2030 strategy and the Digital Czech Republic strategy. These complement the national recovery and resilience plan, which aims, among other things, to further improve the internal working processes in the Czech ministries, equip them with suitable software to share and use data, create digital points of contact for citizens to interact with public administrations and upgrade ePassport operations. The six related reforms and investments, totalling roughly EUR 80 million, are on track or slightly delayed, and were likely to be completed by early 2023.

**People's digital interaction with the government has increased substantially.** The share of people engaging online with public authorities in 2021 was 76%, an improvement of 12 percentage points on the 2020 figures and well above the EU average of 65%. However, Czechia's overall score on e-government benchmark is 64%, below the EU average of 73% (Table A13.1).

**Making the most of staff in the public administration remains a challenge.** However, the gravity of the issue cannot be fully estimated due to a lack of data on public administration HR and performance. The Civil Service Act was amended in 2022 to limit the terms of office for senior civil servants, speed up the selection process and open it up to external applicants. The amendments include offering the possibility of a leave of absence for study or training purposes. This is expected to boost the rate of participation of public administration employees in adult learning, given that the share of employees with higher education (47.1%) is below the EU average of 52% (Graph A13.1b and A13.1c). Gender parity in senior management positions has declined and was the fourth lowest in the EU-27 in 2022 (Graph A13.1a). Furthermore, other challenges linked to the attractiveness remain, in particular the decline of more than 10% in relative-wages over the last 20 years ([97]).

**Evidence-based policymaking in Czechia ranks close to the EU average.** Overall, the regulatory impact assessment process is well developed. However, there are weaknesses in terms of measuring impacts and the lack of systematic policy evaluation. The publication of new guidelines aims to encourage the practice of evaluation. Public consultations are limited to government legislation, while more than half of new primary laws are initiated by parliament ([98]), thus avoiding the obligation to draft an impact assessment. Strategic planning, including inter-ministerial coordination, remains weak.

**The justice system is performing efficiently.** The main challenge is the length of administrative cases, in relation to the length of other types of cases: 265 days on average for first instance administrative cases in 2021, as compared with 141 days for litigious first instance civil and commercial cases. However, this is an improvement on 317 days in 2020 and 356 in 2019. The overall quality of the justice system is good. The level of digitalisation is advanced, considering that procedural rules to permit digital tools in courts are in place. Some digital solutions to initiate and follow proceedings, especially in civil, commercial and administrative cases, are already available. At the same time, there are challenges when it comes to using digital technology in practice. As regards judicial independence, no systemic deficiencies have been reported ([99]).

**Czechia performs below the EU average on certain fiscal framework indicators.** These include the Commission's medium-term budgetary framework index and the strength of fiscal rules index, which have been stable over the past few years. There is still scope to enhance competition on the public procurement market and improve public procurement practices in terms of quality-based competition (see Annex 12).

([96]) Worldwide Governance Indicators, 2021 data (http://info.worldbank.org/governance/wgi/).

([97]) IDEA, Státní zaměstnanci a úředníci: kde pracují a za kolik?, Figure 6, January 2022.

([98]) OECD, Regulatory Policy Outlook 2021, Country profile for the Czech Republic, 2021.

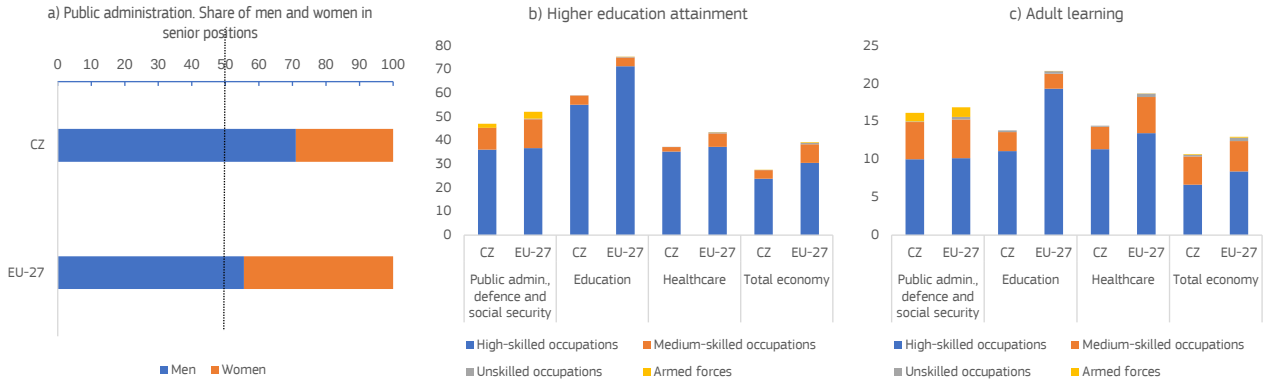
([99]) For a more detailed analysis of the performance of the justice system in Czechia, see the 2023 EU Justice Scoreboard (forthcoming) and the country chapter for Czechia in the 2023 Rule of Law Report (forthcoming).

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

| | CZ 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 (%) | 53.4 (b) | 61.0 (b) | 61.5 | 63.8 | 75.9 (b) | n/a | 64.8 |
| 2 | E-government benchmark overall score ([3]) | n/a | n/a | n/a | 62.7 | 62.6 | 63.8 | 72.9 |
| 3 | Open data and portal maturity index | n/a | 0.6 | 0.6 | 0.7 | 0.7 | 0.9 | 0.8 |
| **Educational attainment level, adult learning, gender parity and ageing** | | | | | | | | |
| 4 | Share of public administration employees with tertiary education (levels 5-8, %) | 42.8 | 43.7 | 45.1 | 43.3 | 45.3 (b) | 47.1 | 52.0 |
| 5 | Participation rate of public administration employees in adult learning (%) | 17.6 | 15.5 | 13.5 | 9.3 | 9.9 (b) | 16.2 | 16.9 |
| 6 | Gender parity in senior civil service positions ([4]) | 38.2 | 36.8 | 40.6 | 36.6 | 43.4 | 42.0 | 11.0 |
| 7 | Ratio of 25-49 to 50-64 year olds in NACE sector O | 2.0 | 2.0 | 2.0 | 2.1 | 2.0 (b) | 1.7 | 1.5 |
| **Public financial management** | | | | | | | | |
| 8 | Medium term budgetary framework index | 0.4 | 0.5 | 0.5 | 0.6 | 0.6 | n/a | 0.7 |
| 9 | Strength of fiscal rules index | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | n/a | 1.5 |
| **Evidence-based policy making** | | | | | | | | |
| 10 | Regulatory governance | 1.63 | n/a | n/a | n/a | 1.67 | 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:*** 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).

Graph A13.1: **a) Public administration: share of men and women in senior positions, b) Higher education attainment, c) Adult learning**




***Source:*** (1) 2022 data
Source: a) European Institute for Gender Equality; b) and c) 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 Czechia's progress in implementing the Pillar's 20 principles and EU headline and national targets for 2030 on employment, skills and poverty reduction.

**The Czech labour market is among the best performing in the EU, but certain groups still face challenges, including women with young children.** Despite weakening economic growth, the employment rate remained resilient at 81.3% in Q4-2022 (6.4 percentage points (pps) above the EU average), and unemployment fell to 2.3% in the same quarter, only 0.3 pps above the lowest level ever recorded in Q2-2019. However, the employment rate of women aged 25-29 was 29.0 pps lower than men in 2021 (versus 8.1 pps in the EU). The gender employment gap was 34.0 pps for women aged 30-34 (versus 12.7 pps in the EU). In 2021, the difference in the employment rate between women with and without children (0-6 years) was 46.4 pps. Limited availability of early childhood education and care, long and unequal parental leave, low uptake of flexible work arrangements and gender biases curb progress on female employment ([100]). The relatively high tax wedge on low-income workers (50% or less of the average wage) creates disincentives for second earners. Increasing the number of women (aged 20-64) participating in the labour market could unlock EUR 20 billion in additional GDP in Czechia by 2030 ([101]) and support progress on its national employment target of 82.2% by 2030. The disability employment gap was above the EU average. There is scope for reducing youth unemployment (7.5% in Q4-2022), particularly for women (8.2%), compared to the pre-pandemic lows.

**Czechia has taken steps, with the support of EU funds, to unlock the potential of women in the workforce, yet significant challenges persist.** In 2021, Czechia created financial incentives for employers who make part-time jobs and job-sharing schemes available. Legal amendments anchored public funding for childcare in children's groups ([102]) (see Annex 15). With the support of the European Social Fund (ESF), 20 000 places were created in early childhood education and care. However, further efforts are needed to significantly increase the participation of children (aged 0-3) in formal childcare (4.9% in 2021, well below the EU average of 32.6%). Once adopted, the Czech social economy law could boost the creation of more social enterprises leading to increased labour market participation of people in vulnerable situations.

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

| Policy area | Headline indicator | |
|---|---|---|
| Equal opportunities and access to the labour market | Early leavers from education and training (% of population aged 18-24, 2022) | 6.2 |
| | Share of individuals who have basic or above basic overall digital skills (% of population aged 16-74, 2021) | 59.69 |
| | Youth NEET rate (% of population aged 15-29, 2022) | 11.4 |
| | Gender employment gap (percentage points, 2022) | 14.9 |
| | Income quintile ratio (S80/S20, 2021) | 3.43 |
| Dynamic labour markets and fair working conditions | Employment rate (% of population aged 20-64, 2022) | 81.3 |
| | Unemployment rate (% of active population aged 15-74, 2022) | 2.2 |
| | Long term unemployment (% of active population aged 15-74, 2022) | 0.6 |
| | GDHI per capita growth (2008=100, 2021) | 125.81 |
| Social protection and inclusion | At risk of poverty or social exclusion rate (% of total population, 2021) | 10.7 |
| | At risk of poverty or social exclusion rate for children (% of population aged 0-17, 2021) | 13.3 |
| | Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2021) | 46.58 |
| | Disability employment gap (percentage points, 2021) | 25.9 |
| | Housing cost overburden (% of total population, 2021) | 6.2 |
| | Children aged less than 3 years in formal childcare (% of population under 3-years-old, 2021) | 4.9 |
| | Self-reported unmet need for medical care (% of population 16+, 2021) | 0.3 |

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

(1) 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; NEET: neither in employment nor in education and training; GDHI: gross disposable household income.
***Source:*** Eurostat.

**Czechia is facing significant labour and skills shortages, particularly of highly skilled workers.** The job vacancy rate ([103]) stood at 4.4%

([100])EIGE (2022), Gender Equality Index 2022.

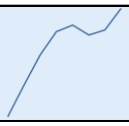
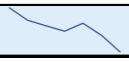
([101])McKinsey (2021), New potential of economic growth: more women in the labour market and in leading positions.

([102])Source: Ministry of Labour (2022), Analysis of the childcare availability. Note: Children's groups refer to childcare provided for children aged between 6 months and 6 years.

([103])For NACE Rev. 2, activities B-S, ref. ISSN 1977-0375.

in Q4-2022, 0.6 pps lower than in Q4-2021 but still 1.5 pps higher than in the EU. Employers reported a shortage of 78 000 persons in Q4-2022. Although 330 000 jobs are at risk of disappearing by 2030 due to automation and technological change, 500 000 new ones are expected to be created ([104]). Adult participation in learning over the last 4 weeks stood at 9.4% in 2022, below the EU average of 11.9%. The share of Roma not in education, employment or training stood at 47% in 2021, compared to 7% among the total population ([105]). Further efforts to increase the attractiveness and relevance of up- and reskilling are needed to support the transition towards a green economy (see Annex 8). These will also help achieve the national skills target of 45% of adults in training every year by 2030. Simplifying the skills recognition system for displaced people from Ukraine can ease some labour and skills constraints. The ESF+ provides EUR 50 million to develop green and digital skills.

Table A14.1: **Situation of Czechia on 2030 employment, skills and poverty reduction targets**

| Indicators | Latest data | Trend (2015-2022) | National target by 2030 | EU target by 2030 |
|---|---|---|---|---|
| Employment (%) | 81.3 (2022) |  | 82.2 | 78 |
| Adult learning[1] (%) | 22.8 (2016) | | 45 | 60 |
| Poverty reduction[2] (thousands) | -141 (2021) |  | -120 | -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. Base values are 2019 for employment rate, 2016 for adult participation in learning, and the reference year for AROPE is 2019. Latest values are 2021 for employment rate (annual), 2016 for adult participation, and 2021 for AROPE. AROPE reduction does not include population projections.
***Source:*** Eurostat, DG EMPL

**Limited social and affordable housing and high foreclosure rates are factors behind poverty and social exclusion in Czechia.** While the share of people at risk of poverty or social exclusion is low (10.7% vs the EU average of 21.7% in 2021), poverty remains concentrated in some localities and among Roma. Before Russia's war of aggression against Ukraine, 165 000 people were already in need of housing, including 50 000 children. A housing allowance reform contributed to an increase in its take-up from 138 000 households in October 2021 to 188 000 in October 2022 ([106]). The pending Social and Affordable Housing Act can increase investment and support social housing planning. Amendments to the construction law and targeted measures to prevent evictions can improve access to and retention of housing and help progress on the national target of 120 000 fewer people at risk of poverty and social exclusion by 2030.

**Inflation weighs on households' purchasing power, while 29% of Czechs have no funds to cope with unexpected expenses ([107]).** 668 000 persons had debts in foreclosure in 2021, with 20% of them having 10 or more ([108]). The debt relief initiative, 'Merciful Summer' ([109]), is an important awareness-raising tool, but has limited impact on the needed systemic change.

**Access to quality community-based services remains limited for some people in need.** The lack of community-based social and health services mainly affects women, older people, and persons with disabilities ([110]). The modernisation of social care services has so far relied largely on ESF+ support. The absence of clear definitions for key terms in legislation and a set deadline for the full deinstitutionalisation of care facilities hinders the ability to provide adequate services. Further efforts are needed to progress on the deinstitutionalisation of children ([111]). The old-age dependency ratio is projected to increase from 31.6% in 2020 to 49.8% in 2050, highlighting the need for further investments in long-term care.

([104]) EU Business and consumer survey and BCG & ASPEN (2022), The future of the Czech labour market.

([105]) FRA (2022), Roma Survey 2021, main results.

([106]) IDEA CERGE EI (2022), Rising energy prices and the increase in housing benefits: did it help?

([107]) EU-SILC 2020 cit. Fialová, K. a Myslíková, M. (2023). Short time financial emergency fund and financial resilience of the Czechs. Internal research report.

([108]) Namely, the action of taking possession of a mortgaged asset when the debt taker fails to keep up their payments. Source: Institute for Prevention and Solving the Foreclosures.

([109]) 'Merciful Summer II' was a time-limited initiative (September – November 2022) that helped highly indebted persons in situations of foreclosure to pay off their debts.

([110]) European Expert Group on Transition from Institutional to Community-based Care (2020). Final report.

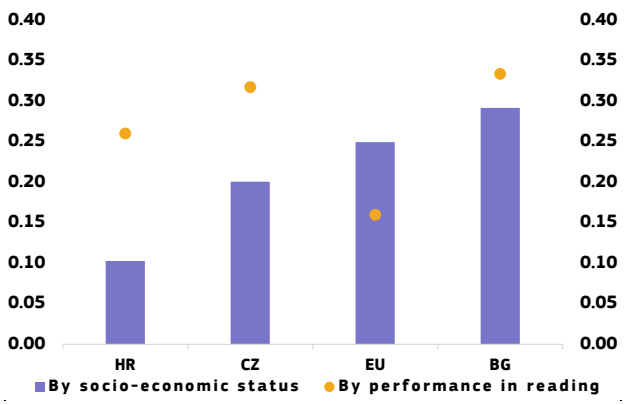
([111]) Social Inclusion Strategy 2021-2030, Section 4.4, Family support.

This Annex outlines the main challenges for Czechia'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.

**Inequalities are a persistent challenge in Czechia's education and training system.** Educational outcomes continue to be strongly influenced by socio-economic background and the geographical location of schools (see 'Islands of educational failure' ([112]). Students from households facing housing affordability challenges and foreclosures (see Annex 14) have a significantly higher risk of grade repetition and school dropout. This is particularly the case in the Karlovy Vary and Ústí nad Labem regions ([113]) (see Annex 17). Czechia scores high on the PISA (Programme for International Student Assessment) isolation index, measured among 15-year-olds, indicating that disadvantaged and low-performing students tend to concentrate in certain schools. Despite the abolishment of special schools, pupils with a Roma background still do not have equal access to quality education: segregation continues in mainstream schools, mainly in the regions with significant population of Roma, for example Ostrava and Brno ([114]). Moreover, frequent misdiagnoses of learning disabilities and the lack of societal consensus on the benefits of inclusive education hinder progress. Czechia has also launched a project to provide comprehensive support to disadvantaged schools and pupils, with help from the Recovery and Resilience Facility (RRF).

**Czechia aims to address capacity shortages in early childhood education and care (ECEC).** In 2021, the participation rate of children in ECEC was among the lowest in the EU at 85.8% (EU: 93%). Introducing mandatory preschool education from the age of 5 has improved access among the disadvantaged. The amendment to the Children's Groups Act aims to ensure stable funding and

Graph A15.1: **Isolation index of disadvantaged students and low-achieving students, PISA 2018**




***Source:*** OECD PISA 2018

quality affordable childcare from 6 months to compulsory schooling age. The national recovery and resilience plan envisages the expansion of childcare capacities by 40% by 2025. New facilities are also financed via Cohesion Policy funding (see Annex 14). Reliable forecasts to ensure enough capacity in the municipalities in need and a well-qualified staff will be essential to accompany investments in infrastructure.

**Czechia has integrated over 50 000 displaced children from Ukraine in its education and training system, as one of the biggest per capita recipients ([115]).** The enrolment of over 7 600 Ukrainian children in kindergartens exacerbates existing capacity challenges in ECEC. The government supports the integration of displaced children through the provision of free language courses, the organisation of adaptation activities and support for schools to hire Ukrainian teaching assistants.

**Teacher salaries have increased significantly in recent years, with the aim to attract more candidates to the profession.** At the same time, it is a challenge to maintain the attractiveness of the salaries against growing inflation and budgetary deficits. Teacher shortages are predicted to intensify in the future, as 44.3% of teachers are older than 50 years (vs EU 38.9%). At present, Czechia lacks a systemic career support structure for teachers and headmasters, leaving teachers, especially novices, feeling less secure in their ability to manage classrooms with diverse learning needs ([116]). To respond to these

([112])PAQ Research (2022), Mapa vzdělávacího ne/úspěchu [Map of educational failure/success], https://www.mapavzdelavani.cz/.

([113])PAQ research (2022), Mapa vzdělávacího ne/úspěchu [Map of educational failure/success], https://www.mapavzdelavani.cz/.

([114])European Union Agency for Fundamental Rights (2022), Roma survey 2021.

([115])Source: Ministry of Education, Youth and Sports, survey data, 31 March 2023.

([116])OECD TALIS (2018).

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

| | | | | 2015 | | 2022 | |
|---|---|---|---|---|---|---|---|
| ***Indicator*** | | | **Target** | **Czechia** | **EU27** | **Czechia** | **EU27** |
| [1]**Participation in early childhood education (age 3+)** | | | **96%** | **84.6%** | **91.9%** | **85.8%** [2020] | **93.0%** [2020] |
| [2]**Low achieving 15-year-olds in:** | | **Reading** | **< 15%** | **22.0%** | **20.0%** | **20.7%** [2018] | **22.5%** [2018] |
| | | **Mathematics** | **< 15%** | **21.7%** | **22.3%** | **20.4%** [2018] | **22.9%** [2018] |
| | | **Science** | **< 15%** | **20.7%** | **21.1%** | **18.8%** [2018] | **22.3%** [2018] |
| **Early leavers from education and training (age 18-24)** | [3]**Total** | | **< 9 %** | **6.2%** | **11.0%** | **6.2%** | **9.6%** |
| | [3] *By gender* | *Men* | | 6.4% | 12.5% | 7.1% | 11.1% |
| | | *Women* | | 6.0% | 9.4% | 5.2% | 8.0% |
| | [4] *By degree of urbanisation* | *Cities* | | 5.2% | 9.6% | 5.3% | 8.6% |
| | | *Rural areas* | | 5.5% | 12.2% | 5.9% | 10.0% |
| | [5] *By country of birth* | *Native* | | 6.1% | 10.0% | 6.2% | 8.3% |
| | | *EU-born* | | 14.1% [u] | 20.7% | 8.9% [u] | 20.3% |
| | | *Non EU-born* | | 7.7% [u] | 23.4% | 4.2% [u] | 22.1% |
| [6]**Equity indicator (percentage points)** | | | | : | : | **18.6** [2018] | **19.3** [2018] |
| [7]**Exposure of VET graduates to work based learning** | **Total** | | **≥ 60% (2025)** | : | : | **18.4%** | **60.1%** |
| **Tertiary educational attainment (age 25-34)** | [8]**Total** | | **45%** | **31.0%** | **36.5%** | **34.5%** | **42.0%** |
| | [8] *By gender* | *Men* | | 24.3% | 31.2% | 26.6% | 36.5% |
| | | *Women* | | 38.1% | 41.8% | 42.9% | 47.6% |
| | [9] *By degree of urbanisation* | *Cities* | | 43.2% | 46.2% | 49.6% | 52.2% |
| | | *Rural areas* | | 22.8% | 26.9% | 25.2% | 30.2% |
| | [10] *By country of birth* | *Native* | | 31.1% | 37.7% | 33.4% | 43.0% |
| | | *EU-born* | | 32.6% | 32.7% | 52.0% | 39.5% |
| | | *Non EU-born* | | 21.2% | 27.0% | 46.4% | 35.7% |
| [11]**Share of school teachers (ISCED 1-3) who are 50 years or over** | | | | 42.1% | 38.3% | 44.6% [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 are 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.

challenges, Czechia has initiated a reform of initial teacher training and it has piloted a project to develop a comprehensive system of professional support for teachers and headmasters ([117]), with help from the European Social Fund Plus.

**Under the RRF, Czechia launched a revision of the national curricula in primary and secondary education.** The aim is to improve computational thinking and develop digital competence across subject areas, in line with the Education Policy Strategy 2030+, to strengthen the acquisition of key competences and to improve access to quality education for all.

**Tertiary educational attainment in Czechia is among the lowest in the EU.** In 2022, tertiary educational attainment stood at 34.5%, lagging far behind the EU average of 42% and the EU-level target of 45%. Significant gender differences are a concern for equal opportunities in education. While many more women than men complete higher education (42.9% vs 26.6%), 17% of women aged 15-29 are neither in employment nor in education or training (NEET) versus 4.6% of men in the same age cohort, which is the highest gap in the EU. The dropout rate is particularly high. Students abandon almost half of their studies without completion. This is partly due to inadequate information and career counselling for secondary school graduates ([118]). Although the employability of graduates of tertiary education and vocational education and training is high, there is a shortage of highly skilled professionals (see Annex 14). The RRF supports Czech universities in the creation of new study programmes in fast-growing, high value-added sectors, such as cybersecurity or artificial intelligence.

([117])Professional development support system for teachers and headmasters (projektsypo.cz)

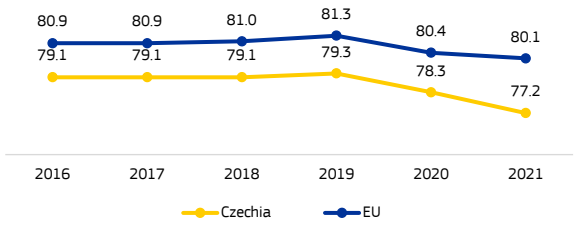
([118])European Commission (2022), Education and Training Monitor.

**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 Czechia.

**Life expectancy in Czechia remains in the lower half of EU countries, and the gap between Czechia and the EU average widened compared to 2020.** However, it is among the highest in the central and eastern EU countries. The continued drop in life expectancy since 2019 contrasts with the previous continuous increase since 2009. It can be mainly explained by successive waves of COVID-19 cases and deaths ([119]), which have set the country back and have widened the gap with the EU average. Cancer mortality is above the EU average. Other main mortality causes are cardiovascular diseases, followed by COVID-19 in 2020.

**Health spending substantially increased over the course of the pandemic, both in relation to GDP and in nominal terms.** This is in line with the upward trend in all Member States in 2020. In general, Czechia spends on average less on healthcare than other EU countries, while the share of public funding is higher than the EU average. Out-of-pocket expenditure in the country remains among the lowest of all EU countries.

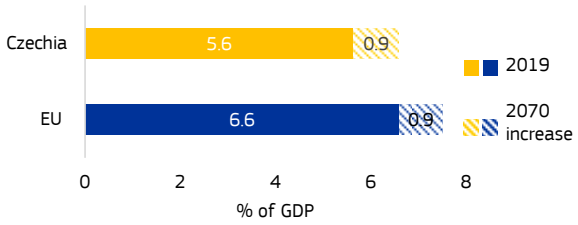
Graph A16.1: **Life expectancy at birth, years**




***Source:*** Eurostat

**Spending on preventive care increased by 53% from 2019 to 2020 (compared to a 26% increase for the EU overall).** This is mainly due to increased spending on early disease protection programmes. Spending on inpatient services is comparatively high (in relation to total healthcare spending), showing room for shifting care delivery to (primary) outpatient settings. Overall, reforms have been focusing on strengthening primary healthcare, improving the integration of health services, and digitalising the health system. Reforms also aimed at reforming public health services and addressing the country's main preventable risk factors for ill health, including tobacco use, alcohol consumption, obesity and exposure to environmental threats. Public expenditure on health is projected to increase by 0.9 percentage points (pps) of GDP by 2070 (the same as for the EU overall), raising long-term fiscal sustainability concerns.

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




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

**The number of doctors and nurses (per 1 000 population) is slightly above the EU average.** Nevertheless, there is an issue of an uneven distribution of health workers, leading to concerns about equal accessibility. The pandemic response highlighted areas for improvement in crisis preparedness and workforce capacity, especially in some regions. Retaining and strengthening the health workforce is high on the political agenda.

**Through its recovery and resilience plan, Czechia will invest EUR 1.1 billion in healthcare (16.1% of the plan's total value).** Investments mainly focus on oncological care (in particular setting up a Czech oncological institute), e-health, and research and development. Milestones and targets are being implemented by the Ministry of Health according to the plan.

([119])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**

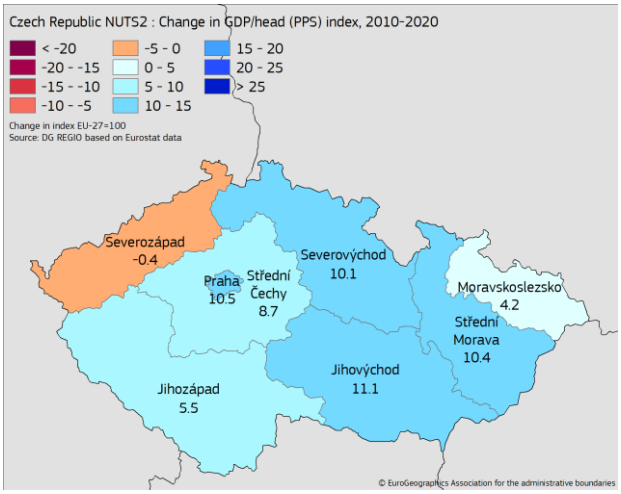
| | 2017 | 2018 | 2019 | 2020 | 2021 | EU average (latest year) |
|---|---|---|---|---|---|---|
| Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare) | 127.2 | 124.2 | 120.3 | 122.5 | NA | 91.7 (2020) |
| Cancer mortality per 100 000 population | 272.9 | 272.1 | 272.4 | 267.2 | NA | 242.2 (2020) |
| Current expenditure on health, % GDP | 7.4 | 7.5 | 7.6 | 9.2 | NA | 10.9 (2020) |
| Public share of health expenditure, % of current health expenditure | 84.4 | 84.9 | 85.0 | 87.7 | NA | 81.2 (2020) |
| Spending on prevention, % of current health expenditure | 3.0 | 2.9 | 2.9 | 3.8 | NA | 3.4 (2020) |
| Acute care beds per 100 000 population | 411 | 408 | 404 | 404 | NA | 387.4 (2019) |
| Doctors per 1 000 population * | NA | 4.0 | 4.1 | 4.1 | NA | 3.9 (2020) |
| Nurses per 1 000 population * | 8.5 | 8.5 | 8.6 | 8.7 | 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 CZ and CY) ** | NA | NA | 16.9 | 13.4 | 13.7 | 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

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

**Regional disparities in Czechia are stable but remain significant.** The country has a highly developed capital city where GDP per capita was 203% of the EU-27 average in 2020. In the rest of the country, there are six moderately developed regions, where the GDP per capita ranged between 73% and 85% (these are the NUTS 2 regions of Moravskoslezko, Střední Morava, Střední Čechy Jihovýchod, Severovýchod, andJihozápad) and a poorer region (Severozápad) where GDP per capita was 61% of the EU average.

Map A17.1: **Change in GDP per capita index in Czech NUTS 2 regions (2010-2020)**

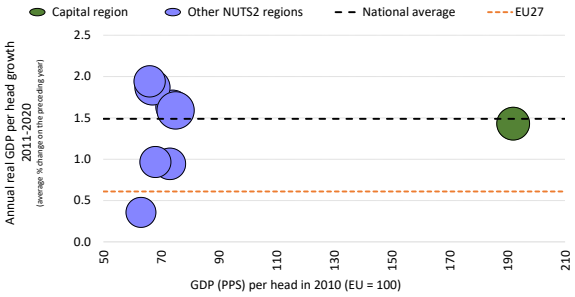



**The Czech regions are catching up and converging on the EU average, albeit at different speeds**. However, a clear exception is the Severozápad region, which is persistently lagging behind. Here the GDP per capita in 2021 was 61% of the EU average, compared to 63% in 2010. The gap is reflected also in the values of the Regional Competitiveness Index (RCI). Severozápad has a RCI of 86.6, while the capital region of Prague has a RCI of 114.3.

**As a consequence of the COVID-19 pandemic and the related containment measures, GDP per capita fell in all Czech regions between 2019 and 2020.** The most severe drop was recorded not only in the less developed region of Severozápad (-6.4%), but also in the more developed regions like Střední Čechy (-7.1%) and Praha (-6.4%). The least affected were the moderately developed regions of Jihovýchod (-2.5%) and Severovýchod (-2.0%). Regional disparities slightly decreased within the country as a result.

**Investment in human capital and R&D is considerably higher in the capital region.** The less developed region of Severozápad lies at the other end of the spectrum. 64.7% of the capital region's population has a high level of educational attainment but only 20.1% in Severozápad. 10.4% of the capital region's workers were employed in high technology sectors in 2020 while only 2.1% in the Severozápad region.

Graph A17.1: **GDP per capita (2010) and GDP per capita growth (2011-2020)**




***Source:*** EUROSTAT

**The evolution of labour productivity shows that all regions are catching up with the EU average**. Real productivity growth was highest in Praha, which grew by 1.59% a year in 2011-2020. The other moderately developed regions experienced lower productivity growth, although most of them still grew by more than the EU average (0%) – ranging from 1.67% in Střední Čechy to 0.94% in Jihozápad. Czechia's poorest region (Severozápad) no longer had the lowest productivity growth in 2020 (it stabilised at 0.29% per year in 2011-2020). This was instead registered in Moravskoslezsko, where real productivity growth turned negative (-0.02% per year in 2011-2020). This mixed performance at regional level led to an average annual national productivity growth of 1.11% in 2011-2020 that was above the EU average.

In 2020, Czechia's labour productivity ([120]) was below the EU average (at 87%). It was by far the highest in the capital region (132% of the EU average) in 2020, compared with 89% in the

([120]) Gross Value Added, GVA (Purchasing Power Standard, PPS) per person employed.

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

| NUTS region name | GDP per head (purchasing power standard/PPS) | Productivity (gross value added (PPS) per person employed) | R&D expenditure | CO2 emissions from fossil fuels per head | Unemployment rate | People at-risk-of-poverty or social exclusion | Population aged 30-34 with high educational attainment | Early school leavers |
|---|---|---|---|---|---|---|---|---|
| | EU27 = 100, 2021 | EU27 = 100, 2020 | % of GDP, 2020 | tCO2 equivalent, 2021 | % of active population, 2021 | % of population, 2021 | % of population aged 30-34, 2021 | % of population aged 18-24, 2021 |
| European Union | 100 | 100 | 2 | 8 | 7 | 22 | 42 | 10 |
| Czechia | 93 | 87 | 2 | 11 | 3 | 11 | 37 | 6 |
| Praha | 203 | 132 | 3 | 3 | 2 | 9 | 65 | 1 |
| Střední Čechy | 79 | 89 | 2 | 11 | 3 | 7 | 30 | 6 |
| Jihozápad | 77 | 77 | 1 | 8 | 2 | 10 | 29 | 9 |
| Severozápad | 61 | 67 | 0 | 35 | 4 | 14 | 20 | 14 |
| Severovýchod | 75 | 76 | 1 | 9 | 2 | 12 | 30 | 6 |
| Jihovýchod | 85 | 81 | 3 | 8 | 2 | 9 | 40 | 4 |
| Střední Morava | 75 | 75 | 1 | 8 | 2 | 12 | 37 | 6 |
| Moravskoslezsko | 73 | 72 | 1 | 12 | 5 | 15 | 31 | 8 |

***Source:*** EUROSTAT

second most productive region (Střední Čechy) and only 67% in the least productive region (Severozápad).

**These disparities are due to a number of reasons. Connectivity, including accessibility to the country's transport network** is still relatively uneven and limits the development prospects of the Czechia's less developed regions. In Praha more than 88.7% of the population living within a radius of 120km could be reached in less than 90 minutes in 2018 on average. In Jihozápad and Severovýchod, two transition and moderately developed regions, this ratio was only just over 50%.

**There is a clear tendency for the population to concentrate in the most prosperous regions**. Population grew in all regions in 2011-2020 – with the exception of three regions that had the lowest GDP per capita in the country. Population fell by 1.5% in Střední Morava, 2% in Severozápad and 3.4% in Moravskoslezsko. However, the population of the Praha and Střední Čechy regions grew by 7.9% and 10% respectively in the same period – well above the national average (2%) and the EU average (2%).

**The same pattern of regional disparities between the less developed regions and other regions can also be seen in the share of population at risk of poverty and social exclusion.** However, it is important to note that this share is generally low in Czechia (10.7% in 2021). The share was much higher in the less developed regions, at 14.3% and 17.8% in Moravskoslezsko and Severozápad (the latter recorded the highest share in Czechia) but was still below the EU average even in those regions. The population in Severozápad has also been significantly affected by foreclosures and personal bankruptcies. In 2020, more than 15% of persons were in foreclosure in Severozápad – almost double the country's average (8%).

**The differences in productivity, investment, education and poverty are only partially reflected in the labour market figures.** Czechia's unemployment rate in 2021 was remarkably low (2.8%) and did not vary greatly between regions.

**Despite the currently low level of unemployment, there are structural problems in the Severozápad and (to a lesser extent) Moravskoslezko regions.** Those problems are both economic (e.g. production with lower value added, old and declining industries, and low incomes) and social (e.g. an ageing population, low education levels and migration). These disparities are likely to grow in the coming years as the economy continues to develop.

**The COVID-19 pandemic caused the biggest economic recession since the Second World War.** However, this economic fallout was distributed unequally. For instance, tourist regions were hit the hardest. Border regions also suffered more than others as various border closures affected cross-border traffic, commuting and services.

**Czechia's banking sector, which is reasonably well developed compared to other eastern European countries, has remained resilient despite the headwinds it has faced in recent years.** The total assets of the country's financial sector were equivalent to 178% of GDP in December 2021, most of which were held by the banks (145% of GDP). 85% of all assets in the country's banking sector belonged to foreign-controlled entities. Bank capitalisation in Q2-2022 remained strong, with a capital-adequacy ratio of 19.6%, slightly below the end-2021 level due to dividend pay-outs and total loan growth, but with a large share accounted for by Tier 1 capital. As Czech banks have been subject to a minimum requirement for own funds and eligible liabilities (MREL) since the start of 2022, they are currently building it up. The countercyclical buffer (CCyB) has reached 2.5% as of 1 April 2023. Bank profitability improved significantly in 2022, well above the EU average, as return-on equity reached 15.4% (up from 6.7% in 2020), mainly due to: (i) the rise in interest rates for loans combined with slower passing on of these higher rates to deposit rates; (ii) strong credit growth; and (iii) low impairment losses. The much lower cost-to-income ratio, as well as the rapid growth in credit, also contributed to this development.

**Asset quality is strong, but credit risk has increased, as loans for both households (especially mortgage loans) and non-financial corporations have been growing**. Over the last 5 years, the increase in real-estate prices has significantly exceeded growth in average household income, leading to new mortgages of a larger size. Households may be exposed to risks associated with growth in the burden of debt service, due to a suppression of disposable income driven by inflation and to an increase of indebtedness mainly through mortgages. As the rise of mortgage interest rates has also been significant, the risk of a future price correction in the Czech housing market poses an additional threat. At end-2022, 67% of mortgages had an interest rate fixation of up to five years, most of them having a five-year fixed interest rate. Some of these fixed terms will end in the next 12 months. However, in April 2022, the Czech National Bank (CNB) set binding upper limits on the loan-to-value ratio, the debt-to-income ratio, and the debt-service-to-income ratio. The CNB took these measures to respond to both the growth in systemic risk associated with consumer mortgage loans and the potential for that risk to increase further. The July 2022 bank-lending survey confirmed that there had recently been a tightening in lending conditions and a decrease in mortgage demand. The survey also revealed that the tightening of monetary policy had already resulted in a decline in the volume of new mortgages. Loans to non-financial corporations increased in 2022, mostly to pay for ongoing activity and to cover the increased expenses from energy costs. There is also an increasing preference for euro-denominated loans (demand for which grew by 12 percentage points between August 2021 and August 2022). Given that these loans are granted only to companies with income in euro, this poses limited currency risks. The non-performing-loan (NPL) ratio reached a historical low of 1.4% in June 2022. However, risks have increased since the beginning of 2022, as indicated by an increase in the number of loans classified as being of increased risk (Stage 2). This increase would warrant higher volumes of net provisioning. However, total provisions have decreased in the last 2 years, which could also be explained by the small proportion of banks that were expecting credit losses to increase in Q3-2022. The NPL coverage ratio declined slightly to 51.5% in Q2-2022, which is above the EU average, but still below Czechia's 2021 level of 52.2%. The direct exposures of the domestic banking sector to Russia, Ukraine and Belarus are small. However, higher credit risk for both non-financial corporations and households is likely due to the indirect effects generated by: (i) the limited economic activity; (ii) disrupted supply chains and (iii) increased inflation. Following the stress tests conducted by the CNB, from a macroprudential policy perspective, the potential credit losses and related growth in risk weightings in an adverse scenario would require a balanced approach to banks' capital surplus and capital buffers. However, banks remain resilient, with high levels of liquidity and capital, while the CNB is closely monitoring the market.

**Czechia has relatively low levels of financial-market depth, liquidity, and diversification. It also has a relatively small investor base.** This is despite the country's relatively well-developed: (i) legal framework; (ii) regulatory framework; and (iii) capital-market infrastructure. However, Czechia's financial sector is better developed than

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

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | EU | Median |
|---|---|---|---|---|---|---|---|---|
| **Total assets of the banking sector (% of GDP)** | 143.0 | 135.6 | 133.2 | 141.8 | 145.4 | 133.7 | 276.8 | 207.9 |
| **Share (total assets) of the five largest banks (%)** | 63.7 | 64.5 | 64.8 | 65.3 | 65.4 | - | - | 68.7 |
| **Share (total assets) of domestic credit institutions (%)[1]** | 8.3 | 8.6 | 8.9 | 8.2 | 13.4 | 13.8 | - | 60.2 |
| **NFC credit growth (year-on-year % change)** | 6.1 | 6.3 | 3.9 | -0.6 | 8.1 | 6.8 | - | 9.1 |
| **HH credit growth (year-on-year % change)** | 8.4 | 7.9 | 6.6 | 6.8 | 10.2 | 6.6 | - | 5.4 |
| **Financial soundness indicators:[1]** | | | | | | | | |
| **- non-performing loans (% of total loans)** | 2.8 | 2.1 | 1.7 | 1.9 | 1.7 | 1.4 | 1.8 | 1.8 |
| **- capital adequacy ratio (%)** | 18.1 | 18.3 | 19.7 | 22.1 | 21.2 | 19.9 | 18.6 | 19.8 |
| **- return on equity (%)[2]** | 13.0 | 13.3 | 13.9 | 6.7 | 10.6 | 15.4 | 6.1 | 6.6 |
| **Cost-to-income ratio (%)[1]** | 47.1 | 47.0 | 47.0 | 49.6 | 48.9 | 40.9 | 60.6 | 51.8 |
| **Loan-to-deposit ratio (%)[1]** | 94.9 | 101.9 | 103.9 | 102.1 | 100.6 | 91.9 | 88.6 | 78.0 |
| **Central bank liquidity as % of liabilities** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - | 2.9 |
| **Private sector debt (% of GDP)** | 80.3 | 83.0 | 78.6 | 81.7 | 78.8 | - | - | 120.7 |
| **Long-term interest rate spread versus Bund (basis points)** | 66.3 | 158.5 | 180.1 | 163.8 | 227.8 | 319.1 | - | 93.3 |
| **Market funding ratio (%)** | 48.2 | 47.0 | 46.0 | 46.0 | 41.6 | - | 50.8 | 40.0 |
| **Green bonds issued to all bonds (%)** | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 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.

that of other central and eastern European countries. The debt-capital market is mainly driven by sovereign issuance, accounting for 87% of total outstanding bond issuance (May 2022). The corporate bond market is rather small and concentrated, with over 79% of the outstanding amount issued by banks and other financial institutions. In 2022, market activity in the Czech debt-capital market was lower than in the previous year, due to volatile capital markets affected by inflationary pressures and the unstable geopolitical situation.

**The Czech insurance sector is relatively small** (in particular in the life-insurance sector), representing 4.8% of the financial sector. At the end of 2020, the insurance sector had a penetration rate (the ratio of total insurance premiums to GDP) of 2.9% (of which 2.1 percentage points were accounted for by non-life insurance) against an average EU penetration rate of 7.3%. Czechia also had an insurance density of EUR 508, against an EU average of EUR 2 181. Insurance companies are robust, with a comfortable ratio of eligible own funds to the solvency capital requirement of 207.8% in mid-2022. Gross premiums written continued their upward trend last year, increasing by 7.5% year-on-year at Q3-2022, mainly due to growth in non-life insurance. The concentration in the market is high in both the non-life and life segments, with two insurers accounting for 50% of all written premiums. Czech insurers face risks related to climate change, but for the moment the sector remains resilient and is able to face potential adverse shocks, as shown by the stress tests conducted by the CNB.

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

**Czechia's tax revenue is relatively low in relation to its GDP.** Table A19.1 shows that Czechia's tax revenue as a percentage of GDP was considerably below the EU aggregate in 2021. Total tax revenue has increased by about 3 percentage points (pps) of GDP since 2010 but remains below the EU average (36% in 2021 compared with 40.6% in the EU; see Table A19.1). Tax revenue in all categories remains below the EU aggregate, except for consumption taxes (11.4% of GDP in 2021, compared with 11.2% in the EU). Revenue from labour taxes has increased since 2010 (by 2.2 pps of GDP to 19.2% in 2021) and revenue from consumption taxes increased to a lesser extent over the same period (by 0.7 pps to 11.4 in 2021), while revenue from capital taxes remained about constant (5.3% of GDP in 2021).

Revenue from environmental taxes is close to the EU average (at 1.8% of GDP, compared with the EU average of 2.2%), but revenue from property taxation (including recurrent property taxation) remains very low (expressed as a % of GDP and as a % in total tax revenue) (see Graph A19.1). This indicates that there would be room to increase property and environmental taxation in order to address fiscal sustainability challenges.

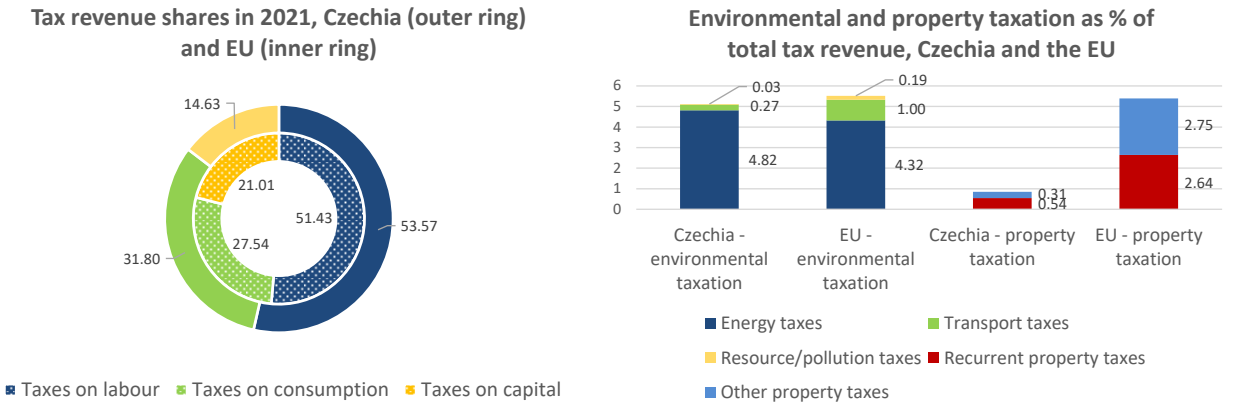
**Czechia's labour tax burden is slightly less progressive than the EU average.** Table A19.1 shows that the tax wedge for single workers earning 50% of the average wage decreased significantly (34.9% in 2021 against 39.7% in 2020). However, it is still above the EU average of 31.7% (see also Graph A19.2). Similarly, the tax wedge for second earners earning 67% of the average wage was 43.3%, above the EU average. The total tax burden on lower earnings has decreased as a result of a 2021 tax reform, which has reduced the tax base and made the tax schedule slightly more progressive. The ability of the tax and benefit system to reduce inequality (measured by its ability to reduce the GINI coefficient) has decreased since 2010 and remains below the EU average since 2010 (see Table A19.1).

Table A19.1:**Taxation indicators**

| | | Czechia | | | | | EU-27 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2010 | 2019 | 2020 | 2021 | 2022 | 2010 | 2019 | 2020 | 2021 | 2022 |
| Tax structure | Total taxes (including compulsory actual social contributions) (% of GDP) | 32.9 | 35.9 | 35.9 | 35.9 | | 37.9 | 39.9 | 40.0 | 40.6 | |
| | Labour taxes (as % of GDP) | 17.0 | 19.2 | 20.2 | 19.2 | | 20.0 | 20.7 | 21.3 | 20.9 | |
| | Consumption taxes (as % of GDP) | 10.7 | 11.5 | 11.3 | 11.4 | | 10.8 | 11.1 | 10.7 | 11.2 | |
| | Capital taxes (as % of GDP) | 5.1 | 5.2 | 4.4 | 5.3 | | 7.1 | 8.1 | 8.0 | 8.5 | |
| | Total property taxes (as % of GDP) | 0.5 | 0.5 | 0.3 | 0.3 | | 1.9 | 2.2 | 2.2 | 2.2 | |
| | Recurrent taxes on immovable property (as % of GDP) | 0.2 | 0.2 | 0.2 | 0.2 | | 1.1 | 1.2 | 1.2 | 1.1 | |
| | Environmental taxes as % of GDP | 2.3 | 2.0 | 1.9 | 1.8 | | 2.4 | 2.4 | 2.2 | 2.2 | |
| Progressivity & fairness | Tax wedge at 50% of average wage (Single person) (*) | 35.7 | 39.4 | 39.7 | 35.3 | 34.9 | 33.9 | 32.3 | 31.9 | 32.1 | 31.7 |
| | Tax wedge at 100% of average wage (Single person) (*) | 42.1 | 44.0 | 44.0 | 40.0 | 39.8 | 41.0 | 40.1 | 39.9 | 39.6 | 39.7 |
| | Corporate income tax - effective average tax rates (1) (*) | | 17.9 | 18.3 | 18.3 | | | 19.5 | 19.4 | 19.1 | |
| | Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*) | 8.0 | 6.7 | 6.7 | 7.2 | | 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 %) (*) | | 30.0 | 31.4 | | | | 31.6 | 40.7 | | |
| | VAT Gap (% of VAT total tax liability, VTTL) | | 14.2 | 11.9 | | | | 11.0 | 9.1 | | |

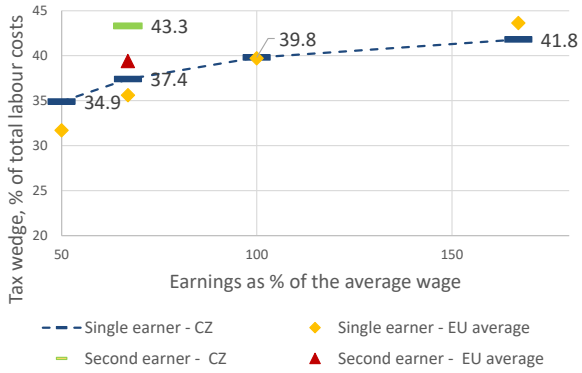
(1) Forward-looking effective tax rate (OECD).
(2) A higher value indicates a stronger redistributive impact of taxation.
(*) EU-27 simple average
For more data on tax revenue as well as the methodology applied, see European Commission, Directorate-General for Taxation and Customs Union, *Taxation trends 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 revenue from different tax types, % of total tax revenue**




***Source:*** European Commission

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




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

**Czechia is doing relatively well in the area of tax administration digitalisation, but there is room for improvement in compliance and enforcement.** Outstanding tax arrears have remained stable at 31.4% of total net revenue in 2020. This is below the EU-27 average of 40.7%, but that average has been inflated by very large values in a few Member States. The VAT gap (an indicator of the effectiveness of VAT enforcement and compliance, where a low gap indicates high effectiveness) decreased in Czechia by 2.3 pps to 11.9%, but this is still above the EU-wide gap of 9.1% (see Table A19.1). Czechia has also been authorised to apply a derogation that allows it to exempt from VAT taxable persons whose annual turnover is below EUR 85 000 (the threshold had been EUR 35 000). This means that Czechia will collect less tax from small enterprises that are eligible for and opt into this scheme. However, Czechia estimates that this will reduce VAT revenue by less than 2% and will therefore not significantly affect total tax revenue collected at the stage of final consumption. Czechia anticipates that increasing the threshold will reduce the burden on the tax administration by lowering the requirement to manage and inspect eligible small enterprises that opt into this scheme. Finally, average forward-looking effective corporate income tax rates were moderately below the EU average in 2020.

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) | 5.9 | 0.2 | 3.1 | -5.5 | 3.6 | 2.5 | 0.2 | 2.6 |
| Potential growth (y-o-y) | 4.5 | 1.7 | 2.4 | 1.4 | 0.5 | 2.1 | 1.5 | 1.6 |
| Private consumption (y-o-y) | 3.6 | 0.6 | 2.9 | -7.2 | 4.1 | -0.9 | -2.2 | 3.3 |
| Public consumption (y-o-y) | 0.2 | -0.1 | 2.3 | 4.2 | 1.4 | 0.6 | 1.7 | 1.5 |
| Gross fixed capital formation (y-o-y) | 7.1 | -1.9 | 4.0 | -6.0 | 0.8 | 6.2 | 2.8 | 2.7 |
| Exports of goods and services (y-o-y) | 18.1 | 4.2 | 4.5 | -8.0 | 6.9 | 5.7 | 5.1 | 4.4 |
| Imports of goods and services (y-o-y) | 15.5 | 2.9 | 4.7 | -8.2 | 13.3 | 5.7 | 4.5 | 4.2 |
| Contribution to GDP growth: | | | | | | | | |
| Domestic demand (y-o-y) | 3.8 | -0.3 | 2.8 | -4.2 | 2.4 | 1.3 | 0.1 | 2.5 |
| Inventories (y-o-y) | 0.6 | -0.4 | 0.1 | -0.9 | 4.8 | 1.0 | -0.3 | -0.2 |
| Net exports (y-o-y) | 1.5 | 1.0 | 0.1 | -0.4 | -3.6 | 0.2 | 0.4 | 0.2 |
| Contribution to potential GDP growth: | | | | | | | | |
| Total Labour (hours) (y-o-y) | 0.5 | -0.1 | 0.5 | -0.2 | -0.7 | 1.0 | 0.5 | 0.4 |
| Capital accumulation (y-o-y) | 1.1 | 0.8 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 |
| Total factor productivity (y-o-y) | 3.0 | 1.0 | 1.2 | 1.0 | 0.6 | 0.4 | 0.3 | 0.4 |
| Output gap | 3.5 | -0.1 | 0.3 | -4.3 | -1.4 | -1.1 | -2.3 | -1.3 |
| Unemployment rate | 7.2 | 6.4 | 4.2 | 2.6 | 2.8 | 2.2 | 2.8 | 2.6 |
| GDP deflator (y-o-y) | 2.1 | 0.9 | 2.0 | 4.3 | 3.3 | 8.6 | 11.3 | 5.5 |
| Harmonised index of consumer prices (HICP, y-o-y) | 2.3 | 2.7 | 1.4 | 3.3 | 3.3 | 14.8 | 11.9 | 3.4 |
| HICP excluding energy and unprocessed food (y-o-y) | 1.8 | 2.1 | 1.5 | 3.7 | 3.8 | 12.4 | 9.0 | 3.8 |
| Nominal compensation per employee (y-o-y) | 6.0 | 2.5 | 4.6 | 3.1 | 5.0 | 5.5 | 7.3 | 6.6 |
| Labour productivity (real, hours worked, y-o-y) | 4.9 | 0.3 | 2.0 | 2.4 | 0.4 | -1.1 | -1.3 | 1.1 |
| Unit labour costs (ULC, whole economy, y-o-y) | 1.3 | 2.1 | 2.5 | 7.3 | 1.8 | 4.8 | 7.8 | 4.4 |
| Real unit labour costs (y-o-y) | -0.7 | 1.2 | 0.5 | 2.8 | -1.5 | -3.5 | -3.1 | -1.0 |
| Real effective exchange rate (ULC, y-o-y) | 3.6 | 2.0 | 0.7 | -0.1 | 4.8 | 5.5 | 6.0 | 0.9 |
| Real effective exchange rate (HICP, y-o-y) | 3.4 | 2.4 | 0.3 | 0.3 | 3.8 | 9.7 | . | . |
| Net savings rate of households (net saving as percentage of net disposable income) | 7.2 | 7.4 | 7.2 | 14.7 | 14.8 | . | . | . |
| Private credit flow, consolidated (% of GDP) | 7.9 | 4.3 | 3.8 | 0.6 | 2.9 | . | . | . |
| Private sector debt, consolidated (% of GDP) | 57.6 | 77.5 | 81.2 | 81.7 | 78.8 | . | . | . |
| of which household debt, consolidated (% of GDP) | 18.1 | 28.6 | 31.1 | 33.9 | 34.4 | . | . | . |
| of which non-financial corporate debt, consolidated (% of GDP) | 39.5 | 48.9 | 50.1 | 47.7 | 44.4 | . | . | . |
| Gross non-performing debt (% of total debt instruments and total loans and advances) (1) | . | . | 2.3 | 1.6 | 1.4 | . | . | . |
| Corporations, net lending (+) or net borrowing (-) (% of GDP) | -2.7 | -0.9 | -1.4 | 1.4 | -2.0 | -5.1 | -1.0 | 1.1 |
| Corporations, gross operating surplus (% of GDP) | 28.6 | 28.2 | 28.7 | 27.3 | 28.3 | 28.1 | 31.0 | 31.0 |
| Households, net lending (+) or net borrowing (-) (% of GDP) | 1.0 | 1.9 | 2.0 | 6.2 | 6.2 | 4.7 | 3.2 | 2.3 |
| Deflated house price index (y-o-y) | 4.6 | -0.9 | 4.6 | 5.4 | 16.4 | 0.8 | . | . |
| Residential investment (% of GDP) | 4.4 | 4.4 | 4.0 | 4.6 | 4.7 | 4.8 | . | . |
| Current account balance (% of GDP), balance of payments | -3.2 | -2.3 | 0.6 | 2.0 | -2.8 | -6.1 | -3.2 | -1.3 |
| Trade balance (% of GDP), balance of payments | 1.8 | 3.5 | 6.4 | 6.7 | 2.8 | -0.1 | . | . |
| Terms of trade of goods and services (y-o-y) | -0.5 | -0.7 | 0.5 | 1.5 | -0.1 | -4.2 | 3.1 | 1.8 |
| Capital account balance (% of GDP) | 0.3 | 0.9 | 1.1 | 1.2 | 1.7 | 0.1 | . | . |
| Net international investment position (% of GDP) | -27.8 | -43.5 | -29.5 | -16.3 | -14.5 | -19.7 | . | . |
| NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2) | 17.8 | 8.6 | 23.7 | 37.3 | 36.9 | 28.3 | . | . |
| IIP liabilities excluding non-defaultable instruments (% of GDP) (2) | 30.5 | 41.9 | 58.6 | 61.3 | 72.1 | 63.0 | . | . |
| Export performance vs. advanced countries (% change over 5 years) | 75.2 | 29.7 | 2.3 | 8.7 | 3.8 | . | . | . |
| Export market share, goods and services (y-o-y) | 10.0 | -0.9 | 1.2 | 2.4 | -4.1 | 1.7 | 2.4 | 0.6 |
| Net FDI flows (% of GDP) | -4.8 | -1.7 | -1.2 | -2.6 | -0.5 | -2.5 | . | . |
| General government balance (% of GDP) | -2.0 | -3.6 | -0.1 | -5.8 | -5.1 | -3.6 | -3.6 | -3.0 |
| Structural budget balance (% of GDP) | . | . | -0.1 | -4.1 | -4.5 | -3.2 | -2.7 | -2.4 |
| General government gross debt (% of GDP) | 27.7 | 36.5 | 37.0 | 37.7 | 42.0 | 44.1 | 42.9 | 43.1 |

(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 Czechia 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's 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). ([121]) Gross financing needs are expected to remain limited at around 8% of GDP in the short term (i.e. over 2023-2024), and on a declining path compared with the recent peak in 2021 (Table A21.1, Table 1). Financial markets' perceptions of sovereign risk remain positive, as confirmed by the spread and the 'AA' rating that the three major rating agencies assigned to Czech government debt.

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

**The DSA for Czechia shows that, under the baseline, the government debt-to-GDP ratio is expected to increase, but remain below 60% of GDP over the medium term (at 53.5% of the GDP in 2033)** (Graph 1) ([122]) ([123]). The assumed structural primary balance (a deficit of 1.1% of GDP) seems relatively ambitious compared to past fiscal performance. At the same time, the baseline projections up to 2033 benefit from a favourable (although diminishing) snowball effect until 2030, thanks to the favourable impact of NextGenerationEU, with real GDP growth at 1.4% of GDP over 2025-2033. Government gross financing needs are expected to increase over the projection period, reaching around 11% of GDP in 2033, above the level forecast for 2024.

**The baseline projection is stress-tested against four alternative scenarios to assess the impact of changes in key assumptions** (Graph 1). For Czechia, reverting to historical trajectories under the 'historical structural primary balance (SPB)' scenario would support debt reduction. If the SPB gradually converged to a deficit of 0.9 % of GDP (its historical 15-year average), the projected debt-to-GDP would be slightly lower (by 1.4 pps.) than in the baseline in 2033. Reducing the SPB level permanently by half of the cumulative forecast change under the 'lower structural primary balance (SPB)' scenario would lead to a higher government debt-to-GDP ratio by 2033 (about 5 pps of GDP) as compared with the baseline. 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 also lead to higher government debt-to-GDP ratio (about 4 pps) by 2033, as compared with the baseline. A temporary worsening of financial conditions, as reflected in the 'financial stress scenario' (i.e. temporarily increase of interest rates by 1 pp.), would provide a similar, though slightly higher, public debt-to-GDP ratio by 2033 compared with the baseline.

**Additionally, stochastic projections indicate a low sensitivity of these projections against plausible unforeseen events** (Graph 2) ([124]). These stochastic simulations point to 49% probability of the debt ratio in 2027 being greater than in 2022, entailing low risk given the initial low debt level. In addition, such shocks point to some uncertainty (i.e. the difference between the 10th and 90th debt distribution percentiles) surrounding the government debt baseline projections.

([121])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.

([122])The assumptions underlying the Commission's 'no-fiscal policy change' baseline notably comprise: (i) a structural primary deficit, before ageing costs, of 1.1% 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; (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 1.4%); (v) ageing costs in line with the 2021 Ageing Report (European Commission, Institutional Paper 142, November 2020). For information on the methodology, see the 2022 Debt Sustainability Monitor.

([123])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.

([124])The stochastic projections show the joint impact on debt of 2000 different shocks affecting the government's budgetary position, economic growth, interest rates and exchange rates. The cone covers 80% of all the simulated debt paths, therefore excluding tail events.

**3 - Long-term risks to fiscal sustainability are medium overall. ([125])**

**The S2 indicator (at 5.8 pps. of GDP) points to medium fiscal sustainability risks.** The indicator shows that, relative to the baseline, the SPB would need to significantly improve to ensure debt stabilisation over the long term. This result is underpinned by the projected increase in ageing-related costs (contribution of 4.4 pps. of GDP) and to a lesser extent, the unfavourable initial budgetary position (1.4 pps. of GDP). Ageing costs' developments are primarily driven by the projected increase of public pension expenditure (contribution of 1.9 pps. of GDP). Health and in particular long-term care spending is projected to increase over the projection period (joint contribution of 2.0 pps. of GDP) (Table 2). Hence, additional measures may be required to further improve the efficiency and fiscal sustainability of the Czech health and long-term care systems.

**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 moderate consolidation effort of 4.1 pps. of GDP would be needed to reduce debt to 60% of GDP by 2070. This result is mainly driven by the projected increase of the ageing-related public expenditure (contribution of 3.3 pps. of GDP) and to a lesser extent the unfavourable initial budgetary position (1.2 pps. of GDP) (Table 2).

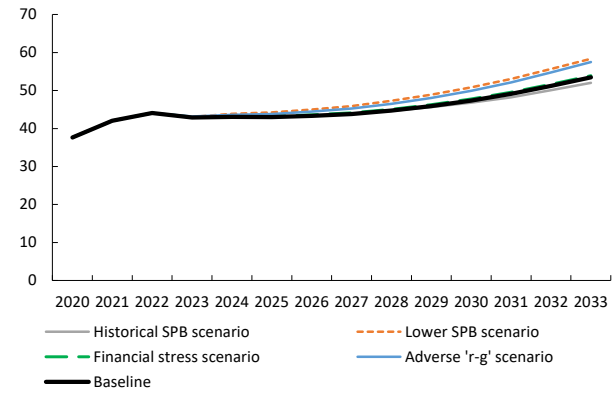
**Finally, several additional risk factors need to be considered in the assessment.** On one hand, risk-increasing factors are related to the recent increase of interest rates. On the other-hand, risk-mitigating factors include the lengthening of debt maturity in recent years, relatively stable financing sources (with a diversified and large investor base), the currency denomination of debt, and to a lesser extent Czechia's negative net international investment position.

([125])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 - Czechia**

| **Table 1. Baseline debt projections** | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gross debt ratio** (% of GDP) | **37.7** | **42.0** | **44.1** | **42.9** | **43.1** | **43.0** | **43.3** | **43.8** | **44.7** | **45.9** | **47.4** | **49.1** | **51.2** | **53.5** |
| Changes in the ratio | 7.6 | 4.4 | 2.1 | -1.2 | 0.2 | -0.1 | 0.3 | 0.5 | 0.9 | 1.2 | 1.5 | 1.8 | 2.1 | 2.2 |
| *of which* | | | | | | | | | | | | | | |
| *Primary deficit* | 5.0 | 4.3 | 2.5 | 2.3 | 1.6 | 1.5 | 1.4 | 1.4 | 1.4 | 1.5 | 1.7 | 1.8 | 1.9 | 2.0 |
| *Snowball effect* | 1.2 | -1.7 | -3.1 | -3.2 | -2.0 | -1.6 | -1.1 | -0.9 | -0.5 | -0.4 | -0.2 | 0.0 | 0.2 | 0.2 |
| *Stock-flow adjustments* | 1.4 | 1.7 | 2.7 | -0.3 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Gross financing needs (% of GDP) | 10.8 | 10.9 | 10.1 | 7.5 | 7.6 | 7.3 | 7.5 | 7.7 | 8.1 | 8.5 | 9.0 | 9.6 | 10.3 | 10.8 |

**Graph 1. Deterministic debt projections**




**Graph 2. Stochastic debt projections 2023-2027**

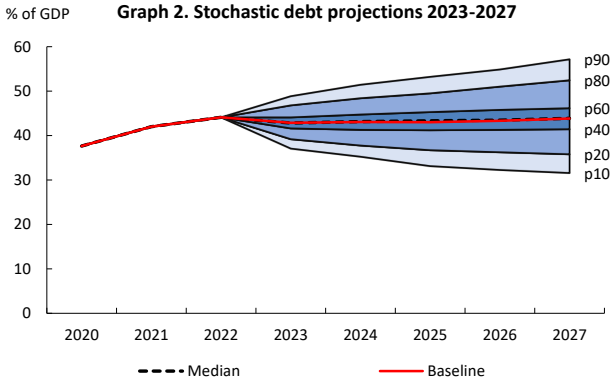



**Table 2. Breakdown of the S1 and S2 sustainability gap indicators**

| | | **S1** | **S2** |
|---|---|---|---|
| **Overall index** (pps. of GDP) | | **4.1** | **5.8** |
| *of which* | | | |
| Initial budgetary position | | 1.2 | 1.4 |
| Debt requirement | | -0.3 | |
| Ageing costs | | 3.3 | 4.4 |
| *of which* | *Pensions* | 1.6 | 1.9 |
| | *Health care* | 0.6 | 0.7 |
| | *Long-term care* | 0.8 | 1.3 |
| | *Others* | 0.3 | 0.4 |

***Source:*** Commission services.

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

| **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** | **LOW** | **MEDIUM** | **MEDIUM** | **MEDIUM** |
| | | Debt level (2033), % GDP | 53.5 | 52.0 | 58.4 | 57.5 | 53.9 | | | | |
| | | Debt peak year | 2033 | 2033 | 2033 | 2033 | 2033 | | | | |
| | | Fiscal consolidation space | 33% | 32% | 36% | 33% | 33% | | | | |
| | | Probability of debt ratio exceeding in 2027 its 2022 level | | | | | | 49% | | | |
| | | Difference between 90th and 10th percentiles (pps. GDP) | | | | | | 25.6 | | | |

(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 consolidtation 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 (for further details on the Commission's multidimensional approach, see the 2022 Debt Sustainability Monitor).

**The Macroeconomic Imbalance Procedure matrix presents the main elements of the in-depth review undertaken for Czechia.** ([126]) Czechia was selected for an in-depth review in the 2023 Alert Mechanism Report. This in-depth review (IDR) 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.

**Czechia is facing vulnerabilities related to deteriorating price competitiveness and house price growth.** As part of a process of convergence to EU averages and a tight labour market, unit labor costs grew faster in Czechia than in the EU over the last decade. The growth in labour costs was however consistent with inflation developments and more pronounced in the non-tradable sectors. Czechia reported gains in export market shares in 2013-2020 and the trade balance remained strongly positive. In the same period, property price growth significantly surpassed both inflation and disposable income growth. In the past two years, fast rising energy prices and a relaxed monetary stance combined with fiscal stimulus provided during the COVID-19 pandemic, drove inflation to 14.8% in 2022, higher than the 9.2% EU average. Due to the energy price shock, the trade balance turned negative to 0.1% of GDP in 2022. While the temporary inflation shock has not been fully translated into wage growth, an eventual persistence in inflation could have negative impacts on the competitiveness of the Czech economy. Favourable economic developments, very low real interest rates and easily available liquidity motivated households to take mortgages for property purchases, pushing prices sharply up in 2021 and the first half of 2022. The increase in prices is also significantly fuelled by a structural lack of supply. The rental market in Czechia is also limited and does not perform well as an alternative to ownership.

**While price pressures seem to be easing, risks remain high, and vulnerabilities require monitoring.** Facing elevated price pressures and related secondary effects, Czechia's price competitiveness is projected to partially recover amid decreasing energy prices. The annual average HICP rate is set to decelerate from 14.8% in 2022 to 11.9% in 2023 and 3.4% in 2024 as commodity prices fall and consumer demand weakens. ULCs are forecast to increase by 7.4% in 2023 but to drop to 4.4% in 2024 as productivity and economic growth recovers. The trade balance is forecast to turn positive again in 2023-2024. As a result of tightened monetary policy and macroprudential measures, house prices growth started moderating in the second half of 2022 and nominal house prices are expected to decline in 2023. ([127]) Nevertheless, risks related to the identified vulnerabilities warrant close monitoring of both price competitiveness and house prices as both the structural lack of house supply and the tight labour market are likely to remain constraining factors going forward.

**Czechia took significant steps to address the identified vulnerabilities, but efforts are still warranted in certain areas.** Faced with rising prices and a risk of de-anchored inflation expectations, the central bank has started early to tighten monetary policy, raising the policy rate from 0.25% to 7% between June 2021 and June 2022, but kept the policy rate unchanged afterwards despite continuing inflation pressures. Macroprudential ratios were tightened in 2022 to contain mortgage growth. On the supply side, the new Building act is expected to speed up the construction process. Announced initiatives on social and affordable housing may further increase housing supply. There is still scope to incentivise rental housing as an alternative to ownership. In order to reduce spillovers of energy prices, the government took measures to cap energy prices. Still, to bring consumer, output, and asset inflation rates down, the monetary and fiscal stance need to remain adequately tight and to react to any persistence in inflation. Additional structural measures aimed at promoting productivity growth, reducing administrative burdens, or resolving labor market tightness are also needed. There is a scope for recalibrating the tax mix making stronger use of property taxes.

**Based on this assessment, the Commission considered in its communication European Semester – 2023 Spring Package (COM(2023) 600 final) that Czechia does not experience macroeconomic imbalances.**

([126]) European Commission (2023), In-Depth Review for Czechia, Commission staff working document (COM(2023) 628 final), in accordance with Article 5 of Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances.

([127])According to the Financial Stability Report – Autumn 2022.

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

| | Gravity of the challenge | Evolution and prospects | Policy response |
|---|---|---|---|
| | **Unsustainable trends, vulnerabilities and associated risks** | | |
| **House prices** | House prices have been persistently growing over the last decade mainly due to an insufficient supply. The nominal house price growth attained 120% since 2010 and significantly surpassed the growth of disposable income. An underdeveloped rental market does not provide a sufficient alternative to house purchases. After the outbreak of the pandemic, annual house prices growth accelerated to 19.7% in 2021 and 16.9%.in 2022 due to a loose monetary and macroprudential stance and supportive government measures but also increase of construction cost. Changes in working patterns affecting housing supply cost could also have contributed. Ahead of expected interest rates hikes in 2022, the growth of mortgage credit and housing prices peaked in the first half of 2022. Overall, house prices appear overvalued by around 30% (as of Q3 2022). With rising interest rates, lending slowed down in the second half of 2022. | On the back of the significant monetary tightening and high inflation putting pressure on real disposable income, house prices declined by 2.2% in 2022 Q4. Further declines are expected in 2023, as inflation is set to remain elevated, accompanied by tight monetary policy. However, in the longer term, a substantial house price correction is unlikely in view of persisting supply constrains. A potential rebound of demand for housing could lead to further increases in prices if it again surpassed the rather inelastic supply. | In response of the high price growth, the Czech National Bank has started to tighten monetary policy, raising the policy rate from 0.25% to 7% between June 2021 and June 2022. However, despite continuous inflation pressures monetary policy remained uchanged since. Macroprudential measures (primarily income and collateral-based limit ratios) were tightened in April 2022 after pandemic-related easing. The measures taken by the Central bank appear to have had a significant effect on demand for housing loans, with new mortgage provision decling by 60% in 2022 though further monitoring of the situation seems warranted. In order to address the constraints in terms of supply, the Czech government is working on initiatives to remove administrative barriers to new housing by attempting to streamline the construction legislation (the Building Act) and accelerating the permitting process.<br><br>Support is being put in place in terms of affordable housing for the vulnerable groups. Further efforts are needed to ensure that the administrative changes will have the desired outcome in terms of new housing supply in the coming years. In addition, the property taxation (currently very low) could be re-calibrated to better serve as a tool in containing demand pressure. |
| **Competitiveness** | Unit labour costs grew faster than the EU average (by 13.6%) over the last decade on the back of a convergence process and a tight labour market. Despite that export market shares gains in 2013-2020. Inflationary pressures intensified in the past two years due to the increase in energy prices and their spill-over effects on other components, but also due to a loose monetary and fiscal stance. The inflationary pressure did not fully translate into ULC growth but could lead to price competitiveness losses if inflation became persistent. | As energy prices are decreasing, the HICP rate is set to decelerate from 15.1% in 2022 to 11.3% in 2023 and 3.4% in 2024. ULC growth is expected at 7.4% in 2023 and to decrease to 4.4% in 2024 as the economic growth and productivity recovers. The trade balance is forecast to turn again positive in 2023-2024. As an additional mitigating factor, Czechia's international stock position does not present a significant risk as, despite the net international investment position being negative, the net position excluding non-defaultable instruments is positive at 28.3% of GDP as of the end of 2022. | To also contain consumer price inflation, the Czech National Bank raised the policy rate from 0.25% to 7% between June 2021 and June 2022, though remaining on hold afterwards. In order anchor inflation expectations, the government took measures to cap energy prices and thus prevent a further spill over into core inflation.<br><br>The monetary and fiscal stance need to remain adequately tight to ensure persistent containment of inflation. Structural measures are also needed in parallel to ensure productivity growth and maintaining competitiveness. These can include reducing administrative burden on businesses and in particular on start-ups, lowering the costs of resolving insolvencies, promoting labour participations of certain categories where participation is low, facilitating migration or strengthening the upskilling and reskilling of the population, notably in green and digital skills. |

***Source:*** European Commission