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2024 Country Report – Hungary

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Recommendation for a COUNCIL RECOMMENDATION

on the economic, social, employment, structural and budgetary policies of Hungary

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European Commission

Hungary

2024 Country Report

ECONOMIC AND EMPLOYMENT SNAPSHOT

The economy is set to recover after the recession in 2023

After a recession in 2023, the Hungarian economy is set to grow again ([1]). Following buoyant growth in 2022, real GDP decreased by 0.9% in 2023. It is projected to increase again by 2.4% in 2024 and by 3.5% in 2025. Despite the fall in GDP, employment held steady and the employment rate remained above the EU average in 2023, which can support domestic demand in the future.

In recent years, expansionary economic policies have contributed to the build-up of vulnerabilities. Until 2022, household consumption was supported by tax cuts, pension increases and price and interest rate caps that aimed to preserve households' purchasing power. However, these measures prevented consumers from adjusting to rising energy prices and borrowing costs, and led to the build-up of both large current account and budget deficits, as well as inflationary pressures. Subsidised lending schemes contributed to house price overvaluation but had little structural effect on productivity growth, while adding to the long-term fiscal burden. In addition, frequent credit market interventions have provided limited support to economic growth while hindering the smooth transmission of monetary policy.

An improving external environment and some policy adjustments helped reduce inflation and the current account deficit. The lifting of price caps led to a spike in inflation from the second half of 2022. This forced consumers to cut back on spending, while tight monetary policy helped reduce inflation rates from an annual average of 17% – the highest in the EU in 2023 – to below 4% by early 2024. Core inflation decreased less and was 6.5% in March 2024. Nominal wage growth has remained high, driven by the tight labour market and significant minimum wage increases. The current account improved from a deficit of 8.3% of GDP in 2022 to a 0.3% surplus in 2023 due to falling energy import prices and lower import demand. The projected pick-up in economic activity is set to keep inflation above the central bank's target of 3%, with a band of ±1%, and lead to modest current account deficits in 2024-2025.

Hungary continues to experience vulnerabilities related to external and government financing needs. An in-depth review was undertaken as part of the macroeconomic imbalance procedure earlier this year ([2]). It found that while the improving external environment mitigated some short-term risks, policy progress has been limited, with Hungary still vulnerable to both external and domestic shocks.

The high budget deficit remains a challenge. Tax revenues have been eroded by labour and corporate tax cuts between 2017-2022, while spending has remained elevated since the pandemic. Hungary has faced some of the highest debt servicing costs in the EU, and interest expenditure rose from 2.2% of GDP in 2019 to 4.7% in 2023 ([3]). The interest rate paid on public debt was the highest in the

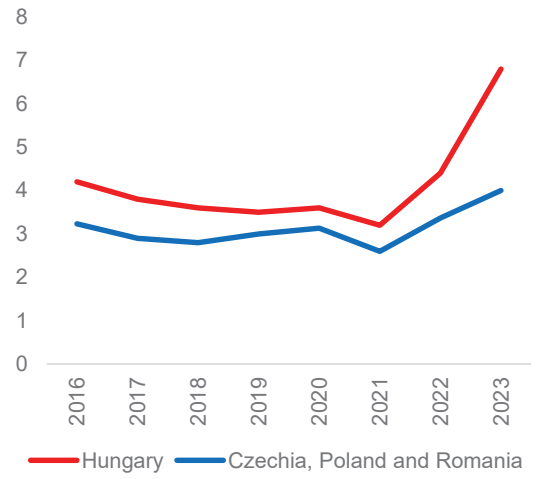
([1]) The cut-off date for the data used to prepare the 27 Country Reports was 15 May 2024.

([2]) SWD(2024) 103 final.

([3]) Interest expenditure is set to amount to 6.7% of public debt in 2024, draining more than 11% of government revenue, up from some 5% in 2021. Inflation-linked retail government bonds, which amounted to some 9% of GDP at the end of 2023, are a major driver of high interest expenditure in 2023 and 2024, as their coupon payments depend on the inflation rate of the preceding year.

EU, and the gap to its peers increased recently (Graph 1.1). The policy response to the fiscal pressures stemming from high energy prices, inflation and the ensuing recession mostly consisted of public investment cuts together with temporary windfall profit and sectoral taxes that were levied mainly on the energy, financial and retail sectors. The 2023 budget deficit, at 6.7% of GDP, exceeded the government's original target by some 3 percentage points. In the absence of further measures, the deficit is projected to remain elevated at 5.4% of GDP in 2024 and 4.5% in 2025, which is expected to stall debt reduction after a 0.5 percentage point decrease in public debt in 2023 to 73.5% of GDP. According to the Commission's debt sustainability analysis based on the 2024 Spring forecast, Hungary faces medium risks in the medium term and long term (see Annex 21).

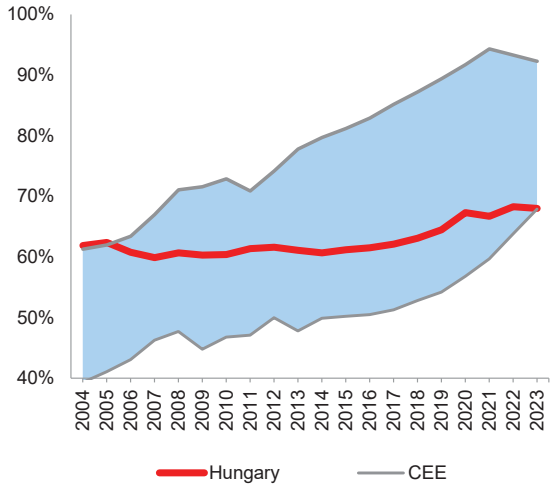
Graph 1.1: **Average interest rate paid on public debt in Hungary and selected Central and Eastern European countries (%)**



(1) Unweighted average of non-euro area countries, i.e. Czechia, Poland and Romania
Source: Ameco database

The benefits from growth are distributed unevenly. Over the past few years, the compensation of employees has grown slower than domestic income, while social transfers as a percentage of GDP have also been low compared to the EU average (see Annex 14). The real value of several social and family benefits has been eroded by high inflation. The tax and benefit system's ability to reduce inequalities is low compared to the EU average (see Annex 19). Consequently, while GDP per capita was 76.4% of the EU average in 2023, actual individual consumption, which measures the material welfare of households, was 68%, the second lowest in the EU. Hungary's relative position has deteriorated in the last decades (see Graph 1.2).

Graph 1.2: **Development of actual individual consumption per capita in Hungary and in Central and Eastern Europe (average of EU-27=100%), 2004-2023**



(1) Central and Eastern Europe = Bulgaria, Estonia, Croatia, Latvia, Lithuania, Poland, Romania, Slovakia
(2) Purchasing power parities
Source: Eurostat

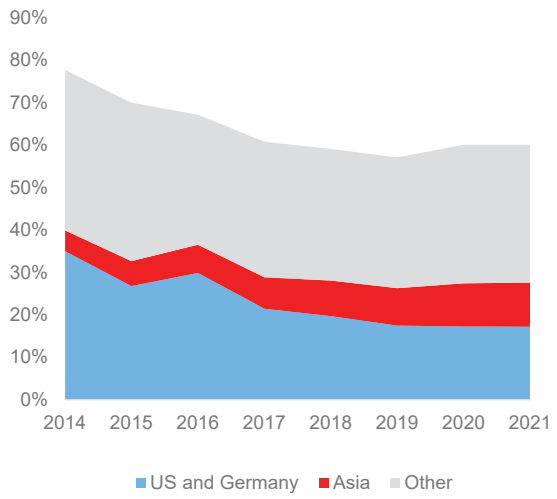
Structural challenges are holding back productivity growth

Structural challenges remain for GDP growth in the longer term. To foster long-term economic growth, Hungary would need to refocus its economic policy on ensuring macroeconomic stability and boosting competitiveness by attracting high value-added investment and providing a more predictable business environment as well as high-skilled workers.

The economy specialises in activities where low production costs are the main source of competitiveness. The Hungarian economy is well integrated into global value chains. However, companies mostly participate

in assembly activities, which are labour- and energy-intensive but only account for a limited share of the final product's value. Policies have aimed to reduce production costs for manufacturing companies by lowering labour and corporate income taxes, offering tax allowances and investment subsidies, adopting lax employment protection legislation, and loosely enforcing environmental regulations. Such policies might attract investment in manufacturing, but this approach has reinforced Hungary's specialisation in cost-sensitive and energy-intensive business activities. While investment in machinery and equipment as a share of GDP was among the highest in the EU in 2023, investment in intellectual property remains well below the EU average. The inward foreign direct investment (FDI) stock has gradually declined over the last decade and its structure has changed. This reflects the deteriorating business environment (see more details in Section 3 on Further priorities ahead), government's efforts to increase domestic ownership in utilities and services, and the promotion of investment in assembly activities.

Graph 1.3: **FDI stock in Hungary by investor, as % of GDP**



(1) Asia = South Korea, China, India and Japan
Source: Magyar Nemzeti Bank

There is still considerable scope to improve the energy efficiency and energy security aspects of Hungary's climate and energy policy. Gas remains a significant part of both the energy and electricity mix (30.6% and 25% respectively in 2022) ([4]). Reliance on foreign electricity supply was 25.4% in 2023 and is set to decline to 20% by 2030. Hungary's draft updated national energy and climate plan from 2023 outlined ambitious plans to further strengthen the internal energy market by improving energy interconnectedness. However, more ambitious targets are needed for energy efficiency, energy security and renewable energy. The plan does not specify the investments that would help achieve the goals. It also lacks concrete measures on how to reduce dependence on Russian oil and gas, which was 75% in 2023, apart from highlighting the need to strengthen domestic natural gas extraction. The reliance on imported fossil fuels, coupled with slow progress in energy efficiency and low renewables penetration, affect Hungary's economic competitiveness.

Skilled workers, digitalisation and an innovation-friendly business environment are needed for long-term growth. The education system could do better in equipping people with skills and promoting social mobility. Some 10 000 pupils from each cohort never enter the labour market or only become low-skilled workers. This is linked to low levels of basic skills, as measured in the OECD's Programme for International Student Assessment (PISA), especially among disadvantaged students. The tertiary attainment rate is among the lowest in the EU. People with a disability, Roma and the low-educated face challenges to participate in training and find work. At the same time, the vacancy rate remains high in sectors requiring skills, such as health and social services, public administration, financial and ICT services. Hungary recently streamlined the process of employing workers from non-EU countries to address the shortage of workers: the number of foreign workers in Hungary surged to around 100 000, around 2.1% of the employed population, in 2023, mostly due to the inflow of non-EU nationals (see Annex 14). While the use of digital technologies by Hungarian firms increased in 2023, the

([4]) https://ec.europa.eu/eurostat/web/interactive-publications/energy-2024#energy-sources

digitalisation of businesses remains a challenge (see Annex 10). The business environment remains a barrier to innovation due to unpredictable regulatory changes, low government effectiveness, a high perception of corruption and weak competition in certain sectors. The administrative burden on businesses, measured by the Global Competitiveness Index, is slightly higher than the EU average. Progress in these areas could help the Hungarian economy transform from a low-cost country into one based on innovation. This could sustain economic growth as domestic wage and price levels catch up with the rest of the EU.

Regional disparities remain significant in Hungary, and the process of internal convergence remains slow. GDP per capita is still around 50% of the EU average in 4 out of the 8 NUTS 2 regions. These regions and rural areas in general experience depopulation and lag behind other regions in terms of labour productivity, poverty reduction, skills and air quality. Internal disparities are driven by limited transport infrastructure and low R&D expenditure in the less developed regions, significant disparities in terms of educational outcomes and a spatial mismatch between labour supply and demand. These factors are reinforced by the lack of integrated programmes to address complex challenges at the level of functional areas, capacity constraints of municipalities in the districts lagging behind and low involvement of local stakeholders.

Hungary performs at or above the average in three-quarters of the European Pillar of Social Rights indicators, but further policy action is needed. Labour market performance continues to be generally favourable. However, the disability employment gap remains substantial, and Roma and low-educated adults also have significantly lower

Box 1: **Hungary's competitiveness in brief**

Hungary's competitiveness is supported by high investment and high employment rates as well as strong integration into EU trade.

However, competitiveness challenges remain:

- **The business environment** is characterised by frequent regulatory changes and discretionary state intervention. This results in low competition in certain sectors, affecting the single market and companies from other EU countries. **Social dialogue** is weak, which does not support an effective and stable regulatory framework. Moreover, the country has the highest number of incorrectly **transposed single market directives**, which hinders the effective functioning of product markets.
- Weaknesses in **economic and fiscal governance** and more broadly **vulnerabilities related to external and government financing needs** tend to result in high financing costs for the economy, creating a competitive disadvantage and increasing the sustainability challenges for public finances.
- **Shortage of skilled workers**, resulting from below-average performance in skills and education, including large gaps in basic skills by socio-economic status, high early school leaving and low tertiary attainment rates, which hinder productivity. **Research and innovation** spending is low and does not translate into actual innovation.
- **The electricity prices for firms** are among the highest in the EU. This weakens their competitiveness, in part because the share of energy from renewable sources is one of the lowest (15.2% compared to the EU average of 23% in 2022).

employment rates. The significant increase in adults' digital skills suggests a positive outlook on adult learning and the digital transition, and this is to be maintained. The low participation of children under 3 in childcare, a high early school leaving rate, together with the recent worsening of poverty indicators, the diminishing impact of social transfers on poverty reduction and the high housing cost overburden rate, point to multiple social issues and the intergenerational transmission of poverty. The limited functioning of social dialogue continues to hinder the broad involvement of social partners in decision-making. While Hungary is actively addressing some of these challenges, further efforts are needed to increase the adequacy of social protection and alleviate poverty for the most disadvantaged, as well as ensure equal access to quality social, education, employment and housing services for all.

Box 2:

UN Sustainable Development Goals (SDGs)

Hungary is moving away from the SDG target on industry, innovation and infrastructure (SDG 9), having fallen behind on Research and innovation policy indicators such as patent applications and R&D expenditure. Among other competitiveness and productivity-related SDGs, the country is converging towards the EU average on some indicators of quality education, while still lagging behind on tertiary education attainment and adult learning (SDG 4). Hungary is outperforming other Member States on most employment indicators related to the goal of decent work and economic growth (SDG 8) but challenges remain in related areas such as gender equality (see Annex 1).

Out of the 17 indicators, 10 SDGs remain below the EU average. Besides those highlighted above, these relate to environmental sustainability (SDGs 2, 7, 9, 12, 13), fairness (SDGs 3, 4, 5, 7) and macroeconomic stability (SDGs 16 and 17).

IMPLEMENTATION OF KEY REFORMS AND INVESTMENTS USING EU INSTRUMENTS

Funding from the Recovery and Resilience Facility (RRF) and cohesion policy funding is key to boost Hungary's competitiveness and promote sustainable growth. In addition to EUR 10.4 billion of RRF funding described in Annex 3, cohesion policy funding for Hungary amounts to EUR 21.7 billion for the 2021-2027 period. Support from these two instruments combined represents around 16.38% of the country's GDP (2023), compared to the EU average of 5.38% of GDP (see Annex 4), provided Hungary fully and effectively implements the remedial measures to protect the financial interests of the EU under the general regime of conditionality, the enabling conditions and the RRF.

Under its recovery and resilience Plan (RRP), Hungary has launched important policy measures that are expected to improve the country's competitiveness ([5]). In particular, the RRP envisages major reforms in the energy sector and reforms to improve the sustainability of public spending. Further RRP measures are ongoing in the fields of education and skills, health, aggressive tax planning, energy efficiency and social cohesion.

The implementation of Hungary's recovery and resilience plan is significantly delayed due to substantial challenges. Hungary has not submitted any payment requests so far. Structural challenges linked to the outstanding implementation of the necessary measures to ensure the protection of the EU's financial interests call for specific actions to ensure that reforms and investments can be completed on time. Investments, in particular, are highly concentrated towards the end of the RRP implementation and merit special attention.

Cohesion policy funding helps tackle Hungary's growth and competitiveness challenges and reduce the country's territorial, economic and social disparities. During the 2014-2020 cohesion policy programming period, support focused on network infrastructure in transport and energy, sustainable and quality employment, education and training, the competitiveness of small and medium-sized businesses, including research and innovation, environmental protection, resource efficiency and the low-carbon economy and social inclusion. For the 2021-2027 programming period, support aims to boost competitiveness, innovation and digital transformation, the green transition, education and skills, labour market measures and territorial and social cohesion, while improving living and working conditions.

Enabling the green and energy transition

Hungary's RRP has a strong green dimension. Following the adoption of the revised RRP in December 2023, including a new REPowerEU chapter, 66.9% of the RRP's allocation is dedicated to climate-related objectives. This is complemented by funding under cohesion policy, which supports Hungary's climate targets, in particular on wastewater treatment, disaster risk reduction, upgrading TEN-T railways network, clean suburban transport, energy efficiency in residential housing, the uptake of renewables in the economy, digitalisation of the electricity grid and energy management of buildings, circular waste management and upskilling.

([5]) The steps taken as part of RRP implementation listed in this section are to be interpreted as preliminary steps by Hungary to fulfil the commitments of the RRP. They do not constitute a final assessment of the satisfactory fulfilment of such measures by the Commission.

Through its RRP and REPowerEU chapter, Hungary has undertaken steps to authorise the connection of 12 GW of electricity from renewables. The plan includes measures to strengthen the grid, which have so far led to 1 GW of grid development for the integration of renewables. They will be complemented by investments and reforms to build a flexible electricity market with a high share of renewables and use the grid in a more flexible way on the supply and demand side (Box 3).

Hungary has started to reduce barriers that were hindering the development of wind power and other renewables. It adopted legislation to reduce the requirement for the installation of wind turbines to keep a minimum distance from residential premises to 700 meters. Rules for the grid connection of small photovoltaic plants were simplified, and feed-in limitations for households' solar panels were lifted in a large part of the country. The framework for the development of renewable hydrogen was also reviewed to incentivise the uptake of green hydrogen in the industrial sector.

Following the introduction of new energy efficiency standards, building renovation schemes backed by EU funds will be required to achieve at least a 30% reduction in energy consumption. Funding under the RRP for energy efficiency measures for households, companies and the public sector amounts to EUR 1.7 billion. There are strong complementarities with the 2021-2027 cohesion policy programmes, which provide additional funding of EUR 1.2 billion for energy efficiency. Measures that target residential homes are also expected to reduce air pollution ([6]). While support from EU funds for energy efficiency measures is significant, there is potential for further energy efficiency improvements in residential buildings, also in light of the fact that the regulated price for households continues to weaken incentives to become energy-efficient and reduce consumption.

([6]) The relatively inefficient energy production sector remains another major source of air pollution.

Hungary is kickstarting the roll-out of financial instruments to improve the access of households and companies to finance in the energy efficiency, electric mobility and geothermal energy sectors. To this end, the Hungarian national development bank (MFB) has been mandated with the implementation of five financial instruments under the RRP for a total of almost EUR 1.5 billion. In addition, the MFB will mobilise at least EUR 550 million in these sectors under the 2021-2027 cohesion policy programming period.

To boost sustainable transport, Hungary is moving towards a single tariff ticketing and passenger information system. As of May 2023, passengers can travel with one ticket across the country on routes operated by different services. Cohesion policy supports the shift to rail transport and green public transport, including urban and suburban transport, to the tune of EUR 3 billion.

Under the RRP, Hungary is developing a national strategy and action plan for green skills. The RRP also includes targeted investments to help train, upskill and reskill the workforce so they can acquire green skills, and increase public awareness on energy, climate mitigation and adaptation, and environmental issues. These complement the resources available for reskilling and employment measures from the Just Transition Fund.

Supporting fiscal sustainability with more efficient and fairer fiscal and tax policies

The RRP includes measures to make fiscal policies more efficient and fairer. Hungary has started preparations to reform the pension system with the aim to promote medium- and long-term fiscal sustainability and fairness. It has also established the institutional framework for conducting annual spending reviews. Two reviews conducted in 2023 (on health and family/housing) and two planned in

Box 3:

Combined action for more impactful EU funds

To boost economic growth and maximise the impact of EU funding, Hungary's RRP includes reforms that support investments under other EU instruments, creating important synergies and complementarities between the various funds. For example, several reforms in Hungary's RRP help build a flexible electricity market with a high share of renewables. These reforms – which include introducing dynamic pricing in the retail electricity market, improving regulatory reserve markets, strengthening the role of energy communities and aggregators, improving the uptake of electricity storage and the range of consumers using smart meters – aim to reduce the burden on the grid. The reforms are flanked by investments both in the RRP and under the cohesion policy to modernise the electricity grid.

2024 (on public investment and education) are expected to cover at least 20% of government expenditure.

Hungary is taking action to tackle aggressive tax planning, improve the transparency of its tax system and make it more user-friendly by digitising tax services. As of 1 January 2024, there are new rules in place aiming to prevent royalty and interest payments from flowing untaxed to zero- or low-tax jurisdictions. Transfer pricing regulations have been bolstered by requiring large companies involved in transactions between associated entities to report specific information. Hungary also put in place an e-platform to fulfil VAT reporting obligations.

Removing regulatory barriers and improving the business environment

The RRP includes several measures to strengthen the anti-corruption framework. This includes the establishment of an Integrity Authority and Anti-Corruption Task Force, and the adoption of a new national anti-corruption strategy, including the possibility of a judicial review of decisions by the prosecution service or the investigating authority to dismiss a crime report or terminate criminal proceedings. Moreover, the plan includes reforms to improve the quality and transparency of decision-making and ensure a more systematic involvement of stakeholders.

Hungary strengthened its judicial independence. Hungary has significantly strengthened the role and powers of the National Judicial Council (led by judges) to limit arbitrary decisions in the administration of courts and reformed the functioning of the Supreme Court to shield it from political influence. It ended the Constitutional Court's role in reviewing final decisions by judges at the request of public authorities and removed obstacles to preliminary references to the Court of Justice of the European Union.

The RRP includes reforms to improve competition in public procurement. To reduce the high share of calls for tender that result in a single bid to 15% by 2026, Hungary reported that it set up a comprehensive performance measurement framework to continuously monitor the level of single bids and assess the underlying reasons. It has also reported on an action plan to make public procurement procedures more transparent and help micro-, small- and medium-sized companies participate in tenders.

Cohesion policy provides support to businesses. Investments amounting to EUR 4.4 billion have been allocated for the technological development of small and medium-sized companies, integration of digital technologies (including cloud, AI and big data) and advisory services. Further funds amounting to EUR 1.5 billion have been allocated to research infrastructure and equipment, technology and knowledge-transfer and research projects of businesses, including equity instruments.

Improving access to quality education and healthcare, and social inclusion

Through the RRP and cohesion policy, Hungary started implementing a reform to make the teaching profession more attractive. At the end of 2023 and at the beginning of 2024, the Hungarian government adopted decrees to start a long-term increase in schoolteachers' salaries. The aim is to reach at least 80% of the average graduate salary by 2025 and maintain this minimum 80% salary level at least until 2030. Around EUR 1.8 billion of cohesion policy funds have been allocated to this end.

Hungary is implementing several measures to ensure equal access to digital education tools and improve the digital skills of students and teachers. In the RRP, a first batch of digital notebooks were distributed to pupils and teachers for education purposes and to schools to help them set up IT classrooms. A strategy was adopted to prioritise disadvantaged students when allocating digital notebooks. Projects under the cohesion policy plan to interlink educational databases, improve online learning and develop the basic digital skills of at least 300 000 adults by 2029.

Hungary is taking steps to modernise its vocational education system. 16 vocational education and training centres will benefit from energy efficiency renovations, modern workshops and classrooms, and new digital equipment, tools and digital learning materials. Investments supported by the cohesion policy plan to modernise professional development programmes for trainers, provide mentoring and scholarships to disadvantaged pupils, and establish sectoral knowledge centres providing quality, dual training on a sectoral basis.

Hungary is increasing the availability of early childhood education and care places for children under 3 years of age. The construction and extension of crèche places is underway under the RRP, with 500 new places to be completed by the end of 2024 and a further 4 000 by the end of 2025, supplemented by an additional 1 000 crèche places financed by cohesion funds.

To improve the quality of health services, Hungary is taking steps to set out more transparent ways for patient-carer relationships and ensure better management. New legislation introduced a new employment contract with higher salaries for doctors as well as sanctions for gratuity payments in the healthcare sector. The government decree on the establishment of the National Directorate-General for Hospitals aims to improve the efficiency of the healthcare management system by creating a leaner organisational structure. Cohesion policy will support the further digitalisation of healthcare and the infrastructure of local outpatient care and social services.

The RRP and cohesion policy funds will help address poverty in the most deprived areas. In connection with the 'Catching-up municipalities' initiative, comprehensive social, healthcare, education, employment and housing services based on local needs are to be implemented.

FURTHER PRIORITIES AHEAD

Hungary faces additional challenges related to economic policy governance, fiscal policy, debt sustainability, the housing market, the business environment, skills level and the integration of disadvantaged groups into the labour market, social assistance, social dialogue and reliance on Russian fossil fuels. Tackling these challenges will help increase Hungary's long-term competitiveness and ensure its resilience. It will also help make further progress in achieving the Sustainable Development Goals (SDGs).

It is important that the challenges identified are addressed both at national and regional level to reduce regional disparities and improve the administrative and absorption capacity in a balanced way across the country.

Weak economic policy governance leads to imbalances and high deficits

Hungary would benefit from a more coherent economic policy strategy that delivers fiscal consolidation and macro-financial stability, and lays the foundations for sustainable economic growth ([7]). In recent years, economic policies have been geared towards stimulating short-term economic growth with the risk of overheating the economy. This can worsen external sustainability and keep inflation and interest rates relatively high. Large minimum wage hikes have helped support consumption but would require future productivity gains to avoid fuelling inflation. The cost of household energy subsidies has been shifted to companies in the form of higher taxes and higher energy prices, weakening their price and cost competitiveness.

Credit market interventions have become an important policy instrument, with questionable benefits and rising budgetary costs. Since the end of 2021, the government has introduced several interest rate caps to limit the rise in borrowing costs for the private sector and the government. In response to rising market interest rates, subsidised lending schemes have also been expanded. However, such schemes have not increased the productivity of loan recipients ([8]), while creating a long-term fiscal burden. Borrowing by a public development bank to finance these schemes has added to public debt by 1.7% of GDP in 2023. In 2023, the government spent 0.6% of GDP on interest subsidies, while the subsidies provided by the central bank (MNB) on its own lending schemes added to its losses. Due to recent changes in the central bank law, the losses made by the MNB no longer need to be reimbursed by the national budget immediately, only over the long term.

The national fiscal framework has not led to a more prudent fiscal stance. Weaknesses in Hungary's fiscal framework and budget planning have increased the expansionary bias of fiscal policy and added to current macroeconomic challenges ([9]). The early preparation of the annual budget between 2016 and 2023 reduced the reliability of macroeconomic and budgetary forecasts. The large discretion of the government in budget implementation allows

([7]) See SWD(2024) 103 final.

([8]) Telegdy, Á. and G. Tóth (2024), A támogatott hitelezés hatásvizsgálata Magyarországon, Közgazdasági Szemle 71:113-130 (in Hungarian).

([9]) See thematic chapter in the 2023 in-depth review; SWD(2023) 639 final. Fiscal policy is often called expansionary or 'loose' if it increases demand in the economy via higher spending and tax cuts.

for looser policy in good times. It has also reduced budget transparency and overall policy predictability. Frequent and significant revisions of fiscal targets have undermined the role of the budget as an anchor for market participants and called into question the credibility of the medium-term fiscal plans. Moreover, Hungary's debt rule remains procyclical, as it allows for more spending and tax reductions when there is higher growth and inflation.

A realistic and stable medium-term fiscal framework would help address fiscal challenges. Hungary would benefit from embedding sound medium-term fiscal planning based on multiannual spending ceilings, as set out in the revised EU fiscal rules, in the domestic budgetary framework. Giving the Hungarian Fiscal Council a more prominent role and increased operational capacities could help improve fiscal discipline and transparency, especially in the current context of heightened consolidation needs. The Fiscal Council could contribute to the national policy debate, for instance by assessing the government's budgetary and multiannual macroeconomic forecasts or performing regular policy costing and long-term sustainability analyses.

The Commission's analysis points to elevated debt sustainability risks driven by persistently high deficits (see Annex 21). According to the 2024 Ageing Report projections, the long-term sustainability of the pension system has deteriorated, with total public pension expenditure expected to account for 12% of GDP in 2070, 0.6 percentage points (pps) higher than in previous projections.

Despite recent reforms, housing support measures may continue to drive up house prices. House price increases cooled and house price overvaluation eased in 2023 due to higher interest rates and a fall in household income and confidence. However, data for early 2024 point to a renewed increase in mortgage lending. Recent reforms in housing subsidies have reduced the number of eligible households, but the amount of support per beneficiary has increased substantially. These subsidies could continue to drive up house prices if supply is not responsive to increased demand. At the same time, meaningful measures to increase the housing supply have been left wanting. The underdeveloped rental market also reduces housing affordability and hinders social mobility. Housing support schemes have also become more geared towards higher-income households with the increasing reliance on subsidised loans.

The quality of the business environment is key for companies

The business environment continued to deteriorate. Hungary ranks among the bottom third of EU countries in the IMD Competitiveness Ranking ([10]). It performed particularly badly in the 'Business efficiency' category, which measures the extent to which the national environment encourages businesses to perform in an innovative manner. Service trade restrictions are high, as measured by the OECD in 2024. The Global Competitiveness Index shows that only a few firms dominate the market. Regulatory quality has declined over the last decade, as measured by the Worldwide Governance Indicator. According to a survey by the German Chamber of Commerce, the attractiveness of Hungary as an investment destination has decreased ([11]). In 2023, there was no Hungarian firm among the 50 fastest growing tech companies in Central and Eastern Europe, while in 2009 there were more Hungarian firms on the list than firms from other countries ([12]). The US terminated its tax treaty with Hungary as of January 2024. The absence of such a tax treaty increases the administrative costs and taxes of Hungarian firms and natural persons on their incomes

([10]) World Competitiveness Ranking – IMD business school for management and leadership courses

([11]) In 2023, 79% of companies stated they would reinvest in Hungary, down from 88% in 2022.

([12]) nyitrai-tamas-a-versenykepessegi-reformok-elmaradasaval-a-hazai-technologiai-cegek-teljesitmenye-is-gyengulo-tendenciat-mutat.pdf (mnb.hu)

from the US. This change may affect the presence of foreign direct investment, in particular by special purpose entities ([13]). In 2024, the number of taxes increased further from 59 to 61, also because most of the temporary sectoral taxes set up since the pandemic have not been phased out by 2024 as expected.

State interventions have an impact on competition and the functioning of the single market in Hungary. In recent years, the sector-specific taxes levied on certain sectors and firms have increased. These tend to be in sectors where foreign ownership is high (e.g. retail, cement, construction and ceramic materials), creating a disproportionate burden on the firms concerned ([14]) and affecting how the single market works. Firms complain about unequal treatment and arbitrariness when authorities conduct administrative inspections ([15]) or decide on permits ([16]). The government increasingly declares certain investment projects to be of 'strategic importance for the national economy' to speed up and lighten the administrative process. Private investors can also ask for exemptions, but the criteria used by the government are not transparent and cannot be challenged in court. In 2023, for instance, the government obtained a right of first refusal on solar power plants in Hungary. This can hinder the green transition and decrease the value of these businesses, as it is less likely that potential buyers will invest money in a transaction if the state has a buy option. At the same time, the government continues to use its power to exempt transactions from merger control. The criteria for these exemptions are not transparent, and no formal procedure exists to contest them. There have been more than 40 such interventions since 2014. The government also continues to make extensive use of its mandate to issue emergency decrees under the 'state of danger' regime. Many of these decrees do not seem to relate to the invoked emergency situation, which weakens legal certainty and interferes with normal business activity.

The changing market and ownership structure create less competition and fewer incentives to invest and innovate. The general perception of businesses is that various state interventions are used to force foreign owners to sell their firms, facilitating the creation of public or government-connected national champions. These interventions may also restrict companies with ownership from other EU countries from doing business under equal opportunities. The transactions are often concluded through private equity funds and their beneficial owners do not seem to be easily identifiable with certainty. This adds to the unpredictability of the business environment and creates a challenge for the market supervisory authorities. Several services ([17]) are entrusted to state-owned or private firms specifically created for these purposes, which operate without competition.

([13]) The foreign direct investment by special purpose entities (SPEs) amounted to around 140% of the GDP in 2022. These SPEs are formally registered in Hungary but have no or very limited physical presence, employment and production activity in the country.

([14]) In the cement industry, the 90% mining fee on profit, the recently introduced 40% tax on freely distributed emission quotas and 15% tax on quota transfers, even within company, has made domestic production uneconomical, thereby supporting imports. The unexpected and retrospective nature of this tax do not provide an incentive to more efficient or environmentally friendly operations. The tax rate in the highest bracket (turnover above HUF 100 billion) of the progressive retail tax on net revenue was increased further from 4.1% to 4.5% in 2024. The tax rate remained unchanged for lower brackets (0% up to HUF 0.5 billion, 0.15% up to HUF 30 billion, 1% up to HUF 100 billion).

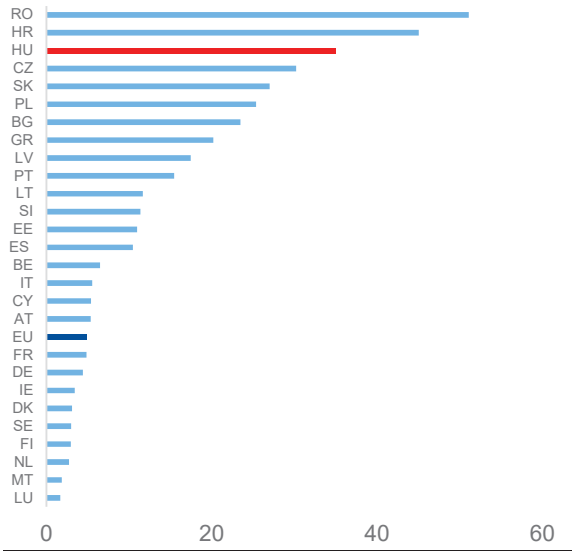
([15]) Large foreign retail firms received disproportionately more fines and inspections than Hungarian-owned retail firms, for example in the context of mandatory discounts that concern only larger retail chains. By contrast, the environmental fines and pollution monitoring standards are low. Firms can contract authorities to carry out targeted inspections on competitor firms.

([16]) The construction of retail establishments above 400 m^2 is prohibited in Hungary, but the authorities can grant exemptions. The criteria for these exemptions are not transparent and there is no scope for effective judicial review.

([17]) Textbook publishing, fertility clinics, waste management, mobile payments, the cash-in-transit market, tobacco wholesale and retail and gambling.

The deteriorating enforcement of single market rules acts as a drag on investment. According to the Single Market Scoreboard, there are significant delays in transposing directives related to the single market and complying with rulings of the European Court of Justice, and a significant proportion of directives are transposed incorrectly. The recent law on 'protecting national sovereignty' also raises legal questions ([18]). Better compliance with single market rules would support market integration, generate more investment and ultimately lead to greater productivity, competitiveness and welfare gains.

Graph 3.1: **Cost of one patent in EUR million, in purchasing power standards, 2022**



Source: Eurostat

Low spending on R&D hampers competitiveness. Overall R&D spending decreased to 1.4% of GDP in 2022 (EU average 2.2%), from more than 1.6% in 2021. Hungary is a 'moderate innovator', and the gap between its performance and the EU average is widening. Businesses and academia are more likely to invest in research if the business environment is stable. While the R&D activity of businesses is supported by the state through a generous tax allowance, a large part of it is performed by a few large companies. Moreover, R&D spending is not translated into actual innovation. The number of patent applications compared to the money spent on them is one of the lowest in the EU (Graph 3.1). This points to the low effectiveness of this tax allowance and R&D spending (see Annex 11).

Shortage of skilled workers acts as an obstacle to growth

The shortage of skilled workers hinders the competitiveness potential of the economy. Basic skills as per the latest PISA test results are around the EU average, but the performance gap by socio-economic status is larger than in other EU countries. More than half of 15-year-old Hungarians from the bottom quarter of the socio-economic distribution underachieve in mathematics, a share that increased by 6.7 pps between 2018 and 2022. The early school leaving rate is above the EU average, and it is significantly higher in rural areas and among disadvantaged groups, especially among Roma and persons with a disability. The share of tertiary graduates is also one of the lowest in the EU, which poses challenges in meeting the growing demand for a highly skilled workforce. Due to the selectiveness of the education system, disadvantaged students have little chance to go to university. Concerns related to academic freedom, obstacles to international scientific cooperations and low salaries in universities decrease the attractiveness of higher education. Improving skills and education levels would help shift the Hungarian economy to a high value-added growth model.

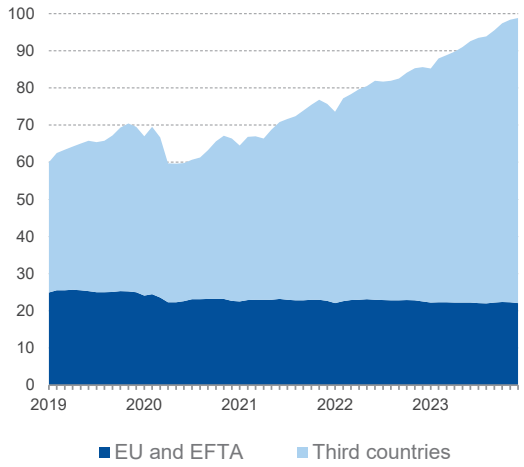
Disadvantaged groups have difficulties entering the labour market. Between 2014 and 2022, significant amounts were allocated to implementing active labour market measures from EU cohesion funds. While the employment rate of the low-skilled and Roma increased significantly over this period, it remains much lower than the average (60% and 46% respectively in 2022). The disability employment gap is well above the EU average. Similarly, while the overall rate of young

([18]) February infringement package: key decisions (europa.eu)

people neither in employment nor in education or training (10.8%) remains below the EU average, it is significantly higher among persons with disabilities, Roma and women in rural areas. There is a substantial territorial difference in the employment rate (see Annex 14). Targeted measures to integrate these groups could improve their socio-economic conditions and ease labour and skills shortages. For a more productive and more mobile workforce, effective and widely available adult education would be key. Extending the duration of the unemployment benefit from its current short period of 3 months could also provide more opportunities for people to find better matching jobs or find time for upskilling- and reskilling. This would improve productivity and competitiveness.

Foreign workers help ease labour shortages. There has been a significant increase in the number of foreign workers in recent years, but this may not match fully the needs. The legislation on the employment of foreign workers sets out limits on their number and the sectors in which they can be hired.

Graph 3.2: **Number of foreign workers in Hungary (thousands)**



Source: KSH

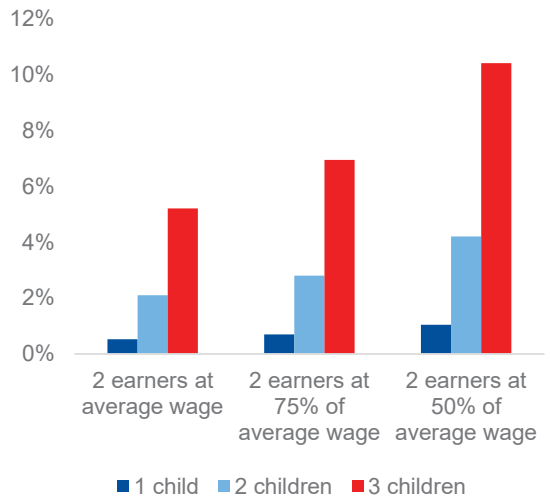
Limited social dialogue puts employees in a disadvantaged position in wage bargaining, especially in the public sector. In times of creeping labour shortages, even during the recession in 2023, the unemployment rate remained below the EU average (4.1% vs 5.9% in 2023). While real wages have fallen due to high inflation, effective labour representation could have led to a less significant loss for wage earners. Despite some improvement, social dialogue remains weak and fragmented in the absence of a legal framework for a tripartite forum made up of the government, trade unions and employers' associations. The collective bargaining coverage as measured by the OECD is low. Measures such as the change in the membership fees payable to trade unions for public sector workers, limiting the right of teachers to strike or the abolishment of collective bargaining in the health sector have put employees in a weak position, including in wage negotiations.

The positive trend of decreasing poverty has stalled. In the past decade, poverty indicators have improved markedly in line with robust economic growth. However, the relative situation of certain groups such as low-income households, children, Roma and people living in remote settlements has worsened. In 2023, national poverty indicators increased again amid the economic recession. The share of people at risk of poverty and social exclusion was especially high among disadvantaged groups such as the low-educated (45.3%) and Roma (61.7%; against 18.6% of non-Roma in 2023). It increased significantly among children to 24.4% in 2023, driven by a strong increase in their severe material and social deprivation rate.

Some social benefits fail to adequately support their target groups. The poverty-reducing impact of social transfers is comparable to other EU Member States. However, some social benefits, such as minimum income ('fht'), family benefit ('családi pótlék') and family tax benefit ('családi adókedvezmény'), have remained nominally unchanged despite the rapid nominal wage growth in recent years. The effective tax reduction impact of the family tax benefit has decreased, in particular for low-income families with more children (see Graph 3.3). In a high-inflation environment, this has resulted in a rising proportion of people at risk of poverty in families compared to those living in single households. The family tax benefit helps well-earning families with several children more than it does for example

households with one child and with a lower income ([19]). The tax system has a low ability to correct income inequalities. The personal income tax is flat, the total tax burden on low earners is relatively high ([20]), and the high reliance on VAT disproportionately burdens low-income groups. The scarcity of public formal care services and assistance implies that families play a role in financing and providing long-term care.

Graph 3.3: **Increase in effective tax burden of employees due to the non-indexation of family tax benefit, 2019-2023 (percentage point)**



(1) Personal income tax and social security contribution
Source: KSH

These findings are consistent with the second-stage analysis in line with the features of the Social Convergence Framework. The analysis points to challenges mainly related to vulnerable groups' education, skills and labour market participation as well as to the adequacy of social protection but does not point to major social convergence challenges for Hungary overall, in light of the positive developments recorded, especially in the areas of employment and skills ([21]).

The green transition remains a significant challenge

The appropriate supply of clean, affordable and secure energy is crucial for the competitiveness of the Hungarian economy. Hungary has added a substantial REPowerEU chapter to its recovery and resilience plan, but significant challenges remain. It continues to rely heavily on Russia for fossil fuels and on nuclear energy, and its efforts to shift away from Russian dependence are slow. The share of Russian crude oil and gas in imports amounted to 64% and 75% in 2021 and 2023 respectively. This is particularly concerning as two thirds of Hungary's energy consumption is covered by oil and gas, and Hungary has one of the highest figures in the EU for fossil fuel subsidies as a share of GDP on account of subsidised energy prices for households. The electricity and gas price for non-household consumers is one of the highest in the EU, hindering the competitiveness of Hungarian firms. The four-year postponement to 2029 of the phase-out of the Mátra lignite-fuelled power plant, which accounts for 50% of the power sector's greenhouse gas emissions, slows the green transition. The deployment of renewable energy and its speedy connection to the grid, particularly wind, will be key as decarbonisation measures and an expansion of electricity-based manufacturing (in particular batteries) are expected to drive up the demand for electricity.

Hungary also continues to face a number of challenges related to the sustainable use of water. There are significant environmental and climate risks, including erosion, flood and drought. Measures that expand irrigation without taking into

([19]) Bornukova, K., Hernandez Martin, A. and Picos, F., Investing in Children: The Impact of EU Tax and Benefit Systems on Child Poverty and Inequality, European Commission, 2024, JRC137125.

([20]) According to the Commission's Tax and Benefits database, the tax wedge – at 50% of the average wage (single earners) – is one of the highest in the EU.

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

Box 4

The mid-term review of cohesion policy funds for Hungary

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

Hungary has made progress in the implementation of cohesion policy programmes and the European Pillar of Social Rights, but challenges remain as outlined in this report, including Annexes 14 and 17. In particular, significant social and regional disparities persist between the least and most developed districts and between urban and non-urban areas. Against this background, it remains important to continue implementing planned priorities, with particular attention to: (i) the digital and green transition, including the development of basic digital skills, the digital transformation of businesses, take-up of smart city solutions, net-zero technologies and water management; (ii) integrated territorial development in functional areas and the least developed districts, and strengthening the administrative capacity at national and sub-national levels; (iii) social inclusion and poverty reduction, focusing on children and the most deprived districts; (iv) comprehensive strengthening of basic skills, and improving access to quality mainstream education and lifelong learning, complemented by structural reforms of the education system; (v) targeted measures addressing labour market challenges for disadvantaged groups such as Roma and building the capacity of social partners; (vi) the implementation of Territorial Just Transition Plans. In addition, resolving pending issues on enabling conditions and the conditionality procedure is necessary for Hungary to make full use of cohesion policy funds.

The following needs merit specific consideration in preparation for the mid-term review: addressing energy poverty and intergenerational poverty through integrated interventions, with a focus on the least developed districts and municipalities and their schools, and strengthened governance and differentiation of the smart specialisation strategy. Hungary could also benefit from the opportunities under the Strategic Technologies for Europe Platform ([22]) initiative to boost investments in deep and digital technologies (e.g. Internet of Things, big data, artificial intelligence), clean technologies (e.g. renewable energy, geothermal energy) and biotechnologies (pharmaceuticals, medical products), while also investing in skills and qualifications required to meet the demand for labour in these sectors.

consideration sustainability aspects harm water quantity, quality, and biodiversity. The increased use of water for industry (for example, growing battery production) is expected to be a further stressor for water quality and create challenges in terms of availability. Distortive sectoral taxes on water pipelines and the low price of drinking water have prevented water utility companies from investing in infrastructure maintenance. The State Audit Office estimates that about 25% of all drinking water was lost to leakage in 2021. Both the legal and administrative environment make the implementation of a comprehensive water strategy difficult. The responsibilities related to water management are scattered across various ministries and authorities (see Annexes 6 and 9).

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

KEY FINDINGS

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

- **Strengthening the green transition,** building a flexible electricity sector with a high share of renewable energy, improving energy efficiency in residential homes, public buildings and companies, electrifying transport, encouraging the production of renewables, incentivising the decarbonisation of industry, rolling out financial instruments for energy, improving waste management and supporting the acquisition of green skills;

- **Boosting investment in digitalisation and green and digital skills** by increasing the use of digital equipment in education, digital skills training, the digitalisation of public administration, healthcare, transport and energy sectors, and through support for research and innovation;

- **Removing regulatory barriers and improving the business environment** by increasing competition and transparency in public procurement, strengthening judicial independence, reinforcing the anti-corruption framework, and ensuring better quality of the decision-making process;

- **Improving fiscal sustainability and the tax system** by reforming the pension system, conducting regular spending reviews to identify options for savings and efficiency gains, and simplifying the tax system, while strengthening it against the risk of aggressive tax planning;

- **Supporting access to quality education and healthcare, the labour market and social services** by making the teaching profession more attractive and promoting greater participation of disadvantaged groups in quality education, modernising hospital and primary care, providing tailored support for those living in the most disadvantaged settlements, and increasing the number of crèche places.

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

Beyond the reforms and investments in the RRP and cohesion programmes, Hungary would benefit from:

- **Pursuing effective policy coordination and improving economic policy to ensure fiscal and external sustainability,** including by strengthening the medium-term budgetary framework and annual budgeting, avoiding the expansionary bias of fiscal policy and distortive interventions on the credit and product markets, and targeting support measures in the housing sector towards low-income households;

- **Improving the quality of the business environment** by ensuring a predictable regulatory framework, a level playing field for all companies, the consistent application of single market rules and a higher level of competition in certain sectors, including by avoiding arbitrary administrative interventions and the use of distortive sectoral taxes and legislation, applying competition scrutiny systematically to business transactions as

well as reducing the use of emergency measures to what is strictly necessary;

- **Accelerating the green transition further** by decreasing dependence on Russian fossil fuels, investing in sustainable water management and by taking concrete steps to phase out fossil fuel subsidies.

- **Improving skills levels, labour market participation and social mobility**, with a focus on disadvantaged groups, including Roma and people with a disability, by raising education performance, decreasing the rate of early leavers and upskilling the workforce;

- **To support upward social convergence, providing adequate unemployment benefits and effective social assistance** as well as a fairer tax system and equal access to essential services, including decent housing for all;

- **Ensuring effective social dialogue** by strengthening its framework and improving the involvement of social partners in decision-making**.**

ANNEXES

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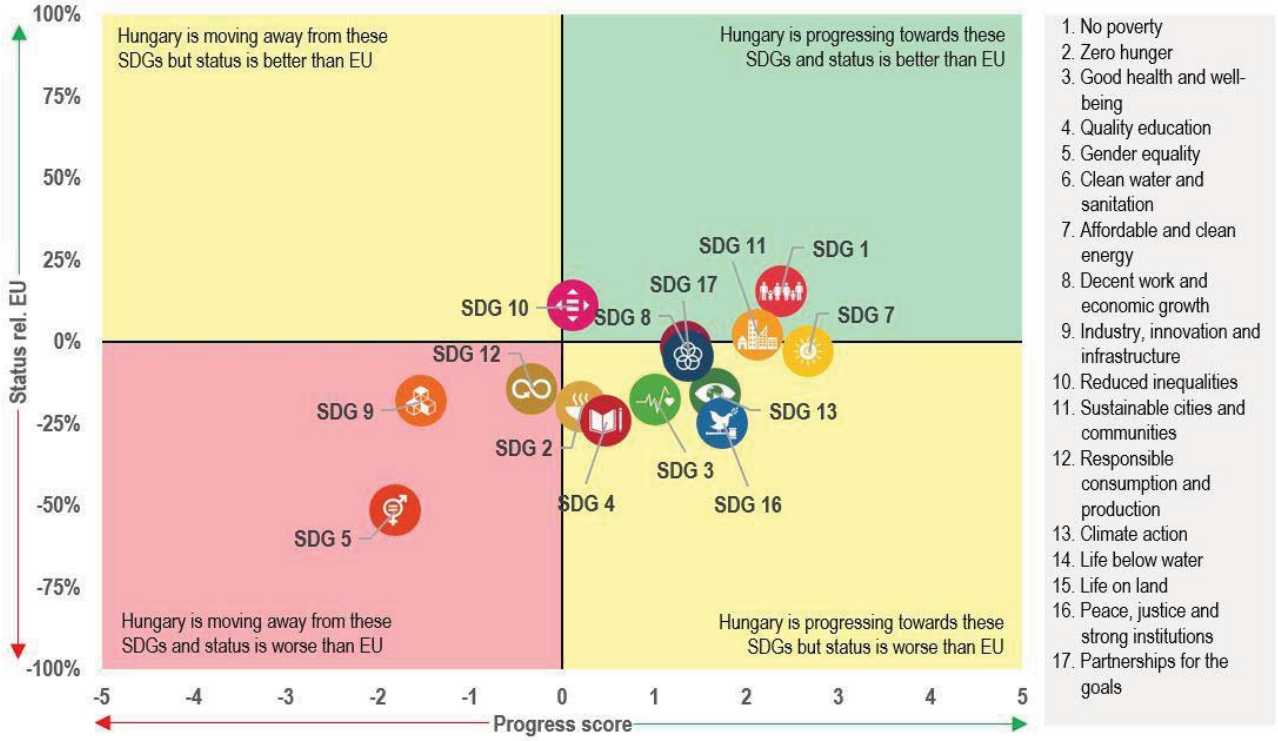
ANNEX 1: SUSTAINABLE DEVELOPMENT GOALS

This Annex assesses Hungary'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 Hungary performs well (SDG 11) or is improving (SDGs 2, 7 and 13) on some SDGs related to *environmental sustainability*, it is moving away from others and needs to catch up with the EU average (SDGs 9 and 12). On SDG 12 (Responsible consumption and production), Hungary is moving away from the EU average. There is room for improvement on the circular economy, where the circular material use rate is low and stagnating (HU: 7.9%, EU: 11.5%; see also Annex 9). Other contributing factors are the small environmental goods and services sector, passenger car emissions (decreasing more slowly than the EU average) and low energy productivity that is rising more slowly than the EU average. On a positive note, Hungary's net greenhouse gas emissions (SDG 13; 5.6 tonnes per capita) continue to be below the EU average (7.3 tonnes per capita). At the same time, Hungary almost halved its contribution to the international commitment to climate-related expenditure between 2017 and 2022, while there was a moderate increase in the EU average. The recovery and resilience plan (RRP) includes measures to facilitate the development of renewable energy and improve the sustainability of transport, water management and the circular economy.

On *fairness*, Hungary performs well on

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



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

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

SDGs 1and 10 (poverty and reduced inequalities). However, it is moving away from the targets for SDG 5 (Gender equality) and needs to catch up with the EU average on several SDGs (SDGs 3, 4, 5, 7 and 8). Hungary outperformed the EU average on multidimensional poverty indicators (SDG 1): it recorded significant progress on indicators linked to people at risk of poverty or social exclusion (which fell from 25.9% of the population in 2017 to 18.4% in 2022) and the severe material and social deprivation rate (which fell from 16.1% of the population in 2017 to 9.1% in 2022). On SDG 3 (Good health and well-being), Hungary needs to catch up, primarily by reducing the obesity rate and avoidable mortality. Hungary is making progress on quality education (SDG 4) but still needs to catch up with the EU average on tertiary education attainment and adult learning. While the unadjusted gender pay gap (SDG 5) decreased, on average, to 12.7% of men's average gross hourly earnings in the EU as a whole, it widened by 1.6 percentage points to 17.5% in Hungary in the 5 years preceding 2022. Moreover, Hungary continues to lag far behind the EU average on indicators related to women in leadership positions (senior management positions and seats in the national parliament). The RRP supports social development in disadvantaged settlements and aims to improve higher and vocational education and modernise the health sector.

Hungary is improving on SDGs 4 (Quality education) and 8 (Decent work and economic growth) in relation to *competitiveness and productivity*. By contrast, it is moving away from the targets for the SDG on industry, innovation and infrastructure (SDG 9). The country is achieving mixed results on industry, innovation and infrastructure (SDG 9), performing well on sustainable infrastructure but being outperformed on R&I indicators, in particular on patent applications to the European Patent Office (11 per million inhabitants in 2023; EU average: 153) and expenditure on R&D (1.39% of GDP in 2022; EU average: 2.24%). Its investment share of GDP (SDG 8; 27.9% in 2022) continues to be above the EU average (22.7%). With the exception of the gender gap, Hungary outperforms the EU average on all employment indicators (SDG 8) but on decent work indicators, it could do better on fatal accidents at work (2.01 out of every 100 000 workers in 2021). The RRP includes measures supporting the development of research and development cooperation and boosting digitalisation in education, public administration, and the health, transport and energy sectors.

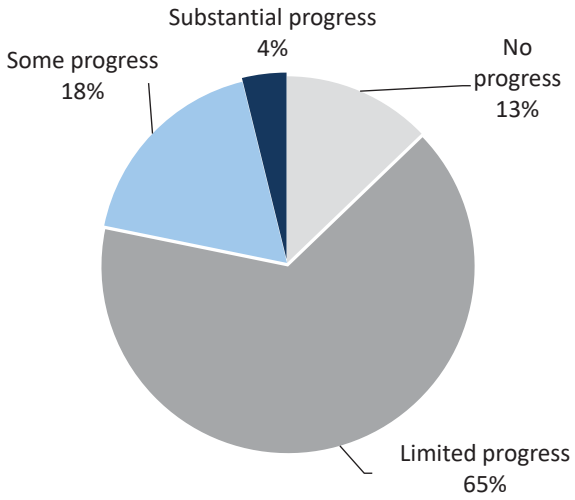
Hungary continues to improve but still needs to catch up with the EU average on all SDGs related to *macroeconomic stability* (SDGs 8, 16, 17). To catch up with the rest of the EU on SDG 16 (Peace, justice and strong institutions), Hungary has room for considerable improvement on general government total expenditure on law courts, as well as on the worsening perceived independence of the justice system and Corruption Perceptions Index. On SDG 17 (Partnerships for the goals), Hungary continues to be below the EU average for global partnership indicators. The RRP includes reforms to improve public finances, measures in areas related to the rule of law and the anti-corruption framework, and reforms to strengthen judicial independence.

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

ANNEX 2: PROGRESS IN THE IMPLEMENTATION OF COUNTRY-SPECIFIC RECOMMENDATIONS

The Commission has assessed the 2019-2023 country-specific recommendations (CSRs) ([23]) addressed to Hungary as part of the European Semester. These recommendations concern a wide range of policy areas that are related to 14 of the 17 Sustainable Development Goals (SDGs) (see Annexes 1 and 3). The assessment considers the policy action taken by Hungary to date ([24]) and the commitments in its recovery and resilience plan (RRP) ([25]). At this stage of RRP implementation, 22% of the CSRs focusing on structural issues from 2019-2023 have recorded at least 'some progress', while 78% recorded 'limited progress' or 'no progress' (see Graph A2.1). As the RRP is implemented further, considerable progress in addressing structural CSRs is expected in the coming years.

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



Source: European Commission.

([23]) 2023 CSRs: EUR-Lex - 32023H0901(17) - EN - EUR-Lex (europa.eu)

2022 CSRs: EUR-Lex - 32022H0901(17) - EN - EUR-Lex (europa.eu)

2021 CSRs: EUR-Lex - 32021H0729(17) - EN - EUR-Lex (europa.eu)

2020 CSRs: EUR-Lex - 32020H0826(17) - EN - EUR-Lex (europa.eu)
2019 CSRs: EUR-Lex - 32019H0905(17) - EN - EUR-Lex (europa.eu)

([24]) Including policy action reported in Recovery and Resilience Facility (RRF) reporting (published twice a year, reporting on progress in implementing milestones and targets on the basis of the payment requests assessment).

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

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

Hungary	Assessment in May 2024*	RRP coverage of CSRs until 2026**	Relevant SDGs
2019 CSR 1			
Ensure compliance with the Council Recommendation of 14 June 2019 with a view to correcting the significant deviation from the adjustment path towards the medium-term budgetary objective.	Not relevant anymore	Not applicable	SDG 8, 16
2019 CSR 2	**Limited progress**		
Continue the labour market integration of the most vulnerable groups, in particular through upskilling, and	Limited progress	Relevant RRP measures planned as of 2023, 2024, and 2026.	SDG 4, 8, 10
improve the adequacy of social assistance and unemployment benefits.	No progress		SDG 1, 2, 10
Improve education outcomes and increase the participation of disadvantaged groups, in particular Roma in quality mainstream education.	Limited Progress	Relevant RRP measures planned as of 2022, 2023, 2024 and 2025.	SDG 4, 8, 10
Improve health outcomes by supporting preventive health measures and strengthening primary healthcare.	Limited progress	Relevant RRP measures planned as of 2021, 2023, 2024 and 2026.	SDG 3, 16
2019 CSR 3	**Limited progress**		
Focus investment-related economic policy on research and innovation,	Limited progress	Relevant RRP measures planned as of 2023 and 2026.	SDG 9, 10, 11
low-carbon energy,	Some progress	Relevant RRP measures planned as of 2021, 2022, 2023, 2024 and 2025.	SDG 7, 9, 10, 11, 13
transport infrastructure, and	Some progress	Relevant RRP measures planned as of 2023, 2024 and 2026.	SDG 10, 11
waste management and	Limited Progress	Relevant RRP measures planned as of 2023 and 2026.	SDG 6, 10, 11, 12, 15
energy and resource efficiency, taking into account regional disparities.	Limited progress	Relevant RRP measures planned as of 2023, 2024 and 2026.	SDG 6, 7, 10, 11, 12, 15
Improve competition in public procurement.	Limited progress	Relevant RRP measures planned as of 2022 and 2023.	SDG 9
2019 CSR 4	**Limited Progress**		
Reinforce the anti-corruption framework, including by improving prosecutorial efforts and access to public information, and	Limited Progress	Relevant RRP measures planned as of 2022 and 2023.	SDG 16
strengthen judicial independence.	Some Progress	Relevant RRP measures planned as of 2023.	SDG 16
Improve the quality and transparency of the decision-making process through effective social dialogue and engagement with other stakeholders and through regular, appropriate impact assessments.	Limited Progress	Relevant RRP measures planned as of 2022.	SDG 8, 16
Continue simplifying the tax system, while strengthening it against the risk of aggressive tax planning.	Limited progress	Relevant RRP measures planned as of 2023, 2024 and 2025.	SDG 8, 10, 12, 16
Improve competition and regulatory predictability in the services sector.	No progress		SDG 9, 16
2020 CSR 1	**Limited progress**		
Take all necessary measures, in line with the general escape clause of the Stability and Growth Pact, to effectively address the COVID-19 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
Address shortages of health workers and ensure an adequate supply of critical medical products and infrastructure to increase the resilience of the health system.	Some Progress	Relevant RRP measures planned as of 2021, 2023, 2024 and 2026.	SDG 3
Improve access to quality preventive and primary care services.	Limited progress	Relevant RRP measures planned as of 2021, 2023, 2024 and 2026.	SDG 3
2020 CSR 2	**Limited progress**		
Protect employment through enhanced short-time working arrangements and effective active labour-market policies and extend the duration of unemployment benefits.	Limited progress	Relevant RRP measures planned as of 2023, 2024, and 2026.	SDG 1, 2, 8, 10
Improve the adequacy of social assistance and ensure access to essential services and	Limited Progress	Relevant RRP measures planned as of 2023, 2024, and 2026.	SDG 1, 2, 10
quality education for all.	Limited Progress	Relevant RRP measures planned as of 2022, 2023, 2024 and 2025.	SDG 4
2020 CSR 3	**Some progress**		
Ensure liquidity support to SMEs.	Substantial progress		SDG 8, 9
Front-load mature public investment projects and	Some progress		SDG 8, 16
promote private investment to foster the economic recovery.	Substantial progress		SDG 8, 9
Focus investment on the green and digital transition, in particular clean and efficient production and use of energy,	Limited Progress	Relevant RRP measures planned as of 2021, 2022, 2023, 2024 and 2025.	SDG 7, 9, 13
sustainable transport,	Some progress	Relevant RRP measures planned as of 2023, 2024 and 2026.	SDG 11
water and waste management,	Limited Progress	Relevant RRP measures planned as of 2023, 2024 and 2026.	SDG 6, 12, 15
research and innovation, and	Limited progress	Relevant RRP measures planned as of 2023 and 2026.	SDG 9
digital infrastructure for schools.	Some Progress	Relevant RRP measures planned as of 2022 and 2024.	SDG 4, 9, 16

(Continued on the next page)

Table (continued)

2020 CSR 4	**No Progress**		
Ensure that any emergency measures be strictly proportionate, limited in time and in line with European and international standards and do not interfere with business activities and the stability of the regulatory environment.	No Progress		SDG 16
Ensure effective involvement of social partners and stakeholders in the policy-making process.	No progress	Relevant RRP measures planned as of 2022 and 2024.	SDG 8, 16
Improve competition in public procurement.	Limited progress	Relevant RRP measures planned as of 2022 and 2023.	SDG 9
2020 CSR 5	**Limited progress**		
Strengthen the tax system against the risk of aggressive tax planning.	Limited Progress	Relevant RRP measures planned as of 2023, 2025 and 2026.	SDG 8, 16
2021 CSR 1	**Not relevant anymore**		
In 2022, maintain a supportive fiscal stance, including the impulse provided by the Recovery and Resilience Facility, and preserve nationally financed investment.	Not relevant anymore	Not applicable	SDG 8, 16
When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.	Not relevant anymore	Not applicable	SDG 8, 16
At the same time, enhance investment to boost growth potential. *Pay particular attention to the composition of public finances, on both the revenue and expenditure sides of the national budget, and to the quality of budgetary measures in order to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, in particular investment supporting the green and digital transition.*	Not relevant anymore	Not applicable	SDG 8, 16
Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including, where relevant, by strengthening the coverage, adequacy and sustainability of health and social protection systems for all.	Not relevant anymores	Not applicable	SDG 8, 16
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.	Some 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.	Substantial Progress	Not applicable	SDG 8, 16
For the period beyond 2023, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions.	Limited Progress	Not applicable	SDG 8, 16
Improve the long-term sustainability of the pension system, while preserving adequacy in particular through addressing income inequalities.	Limited progress	Relevant RRP measures planned as of 2023.	SDG 8
2022 CSR 2			
Swiftly finalise the negotiations with the Commission on the 2021–2027 cohesion policy programming documents with a view to starting their implementation.	Progress on the cohesion policy programming documents is monitored under the EU cohesion policy.		
2022 CSR 3	**Limited progress**		
Continue the labour-market integration of the most-vulnerable groups, in particular through upskilling, and extend the duration of unemployment benefits.	Limited progress	Relevant RRP measures planned as of 2023, 2024, and 2026.	SDG 1, 2, 4, 8, 10
Improve the adequacy of social assistance and ensure access to essential services and adequate housing for all.	Limited progress	Relevant RRP measures planned as of 2023, 2024, and 2026.	SDG 1, 2, 10
Improve education outcomes and increase the participation of disadvantaged groups, in particular Roma, in quality mainstream education.	Limited progress	Relevant RRP measures planned as of 2022, 2023, 2024 and 2025.	SDG 4, 8, 10
Improve access to quality preventive and primary care services.	Limited progress	Relevant RRP measures planned as of 2021, 2023, 2024 and 2026.	SDG 3
2022 CSR 4	**Limited progress**		
Reinforce the anti-corruption framework, including by improving prosecutorial efforts and access to public information, and	Limited progress	Relevant RRP measures planned as of 2022 and 2023.	SDG 16
strengthen judicial independence.	Some progress	Relevant RRP measures planned as of 2023.	SDG 16
Improve the quality and transparency of the decision-making process through effective social dialogue, engagement with other stakeholders and regular impact assessments.	Limited progress	Relevant RRP measures planned as of 2022.	SDG 16
Continue simplifying the tax system.	Limited progress	Relevant RRP measures planned as of 2023, 2024 and 2025.	SDG 8, 10, 12
Improve regulatory predictability and competition in the services sector, in particular in retail and utilities, and apply competition scrutiny systematically in business transactions.	No Progress		SDG 9
Improve competition in public procurement.	Limited progress		SDG 9
2022 CSR 5	**Limited progress**		
Promote reform and investment on sustainable water and waste management and the circularity of the economy,	Limited progress	Relevant RRP measures planned as of 2023, 2024 and 2026.	SDG 6, 12, 15
the digitalisation of businesses,	Some Progress		SDG 9
green and digital skills, and	Limited progress	Relevant RRP measures planned as of 2022, 2023 and 2026.	SDG 4
research and innovation.	Limited progress	Relevant RRP measures planned as of 2023 and 2026.	SDG 9

(Continued on the next page)

Table (continued)

2022 CSR 6	**Limited progress**		
Reduce overall reliance on fossil fuels	Limited Progress	Relevant RRP measures planned as of 2022 and 2023.	SDG 7, 9, 13
by accelerating the deployment of renewables, in particular by streamlining the permitting procedures	Some Progress	Relevant RRP measures planned as of 2023.	SDG 7, 8, 9, 13
and the upgrading of the electricity infrastructure.	Limited progress	Relevant RRP measures planned as of 2022.	SDG 7, 9, 13
Diversify imports of fossil fuels by, inter alia, strengthening interconnection with the participation of other countries.	Limited Progress		SDG 7, 9, 13
Reduce the dependency on fossil fuels in buildings and transport by stepping up efforts on energy-efficiency measures for all, especially in residential houses	Some Progress	Relevant RRP measures planned as of 2023 and 2024.	SDG 7, 9, 13
and on sustainable transport, in particular through electrification.	Some Progress	Relevant RRP measures planned as of 2023, 2024 and 2026.	SDG 7, 9, 13
2023 CSR 1	**Limited progress**		
Wind down the emergency energy support measures in force, using the related savings to reduce the government deficit, as soon as possible in 2023 and 2024. Should renewed energy price increases necessitate new or continued support measures, ensure that such support measures are targeted at protecting vulnerable households and firms, are fiscally affordable and preserve incentives for energy savings.	Limited progress		SDG 8, 16
Ensure prudent fiscal policy, in particular by limiting the nominal increase in nationally financed net primary expenditure in 2024 to not more than 4,4 %.	Limited progress		SDG 8, 16
Preserve nationally financed public investment and ensure the effective absorption of grants under the Facility and of other Union funds, in particular to foster the green and digital transitions.	No Progress		SDG 8, 16
For the period beyond 2024, continue to pursue a medium-term fiscal strategy of gradual and sustainable consolidation, combined with investments and reforms conducive to higher sustainable growth, in order to achieve a prudent medium-term fiscal position.	Limited progress		SDG 8, 16
Pursue effective coordination and clear demarcation of macroeconomic policies in order to ensure fiscal and external sustainability.	No Progress		SDG 8, 16
Phase out price and interest-rate caps in order to reduce distortive effects and to facilitate the smooth transmission of monetary policy.	Limited progress		SDG 8
Target support measures in the housing sector to low-income households.	Limited progress		SDG 8, 10, 1
Strengthen the medium-term budgetary framework, align the preparation of annual budgets with the budgetary year and limit discretion in the implementation of annual budgets.	Limited progress		SDG 8, 16
2023 CSR 2			
Urgently fulfil the required milestones and targets related to strengthening judicial independence and safeguarding the protection of the financial interests of the Union in order to allow for a swift and steady implementation of its recovery and resilience plan. Swiftly finalise the REPowerEU chapter with a view to rapidly starting the implementation thereof. Proceed with the speedy implementation of cohesion	RRP implementation is monitored through the assessment of RRP payment requests and analysis of the bi-annual reporting on the achievement of the milestones and targets, to be reflected in the country reports. Progress with the cohesion policy is monitored in the context of the Cohesion Policy of the European Union.		
2023 CSR 3	Limited Progress		
Improve the adequacy of the social assistance system, including unemployment benefits.	Limited progress	Relevant RRP measures are planned as of 2023.	SDG 1, 2, 10
Improve access to effective active labour market measures, in particular upskilling opportunities for the most disadvantaged groups,	Limited progress	Relevant RRP measures are planned as of 2023.	SDG 8, 4, 10
and ensure effective social dialogue.	Limited progress		SDG 16
Improve the regulatory framework and competition in services by avoiding selective and arbitrary administrative interventions and the use of tailor-made legislation providing undue advantage or disadvantage to specific companies,	No Progress		SDG 9, 16
by applying competition scrutiny systematically to business transactions and by reducing the use of emergency measures to what is strictly necessary, in line with the principles of the single market and of the rule of law.	No Progress		SDG 9, 16
2023 CSR 4	**Limited progress**		
Reduce overall reliance on fossil fuels	Limited progress	Relevant RRP measures planned as of 2023, 2024, 2025 and 2026.	SDG 7, 9, 13
by accelerating the deployment of renewables, including wind energy, geothermal and sustainable biomethane, in particular by streamlining permitting procedures, while conducting regular environmental impact assessments, and by creating a supportive and predictable regulatory environment.	Some Progress	Relevant RRP measures are planned as of 2023, 2024, 2025 and 2026.	SDG 7, 8, 9, 13
Phase out subsidies for fossil fuels.	No Progress		SDG 12, 13
Reform the rules on the balancing of the energy market and tariff setting in order to allow for cost recovery and an optimum use of the grid.	Limited progress	Relevant RRP measures are planned as of 2024 and 2025.	SDG 7, 8, 9
Where necessary, upgrade the electricity infrastructure, including grid and storage capacities.	Limited progress	Relevant RRP measures are planned as of 2024.	SDG 7, 8, 9
Diversify imports of fossil fuels in order to significantly decrease dependence on Russia, including by strengthening cooperation with other Member States, including, where necessary, on infrastructure.	Limited progress		SDG 7, 8, 9
Improve energy efficiency, in particular in buildings, and continue efforts to reduce overall gas consumption.	Limited progress	Relevant RRP measures are planned as of 2023 and 2024.	SDG 7, 8, 9
Adjust the current system of regulated energy prices in order to encourage energy saving while providing targeted support for low-income households.	Limited progress	Relevant RRP measures are planned as of 2024 and 2025.	SDG 7, 13, 1, 10
Step up policy efforts aimed at the provision and acquisition of skills and competences needed for the green transition.	Limited progress	Relevant RRP measures are planned as of 2024.	SDG 4, 7, 13

Note:

* See footnote ([25]).

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

Source: European Commission.

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

The RRP paves the way for disbursing up to EUR 6.5 billion in grants and EUR 3.9 billion in loans under the RRF over the 2021-2026 period, representing 5.3% of Hungary's GDP ([26]). As of mid-May 2024, EUR 0.9 billion has been disbursed to Hungary under the RRF, comprising EUR 0.14 billion in grants and EUR 0.78 billion in loans.

Hungary still has EUR 9.5 billion available in grants and loans from the RRF. This will be disbursed after the assessment of the future fulfilment of the remaining 368 milestones and targets ([27]) included in the Council Implementing Decision ([28]) (CID), ahead of the 2026 deadline established for the RRF.

Hungary's progress in implementing its plan is recorded in the Recovery and Resilience Scoreboard ([29]). The scoreboard gives an overview of the progress made in implementing the RRF as a whole. Graphs A3.1 and A3.2 show the current state of play as reflected in the scoreboard.

Hungary's RRP includes a REPowerEU chapter to phase out its dependency on fossil fuels, diversify its energy supplies and produce more clean energy in the coming years. To kick-start the REPowerEU chapter's implementation, EUR 919.6 million was disbursed as pre-financing on 28 December 2023 and 15 January 2024. This helped launch relevant reforms like the introduction of dynamic pricing in the retail electricity market, improving regulatory reserve markets, strengthening the role of energy communities and aggregators, incentivising the uptake of electricity storage, or increasing the number of consumers to use smart meters and harmonising the ways the connection application rules are applied by the distribution system operators.

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

Initial plan CID adoption date	15 December 2021
Scope	Revised plan with REPowerEU chapter
Last major revision	8 December 2023
Total allocation	EUR 6.5 billion in grants and EUR 3.9 billion in loans (5.3% of 2023 GDP)
Investments and reforms	47 investments and 67 reforms
Total number of milestones and targets	368
Fulfilled milestones and targets	0 (0% of total)

Source: RRF Scoreboard

The plan has a strong focus on the green transition, dedicating 66.9% of the available funds to measures that support climate objectives and 29.1% of its total allocation to support the digital transition. It also retains a strong social dimension with social protection measures, especially related to social inclusion, which are expected to improve access to mainstream education for disadvantaged students and for those with special needs, support for 4,500 additional early age childcare places as well as social measures dedicated to the 300 most disadvantaged settlements experiencing high levels of poverty.

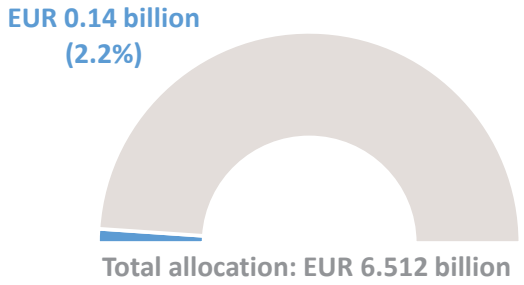
([26]) GDP information is based on 2023 data. Source: https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/index.html?lang=en

([27]) 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.

([28]) https://data.consilium.europa.eu/doc/document/ST-15447-2022-ADD-1/en/pdf

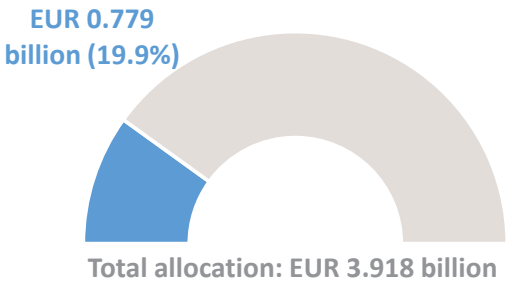
([29]) https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

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



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

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



Source: RRF Scoreboard

With a significantly delayed implementation of its RRP, Hungary is still working on the completion of its first payment request as of 15 May 2024. Table A3.2 highlights some measures that will be implemented before 2026 to keep making the Hungarian economy greener, more digital, inclusive, and resilient.

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

Upcoming reforms and investments
• Modernisation of the electricity sector • Improving the attractiveness of the teaching profession • Strengthening of the anti-corruption framework

Source: FENIX

EU funding instruments provide considerable resources for recovery and growth to the EU Member States. In addition to the EUR 10.4 billion of Recovery and Resilience Facility (RRF) funding described in Annex 3, EU cohesion policy funds ([30]) provide EUR 21.7 billion to Hungary for the 2021-2027 period ([31]). Support from these two instruments combined represents around 16.38% of the country's 2023 GDP, compared to the EU average of 5.38% of GDP ([32]). Cohesion policy supports regional development, economic, social and territorial convergence, and competitiveness through long-term investment in line with EU priorities and with national and regional strategies.

During the 2014-2020 programming period, cohesion policy funds boosted Hungary's competitiveness, with tangible achievements notably in digital connectivity, water services and improved public services in several areas, from childcare to telemedicine. Over the whole period, which financed investments until December 2023, cohesion policy funds ([33]) made EUR 22.5 billion available to Hungary ([34]), of which EUR 13.2 billion has been disbursed since March 2020, when the COVID-19 pandemic began ([35]). The achievements of cohesion policy funds over the programming period included support for 60 000 businesses. The funding helped stimulate growth, create jobs, improve skills, strengthen social inclusion, boost competitiveness, provide broadband access for an additional 256 000 households and provide improved water supply and wastewater treatment for the population. The REACT-EU scheme helped mitigate the impact of the COVID-19 pandemic, for example by providing preferential loans to SMEs, a job-protection scheme, support for medical staff and purchasing vaccines. During the same period, the European Social Fund (ESF) helped provide 177 of the least developed municipalities access to improved services, ranging from early childhood care to social work and telemedicine. Another ESF measure with a budget of EUR 3.5 million provided support of up to HUF 40 000 (EUR 110) per month for unemployed parents, improved access to day-care services for 5 300 children, reduced the cost of placement and helped at least one parent to return to work. The ESF also funded the digitalisation of public administration, including electronic health records, and improved schools for 180 000 pupils and the ELI-APLS Laser Institute.

In the current programming period, cohesion policy will provide a further boost to Hungary's competitiveness, to the green transition and to social cohesion, improving the living and working conditions of the Hungary's people. In 2021-2027, the European Regional Development Fund and the Cohesion Fund will invest in the digital transformation of businesses, in the uptake of advanced technologies and business innovation, in significant improvements to the TEN-T network railways and clean suburban transport, water management and sanitation, sustainable urban development and local public infrastructure, energy efficiency and in renewable energy. The Just Transition Fund will help workers and businesses in three carbon-intensive counties to find new jobs and skills.

The European Social Fund Plus (ESF+) will improve the quality and quantity of the workforce, for example by funding employment and adult learning measures. It seeks to make the teaching profession more attractive, promote quality education and contribute to inclusive education and social inclusion. It will help fund digital skills development by allocating EUR 236 000 to help citizens meet the challenges of the digital transition. Specific measures are planned to equip at least 180 000 disadvantaged people with entry-level digital skills. It will support further 360 000 people in digital skills development, particularly targeting (at least 160 000) people who previously lack at least overall basic digital skills. With this work, cohesion policy substantially

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

([31]) European territorial cooperation (ETC) programmes are excluded from the figure. In 2021-2027, the total investment, including national financing, amounts to EUR 26.1 billion.

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

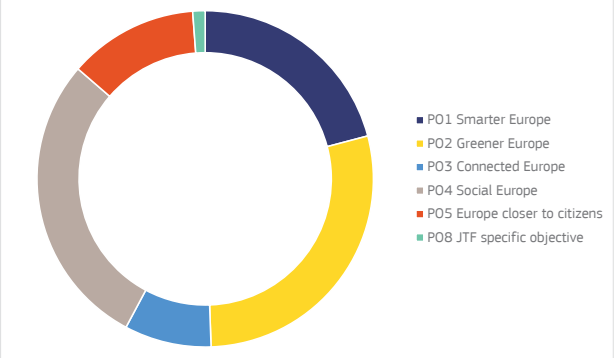
([33]) In 2014-2020, cohesion policy funds included the Cohesion Fund, the European Regional Development Fund, the European Social Fund and the Youth Employment Initiative. REACT-EU allocations are included but ETC programmes are excluded.

([34]) In 2014-2020, the total investment, including national financing, amounted to EUR 26.5 billion.

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

contributes to achieving the UN Sustainable Development Goals (SDGs) in Hungary, in particular SDG 9 (Industry, innovation, infrastructure), SDG 8 (Decent work and economic growth) and SDG 4 (Quality education).

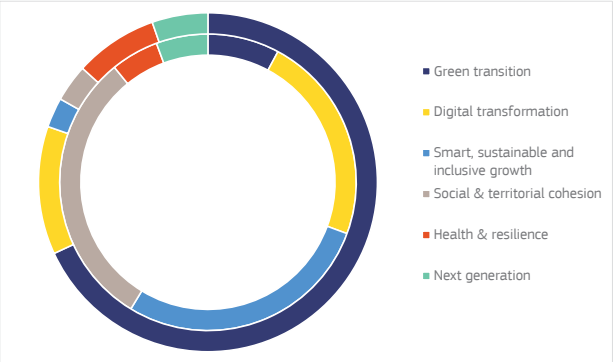
Graph A4.1: **Distribution of cohesion policy funding across policy objectives in Hungary**



Source: European Commission

Through combined action, cohesion policy and the recovery and resilience plan (RRP) have a mutually reinforcing impact in Hungary. For instance, reforms under the RRP tackle barriers to renewable investments and connection to the grid, which will facilitate cohesion policy investments through financial instruments to promote the uptake of renewable energy by companies. The national *catching-up settlements programme* improves basic public services and housing conditions in 300 lagging municipalities, jointly financed by cohesion policy funds and the RRP. The RRP and the ESF+ jointly promote inclusive education by investing in a sustained wage increase for teachers, teacher training, measures supporting low achieving schools and digitalisation in the education sector. Cohesion policy funds also contribute to developing human and infrastructural capacity in integrated education, while the RRP aims to boost the capacity of inclusive schools. The contribution of cohesion policy and RRP funding by policy objective is illustrated by Graphs A4.1 and A4.2.

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



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

Source: European Commission

The Technical Support Instrument (TSI) helps Hungary invest in its public administration and create a better enabling environment for EU and national investment. The TSI has funded projects in Hungary to design and implement growth-enhancing reforms since 2018. The support provided in 2023 included work to develop an interoperable health system, to improve the efficiency and quality of health services, to integrate environmental dimensions in public finances, to implement the 'do no significant harm' principle in public funding programmes, work to improve the quality and use of tax information exchanged between Member States under the Directive on Administrative Cooperation and to promote adult learning by introducing micro-credentials. Following the approval of its RRP, Hungary can request TSI support to boost its overall capacity to implement the specific reforms and investments included in the plan.

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

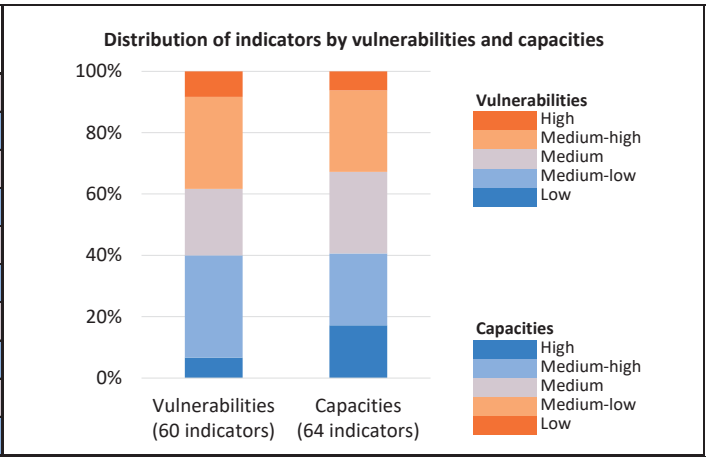
Table A4.1: **Support from EU instruments in Hungary**

EU grants			
	Amount 2014-2020 (EUR million)		Amount 2021-2027 (EUR million)
Cohesion policy	22 529.7		21 730.1
RRF grants (1)	-		6 511.6
Public sector loan facility (grant component) (2)	-		19.8
Common agricultural policy (3)	16 200.0		8 445.0
EMFF/EMFAF (4)	38.4		37.7
Connecting Europe Facility (5)	1 156.2		364.7
Horizon 2020 / Horizon Europe (6)	369.6		144.9
LIFE programme (7)	62.9		22.8
EU guarantees			
	EU Guarantee (EUR million)		Volume of operations (EUR million)
European Fund for Strategic Investment 2015-2020 (8)	223.2		613.9
InvestEU 2021-2027 (9)	16.7		42.9
EU loans			
	Period	Total amount available (EUR million)	Disbursed amount (EUR million)
SURE (10)	2020-2022	651.5	651.5
RRF	2021-2026	3 918	779.5

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

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

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



(1) The synthetic indices aggregate the relative resilience situation of countries across all considered indicators. For an indicator, each country's relative situation in the latest available year is compared with the collection of values of that indicator for all Member States and all years in the reference period.

Source: Resilience Dashboards - version spring 2024, data up to 2022

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

According to the RDB's set of resilience indicators, Hungary has medium overall vulnerabilities (similar to the EU average) and medium overall capacities (lower than the EU average), both of which have remained stable with respect to last year. This is reflected in the distribution of indicators across different resilience categories: around 40% of both vulnerability and capacity indicators fall into the top two categories (blue and light blue, medium-low or low vulnerability and medium-high or high capacity) and into the bottom two (orange and light orange, medium-high or high vulnerability and medium-low or low capacity).

With respect to the 2023 RDB, Hungary has seen its social and economic vulnerabilities deteriorate. The reasons for the deterioration in vulnerabilities are the proportion of employment in manufacturing with a high risk of automation (now the highest in the EU), regional dispersion in household income (now the second highest in the EU), and the variation in performance explained by students' socio-economic status. The country's social and economic capacities have also deteriorated for reasons such as the drop in the insurance sector solvency capital ratio and the lessening of the impact of social transfers (other than pensions) on poverty reduction. The country is currently below the EU average in specific capacity indicators such as the proportion of children under 3 in formal childcare, or standardised preventable and treatable mortality.

In the green dimension, **Hungary has mostly medium and medium-low vulnerabilities, except for fossil fuel subsidies, energy used in information and communication technology (ICT), and farm income variability (medium-high vulnerability).** Its overall vulnerabilities have stayed stable, with a higher waste generation rate, fossil fuel subsidies and farm income variability, but a lower harmonised risk indicator 1 for pesticides. Its green capacities

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

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

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

are more mixed, having remained mostly stable, and below the EU average. The share of the environmental goods and services sector from gross value added is the lowest in the EU (2021 data).

In the digital dimension, **Hungary's vulnerabilities and capacities are mostly stable with respect to last year's dashboard, but it lags behind the EU on both counts.** It continues to have high vulnerabilities in terms of the broadband access gap by company size (with some improvement) and the ICT specialist gender gap. It still shows low capacities in terms of adults' and young people's advanced digital skills, and high capacities in areas such as the use of social networks and gross value added in ICT. It has also improved a lot in the use of the collaborative economy. However, it remains below the EU average in capacity indicators such as ICT Master's graduates.

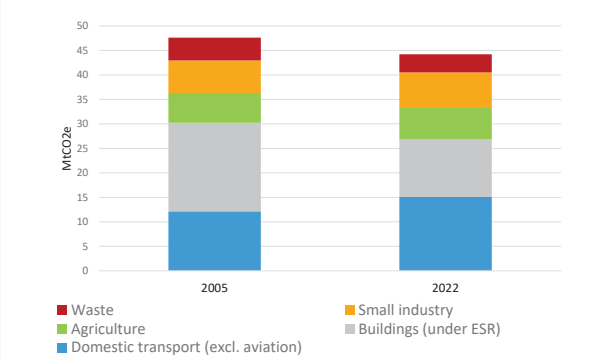
Its geopolitical vulnerabilities have remained stable while capacities have improved, and are now both on par with the EU average. Hungary deteriorated in net lending/borrowing and supplier concentration of energy carriers, while there have been improvements in intra-EU trade in energy, trade openness (extra-EU), and the net migration rate.

Hungary has made progress in the green transition, with more action needed on specifying the funding framework for the climate and energy transition, sustainable water management, the institutional framework on climate adaptation, and other areas. This Annex provides a snapshot of climate, energy, and environmental aspects of the transition in Hungary ([39]).

Hungary's draft updated national energy and climate plan (NECP) does not yet map all its investment needs against sources of funding to achieve its 2030 climate and energy targets. The plan includes only limited information on the investment needed to implement the planned policies and measures. It provides information on total investment needs until 2035 and for 2036-2050 per sector, covering transport, electricity, district heating, households, industry and services, but omitting agriculture. The plan outlines some of the main sources of financing, but only includes EU funds ([40]).

Hungary is projected to reach its 2030 effort sharing target, provided that it adopts and implements the planned additional measures ([41]). In 2022, Hungary's greenhouse gas emissions from its effort sharing sectors are expected to be 37.5% below 2005 levels. Additional policies considered in Hungary's draft updated NECP are projected to reduce these emissions by 23.8% from 2005 levels. This means that Hungary will exceed its effort sharing target to achieve a 18.7% reduction by 5.1 percentage points. However, with current policies, Hungary is projected to reduce its effort sharing emissions by 20.2% compared to 2005 levels by 2030, leaving a gap of 3.6 percentage points below Hungary's target ([42]). This highlights the importance of implementing the full range of policies and measures in the draft updated NECP. The draft plan reiterates Hungary's legally binding commitment to achieve climate neutrality by 2050.

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



Source: European Environment Agency

There is scope for increasing Hungary's targets for renewable energy and energy efficiency in its final updated NECP ([43]). Hungary's renewable energy contribution set in its draft updated NECP, 29% by 2030, is below the required contribution of 34%. Its energy efficiency contribution of 17.9 Mtoe in primary energy consumption for 2030 set in the draft updated NECP is also less ambitious than required by the Energy Efficiency Directive. No target for primary

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

([40]) See the Commission's (2023) assessment of the draft national energy and climate plan of Hungary.

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

([42]) The effort sharing emissions for 2022 are based on approximated inventory data. The final data will be established in 2027 after a comprehensive review. Projections on the impact of current policies ('with existing measures', WEM) and additional policies ('with additional measures', WAM) as per Hungary's draft updated NECP.

([43]) The EU target set out in the revised Renewable Energy Directive is to have 42.5% of gross final energy consumption coming from renewable energy sources by 2030, with the aspiration to reach 45%. The formula in Annex I to Directive (EU) 2023/1791 sets the indicative national contribution for Hungary at16,2 Mtoe for final energy consumption. The Commission communicated a corrected national contribution of 29.04 Mtoe in final energy consumption for 2030 in accordance with Article 4(5) of the Energy Efficiency Directive to increase the contribution towards the Union's binding energy efficiency target. See the Commission Recommendation of 18.12.2023 to Hungary.

energy consumption has been provided in the draft plan.

In Hungary there is still much to do to curb rising greenhouse gas emissions from road transport ([44]). In 2022, electric vehicles represented only 0.8% of its passenger car fleet. In 2023, Hungary's 3 250 publicly accessible charging points provided one charging point for every nine e-vehicles, compared to the EU average of 1:10. Buses and coaches and rail accounted for 20% of passenger transport, with passenger cars accounting for only 78% (EU average: 85%). Rail accounts for a significant 25% of freight transport, while 66% of freight is transported by road (EU average: 75%). Only 41% of Hungary's rail network is electrified (EU average: 56%).

Hungary has the potential to increase carbon removals through land use, land use change and forestry (LULUCF). Hungary achieves significant carbon removals through its forests, but its cultivated arable land is a major emitter of greenhouse gases. To reach the 2030 LULUCF target, additional carbon removals of 934 kt CO_2eq are needed ([45]).

Climate change poses challenges to Hungary's forests, soils, water-related activities (due to both droughts and floods), and other areas. Threats include the impairment of forests' carbon removal capacity and declining agricultural productivity. Water management in changing climatic conditions requires particular attention due to risks of electricity disruption as floods, heat and drought impact the energy production. Appropriate institutional mechanisms are crucial for climate adaptation. Here, Hungary faces shortcomings in its governance and coordination structures that hamper effective planning, climate adaptation solutions and investment, the monitoring, evaluation and review of policies, coordination between different sectors of government, and the preparation and updating of sub-national policies ([46]).

Hungary has significant room for improvement on wastewater and drinking water infrastructure ([47]). Water resources are under major pressure, mainly due to pollution, hydromorphological changes, and unsustainable agricultural practices, notably the use of nutrients. Water bodies are significantly affected by abstraction and pollution from industrial activities. Diffuse pollution affects all surface waters, while a majority is under significant pressure from point source pollution and water abstraction. Abstraction pressures also affect all groundwaters. Exceedances of several pollutants were recorded in drinking water in several municipalities. Hungary also faces a systemic problem in tackling nutrient loss from agriculture ([48]). In 2022, only 11,3% of surface water bodies reached good ecological status and only 46% reached good chemical status ([49]). Hungary is increasingly exposed to climatic risks, exacerbated by climate change. Droughts are common in the great plains ([50]), and one quarter of Hungary's territory is exposed to floods ([51]). The current irrigation strategy raises concerns regarding long-term sustainability where 'grey' infrastructures (such as the rehabilitation of irrigation canals) are favoured to nature-based solutions ([52]). The investment gap to achieve sustainable water management is estimated at EUR 589 million per year over 2021-2027.

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

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

([46]) See the Commission's 2023 assessment and recommendation on Hungary's progress on climate adaptation.

([47]) There are infringement cases against Hungary for non-compliance with the Drinking Water Directive and non-compliance with the urban Wastewater Directive.

([48]) Commission Report on the implementation of the Nitrates Directive.

([49]) In the second river basin management plan (RBMP), the chemical status of 46,5% and the ecological status of 13.5% of surface water bodies was unknown. The assessment of the third RBMP is not yet available.

([50]) Financing-water-supply-sanitation-and-flood-protection-country-fact-sheet-hungary.pdf (oecd.org)

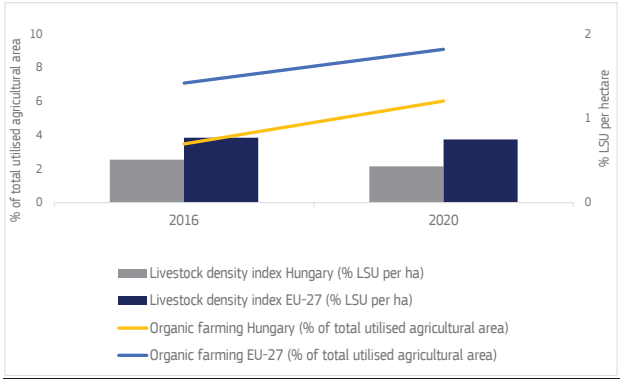
([51]) European Commission, Assessment of second cycle preliminary flood risk assessments and identification of areas of potential significant flood risk under the Floods Directive: Member State: Hungary, 2022.

([52]) Examples of nature-based solutions for water retention can be found on the Natural Water Retention Measures Platform, European NWRM+ platform.

Nature is under pressure in Hungary, resulting in biodiversity loss and the deterioration of habitats. In 2021, Natura 2000 sites covered 21.4% of Hungary's territory ([53]). However, in 2020, Hungary reported that more than half of its habitat assessments had worsened ([54]). Moreover, less than 8% of the protected forest habitats are in a favourable conservation status ([55]). However, the common farmland bird index remained stable between 2018 and 2020, slightly above the EU average. Fragile habitats such as wetlands, peatlands and grasslands are directly threatened by damaging economic activities.

Hungary's agri-food sector has a major environmental footprint. The share of the country's total utilised agricultural area (UAA) under organic farming remains quite low, at 5.8% in 2021 ([56]). Hungary is far from achieving its ambition of having 280 000 hectares under organic farming by 2027. Only 4.2% of Hungary's agricultural land was covered with landscape features in 2022. Hungary's livestock density index decreased to 0.43% in 2020 ([57]). However, the intensive rearing of poultry and pigs was the industrial activity that placed the highest burden on the environment in terms of emissions of ammonia and non-methane volatile organic compounds. In 2021, the agricultural sector was responsible for 91.4% of ammonia emissions ([58]). Hungary did not meet its 2020 and 2021 emission reduction commitments for ammonia under the National Emission Ceilings Directive ([59]) and is at risk to miss its 2020-2029 commitments. 58% of Hungarian soil ([60]) could be considered as unhealthy ([61]). The loss of organic carbon affects 70% of cropland and grassland area, while soil erosion affects 41% of cropland area. In Hungary, the net stock change of organic soils in cropland and grassland areas decreased over time and reached 1 516 kt in 2021.

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



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

Hungary would benefit from investing more in sustainable water management, in the circular economy, and in pollution prevention and control. The environmental investment gap increased for the 2021-2027 period, reaching EUR 1.7 billion. The investment gap for water management has more than doubled in this sector ([62]). The highest investment gap concerns pollution prevention and control which has more than doubled since 2014-2020. The gap for the circular economy has also increased. The gap for biodiversity has decreased but remains excessive.

([53]) Above the EU average.

([54]) European Environment Agency, Conservation status and trends of habitats and species, December 2021.

([55]) State of nature in the EU - European Environment Agency (europa.eu)

([56]) Versus 9.1% of the EU average in 2020.

([57]) Below the EU average of 0.75 in 2020.

([58]) Above the EU average of 90.7%. Statistics | Eurostat (europa.eu)

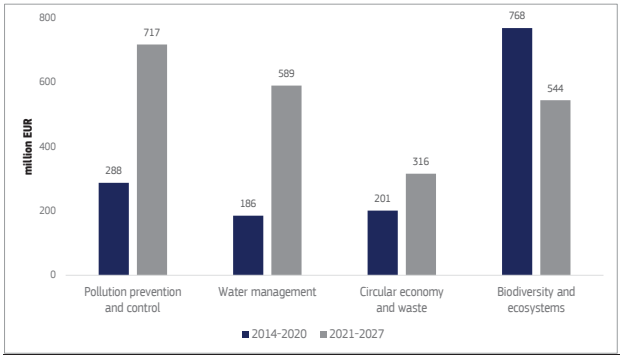
([59]) Hungary – air pollution country fact sheet - European Environment Agency (europa.eu)

([60]) SWD 417 final of 05.07.2023

([61]) However, not all soil degradation processes could be quantified for all land uses. This number simply indicates an order of magnitude.

([62]) The investment gap in sustainable water management concerns in particular wastewater collection and treatment, water supply infrastructure, and green infrastructures.

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



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

Source: European Commission

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

							Target	Distance	
		2005	2019	2020	2021	2022	2030	WEM	WAM
Progress to climate and energy policy targets									
Greenhouse gas emission reductions in effort sharing sectors [1]	Mt CO_{2eq}, %, pp	47,826.9	-7%	-9%	-3%	-8%	-19%	-6	5
Net greenhouse gas removals from LULUCF [2]	Kt CO2eq	-6 003	-5 382	-7 106	-7 195	-6 803	-5,724	n/a	n/a
Share of energy from renewable sources (1) [3]	%	7%	13%	14%	14%	15%	34%	-	-
Energy efficiency: primary energy consumption [3]	Mtoe	26.3	24.6	23.9	24.9	23.9	23.3		
Energy efficiency: final energy consumption [3]	Mtoe	18.7	18.6	18.0	19.1	18.3	16.2		

							EU-27		Projected
		2018	2019	2020	2021	2022	2021	2022	2030
Green transition: mobility									
Greenhouse gas emissions: road transport	Mt CO2e	-	-	-	14.0	15.1	769.0	786.6	11.4
Share of zero-emission vehicles in new registrations [4]	%	0.9	1.2	2.3	3.5	4.2	9	12.1	n/a
Number of publicly accessible AC/DC charging points		-	-	1231	2636	3323	299178	446956	n/a
Share of electrified railways	%	39.7%	40.2%	40.0%	40.8%	-	56.1%	-	n/a
Green transition: buildings									
Greenhouse gas emissions: buildings	Mt CO2e	-	-	-	13.5	11.8	537.0	486.7	10.1
Final energy consumption in buildings	2015=100	96.9%	94.5%	97.6%	103.4%	94.7%	104.0%	97.2%	
Climate adaptation									
Climate protection gap [5]	score 1-4	-	-	1.3	1.2	1.1	1.5	1.5	n/a

		2018	2019	2020	2021	2022	2020	2021	2022
State of the environment									
Water | Water exploitation index (WEI+) (1) [6]	% of renewable freshwater	1.4	1.3	-	-	-	3.6	-	-
Circular economy | Material footprint [7]	tonnes per person	15.9	16.7	14.3	14.5	14.5	14.2	14.8	14.9
Pollution | Years of life lost due to air pollution by PM2.5 [8]	per 100.000 inhabitants	1,420	1,011	1,056	1,155	-	545	584	-
Biodiversity | Habitats in good conservation status [9]	%	13.3					14.7		
Common farmland bird index [10]	2000=100	81	81	81	-	-	78	-	-
Green transition: agri-food sector									
Organic farming	% of total utilised agricultural area	3.92	5.71	6.03	5.81	-	9.1	-	-
Nitrates in groundwater	mg NO_3/litre	-	-	-	-	-	20.42	-	-
Food waste per capita	Kg per capita			93	91	-	130	131	-
Share of soil in poor health [11]	%					58			41
Soil organic matter in agricultural land [12]	Mt per ha	286	-	-	-	-	7,904	-	-

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

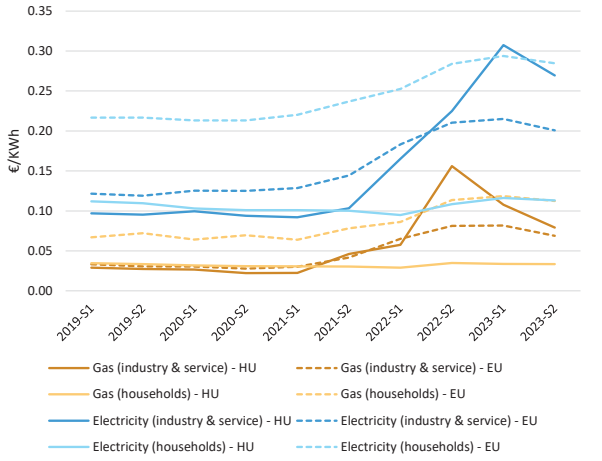
This Annex ([63]) sets out Hungary's progress and challenges in accelerating the net-zero energy transition while bolstering the EU's competitiveness in the clean energy sector ([64]). It considers measures and targets put forward in the draft updated National Energy and Climate Plans (NECP) for 2030 ([65]).

Hungary has shown progresses in terms of renewable energy development and aims to become a manufacturing hub for batteries. However, the lack of a strong price signal, reliance on Russia fossil fuels and grid constraints hinder the competitiveness of the energy sector.

Retail energy prices for households have not reflected the tight energy market conditions in the past 2 years, due to a government price cap which keeps them at a level considerably lower than the EU average. Despite the 2022 changes in household price ceilings, Hungarian energy (electricity and gas) retail prices remain among the lowest in the EU.

The situation is very different for industrial consumers, who are not covered by the price regulation and have seen their electricity and gas prices drastically increased throughout 2022, remaining at levels considerably above the EU average. While gas prices peaked in December 2022 before commencing a steep decline, electricity prices for non-household consumers more than doubled in the first half of 2023, the largest increase in the EU.

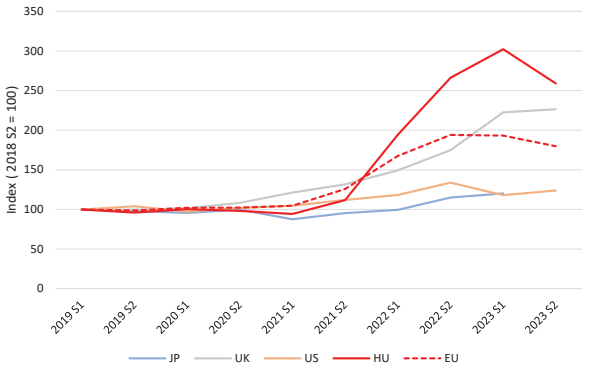
Graph A7.1: **Hungary's energy retail prices for households and industry & service**



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

In relative terms, electricity prices for non-household consumers have increased significantly compared to the US, Japan, and the UK, thus potentially affecting the international competitiveness of energy-intensive industries in Hungary.

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



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

Hungary's cap on electricity and gas prices for households remains largely untargeted,

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

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

([65]) Hungary submitted its draft updated NECP in August 2023. The Commission issued an assessment and country-specific recommendations on 18 December 2023. Commission Recommendation, Assessment (SWD) and Factsheet of the draft updated National Energy and Climate Plan of Hungary - European Commission (europa.eu)

weakening incentives for energy saving and producing regressive distribution effects. Due to increasing energy prices, the cost of the price freeze amounted to around 2% of GDP in 2022-2023, thus provoking a growing strain on the public budget. Since August 2022 the capped utility price applies up to the level of average consumption, with the excess being exposed to a considerably higher price. However, price regulation still does not account for the households' income level and prices are not responsive to market dynamics. As Hungary reduced its gas demand between August 2022 and December 2023 by 19% compared to the average of the previous five years, the level of average consumption could be updated to reflect new lower levels.

Consumer empowerment opportunities in the electricity and gas markets are still limited, and the deployment of smart meters is still lagging. Switching times are still well above the legal time limit of three weeks and only 7.3% of final household consumers had smart meters in 2022 (EU average: 80%).

In 2022, 100% of household consumers held fixed-price contracts in both electricity and gas. A reform in the Hungarian REPowerEU Chapter of the RRP aims at facilitating the application of dynamic pricing in the residential consumer and microenterprises segments. Hungary allows for collective self-consumption within the same building. However, unanimity among co-owners is required to install solar PV on multi-apartment buildings. In terms of operational support, Hungary has recently introduced measures, including as part of their reform in the recovery and resilience plans, to phase out net-metering that does not account separately of electricity injected and taken off the grid, for the purpose of calculating the network tariffs. There are no 'time of use' grid tariffs in place in Hungary, limiting the incentive for active consumers to align their consumption with production in real-time during off-peak hours.

Hungary is providing financial support to energy communities through an open call for proposals and has planned to invest in social solar plans under its RRP. However, to date, there are very few energy communities operational in Hungary, in part due to a limited enabling framework. There is no indicative target for the number of energy communities by 2025.

Hungary continues to heavily depend on Russia for most of its imports of fossil fuels and diversification efforts have remained slow. Serbia is the main entry point for Russian gas into the country, following the significant decrease in flows through Ukraine. Following the expiration of the Russia-Ukraine transit contract at the end of 2024, Hungary will rely for a dominant share of its supply on a single-entry point, further increasing supply disruption risks. Plans to secure additional supply sources through increased domestic production and drawing from Azeri gas supplies, future production in Romania, and Greek and Turkish LNG via the "Solidarity Ring" project and the Krk terminal (to be expanded from 2.9 to 6.1 bcm/y), have been thwarted by infrastructure bottlenecks in neighbouring countries and the lack of a clear source diversification strategy. Following successful market tests, the Hungarian transmission system operator (TSO) is cooperating with the respective national TSOs to increase the capacity of the interconnection points with Romania and Slovakia. In 2022, Hungary depended on Russia for around 84% of its oil imports, the highest level since 2014. Moreover, MOL refineries are designed to process mainly Russian Urals crude and would require substantial investment to process other crude grades. Hungary has a large storage capacity of around 6.5 bcm, equal to 67% of its annual gas consumption in 2022. The country operates five underground storage facilities managed by two operators: HEXUM (UGS Szöreg-1) and HGS (Pusztaederics, Zsana-Nord, Kardoskút-Pusztaszolos, Hajdúszoboszló). Hungary fulfilled its gas storage obligations last winter, reaching 98% by 1 November 2023, and ended the winter season with a storage filled at 66.22% by 1 April 2024.

Electricity demand is projected to increase rapidly, especially in the industrial sector, as Hungary pursues plans to electrify its economy and to become a manufacturing hub for electric vehicles (EVs) and batteries. Hungary depends on imports for around one third of its electricity supply, and its domestic electricity supply is largely reliant on its four Russia-designed nuclear reactors at the Paks power plant, which generate almost half of its electricity. In December 2023, the operator submitted a plan for Paks which would extend its lifetime until the 2050s. The completion of the two additional Rosatom 1.2 GW reactors is scheduled for 2030. To address increasing electricity needs and provide flexibility to the electricity system, 1.5 GW combined cycle

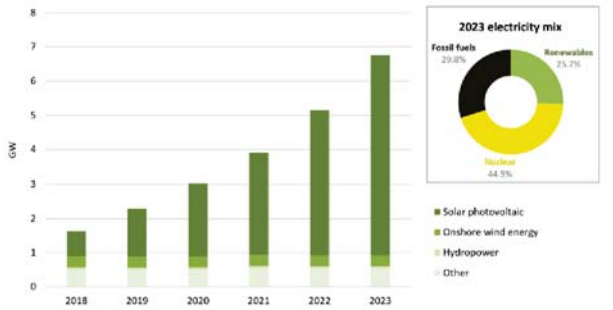
gas turbine plants are planned to be commissioned by 2027.

Hungary electricity system is well interconnected. Interconnection capacities are available with all neighbouring countries and in total their capacity reaches 50% of the total domestic generation capacities.

Hungary intends to phase out coal from domestic electricity production by 2030 as declared in the draft updated NECP, with a deadline for phase out of lignite for the Mátra Power Plant by 2025, to which Hungary committed in their territorial just transition plan under the Just Transition Fund in 2022. However, by government Resolution 1500/2023 the lignite phase-out deadline for Mátra was postponed until the commissioning of the combined cycle gas turbine power plant that is planned for the Mátra site, expected by the end of 2027. Any further postponement of the coal phase out of Matra after 2025 would hinder Hungary's achievements under the JTF. Hungary also intends to keep lignite-based electricity production available as a strategic reserve. Hungary's intentions in the area of coal may put at risk the achievement of climate targets and the just transition objectives.

2023 confirmed the strong growth of installed solar energy capacity in Hungary, with 1.6GW of newly installed capacity, bringing the total to around 5.6GW. In its draft updated NECP, Hungary plans to reach 12 GW of installed solar capacity by 2030. Residential PVs installations are supported via the RRP and national programs. In January 2024 the government had almost completely lifted the ban (imposed in October 2022) on solar energy feed-in to the grid.

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



(1) "Other" includes solid biofuels, renewable municipal waste, biogas and geothermal energy

Source: IRENA, Ember

Wind energy has been at a standstill due to the hostile regulatory environment, but legislative developments as laid out in the recovery and resilience plan (RRP) should improve the outlook significantly. Wind represents less than 1.5% of total installed capacity in Hungary and the wind capacity target of 1GW indicated in the draft updated NECP is modest. On 1 January 2024, a new package of legislation reduced the setback distance to 700 meters from the current 12km and repealed the mandatory tendering procedure for wind farm capacity. However, various factors (the scarce grid connection capacity, the long applications queue and remaining high security distance requirements, which considerably reduce the available areas for wind projects) still cast doubts over wind power development in the country.

The major challenge to future renewable energy growth is represented by scarce grid capacity, which constrains further renewables expansion and creates balancing issues for the grid. New energy projects applying today for connection to the grid cannot expect to be connected before 2030. The grid expansion and upgrade will need to accelerate to keep up the pace of new connection requests and achieve Hungary's renewables targets. The RRP reform to harmonise grid connection requirements has the potential to significantly alleviate the administrative burden on project developers and increase transparency and efficiency. Plans for increasing manufacturing capacity in energy intensive sectors (EVs and Batteries) will put additional pressure on the grid. It is important that grid is expanded especially in those area of the country with more renewable energy potential.

Hungary's National Hydrogen Strategy and NECP envisage the installation of 240MW of electrolyser capacity by 2030. Hungary aims to use hydrogen for industrial decarbonisation and in heavy-duty transport by 2030. By 2030, Hungary aims to install 240 MW of electrolysis capacity. Hungary is exploring adapting its gas storage facilities to the shift from east-west transport routes to a more south-north-west direction and making them hydrogen-compatible.

Hungary´s final energy consumption contribution is not in line with reaching the 2030 EU energy efficiency target, and further progress is needed to reach it. In 2022, Hungary's primary energy consumption decreased by 4.3% compared to 2021 and was 3.2% higher than in 2012. Final energy decreased by 4.1% year on year and was 11.2% higher than in 2012. In 2022, the sector that decreased its consumption most was industry, which cut its final energy consumption by 9.4%. The worst performance came from the transport sector, which increased its final energy consumption by 10.3%. High energy prices for industrial consumers might have impacted energy consumption in the industrial sector.

Hungary's energy efficiency improvements have been lagging, also due to weak price signals. In the last decade, its final energy consumption has been on an increasing trend and its primary and final energy intensity is significantly higher than the EU average. RRP support has been complemented by the new REPowerEU Chapter, notably by new investment in residential and public buildings and in energy-efficiency improvements in businesses. The Energy Efficiency Obligation Scheme introduced in 2021 has produced good results in the industrial sectors not covered by the price cap and therefore more receptive to adopting energy efficiency solutions.

The energy performance of the building stock is very low and regulated residential energy prices provide little incentive for renovations. Final energy consumption in residential did not decrease between 2018 and 2022, while the national long-term renovation strategy plans a reduction in building energy consumption by 20% during the same period. Heating and cooling represent the highest share of final energy consumption in residential being at about 85% in 2021, with renewables supplying 20.35% of the total energy used for heating and cooling across all sectors. A 2.5% increase year on year, after five years of decrease or stagnation, was mainly driven by a significant decrease in consumption.

The heat pump market has seen a significant acceleration following the increase of fossil fuel prices. Approximately 15 000 heat pumps were sold in 2022, an increase of 110% over the previous year ([66]), reaching a total stock of around 36 000 installed heat pumps in the residential sector. In H1 2023, average electricity prices were 3.45 times more than natural gas in residential and 2.8 times more than natural gas in the non-residential sector. These indicates that the context is apparently unattractive financially for the deployment of efficient heat pumps in the residential sector and slightly favourable in the non-residential sector. Bioenergy still remains the by far primary energy source for household heating purposes, which poses sustainability and air pollution issues.

Hungary has limited domestic PV manufacturing capacity compared to the total solar energy capacity installed in the country. One Hungarian manufacturer stands as the sole active player, operating one production facility with an annual cell manufacturing capacity of approximately 100MW. It has ambitious plans to expand this capacity significantly, targeting a range of 500-600MW in the coming years.

Hungary is positioning itself as one of the world's leading batteries suppliers for EVs. A South-Korean multinational operates a prominent battery cell plant in Göd, recently expanded to a total capacity of 30 000 MWh. The same company has announced an investment project of nearly EUR 62 million in September 2023, to boost research and development activities in Göd. Another South Korean company operates a plant in Komárom with a capacity of 7 500 MWh. In 2023, several manufacturers – mainly Chinese - announced around EUR 10 billion of investment in battery manufacturing. A planned joint Chinese-German investment project in Debrecen is worth more than EUR 7.3 billion and would have a total capacity of 100GWh. This would be the largest battery manufacturing plant in Europe. Hungary's

([66]) Energy Poverty Advisory Hub, 2023.

appeal for battery producers is also explained by the presence of a significant number of automotive manufacturers already based in the country. Adding to the momentum, a prominent Chinese company announced plans in December to construct a new EV plant near the southern Hungarian city of Szeged.

Public R&I spending for Energy Union priorities ([67]) reached EUR 64 m in 2021, a significant jump forward compared to 2020 (EUR 16 m); half of it was invested in smart energy systems, while the other half went to sustainable transport, energy efficiency and renewables technologies. Private R&I in energy spending was EUR 45 m in 2020 (2021 data is not available), mostly on sustainable transport and energy efficiency. Venture capital investment in clean energy technology start-ups and scale-ups showed a strong increase in recent years, although starting from a very low baseline: from EUR 0.1 m in 2019 to EUR 7.6 in 2023 ([68]).

([67]) JRC SETIS research and innovation data: https://setis.ec.europa.eu/publications/setis-research-and-innovation-data_en

([68]) Source: JRC SETIS (2024)

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

		Hungary				EU			
		2019	2020	2021	2022	2019	2020	2021	2022
ENERGY DEPENDNCE	**Import Dependency [%]**	**69.7%**	**56.6%**	**54.1%**	**64.2%**	**60.5%**	**57.5%**	**55.5%**	**62.5%**
	of Solid fossil fuels	45.7%	43.7%	38.5%	41.5%	43.3%	35.8%	37.3%	45.8%
	of Oil and petroleum products	86.6%	87.1%	86.9%	89.4%	96.7%	96.8%	91.7%	97.7%
	of Natural Gas	115.2%	75.6%	67.2%	99.1%	89.7%	83.6%	83.6%	97.6%
	Dependency from Russian Fossil Fuels [%]								
	of Natural Gas	95.0%	95.0%	95.0%	82.4%	39.7%	41.3%	41.1%	21.0%
	of Crude Oil	72.6%	58.8%	56.9%	84.1%	28.8%	26.7%	26.4%	19.5%
	of Hard Coal	9.7%	21.7%	18.1%	7.3%	43.5%	49.1%	47.4%	21.5%

		2016	2017	2018	2019	2020	2021	2022
DIVERSIFICATION OF GAS SUPPLIES	**Gas Consumption (in bcm)**	**10.0**	**10.7**	**10.3**	**10.4**	**10.9**	**11.4**	**9.7**
	Gas Consumption year-on-year change [%]	5.9%	7.0%	-3.6%	0.7%	4.2%	5.1%	-14.9%
	Gas Imports - by type (in bcm)	**7.6**	**9.8**	**7.7**	**11.7**	**7.9**	**7.5**	**9.3**
	Gas imports - pipeline	7.6	9.8	7.7	11.7	7.9	7.5	9.3
	Gas imports - LNG	0.0	0.0	0.0	0.0	0.0	0.0	-
	Gas Imports - by main source supplier (in bcm) (1)							
	Russia	7.2	9.4	7.4	11.1	7.5	7.1	7.7
	Not specified	0.4	0.5	0.4	0.6	0.4	0.4	1.6

		2019	2020	2021	2022	2023
	LNG Terminals - storage capacity m3 LNG					
	Number of LNG Terminals	0	0	0	0	0
	LNG Storage capacity (m3 LNG)	0	0	0	0	0
	Underground Storage					
	Number of storage facilities	5	5	5	5	5
	Technical Capacity (bcm)	6.0	6.2	6.2	6.0	6.3

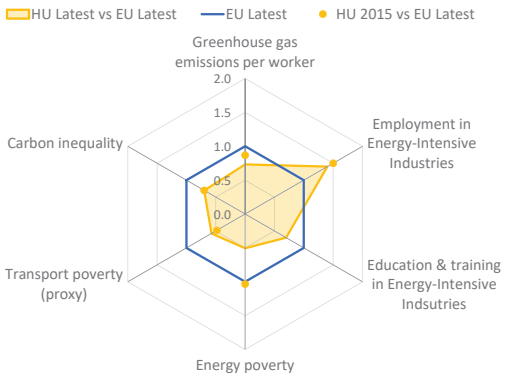
		2016	2017	2018	2019	2020	2021	2022	2023
ELECTRICITY/ENERGY	**Gross Electricity Production (GWh) (2)**	**31,902**	**32,915**	**32,067**	**34,291**	**34,930**	**36,120**	**35,775**	-
	Combustible Fuels	14,583	15,407	14,725	15,429	15,358	15,301	14,365	-
	Nuclear	16,054	16,098	15,733	16,288	16,055	15,990	15,812	-
	Hydro	259	220	222	219	244	212	178	-
	Wind	684	758	607	729	655	664	610	-
	Solar	244	349	629	1,497	2,459	3,796	4,732	
	Geothermal	0	1	12	18	16	12	4	-
	Other Sources	78	82	139	111	143	145	73	-
	Gross Electricity Production [%]								
	Combustible Fuels	45.7%	46.8%	45.9%	45.0%	44.0%	42.4%	40.2%	-
	Nuclear	50.3%	48.9%	49.1%	47.5%	46.0%	44.3%	44.2%	-
	Hydro	0.8%	0.7%	0.7%	0.6%	0.7%	0.6%	0.5%	-
	Wind	2.1%	2.3%	1.9%	2.1%	1.9%	1.8%	1.7%	-
	Solar	0.8%	1.1%	2.0%	4.4%	7.0%	10.5%	13.2%	-
	Geothermal	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	-
	Other Sources	0.2%	0.2%	0.4%	0.3%	0.4%	0.4%	0.2%	-
	Net Imports of Electricity (GWh)	**12,711**	**12,878**	**14,348**	**12,584**	**11,677**	**12,754**	**12,152**	-
	As a % of electricity available for final consumption	32.9%	32.1%	35.1%	30.4%	28.2%	29.1%	28.2%	-
	Electricity Interconnection [%]	-	**58.3%**	**58.8%**	**53.1%**	**35.3%**	**32.5%**	**41.4%**	**48.0%**
	Share of renewable energy consumption - by sector [%]								
	Electricity	7.3%	7.5%	8.3%	10.0%	11.9%	13.7%	15.3%	-
	Heating/cooling	21.0%	19.9%	18.2%	18.2%	17.7%	17.9%	20.3%	-
	Transport	7.8%	7.7%	7.7%	8.1%	11.6%	6.2%	7.8%	-
	Overall	14.4%	13.6%	12.5%	12.6%	13.9%	14.1%	15.2%	-

		2019	2020	2021	2022	2023
CLEAN ENERGY	**VC investments in climate tech start-ups and scale-ups (EUR Mln)**	**0.09**	**0.65**	**1.51**	**3.17**	**7.62**
	as a % of total VC investment (3) in Hungary start-ups and scale-ups	0.0%	0.4%	1.7%	1.6%	5.4%
	Research & Innovation spending in Energy Union R&i priorites					
	Public R&I (EUR mln)	6.3	16.1	64.4	-	-
	Public R&I (% GDP)	0.004%	0.012%	0.042%	-	-
	Private R&I (EUR mln)	43.9	45.0	-	-	-
	Private R&I (% GDP)	0.030%	0.033%	-	-	-

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

This Annex monitors Hungary's progress in ensuring a fair transition towards climate neutrality and environmental sustainability, particularly for workers and households in vulnerable situations. Hungary's green economy is relatively underdeveloped. Total jobs in the environmental goods and services sector stood at 0.9% of total employment in 2021 (EU: 2.7%). Between 2015 and 2022, the greenhouse gas emissions intensity of Hungary's workforce (see Graph A8.1 and Table A8.1) declined from 12.4 to 10.5 tonnes per worker, below the EU average of 14.3 ([69]), indicating a positive trend in the green transition. However, the progress made towards the greening of Hungary's economy has been slow, and further policy-relevant research and analysis, particularly of the labour market impacts of the green transition, is needed. Investment in relevant upskilling and reskilling should be increased, especially for workers in declining and transforming sectors, to ensure a fair green transition in line with the Council Recommendation on ensuring a fair transition towards climate neutrality ([70]). The recovery and resilience plan (RRP) outlines some measures in this regard, complementing the territorial just transition plans and actions supported by the European Social Fund Plus (ESF+).

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



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

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

([70]) Council Recommendation of June 2022 (2022/C 243/04) covers employment, skills, tax-benefit and social protection systems, essential services and housing.

Employment in Hungary's sectors that are most affected by the green transition remains stable. In 2023, employment in Hungary's energy-intensive industries comprised 4.9% of total employment (3.5% in the EU). However, employment in mining and quarrying has fallen by 28.4% since 2015 (to around 7 300 workers in 2023). The job vacancy rate in construction (see Graph A8.2), a key sector for the green transition, is relatively low (1.6% vs 3.6% in EU in 2023). Nevertheless, 57% of small and medium-sized enterprises (SMEs) in the sector reported that skills shortages are holding them back in general business activities ([71]). According to the European Labour Authority (ELA) ([72]), labour shortages were reported in 2023 for a number of occupations that required specific skills or knowledge for the green transition ([73]), including roofers, insulation workers and civil engineering labourers. Overall, vacancy rates in all transforming sectors increased between 2015 and 2022, particularly in manufacturing, and could hinder the transition towards climate neutrality. A recent report from Eurofound also identified labour shortages linked to the green transition in the energy sector ([74]). This underlines the need to ensure green jobs and skills are developed for a successful and fair green transition . To this end, Hungary allocated 5% (EUR 55 million) of its available ESF+ funding to active labour market measures and adult education over the 2021-2027 period to increase green skills and jobs.

Upskilling and reskilling in declining and transforming sectors requires further policy measures, and supporting low-skilled workers remains crucial for a fair green transition. In energy-intensive industries, workers' participation in education and training decreased from 9.5% in 2015 to 7.6% in 2023 (vs 10.9% in the EU). In Hungary, only 31% of SMEs reported that the skills required for greening

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

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

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

([74]) Eurofound (2021), Tackling labour shortages in EU Member States, Publications Office of the European Union, Luxembourg.

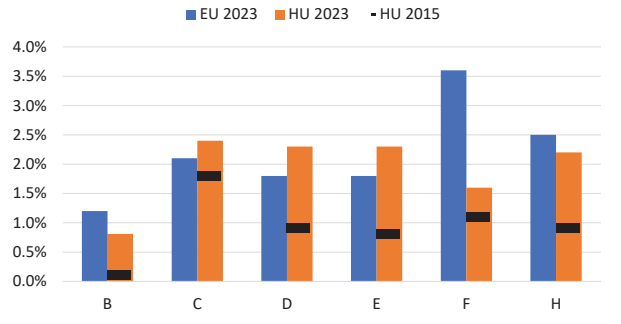
Table A8.1: **Key indicators for a fair transition in Hungary**

Indicator	Description	HU 2015	HU	EU
GHG per worker	Greenhouse gas emissions per worker – CO_2 equivalent tonnes	12.4	10.5 (2022)	14.3 (2022)
Employment EII	Employment share in energy-intensive industries, including mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24) and automotive (C29)	5.3%	4.9% (2023)	3.5% (2023)
Education & training EII	Adult participation in education and training (last 4 weeks) in energy-intensive industries	9.5%	7.6% (2023)	10.9% (2023)
Energy poverty	Share of the total population living in a household unable to keep its home adequately warm	9.6%	4.7% (2022)	9.3% (2022)
Transport poverty (proxy)	Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport	17.9%	21.3% (2023)	37.1% (2023)
Carbon inequality	Ratio between the consumption footprint of the top 20% vs bottom 20% of the income distribution	1.9	1.9 (2021)	2.7 (2021)

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

business activities are becoming more important (vs 42% in the EU) ([62]). If Hungary matches its projected contribution to the EU's 2030 renewable energy target, between 600 and 1 400 additional skilled workers will be needed for the deployment of wind and solar energy, which may require an investment in skills of EUR 1.7-2.2 million ([75]). Hungary has committed to adopting a national strategy for developing skills needed for a fair green transition by the end of 2024 under the RepowerEU chapter of its RRP. The RepowerEU plan will also finance at least 50 000 professionals to participate in green skills training courses by Q2-2026.

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



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

Energy poverty indicators deteriorated in Hungary in 2023 due to persistent inflation leading to a decline in real wages. The share of the population unable to keep their homes adequately warm decreased from 9.6% in 2015 to 4.7% in 2022, but rose sharply to 8% in 2023 ([76]), despite access to regulated prices for all gas and electricity households consumers. Energy poverty is particularly high in the least developed regions (42% Észak-Alföld and 46% Dél-Dunántúl) and in villages (65%). In 2022, energy poverty affected 10% of the population at risk of poverty (AROP) (EU: 20.1%) and 4.3% of lower middle-income households (deciles 4-5) (EU: 11.6%). In January 2023, 21.3% (vs 37.1% in the EU) of the population at risk of poverty spent a considerable proportion of their budget (more than 6%) on private transport fuels ([77]).

High levels of air pollution are increasing health risks in Hungary while environmental inequalities remain an issue. In 2021, the average levels of air pollution stood above the EU average (14.4 vs 11.4 µg/m³ PM2.5), with critical levels of air pollution ([78]) registered in each NUTS-3 region of Hungary. This has led to a significant impact on health, affecting vulnerable groups in particular, and to around 10 400 premature deaths annually ([79]). Meanwhile, the consumption footprint of the richest 20% of the population was 1.9 times as high as the footprint of the poorest 20% in 2021 (vs 1.8 in the EU). For both groups, the consumption footprint is highest for housing and food ([80]).

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

([76]) According to reporting by the Hungarian Central Statistical Office.

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

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

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

([80]) Developed in the context of the EMPL-JRC DISCO(H) project. Methodology explained in Joint Research Centre, 2024. Carbon and environmental footprint inequality of household consumption in the EU. JRC137520. The EU

Hungary has started to implement measures which could help it make progress towards achieving a fair green transition. Hungary's measures to boost employment and support businesses as well as analyse and manage the impact of climate change (based on the national occupational safety and health policy) are welcome ([81]). Also welcome is its commitment to adopting a national strategy for green skills. However, further action is needed to address the existing challenges in education and the upskilling of workers with an emphasis on green skills and sectors. In addition, targeted efforts are needed to intensify and align the country's policies with the environmental objectives, to support the most affected and vulnerable groups, and to actively involve social partners.

average refers to EU27 without Italy (household income data not available for IT in the HBS)

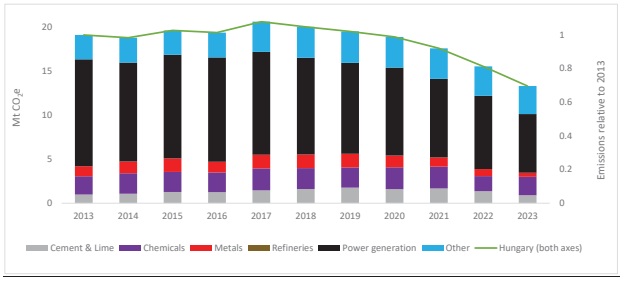
([81]) See monitoring review of the Council Recommendation of June 2022, which took place in October 2023.

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

Hungary's circular economy transition is insufficient to achieve the EU Circular Economy Action Plan goals. Hungary's material footprint was at the EU average in 2022 with 14.52 tonnes per capita. Waste production increased to 1.8 tonnes per capita in 2020. The construction, mining and energy sectors are the main waste generators. The trends show that Hungary is just at the beginning of its circular economy transition. The 2022 Eco-Innovation Scoreboard placed Hungary in the 'catching-up group', with a score of 81.2. As of September 2023, Hungary totalled only 26 awarded EU Ecolabel licences and 93 products with the EU Ecolabel, showing a low but increasing take-up of licences and products.

In 2019-2023, greenhouse gas emissions from the sectors covered by the EU emissions trading system (ETS) in Hungary ([83]) declined by 32%, after a strong increase in 2013-2019. In 2023, half of greenhouse gases emitted by Hungary's ETS installations came from power generation, a bit below the EU average, 57%. Of the total emissions from all industry sectors, the chemical industry emitted almost one third, cement and lime production about 15%, the metals industry 7%, and other industries 48% ([84]). Between 2019 and 2023, the power sector registered a higher emissions reduction (35%) ([85]) than the industry sectors (28%). Between 2013 and 2023, greenhouse gas emissions declined by 45% in power generation but only by 5% in the industry sectors, driven by the metals industry. This resulted in a combined greenhouse gas reduction of 30% in this period.

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



Source: European Commission

The transition to a circular economy is key to improving the efficiency of the Hungarian industry. Although below the EU average, the country has shown an increase in the use of circular materials over the last few years, reaching 7.9% in 2022. A similar trend can be seen for resource productivity, with 1.99 purchasing power standards (PPS) per kilogram in 2022 ([86]), showing an improvement in the Hungarian economy's ability to efficiently use material resources to produce wealth. Most materials are used by the construction and energy sectors ([87]). Hungary was dependent on imports for 28.8% of materials used in 2022 ([88]), making the country comparatively more vulnerable to supply chain disruptions than other countries. Energy production is, by far, the most water-consuming economic activity in Hungary (with more water abstraction than all other economic sectors together) ([89]). Circular economy measures in agrifood are insufficient. Despite some progress, there is a need for a strengthened policy framework, focusing on food waste reduction, food waste and biomass use for composting or energy valorisation, and the development of the bioeconomy ([90]).

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

([83]) This analysis excludes air travel. For more details and the data sources, see Weitzel, M; van der Vorst, C. (2024), Uneven progress in reducing emissions in the EU ETS, JRC Science for policy brief, JRC138215, Joint Research Centre.

([84]) Of the greenhouse gas emissions classified as coming from the 'other' group, almost half originated from the manufacture of refined petroleum products.

([85]) This includes a steep decrease of 15% year-on-year in 2020, and a gradual rebound in the next 2 years.

([86]) Below the EU average of 2.45 PPS per kg.

([87]) OECD (2018), *OECD Environmental Performance Reviews: Hungary*, available at this link.

([88]) Above the EU average of 22.4%, available at this link.

([89]) European Environment Agency (2023), Water abstraction by economic sector, 2000-2019, available at this link.

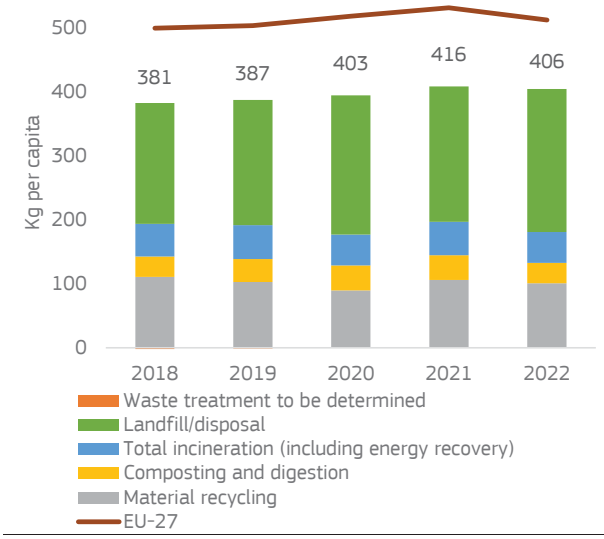
([90]) OECD (2023), *Towards a National Circular Economy Strategy for Hungary*, OECD Publishing, Paris, available at this link.

Table A9.1: **Circularity indicators**

	2018	2019	2020	2021	2022	2023	EU-27	Latest year
Industry								
Resource productivity (purchasing power standard (PPS) per kilogram)	1.4	1.4	1.6	1.7	2.0	-	2.5	2022
Circular material use rate (%)	7.0	5.6	5.2	7.3	7.9	-	11.5	2022
Eco-innovation index (2013=100)	64.8	64.0	65.2	69.6	81.2	-	121.5	2022
Recycling of plastic packaging (%)	30.0	33.0	24.9	-	-	-	40.7	2021
Cost of air emissions from industry (EUR bn)	6.4	6.2	6.5	6.6	-	-	352.7	2021
Built environment								
Recovery rate from construction and demolition waste (%)	99.0	-	98.0	98.3	-	-	89.0	2020
Soil sealing index (base year = 2006)	103.4	-	-	-	-	-	103.4	2018
Non-residential floor area (m^2 per capita)	11.6	11.7	11.9	-	-	-	18.0	2020
Waste backfilled (%)	6.7	-	88.1	-	50.9	-	9.9	2020

Source: Eurostat, European Environment Agency

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



Source: Eurostat

Hungary's performance in waste management is insufficient. Municipal waste generation is below the EU average, but some generated waste might not be properly reported ([91]). Hungary recycled 32.8% of municipal waste in 2022 ([92]), while the plastic packaging recycling rate stood at 24.9% in 2020, below the EU average. Hungary missed the 2020 waste targets and risks missing all the 2025 ones for municipal waste and packaging ([93]). Landfilling of municipal waste stood at 55,2% in 2022, far from the target of a maximum of 10% by 2035 and showing an increasing trend. The main challenges for waste management include insufficient collection and treatment capacity for some specific streams such as packaging, biowaste and textile. Significant reforms are ongoing in the waste management sector, but their impacts are still to be assessed.

Improving resource efficiency is essential for the transition of the building sector in Hungary. Hungary's building permits index shows an increasing trend in construction activities over the last years, standing at 162.9 in 2023 ([94]). In 2020, Hungary submitted a long-term renovation strategy aiming to decarbonise the building stock. Construction and demolition waste per capita remains well below the EU average. The proportion of backfilling increased to 88.1% in 2020, well above the EU average of 9.9%. Hungary's recovery rate rapidly increased to 98.3% in 2021, achieving the Waste Framework Directive's target for 2020 of 70%. In 2021, 84% of the Hungarian population was connected to at least secondary wastewater treatment. Several urban areas in Hungary have levels of arsenic, boron and fluoride in drinking water that are above the EU parametric values, which is a major public health issue.

([91]) European Commission (2023), *The early warning report for Hungary*, available at this link.

([92]) Below the EU average recycling rate of 48.6% for municipal waste in 2022, available at this link.

([93]) Specifically for plastics and glass. European Environment Agency (2023), *Many EU Member States not on track to meet recycling targets for municipal waste and packaging waste*, available at this link.

([94]) with 2015 as base (2015=100). Statistics | Eurostat (europa.eu).

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 Hungary'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). Hungary allocates 29.1% of its total RRP budget to digital (EUR 2.23 billion) ([95]). Under Cohesion Policy, an additional EUR 2.5 billion (12% of the country's total Cohesion Policy funding) is allocated to the country's digital transformation ([96]).

The Digital Decade Policy Programme sets out a pathway for EU's successful digital transformation by 2030. Hungary's national roadmap outlines the actions it intends to take to reach the objectives and targets at national level. The first Report on the State of the Digital Decade highlighted the need to accelerate and deepen the collective efforts to reach the EU-wide targets and objectives ([97]). Among others, a digitally skilled population increases the development and adoption of digital technologies and leads to productivity gains and new business models. It also leads to higher inclusion and participation in an environment increasingly shaped by the digital transformation ([98]). Digital technologies, infrastructure and tools all play a role in addressing the current structural challenges, including strategic dependencies, cybersecurity and climate change.

Hungary has improved significantly and scores slightly above the EU average in terms of digital skills. 59% of the population possesses at least basic digital skills, representing a 10 percentage point increase in two years. However, people who are above 55 years of age lag behind the national average. The proportion of specialists in information and communications technology (ICT) in the Hungarian workforce has increased slightly in recent years but remains relatively low, at 4.2% compared to the EU average of 4.8%. The Hungarian RRP and cohesion policy programmes include several measures that target digital skills ([99]).

Broadband connectivity remains above the EU average and on 5G, Hungary has again made considerable progress during the last year. Fixed very high capacity network (VHCN) coverage went up from 80% in 2022 to 84% in 2023, above the EU average of 79%. 5G coverage in Hungary increased to 84% in 2023 (up by 26 percentage points from the previous year). However, it is still lower than the EU average, which stands at 89%.

The digitalisation of businesses remains a major challenge in Hungary. Only 53% of SMEs in Hungary had at least basic digital intensity in 2023 (compared with an EU average of 58%). The use of advanced digital technologies, such as data analytics, cloud or artificial intelligence (AI), has improved significantly during the last year, as already 66% of enterprises have taken up at least one of these three technologies (compared to the EU average of 55%). However, the use of AI is half the EU average (4% in Hungary against 8% in the EU). Further investments and large-scale, targeted and effective measures are necessary to keep up the pace of the digital transformation of businesses, especially for SMEs, including the development of digital skills in order to increase SMEs' use of digital technology and to develop digital start-ups. In 2022, 2.6% of enterprises in Hungary reported ICT service outage due to cyberattacks (e.g. ransomware attacks, denial of service attacks). Over the same year, 21.1% of

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

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

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

([98]) 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) and OECD (2019): Going Digital: Shaping Policies, Improving Lives – Summary, https://www.oecd.org/digital/going-digital-synthesis-summary.pdf.

([99]) The Digital Renewal Operational Programme Plus contains digital skills measures worth up to EUR 400 million; the Economic Development and Innovation Operational Programme Plus contains measures in vocational education and training investments.

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

	Hungary			EU	Digital Decade target by 2030 (EU)
	2022	2023	2024	2024	
Digital skills					
At least basic digital skills	**49%**	**49%**	**59%**	**56%**	**80%**
% individuals	2021	2021	2023	2023	2030
ICT specialists ([1])	**3.9%**	**4.1%**	**4.2%**	**4.8%**	**20 million**
% individuals in employment aged 15-74	2021	2022	2023	2023	2030
Digital infrastructure/connectivity					
Fixed very high capacity network (VHCN) coverage	**72%**	**80%**	**84%**	**79%**	**100%**
% households	2021	2022	2023	2023	2030
Fibre to the premises (FTTP) coverage ([2])	**64%**	**70%**	**76%**	**64%**	**-**
% households	2021	2022	2023	2023	
Overall 5G coverage	**18%**	**58%**	**84%**	**89%**	**100%**
% populated areas	2021	2022	2023	2023	2030
Digitalisation of businesses					
SMEs with at least a basic level of digital intensity	**34%**	**NA**	**53%**	**58%**	**90%**
% SMEs	2021		2023	2023	2030
Data analytics	**NA**	**NA**	**53%**	**33%**	**-**
% enterprises			2023	2023	
Cloud	**21%**	**21%**	**37%**	**39%**	**-**
% enterprises	2021	2021	2023	2023	
Artificial intelligence	**3%**	**3%**	**4%**	**8%**	**-**
% enterprises	2021	2021	2023	2023	
AI or cloud or data analytics ([3])	**NA**	**NA**	**66%**	**55%**	**75%**
% enterprises			2023	2023	2030
Digitalisation of public services					
Digital public services for citizens	**64**	**68**	**73**	**79**	**100**
Score (0 to 100)	2021	2022	2023	2023	2030
Digital public services for businesses	**74**	**76**	**75**	**85**	**100**
Score (0 to 100)	2021	2022	2023	2023	2030
Access to e-health records	**NA**	**80**	**86**	**79**	**100**
Score (0 to 100)		2022	2023	2023	2030

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

Source: Digital Economy and Society Index

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

Hungary continued to progress on the digitalisation of public services, but its performance remains below the EU average, mainly because of low scores on cross-border services. The use of national eID cards remains limited, as most users prefer the client gate trusted profile, which is a basic authentication method using a login name and a password ([100]). The Hungarian RRP includes several measures that

([100])In the fourth quarter of 2023, there were approximately 6.7 million national eID cards capable of e-identification in Hungary (covering 67% of the population). At the end of 2022, the client gate trusted profile had 5.54 million active profiles. In more than 97.75% of cases, the basic client gate was used, while the national eID card was chosen by 1.5% of users.

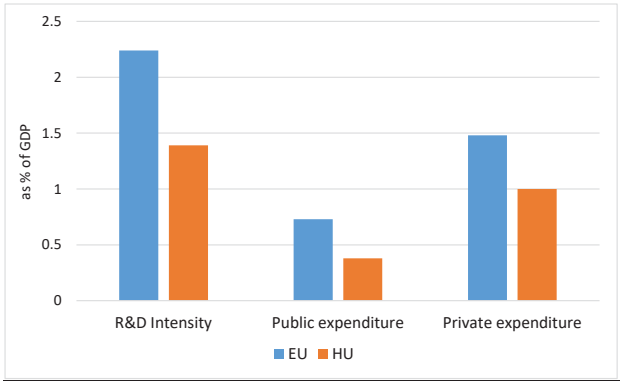
focus on improving digitalisation in healthcare. Regarding access to electronic health records, Hungary has already a high score of 86 out of 100. The Digital Renewal Operational Programme Plus also allocates EUR 2.042 billion to the digitalisation of businesses and the public sector in Hungary – supporting key EU initiatives (e.g. the Digital Wallet, eIDAS and the interoperability framework) and the UN Sustainable Development Goals.

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

Hungary is a 'moderate innovator' and the gap between its performance and the EU average is broadening. According to the 2023 edition of the European Innovation Scoreboard ([101]), its innovation performance has increased by 7.7 percentage points since 2016, at a lower rate than the EU. Its overall performance remained below the EU average (70.4% of the EU performance) but has caught up slightly in recent years (since 2020).

Low public spending on R&D undermines the quality and performance of the science base, thus hindering Hungary's transition toward a more knowledge-based economy. Driven by the private sector, with 1.39% of GDP in 2022, Hungary's total R&D spending remained below the EU average of 2.24% and the country's 1,8% target initially set for 2020 as well as the ambitious 3% goal by 2030 ([102]). With the new John von Neumann Programme ([103]), Hungary aims to reinforce a knowledge-based economy and to become one of the top innovators in Europe by 2030. However, low public R&D intensity (standing at 0.38% of GDP in 2022) hampers the quality and efficiency of the public R&I system. Following a peak at 6.4% in 2019, the share of scientific publications within the top 10% most cited scientific publications worldwide dropped to 5.9% in 2020 and remained below the EU average of 9.6%. A break in trend can also be observed in the share of international co-publications as % of total number of publications, with a decline from 52.4% in 2021 to 50.9% in 2022 (compared to 55.5% for the EU average) ([104]). A weak public research base limits the scope for generating knowledge spillovers that are needed to raise productivity and remain competitive.

Graph A11.1: **R&D intensity in 2022**



Source: Eurostat, 2023

Skill shortages remain a major challenge for the Hungarian research and innovation system, further exacerbated by deteriorating conditions for researchers. Against the EU average of 43.1%, the share of population aged 25-34 who have successfully completed tertiary education was 29.4% in 2023 and is one of the lowest in the EU. Following a peak in 2020, the number of new graduates in science and engineering per thousand population aged 25-34 fell back from 17.6 to 9.1 in 2021, to a pre-2014 level and well below the EU average of 16.9. A series of factors and recent developments are creating uncertainty among the research community and are severely affecting the attractiveness of research careers. This includes the low salaries for PhD students and researchers, the change of the employment status of public researchers from public servants to workers directly covered by the labour code, and finally the introduction of a performance-based funding model of public research centres based on an unclear evaluation system ([105]). In addition, the differentiation of state-owned universities in favour of institutions governed by public trust funds when it comes to the allocation of public funding affects the quality of scientific excellence ([106]). Concerns over academic and

([101])2023 European Innovation Scoreboard (EIS), country profile: Hungary https://ec.europa.eu/assets/rtd/eis/2023/ec_rtd_eis-country-profile-hu.pdf The EIS provides a comparative analysis of innovation performance in EU countries, including the relative strengths and weaknesses of their national innovation systems (also compared to the EU average).

([102])https://nkfih.gov.hu/hivatalrol/strategia-alkotas/kutatasi-fejlesztesi-innovacios-strategia.

([103])https://kormany.hu/dokumentumtar/neumann-janos-program.

([104])Source: Science-Metrix.

([105])In 2023 HUN-REN introduced a new indicator-based evaluation system with retroactive performance requirements for 2022 which set the financial allocations for the research centres in 2024.

([106])While the non-model changed public universities receive basic funding for maintenance and headcount, the model changed institutions receive extra funding for example for salaries or R&I activities from the government. with focus on quantitative rather than qualitative output.

scientific freedom also remain ([107]). (See also Annex 15 on education.)

Hungary's innovation capacity remains limited to a small group of big foreign-owned enterprises and some large domestic companies. The Hungarian economy largely relies on high foreign direct investment (FDI) net flows ([108]) of big companies that engage in medium-high-tech and high-tech manufacturing. A significant proportion of the small and medium enterprises do not engage in innovation activities or perceive a need to, while there is a high share of non-innovators with a potential to innovate ([109]).

Businesses do not systematically seek out public-private collaboration. Public-private relationship shows asymmetry when it comes to cooperation between academia and businesses. Public expenditure on R&D financed by business enterprises (national) as % of total public expenditure on R&D remains lower than the EU average (2.89% in 2021, compared to 7.11%).

The very limited support for R&I in the Hungarian recovery and resilience plan (RRP) is a missed opportunity. The Hungarian RRP includes only one R&I-supporting measure, which aims at creating national laboratories to foster public-private collaboration around socio-economic and environmental challenges. In light of the low public expenditure for R&D in Hungary and the challenges that hinder the country's scientific and innovation performance, full exploitation of the ERDF would be important to provide stronger support for such a strategic area, which is essential to build a more resilient and competitive economy.

([107])EC, Education and training monitor 2023.

([108])Source EIS Hungary country profile: 61% of GDP is outstanding against the EU average of 2.1%.

([109])See EIS Hungary country profile: Non-innovators with potential to innovate 39.6% against the EU average of 17.2%.

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

Hungary	2010	2015	2020	2021	2022	EU average (1)
Key indicators						
R&D intensity (GERD as % of GDP)	1.13	1.34	1.59	1.64	1.39	2.24
Public expenditure on R&D as % of GDP	0.43	0.34	0.37	0.4	0.38	0.73
Business enterprise expenditure on R&D (BERD) as % of GDP	0.68	0.98	1.22	1.24	1	1.48
Quality of the R&I system						
Scientific publications of the country within the top 10% most cited publications worldwide as % of total publications of the country	5.1	4.8	5.9	:	:	9.6
Patent Cooperation Treaty (PCT) patent applications per billion GDP (in PPS)	1.4	1.5	1.17	:	:	3.4
Academia-business cooperation						
Public-private scientific co-publications as % of total publications	9.2	9.4	10.7	11.5	10.7	7.6
Public expenditure on R&D financed by business enterprise (national) as % of GDP	0.057	0.029	0.008	0.01	:	0.054
Human capital and skills availability						
New graduates in science & engineering per thousand pop. aged 25-34	7.2	10.7	17.6	9.1		16.9
Public support for business enterprise expenditure on R&D (BERD)						
Total public sector support for BERD as % of GDP	0.265	0.353	0.238	0.26	:	0.204
R&D tax incentives: foregone revenues as % of GDP	0.163	0.148	0.038	0.035	:	0.104
Green innovation						
Share of environment-related patents in total patent applications filed under PCT (%)	12.1	12.9	8.3	:	:	14.7
Finance for innovation and economic renewal						
Venture capital (market statistics) as % of GDP	0.01	0.039	0.08	0.089	0.074	0.085
Employment share of high growth enterprises measured in employment (%)	:	20.69	:	:		12.51

Note: EU average for the latest available year or the year with the largest number of country data.

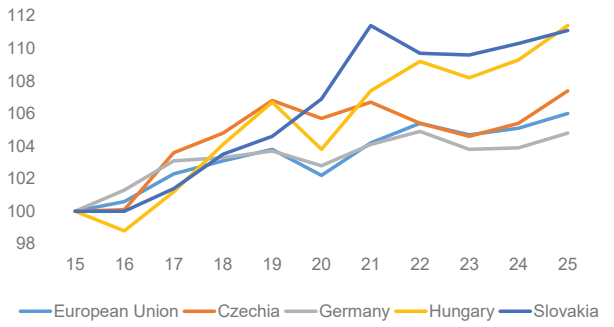
Source: Eurostat, OECD, DG JRC, Science-Metrix (Scopus database and EPO's Patent Statistical Database), Invest EU

Hungarian businesses continue to be confronted by a tough economic climate linked to high inflation, including high energy prices. The economy began to contract in 2022 amid high inflation, low business confidence and declining investment. Producer prices continued to increase more rapidly than in almost all other Member States throughout 2023 ([110]). Because of this environment, the confidence indicator in industry remained considerably below the EU average throughout 2023 ([111]), adversely affected in particular by the decrease in orders in manufacturing and the general price environment. The energy crisis and tough economic climate have had an impact on businesses and their competitiveness, with a sizeable increase in the rate of bankruptcies over the past 3 years. The index of industrial producer prices on the domestic market increased more in Hungary than in any other Member State throughout 2022 and 2023 ([112]). According to a 2023 EIB Investment Survey ([113]), firms in Hungary are more likely than other EU Member States to have faced increases in energy costs (97% vs 93%), with a larger proportion facing increases of 25% or more (86% vs 68%). The major concerns for firms in Hungary are energy prices (91%) and uncertainty (83%).

Hungarian labour productivity is around two-thirds of the EU weighted average. Convergence of productivity with the EU, in terms of both GDP per hour worked and total factor productivity growth, began to re-emerge in 2017. Over the past 5 years, Hungary has recorded the fourth-highest growth in labour productivity and the fifth-highest growth in total factor productivity among the Member States that joined the EU after 2004. Real GDP per person employed increased by 2.8% in 2022 and by 0.5% in 2023. Gross value added per person employed at constant prices increased by 4.9% in 2022, above the EU average of 3.6%.

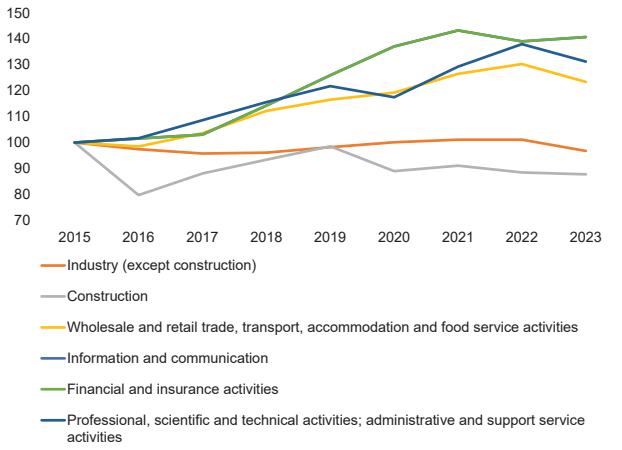
Productivity varies significantly by sector (Graph A12.2), with industry and construction lagging behind. For industry, real labour productivity per person increased by 0.5% in 2022 and decreased by 5.1% in 2023, well below the EU average (-1.24%). This is most likely a reflection of exposure to international markets, with internationally oriented (large) firms performing relatively well and domestic small and medium-sized enterprises (SMEs) less so. This difference points to the importance both of global competition and of foreign direct investment inflows for productivity.

Graph A12.1: **Total factor productivity**



Source: Commission AMECO database

Graph A12.2: **Labour productivity by sector (GDP per person employed, 2015=100**



Source: Eurostat national accounts

Hungarian SMEs face some difficult financing conditions, according to the 2023 Survey on the Access to Finance of Enterprises (SAFE) ([114]). Access to public financial support is below the EU average, and – with a high number of SMEs in the

([110]) Statistics | Eurostat (europa.eu) Producer prices in industry, total – quarterly data.

([111]) Statistics | Eurostat (europa.eu) Industrial confidence indicator.

([112]) Industrial producer prices down by 0.3% in the euro area and by 0.2% in the EU – Eurostat (europa.eu)

([113]) EIB Investment Survey 2023 – Hungary overview

([114]) Data and surveys – SAFE (europa.eu)

economy – this can be a considerable constraint to the scaling up and growth of these companies.

In light of demographic ageing and a declining fertility rate, Hungary's economic development relies on the capacity to remove obstacles to sustainable productivity growth. While part of the productivity slowdown reflects increasing labour shortages (with low-productivity workers included in the labour force), structural weaknesses remain significant. A comprehensive SME strategy, particularly one focused on digitalisation and digital skills, could benefit the country, accompanied by addressing weaknesses in the business environment. The 2022 European Innovation Scoreboard shows Hungary is among the innovation laggards, with performance relative to the EU decreasing over time (see also Annex 11). Innovation and R&D by business is low.

A major contributory factor to future Hungarian competitiveness is the quality of its Human Capital. Students' socio-economic background remains a strong predictor of their performance according to the latest, 2022 "Programme for International Student Assessment" (PISA) study published by the OECD. The study reveals that 3 out of 10 Hungarian students in mathematics and 1 in 4 students in reading and science do not meet the basic proficiency levels in these areas, with the achievement gap by socio-economic status being also larger than in other EU countries. More than half of students (54.9% vs EU average 48.0%) from the bottom quarter of the socio-economic status underachieve in mathematics, a share that increased by 6.7 percentage points between 2018 and 2022 (see annex 15 for more detail).

The business environment and general economic environment are affecting Hungarian competitiveness. Business entry rates are relatively low in Hungary and bankruptcies have been high throughout 2022 and 2023. Regulation, ad hoc taxes and an uncertain business environment limit market entry, competition and ultimately innovation in several sectors of the economy. The government's policy of pushing non-domestic companies out of the Hungarian market can have important implications for innovation and productivity and can negatively impact on cohesion policy support for SMEs. In recent years there have been interferences in markets, weakening the business environment. These have the potential to discourage or limit EU and foreign investment, in effect enabling purchases of companies by (less efficient) state-owned enterprises or private firms with ties to the government.

Certain firms and industries face discriminatory treatment through tailor-made taxes, price caps and regulations imposed at short notice and without prior consultation. Examples include price caps and profit taxes on the production of cement and ceramic materials, together with increased tax on insurance and pharmaceutical companies. For several years the government has used its extraordinary power under the 'state of danger' to introduce such measures. The 'state of emergency' continues to be extended and will also continue in 2024. The retail sector faces specific regulations that hinder development. Conditions for authorising the establishment of or changes to shops above 400m^2 are not transparent. The tax on the retail sector disproportionately burdens larger companies that are typically foreign owned. Legislation forbids European operators from adopting a franchised structure (common among larger Hungarian retail operators) if restructuring occurs for economic reasons (e.g. to lower the tax burden).

The government frequently uses its power to exempt transactions from merger control. The impact of such transactions on the economy, competition and the single market is therefore not assessed. The criteria for these exemptions are not clear, and there is no formal procedure to contest them or the decision itself.

State or state-friendly domestic ownership has increased in banking, telecommunications, utilities, media, TV and radio broadcasting, to the detriment of foreign ownership. Government announcements suggest similar transactions can be expected in insurance, retail and the transport sector. The decreased presence of foreign capital and know-how in high value-added industries like banking and telecommunications risks curbing Hungary's opportunities for productivity growth and innovation.

In some sectors, product market regulations create barriers to competition and market entry. State ownership is prevalent in these sectors and is on the increase. Hungary has the highest number of regulated professions in the EU,

with professions like tourist guides, patent trademark agents and transport workers having levels of restrictiveness above the EU average.

Hungary's REPowerEU chapter represents an ambitious package of measures to help address significant energy challenges that Hungary is currently facing in order to increase its energy savings and renewable potential. Large parts of the reforms focus on improving the electricity system. These include setting up dynamic pricing in the retail electricity market, incentivising the uptake of electricity storage, and increasing the number of consumers that use smart meters. The plan includes an ambitious target for connecting power plants to the grid based on renewable energy sources. Other reforms include a strategy for biogas and biomethane with a biomethane action plan, and a national strategy on skills for the green transition.

The digitalisation of businesses remains a major challenge in Hungary. Most businesses, in particular SMEs, are not yet maximising the opportunities offered by digital technologies. This affects the competitiveness of the economy. The 2023 Digital Economy and Society Index indicates performances below the EU average and objectives in several dimensions. Hungary performs best on broadband connectivity and worst on the integration of digital technology in firms' activities. According to the index, only 52% of SMEs have at least a basic level of digital intensity, compared with 69% for the EU ([115]). Use of electronic information sharing and e-invoicing is far below the EU average.

Hungary is an open economy, highly integrated into the single market and heavily reliant on EU sources. In 2023, 27.3% of value added was sourced from the rest of the EU compared to an EU average of 19.7%. The Single Market Scoreboard indicates that Hungary experienced a significant improvement in transposing EU law from 2022 to 2023. The transposition deficit was 0.2% at the end of 2023 (EU average 0.7%), compared with 1.5% in 2022. However, the transposition delay in overdue directives and the conformity deficit are both significantly above the EU average. There are 41 ongoing infringement procedures, significantly above the EU average of 26 ([116]). The Hungarian SOLVIT center handled 10% of the cases submitted to SOLVIT network in 2023. Hungary solved 75% of SOLVIT cases (21) it handled as lead centre, below the EU average of 88.3%. The caseload of the Hungarian SOLVIT as home centre is the second highest among Member States . Hungary does not actively participate in EU tools such as the Single Market Enforcement Taskforce, which is designed to improve the functioning of the single market.

Hungary is implementing several measures to improve the competition in public procurement. The proportion of contracts awarded in procedures where there was just one bidder decreased from 33% in 2022 to 32% in 2023 but is stillabove the EU average (27%) ([117]). The commitments Hungary has undertaken under its Recovery and Resilience Plan (RRP) aim to improve the transparency and efficiency of public procurement and to address the lack of competition in the short, medium and long term. Hungary has reported to have set up a single bid reporting tool, a performance measurement framework, developed a publicly available function allowing the structured search and bulk export of contract award notice data, and adopted an action plan on public procurement. In March 2022, guidance was published on best practices to avoid single bid public procurements.

The gathering of data by the newly created Integrity Authority and the reporting obligation on market concentration in public procurement can help identify the root causes behind the lack of competition on the public procurement market. The recently adopted Construction Law raises concerns in terms of public procurement procedures in the sector. The scope and practical implementation of its provisions are unclear, and the application of the law could disconnect the project from local needs. This may cause bottlenecks in the procurement process, resulting in project implementation delays and affecting both the RRP and cohesion policy. The government promotes the use of public

([115])For a more complete analysis see Annex 10 on Digital Transformation.

([116])Single Market Scoreboard 2023.

([117])The Single Market and Competitiveness Scoreboard | Single Market Scoreboard (europa.eu)

procurement as a strategic tool to achieve sustainable goals, and the Hungarian regulatory framework for public procurement provides a good foundation for this. However, the uptake of sustainable procurement by contracting authorities is moderate. Further operational support is needed to help them implement green, social and innovative public procurement. A green public procurement strategy was adopted in December 2022, focusing on the development and dissemination of methodologies and tools that support contracting authorities with the uptake of strategic public procurement. However, it has not yet been adopted.

Implementing the Single Digital Gateway Regulation will improve online access to information, administrative procedures and assistance within the EU. Hungary is in the intermediate stage implementing the components needed to connect to the Once-Only' Technical System (OOTS). The system will enable the automated cross-border exchange of evidence between competent authorities, improving online access to information, administrative procedures and assistance within the EU. The onboarding of Hungarian authorities is crucial for the system to function smoothly and to reduce administrative burden. Hungary lacks a pre-notified or notified eIDAS eID scheme.

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

Hungary							
POLICY AREA	**INDICATOR NAME**	**2019**	**2020**	**2021**	**2022**	**2023**	**EU27 average***
HEADLINE INDICATORS							
Economic Structure	Net Private investment, level of private capital stock, net of depreciation. % GDP[1]	8.6	6.7	7.5	8.5	6.4	**3.8**
	Net Public investment, level of public capital stock, net of depreciation, % GDP[1]	2.6	2.4	2.2	1.1	0.5	**1.2**
	Real labour productivity per person in industry (% yoy)[2]	2.3	-3.9	4.2	0.5	-5.1	**-1.24**
Cost competitiveness	Nominal unit labour cost in industry (% yoy)[2]	2.9	-0.5	2.3	2.8	26.7	**9.83**
SINGLE MARKET							
Single Market integration	EU Trade integration, % (Average intra-EU imports + average intra EU exports)/GDP[2]	59.5	57.5	58.0	66.8	56.5	**42.9**
Compliance	Transposition deficit, % of all directives not transposed[3]	0.5	1	0.7	1.5	0.2	**0.7**
	Conformity deficit, % of all directives transposed incorrectly[3]	1.5	1.6	1.8	1.9	2.3	**1.1**
	SOLVIT, % resolution rate per country[3]	89.3	95.0	91.2	93.5	75.0	**88.3**
	Number of pending infringement proceedings[3]	29	36	32	30	41	**25.9**
Restrictions	EEA Services Trade Restrictiveness Index[4]	0.05	0.05	0.05	0.05	0.05	**0.05**
Public procurement	Single bids, % of total contractors[3]	40	39	40	33	32	**28.6**
	Direct Awards, %[3]	6	6	5	5	4	**8.1**
ECONOMIC STRUCTURE							
Shortages	Material Shortage (industry), firms facing constraints, %[5]	9.3	8.8	23.4	22.2	10.8	**17.2**
	Labour Shortage using survey data (industry), firms facing constraints, %[5]	58.5	24.4	38.5	39.0	28.6	**23.3**
	Vacancy rate, % of vacant posts to all available ones (vacant + occupied)[2]	2.45	1.8	2.3	2.7	2.3	**2.5**
Strategic dependencies	Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials[6]	0.18	0.2	0.2	0.21	0.21	**0.22**
	Installed renewables electricity capacity, % of total electricity produced[2]	0.0	0.0	0.2	0.3		**50**
BUSINESS ENVIRONMENT - SMEs							
Investment obstacles	Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle[7]	9.2	10.8	7.6	7.0	11.0	**22.2**
Business demography	Bankruptcies, Index (2015=100)[2]	-	-	43.9	81.2	209.8	**105.6**
	Business registrations, Index (2015=100)[2]	-	-	166.7	165.2	145.0	**120.2**
Late payments	Payment gap - corporates B2B, difference in days between offered and actual payment[8]	-	18	12	11	15	**15**
	Payment gap - public sector, difference in days between offered and actual payment[8]	-	19	9	14	14	**16**
	Share of SMEs experiencing late payments in past 6 months, %[9]	50.9	43.9	34.6	40.6	43.6	**48.7**
Access to finance	EIF Access to finance index - Loan, Composite: SME external financing over last 6 months, index values between 0 and 1[10]	0.31	0.28	0.13	0.27	-	**0.49**
	EIF Access to finance index - Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values between 0 and 1[10]	0.12	0.13	0.06	0.08	-	**0.17**

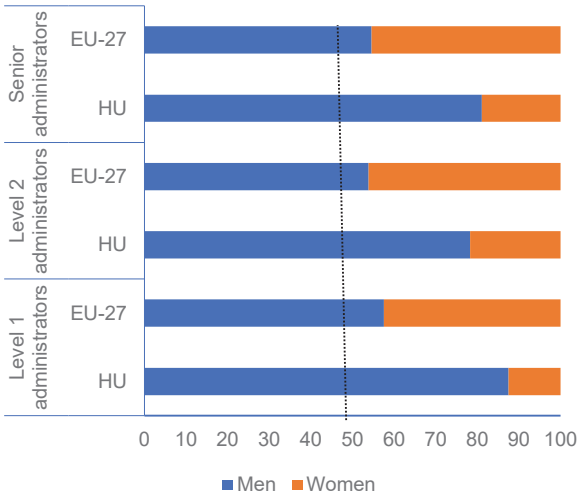
Source: (1) AMECO, (2) Eurostat, (3) Single Market Scoreboard, (4) OECD, (5) ECFIN BCS, (6) COMEXT and Commission calculations, (7) EIB Investment Survey, (8) Intrum Payment Report, (9) SAFE survey, (10) EIF SME Access to Finance Index.
* Own Commission calculations for the EU27 average

Hungary's public administration is essential for the economy's competitiveness by, in particular, shaping the conditions for the twin transitions and creating a favourable business environment. Overall, the perception of government effectiveness in Hungary has improved; however, it remains below the EU average ([118]). Coordination in government is characterised by strong centralisation around the Prime Minister, particularly in decision-making and policy implementation. The recovery and resilience plan (RRP) aims to improve judicial independence and the quality of legislation through stakeholder engagement and consultation. However, the extensive use of emergency procedures in law-making limits the potential of public consultations.

Hungary has a relatively young civil service. The ratio of staff aged 49 or below to those aged 50 or above is higher than the EU average. However, the share of employees with higher education is relatively low unlike the participation of civil servants in adult learning (Table A13.1). Gender parity in senior civil service positions is the lowest in the EU (Graph A13.1). Civil service rules are rather fragmented, with an increasing number of sectors operating under their own separate human resource regulatory frameworks. Recruitment rules are opaque, and there were arbitrary layoffs in 2023 in the public administration ([119]). There was action taken in 2023 aimed at reducing the political, financial and administrative autonomy of local government ([120]).

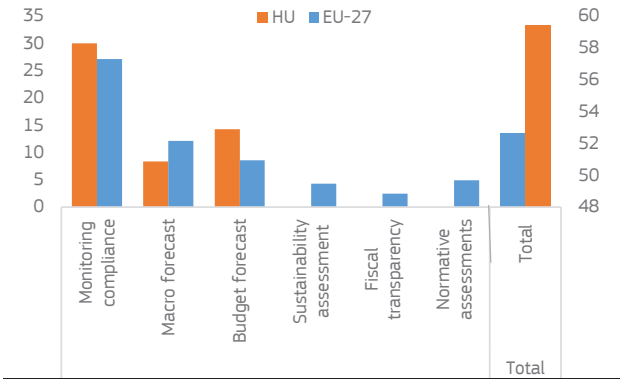
Hungary has a low ranking on selected fiscal framework indicators. Its performance on the national medium-term budgetary framework and the strength of its fiscal rules' indices are below the EU average. This is partly because the targets set in the medium-term budget plans can be revised quite often, and the reduced role of the Parliament and of the fiscal council in the adoption and preparation of medium-term plans. Moreover, not all fiscal rules have real-time monitoring or set measures in case of deviation. Furthermore, Hungary's independent fiscal institution has a narrower scope of activity than that of the EU average, with room for further development, particularly in terms of *ex post* evaluation of macroeconomic forecasts (Graph A13.2).

Graph A13.1: **Share of women and men in management positions**



Source: European Institute for Gender Equality (2023 data)

Graph A13.2: **Scope index of independent fiscal institutions**



Source: European Commission (2022 data)

Fast-track regulatory governance processes can reduce Parliament's consultation with stakeholders. Emergency procedures that deviate from the standard legislative process were initiated during the COVID-19 pandemic. They were then extended at the beginning of Russia's full-scale invasion of Ukraine and further extended in 2023 ([121]). Emergency procedures eliminate the possibility of having effective stakeholder consultation before legislation is voted on ([122]). Ex

([118])Worldwide Governance Indicators, 2022.

([119])EUPACK report 2023.

([120])EUPACK report 2023.

([121])Government decree 515/2023 (XI. 22.).

([122])European Commission, Public administration and governance: Hungary, Publications Office of the EU, 2023 (forthcoming).

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

HU	Indicator ([1])	2019	2020	2021	2022	2023	EU-27([2])
E-government and open government data							
1	Share of internet users within the last year that used a public authority website or app	n/a	n/a	n/a	81.0	82.4	75.0
2	E-government benchmark overall score ([3])	n/a	63.3	66.2	68.1	72.8	75.8
3	Open data and portal maturity index	0.3	0.3	0.6	0.7	0.8	0.8
Educational attainment level, adult learning, gender parity and ageing							
4	Share of public administration employees with higher education (levels 5-8, %)	38.8	41.2	45.4 (b)	46.6	45.4	52.9
5	Participation rate of public administration employees in adult learning (%)	11.0	10.6	8.3 (b)	20.1	23.2	17.9
6	Gender parity in senior civil service positions ([4])	64.2	63.4	62.6	57.4	62.2	9.2
7	Ratio of 25-49 to 50-64 year olds in NACE sector O	2.4	2.2	2.1 (b)	2.1	1.9	1.5
Public financial management							
8	Medium-term budgetary framework index	0.6	0.6	0.6	0.6	n/a	0.7
9	Strength of fiscal rules index	0.7	0.7	0.7	0.7	n/a	1.4
Evidence-based policy making							
10	Regulatory governance	n/a	n/a	1.28	n/a	n/a	1.7

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

ante regulatory impact assessments and ex post legislative evaluations are also limited in practice by the extensive use of the emergency procedures. The RRP includes measures to improve the quality of law-making, including impact assessments, to support the effective involvement of stakeholders and make public information more transparent. However, new legislation on the social consultation process significantly limits civil society's right to policy consultation ([123]).

There is room to improve the digitalisation of public services (Table A13.1 and Annex 10). The share of e-government users is above the EU average unlike the e-government benchmark's overall index, which measures the development of e-government services.

The justice system performs efficiently while there are concerns about the level of remuneration of judges and court staff ([124]). The estimated time needed to resolve litigious civil and commercial cases at first instance is low (134 days in 2022). Hungary scores the third highest in the EU on the estimated time to resolve administrative cases at first instance. The quality of the justice system is good overall. The level of digitalisation is very advanced. However, there are concerns about the level of remuneration for judges and court staff. Specific arrangements for access to justice to people at risk of discrimination, older people and victims of domestic violence could also be improved. The Commission is monitoring implementation of the recent reform seeking to strengthen judicial independence.

([123]) Government decree 146/2023 on the establishment of administrative procedural rules regarding the operation of organisations during the state of emergency.

([124]) For more details, see the 2024 EU Justice Scoreboard and the Commission's 2024 Rule of Law Report (forthcoming).

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 Hungary's progress in implementing the Pillar's 20 principles and the EU headline and national targets for 2030 on employment, skills and poverty reduction.

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

Policy area	Headline indicator	
Equal opportunities and access to the labour market	Adult participation in learning (during the last 12 months, excl. guided on the job training, % of the population aged 25-64, 2022)	62.2
	Early leavers from education and training (% of the population aged 18-24, 2023)	11.6
	Share of individuals who have basic or above basic overall digital skills (% of the population aged 16-74, 2023)	58.9
	Young people not in employment, education or training (% of the population aged 15-29, 2023)	10.9
	Gender employment gap (percentage points, population aged 20-64, 2023)	9.2
	Income quintile ratio (S80/S20, 2022)	4.0
Dynamic labour markets and fair working conditions	Employment rate (% of the population aged 20-64, 2023)	80.7
	Unemployment rate (% of the active population aged 15-74, 2023)	4.1
	Long term unemployment (% of the active population aged 15-74, 2023)	1.4
	Gross disposable household income (GDHI) per capita growth (index, 2008=100, 2022)	147.0
Social protection and inclusion	At risk of poverty or social exclusion (AROPE) rate (% of the total population, 2022)	18.4
	At risk of poverty or social exclusion (AROPE) rate for children (% of the population aged 0-17, 2022)	18.1
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2022)	36.65
	Disability employment gap (percentage points, population aged 20-64, 2022)	32.4
	Housing cost overburden (% of the total population, 2022)	8.1
	Children aged less than 3 years in formal childcare (% of the under 3-years-old population, 2022)	12.9
	Self-reported unmet need for medical care (% of the population aged 16+, 2022)	1.4

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

(1) Update of 27 October 2023. Members States are categorised based on the Social Scoreboard according to a methodology agreed with the EMCO and SPC Committees. Please consult the Annex of the Joint Employment Report 2024 for details on the methodology.
Source: Eurostat

Hungary's labour market performance continues to be generally favourable, but some vulnerable groups still face significant barriers in an overall tight labour market. In 2023, the unemployment rate (aged 15-74) ticked up but remained well below the EU average (4.1% vs 6.1%). At the same time, the employment rate (aged 20-64) continued to increase to 80.7% (vs 75.3% in the EU), although with signs of slowing down, as the main labour reserves have been gradually depleting, leading to significant labour shortages. Some vulnerable groups, such as the low-skilled, Roma and persons with disabilities, continue nonetheless to have limited access to the labour market. Their unemployment rates were substantially higher (11.6%, 20% and 9.5% respectively) than for the general population. The disability employment gap was among the highest in the EU in 2022, at 32.4 percentage points (pps) and remains high, at 29.6 pps in 2023. Women's labour market situation presents a mixed picture. While the gender employment gap decreased to 9.2 pps in 2023 (vs 10.2 pps in the EU), the gender pay gap was among the highest in the EU in 2022 (at 17.3%). The combination of the limited labour market integration of various groups and labour shortages (2.4% vs. 2.7% in the EU) undermines Hungary's potential to improve its economic competitiveness. Addressing the needs of these groups, including through skills development and effective active labour market measures, will be key to reaching Hungary's employment rate target of 85% by 2030.

Persistent inequalities in education and training have a negative effect on the employability of disadvantaged groups. The Hungarian education system is characterised by a low share of children under 3 years of age participating in formal childcare (12.9% vs 35.7% in the EU in 2022), which later impacts educational outcomes and life prospects for many disadvantaged children. The share increased significantly in 2023 (to 20.3%) but is expected to remain significantly below the EU average. Hungary also continues to have a high early school leaving rate (11.6% vs 9.5% in the EU in 2023), despite a recent decrease. The rate is significantly higher among pupils in Northern Hungary and rural areas, as well as among those with disabilities, the socio-economically disadvantaged and Roma (see Annex 13). Early school leaving is often associated with a low level of basic skills, which affects around a quarter of 15-year-olds in Hungary (PISA 2022). Overall, the rate of young people (15-29) not in employment, education or training (NEETs) hovers around the EU average (10.9% vs 11.2% in the EU in 2023). However, around one in five women between the ages of 15 and 29 and with a low level of education or living in a rural area, and 40.4% of Roma (in 2022), are NEET. Hungary allocated EUR 447 million from the European Social Fund Plus (ESF+) to implement the Reinforced Youth Guarantee, which should make a significant contribution to addressing the needs of the more vulnerable people. Furthermore, the ESF+ supports measures to increase the attractiveness of the teaching profession and to provide

educational support in schools and vocational education and training institutions with high drop-out rates.

The positive momentum in relation to digital skills should be maintained to ensure a fair digital transition. The share of 16-74-year-olds with at least basic digital skills significantly increased to 58.9% in 2023 (vs 49% in 2021), thereby surpassing the EU average of 55.5%. However, adults with a low level of education, those aged 55 and above, and unemployed people are still lagging behind, and only about a quarter of those who belong at least two of these groups have at least basic digital skills. Greater efforts are needed to close the digital skills gap, especially among these vulnerable groups. These efforts include upskilling measures aimed at ensuring equal access to digital public services, and better opportunities in the labour market. Investments using ESF+ funding to support more than 150 000 adults without or with few digital skills, including vulnerable groups, to acquire at least basic overall digital skills by 2029 are a positive step in this regard.

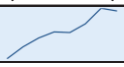
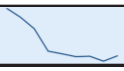
Despite surpassing the 2030 adult learning target in 2022, the training programmes available in Hungary often do not reach the people who need them most. Adult participation in learning in the previous 12 months increased to 62.2% in 2022, thereby exceeding the EU average and Hungary's national skills target of 60%. However, people with a low level of education, the unemployed and those outside the labour force tend to participate in learning significantly less than the average (42.3%, 20.7%, 18.6%, respectively). ([125]) An overall strategic framework for adult learning with a stable source of funding (and up-to-date information about learning opportunities), and upskilling actions targeting vulnerable groups, including in public employment services could help increase the labour supply and productivity by improving people's long-term employability.

High inflation recently disrupted the positive trend of a reduction in poverty, and aggravated the situation of the most vulnerable people. The share of people at risk of poverty or social exclusion (AROPE) fell in 2022 (by 1 pps to 18.4%, vs 21.6% in the EU), as did its component of severe material and social deprivation (SMSD), by 1.1 pps to 9.1% (vs 6.7% in the EU). However, 2023 data point to a renewed deterioration in the situation, with the AROPE rate standing at 19.7% and the SMSD rate at 10.4%. The SMSD rate was particularly high among children (12.0% vs 8.4% in the EU in 2022, rising sharply to 15.1% in 2023) and Roma (51.0% in 2023). Persons with disabilities are particularly affected, with a gap in the AROPE rate well above the EU average (15.4 pps vs 10.5 pps in 2022) and a rising trend in 2023.

There are significant gaps in the social protection system. While inflation fell by the end of 2023, Hungary's recent annual averages were the highest in the EU (14.5% in 2022 and 17.6% in 2023). At the same time, the nominal amount of the minimum income benefit has not increased since 2010. As a result, its real value has halved since then, and its adequacy was one of the lowest in the EU in 2021 (18.9% of the poverty threshold vs 59% in the EU). Overall, government expenditure on social protection was one of the lowest in the EU (13.1% of GDP in 2021 vs 20.4% in the EU). The impact of social transfers on poverty reduction was slightly above the EU average (36.7% vs 35%) in 2022 and fell to 34.5% in 2023. The housing cost overburden rate rose sharply from 2.4% in 2021 to 8.7% in 2023, increasing the high cost of living for many lower income households. On access to services, the public long-term care (LTC) system suffers from a high rate of unmet needs, with LTC spending and the number of formal LTC workers below the EU average. Further social policy efforts are needed for Hungary to meet its national target of reducing the material and social deprivation rate of families with children to 13%, thereby reducing the number of people at risk of poverty or social exclusion by 292 000 by 2030. The available quantitative and qualitative evidence and the policy response undertaken and planned analysed in the second-stage analysis of the Social Convergence Framework of May 2024 (SWD(2024)132) point to challenges mainly related to vulnerable groups' education, skills and labour market participation as well as to the adequacy of social protection but do not point to major social convergence challenges for Hungary overall, in light of the positive developments recorded, especially in the areas of employment and skills.

([125]) Data used here exclude guided on-the-job training (see public excel file), except for the unemployed and those outside the labour force.

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

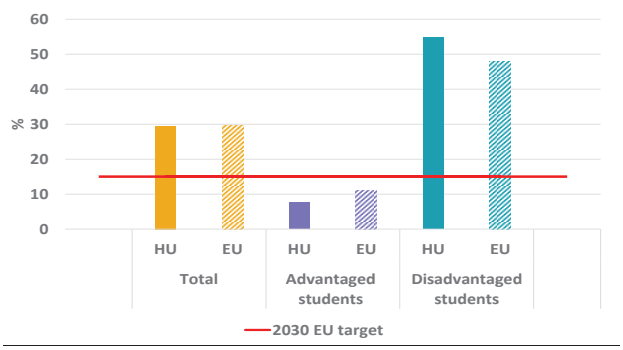
Indicators	Latest data	Trend (2016-2023)	2030 target	EU target
Employment (%)	80.7 (2023)		85	78
Adult learning[1] (%)	62.2 (2022)		60	60
Poverty reduction[2,3] (thousands)	-51 (2023)		-292	-15 000

(1) Adult Education Survey, adults in learning in the past 12 months, special extraction excl. guided on-the-job training
(2) Change in the number of persons at risk of poverty or social exclusion (AROPE), reference year 2019.
(3) Hungary expresses its national target as a reduction of the material and social deprivation rate of families with children to 13% and thereby a reduction of the number of people AROPE by 292 000.
Source: Eurostat, DG EMPL

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

Basic skills, as measured by PISA 2022, are around the EU average, but students' socio-economic background is a strong predictor of their performance. Some 3 in 10 Hungarian students in mathematics, and 1 in 4 students in reading and science, do not meet the basic proficiency levels in these areas, above the EU target. The achievement gap by socio-economic status is larger than in other EU countries. More than half of students (54.9% v EU average 48.0%) from the bottom quarter of the socio-economic distribution underachieve in mathematics, a share that increased by 6.7 percentage points between 2018 and 2022 (Graph A15.1). From all EU countries, disadvantaged students are the most often separated from their advantaged peers in Hungary; and low-achieving students are the second most separated from their high-achieving peers. The share of top-performing 15-year-olds is at the EU average in mathematics, and close to the EU average in science and reading. Low basic skills among vocational education and training (VET) pupils hinders their later employability, and the participation of those with a low level of education in adult learning remains fairly limited (see Annex 14).

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



Source: OECD (2023).

Hungary faces increasing teacher shortages. Teacher shortages in Hungary are more pronounced in disadvantaged areas, for mathematics, science subjects and foreign languages, and in VET ([126]). In a recent survey, teachers cited low wages, high workload, lack of professional autonomy, the composition of the curriculum and administrative burden as the biggest problems ([127]). The teaching workforce is ageing: in 2021, 29.5% of teachers were aged 55 or older (EU average 24.5%). A system for forecasting teacher supply and demand, which could support planning, is lacking.

The government announced a major salary reform with EU co-financing. In 2022, teacher salaries in Hungary, as compared with the earnings of other tertiary-educated workers, were among the lowest among the EU countries that are OECD members. The actual salaries of lower secondary teachers were equivalent to only 60% of the salaries of other tertiary graduates (EU-22 average: 89%) ([128]). In 2023, the government announced a major salary increase co-financed by the European Social Fund Plus (ESF+), as part of a programme to enhance the attractiveness of the teaching profession. A 32.2% average increase was implemented under this in January 2024. The aim is to increase teachers' salaries to 80% of the average wage level of other tertiary graduates by January 2025, with novice teacher salaries increasing even more. Teachers working in schools with a high share of disadvantaged pupils and applying inclusive methods should receive a salary top-up.

Participation in early childhood education and care (ECEC) surpasses the EU average but teacher shortages affect quality. From age 3, 93.4% of children participate in ECEC (EU average: 92.5%; EU-level target: 96%). The regional coverage of kindergartens remains unbalanced: in 2021, 31% of settlements had no kindergarten ([129]). In 2020, the government amended the employment conditions in kindergartens, thereby reducing the required number of qualified teaching staff. Since January 2024, VET graduates of kindergarten education

([126])Varga, J. (ed) (2022): A közoktatás indikátorrendszere 2021

([127])Társadalomtudományi Kutatóközpont Politikatudományi Intézete: Pedagóguskutatás 2023 - Gyorsjelentés

([128])OECD Education at a Glance 2022, Table D3.2.

([129])Varga, J. (ed) (2022).

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

				2012		2018		2023	
Indicator			Target	Hungary	EU-27	Hungary	EU-27	Hungary	EU-27
[1]Participation in early childhood education (age 3+)			96%	88.3% 2013	91.8% 2013	92.2%	92.2%	93.4% 2021	92.5% 2021,d
[2]Low-achieving 15-year-olds in:		Reading	< 15%	19.7%	18.0%	25.3%	22.5%	25.9% 2022	26.2% 2022
		Mathematics	< 15%	28.1%	22.1%	25.6%	22.9%	29.5% 2022	29.5% 2022
		Science	< 15%	18.0%	16.8%	24.1%	22.3%	22.9% 2022	24.2% 2022
Early leavers from education and training (age 18-24)	[3]Total		< 9 %	11.8%	12.6%	12.5%	10.5%	11.6%	9.5%
	[3] By gender	Men		12.3%	14.5%	12.6%	12.1%	12.8%	11.3%
		Women		11.2%	10.6%	12.3%	8.7%	10.4%	7.7%
	[4] By degree of urbanisation	Cities		7.0% b	11.2%	6.2%	9.4%	5.1%	8.6%
		Rural areas		16.7% b	14.0%	18.4%	11.0%	17.1%	9.9%
	[5] By country of birth	Native		11.7%	11.3%	12.6%	9.2%	11.7%	8.2%
		EU-born		: u	26.2%	: u	22.4%	: u	21.0%
		Non EU-born		: u	30.1%	: u	23.0%	: u	21.6%
[6]Socio-economic gap (percentage points)				42.0	:	41.3	29.5	47.3 2022	37.2 2022
[7]Exposure of VET graduates to work-based learning			≥ 60% (2025)	:	:	:	:	25.9%	64.5%
Tertiary educational attainment (age 25-34)	[8]Total		45%	30.5%	34.1%	30.6%	38.7%	29.4%	43.1%
	[8] By gender	Men		24.7%	29.1%	24.9%	33.3%	23.2%	37.6%
		Women		36.5%	39.2%	36.6%	44.2%	36.0%	48.8%
	[9] By degree of urbanisation	Cities		46.2% b	43.5%	47.2%	49.0%	51.5%	53.3%
		Rural areas		17.0% b	24.8%	15.7%	27.7%	14.2%	31.7%
	[10] By country of birth	Native		30.4%	35.4%	30.4%	39.7%	28.9%	44.2%
		EU-born		37.7%	29.3%	34.4%	36.7%	44.5%	40.2%
		Non EU-born		36.7% u	24.2%	39.7% u	31.0%	47.7%	37.1%
[11]Participation in adult learning (age 25-64)			≥ 47% (2025)	:	:	54.8% 2016	37.4% 2016	62.2% 2022	39.5% 2022
[12]Share of school teachers (ISCED 1-3) who are 55 years or over				17.7% 2013	22.7% 2013	26.3%	23.8%	29.5% 2021	24.5% 2021

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

are allowed to work as ECEC teachers, which was earlier only possible with a tertiary diploma ([130]).

Early school leaving decreased in 2023. The rate of early leavers from education and training stood at 11.6%, against an improving EU average of 9.5% and the EU-level target of less than 9%. The rate is higher in the least-developed districts and among Roma (62.7% vs 9.9% among non-Roma) ([131]). Participation data shows that lowering the compulsory school age from 18 to 16 in 2012-2013 had a significant negative impact on school attendance ([132]). The national recovery and resilience plan includes measures to improve the quality of lower secondary education and the provision of special education, and to support teachers in acquiring new specialisations.

The number of tertiary graduates cannot meet the growing demand for a highly skilled workforce. At 29.4%, Hungary has one of the lowest rates of the population aged 25-34 holding a tertiary degree in the EU. This rate has even decreased since 2013, when it was 31.2% (EU average: 43.1%; EU-level target: 45.0%). The employment rate of recent tertiary graduates (94.5%) exceeds the EU average (86.7%), indicating a high demand.

Academic freedom has declined in recent years. By 2024, all but five state universities were restructured to come under the control of public interest trusts set up by the government. The boards of the public interest trusts have all decision-making powers in the universities' key areas without being accountable for their own operation and decisions, either to the government or to the academic body of the university. The European Commission raised concerns about academic freedom with regard to Hungary's compliance with the enabling condition under cohesion policy on the EU Charter of Fundamental Rights.

([130])Government decree 401/2023. (VIII. 30.).

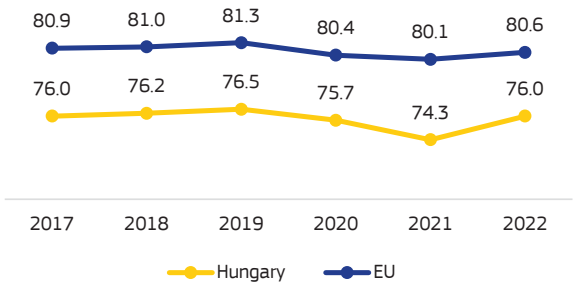
([131])Magyar Nemzeti Társadalmi Felzárkózási Stratégia 2030. 2022 data

([132])Adamecz-Völgyi, A et al.: The Labor Market and Fertility Impacts of Decreasing the Compulsory Schooling Age

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 Hungary.

In 2022, life expectancy at birth increased compared to 2021, but remained among the lowest in the EU. Due to the COVID-19 pandemic, in 2021 life expectancy at birth in Hungary was more than 2 years lower than in 2019. Then, in 2022, it rebounded almost to the pre-pandemic level, as mortality from COVID-19 declined ([133]). In 2021, the leading causes of death were diseases of the circulatory system ('cardiovascular diseases') followed by cancer and COVID-19. Lung, colorectal and breast cancer account for almost half of all cancer deaths in 2021. Mortality rates due to preventable and treatable causes are nearly double the EU averages. At the same time, mortality in economically active age groups, both as a share of total mortality and relative to the workforce size, is among the highest in the EU. The suicide rate among men in Hungary has been one of the highest in the EU. In 2020 it was almost 1.5 times the average across the EU. Long waiting lists have been reported as the most frequent barrier to accessing mental health services ([134]).

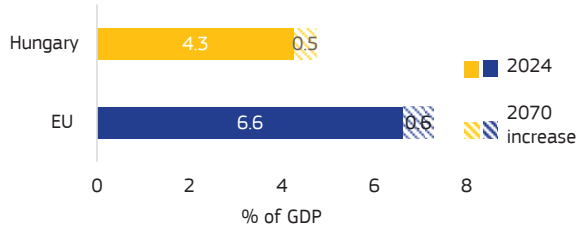
Graph A16.1: **Life expectancy at birth, years**



Source: Eurostat

Health expenditure remains among the lowest in the EU. Although total health spending has been increasing steadily, in 2021 per capita health spending in Hungary (adjusted for differences in purchasing power) was less than half the average across the EU. Spending per capita is below the respective EU averages for outpatient care, inpatient care, disease prevention, pharmaceuticals and medical devices. When measured as a share of GDP, health spending in Hungary remained low at 7.4% in 2021, compared to 10.9% on average across the EU. Provisional data suggest that in 2022 total healthcare spending fell back to 6.8% of GDP. Public spending on health as a proportion of total health expenditure (72.5%) was also well below the EU average (81.1%) in 2021. Related to this, the share of household out-of-pocket expenditure for healthcare was significantly above the EU average. Based on the age profile of the Hungarian population, public spending on health is projected to increase by 0.5 percentage points (pps) of GDP by 2070, compared to 0.6 pps for the EU overall (see Graph 16.2 and Annex 21).

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



Baseline scenario
Source: European Commission / EPC (2024)

In 2021, spending on prevention amounted to 7.6% of total spending on healthcare, compared to 6.0% for the EU overall. Between 2019 and 2021, spending on preventive care in Hungary more than doubled, in line with the trend across the EU. Proportionally, budget shares for prevention across the EU increased most for emergency response, disease detection and immunisation programmes.

The health system in Hungary suffers from a chronic scarcity of medical professionals. With 3.3 practising doctors per 1 000 population in 2021, Hungary has fewer doctors than the EU average (4.1 per 1 000 population). Under the newly adopted Eurostat definition of nurses (following the EU Directive 2005/36/EC on the recognition of professional qualifications) the number of nurses per 1 000 population in Hungary

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

([134])https://europa.eu/eurobarometer/surveys/detail/3032

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

	2018	2019	2020	2021	2022	EU average (latest year)
Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare)	176.0	173.2	179.6	188.9	NA	93.3 (2021)
Cancer mortality per 100 000 population	335.7	327.7	320.9	309.9	NA	235.4 (2021)
Current expenditure on health, % GDP	6.6	6.3	7.3	7.4	6.8	10.9 (2021)
Public share of health expenditure, % of current health expenditure	69.6	68.7	70.8	72.5	NA	81.1 (2021)
Spending on prevention, % of current health expenditure	3.1	3.2	3.7	7.6	NA	6.0 (2021)
Available hospital beds per 100 000 population	695	691	676	679	NA	525 (2021)
Doctors per 1 000 population	3.4	3.5	3.1	3.3	NA	4.1 (2021)*
Nurses per 1 000 population	4.9	5.0	5.0	3.7	NA	7.9 (2021)
Total consumption of antibacterials for systemic use, daily defined dose per 1 000 inhabitants per day ***	14.8	14.4	11.2	11.9	14.4	19.4 (2022)

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

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

(3.7) is significantly lower than the EU average (7.9). Workforce shortages are linked to emigration to other European countries for higher pay and, to some extent, the private sector ([135]). In 2021, the number of medical graduates, at around 16 per 100 000 population, was close to the EU average, while the respective rate for nursing graduates was below the EU average. One issue is whether new medical graduates will opt to work in the public sector or choose to practise in the private sector or abroad. Hungary has had fewer staff working in human health activities since the start of the pandemic, contrary to the overall trend in the EU. Between the first quarter of 2020 and the second quarter of 2023, employment in healthcare in Hungary dropped by 5%, while it increased in the EU by 9% on average. More than 40% of doctors are aged 55 or older, raising concerns about the long-term accessibility of health services. The government has been trying to address challenges in health workforce retention through significant wage increases for doctors, dentists and pharmacists, implemented in stages over the last 3 years. However, higher salaries and better working conditions abroad continue to be incentives for emigration to other countries.

EU funds support substantial investments in healthcare in Hungary. Historically, investment levels in healthcare have lagged behind in Hungary, a fact also reflected in the low availability of key diagnostic (medical imaging) technology. Hungary is now among the EU countries that allocate the largest relative share of funding under their recovery and resilience plan (RRP) to investments and reforms in the healthcare sector (12.5% of the RRP's total value, corresponding to EUR 1.3 billion). Hungary plans to make an ambitious range of reforms and investments for the development of primary healthcare, digitalisation of the healthcare sector, and strengthening of inpatient care and the infrastructure for it. Complementary investments are planned under the EU cohesion policy funding for 2021-2027. Hungary is set to invest EUR 154 million in its healthcare system under the European Regional Development Fund, with a view to improving service quality through modern infrastructure development ([136]).

([135])Gaal P et al. (2021). The 2020 reform of the employment status of Hungarian health workers: will it eliminate informal payments and separate the public and private sectors from each other? Health Policy 125(7): 833-40.

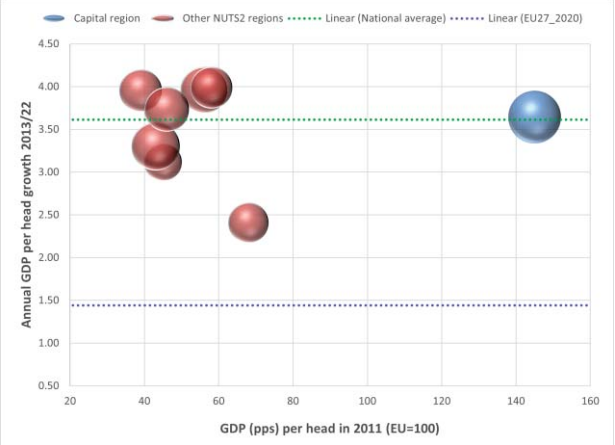
([136])The EU cohesion policy data reflect the status as of 13 May 2024.

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

Overview of economic and social performance at regional level

In the past 10 years, economic growth has been sustained but with significant disparities at regional level. The process of internal convergence remains slow (Figure 1).

Graph A17.1: **GDP per capita (2012) and GDP per capita growth (2013-2022)**



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

GDP per capita remains slightly above 50% as compared to EU average in the 4 lagging NUTS 2 regions (Dél-Alföld, Dél-Dunántúl, Észak-Alföld, Észak-Magyarország). In 2022, GDP per capita in the capital region of Budapest stood at 158% of the EU average while it was only 50% in Észak-Alföld. Real total GDP has been driven by growth in some of the more developed regions while out of the lagging regions only Észak-Magyarország and Dél-Alföld performed around the national average between 2012 and 2022. Disparities in GDP per capita were reflected in labour productivity gaps between regions ([137]). Productivity was higher than the national average (69,4% of the EU average, 2022) in Budapest, Pest (74.2% and 77.6% of the EU average) while it stood slightly above 63% of EU average in most of the other regions. Even though real productivity grew more strongly in the lagging regions than in the more developed ones between 2012 and 2022, the growth in productivity slowed down compared to the previous decade. Several factors can explain these trends.

Key assets, such as transport infrastructure, remains limited in the least developed counties. Outside the capital region, the share of population living in a radius that can be reached within 90 minutes by car or train ([138]) is between 72-77% and 11-13% respectively in Győr-Moson-Sopron, Komárom-Esztergom and Fejér. However, these percentages drop to as low as 37% and 3% in Békés county.

Investments in R&D are concentrated in Budapest (2.8% of GDP, above the EU average of 2.3%) while in the rest of the country it ranges from only 0.6% in Pest to 1.4% in Dél-Alföld. R&D expenditure in the business sector significantly lags behind the national average (1.6%) in the less developed regions, except in Közép--Dunántúl and Dél-Alföld (1.3% and 1.4%, respectively). The rate of SMEs introducing product or process innovation in the less developed regions (especially in Dél- and Észak-Alföld and Dél-Dunántúl) was well below the performance of the capital.

Hungary has one of lowest rates of digitalisation of businesses, with significant differences between the capital and the less developed regions. The share of adults with at least basic digital skills was above the EU average in 2023 (58.9% vs 55.5% in the EU). However, the low-skilled and the unemployed who are found in higher concentration in the less developed regions, still lag behind in this respect.

([137])Eurostat.

([138])The share of population who can reach in 90 minutes any destination within a 120 km radius from their residence

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

NUTS region name	GDP per head (PPS)	Productivity (GVA (PPS) per person employed)	Real productivity growth	GDP growth	Population growth	At-risk-of-poverty or social exclusion	Early school leavers	R&D expenditure	Households with broadband connection	EU Regional Competitiveness Index 2.0 - 2022 edition
	Index, EU27 = 100 (2022)	Index, EU27 = 100 (2022)	Average % change on the preceding year (2013-2022)	Average % change on the preceding year (2013-2022)	Average annual change per 1000 residents (2013-2021)	% of population (2022)	% of population aged 18-24 (2023)	% of GDP (2021)	% of all households (2021)	Index, EU27 = 100
European Union (27 MS)	100	100	0.7	1.6	1.9	21.6	9.5	2.3	90	100
Magyarország	76	69.4	1.4	3.32	-2.5	18.4	11.6	1.6	91	83.5
Budapest	158	74.2	1.1	3.38	-1.9	13.8	5.8	2.8	96	105.5
Pest	65	77.6	2.1	4.87	9.3	16.1	10.9	0.6	94	105.5
Közép-Dunántúl	71	65.9	1.5	3.8	-1.9	11.3	10.6	1.3	92	82.3
Nyugat-Dunántúl	68	68.4	1.6	2.46	1.5	14.3	5	1.1	92	83.9
Dél-Dunántúl	52	63.4	1.2	2.35	-7.6	24.6	14.1	0.9	89	69.9
Észak-Magyarország	50	63.5	1.7	3.07	-8.5	25	18.5	0.6	86	66
Észak-Alföld	50	63.2	1.1	2.73	-5.2	24	16.4	1	88	67.9
Dél-Alföld	55	64.4	1.7	3.02	-6.7	19.5	11.2	1.4	87	73.3

Source: Eurostat, EDGAR database

The share of employment in the science and technology sectors is close to the EU average (23.4% of total employment) at national level (23.2%), but significantly lower in the less developed regions, except for Pest. Employment in high-technology sectors and in knowledge-intensive services is below the EU average in the 4 less developed regions.

The less developed regions experienced significant depopulation. Between 2013 and 2021 ([139]), the population shrunk by 8.5%, in Észak-Magyarország and by 7% in Dél-Dunántúl and Dél-Alföld. At the same time, the population in Pest increased by more than 9% and by 7.4% in Győr-Moson-Sopron due to internal migration flows towards the relatively more developed counties.

Regional disparities remained significant in 2023 in terms of the level of educational outcomes. Pupils' performance in basic skills was lower in the least developed regions than the national average in all grades tested. In addition, the rate of early school leavers in these regions was also higher. Észak-Magyarország (18.5 %) and in Észak-Alföld (16.4 %) faced one of the highest early school leaving rates in the EU, in contrast to 5.8 % in Budapest and 5% in Nyugat-Dunántúl.

The share of the population aged 25-64 with an education attainment below secondary level was also significantly higher in some of the less developed regions (Észak-Magyarország: 20.6%, Észak-Alföld: 19.2%, Dél-Dunántúl: 17.5%) than the national average (13%) and 21.6% in rural areas. In addition, the share of low-educated young people among younger cohorts appears to be increasing in all the four least developed regions. Tertiary educational attainment level (age class from 25 to 34 years) was below the national (29.4%) and EU average (43.1%), in all less developed regions (between 16.3% and 30.1%).

As a result of these demographic developments and the lagging levels of education attainment, Hungary's four least developed regions and rural areas are in a talent development trap.

There are significant differences between the regions in terms of young people who are neither in employment nor in education and training (NEET). While the national average (10.8%) is below the EU average (11.7%), in the least developed regions, except for Dél-Alföld, it remained between 13.5% and 17.7%. Rural areas also suffer significantly more than towns (15.9% vs. 10.5% and 5.4%) and the difference was even more striking for women.

Labour market conditions are generally better or corresponding to the EU average in all regions, but certain groups lag behind. The employment rate hit another record (80.7%), but a gap of 9 pps remains between the best performing region of Budapest (84.4%) and Észak-Magyarország (75.8%). However, the 4 least developed regions consistently underperform in terms of employment and unemployment rate of low-skilled people. The employment and unemployment rate in Roma was 47.3% and 17.6% respectively, with nearly 80% of the Roma population concentrated in the 4 least developed

([139])Central Statistical Office.

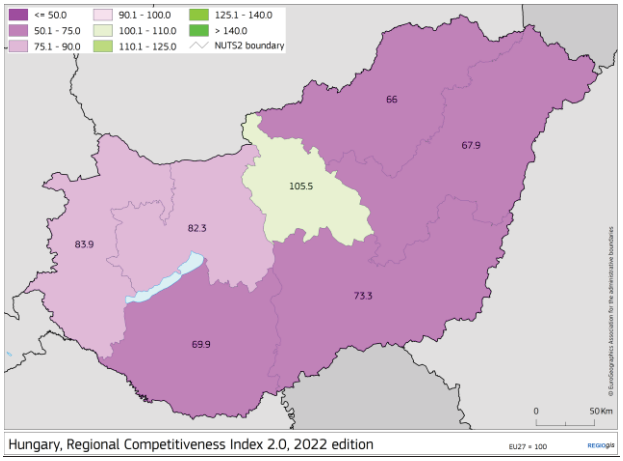
regions. 55% of all unemployed or inactive people with disabilities also lived in these regions. There was a spatial mismatch in labour supply and shortage, with vacancy rates highest in the more developed regions (Közép- and Nyugat-Dunántúl).

The decrease of poverty has slowed down since 2018 and reversed in 2023. The share of the population being at-risk-of-poverty and social exclusion was significantly higher in three lagging regions, reaching a high of 31.7% in north Hungary as compared to better performing regions (e.g. 10.9% in Közép-Dunántúl). Poverty was also more pronounced in rural areas with around 25.6% of the population being at-risk-of-poverty in 2023 (+12 pp. from 2022) and especially in districts ("járás") with an above-average share of Roma.

Energy poverty ([140]) is particularly prevalent in the four least developed regions. This is where a significant part of the population lives in flats in bad condition using unsustainable biomass (solid fuel) and individual heating solutions (42% Észak-Alföld, 46% Dél-Dunántúl, reaching as high as 65% of the households in villages), which contributes to air pollution. Hungary records persistent exceedances in PM10 levels in three geographic areas and is harmful for health. These conditions are more prevalent in the lowest income quintile.

There is considerable regional variation in the carbon intensity of the economy in Hungary's regions, as well as in the composition of their greenhouse gas emissions, being the highest in northern Hungary. Buildings added more significantly to regional GHG emissions in the northern Great Plain region, Pest and Budapest, while GHG emissions from energy have been particularly pronounced in northern Hungary. Industry emissions dominated in northern Hungary, Budapest, and Central Transdanubia.

Map A17.1: **Regional Competitiveness Index, 2022, Hungary**



Source: DG REGIO, JRC

These factors are reflected in the composite indicator of the Regional Competitiveness Index, which stands at 83% of the EU average in Hungary, and around 70% in the 4 lagging regions.

Investment and subnational reform needs ahead

Hungary would benefit from increasing investments to combat poverty, especially in the most deprived districts of the country. It could better support the green and digital transition at local level with better targeted integrated territorial policies, facilitating investments in net-zero technologies manufacturing. Hungary could benefit from the opportunities under the Strategic Technologies for Europe Platform initiative to boost investments in the critical technologies to support the industry transformation of industry.

Social inclusion policies could be reinforced in view of the negative trends of poverty and its territorial concentration. Hungary's main response was the Catching-up municipalities initiative, which targets the 300 most deprived municipalities, with EU cohesion policy funding from Cohesion policy and the Recovery and Resilience Plan. Measuring the results and reviewing the initiative, when necessary, could ensure its long-term impact. In addition, local level interventions could be complemented by strengthening the inclusiveness of mainstream education, employment and First policies, by better addressing territorial inequalities and diversities.

([140])Central Statistical Office.

Underinvestment in making houses more energy efficient contributes to poverty and environmental concerns, which particularly affect those living in bad housing conditions that are concentrated in lagging and non-urban districts. Therefore, providing non-repayable support to low-income households facing energy poverty – focusing on the least developed districts - for investments in energy efficiency that deliver tangible benefits in the long-term (e.g. by deep renovating buildings), combined with investments in renewable energy, would contribute to lowering energy costs further, reducing emissions and improving air quality.

There is a need to step up investment in the digitalisation of businesses – including advanced technologies - in the less developed regions, ensuring that the support reaches the enterprises in lagging areas. The allocation of funding dedicated to improving the digital skills of people with low digital skills could better take into account the territorial distribution of the target group, focusing on the least developed districts. The take-up of smart city solutions by municipalities has been slow in the current programmes. Therefore, launching specific measures appears to be necessary.

The weaker research, development and innovation performance of the less developed and lagging regions, the differences in the endowments and economic profile of regions call for a more differentiated approach in smart specialisation (S3) and for a strengthened governance of regional innovation ecosystems.

Fairness and inclusion in education also has a strong regional dimension, therefore a mapping of the school network, a review of educational funding and governance, and targeted comprehensive measures to strengthen access to quality mainstream education and lifelong learning in the most affected settlements could help nurture and retain talent in the most disadvantaged regions.

Labour market challenges mainly concern a few well-defined vulnerable groups, such as low-skilled people, NEETs, Roma, people with disabilities, women, especially young people and those with care responsibilities, concentrating mostly in the least developed regions. Mapping these groups, assessing their needs and addressing them with more targeted action could contribute to easing labour shortages.

The low level of administrative capacities of municipalities in the least developed districts tends to limit their access to EU cohesion policy funding. At the same time, the integrated territorial development programmes of counties failed to sufficiently address the complexity of development challenges which their least developed districts face. The multiple challenges affecting the least developed districts could be better addressed through integrated territorial strategies that consider the use of functional areas to deliver basic public services.

In addition, local development projects did not effectively capitalise on the resources of local stakeholders, except for the pilot community-led local development projects with a limited thematic scope. Therefore, Hungary would benefit from re-introducing the instrument of community-led local development in order to involve local stakeholders in the co-design and delivery of local investments, making use of local resources and solutions.

The financing of local municipalities' mandatory tasks is characterised by a lack of funding for operational tasks ([141]), a below-average funding for capital expenditure in the least developed municipalities and a restricted access to market funding, which may affect the durability of investments and services financed by EU funds. An increasing share of public services and decisions concerning local communities have been transferred to central government and as a result, the overall autonomy, including fiscal autonomy, of local authorities in Hungary is also among the lowest in the EU ([142]). The recently adopted Construction Law reinforces this trend as it disconnects municipality projects from the local needs. A higher level of local

([141]) https://szentendre.hu/az-onkormanyzati-finanszirozasi-rendszer-kiskorunak-tekinti-az-embereket/ and https://hang.hu/belfold/elodazhatatlan-az-onkormanyzati-finanszirozasi-rendszer-megujitasa-152998

([142]) https://ec.europa.eu/regional_policy/sources/policy/analysis/KN-07-22-144-EN-N.pdf

autonomy could have a positive impact on people's satisfaction with services as well as on their political trust, including by better addressing local needs through the use of EU funds. This would mean that finances are adjusted to cover the real costs of mandatory municipality tasks and that there are transparent and normative conditions applicable for all local municipalities as for the access to loans and other financial instruments. In addition, to better implement their integrated strategies, local municipalities could be supported to strengthen their human capital and expertise, possibly as shared capacity and by making use of technical assistance resources.

Hungary has a predominantly bank-based financial sector. Total banking-sector assets were equivalent to 99.9% of GDP in Q3-2023. The domestic ownership of local lenders accounts for 62.9% of total banking-sector assets, while the five largest banks in the system hold around 56% of total banking-sector assets.

The Hungarian banking sector remains highly profitable and resilient. Banking-sector profitability reached historically high levels with return on equity of 24.8% in Q3-2023 (EU average: 9.9%), mainly driven by an increase in net interest income. Other factors that have had a more negative impact on bank profitability include the extra profit tax, an increase in operating costs, and the interest-rate cap ([143]). The cost-to-income ratio decreased to 51.8% in Q3-2023 (EU average: 52.8%) from 55.6% in 2022. The banking capital-adequacy ratio remained stable at 19.4% in Q3-2023 (EU average: 19.6%), signalling the robustness of the banking sector. Hungarian banks remain well capitalised, with a common equity tier 1 ratio of 16.8% in Q3-2023 (EU average: 16.1%). The liquidity reserve of the banking system remains high. To further strengthen the resilience of credit institutions, Hungary's central bank (MNB) decided to increase the countercyclical capital buffer rate to 0.5% from 1 July 2024 after having postponed in June 2023 the activation of the countercyclical capital buffer by one year (initially planned from 1 July 2023). ([144]) The MNB also announced the reactivation of the systemic risk buffer from 1 July 2024 due to risks in the commercial real-estate market.

The non-performing loan (NPL) ratio has remained rather stable but risks to the quality of portfolios remain. The NPL ratio was 2.7% in Q3-2023 (EU average: 1.8%), the lowest level since 2017. Similarly, the coverage ratio of NPLs remained high at 54.2% in Q3-2023, showing banks' ability to absorb any future losses (EU average: 43.7%). Compared to Q3-2022, the corporate NPL ratio remained unchanged in Q3-2023, while the household NPL ratio declined. According to the MNB, government measures (e.g. family housing subsidies, mortgage interest rate caps) may have helped to keep NPL ratios low in the household sector. In the corporate sector, strong liquidity and caps on the interest paid by SMEs may have played an important role in keeping corporate NPL ratios low. However, increasing risks in the commercial real-estate segment and the phasing out of interest-rate caps pose risks to the NPL ratio ([145]).

Lending activity slowed in the second half of 2023. Lending growth to non-financial corporations declined to around 6.2% in December 2023, which indicates a slowdown compared to 15.1% in December 2022. Growth in lending to households (comprising consumer credit and mortgages) also declined to 2.7% in December 2023 compared to 8% in December 2022 (more specifically, lending growth for house purchases fell to 1.3% in December 2023). This is a significant decrease from the previous year and was mainly due to a decline in demand for credit and the uncertain economic outlook.

In December 2021, the European Systemic Risk Board (ESRB) ([146]) issued a warning to Hungary on medium-term vulnerabilities in the residential real-estate market as being a potential risk to the country's financial stability. The ESRB considered the main vulnerabilities to be: (i) signs of house-price overvaluation; (ii) strong house-price growth; (iii) high rates of growth in mortgage credit; and (iv) rapid growth in household indebtedness. In February 2024, the ESRB assessed the current national macroprudential policy measures as appropriate and sufficient to address these risks ([147]).

([143]) Magyar Nemzeti Bank, November 2023, *Financial Stability Report*, MNB.hu

([144]) Magyar Nemzeti Bank, December 2023, *MNB does not change Countercyclical Capital Buffer rate*, MNB.hu

([145]) Magyar Nemzeti Bank, November 2023, *Financial Stability Report*, MNB.hu

([146]) European Systemic Risk Board, February 2022, ESRB.europa.eu

([147]) European Systemic Risk Board, February 2024, ESRB.europa.eu

Table A18.1:**Financial Soundness Indicators**

	2017	2018	2019	2020	2021	2022	2023	EU	Median
Total assets of the banking sector (% of GDP)	95,4	92,6	90,9	107,4	109,7	108,4	99,9	257,0	184,6
Share (total assets) of the five largest banks (%)	49,6	50,0	52,7	50,1	51,6	55,7	-	-	69,6
Share (total assets) of domestic credit institutions (%)[1]	53,7	52,8	57,1	57,8	58,6	60,0	62,9	-	62,9
NFC credit growth (year-on-year % change)	10,2	13,6	14,1	8,9	10,7	15,2	6,2	-	2,4
HH credit growth (year-on-year % change)	2,6	7,3	16,6	14,3	15,1	8,0	2,7	-	1,4
Financial soundness indicators:[1]									
- non-performing loans (% of total loans)	8,4	5,4	4,2	3,6	3,2	3,1	2,7	1,8	1,8
- capital adequacy ratio (%)	16,2	18,5	18,0	18,3	19,7	18,9	19,4	19,6	20,1
- return on equity (%)[2]	14,5	14,7	14,3	7,6	12,7	12,1	24,8	9,9	13,2
Cost-to-income ratio (%)[1]	64,4	63,9	64,7	61,0	58,4	55,6	51,8	52,8	44,9
Loan-to-deposit ratio (%)[1]	71,8	72,7	76,0	74,4	75,5	70,3	70,0	93,3	80,2
Central bank liquidity as % of liabilities	4,0	2,9	3,7	9,6	10,4	8,8	7,0	-	0,7
Private sector debt (% of GDP)	69,9	68,7	67,4	77,0	80,9	78,8	-	133,0	118,4
Long-term interest rate spread versus Bund (basis points)	264,5	266,2	271,8	273,6	343,5	642,6	507,9	107,7	104,2
Market funding ratio (%)	35,2	33,1	32,5	35,7	40,1	39,8	-	50,8	39,8
Green bonds outstanding to all bonds (%)[3]	-	-	-	-	-	-	-	4,0	2,7

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

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

The housing market in Hungary has been on a downward trend since mid-2022, with a decline in housing prices and a drop in the number of sales transactions. According to the MNB, house prices fell by 0.8% in Q2-2023 (year-on-year), marking the first time that a year-on-year decline in prices was seen since 2014. The number of housing-market sales transactions also fell, dropping by 11% in Q3-2023 in year-on-year terms, consistent with the drop in mortgage lending. Asking prices are adjusting to low demand ([148]).

Household indebtedness has continued to rise but is expected to fall in the coming months and remains relatively low compared with the EU average. According to Eurostat, household debt decreased from 20.8% of GDP in 2020 to 18.6% of GDP in 2022 ([149]). Rising interest rates and economic uncertainty have dampened demand for mortgages, and ended the recent pattern of sharp growth in property prices, thus mitigating the risks associated with rising indebtedness. In terms of borrower-based measures to reduce indebtedness, the MNB announced: (i) an increase in the threshold value for debt-service-to-income limits as of 1 July 2023; and (ii) the introduction of a preferential loan-to-value limit for first-time home buyers as of 1 January 2024 ([150]). Furthermore, the share of variable-interest-rate loans, which are exposed to interest rate risk, has significantly decreased since 2022.

Hungary's insurance sector is rather small and highly concentrated. The top five market participants account for around 60% of all premium revenue. The total assets of all insurers were equivalent to 4.5% of GDP in 2022, which is relatively low (EU average: 56.1%). In 2022, the insurers' solvency ratio was 173.3%, above the regulatory minimum, but below the EU average (258.9%). In Q3-2023, there were 33 insurance companies operating in the Hungarian market, while the breakdown of insurance activities was as follows: 30% life insurance, 6% non-life insurance, and 60% composite.

Capital markets play a less significant role than banks in financing the economy. Hungary's stock-market capitalisation remained rather low at 12.9% of GDP in 2022 (EU average: 65.6%). The MNB continues to support the development of the green bond and credit markets through its green corporate, municipal and retail preferential-capital-requirements programmes. The MNB has also set up an innovation hub in order to provide quick responses to regulatory questions related to Fintech innovative solutions (e.g. payment services, crowdfunding), and a

([148])Magyar Nemzeti Bank, November 2023, *Housing Market Report*, MNB.hu

([149])Eurostat

([150])Magyar Nemzeti Bank, Borrower-Based Measuers, MNB.hu

regulatory sandbox where Fintech innovations can be tested.

This annex provides an indicator-based overview of Hungary's tax system. It includes information on the tax structure (the types of tax that Hungary 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, and on the risks of aggressive tax planning activity.

Hungary's tax revenues as a percentage of its GDP are lower than the EU aggregate for all tax types except consumption taxes. Table A19.1 shows that Hungary's annual tax revenues as a percentage of GDP increased from 33.9% in 2021 to 35.1% in 2022 but remained below the EU aggregate of 40.2%. Labour taxation (14.6% of GDP in 2022) is the most important tax base, although its relative importance has been decreasing in recent years. The tax system also relies heavily on consumption taxes (13.9% of GDP in 2022, above the EU average of 11.0%). Capital taxation in relation to GDP was 6.6% in 2022 (against an EU average of 8.9%). Hungary's 9% corporate tax rate is the lowest in the EU. Revenues from property taxes were relatively low as a percentage of both GDP and total tax revenues. Pollution and resources taxes account for 10.2% of environmental taxes, which is one of the highest shares in the EU. However, there could be potential to strengthen the application of the 'polluter pays' principle. Hungary has implemented three of the six main types of pollution and resources taxes (i.e. taxes on waste landfilling, discharge of waste into water, and plastic products). There remains scope to expand waste disposal taxes (including incineration) and implement the three other types (i.e. taxes on NOx emissions, fertilisers and pesticides).

Hungary has made a commitment to simplify the tax system within the framework of its Recovery and Resilience Plan (RRP) implementation. Hungary's RRP includes commitments to introduce tax simplification measures in order to reduce tax-related administrative costs and improve voluntary compliance incentives, thereby making a contribution to a more competitive and fairer economy and a better business environment. One of the deliverables of the RRP is the phasing-out of six temporary sectoral tax measures, including the surtax on the retail sector. However, Hungary has so far kept these tax measures in place for 2024 with a decree published on 31 May 2023. The RRP also contains dedicated measures to tackle aggressive tax planning.

Hungary's labour tax burden is significantly higher than the EU average for low wage-earners. Graph A19.1 shows that Hungary's total labour tax wedge (at 41.2%) was much higher in 2023 than the EU average (31.7%) for single people earning 50% of the average wage but

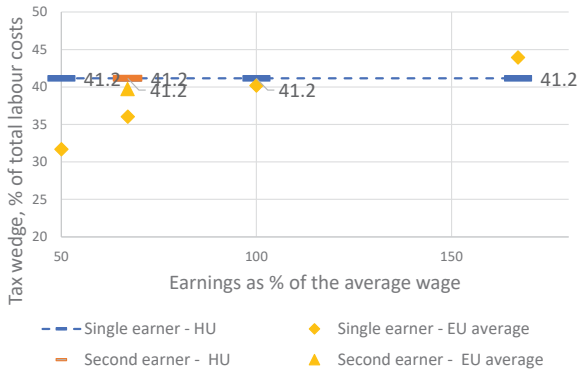
Table A19.1:**Taxation indicators (to be updated once new data are available)**

		Hungary					EU-27				
		2010	2020	2021	2022	2023	2010	2020	2021	2022	2023
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	36.8	36.0	33.9	35.1		37.9	40.0	40.4	40.2	
	Labour taxes (as % of GDP)	17.3	16.2	14.5	14.6		20.0	21.3	20.7	20.3	
	Consumption taxes (as % of GDP)	12.3	13.9	13.7	13.9		10.8	10.7	11.2	11.0	
	Capital taxes (as % of GDP)	7.2	5.9	5.6	6.6		7.1	8.0	8.6	8.9	
	Of which, on income of corporations (as % of GDP)	2.9	3.0	2.9	3.0		2.4	2.5	3.0	3.4	
	Total property taxes (as % of GDP)	1.1	1.1	0.9	1.0		1.9	2.3	2.2	2.1	
	Recurrent taxes on immovable property (as % of GDP)	0.3	0.4	0.4	0.3		1.1	1.2	1.1	1.0	
	Environmental taxes as % of GDP	2.6	2.2	2.0	1.9		2.4	2.2	2.3	2.0	
Progressivity & fairness	Tax wedge at 50% of average wage (Single person) (*)	41.0	43.6	43.2	41.2	41.2	33.9	31.7	32.1	31.8	31.7
	Tax wedge at 100% of average wage (Single person) (*)	46.6	43.6	43.2	41.2	41.2	41.0	40.1	39.9	40.0	40.2
	Corporate income tax - effective average tax rates (1) (*)		10.3	10.3	10.3			19.5	19.0	19.0	
	Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*)	12.6	7.6	4.6	5.6		8.6	8.1	8.2	7.9	
Tax administration & compliance	Outstanding tax arrears: total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*)		12.0	12.0				40.9	35.5		
	VAT Gap (% of VAT total tax liability, VTTL)(**)	22.3	7.1	4.4	5.8			9.7	5.4		

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

close to the EU's figure for people earning the average wage and above. 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 fallen significantly below the EU average (see Table A19.1).

Graph A19.1: **Tax wedge for single and second earners, % of total labour costs, 2023**

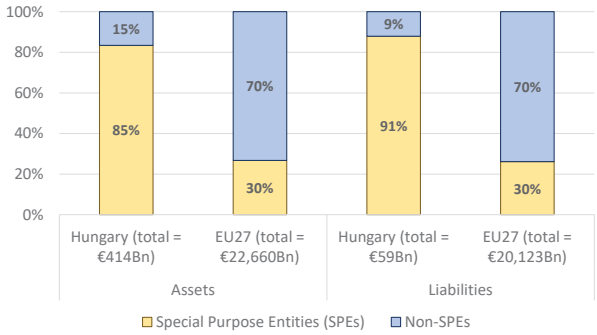


The second earner tax wedge assumes a first earner at 100% of the average wage and no children. For the methodology of the tax wedge for second earners, see OECD, 2016, *Taxing Wages 2014-2015*.
Source: European Commission

Hungary performs relatively well on tax compliance and tax administration. Tax arrears for 2021 amounted (as in 2020) to 12% of total net revenue. This was significantly below the EU average of 35.5%, although that average was distorted by very large values in a few Member States. The VAT gap (the gap between revenues actually collected and the theoretical tax liability) amounted to 4.1% of the VAT total tax liability in 2021, which was still below the EU-wide gap of 5.4%. As part of its efforts to increase VAT compliance, Hungary has implemented multiple instruments to combat the missing trader intra-community (MTIC) fraud ([151]) as well as one of the most far-reaching electronic systems for monitoring taxpayers. The VAT compliance gap in Hungary has steadily and steeply declined, although the latest decrease in 2021 may also be due to COVID-19 effects. However, flash estimates show that the gap might increase in 2022. ([152]) RRP measures on the digital transformation of tax compliance procedures, as part of the tax simplification measures, aim to achieve streamlined digital platforms and services. In this vein, the 'eVAT' platform, which was launched on 1 January 2024, enables all VAT-registered taxpayers in Hungary to access their pre-filled VAT returns.

Tackling aggressive tax planning remains a challenge. High foreign direct investment (FDI) flows as a percentage of GDP and the high share of FDI stocks held through special purpose entities suggest that Hungary's tax structure is being used for aggressive tax planning. Hungary's RRP includes a commitment to strengthen the tax system against the risk of aggressive tax planning by introducing minimum substance requirements for corporate income tax for shell companies, strengthening transfer pricing regulations and broadening the scope of non-deductibility for outbound payments. Additional supporting measures aim to enhance the effectiveness of tax avoidance rules.

Graph A19.2: **Stocks of assets and liabilities held through special purpose entities (SPEs) as a % of the respective total asset and liability stocks of foreign direct investment (FDI) in 2022**



Source: European Commission

([151])This highly complex form of tax fraud relies on the abuse of the VAT rules for cross-border transactions in the EU.

([152])EU VAT Gap report, 2023, p.99.

ANNEX 20: TABLE WITH ECONOMIC AND FINANCIAL INDICATORS

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

	2004-07	2008-12	2013-20	2021	2022	2023	forecast 2024	forecast 2025
Real GDP (y-o-y)	3.4	-0.8	2.8	7.1	4.6	-0.9	2.4	3.5
Potential growth (y-o-y)	.	0.4	2.8	3.3	3.1	2.1	2.2	2.5
Private consumption (y-o-y)	1.9	-2.2	3.5	4.6	7.1	-2.0	4.0	4.1
Public consumption (y-o-y)	0.1	0.5	2.6	1.8	2.9	1.2	0.8	1.5
Gross fixed capital formation (y-o-y)	4.2	-4.4	6.3	5.7	1.4	-7.4	1.6	8.2
Exports of goods and services (y-o-y)	16.6	2.1	4.3	8.3	11.4	0.9	3.0	5.3
Imports of goods and services (y-o-y)	13.8	0.1	5.6	7.3	10.8	-4.3	3.5	6.9
Contribution to GDP growth:								
Domestic demand (y-o-y)	2.0	-2.0	3.7	4.2	4.4	-2.8	2.6	4.4
Inventories (y-o-y)	0.0	-0.4	-0.2	2.0	-0.3	-3.0	0.0	0.0
Net exports (y-o-y)	1.3	1.6	-0.7	0.9	0.5	4.9	-0.2	-0.9
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	.	-0.2	0.8	0.2	0.3	0.1	0.2	0.3
Capital accumulation (y-o-y)	.	0.6	1.2	1.5	1.4	1.0	0.9	1.1
Total factor productivity (y-o-y)	.	0.1	0.8	1.6	1.3	1.1	1.1	1.1
Output gap	2.3	-3.7	0.9	0.1	1.6	-1.4	-1.2	-0.2
Unemployment rate	6.9	9.9	4.9	4.1	3.6	4.1	4.5	4.0
GDP deflator (y-o-y)	4.2	3.3	4.0	6.4	14.2	14.7	5.3	3.8
Harmonised index of consumer prices (HICP, y-o-y)	5.5	4.9	1.8	5.2	15.3	17.0	4.1	3.7
HICP excluding energy and unprocessed food (y-o-y)	4.5	4.1	2.3	4.5	14.2	16.8	4.7	4.3
Nominal compensation per employee (y-o-y)	7.9	2.5	4.1	8.2	17.0	14.0	11.7	7.7
Labour productivity (real, hours worked, y-o-y)	4.8	0.4	1.4	3.8	2.4	0.2	1.3	2.8
Unit labour costs (ULC, whole economy, y-o-y)	4.0	2.6	3.3	2.3	13.7	15.2	9.2	4.8
Real unit labour costs (y-o-y)	-0.2	-0.6	-0.6	-3.9	-0.5	0.4	3.7	0.9
Real effective exchange rate (ULC, y-o-y)	2.8	-2.3	-1.1	0.0	0.2	9.6	1.2	1.8
Real effective exchange rate (HICP, y-o-y)	3.4	-0.4	-1.4	0.4	-3.8	13.3	.	.
Net savings rate of households (net saving as percentage of net disposable income)	6.4	5.3	8.9	12.6	9.9	.	.	.
Private credit flow, consolidated (% of GDP)	13.0	0.8	1.6	12.9	9.2	.	.	.
Private sector debt, consolidated (% of GDP)	82.0	110.5	76.4	80.9	79.0	.	.	.
of which household debt, consolidated (% of GDP)	24.9	36.5	20.4	21.1	18.7	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	57.1	74.0	56.1	59.8	60.3	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (1)	.	9.8	.	2.4	2.6	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	-3.4	1.5	1.0	-0.6	-4.4	-0.8	0.1	-0.2
Corporations, gross operating surplus (% of GDP)	22.5	23.1	24.7	25.3	24.4	24.0	24.3	24.6
Households, net lending (+) or net borrowing (-) (% of GDP)	1.9	2.9	5.0	6.2	4.3	8.0	7.2	5.3
Deflated house price index (y-o-y)	.	-6.7	8.5	9.6	5.2	-7.7	.	.
Residential investment (% of GDP)	4.4	3.1	2.8	3.9	4.7	4.2	.	.
Current account balance (% of GDP), balance of payments	-7.7	-1.1	1.2	-4.1	-8.4	0.3	0.0	-1.5
Trade balance (% of GDP), balance of payments	-1.2	4.5	5.5	0.2	-4.4	5.1	.	.
Terms of trade of goods and services (y-o-y)	-0.7	-0.5	0.4	-3.1	-5.4	6.2	-0.3	0.0
Capital account balance (% of GDP)	0.5	1.9	2.2	2.5	2.0	0.9	.	.
Net international investment position (% of GDP)	-92.1	-102.9	-59.1	-53.6	-52.1	-46.6	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2)	-30.9	-48.3	-11.1	-1.8	-5.5	-7.5	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (2)	75.2	111.6	67.9	68.4	73.8	68.5	.	.
Export performance vs. advanced countries (% change over 5 years)	.	.	0.1	1.3	-1.3	5.0	.	.
Export market share, goods and services (y-o-y)	4.9	-5.2	1.6	-6.1	-0.4	-0.1	-0.5	1.6
Net FDI flows (% of GDP)	-2.4	-1.7	-1.9	-2.5	-2.9	-1.7	.	.
General government balance (% of GDP)	-7.2	-4.1	-3.0	-7.2	-6.2	-6.7	-5.4	-4.5
Structural budget balance (% of GDP)	.	.	-3.4	-7.1	-7.0	-6.0	-4.9	-4.4
General government gross debt (% of GDP)	62.3	77.7	73.3	76.7	74.1	73.5	74.3	73.8

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

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

1 – Short-term risks to fiscal sustainability are low. The Commission's early-detection indicator (S0) does not point to any major short-term fiscal risks (Table A21.2) ([153]). Government gross financing needs are expected to decrease to around 13% of GDP on average over 2024-2025 (Table A21.1, Table 1). Hungary's credit rating remains at the lower end of the investment grade.

2 – Medium-term fiscal sustainability risks appear medium.

The DSA baseline shows that the government debt ratio is expected to remain broadly stable at a relatively high level in the medium term (at around 78% of GDP in 2034) (Graph 1, Table 1) ([154]). The debt dynamics are supported by the assumed neutral structural primary balance (excluding changes in cost of ageing) as of 2024. Compared to historical data, this appears plausible, as more than half of past fiscal positions were more stringent than the one assumed in the baseline (Table A21.2) ([155]). The debt increase is particularly driven by an unfavourable and increasing snowball effect of 0.6% of GDP annually on average over 2027-2034, mainly linked to projected increases in interest expenditure.

The baseline projections are stress-tested against four alternative deterministic scenarios to assess the impact of changes in key assumptions relative to the baseline (Graph 1). Under the *historical structural primary balance (SPB) scenario* (i.e. the SPB returns to its historical 15-year average of -0.1% of GDP) the debt ratio would be higher than under the baseline by about 1 pp. in 2034. Under the *adverse interest-growth rate differential scenario* (i.e. the interest-growth rate differential deteriorates by 1 pp. compared with the baseline), the debt ratio would be higher than under the baseline by around 7 pps. in 2034. Under the *financial stress scenario* (i.e. interest rates temporarily increase by 1 pp. compared with the baseline) the government debt ratio would be higher by about 1 pp. in 2034. Finally, under the *lower structural primary balance scenario* (i.e. the projected cumulative improvement in the SPB over 2023-2024 is halved) the debt ratio would be higher than under the baseline by around 7 pps. in 2034.

The stochastic projections indicate medium risk, pointing to the moderate sensitivity of these projections to plausible unforeseen events ([156]). These stochastic simulations indicate a 49% probability that the debt ratio will be higher in 2028 than in 2023, implying medium risks given the current relatively high debt level. In addition, the uncertainty surrounding the baseline debt projections (as measured by the difference between the 10th and 90th debt distribution percentiles) is high, reaching around 42 pps. of GDP in five years' time) (Graph 2).

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

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

([154]) The assumptions underlying the Commission's 'no-fiscal policy change' baseline include in particular: (i) a structural primary balance, before changes in ageing costs, of 0.0% of GDP from 2024 onwards; (ii) inflation converging linearly towards the 10-year forward inflation-linked swap rate 10 years ahead (which refers to the 10-year inflation expectations 10 years ahead); (iii) the nominal short- and long-term interest rates on new and rolled over debt converging linearly from current values to market-based forward nominal rates by T+10; (iv) real GDP growth rates from the Commission 2024 spring forecast, followed by the EPC/OGWG 'T+10 methodology projections between T+3 and T+10 (average of 2.2%); (v) ageing costs in line with the 2024 Ageing Report (European Commission, Institutional Paper 279, April 2024). For information on the methodology, see the 2023 Debt Sustainability Monitor (European Commission, Institutional Paper 271, March 2024).

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

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

stabilise debt (S2 indicator) and bring to 60% of GDP (S1 indicator) over the long term ([157]). This assessment is mainly driven by the projected increase in ageing costs and, to a lesser extent, the unfavourable initial budgetary position.

The S2 indicator points to medium fiscal sustainability risks. The indicator shows that, relative to the baseline, the SPB would need to improve by 4.9 pps. of GDP in 2025 to ensure debt stabilisation over the long term. This result is underpinned by the projected increase in ageing-related costs (contribution of 4.3 pps.) and an unfavourable initial budgetary position (0.6 pp.). Ageing costs' developments are primarily driven by a projected increase in public pension expenditure (3.5 pps.), followed by both health care (0.4 pp.) and long-term care spending (0.3 pp.) (Table A21.1, Table 2). As reforms in the RRP are meant to improve the sustainability of the Hungarian pension system, it will be important to carefully monitor their implementation.

The S1 indicator points to medium fiscal sustainability risks. The indicator shows that the country would need to further improve its fiscal position by 3.3 pps. of GDP in 2025 to reduce its debt to 60% of GDP by 2070. This result is mainly driven by the projected increase in age-related public spending (contribution of 2.5 pps.) and the unfavourable initial budgetary position (0.6 pp.). The current distance of the Hungarian government debt ratio from the 60% reference value further slightly increases the need for fiscal consolidation (0.3 pp.) (Table A21.1, Table 2).

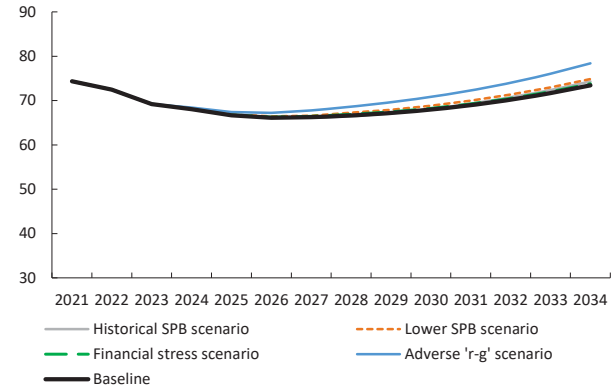
4 - Finally, several additional risk factors need to be considered in the assessment. Risk-increasing factors are mainly related to the significant share of government debt held in foreign currency. Some contingent liability risks stemming from the high level of government guarantees, as well as Hungary's negative net international investment position, pose additional fiscal risks. For several years the debt management agency has maintained favourable conditions for redeeming retail government bonds (amounting to some 20% of public debt) before maturity, which risks raising gross financing needs in times of financial stress.

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

Table A21.1:**Debt sustainability analysis – Hungary**

Table 1. Baseline debt projections	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Gross debt ratio (% of GDP)	**74.4**	**72.5**	**69.2**	**68.1**	**66.7**	**66.1**	**66.3**	**66.7**	**67.2**	**68.0**	**69.0**	**70.2**	**71.7**	**73.5**
Changes in the ratio	-5.2	-1.9	-3.3	-1.1	-1.4	-0.6	0.1	0.4	0.5	0.8	1.0	1.2	1.5	1.8
of which														
Primary deficit	3.3	1.9	1.2	1.4	1.3	1.2	1.6	1.9	2.1	2.3	2.4	2.6	2.8	2.9
Snowball effect	-6.7	-5.1	-5.7	-2.3	-2.5	-1.8	-1.5	-1.5	-1.6	-1.5	-1.4	-1.3	-1.3	-1.1
Stock-flow adjustments	-1.8	1.3	1.2	-0.2	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross financing needs (% of GDP)	10.4	8.2	6.9	7.4	7.3	7.4	7.9	8.4	8.7	9.1	9.4	9.8	10.3	10.7

Graph 1. Deterministic debt projections



Graph 2. Stochastic debt projections 2024-2028

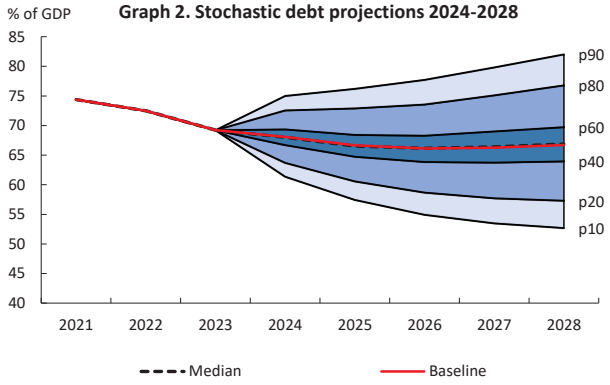


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

		S1	**S2**
Overall index (pps. of GDP)		**4.7**	**6.3**
of which			
Initial budgetary position		0.9	1.6
Debt requirement		0.2	
Ageing costs		3.7	4.7
of which	*Pensions*	2.5	3.1
	Health care	0.7	0.9
	Long-term care	0.6	0.9
	Education	-0.2	-0.2

Source: Commission services.

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

Short term	**Medium term - Debt sustainability analysis (DSA)**								**Long term**		
			Deterministic scenarios								
Overall (S0)	**Overall**		Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress	**Stochastic projections**	**S2**	**S1**	**Overall (S1 + S2)**
LOW	**MEDIUM**	Overall	**MEDIUM**	**MEDIUM**	**MEDIUM**	**MEDIUM**	**MEDIUM**	**MEDIUM**	**HIGH**	**MEDIUM**	**HIGH**
		Debt level (2034), % GDP	73.5	74.3	74.9	78.4	73.8				
		Debt peak year	2034	2034	2034	2034	2034				
		Fiscal consolidation space	56%	61%	62%	56%	56%				
		Probability of debt ratio exceeding in 2028 its 2023 level						42%			
		Difference between 90th and 10th percentiles (pps. GDP)						29.3			

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

Source: Commission services.