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2024 Country Report - Lithuania

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

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European Commission

Lithuania

2024 Country Report

#EURO at 25



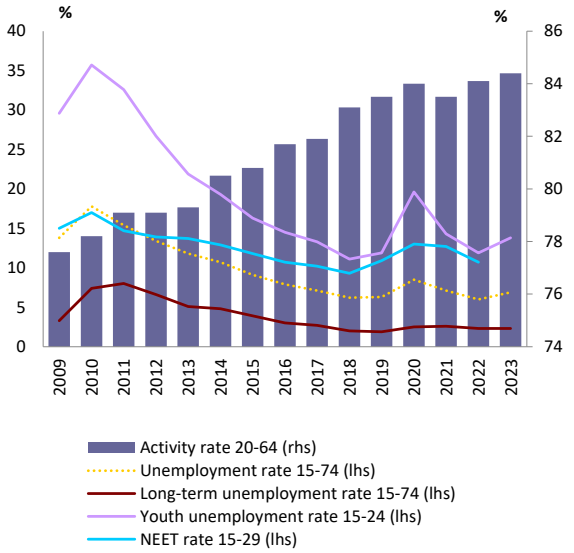
ECONOMIC AND EMPLOYMENT SNAPSHOT

Economic recovery remains slow, but labour market resilience and lower inflation could support a gradual recovery

In 2023, economic recovery was interrupted due to subdued consumer spending, weak exports and tight financing conditions. ([1]) After a negative first quarter, real GDP rebounded strongly, before stagnating in the second half of the year, leading to an overall contraction of 0.3% in 2023. Exports of goods, in particular in the chemical, plastic, wood and furniture sectors, continued to be affected by sluggish global demand, while exports in services recovered. In early 2024, consumer confidence started to improve, although uncertainty linked to Russia's war of aggression against Ukraine could still weigh on consumer spending. GDP growth is expected to be 2% in 2024 and 2.9% in 2025, mainly driven by consumer spending, and continued investments.

After an inflation spike in 2022, price growth slowed significantly in 2023 and is expected to remain just below the 2% target. After reaching a record high of 18.9% in 2022, HICP (Harmonised Index of Consumer Prices) inflation moderated to 8.7% in 2023, as growth in energy prices turned negative in the second half of 2023, while the growth in prices of food and manufacturing products continued to decrease. Over 2024-2025, HICP inflation is forecast to fall substantially to 1.9% and 1.8% in 2024 and 2025. Wage growth is expected to slow from double-digit growth in 2023, but should remain elevated due to the tight labour market and minimum and public wage increases.

Graph 1.1: **Selected labour market indicators**



Source: Eurostat, Labour Force Survey

The labour market in Lithuania remained relatively resilient despite economic challenges in 2023. The employment rate in 2023 remained high (78.5%) compared to the EU average of 75.3%. The influx of more than 52 000 working age migrants fleeing the war in Ukraine since February 2022 contributed to the increase in employment, as more than half of them were employed by Q3-2023 (see Annex 14). Total employment growth is expected to decelerate in 2024 before turning negative in 2025 due to demographic trends and the likely only limited new migration inflows. The unemployment rate in 2023 increased to 6.9% (6.0% in 2022) and is expected to increase slightly to 7.0% in 2024 and back to 6.9% by 2025.

The labour supply continues to fall short of growing demand, and skills

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

mismatch ([2]) remains an obstacle to competitiveness and potential growth. Labour market tightness ([3]) was close to its highest level in 15 years ([4]) and is still rising. The job vacancy rate has been increasing steadily (from 1.45% in 2019 to 2% in Q4-2023), but is still below the EU average for almost all sectors This points to skills mismatches and skills shortages, which are of considerable concern to Lithuanian firms according to the 2023 EIB Investment Survey, especially in the construction sector (see Annex 12).

Increased spending needs for public services affect public finances

Lithuania's general government debt has remained relatively low, but the deficit, while still below the 3% threshold, is increasing. The debt-to-GDP ratio is set to slightly increase from 38.2% of GDP in 2023 to 38.9% in 2024 and to 41.6% in 2025 (see Annex 20). The increase is mainly driven by a rising deficit, which increased from 0.6% of GDP in 2022 to 0.8% in 2023 and is projected to continue to rise to 1.8% in 2024 and to 2.2% in 2025. The deficit is gradually being pushed up mainly by increases in pensions, social benefits and public sector wages, which have not been matched by tax increases.

Spending needs will continue to weigh on public finances in the medium term. General government expenditure continued to increase from 36.3% of GDP in 2022 to 38.2% in 2023 and is projected to rise to 40.3% in 2024 and to 40.7% in 2025. Defence spending was increased following Russia's full-scale invasion of Ukraine and Lithuanian government is discussing plans to rise it further (from 2.8% of GDP in 2024 to 3.1% in 2025, and to remain above 3.0% in the medium to long term). High inflation in 2022 and 2023 prompted Lithuania to adopt a package of permanent expenditure measures to help protect households' disposable incomes (increases in pensions, social benefits and public sector wages). While much needed, the measures will continue to affect public finances in the coming years as most of these spending categories are indexed each year. Furthermore, the value of the minimum consumption basket was significantly increased for 2024. Since social benefits are mostly indexed to this basket, as a result social spending is projected to further increase by EUR 450 million in 2025. In addition, pension indexation was reformed in 2022. This will lead to higher pension adequacy, but also higher public expenditure.

To reconcile spending pressures with continued sound public finances over the medium term, new revenue sources need to be found. In May 2023, Parliament adopted a 'temporary solidarity contribution' in the form of a windfall tax rate of 60% levied on banks' net interest income that exceeds their four-year average net interest income by 50% or more. In 2023, the banks' net operating profit was more than twice higher than in 2022 and the corresponding tax levy raised EUR 250 million ([5]). While higher defence spending is partly covered by the revenues from this temporary windfall tax on banks' profits for 2023 and 2024, Lithuania's budget deficit is projected to keep increasing in the years beyond 2024 unless new financing sources are found to cover defence spending as well as its other medium-term spending pressures.

In 2022, the positive trend of decreasing poverty and income inequality seen in 2017-2021 was reversed. Income

([2]) Skills mismatch is a discrepancy between the skills that are sought by employers and the skills that individuals have.

([3]) The level of labour market tightness is measured by the ratio of job vacancies to the unemployed.

([4]) Central Bank of Lithuania (2023). Lithuanian Economic Review, September 2023.

([5]) Central Bank of Lithuania, 1 March 2024, 'Banks' contribution to defence is more than a quarter of a billion euros'

inequality in Lithuania increased in 2022 ([6]) and remains the third highest in the EU, with the income of the richest 20% of the population over six times higher than that of the poorest 20% (see Annex 14). The situation is deemed 'critical' in the Social Scoreboard (see Annex 14). The at-risk-of-poverty rate also increased by 0.9 percentage points (pps) to 20.9% in 2022 and remains significantly above the EU average of 16.5%. According to the Lithuanian statistical office data, AROP for the total population slightly decreased in 2023 (by 0.3 pps). In particular, the poverty rate materially decreased among older people (65+) and people with a disability (by 3.4 pps and 1.1 pps respectively). However, the situation remains difficult for these vulnerable groups.

Lithuania faces some challenges linked to its social protection system. According to the Social Scoreboard that supports the European Pillar of Social Rights, there is a high risk of poverty or social exclusion as well as income inequality. Significant efforts are needed to tackle high poverty risks among the unemployed and older people as well as people with a disability. These are due to low spending on social protection, which leads to relatively low coverage and low adequacy of unemployment and social benefits as well as pensions. While the labour market situation has improved, recent policy interventions to address the disability employment gap may take some time to show up in the data. Lithuania faces challenges related to the low participation of children below 3 years of age in formal childcare. Despite recent improvements, the level of digital skills is below the EU average, and the low rate of adult participation in lifelong learning is hindering the development of these skills (see Annex 14).

Regional disparities persist, exacerbated by negative demographic developments. GDP per capita in Vilnius county (the capital region) significantly exceeds the EU average, while in some other counties it was only around half the EU average in 2021. Since 2013, Lithuania has experienced one of the highest rates of depopulation in the EU, with municipalities far from the main economic centres suffering the most. For smaller and more remote municipalities, it is becoming increasingly difficult to provide quality healthcare, education, transport, energy/water supplies and other public services in an efficient manner, and to speed up economic development. The municipalities lack cooperation to pool expertise and investments in order to scale up and improve efficiency in the provision of public services. There is scope for further consolidation and concentration of resources, better cooperation between municipalities and stronger coordination at central level, combined with more efforts to ensure better public transport (see Annex 17).

Transitioning towards a higher value-added economy

The recent productivity decline compared to the EU average could be linked to the Lithuanian economy's high exposure to external shocks. Lithuania has experienced a slight decrease in relative labour productivity since 2021. In 2023, it was 70% of average EU productivity ([7]) (see Annex 12). This weakness can be partially attributed to Lithuania's reliance on its export sectors, the biggest of which are mineral products and transport services. Both are prone to external shocks such as supply chain disruptions and energy price spikes (see Annex 12). Historically, low prices for energy and other resources, and to a certain extent low labour costs, have played a key role in keeping Lithuania's economy competitive. However, the continued convergence of wages with the EU average threatens this model of price competitiveness, while supply chain disruptions and energy shocks present additional risks.

([6]) Poverty and inequality statistics for the year *t* are calculated based on survey data reflecting household disposable income statistics with a one-year lag (*t-1*).

([7]) In terms of GDP per hours worked in purchasing power standards (PPS).

Box 1:

Lithuania's competitiveness in brief

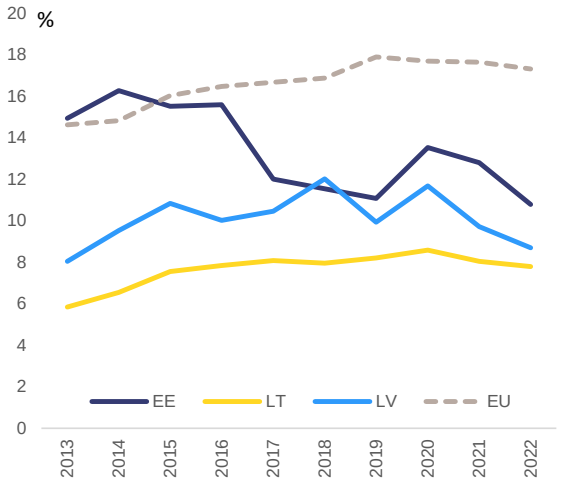
Lithuania's competitiveness is relatively stable. The country is highly integrated into the single market, performing particularly well in EU trade integration compared to other Member States ([11]). The same goes for the transposition of EU directives, with the country ranking among the best Member States with a transposition deficit of just 0.3% in 2023. Lithuania also has a relatively favourable business environment, with a low percentage of firms reporting regulation as a major obstacle to investment (13% vs EU 22.2%) and a high business registration rate (almost 1.5 times higher than the EU average) in 2023.

However, competitiveness challenges remain:

- **persistent skills mismatch and low R&D intensity**, which limits the country's innovation potential and advancement in productivity;
- **inadequate access to diverse financing options,** particularly for SMEs, which hampers the ability of young and innovative firms to scale up;
- **resource inefficiency, especially at industry level, and slow progress towards a circular economy**, which drives Lithuania's dependence on volatile raw material markets and hampers the country's economic security.

Lithuania's industrial system continues to suffer from low resource productivity. Its resource productivity is still considerably below the EU average (1.5 vs 2.5 purchasing power standards per kilogramme in 2022). This results in high material waste and points to various production inefficiencies, possibly leading to increased import dependence on materials.

Graph 1.2: **Exports of high tech as share of total exports**



Source: Eurostat

The structure of Lithuania's economy and sluggish innovation could hamper competitiveness. Its economy is concentrated in less knowledge-intensive processing activities ([8]). The lack of significant structural change towards higher-tech activities is also shown by the stagnation of Lithuania's value added in high-tech manufacturing as a share of total value added ([9]). Despite the growth of its start-up ecosystem, Lithuania's innovation still lags behind, as shown by the consistently low number of patents ([10]). Continuing its transformation to a more knowledge-intensive economy and increasing the complexity of its export products is key to securing the competitive position of its economy.

([8]) SME Country Fact Sheet, 2022 (https://ec.europa.eu/docsroom/documents/54973).

([9]) European Commission R&I indicators. The compound annual growth 2010-2022 of value added in high-tech manufacturing as a share of total value added was -0.6%.

([10]) Lithuania had 28 applications per million inhabitants in 2022 against the EU average of 151.

([11]) The sum of average intra-EU imports and average intra-EU exports as a percentage of GDP in Lithuania was 51.7% in 2023 compared to the EU average of 42.9%. Source: Eurostat.

Box 2:

UN Sustainable Development Goals (SDGs)

Lithuania is making progress on two SDGs related to competitiveness and productivity (SDGs 4 and 9). However, for one SDG (SDG 8) Lithuania is moving away from the SDG target and falling further behind the EU average. Under SDG 8 (Decent work and economic growth), Lithuania improved its employment rate from 2018 to 2023 and surpassed the EU average, but faces challenges with a rise in the NEET rate (young people not in education, employment or training) and a slight increase in long-term unemployment. Furthermore, the country's material footprint, in terms of tonnes per capita, grew from 2017 to 2022 and is significantly higher than the EU average. On SDG 9 (Industry, innovation and infrastructure), Lithuania saw a substantial increase in patent applications per capita to the European Patent Office from 2018 to 2023, although these are still only one-third of the EU average. The percentage of R&D personnel in the labour force also saw a notable improvement from 2017 to 2022, but is still approximately two-thirds of the EU average. On the downside, the share of buses and trains in passenger transport halved from 2016 to 2021, which is less than half of the EU average.

Out of the 17 indicators, 12 SDGs remain below the EU average. Besides SDG 8 and 9 highlighted above, these relate to environmental stability (SDGs 2, 6, 7, 11, 12, 13), fairness (SDGs 1, 3, 7, 5) 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 mutually reinforcing Lithuania's efforts to boost its competitiveness and foster sustainable growth. In addition to the EUR 3.8 billion of RRF funding described in Annex 3, cohesion policy provides Lithuania with EUR 6.3 billion for the 2021-2027 period. Support from these two instruments combined represents around 14.06% of the country's annual 2023 GDP, compared to the EU average of 5.38% of GDP (see Annex 4).

Under the recovery and resilience plan (RRP), Lithuania has launched important policy measures that are expected to improve the country's competitiveness. In particular, the RRP envisages major reforms in the areas of the green and digital transition, general and vocational education and training, lifelong learning, and innovation and science. Lithuania is also undertaking substantial investments in these areas as well as in the energy renovation of buildings, renewable energy and digitalisation of businesses.

The implementation of Lithuania's recovery and resilience plan is underway, however timely completion requires increased efforts. Lithuania has submitted 2 payment requests, corresponding to 37 milestones and targets in the plan and resulting in an overall disbursement of EUR 1.34 billion on 16 May (see Annex 3). Emerging delays in the implementation of the RRP measures, including most notably the tax reform, could put in jeopardy the timely and effective implementation of the plan.

Cohesion policy funding tackle Lithuania's growth and competitiveness challenges and reduce the country's territorial and social disparities. Under the 2014-2020 cohesion programming period, support focused on the areas of energy efficiency, environmental protection, transport infrastructure, healthcare, social inclusion, the competitiveness of SMEs, innovation and education. For the 2021-2027 programming period, support aims to further improve renovations, primary healthcare, long-term care services and personalised services for vulnerable groups, digitalisation of both the private and public sector, increase SMEs productivity, as well as strengthen the system for vocational education and training, lifelong learning and higher education, alongside scientific capacities to increase innovation. It focuses in particular on integrated and place-based territorial development, which takes into account local needs and challenges through a bottom-up approach.

Unlocking investments for the green and digital transition

Lithuania is improving the framework for the sale of electricity, creating the right preconditions for the green transformation and energy independence. Under the RRP, Lithuania has adopted a new legislative framework to improve the institutional and legal mechanisms in order to promote the generation, transmission and consumption of electricity from renewable sources. This measure will improve the Lithuanian energy market by establishing a new framework for the sale of electricity and setting long-term renewable energy targets for all sectors. The Technical Support Instrument ([12]) has helped the Lithuanian authorities accelerate the use of renewable energy by improving the administrative framework for permitting, thereby improving

([12]) Streamlining administrative procedures for renewable energy permitting, TSI23LT01.

the conditions for energy producers to establish and increase their electricity generation capacity. This will contribute to the development of renewable energy sources in Lithuania.

Lithuania is taking steps to decarbonise its transport sector by renewing its rolling stock. Under the RRP, Lithuania has adopted a new legislative framework to set the energy efficiency and environmental protection requirements for purchasing road transport vehicles. This will help to progressively decarbonise road transport. Furthermore, the establishment and operationalisation of the Sustainable Mobility Fund, alongside the adoption of an action plan for a better network of electric vehicle charging points and an IT system to record the quantities of renewable fuels, will help make the transport sector in Lithuania greener.

Lithuania undertook measures to increase the level of digitalisation of the public sector. Lithuania has amended the rules and procedures to boost the development of the National Data Lake. This will improve the efficiency of data management by reducing the decentralisation and fragmentation of public sector data. Furthermore, Lithuania has taken important steps to deploy high-capacity networks in international land transport corridors (Via Baltica and Rail Baltica). The country currently achieves more than 95% 5G coverage in urban areas, international airports and seaports. Further progress has also been made on completing the ultra high speed connectivity infrastructure project. It will help achieve higher levels of digital connectivity across the country.

Investing in people for economic growth and resilience

Lithuania is reforming its school system to address socio-economic and territorial disparities. To include more children from socially vulnerable families in pre-school education, the country is implementing the Child Guarantee Project. Additionally, with the implementation of the revised school network rules and the Millennium Schools programme envisaged in the RRP, Lithuania aims to address inequality in access and improve the quality of school education. This includes closing very small schools and very small classes, and creating school networks in municipalities. These reforms are ambitious, but the ambition should remain high in the implementation phase. The reforms should be accompanied by the necessary measures, and consensus should be built around them to avoid unintentionally making territorial disparities worse.

Lithuania is making efforts to improve its vocational education and training (VET) system and has provided additional possibilities to increase lifelong learning. To improve the labour market relevance and quality of VET, Lithuania has launched the National Platform for Progress in VET. It aims to represent the interests of business, industry, the educational community and public authorities. From 2024, admissions to vocational education programmes will be based on regional and national needs forecasts, to ensure alignment between VET and labour market's needs. Lithuania is also taking steps to increase the number of apprenticeships, especially in SMEs. To increase the number of adults in lifelong learning and make it easier for them to reskill and upskill, Lithuania rolled out the lifelong learning one-stop shop platform based on the principle of individual learning accounts.

Box 3: **Combined action for more impactful EU funds**

To boost economic growth and maximise the impact of EU funding, Lithuania's RRP includes reforms that support investments under other EU instruments, creating important synergies and complementarities between the various funds. For example, the Lithuanian RRP includes reforms in the field of science and innovation to support innovative activities, concentrate resources in areas with high growth potential and promote active participation in R&I. Lithuania has established a single innovation agency, which provides a one-stop shop for business to apply for ESIF-financed support to build innovation capacity, the uptake of advanced technologies and to boost SME competitiveness. Revised legal acts make the innovation support framework more coherent and reduce gaps and overlaps in existing support measures. A new smart specialisation strategy enables Lithuania to concentrate resources in areas with the highest growth potential. Furthermore, a science policy agency has been reformed into Research Council of Lithuania with one of the main aims to promote more active participation of Lithuanian applicants in international R&I programmes. The reforms under the RRF are expected to increase the effectiveness of cohesion policy funding.

Lithuania is implementing comprehensive reforms to address the inefficiencies of the health system and improve access to health services. Strengthening access to health services is of paramount importance given that Lithuanians' life expectancy is 5 years lower on average than the rest of the EU. As part of the RRP, Lithuania is therefore implementing reforms to improve access to an efficient healthcare system. The revision of the framework for ambulance services has improved emergency response times. In addition, several measures are being taken to support the digitalisation of the health system, addressing administrative barriers that were preventing an efficient delivery of health services. Furthermore, the long-term care model is being gradually implemented to better integrate social and health services and support patients more. The ongoing reforms are to be followed by targeted investments, for example in five centres of expertise in the cluster of infectious diseases and in the emergency units of seven regional hospitals. This will improve the country's ability to react to an emergency and deliver higher quality health services.

Lithuania has implemented measures to provide higher quality and better targeted social and employment services. The country has reformed its system for training social workers. According to the new legislation, a consortium of organisations regularly selected via a tender process will provide training, methodological assistance and community-building services. The aim is to increase the number, quality and diversity of training for social workers, and with it the quality of social services. Lithuania also implemented a reform to improve the integration of employment, social and other services. According to Public Employment Service data, around 20-24% of registered unemployed people cannot be integrated into the labour market due to barriers such as caring for a family member, having psychological problems or addictions, not having access to transport services or having low financial literacy and being in debt. To help people facing these complex issues, the Public Employment Service was mandated to offer them the special status of 'persons getting ready for the labour market', entitling them to personalised services and consultations and to participation in municipal employment enhancement programmes.

FURTHER PRIORITIES AHEAD

Lithuania faces additional challenges related to improving the quality of public finances and public services, addressing social inclusion and social protection issues, strengthening primary and preventive care, increasing resource productivity while decarbonising the economy and increasing its sustainability, closing the skills gap and facilitating business investment into R&I. Tackling these challenges will help increase Lithuania's long-term competitiveness and ensure the resilience of its economy and the well-being of its people. It will also help it to make further progress towards achieving the SDGs.

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

Making government spending sufficient and sustainable to tackle demographic challenges

Government spending on public services and social protection remains one of the lowest in the EU, hampering timely and equal access to healthcare, social protection and high-quality public administration services. The policy areas that receive the lowest level of public funding compared to other Member States are general public services (such as public administration, legislative or diplomatic services), social protection, and healthcare. General public services are the most underfunded, and the amounts allocated decreased further by 0.3 percentage points (pps) to 2.8% of GDP in 2022, receiving less than half of the EU average (6% in 2022). Against this background, the government is struggling to attract talent to work for the civil service: in 2023, the highest vacancy rate among all sectors was recorded in public administration (4.4%) ([13]). Healthcare and social protection spending also decreased by 0.7 pps and 0.9 pps respectively, to 5.2% and 13.5% of GDP in 2022, around two-thirds of the corresponding EU averages. Inadequate financial resources are an obstacle to timely and adequate access to healthcare and to ensuring adequate social protection (see subsections 'Promoting social inclusion and protection' and 'Strengthening primary and preventive care').

The pressure to increase funding for public services is expected to grow stronger due to population ageing. The increasing expenditure needs due to population ageing are expected to increase fiscal sustainability risks if Lithuania does not manage to find sustainable public revenue sources ([14]) (see Annex 21). Pressure on public expenditure is growing and demographic challenges, which already have a visible negative impact on the quality of social services in remote regions, will only exacerbate this trend. By 2070, Lithuania is expected to have one of the highest old-age dependency ratios in the EU, driving up public pension expenditure by 3.2 pps of GDP (in comparison to the 2022 level) ([15]). Under current policies, the balance between public pension contributions and expenditure is estimated to deteriorate, reaching -2.1% of GDP by 2070 ([16]). The increase would have to be even higher to address the issues of low

([13]) Lithuania's State Data Agency.

([14]) Under the current policy framework, medium-term and long-term fiscal sustainability risks are assessed as medium (see Annex 21).

([15]) European Commission (2024). 2024 Ageing Report.

([16]) European Commission (2024). 2024 Ageing Report.

adequacy of pensions and social benefits, and limited effectiveness and accessibility of healthcare or other public services.

The country's capacity to provide accessible and high-quality public services is limited by low tax revenues. Lithuania's tax revenue as a percentage of GDP remains among the lowest in the EU. The divergence from the EU average is mainly driven by low labour and capital tax revenues (see Annex 19), the latter having been the fourth lowest in the EU as a percentage of GDP in 2022. Revenue from recurrent property taxes also remains very low (see Annex 19). Furthermore, the tax system offers tax arbitrage opportunities, e.g. between employment, self-employment and some forms of incorporated business.

To address fiscal challenges, efforts could be made to strengthen Lithuania's independent fiscal institution (IFI). The Lithuanian IFI, which is embedded in the National Audit Office, has a relatively broad mandate. Although the IFI has legal grounding and a Memorandum of Understanding, its timely access to information could be improved. Its embedded nature could make it difficult to discern its particular role.

Promoting social inclusion and protection

The decreasing adequacy and limited coverage of social benefits are driving up poverty and income inequality, the latter being one of the highest in the EU. High levels of inequality and poverty are associated with lower educational and health outcomes, which affect labour productivity. In 2022, increasing income inequality and poverty rates reversed the positive trends observed in 2017-2021 (see Annex 14). The increases were mainly driven by the deteriorating effectiveness of social benefits (pensions included). The impact ([17]) of social transfers (pensions included) on reducing poverty and on reducing income inequality both decreased, by 2.7 pps to 19.8 pps and by 0.5 pps to 15.3 pps in 2022 respectively. The impact on reducing inequality remains significantly below the EU average (15.3 pps vs 19.2 pps). The record levels of inflation seen in 2022 (18.9%) eroded much of the value of significant increases in non-taxable amounts of income, the minimum wage, pensions and social benefits ([18]), likely further increasing the divide between high-income and low-income earners in 2023 (see Annex 14).

Poverty among older people (65+) is especially high, and the low adequacy of pensions is driving it up even further. In 2022, the at-risk-of-poverty (AROP) rate for this group was one of the highest in the EU (Lithuania 39.5% vs EU 17.3%), and much higher than for the working-age population (15.8%) (see Annex 14). Women are particularly affected by old-age poverty (46.9%) compared to men (26.3%), mainly due to family-related care responsibilities during their career. According to data from the Lithuanian Statistical Office, AROP for older people decreased by 3.4 pps in 2023 but still remains critically high. The aggregate replacement rate for old-age pensions ([19]), which measures the size of pensions as a share of salary pre-retirement, decreased for a third consecutive year in 2022 (Lithuania 33% vs EU 58%), and the average pension was well below the poverty threshold (see Annex 14). Beyond changes to indexation rules, Lithuania has introduced several measures in recent years that are expected to alleviate old-age poverty by bringing the average old-age

([17]) The impact is measured as a difference (in pps) in the AROP and Gini coefficient before and after social benefits (pensions included).

([18]) Estimations performed by the Joint Research Centre based on the EUROMOD model I6.0+, simulation on the impact of inflation on the increases in non-taxable amounts of income, the minimum wage, pensions and social benefits in 2022 and 2023.

([19]) The aggregate replacement rate is the gross median individual pension income of the population aged 65–74 relative to gross median individual earnings from work of the population aged 50–59, excluding other social benefits.

pension closer to the poverty threshold in the short- to medium term (see Annex 14). However, there is scope for continued efforts to improve pension adequacy further in the longer term.

People with a disability face high poverty risks, driven by their relatively weaker labour market situation and low adequacy of social benefits. The AROP rate of people with a disability in 2022 was 37.7% (vs EU 20.5%), significantly higher than the AROP rate of people without a disability (second highest gap in the EU) (see Annex 14). The average disability pension accounts for around 65% of the average old-age pension and around 55% of the AROP threshold forecast for 2023. The disability employment gap (the gap between employment rates within the general population and people with a disability) is one of the highest in the EU according to the Social Scoreboard, although the national data paints a more positive picture.

These findings are consistent with the second-stage analysis in line with the features of the Social Convergence Framework. The analysis points to challenges related to the high at-risk-of-poverty or social exclusion rates and income inequality but does not point to major social convergence challenges for Lithuania overall, in light of the positive developments recorded, especially in the area of employment ([20]).

Strengthening primary and preventive care

Shortages and an uneven distribution of health professionals exacerbate challenges in accessing primary and preventive care. In Lithuania, the population ageing trend increases the demand for health services, while the average age of the health workforce is also increasing (see Annex 16). Shortages of nurses remain a particularly critical issue, and the gap is expected to widen further in the coming years. The concentration of doctors in the biggest cities, unattractive working conditions and skills mismatches are challenges that exacerbate workforce shortages, particularly in rural areas, and hamper access to healthcare. Lithuania is taking action to improve the attractiveness of the profession and strengthen the health workforce. This includes increasing the wages of healthcare professionals and dedicated investments under cohesion policy programmes.

Health expenditure in Lithuania is among the lowest in the EU, increasing the risk of unmet healthcare needs. Lithuania has just over half of the EU average of health funding per capita (7.8% of GDP in 2021 vs 11% of GDP in the EU). The low expenditure levels result in high out-of-pocket costs for households, long waiting times and shortages of health professionals driven by poor working conditions and non-competitive salaries (see Annex 16). Public spending on prevention compared with total spending on healthcare is also below the EU average. This is reflected in a high number of avoidable hospital admissions and high levels of treatable and preventable mortality. Further investments in prevention and primary care have the potential to improve population health and cultivate a more productive workforce.

Lithuania has put forward structural reforms to improve the accessibility, efficiency and resilience of the healthcare system, including on mental health. Life expectancy in Lithuania remains among the lowest in the EU, suggesting structural challenges in primary and preventive care. Lithuania has outlined a plan to move to a more efficient model based on stronger primary care. This includes reorganising the network of hospitals to decrease patients' reliance on hospitals, and improve the efficiency and quality of care. The results will be conditional on the provision of adequate and sufficient funding. At the same time, COVID-19 caused major disruptions to disease

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

prevention programmes, in particular those tackling cardiovascular diseases and treatable cancers. There is scope for improvement in cancer care, both in better screening coverage and higher survival rates for many treatable cancers (cancer mortality is above the EU average). Lithuania also continues to have the highest suicide rate in the EU, but there are forthcoming strategies that should promote better mental well-being and improve access to mental healthcare.

Tackling resource productivity, transport and environmental challenges

Lithuania's economy, and particularly its industry, is considerably less efficient at using materials to produce wealth than the EU average. Standing at 1.5 purchasing power standards per kilogramme (pps/kg) in 2022, resource productivity has remained consistently below the EU average (EU-27: 2.5 pps/kg), despite increasing slightly over time (see Annex 9). Improving resource productivity can reduce dependency on volatile raw material markets, improve efficiency through lower production costs and therefore boost competitiveness, while also helping to minimise the negative impacts on the environment. It should be noted that Lithuania's industry is mainly focused on the production of intermediate goods driven by foreign demand, and has large refined petroleum and fertiliser manufacturing sectors, as well as a large transport sector. Moreover, Lithuania's circular material use rate remains three times below the EU average (4.1% compared to 11.5% in 2022) and has shown no clear signs of improvement since 2018 (see Annex 9). This means that around 96% of all materials are not reused, indicating considerable scope to improve the fragmented waste-sorting and recycling system as well as promote the use of secondary materials for value creation. Furthermore, Lithuania scored below the EU average on the Eco-Innovation Scoreboard 2022 (103.8 vs 121.47). Overall, there is a need to better exploit the potential of the circular model to drive the decarbonisation, competitiveness and security of Lithuania's industry.

Lithuania has significantly increased its domestic energy generation, despite still sourcing half of its electricity needs from abroad. Thanks to the proliferation of solar and onshore wind energy investments, the share of energy from renewable sources in gross electricity consumption has been rapidly increasing in recent years (by 5.2 pps since 2021 and by 8.2 pps since 2017). However, it remains below the EU average (26.5% compared to 41.2%, in 2022), despite the growing number of prosumers (see Annex 7). With the help of the recovery and resilience plan (RRP), Lithuania aims to increase its electricity production from renewable energy sources to at least 7 TWh by 2030, representing 50% of total national electricity consumption. Renewable energy communities could play a larger role in achieving this objective of higher energy supply security.

Preparations to synchronise Lithuania's electricity grid with continental Europe's network are progressing well. Lithuania, Latvia and Estonia have set February 2025 as the date to synchronise their electricity grids with continental Europe's network. The timely finalisation of preparatory work is of utmost importance to ensure smooth disconnection from Russia and Belarus and integration of the Baltic States into the internal energy market.

The transport sector remains the largest emitter of greenhouse gas emissions in Lithuania, partly due to the lack of available public transport solutions. With 95% of people travelling by car, the uptake of public transport is the lowest in the EU. Lithuania has considerable scope to improve the coordination of its fragmented public transport system, which is unevenly developed and lacks intermunicipal connectivity, trip planning and other basic passenger services. Due to the lack of public funding for necessary but unprofitable routes, public transport routes in the regions are being abandoned. This makes it difficult for vulnerable groups to access jobs and public services, contributing to regional disparities (see Annex 17) and

negatively impacting the competitiveness of the economy. An old and polluting car fleet is the key factor preventing Lithuania from reducing greenhouse gas emissions faster as well as complying with air pollution reduction obligations. Transport taxes in Lithuania are several times lower than the EU average, while only 0.4% of the car fleet is electric, which is also below the EU average (1.2%). By contrast, nearly two-thirds of Lithuania's freight transport is by rail (EU 16%). However, only 8% is electrified (2021), which is the second lowest in the EU, further outlining the untapped potential to decarbonise the sector (see Annex 6).

Lithuania is among the worst performers in the EU on energy poverty, with ample opportunity to reduce its energy consumption through building renovations. Three-quarters of the surface area of Lithuania's building stock was built before 1992 and suffers from poor energy efficiency. This drives up energy consumption and expenditure, weighing on households' ability to use their income on other goods and services. Energy poverty remains among the highest in the EU despite considerable progress in recent years. The share of households unable to keep their homes adequately warm dropped from 26.7% in 2019 to 17.5% in 2022, but is still almost double the EU average of 9.3% (see Annex 7). This welcome reduction has gone hand in hand with a 7% increase in residential final energy consumption over 2015-2022, which contradicts Lithuania's long-term renovation strategy to reduce primary energy consumption by 15% over 2015-2030 and underlines the need for energy efficiency renovations.

Despite considerable support for the renovation of multi-apartment buildings, including through the RRP, renovation rates remain rather low due to financial and administrative disincentives. The renovation process is affected by complex decision-making procedures and limited incentives for housing administrators and construction companies to take part in such projects. Reduced VAT for heating and heating price compensation for low-income households, while helping to alleviate energy poverty, continue to act as disincentives for renovation. Additionally, while heating and cooling account for 80% of the country's residential final energy consumption, only 12.3% of household consumers had smart meters in 2022 (EU average 80%) (see Annex 7). Installing smart systems in households would allow consumers to better control and adjust their consumption behaviour, helping improve the energy efficiency of the housing stock.

In the past decade, the net carbon removals from Lithuania's land use sector remained static, while ammonia emissions from agriculture continued to hamper efforts to reduce air pollution. The agricultural sector remains the second largest emitter of greenhouse gases in Lithuania. The sector's emissions have been on an upward trend in general since 2005, which is an obstacle to achieving national and EU climate targets. As a result, the downward trend in overall air pollution emissions is not sufficient to meet emission reduction targets. Organic farming practices in Lithuania are slightly below the EU average, but are increasing. In 2021, they covered a total of 8.9% of utilised agricultural area against the EU average of 9.1% in 2020 and the EU-wide goal of at least 25% by 2030 (see Annex 6). Environmental investment needs are estimated to be at least EUR 1.6 billion per year (over 2014-2020), while investments stood at EUR 604 million, leaving an investment gap equivalent to 2.2% of GDP, well above the EU average of 0.8% (see Annex 6).

Two-thirds of the habitats protected under EU legislation are in unfavourable conservation status due to pressures from forestry, agriculture and invasive species. The common farmland bird index – used to assess the biodiversity status of agricultural landscapes – indicates that the farmland bird population declined by almost half over 2000-2020. This coincides with a significant loss of grassland areas to croplands. At the same time, Lithuania has yet to complete its Natura 2000 designations and put in place clear site-specific conservation

objectives and measures for all sites. At the end of 2021, Lithuania protected 17.1% of its land and 22.8% of its marine area (see Annex 6). By August 2023, only 28% of sites of Community importance had conservation objectives and measures in place. As such, there is still room to further align agricultural practices with environmental standards, thereby improving the long-term sustainability of the sector.

Boosting competitiveness through skills and innovation

Skills mismatches hinder long-term investment by businesses. Although Lithuania has one of the highest tertiary attainment rates (See Annex 15), for 72% of Lithuanian firms surveyed, the scarcity of skilled staff is a major obstacle to long-term investment (see Annex 12). At the same time, while most Lithuanian students obtain a degree and their employability is improving (74.1% of graduates were employed within 12 months after graduation in 2023 compared to 67.3% in 2019), among college graduates only 47% find jobs that match their level of education (see Annex 15). Ensuring labour market relevance and quality of higher education in Lithuania remains a challenge. The involvement of social partners in the development of study programmes and the quality control of higher education study programmes remain weak. The network of higher education institutions has not been adapted to the dwindling number of students and will face further pressures once a new student admission system comes into force this year. In its RRP, Lithuania has planned several college reorganisation projects. However, to improve the quality of the higher education system, further efforts are needed to increase the efficiency of the higher education network and consolidate the fragmented research ecosystem.

Relatively low R&D intensity hampers innovation. Public R&D expenditure was 0.53% of GDP in 2022, its lowest level since 2007. In 2024, Lithuania will allocate 0.46% of GDP from the national budget to R&D spending, up from 0.31 % of GDP in 2022. However, this remains well below the 0.75% of GDP target for 2024 agreed by political parties in the National Agreement on Education. Recovery and Resilience Facility and cohesion policy funds help boost research and innovation (R&I) and digitalisation. However, the support measures are dependent on budgetary cycles and lack continuity (see Annex 11).

Complex rules limit access to R&I public support measures for academia and business. Despite recent efforts to consolidate the R&I support system with the creation of the Innovation Agency and establishment of science policy implementing agency (Research Council of Lithuania), the effectiveness of R&I support measures is still hindered by a lack of coordination between government bodies, administrative burden, inflexibility and lack of predictability in terms of timeline, which makes public support less attractive for potential beneficiaries. Streamlining processes is essential for improving access to public support and unlocking innovation potential (see Annex 11).

Science-business linkages need to be strengthened further to deliver innovation and growth. Lithuania has the lowest rate of public-private co-publications in the EU. However, the level of public expenditure on R&D financed by national business enterprise slightly surpassed the EU average in recent years (0.056 vs 0.054 % of GDP). The RRP includes measures focused on mission-based science and business cooperation. However, they are still in a pilot phase and have to be expanded further to demonstrate macroeconomic relevance (see Annex 11).

Stagnating R&D spending by businesses hampers business innovation potential. Despite high entrepreneurial dynamism and niches of technological excellence, business enterprise expenditure on R&D as a percentage of GDP has stagnated in recent years and is three times lower than the EU average. Furthermore, despite rapid development and various initiatives, venture capital availability in Lithuania continues to lag

Box 4: **The mid-term review of cohesion policy funds for Lithuania**

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.

Lithuania 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 (see Annexes 14 and 17). In particular, significant disparities persist between the Capital region and the rest of Lithuania in terms of economic activity, investments and social indicators. Against this background, it remains important to continue implementing planned priorities, with particular attention to: (i) strengthening innovation performance and productivity growth by building innovation capacity and increasing the uptake of advanced technologies, especially in central-western Lithuania; (ii) energy efficiency, renewable energy and reducing energy consumption in housing, public buildings and businesses; (iii) addressing regional disparities by incentivising economic activity and improving the provision of public services, especially in counties lagging behind in economic and social development; (iv) active labour market policy measures to improve access to the labour market; (v) improving the quality and inclusiveness of education, including by implementing the European Child Guarantee, and strengthening the up- and re-skilling of the adult population to address labour and skills shortages; (vi) improving the quality and access to social and health services, including long-term care.

Lithuania could also benefit from opportunities provided by the Strategic Technologies for Europe Platform (STEP) initiative ([21]) to help transform industry, for instance by developing and manufacturing high value-added digital and deep-tech innovation, clean and resource-efficient technologies and biotechnologies, including in the area of defence and dual-use goods sectors.

behind the EU average (see Annexes 11 and 12). Targeted incentives could be designed to boost business R&I expenditure.

Limited access to finance hinders the innovation capacity of firms, especially small and medium-sized enterprises (SMEs). Tightening monetary conditions in 2023 had a pronounced effect on Lithuanian firms, which rely more on bank loans than in the other Baltic states. The ratio of financially constrained firms is one of the highest in the EU, and 22% of firms reported a deterioration in the availability of bank loans (EU average 15%). Additionally, the share of SMEs experiencing late payments increased by roughly 8 pps from 51% to 59%, compared to the EU average of 49%. Furthermore, the underdeveloped equity finance market in Lithuania also continues to hinder the growth of small, young and innovative firms. The development of the fintech sector and the use of venture capital, especially via private management, has further potential, particularly in targeting start-ups in their later life cycle (see Annex 12). At the same time, the Lithuanian banking market is relatively concentrated, with mostly Nordic, non-euro area banks present. Further improving capital market access by coordinated policy action, flexible investment ceilings and lending support (e.g. guarantees) to businesses could encourage private investment.

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

KEY FINDINGS

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

- **Promoting the generation of electricity from renewable energy sources**, a network of electric vehicle charging points as well as green finance;
- **Accelerating the digital transformation** by developing a National Data Lake for open data, supporting the development of digital skills, and improving broadband infrastructure and digital connectivity;
- **Supporting innovative activities** by establishing a single innovation agency, and adopting a new smart specialisation strategy and guidelines for the development of the defence industry;
- **Creating a high-quality education system** by rolling out the Millennium School programme to bridge the gaps in pupils' achievement and reforming student admission to higher education;
- **Increasing the effectiveness of the social protection system** by setting up the social care accreditation scheme, reviewing the benefits system for single persons with a disability and older single persons, and launching training and employment support schemes;
- **Improving access to high-quality healthcare services** in primary care, specialised outpatient care and long-term care while investing in emergency response services.

The implementation of Lithuania's recovery and resilience plan is facing increasing challenges. Renewed efforts are key for a successful implementation of all the measures of Lithuania's recovery and resilience plan by August 2026.

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

- **To support upward social convergence, reducing the risk of poverty and social exclusion**, including by providing adequate financing for healthcare, social protection and general public services;
- **Tackling skills mismatches** by increasing the relevance of higher education for the job market;
- **Unleashing research and innovation (R&I) potential** by consolidating research institutions, simplifying access to public R&I support and incentivising business R&I investment;
- **Making it easier for businesses to access finance**, specifically SMEs, by further improving capital market access;
- **Strengthening primary care and expanding preventive care** to reduce unmet needs and improve overall health outcomes, and to make the healthcare system more resilient;
- **Further increasing the adequacy of old-age pensions**, while maintaining the sustainability of the pension system;
- **Addressing regional disparities** by incentivising municipalities to cooperate in the provision of public services, improving coordination of public transport and

increasing incentives to choose less polluting means of transport;

- **Stepping up resource efficiency measures,** particularly in the industrial sector, and energy efficiency measures in residential buildings;

- **Strengthening the protection of biodiversity** and progressing towards a circular economy, particularly in industry.

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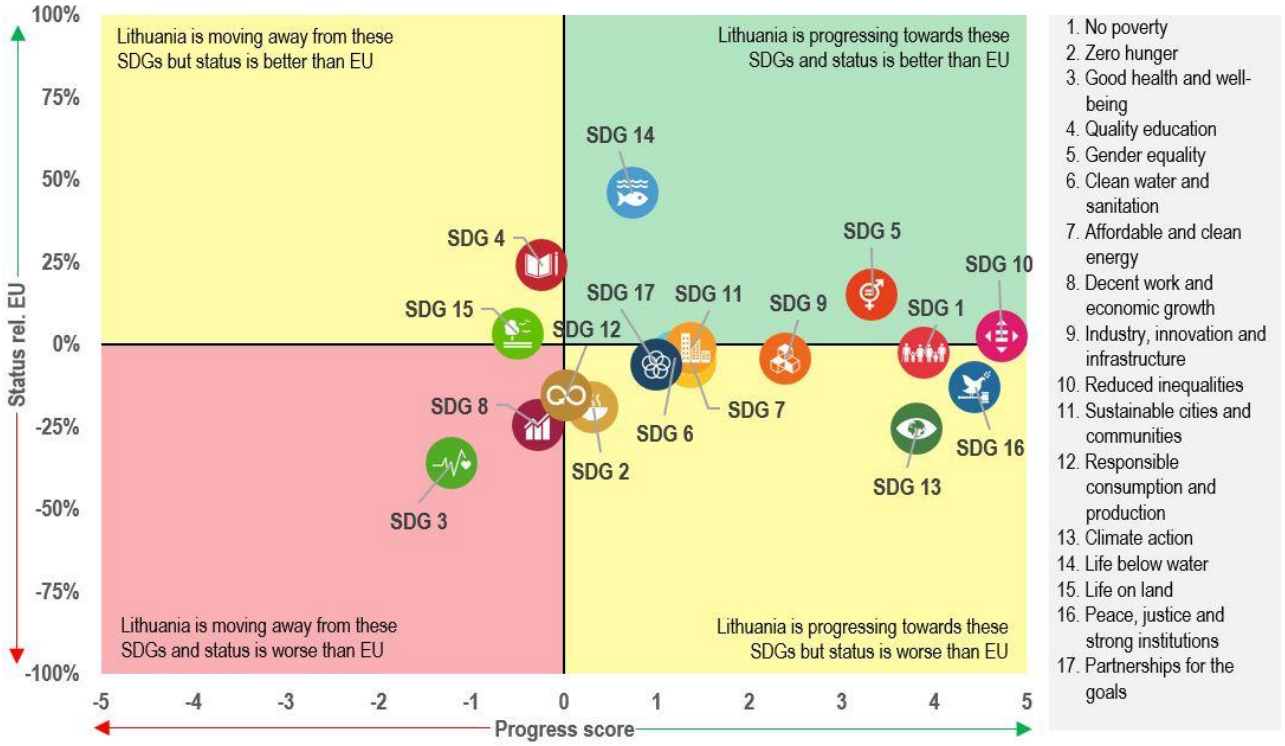
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ANNEX 1: SUSTAINABLE DEVELOPMENT GOALS

This Annex assesses Lithuania'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 Lithuania performs well on several of the SDG indicators related to *environmental sustainability* (SDGs 14, 15), it needs to catch up with the EU average on others (SDGs 2, 6, 7, 9, 11, 12, 13). On SDG 13 (Climate Action), the share of renewable energy in gross final energy consumption increased from 26% in 2017 to 29.6% in 2022, above the EU average of 23% in 2022. Meanwhile, net greenhouse gas emissions fell to 4.6% in 2022, remaining significantly below the EU average of 7.3%. However, the average CO_2 emissions per km from new passenger cars, although lower at 135.9 g in 2022, was materially above the EU average of 109.8 g in 2022. On SDG 15 (Life on land), Lithuania is moving away from the goals, while remaining above the EU average. In particular, the share of phosphate in rivers increased from 0.064 mg PO4 per litre in 2016 to 0.205 in 2021 (EU average: 0.074 in 2021). On SDG 7 (Affordable and clean energy), Lithuania has achieved significant progress in its share of renewable energy in total energy consumption. This increased from 26% in 2017 to 29.6% in 2022 and is well above the EU average (23% in 2022). Similarly, progress was made on other energy indicators, including energy productivity (from 4.6% in 2017 to 5.9% in 2022), yet still significantly below the EU average (9.3%) in 2022.

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



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.

The Lithuanian recovery and resilience plan includes investments in mobility infrastructure and public transport for sustainable mobility, together with investments in solar and wind energy capacity to provide additional security of supply and flexibility to accommodate renewable energy sources in the grid. Lithuania is below the EU average on SDG 6 (Clean water and sanitation) and SDG 11 (Sustainable cities and communities). On SDG 6 (Clean water and sanitation), Lithuania's share of population without a bath, shower or indoor flushing toilet decreased from 10.6% in 2015 to 6.4% in 2020 but remained significantly above the EU average of 1.5%. On SDG 11 (Sustainable cities and communities), the rate of the population under severe housing deprivation fell from 8.9% in 2015 to 5.4% in 2020 but remained above the EU average of 4.3%. On SDG 12 (Responsible consumption and production), Lithuania is moving away from the goals and is worse than the EU average. In particular, its material footprint increased from 20.3 tonnes in 2017 to 22.6 tonnes in 2022 (EU average: 14.9 tonnes in 2022). Its waste generation needs further improvement, as the circular material use rate decreased from 4.5% in 2017 to 4.1% in 2022 (EU average: 11.5% in 2022).

Lithuania is performing well on two SDG indicators related to *fairness* (SDGs 5, 10), but still needs to catch up on several others (SDGs 1, 3, 7, 8), and it is moving away from the target for SDG 4. Lithuania reduced the risk of poverty or social exclusion (SDG 1) from 29.8% in 2017 to 24.6% in 2022 but is still above the EU average of 21.6%. While regional disparities remain an important issue, Lithuania has achieved significant progress on SDG 10 (Reduced inequalities). The urban-rural gap for the risk of poverty or social exclusion, computed as the difference in the share of the population, narrowed from 18 p.p. in 2017 to 10.7 p.p. in 2022, although it remains well above the EU average (0.4 p.p. in 2022). While Lithuania is improving on two SDGs related to fairness, it is moving away from the targets for SDG 3 (Good health and well-being) and remains below the EU average; also moving away from targets for SDG 4 (Quality education) but for it remains above the EU average. For SDG 3, this concerns in particular healthy life expectancy – this was 57.6 years in 2021 (EU average: 63.6 years). At the same time, progress has been made on all causes of death indicators, especially road traffic deaths, where the indicator fell from 6.8% in 2016 to 4.2% in 2021 (EU average: 4.6%). The Lithuanian RRP includes measures to reform the minimum income scheme and improve the social safety net, as well as measures to improve the resilience, accessibility and quality of health services and increase the quality, affordability and efficiency of the healthcare system. For quality education, moving away from the targets is driven by increase in early leavers from education – from 4.6% in 2018 to 6.4% in Lithuania, while in the EU, a decrease was recoded – from 10.5% in 2018 to 9.5%.

Lithuania is improving on SDGs 9 related to *productivity*, while it is moving away from the targets for SDG 4 and 8. Regarding Lithuania's performance on SDG 4 (Quality education) further efforts are needed to reach the EU average on: (i) participation in early childhood education, which increased from 88.1% in 2016 to 92.1% in 2021 (EU average: 92.5% in 2021) and (ii) adult learning, up from 6.6% in 2018 to 10.7% in 2023 (EU average: 12.7% in 2023). The share of households with a high-speed internet connection (SDG 9) in 2022 (78%) was significantly above the EU average (73.4%). Lithuania has slowly improved gross domestic expenditure on R&D, which rose from 0.9% of GDP in 2017 to 1.02% of GDP in 2022, but it remains below the EU average of 2.24%. The country is also still lagging some way behind on patent applications to the European Patent Office, with 45 applications per million inhabitants in 2023 (EU average: 153). Several reforms and investments in the RRP focus on further developing digital infrastructure and equipment and improving the quality of education and digital skills at all levels.

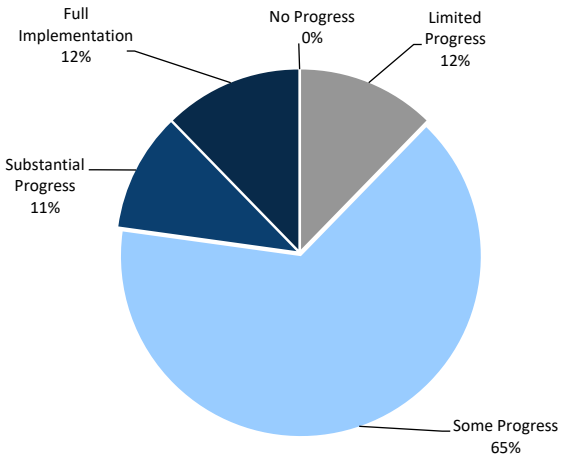
Lithuania is improving on two SDG indicators related to *macroeconomic stability* (SDGs 16 and 17) but is moving away from SDG 8. Lithuania continues to perform below the EU average on the investment share of GDP (SDG 8 on Decent work and economic growth) but increased its share from 20.1% in 2017 to 21.4% in 2022 (EU: 22.7% in 2023). The employment rate is improving and is performing better than the EU average (78.5%, vs 75.3% for the EU in 2023). On the negative side, the long-term unemployment rate and the indicator on young people not in education, employment or training has deteriorated (from 2% in 2017 to 2.3% in 2023 and from 9.3% in 2018 to 13.5% in 2023

respectively). Lithuania needs to catch up with the EU average on SDG 16 (Peace, justice and strong institutions). The Corruption Perceptions Index improved from 59% in 2018 to 61% in 2023, and general government total expenditure on law courts per capita increased from EUR 39 in 2016 to EUR 48.5 in 2022. This is, however, still far from the EU average of EUR 113.7 in 2022.

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

The Commission has assessed the 2019-2023 country-specific recommendations (CSRs) ([22]) addressed to Lithuania as part of the European Semester. These recommendations concern a wide range of policy areas that are related to 14 of the 17 Sustainable Development Goals (see Annexes 1 and 3). The assessment considers the policy action taken by Lithuania to date ([23]) and the commitments in its recovery and resilience plan (RRP) ([24]). At this stage of RRP implementation, 88% of the CSRs focusing on structural issues from 2019-2023 have recorded at least 'some progress', while 12% recorded 'limited progress' (see Graph A2.1). As the RRP is implemented further, considerable progress in addressing structural CSRs is expected in the years to come.

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



Source: European Commission

([22]) 2023 CSRs : EUR-Lex - 32023H0901(15) - EN - EUR-Lex (europa.eu)

2022 CSRs: EUR-Lex - 32022H0901(15) - EN - EUR-Lex (europa.eu)

2021 CSRs: EUR-Lex - 32021H0729(15) - EN - EUR-Lex (europa.eu)
2020 CSRs: EUR-Lex - 32020H0826(15) - EN - EUR-Lex (europa.eu)
2019 CSRs: EUR-Lex - 32019H0905(15) - EN - EUR-Lex (europa.eu)

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

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

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

Lithuania	Assessment in May 2024	RRP coverage of CSRs until 2026	Relevant SDGs
2019 CSR 1	**Some progress**		
Improve tax compliance and	Some progress	Relevant RRP measures being implemented as of 2021, 2022, 2023 and 2024	SDG 8, 16
broaden the tax base to sources less detrimental to growth.	Some progress	Relevant RRP measures being implemented as of 2022	SDG 8, 10, 12
Address income inequality, poverty and social exclusion, including by improving the design of the tax and benefit system.	Some progress	Relevant RRP measures being implemented as of 2021, 2022, 2023 and 2024	SDG 1, 2, 8, 10, 12
2019 CSR 2	**Some progress**		
Improve quality and efficiency at all education and training levels, including adult learning.	Some progress	Relevant RRP measures being implemented as of 2021 and 2022	SDG 4
Increase the quality,	Some progress	Relevant RRP measures being planned as of 2022	SDG 3
affordability and	Some progress	Relevant RRP measures being planned as of 2022	SDG 3
efficiency of the healthcare system.	Some progress	Relevant RRP measures being planned as of 2022	SDG 3
2019 CSR 3	**Some Progress**		
Focus investment-related economic policy on innovation,	Some Progress	Relevant RRP measures being implemented as of 2021, 2022, 2023 and 2026	SDG 9, 10, 11
energy and	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 10, 11, 13
resource efficiency,	Some Progress	Relevant RRP measures being planned as of 2022 and 2023	SDG 6, 10, 11, 12, 15
sustainable transport and	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 10, 11
energy interconnections, taking into account regional disparities.	Substantial Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 10, 11, 13
Stimulate productivity growth by improving the efficiency of public investment.	Some Progress	Relevant RRP measures being implemented as of 2022	SDG 8, 16
Develop a coherent policy framework to support science-business cooperation and	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 9
consolidate research and innovation implementing agencies.	Full Implementation	Relevant RRP measures being implemented as of 2021	SDG 9
2020 CSR 1	**Some progress**		
In line with the general escape clause, take all necessary measures to effectively address the pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.	Not relevant anymore	Not applicable	SDG 8, 16
Strengthen the resilience of the health system, including by mobilising adequate funding and addressing shortages in the health workforce and of critical medical products.	Some progress	Relevant RRP measures being planned as of 2022, 2023 and 2024	SDG 3
Improve the accessibility and quality of health services.	Some progress	Relevant RRP measures being planned as of 2022, 2023 and 2024	SDG 3
2020 CSR 2	**Some progress**		
Mitigate the impact of the crisis on employment.	Full implementation	Relevant RRP measures being implemented as of 2022	SDG 8
Increase the funding and coverage of active labour market policy measures	Some progress	Relevant RRP measures being implemented as of 2022	SDG 8
and promote skills.	Some progress	Relevant RRP measures being implemented as of 2021, 2022 and 2024	SDG 4
Ensure the coverage and adequacy of the social safety net and improve the effectiveness of the tax and benefit system to protect against poverty.	Some progress	Relevant RRP measures being implemented as of 2021 and 2022	SDG 1, 2, 8, 10, 12
2020 CSR 3	**Some progress**		
Support liquidity for businesses, especially for small- and medium-sized enterprises and export-oriented sectors	Some progress		SDG 8, 9
Front-load mature public investment projects	Some progress	Relevant RRP measures being implemented as of 2021, 2022, 2024, 2025 and 2026	SDG 8, 16
and promote private investment to foster the economic recovery.	Some progress	Relevant RRP measures being implemented as of 2021, 2022 and 2025	SDG 8, 9
Focus investment on the green and digital transition, in particular on the coverage and take-up of very high-capacity broadband,	Some progress	Relevant RRP measures being implemented as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 9
on clean and efficient production and use of energy,	Some progress	Relevant RRP measures being implemented as of 2022	SDG 7, 9, 13
and sustainable transport.	Some progress	Relevant RRP measures being implemented as of 2021	SDG 11
Promote technological innovation in small and medium-sized enterprises.	Some progress	Relevant RRP measures being implemented as of 2021	SDG 8, 9

(Continued on the next page)

Table (continued)

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. Keep the growth of nationally financed current expenditure under control.	Not relevant anymore	Not applicable	SDG 8, 16
When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.	Not relevant anymore	Not applicable	SDG 8, 16
At the same time, enhance investment to boost growth potential. Pay particular attention to the composition of public finances, on both the revenue and expenditure sides of the budget, and to the quality of budgetary measures in order to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, in particular investment supporting the green and digital transition.	Not relevant anymore	Not applicable	SDG 8, 16
Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including, where relevant, by strengthening the coverage, adequacy and sustainability of health and social protection systems for all.	Not relevant anymore	Not applicable	SDG 8, 16
2022 CSR 1	**Substantial Progress**		
In 2023, ensure that the growth of nationally financed primary current expenditure is in line with an overall neutral policy stance, taking into account continued temporary and targeted support to households and firms most vulnerable to energy price hikes and to people fleeing Ukraine. Stand ready to adjust current spending to the evolving situation	Substantial Progress	Not applicable	SDG 8, 16
Expand public investment for the green and digital transitions, and for energy security taking into account the REPowerEU initiative, including by making use of the Recovery and Resilience Facility and other Union funds	Full Implementation	Not applicable	SDG 8, 16
For the period beyond 2023, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions.	Full Implementation	Not applicable	SDG 8, 16
Foster cooperative public procurement at central government and municipality levels.	Some Progress	Relevant RRP measures are being implemented as of 2023 and 2025.	SDG 9
2022 CSR 2			
Proceed with the implementation of its recovery and resilience plan, in line with the milestones and targets included in the Council Implementing Decision of 20 July 2021.	RRP implementation is monitored by assessing RRP payment requests and analysing reports published twice a year on the achievement of the milestones and targets. These are to be reflected in the country reports.		
Swiftly finalise the negotiations with the Commission of the 2021-2027 cohesion policy programming documents with a view to starting their implementation	Progress on the cohesion policy programming documents is monitored under the EU cohesion policy.		
2022 CSR 3	**Some Progress**		
Strengthen primary and preventive care.	Some Progress	Relevant RRP measures being planned as of 2023, 2024, 2025 and 2026	SDG 3
Reduce fragmentation in the planning and delivery of social services and improve their personalisation and integration with other services.	Substantial Progress	Relevant RRP measures being implemented as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 1, 2, 10
Improve access to and quality of social housing.	Some Progress		SDG 1, 2, 10
2022 CSR 4	**Some Progress**		
Reduce overall reliance on fossil fuels	Some Progress	Relevant RRP measures being implemented as of 2022, 2024, 2025 and 2026	SDG 7, 9, 13
by accelerating the deployment of renewables	Some Progress	Relevant RRP measures being implemented as of 2022, 2023 and 2026	SDG 7, 9, 13
and increasing energy efficiency and decarbonisation of industry, [transport] and buildings,	Limited Progress	Relevant RRP measures being planned as of 2024, 2025 and 2026	SDG 7
and [increasing energy efficiency and decarbonisation] of transport	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 11
and ensure sufficient capacity of energy interconnections.	Substantial Progress	Relevant RRP measures being implemented as of 2022, 2023 and 2026	SDG 7, 9, 13
2023 CSR 1	**Some Progress**		
Wind down the emergency energy support measures in force, using the related savings to reduce the government deficit, as soon as possible in 2023 and 2024. Should renewed energy price increases necessitate new or continued support measures, ensure that such support measures are targeted at protecting vulnerable households and firms, are fiscally affordable and preserve incentives for energy savings.	Full Implementation	Not applicable	SDG 8, 16
While maintaining a sound fiscal position in 2024,	Full Implementation	Not applicable	SDG 8, 16
preserve nationally financed public investment and ensure the effective absorption of grants under the Facility and of other Union funds, in particular to foster the green and digital transitions.	Some Progress	Not applicable	SDG 8, 16
For the period beyond 2024, continue to pursue investment and reforms conducive to higher sustainable growth and preserve a prudent medium-term fiscal position.	Full Implementation	Not applicable	SDG 8, 16
Strengthen the adequacy of healthcare and	Limited Progress		SDG 3
social protection,	Some Progress	Relevant RRP measures being implemented as of 2022, 2023, 2024, and 2025	SDG 1,2, 10
and improve general public services.	Limited Progress		SDG 16

(Continued on the next page)

Table (continued)

2023 CSR 2			
Continue the steady implementation of its recovery and resilience plan and swiftly finalise the REPowerEU chapter with a view to rapidly starting the implementation thereof. Proceed with the speedy implementation of cohesion policy programmes, in close complementarity and synergy with the recovery and resilience plan.	RRP implementation is monitored through the assessment of RRP payment requests and analysis of the bi-annual reporting on the achievement of the milestones and targets, to be reflected in the country reports. Progress with the cohesion policy is monitored in the context of the Cohesion Policy of the European Union.		
2023 CSR 3	**Some Progress**		
Strengthen primary care and expand preventive care in order to, inter alia, make the healthcare system more resilient.	Some Progress	Relevant RRP measures being planned as of 2022, 2023 and 2024	SDG 3
Improve the planning and delivery of social services.	Substantial Progress	Relevant RRP measures being implemented as of 2022 and 2023	SDG 1, 2, 10
Improve access to, and the quality of, social housing.	Some Progress	Not applicable	SDG 1, 2, 10
2023 CSR 4	**Some Progress**		
Further reduce reliance on fossil fuels and imported energy	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 13
by accelerating the deployment of renewables, in particular by ensuring sufficient grid capacity and access,	Some Progress	Relevant RRP measures being implemented as of 2022, 2023 and 2026	SDG 7, 9, 13
ensuring the transformation and decarbonisation of industrial production,	Limited Progress	Relevant RRP measures being planned as of 2023	SDG 7
and increasing the uptake of public and sustainable transport, as well as	Limited Progress	Relevant RRP measures being implemented as of 2021	SDG 11
by making buildings more energy-efficient with a view to, inter alia, reducing energy poverty.	Limited Progress	Relevant RRP measures being planned as of 2024, 2025 and 2026	SDG 1, 2, 7, 10
Ensure sufficient capacity of electricity interconnections in order to increase security of supply, continuing the timely synchronisation with the Union electricity grid.	Substantial Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 13
Step up policy efforts aimed at the provision and acquisition of skills and competences needed for the green transition.	Limited Progress	Relevant RRP measures being implemented as of 2026	SDG 4

Note:

* See footnote ([24]).

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

Source: European Commission

This Annex provides a snapshot of Lithuania'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 2,298 million in grants and EUR 1,552 million in loans under the RRF over the 2021-2026 period, representing 5.4% of Lithuania's GDP ([25]). As of mid-May 2024, EUR 1,341 million have been disbursed to Lithuania under the RRF, comprising EUR 886 million in grants and EUR 470 million in loans.

Lithuania still has EUR 2,494 million available in grants and loans from the RRF. This will be disbursed after the assessment of the future fulfilment of the remaining 180 milestones and targets ([26]) included in the Council Implementing Decision ([27]) (CID), ahead of the 2026 deadline established for the RRF.

Lithuania's progress in implementing its plan is recorded in the Recovery and Resilience Scoreboard ([28]). 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.

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

Initial plan CID adoption date	28 July 2021
Scope	Revised plan with REPowerEU chapter
Last major revision	9 November 2023
Total allocation	EUR 2,298 million in grants and EUR 1,552 million in loans (5.4% of 2023 GDP)
Investments and reforms	10 investments and 31 reforms
Total number of milestones and targets	218
Fulfilled milestones and targets	36 (16.5% of total)

Source: RRF Scoreboard

Lithuania's RRP includes a REPowerEU chapter to phase out its dependency on Russian fossil fuels, diversify its energy supplies and produce more clean energy in the coming years. To kick-start the REPowerEU chapter's implementation, EUR 149.4 million was disbursed as pre-financing on 28 December 2023. This helped launch relevant reforms and investments, like facilitating the issuance of permits for renewable energy development, which is currently underway.

The plan has a strong focus on the green transition, devoting 37.3% of the available funds to measures that support climate objectives and 23.3% of its total allocation to support the digital transition. It also retains a strong social dimension with social protection measures, especially related to healthcare and education.

With two payment requests completed, Lithuania's implementation of its RRP is underway. However, timely completion requires increased efforts. The Commission gave a positive assessment of Lithuania's first payment request, taking into account the opinion of the Economic and Financial Committee. This led to EUR 542 million being disbursed in financial support on 10 May 2023 ([29]). The disbursement reflected the positive assessment of 31 out of 33

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

([26]) 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.

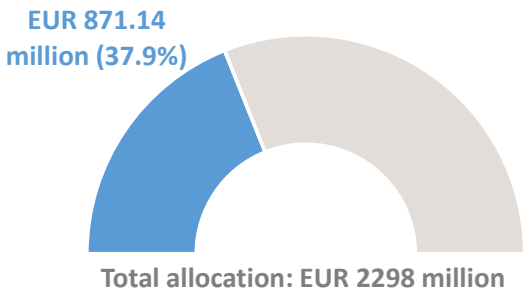
([27]) https://data.consilium.europa.eu/doc/document/ST-10477-2021-ADD-1/en/pdf

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

([29]) When requested payments are disbursed, the pre-financing is cleared proportionally. The net amounts are quoted here.

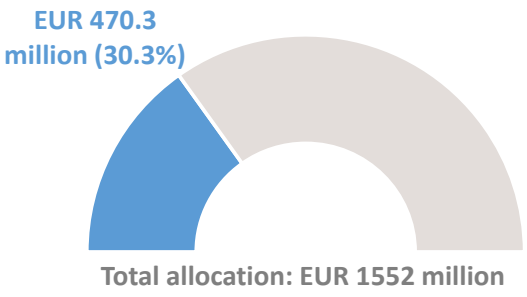
milestones and targets covering renewable energy and digitalisation of public services, among others. The remaining 2 milestones concerning taxation had not been satisfactorily fulfilled. The Commission therefore activated the 'payment suspension' procedure, as envisaged in Article 24(6) of the Regulation. After re-assessment on 6 May 2024, one out of the two milestones was considered as fulfilled, leading to a partial payment of EUR 14.9 million.

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

The most recent payment request, which the Commission assessed positively on 21 February 2024, led to the disbursement of EUR 360 million on 27 March 2024. The disbursement reflected the positive assessment of 5 milestones covering social care, the green transition, public procurement, and modernisation of its industry.

As of 15 May 2024, Lithuania is working towards its third payment request. Table A3.2 highlights some relevant measures achieved so far, and some that will be implemented before 2026 to keep making Lithuania's economy greener, more digital, inclusive, and resilient.

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

Reforms and investments implemented
• Action plan to integrate electric charging infrastructure framework • Assignation of radio frequencies for 5G deployment • Funding for the development of vocational education and training
Upcoming reforms and investments
• Legislation for a new long-term care model • Inter-urban mobility system reform • Solutions for digital public services to persons with disabilities

Source: FENIX

EU funding instruments provide considerable resources for recovery and growth to the EU Member States. In addition to the EUR 3.8 billion of Recovery and Resilience (RRF) funding described in Annex 3, EU cohesion policy funds ([30]) provide EUR 6.3 billion to Lithuania for the 2021-2027 period ([31]). Support from these two instruments combined represents around 14.06% 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 Lithuania's competitiveness, with tangible achievements notably in entrepreneurship, energy efficiency, healthcare and employment. Over the whole period, which financed investments until December 2023, cohesion policy funds ([33]) made EUR 7.0 billion available to Lithuania ([34]), of which EUR 4.5 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 financial support to almost 9 000 enterprises, creation of over 1 100 new jobs, improving energy efficiency in 52 000 households so far, and upgrading infrastructure for the provision of health services in 325 public healthcare institutions. During the same period, in the context of the European Social Fund (ESF), over 60 000 young people (15-29) neither in employment, nor in education or training participated in the measures funded by the Youth Employment Initiative, of which almost 29 000 people were in the 25-29 age group. Over 60% of participants took up employment, became self-employed or continued their training.

In the current programming period, cohesion policy will provide a further boost to Lithuania's competitiveness, to the green transition and to social cohesion, improving the living and working conditions of Lithuania's people. In 2021-2027, the European Regional Development Fund and the Cohesion Fund will support action on the green transition, directing a substantial part of cohesion policy investments (EUR 277 million) to the roll-out of renewable energy sources for electricity production in households and to heat and cooling production. This will make a significant contribution to increasing the share of renewables in final energy consumption and to helping people meet the challenges of the green transition. The investments will enable the installation of an additional 800 MW of renewable energy capacity and reduce CO_2 emissions by about 550 000 tonnes every year. To encourage Lithuania's economy to shift to the production of high value-added products, the funding will support over 1 200 businesses in developing new product ideas, creating prototypes and bringing products to market. In addition, it will create almost 240 research jobs in recipient entities to carry out R&D activities, early trials of new products and to prepare products for the market.

In terms of social inclusion, the investments in new or modernised social housing will improve living conditions for over 2 000 people with disabilities and for large families. The Just Transition Fund (JTF) will help Lithuania reduce emissions from greenhouse gas-intensive industries and tackle the related negative social and economic effects in the counties of Kaunas, Šiauliai and Telšiai. The JTF will provide 430 employees with skills for the industrial transition and create almost 400 new sustainable jobs. For the 2021-2027 period, Lithuania has earmarked over EUR 441 million from the European Social Fund (ESF+) to social inclusion (excluding funding under the programme to support the most deprived). To integrate people at risk of poverty or social exclusion in a sustainable manner, the ESF+ will support projects including the development of social integration services, integrated services for families, projects to

([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 7.8 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.

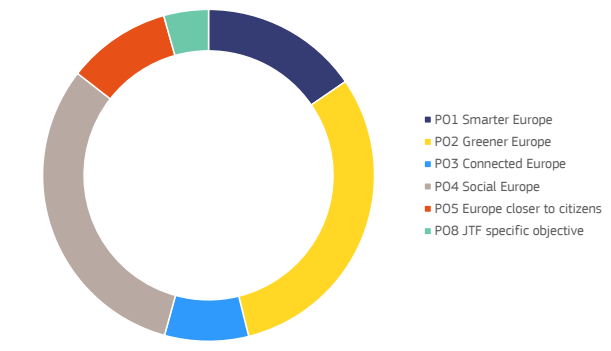
([34]) In 2014-2020, the total investment, including national financing, amounted to EUR 8.2 billion.

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

implement the Child Guarantee and to transition from institutional care to family and community-based services. With this work, cohesion policy substantially contributes to achieving the UN Sustainable Development Goals (SDGs) in Lithuania, in particular SDG 9 (Industry, innovation, infrastructure), SDG 7 (Affordable and clean energy) and SDG 1 (No poverty).

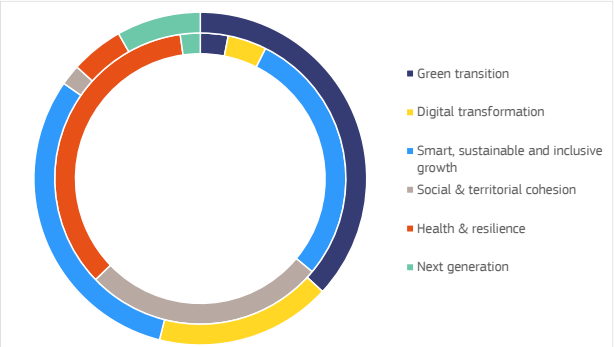
Through combined action, cohesion policy and the recovery and resilience plan (RRP) have a mutually reinforcing impact in Lithuania. For instance, in terms of promoting innovation, the RRP covered the adoption of the legal acts needed to set up the Innovation Agency and fund its infrastructure, enabling the Agency to function as a one-stop-shop for business to apply for ESIF-financed support to build innovation capacity, the uptake of advanced technologies and to boost SME competitiveness. In healthcare, the RRP is investing in the development of a sustainable long-term care model by adopting legislation, creating specialised long-term care day centres and mobile teams and training long-term care professionals. This is combined with cohesion policy funding to finance projects to develop specialist competences and qualifications to provide long-term care services in inpatient and outpatient chains, to create a methodological centre and municipal-level personal healthcare institutions, provide targeted long-term care services and to purchase vehicles and innovative equipment for home visits to patients. The contribution of cohesion policy and RRP funding by policy objective is illustrated by Graphs A4.1 and A4.2.

Graph A4.1: **Distribution of cohesion policy funding 2021-2027 across policy objectives in Lithuania**



Source: European Commission

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



(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 Lithuania.

Source: European Commission

The Technical Support Instrument (TSI) helps Lithuania invest in its public administration and create a better enabling environment for EU and national investment. The TSI has funded projects in Lithuania to design and implement growth-enhancing reforms since 2017. The support provided to Lithuania in 2023 included help to accelerate the use of renewable energy by improving the administrative framework for permitting, to strengthen Lithuania's development cooperation ecosystem by preparing an action plan and a strategy for integrating the lifecycle of partnerships and to boost the capacity of Lithuanian authorities to conduct health technology assessments. The TSI is also helping Lithuania boost its overall capacity to implement specific reforms and investments included in its RRP, such as advancing building renovation with the use of organic materials. Lithuania also receives funding from several other EU instruments, including those listed in Table A4.1.

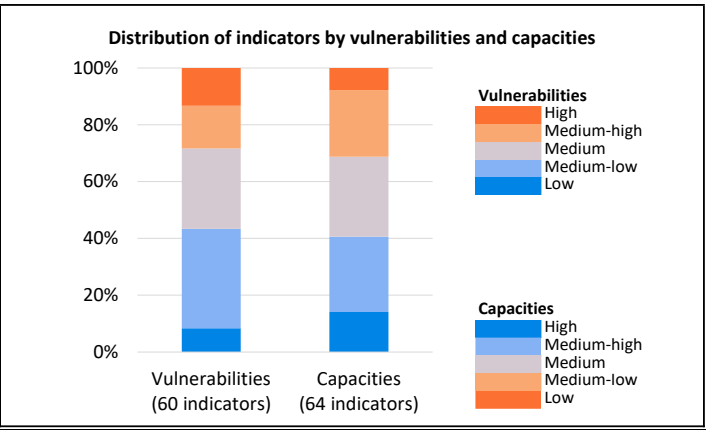
Table A4.1: **Support from EU instruments in Lithuania**

EU grants			
	Amount 2014-2020 (EUR million)		Amount 2021-2027 (EUR million)
Cohesion policy	7 033.5		6 274.3
RRF grants (1)	-		2 297.6
Public sector loan facility (grant component) (2)	-		20.7
Common agricultural policy (3)	6 100.0		3 998.0
EMFF/EMFAF (4)	63.4		61.2
Connecting Europe Facility (5)	929.8		659.5
Horizon 2020 / Horizon Europe (6)	94.5		108.0
LIFE programme (7)	29.7		38.6
EU guarantees			
	EU Guarantee (EUR million)		Volume of operations (EUR million)
European Fund for Strategic Investment 2015-2020 (8)	102.0		288.3
InvestEU 2021-2027 (9)	26.8		50.0
EU loans			
	Period	Total amount available (EUR million)	Disbursed amount (EUR million)
SURE (10)	2020-2022	1 099.1	1 099.1
RRF	2021-2026	1 552	470.3

(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 Lithuania and the EU-27**

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



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

This Annex uses the Commission's resilience dashboards (RDB) ([36]) to show Lithuania'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, Lithuania has medium overall vulnerabilities and capacities that have remained stable with respect to last year. Its vulnerabilities are in line with the EU average, but its capacities remain below the EU average. RDB indicators for Lithuania vary a lot, with only around 20% of indicators showing medium capacities and vulnerabilities.

Lithuania's social and economic vulnerabilities and capacities deteriorated, to medium and medium-low. The main reasons for this deterioration are a lower household saving rate, the increased income inequality (s80/s20) and a diminution of the impact of social transfers on poverty reduction. Lithuania also continues to have a low level of healthy life years in absolute value at birth and one of the highest rates of standardised preventable and treatable mortality in the EU, putting pressure on the healthcare sector. On the positive side, it has managed to reduce its vulnerabilities arising from employment in manufacturing with a high risk of automation.

With respect to 2023, Lithuania's green resilience remained stable. Some indicators have even seen an improvement, such as a reduction in the harmonised risk indicator 1 for pesticides, as well as better resource productivity, an increase in the number of environmental patents per capita, and a higher e-waste recycling rate.

In the digital dimension, Lithuania's vulnerabilities, at medium, have remained unchanged and capacities improved to reach the EU average. The country has improved its level of collaborative economy ([39]) with respect to 2021.

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

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

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

([39]) The collaborative economy is defined as the percentage of individuals who made online purchases (rented accommodation) during the last 3 months as private individuals.

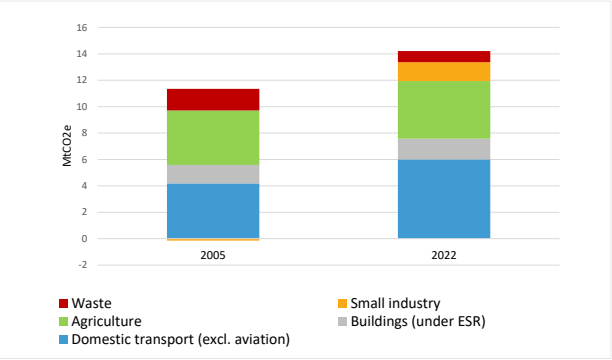
Lithuania's geopolitical capacities and vulnerabilities have remained stable at EU level. On the vulnerabilities it has increased its net lending/borrowing but has improved its metal footprint per capita. Some of Lithuania's capacities have also slightly improved, especially its intra-EU trade, as well as its trade openness in general, and specifically in the energy sector.

Lithuania has made progress in the green transition, with more action needed in several areas, for example to enhance its carbon sinks in the land-use sector and to improve the circular economy. This Annex provides a snapshot of climate, energy, and environmental aspects of the transition in Lithuania ([40]).

Lithuania's draft updated national energy and climate plan (NECP) provides precise information on the investment needs to achieve its 2030 climate and energy targets, by sector and by policy area. It distinguishes between public budgets and private investment by sector for both current and planned policies. The plan outlines funding needs and the main funding sources but does not clearly detail EU support. The plan does not sufficiently describe the role of public funding in mobilising private financing. It does not mention the timeframe of the measures or the share of EU funding (and the contribution from the Recovery and Resilience Fund in particular) ([41]).

Including the planned measures that are yet to be adopted, Lithuania is projected to almost reach its 2030 effort sharing target ([42]). Lithuania's 2022 greenhouse gas emissions from its effort sharing sectors are expected to come in at 8.8% above 2005 levels. Current policies are projected to reduce Lithuania's effort sharing emissions by 14.5% from 2005 levels by 2030. Additional policies planned in Lithuania's draft updated NECP are projected to reduce these emissions by 20.9% from 2005 levels, falling short of its effort sharing target to achieve a 21% reduction, by just 0.1 percentage points ([43]). The draft updated NECP reiterates Lithuania's 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 Lithuania's target for energy efficiency in its final updated NECP. Its energy efficiency contribution of 5.2 Mtoe in primary energy consumption and 4.2 Mtoe in final energy consumption for 2030 set in the draft updated NECP match the contribution required under the Energy Efficiency Directive ([44]). However, the projected contributions including the proposed measures do not appear to reach those targets. Lithuania's renewable energy contribution set in its draft updated NECP, 55% by 2030, is significantly above the required contribution of 49%.

Sustainable transport has yet to take off in Lithuania, which has a high potential in

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

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

([42]) 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% 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).

([43]) 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 Lithuania's draft updated NECP.

([44]) 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 Lithuania at 5.2 Mtoe for primary energy consumption and 4.2 Mtoe for final energy consumption. Commission Recommendation of 18/12/2023 Lithuania

electric rail transport ([45]). At 0.4% in 2022, the share of battery electric vehicles in its passenger car fleet is comparatively low (EU average: 1.2%). 1 070 publicly accessible charging points in 2023 provide one charging point for every 11 electric vehicles (EU average is 1:10). Nearly all passenger transport (95%) in Lithuania is by passenger car. However, only 37% of freight is transported by road and the remainder, 62%, is by rail, far above the EU average (16%) ([46]). By contrast, only 8% of the rail network is electrified, a very low share.

Lithuania's actions to increase carbon removals through land use, land-use change and forestry (LULUCF) are not projected to be sufficient to reach its 2030 target. Over the last ten years, Lithuania's land-use sector has maintained a consistent level of carbon removals. To increase its ability to absorb carbon, Lithuania has measures in its recovery and resilience plan to restore degraded peatlands. To meet its 2030 LULUCF target, additional carbon removals of 661 kt CO_2eq are needed ([47]). The latest projections for 2030 indicate that Lithuania will not meet the target ([48]).

Climate change is affecting several sectors and ecosystems in Lithuania, particularly in the coastal region. The highest climate-related risks relate to (coastal) flooding and windstorms in the western part of the country. The most climate-sensitive sectors are agriculture, public health, energy, industry, transport and communication infrastructure. The rising number of heatwaves is projected to affect heat-related mortality, morbidity, and the transport system. Heatwaves are also likely to exacerbate problems with electricity and water supply, especially in urban areas such as Vilnius. During winter, frequent temperature fluctuations around 0 °C will intensify frost heave and corrosion ([49]).

The level of biodiversity protection in Lithuania is insufficient. By the end of 2021, Lithuania had protected 17.1% of its land and 22.8% of its marine areas ([50]). Lithuania lags behind in setting conservation objectives and measures for its Natura 2000 sites. By August 2023, only 155 sites of Community importance out of 549 had conservation objectives and measures in place. Accelerating the process of setting conservation objectives and measures would facilitate the management of Natura 2000 sites. Two-thirds of EU-protected habitats are in an unfavourable conservation status due to pressure from forestry, agriculture, and invasive alien species. According to the latest report on the conservation status of habitats and species covered by Article 17 of the Habitats Directive in 2013-2018, only 22% of protected habitats and 37% of species were in a good conservation status ([51]). Declining farmland biodiversity is illustrated by a sharp decline in the common farmland bird index dropping from 77 in 2011 to 51 in 2020, the lowest value reported ([52]).

Air quality in Lithuania is an emerging area of concern. Air pollutant emissions exceed the maximum levels allowed under the National Emission Reduction Commitment Directive for several pollutants (ammonia, NOx and NMVOC in 2021). The latest available annual estimates (2021) by the European Environmental Agency indicate that Lithuania suffers about 799 years of life lost for every 100 000 inhabitants due to exposure to particulate matter (PM2.5), significantly above the EU average (584), and 73 years due to NO2. The smog-precursor emission intensity to GDP fell by only 8% between 2008 and 2021 to reach 2.97 tonnes/EUR 10, above the EU average.

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

([46]) Pipelines carry 0.6% of freight. Inland waterways do not play any role in transport in Lithuania.

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

([48]) Projections submitted in Lithuania's draft updated national energy and climate plan, 2023.

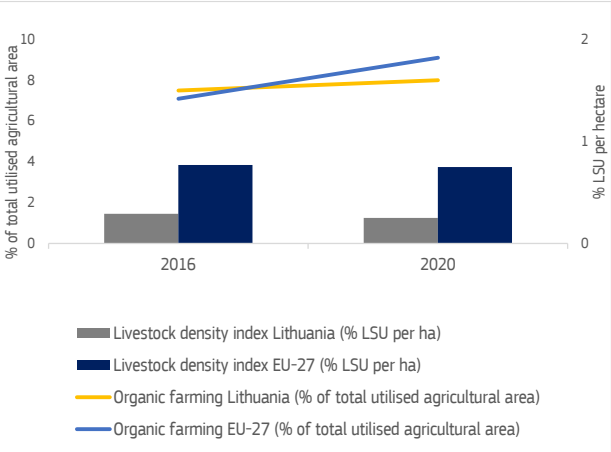
([49]) Also see the Commission's 2023 assessment and recommendation on Lithuania's progress on climate adaptation.

([50]) Less than 24% reported in 2019.

([51]) Against the EU averages of 15% and 28%.

([52]) Base year 2000=100.

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

Intensive agriculture has a major impact on ecosystems, biodiversity and air quality. The value of the agricultural sector's annual output remained approximately stable at EUR 3.3 billion ([53]) in 2023. The adoption of organic farming practices is improving. The share of land under organic farming reached 8.9% of utilised agricultural area in 2021 against the EU average of 9.1% ([54]) and the EU-wide goal of at least 25% by 2030. Furthermore, conservation tillage practices, which increase soil organic carbon, covered 10% of the tillable area in 2016 in Lithuania. The agricultural sector was responsible for generating 95.3% of all ammonia emissions, against the EU average of 90.7% in 2021.

As in most EU Member States livestock numbers in Lithuania declined between 2010 and 2020. In Lithuania, the livestock density index fell from 0.32% to 0.25%. At the same time, the share of extensive livestock farming ([55]) over the total utilised agricultural area fell from 38.3% in 2013 to 29.1% in 2016 ([56]), above the EU average of 23.8%. In Lithuania, less than 0.1% of agricultural area is irrigated and the agricultural sector abstracts 21.6% of the total volume of water abstracted.

([53]) Production value at basic price (2015=100).

([54]) In 2020. 2021 data is not available.

([55]) Share of utilised agricultural area with livestock density below 1 livestock unit per hectare.

([56]) The latest available data.

Moving to sustainable agricultural practices and reducing the use of excess nutrients would help reduce pollution and protect biodiversity. The latest figures (2019) for the gross nitrogen balance on agricultural land in Lithuania indicate an average surplus of 40.8 kg of nitrogen per hectare per year. 1.7% of groundwater monitoring stations indicate levels above the maximum 50 mg nitrates/l. The gross phosphorous balance was -1.3 kg/ha in 2017. Waterbodies in Lithuania are less affected by pesticide pollution than the EU average. In 2021, no monitoring sites reported pesticide levels exceeding the thresholds set by the Water Framework Directive. Over the last decade, the peak was registered in 2015, when 58.3% of monitoring sites were above the threshold. Although Lithuania has started to implement some soil-friendly farming practices, Lithuanian arable land is still affected by leaching of organic carbon ([57]) and the incentives for farmers to better protect grassland habitat are insufficient as illustrated by reduced grassland and pasture areas ([58]).

Food waste production remains relatively high, and the composting and digestion rates could be improved. The country produced 139 kg of food waste per person in 2021, above the EU average of 131 kg per person. Most waste was generated during household use. The composting and digestion rate of municipal waste fell to 86 kg per person in 2021, representing 19.7% of total municipal waste (for more details see annex 9).

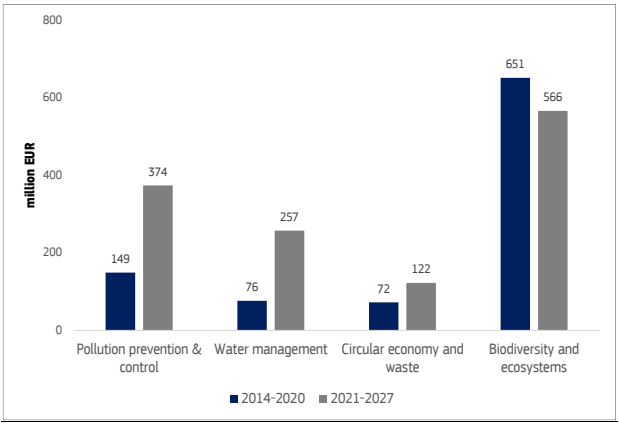
Lithuania would benefit from investing more in biodiversity and in accelerating the transition to a circular economy. Over the 2014-2020 period, the environmental investment gap was estimated at EUR 956 million per year, equivalent to 2.2% of GDP, well above the EU average of 0.8%. The gap is estimated to be widening over the 2021-2027 period at EUR 1.3 billion per year. There remains an opportunity to increase funding, in particular for biodiversity (a gap of EUR 566 million per year) and circular economy and waste management (EUR 122 million per year). Lithuania would also benefit from investing in pollution prevention and

([57]) SWD(2019) 125 final/2, p. 14.

([58]) OECD Environmental Performance Review: Lithuania 2021, pp. 29 and 54.

sustainable water management, as the investment gap has widened there.

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	13,062.1	8%	6%	10%	9%	-21%	-6	0
Net greenhouse gas removals from LULUCF [2]	Kt CO2eq	-4 179	-5 903	-6 073	-5 501	-6 356	-4,633	n/a	n/a
Share of energy from renewable sources (1) [3]	%	17%	25%	27%	28%	30%	49%	-	-
Energy efficiency: primary energy consumption [3]	Mtoe	8.1	6.3	6.2	6.6	6.3	5.2		
Energy efficiency: final energy consumption [3]	Mtoe	4.7	5.6	5.3	5.7	5.4	4.2		

							EU-27		Projected
		2018	2019	2020	2021	2022	2021	2022	2030
Green transition: mobility									
Greenhouse gas emissions: road transport	Mt CO2e	-	-	-	6.1	6.0	769.0	786.6	3.7
Share of zero-emission vehicles in new registrations [4]	%	0.1	0.1	1.1	3.6	5.2	9	12.1	n/a
Number of publicly accessible AC/DC charging points		-	-	126	127	418	299178	446956	n/a
Share of electrified railways	%	8.0%	8.0%	8.0%	8.0%	-	56.1%	-	n/a
Green transition: buildings									
Greenhouse gas emissions: buildings	Mt CO2e	-	-	-	1.6	1.6	537.0	486.7	1.3
Final energy consumption in buildings	2015=100	111.8%	107.2%	103.9%	117.7%	112.8%	104.0%	97.2%	
Climate adaptation									
Climate protection gap [5]	score 1-4	-	-	1.3	1.2	1.3	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	0.6	0.7	-	-	-	3.6	-	-
Circular economy | Material footprint [7]	tonnes per person	20.2	20.6	21.9	23.7	23.2	14.2	14.8	14.9
Pollution | Years of life lost due to air pollution by PM2.5 [8]	per 100.000 inhabitants	840	777	571	779	-	545	584	-
Biodiversity | Habitats in good conservation status [9]	%	22.2					14.7		
Common farmland bird index [10]	2000=100	59	62	51	-	-	78	-	-
Green transition: agri-food sector									
Organic farming	% of total utilised agricultural area	8.13	8.14	8	8.91	-	9.1	-	-
Nitrates in groundwater	mg NO_3/litre	3.27	3.62	3.33	-	-	20.42	-	-
Food waste per capita	Kg per capita			137	139	-	130	131	-
Share of soil in poor health [11]	%					31			41
Soil organic matter in agricultural land [12]	Mt per ha	133	-	-	-	-	7,904	-	-

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

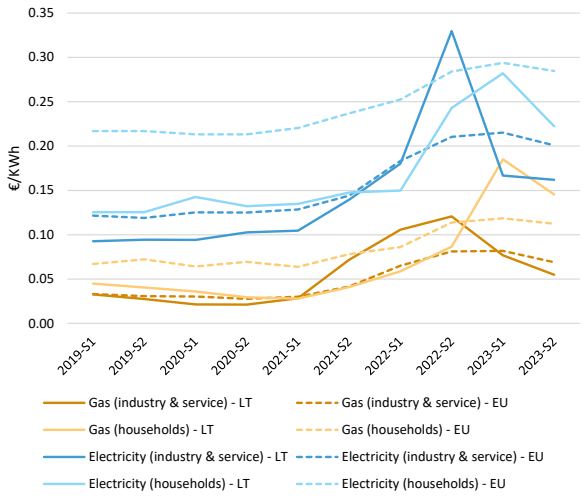
This Annex ([59]) sets out Lithuania's progress and challenges in accelerating the net-zero energy transition while bolstering the EU's competitiveness in the clean energy sector ([60]). It considers measures and targets put forward in the draft updated National Energy and Climate Plan (NECP) ([61]).

Lithuania's energy landscape saw important shifts in 2023. Fast renewable energy deployment, especially in wind and solar, showcased Lithuania's progress towards energy transition, and reinforce the country's energy security and independence, on top of other crucial infrastructure projects. Challenges in energy efficiency and grids persist, despite investments.

Like prevailing trends observed across the EU, energy prices in Lithuania have declined after the 2022-2023 winter peak, but are still significantly higher than pre-crisis. After peaks in the second half of 2022 for industry electricity and gas prices, and in the first semester of 2023 for households, prices decreased by 49% for electricity in industry between the second half of 2022 and the first of 2023, and by 36% for gas. Household prices averages decreased about 20% in the first semester of 2023. Except for household gas prices, all energy prices averages in Lithuania for the second half of 2023 reached sub EU averages levels.

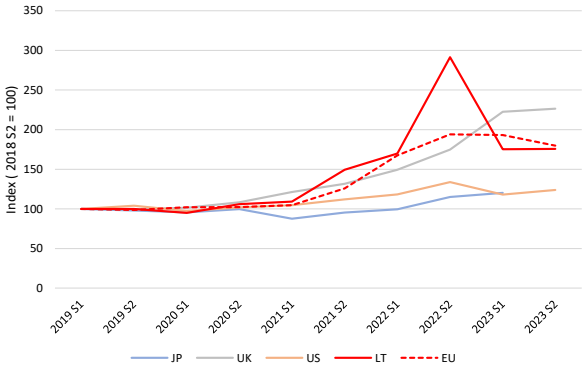
Most of the direct energy support measures for households implemented since the outset of the energy crisis were discontinued in July 2023. The most vulnerable customers remain shielded from the steep energy prices. As regards electricity, almost 30% of the smallest household consumers in Lithuania (with annual consumption below 1 000kWh) enjoy regulated electricity tariffs, with the final stage of liberalisation postponed till 2026. In 2023 this tariff, however, was slightly above the average variable price contract tariff available on the market. As regards heating, almost 110 000 households (7.5% of households) received compensation during the 2022 –2023 heating season. In 2024 this number is estimated to decrease by 20% due to the re-introduced pre-crisis procedure.

Graph A7.1: **Lithuania´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

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



(1) For Eurostat data (EU and LT), 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

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

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

([61]) Lithuania submitted its draft updated NECP in July 2023. The Commission issued an assessment and country-specific recommendations on 18 December 2023.

In relative terms, electricity prices for non-household consumers have increased significantly compared to the US and Japan. Although there has been a notable decline since the second half of 2022, Lithuania's electricity prices have persisted above those of the US and Japan. This could potentially affect the international competitiveness of energy-intensive industries in the country.

Consumer empowerment in the electricity market is significant, with a rapidly growing number of prosumers, but the deployment of smart meters is lagging, and energy communities have not yet found their place in the energy system. Due to a favourable regulatory framework, the number of prosumers doubled in 2023, reaching almost 90 000 and producing around 5% of the total electricity consumed in Lithuania. Only 12.3% of household consumers had smart meters in 2022 (EU average 80%).

While Lithuania during the period 2021-2022 transposed the EU provisions regarding energy communities and adopted a number of incentives including support schemes, light permitting procedures and priority access to grids, so far three renewable energy communities have been registered. An investment support programme for energy communities is set under the national recovery and resilience plan.

Lithuania successfully diversified its energy imports but is still highly dependent on these, despite an improvement in 2023 due to much faster deployment of new generation capacity. While Lithuania is maintaining its energy trade ban with Russia, it managed to preserve its security of supply. The Klaipeda floating storage and regasification unit (FSRU), which the Lithuanian authorities plan to acquire by the end of 2024, and the GIPL pipeline with Poland (Gas Interconnection Poland-Lithuania) had made it possible for Lithuania to substantially diversify its gas suppliers in recent years.

The ELLI project (Enhancement of Latvia-Lithuania interconnection), which has improved the gas interconnection with Latvia, has also helped improve Lithuania's security of gas supply, by improving the Inčukalns underground gas storage site in Latvia. Lithuania also managed to reduce its gas demand during the period August 2022 - December 2023 by 32 % in comparison with the average of the previous five years. The role of gas is expected to further decrease in the coming years and should account for around 13 % of the energy mix by 2030 ([62]).

As for the security of electricity supply, there were no adequacy issues recorded during 2023 and winter 2023-2024, according to ENTSO-E analysis. In 2023, according to the TSO, Lithuania relied in imports to cover 49% of their electricity demand, a significant decrease compared to 2022 (-14pp), driven by both the decrease in electricity consumption and the significant additions of wind and solar capacity in the latest years.

In December 2023, Lithuania, together with Estonia, Latvia, Poland and the European Commission, signed a new political declaration paving the way for the next steps to complete the synchronisation project with the EU continental grid. Several key infrastructure investment projects are currently being implemented which will also serve the synchronisation project.

Renewable installed capacity surged by 59% in 2023, driven by the significant increase in wind and solar, supported by significant steps in implementing reforms to accelerate renewables development. Total renewable energy capacity in Lithuania in 2023 stood at 2785 MW. Total wind capacity in Lithuania for 2023 was 1287 MW, a yearly increase of 36%, of which all was onshore wind ([63]). Lithuania is also making significant investment in offshore wind, with two offshore wind parks planned to be installed by 2028, with a total capacity of 1.4 GW.

As regards the great acceleration of solar deployment, the total installed capacity in 2023 was 1165 MW, an increase of 103% compared to 2022 ([64]). When it comes to grid connection, in Lithuania grid connection is reserved for self-

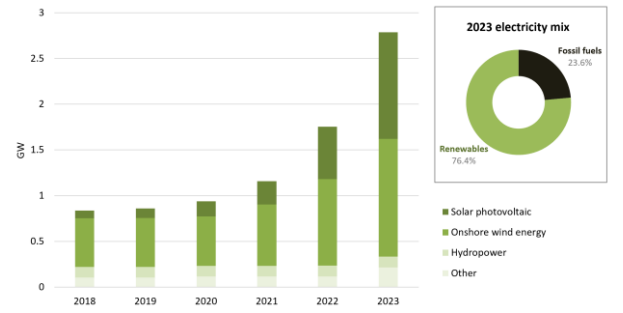
([62]) Lithuanian government projections

([63]) IRENA Report 2024

([64]) IRENA report Renewable Energy Statistics 2024. The data might differ from the Eurostat data because a different methodology is used to calculate the capacity in AC and DC.

consumers, and it has also included in its draft NECP update a quantitative self-consumption target for 2030. Lithuania aims to develop 1.4 GW of offshore wind by 2030. This goal aligns with Lithuania's non-binding agreement, as defined by the non-binding goals in the 2023 EU Sea Basins agreements.

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



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

Source: IRENA, Ember

Lithuania adopted a package of measures which simplifies the permit-granting framework for wind and solar power plants, sets the conditions for developing and operating hybrid power plants (combining several renewable energy technologies and (or) storage facilities) and clarifies the procedure for tendering and permit-granting for offshore projects.

Lithuania's relatively high share of renewables in heating and cooling (51.5% in 2022) is mainly related to biomass use, with heat pumps covering around 5% of this share. The targets stated in the draft updated NECP do not distinguish between bioenergy and other sources of renewable heat, such as heat pumps. The share of renewables in the electricity sector reached 26.5% in 2022, more than half of which was covered by wind energy.

Lithuania demonstrated significant progress in reaching the 2030 EU targets for energy efficiency. In 2022, it had a primary energy consumption of 6.3 Mtoe, a 4.8% decrease compared to 2021, and a 5.5% increase compared to 2012. It had a final energy consumption of 5.4 Mtoe, a 4.7% decrease compared to 2021, and a 10.0% increase compared to 2012. In this last year, the best results came from the industry sector, which decreased its final energy consumption by 14.0%, and the worst from the transport sector, which nevertheless decreased its final energy consumption by 0.1%.

Lithuania has implemented a series of energy efficiency measures with the support of several EU funds. The recovery and resilience plan includes reforms and investment worth EUR 307 million for energy efficiency renovation of buildings. The revised plan, including the REPowerEU Chapter, adds additional reforms and investment for reducing dependence on Russian fossil fuels and supporting the green transition. Under cohesion policy, EUR 900 million (15 % of the overall funding allocated to Lithuania) covers promoting energy efficiency and renewable energy supporting (i) the renovation of multi-apartment and public buildings, (ii) the installation of renewable energy sources and energy storage solutions in households, and (iii) increasing energy efficiency in industrial firms.

Lithuania remains a leader in the EU in using financial instruments for the renovation of multi-apartment buildings and public buildings, developing energy efficiency and using renewables in district heating and cooling systems.

Lithuania has underachieved the 2020 energy efficiency target in final energy consumption (FEC) by 19%, which was of 4.3 Mtoe, and overachieved by 4.4% the target in primary energy consumption (PEC), which was of 6.5Mtoe. However, these results can mainly be attributed to the exceptional drop in energy consumption caused by covid lock-down in 2020. In 2021 the levels of both primary and final energy consumption increased back to the pre-covid years, accounting respectively for 6.63 Mtoe in PEC and 5.66 Mtoe in FEC. Therefore, without the exceptional effects of the pandemic, Lithuania would have missed both targets in 2020.

While implementing the energy savings obligation for the new obligation period 2021-2030, Lithuania opted for a mix of 13 policy measures, including an alternative approach and taxation measures. New annual savings achieved in 2021 were significantly higher than what was required ([65]).

([65]) National energy and climate progress report (NECPR) submitted in 2023,

Lithuania's efforts in buildings renovation will likely not lead to a meaningful contribution to its 2030 reduction target for energy consumption by buildings. Residential final energy consumption increased by 7% between 2015 and 2022 while the Lithuanian long-term renovation strategy sets out a reduction in building primary energy consumption of 15% by 2030 compared to 2015. Heating and cooling account for 80% of the country's residential final energy consumption, with renewables supplying 51.5% of the total energy used for heating and cooling across all sectors. Approximately 25 000 hceat pumps were sold in 2022, reaching a total stock of around 120 000 installed heat pumps in the residential sector. Electricity in Lithuania is 4.79 times more expensive than gas, meaning that end users save energy but pay more if they choose a heat pump for heating ([66])

Lithuania's REPowerEU chapter in its recovery and resilience plan has increased the overall budget dedicated to building renovation and will contribute positively to its target by speeding up the rate of renovations and ensuring that a 30% reduction in primary energy consumption is achieved for those renovation projects receiving support. Lithuania is developing a hydrogen interconnector together with Finland, Estonia, Latvia, Poland and Germany (currently known as Nordic-Baltic Hydrogen Corridor), which is a project of common interest on the 1st Union list of projects of common interest and projects of mutual interest under the revised TEN-E Regulation. The goal of the project is to develop hydrogen infrastructure from Finland through Estonia, Latvia, Lithuania and Poland to Germany by 2030. Lithuania is also developing a CO2 infrastructure project, the CCS Baltic Consortium – cross-border CO2 transport via rail between Latvia and Lithuania, with a multi-modal liquid CO2 terminal based in Klaipeda. This is also a project of common interest on the 1st Union list of projects of common interest and projects of mutual interest under the revised TEN-E Regulation. The infrastructure for the project is planned to be developed by 2027, with the project intended to be operational as of 2030.

Lithuania is a moderate innovator ([67]), with its performance at 83.8% of the EU average. Lithuania shows relative strength concerning the share of population with tertiary education, trademark applications and innovative SMEs collaborating with others. It shows, on the other hand, relative weakness in areas such government support for business R&D, R&D expenditure in the business sector and PCT ([68]) patent applications. Performance is increasing at a rate higher than that of the EU. The country's performance gap to the EU is becoming smaller.

Lithuania remains dependent on non-EU countries for clean energy technologies, and other EU Member States for wind energy, but is a regional leader in PV cells and modules. Lithuania presents good and steadily increasing developments in PV manufacturing and offers innovative PV solutions. The country hosts several modules and cell manufacturing facilities and particularly increased its production capacity in 2023. Regarding batteries, a few lithium batteries and energy flow management systems production facilities are located in Lithuania. On wind, Lithuania hosts some industrial capacity supplying the wind industry.

([66]) Therefore, Lithuania would benefit from analysing how taxation and network charges and levies affect the economics of decarboniszed heating and addressing any imbalances.

([67]) European Innovation Scoreboard 2023, country profile Lithuania

([68]) Patent Cooperation Treaty

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

		Lithuania				EU			
		2019	2020	2021	2022	2019	2020	2021	2022
ENERGY DEPENDNCE	**Import Dependency [%]**	**75.2%**	**74.9%**	**73.3%**	**72.4%**	**60.5%**	**57.5%**	**55.5%**	**62.5%**
	of Solid fossil fuels	108.1%	87.9%	91.9%	127.8%	43.3%	35.8%	37.3%	45.8%
	of Oil and petroleum products	100.8%	102.7%	101.7%	98.8%	96.7%	96.8%	91.7%	97.7%
	of Natural Gas	100.0%	98.9%	100.8%	101.2%	89.7%	83.6%	83.6%	97.6%
	Dependency from Russian Fossil Fuels [%]								
	of Natural Gas	43.3%	41.8%	36.6%	7.9%	39.7%	41.3%	41.1%	21.0%
	of Crude Oil	78.0%	72.3%	79.1%	18.0%	28.8%	26.7%	26.4%	19.5%
	of Hard Coal	100.0%	100.0%	100.0%	72.8%	43.5%	49.1%	47.4%	21.5%

		2016	2017	2018	2019	2020	2021	2022
DIVERSIFICATION OF GAS SUPPLIES	**Gas Consumption (in bcm)**	**2.2**	**2.3**	**2.1**	**2.2**	**2.4**	**2.3**	**1.5**
	Gas Consumption year-on-year change [%]	-11.9%	5.0%	-7.5%	4.4%	6.1%	-4.2%	-32.4%
	Gas Imports - by type (in bcm)	**2.3**	**2.5**	**2.3**	**2.7**	**2.9**	**2.4**	**3.5**
	Gas imports - pipeline	0.9	1.3	1.3	1.2	1.2	0.9	0.3
	Gas imports - LNG	1.4	1.2	1.0	1.6	1.7	1.5	3.3
	Gas Imports - by main source supplier (in bcm) (1)							
	Norway	1.4	0.9	1.0	1.5	1.1	0.3	0.9
	Russia	0.9	1.3	1.3	1.2	1.2	0.9	0.3
	United States	-	0.2	-	0.1	0.6	0.9	2.4

		2019	2020	2021	2022	2023
	LNG Terminals - storage capacity m3 LNG					
	Number of LNG Terminals	1	1	1	1	1
	LNG Storage capacity (m3 LNG)	170,000	170,000	170,000	170,000	170,000
	Underground Storage					
	Number of storage facilities	0	0	0	0	0
	Technical Capacity (bcm)	0.0	0.0	0.0	0.0	0.0

		2016	2017	2018	2019	2020	2021	2022	2023
ELECTRICITY/ENERGY	**Gross Electricity Production (GWh) (2)**	**4,266**	**4,187**	**3,511**	**3,972**	**5,518**	**5,079**	**4,783**	-
	Combustible Fuels	1,750	1,324	1,089	1,210	2,550	2,240	1,845	-
	Nuclear	0	0	0	0	0	0	0	-
	Hydro	1,044	1,181	960	948	1,080	1,094	1,021	-
	Wind	1,136	1,364	1,144	1,499	1,552	1,362	1,512	-
	Solar	66	68	87	91	129	191	342	
	Geothermal	0	0	0	0	0	0	0	-
	Other Sources	270	250	232	223	207	193	63	-
	Gross Electricity Production [%]								
	Combustible Fuels	41.0%	31.6%	31.0%	30.5%	46.2%	44.1%	38.6%	-
	Nuclear	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-
	Hydro	24.5%	28.2%	27.3%	23.9%	19.6%	21.5%	21.3%	-
	Wind	26.6%	32.6%	32.6%	37.8%	28.1%	26.8%	31.6%	-
	Solar	1.5%	1.6%	2.5%	2.3%	2.3%	3.8%	7.2%	-
	Geothermal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-
	Other Sources	6.3%	6.0%	6.6%	5.6%	3.7%	3.8%	1.3%	-
	Net Imports of Electricity (GWh)	**8,275**	**8,677**	**9,633**	**9,344**	**7,909**	**9,044**	**8,568**	-
	As a % of electricity available for final consumption	77.9%	79.2%	85.4%	81.9%	70.9%	75.7%	74.8%	-
	Electricity Interconnection [%]	-	**88.3%**	**80.9%**	**86.5%**	**77.0%**	**81.4%**	**69.2%**	**72.4%**
	Share of renewable energy consumption - by sector [%]								
	Electricity	16.9%	18.3%	18.4%	18.8%	20.2%	21.3%	26.5%	-
	Heating/cooling	46.6%	46.5%	46.0%	47.4%	50.4%	48.6%	51.5%	-
	Transport	3.6%	4.3%	4.3%	4.0%	5.5%	6.5%	6.7%	-
	Overall	25.6%	26.0%	24.7%	25.5%	26.8%	28.2%	29.6%	-

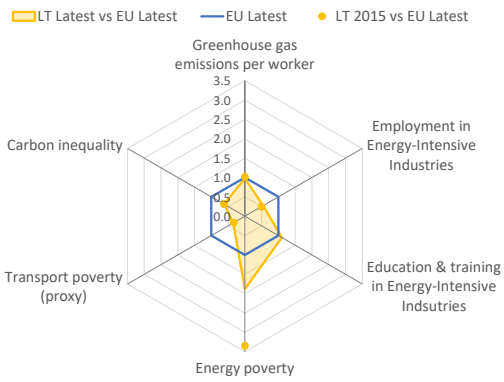
		2019	2020	2021	2022	2023
CLEAN ENERGY	**VC investments in climate tech start-ups and scale-ups (EUR Mln)**	**0.40**	**1.55**	**21.10**	**-**	**92.38**
	as a % of total VC investment (3) in Lithuania start-ups and scale-ups	1.4%	0.8%	4.7%	-	55.4%
	Research & Innovation spending in Energy Union R&i priorites					
	Public R&I (EUR mln)	-	-	-	-	-
	Public R&I (% GDP)	-	-	-	-	-
	Private R&I (EUR mln)	8.8	19.2	-	-	-
	Private R&I (% GDP)	0.03%	0.06%	-	-	-

(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 Lithuania's progress in ensuring a fair transition towards climate neutrality and environmental sustainability, particularly for workers and households in vulnerable situations. Lithuania's green economy is expanding. Between 2015 and 2024, total jobs in the environmental goods and services sector grew by 38.6% (to around 52 600) (EU: 18.2%), reaching 3.9% of total employment (EU: 2.7%). Also between 2015 and 2020, the greenhouse gas emission intensity of Lithuania's workforce (see Graph A8.1 and Table A8.1) slightly declined from 14.6 to 13.9 tonnes per worker, just below the EU average (14.3 tonnes per worker in 2022) ([69]), indicating a positive trend in the green transition. In line with the Council Recommendation on ensuring a fair transition towards climate neutrality ([70]), the recovery and resilience plan (RRP) supports the update and creation of 95 vocational training programmes supporting the green and digital transition. A pilot project by the Public Employment Service (PES) promotes entrepreneurship and job creation in the green sector. The European Social Fund Plus (ESF+) also supports the creation of new and better jobs, with particular attention given to skills for the green transition and circular economy.

Employment in Lithuania's sectors most affected by the green transition increased slightly. In 2023, employment in Lithuania's energy-intensive industries ([71]) comprised 1.9% of total employment (3.5% in the EU), a slight increase from 1.7% in 2015. Employment in mining and quarrying has risen by 52.2% since 2015 (to around 3 500 workers in 2023). The job vacancy rate in construction (see Graph A8.2), a key sector for the green transition, is lower than the EU average (1.8% vs 3.6% in EU in 2023). Nevertheless, 72% of small and medium-sized enterprises (SMEs) in the sector reported that skills shortages are holding them back in general business activities ([72]).

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



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

Upskilling and reskilling in energy-intensive industries decreased and labour shortages are relatively limited. In energy-intensive industries, workers' participation in education and training decreased from 10.4% in 2016 to 12.0% in 2023, below the EU average (10.9%). In Lithuania, 38% of the SMEs think that the skills required for greening business activities are becoming more important (EU: 42%) ([72]). If Lithuania matches its projected contribution to the EU's 2030 renewable energy target, between100 and 1 500 additional skilled workers will be needed for the deployment of wind and solar energy, which may require an investment in skills of EUR 0.4-0.5 million ([73]). Specific investments under the Just Transition Mechanism provide training to help reskill workers in regions affected by the transition, together with a broader training offer under the RRP and national programmes. Lithuania also aims to increase employment support in view of the digital and green transition, including upskilling and reskilling programmes in fields such as the circular economy and digital skills. Lithuania committed to submitting ESF+ figures for the funding of green skills and jobs at a later stage, tentatively in 2025.

Energy poverty indicators have been improving in recent years but still remain at a relatively high level. The share of the

([69]) Workforce-related calculations are based on the EU Labour Force Survey. Note, in the 2023 country report for Lithuania, 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 16 June 2022 on ensuring a fair transition towards climate neutrality (2022/C 243/04) covers employment, skills, tax-benefit and social protection systems, essential services and housing.

([71]) Mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24) and automotive (C29)

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

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

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

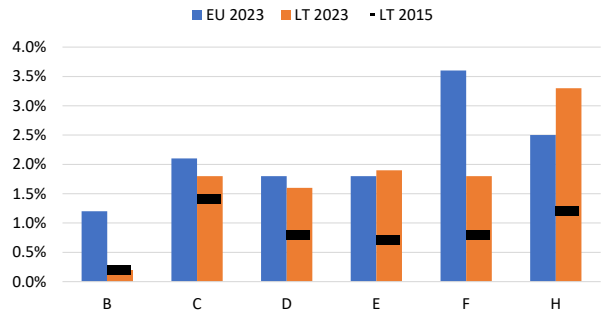
Indicator	Description	LT 2015	LT	EU
GHG per worker	Greenhouse gas emissions per worker – CO_2 equivalent tonnes	14.6	13.9 (2022)	14.3 (2022)
Employment EII	Employment share in energy-intensive industries, including mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24) and automotive (C29)	1.7%	1.9% (2023)	3.5% (2023)
Education & training EII	Adult participation in education and training (last 4 weeks) in energy-intensive industries	9.6% (2016)	12.0% (2023)	10.9% (2023)
Energy poverty	Share of the total population living in a household unable to keep its home adequately warm	31.1%	17.5% (2022)	9.3% (2022)
Transport poverty (proxy)	Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport	12.2%	13.0% (2023)	37.1% (2023)
Carbon inequality	Ratio between the consumption footprint of the top 20% vs bottom 20% of the income distribution	1.7	1.7 (2021)	2.7 (2021)

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

population unable to keep their homes adequately warm decreased from 31.1% in 2015 to 17.5% in 2022, still well above the EU average (9.3%) ([74]). However, the indicator decreased by 5.0 percentage points between 2021 and 2022, despite energy price increases due to supply constraints caused by the COVID-19 pandemic and Russia's war of aggression against Ukraine. This improvement was attributed to emergency measures implemented in Lithuania. In 2022, 28.8% of the population at risk of poverty (AROP) (EU: 20.1%) and 20.9% of lower middle-income households (in deciles 4-5) (EU: 11.6%) were unable to keep their homes adequately warm. On the other hand, 13.0% of the population at risk of poverty spent a considerable proportion of their budget (more than 6%) on private transport fuels in January 2023 (EU: 37.1%) ([75]). Lithuania has established a legal definition of energy poor/vulnerable customers, but has not yet revised this definition to align it better with the Commission Recommendation on Energy Poverty (EU) 2023/2407.

Despite being below/equal the EU average, environmental inequalities remain an issue in Lithuania . In 2021, the consumption footprint for 20% of the population with the highest income is 1.7 times higher than the footprint of the poorest 20% in 2021 ([76]) (EU: 1.8). For both groups , the consumption footprint is highest for food and housing. The average levels of air pollution in 2021 stood equal to the EU average (11.4 vs 11.4 µg/m3 PM2.5), with all the population living in regions exposed to critical levels of air pollution ([77]). This has led to a significant impact on health, affecting vulnerable groups in particular, and around 2 150 premature deaths annually ([78]).

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.

Lithuania is at an early stage of implementing measures for a fair transition towards climate neutrality. Active labour market policies in place also address challenges for those affected by the green transition. In its RRP, Lithuania plans actions to train PES staff on the green economy, create jobs relevant to the green and digital transition and promote the circular economy. Better targeted reskilling and upskilling measures are needed, as current initiatives are rather general. Improving existing

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

([75]) 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.

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

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

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

tools used for analysing and forecasting the demand for jobs and skills in the green and digital economy would enable the PES to better address labour and skills shortages in sectors and regions affected by the green transition ([79]).

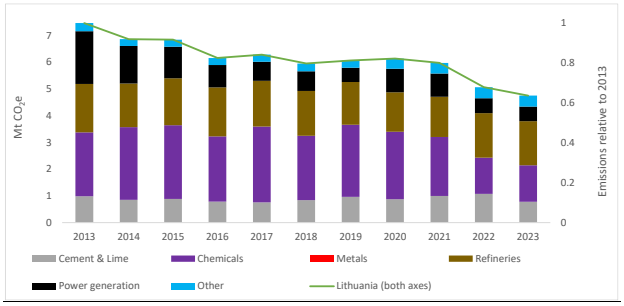
([79]) Based on the monitoring review of the Council Recommendation on ensuring a fair transition towards climate neutrality, which took place in October 2023.

The green transition of industry and the built environment, in particular decarbonisation, resource efficiency and circularity, is essential to boost Lithuania's competitiveness ([80]). In this regard, priorities for Lithuania are waste management and the use of circular materials in industry and construction.

Lithuania is not on track to achieve the EU Circular Economy Action Plan goals, mainly due to low levels of efficiency and productivity. Lithuania presents one of the EU's highest material footprints. It increased from 18 to 22.6 tonnes per capita between 2016 and 2022. Waste production per capita increased between 2010 and 2018, before dropping to 2.4 tonnes per capita in 2020 – below the EU average (4.8 tonnes per capita). There is still room to make better use of the potential of the circular economy transition to drive the decarbonisation of Lithuania's industry. Implementing the guidelines for Lithuania's transition to a circular economy by 2035 adopted in June 2023 could help Lithuania bring about the necessary systemic change and create a fertile business environment for circular innovation and circular economy practices. The 2022 Eco-Innovation Scoreboard listed the country among the average performers in terms of eco-innovation. Lithuania scored 103.8, compared to an EU average of 121.47, which indicates the country has some ground to make up in eco-innovation. Furthermore, as of September 2023, Lithuania totalled 9 awarded EU Ecolabel licences and 470 products with the EU Ecolabel, showing a rather low take-up of products and licences. While the number of products has steadily increased over the years, the number of licences is rather stable.

In 2023, the sectors covered by the EU emissions trading system (ETS) in Lithuania ([81]) emitted 36% less greenhouse gases than in 2013. In 2023, almost 88% of the greenhouse gases emitted by Lithuania's ETS installations came from 3 installations (around 35% from a refinery, around 29% a chemical plant, and around 19% from a cement and lime plant). Power and heat generation were responsible for 12% ([82]), and 9% came from industry sectors classified as 'other'. Between 2019 and 2023, the power sector slightly increased its emissions, by 3%, and the industry sectors decreased theirs by 24%. Greenhouse gas emissions in the chemicals industry decreased significantly, by 49% Between 2013 and 2023, greenhouse gas emissions in the industry sectors declined by 23%.

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



Source: European Commission

Lithuania is not keeping up with the EU average efficiency and productivity levels in the industrial sector. Lithuania's circular material use rate was only 4.1% in 2022 – almost three times lower than the EU average of 11.5%. By contrast, resource productivity has marginally increased since 2019, but has always remained below the EU average. It stood at 1.5 purchasing power standards per kilogram in 2022 (compared to an EU average of 2.5). Resource productivity expresses how efficiently the economy uses material resources to produce wealth. Improving resource productivity can help minimise negative impacts on the environment and reduce dependence on volatile raw material markets. Lithuania's dependence on imports decreased to 35.4% of materials used in 2022, compared with an EU average of 22.4%, making the country comparatively more vulnerable to market disruptions. Furthermore, the manufacturing sector accounted for 17.9% of water abstracted in 2019. The Lithuanian national energy and climate plan recognises the role of circular economy in climate

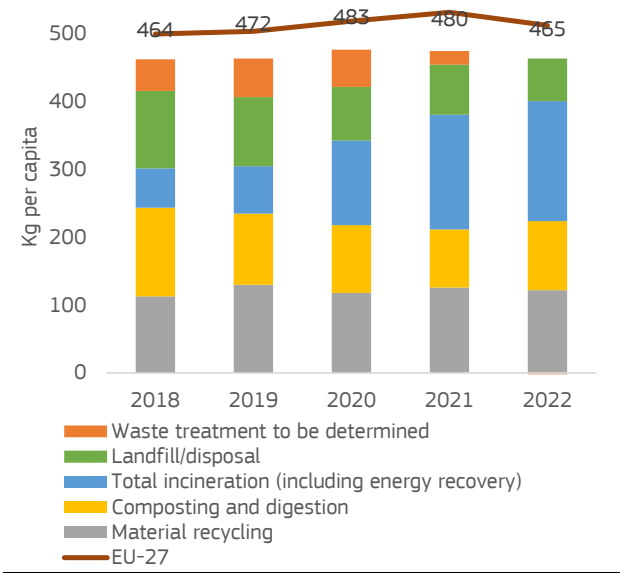
([80]) See also Annexes 6, 7 and 12.

([81]) 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.

([82]) Following the closure of the Ignalina nuclear power plant in 2010, the vast majority of electrical power consumed in Lithuania is either imported or produced from renewable sources.

change mitigation and decarbonisation of the economy beyond waste management. It includes, for instance, preventive measures and alternative business models, and underlines the importance of circular economy in research, innovation and competitiveness.

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



Source: Eurostat

Lithuania has made significant progress with its waste management system over the last decade, but there is still room for improvement. The municipal waste recycling rate stood at 48.4% in 2022, and the country is considered at risk of meeting neither the 2025 target for packaging waste nor the 2025 target for municipal waste. The plastic packaging recycling rate is declining but still stands above the EU average (39.7%), accounting for 56.1% in 2021. In recent years, Lithuania has successfully decreased its dependence on landfilling. It is on track to achieve the target of a maximum of 10% of landfilling by 2035. However, the country has increased its dependence on incineration, which could impede its circular economy transition. Lithuania did not register any new patents on waste and recycling in 2020, confirming a need to encourage the circular economy uptake.

The built environment system continues to exacerbate the depletion of resources. In 2020, the residential floor area per capita stood below the EU average – 34.2 versus 52.3 m^2 per capita – but grew faster than the average. A similar growth rate can be observed for the non-residential floor area per capita, which, however, remained below the EU average. In 2020, Lithuania submitted a long-term renovation strategy to decarbonise the building stock. It mentions the implementation of principles of circular economy as part of the package of support measures. Despite some positive trends, there is still room for improving construction and demolition waste management in Lithuania. Between 2010 and 2020, waste generated from construction and demolition activities per capita increased, remaining below the EU average. The proportion of backfilling has remained stable over the last decade and stood at 19.6% in 2020. Lithuania's recovery rate increased to 98% in 2020, achieving the Waste Framework Directive's target for 2020. In 2020, the share of the population connected to at least secondary waste water treatment was below the EU average of 81%.

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	1.3	1.4	1.5	-	2.5	2022
Circular material use rate (%)	4.3	3.9	4.0	4.2	4.1	-	11.5	2022
Eco-innovation index (2013=100)	81.7	87.8	92.8	98.5	103.8	-	121.5	2022
Recycling of plastic packaging (%)	69.3	69.6	56.1	-	-	-	39.7	2021
Cost of air emissions from industry (EUR bn)	1.1	1.4	-	-	-	-	-	2024
Built environment								
Recovery rate from construction and demolition waste (%)	99.0	-	98.0	-	-	-	89.0	2020
Soil sealing index (base year = 2006)	107.8	-	-	-	-	-	108.3	2018
Non-residential floor area (m^2 per capita)	11.4	11.6	11.7	-	-	-	18.0	2020
Waste backfilled (%)	19.6	-	19.6	-	-	-	9.9	2020

Source: Eurostat, European Environment Agency

Digital transformation is key to ensuring a resilient and competitive economy. In line with the Digital Decade policy programme, and in particular with its targets for digital transformation by 2030, this Annex describes Lithuania'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). Lithuania allocates 23.3% of its total Recovery and Resilience Facility budget to digital ([83]). Under cohesion policy, an additional EUR 309 million is allocated to the country's digital transformation ([84]).

The Digital Decade policy programme sets out a pathway for the EU's successful digital transformation by 2030. Lithuania'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 ([85]). Through this, 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 ([86]). Digital technologies, infrastructure and tools all play a role in addressing the current structural challenges, including strategic dependence in various areas, cybersecurity and climate change.

The number of information and communication technology (ICT) specialists has grown significantly. The proportion of people in Lithuania with at least basic digital skills is slightly below the EU average (53% versus 56%). However, with 4.9%, the rate of ICT specialists in employment is now slightly above the EU average (4.8%), showing a very positive dynamic during the last year. It is quite positive given the ICT sector has an important role in the Lithuanian economy.

The country could further improve on digital infrastructure/connectivity, where broader network coverage could enable wider use of digital technologies. Very high capacity network (VHCN) coverage is almost aligned on the EU average (78% versus 79%), but in overall 5G coverage Lithuania stands above the EU average (99% versus 89%) after having implemented different measures since 2022.

Lithuania's performance on the digitalisation of businesses is overall positive. The share of small to medium-sized enterprises with at least basic digital intensity is slightly above the EU average (60% versus 58%), while the use of advanced technologies like artificial intelligence, data analytics or cloud computing services is slightly below the EU average (54% versus 55%). In 2022, 0.8% of enterprises in Lithuania reported ICT service outage due to cyberattacks (e.g. ransomware attacks, denial of service attacks). Over the same year, 16.9% of enterprises developed or reviewed their ICT security policy within the previous 12 months.

Lithuania performs well on digital public services. This is most notable in the availability of digital public services for businesses, where it performs comfortably above the EU average (96 out of 100 versus 85 out of 100). In the provision of digital services for citizens, the country's performance is slightly lower, although still above the EU average (87out of 100 versus 79 out of 100). For access to electronic health records, Lithuania scores 95 out of 100, considerably above the EU average. The country has one electronic identification (eID) scheme that has been notified under the eIDAS Regulation. A considerable proportion of the digital transformation measures set out in Lithuania's RRP are focused on public services, including measures to support the digital transformation of healthcare, implement a government cloud

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

([84]) 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.

([85]) 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).

([86]) 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.

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

	Lithuania			EU	Digital Decade target by 2030 (EU)
	2022	2023	2024	2024	
Digital skills					
At least basic digital skills	**49%**	**49%**	**53%**	**56%**	**80%**
% individuals	2021	2021	2023	2023	2030
ICT specialists ([1])	**3.8%**	**4.4%**	**4.9%**	**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	**78%**	**78%**	**78%**	**79%**	**100%**
% households	2021	2022	2023	2023	2030
Fibre to the premises (FTTP) coverage ([2])	**78%**	**78%**	**78%**	**64%**	**-**
% households	2021	2022	2023	2023	
Overall 5G coverage	**33%**	**90%**	**99%**	**89%**	**100%**
% populated areas	2021	2022	2023	2023	2030
Digitalisation of businesses					
SMEs with at least a basic level of digital intensity	**57%**	**NA**	**60%**	**58%**	**90%**
% SMEs	2021		2023	2023	2030
Data analytics	**NA**	**NA**	**41%**	**33%**	**-**
% enterprises			2023	2023	
Cloud	**28%**	**28%**	**34%**	**39%**	**-**
% enterprises	2021	2021	2023	2023	
Artificial intelligence	**5%**	**5%**	**5%**	**8%**	**-**
% enterprises	2021	2021	2023	2023	
AI or cloud or data analytics ([3])	**NA**	**NA**	**54%**	**55%**	**75%**
% enterprises			2023	2023	2030
Digitalisation of public services					
Digital public services for citizens	**82**	**84**	**87**	**79**	**100**
Score (0 to 100)	2021	2022	2023	2023	2030
Digital public services for businesses	**93**	**94**	**96**	**85**	**100**
Score (0 to 100)	2021	2022	2023	2023	2030
Access to e-health records	**NA**	**92**	**95**	**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

infrastructure, increase interactivity for end users, and increase the use of advanced technologies, such as artificial intelligence in digital public services.

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

Lithuania is a 'moderate innovator' steadily nearing to the EU average. According to the 2023 edition of the European Innovation Scoreboard (EIS) ([87]), its innovation performance has increased by 16.7 percentage points since 2016, at a higher rate than the EU's (8.5pp). However, its overall performance remains below the EU average (83.8% of the EU performance).

The Lithuanian innovation ecosystem benefits from an entrepreneurial dynamism, a nurturing start-up environment, and some niches of technological excellence. Birth and death rates in industry are one of the highest in the EU; the unicorn valuation, in comparison to GDP, is one of the highest in the world ([88]); and Lithuania performs better than the EU average in terms of high-growth enterprises ([89]). In 2023, for the first time, a Lithuanian company won a European Innovation Council Pathfinder grant, illustrating the presence of some niches of technological excellence. At the same time, business enterprise expenditure on R&D, in comparison to GDP, has stalled in recent years and remains three times lower than the EU average, limiting business innovation potential. In addition, despite rapid development and several relevant initiatives, the availability of venture capital in Lithuania remains below the EU average (Table A11.1).

Ongoing reforms should improve the attractiveness of researchers' careers. The number of doctoral graduates has dropped by 11.4% since 2016 as the career has an unattractive salary in the junior researcher stage. In 2024 a new remuneration system is expected to increase researcher careers appeal, as the average salary should reach 150% of the median national wage. Moreover, the career model will be adapted in line with the European framework.

Science-business linkages remain overall too weak. The overall low level of cooperation between the public science base and businesses is illustrated by a rate of public-private co-publications which is the lowest in the EU (Table A11.1). National missions established under the recovery and resilience plan (RRP) will enable targeted cooperation between public research and businesses to carry out joint projects, develop and commercialise start-ups and business ideas, conduct applied scientific research, improve skills, and fill service and infrastructure gaps for experimental development activities ([90]). However, mission-based science and business cooperation is still in a pilot phase and needs to be mainstreamed to gain macroeconomic relevance.

The fragmentation of the public science base remains a major obstacle to further strengthening its performance and its contribution to the economy. After the outstanding merger having established the Lithuanian University of Health Sciences in 2010 and successful integration of several institutions into Vytautas Magnus University in 2019 and Vilnius University in 2021, further consolidation efforts remain to be carried out. In its RRP, Lithuania committed to setting up a voluntary scheme for reorganisation and mergers amongst the higher education institutions.

Inadequate funding for the public science base risks undermining its progression. Together with reforms, the availability of adequate funding for the public science base from the national budget is essential to increase public research performance. In that respect, the decline in public R&D intensity ([91]) from 0.6% in 2020 to 0.52% in 2022, its lowest level since 2007, is a major concern. This issue could be addressed by implementing the 2021 national agreement to reach a level of public support for R&D from national sources equal to 1% of GDP by 2030, if a substantial part of the additional resources were allocated to the public science base. For 2024 Lithuania has increased allocations to R&D from the national budget from 0.31% to 0.46% of GDP.

([87]) 2023 European Innovation Scoreboard (EIS), Lithuania: https://ec.europa.eu/assets/rtd/eis/2023/ec_rtd_eis-country-profile-lt.pdf.

([88]) 8.4% GDP, ties with Estonia, Israel, Senegal, and the United States, Global innovation Index, WIPO 2023.

([89]) Employment share of high growth enterprises measured in employment (%).

([90]) STIP Compass Lithuania Overview, EC/OECD (2023).

([91]) Public expenditure on R&D as % of GDP.

In addition to national funding, almost EUR 1 billion of cohesion policy funds for 2021-2027 are dedicated to boosting R&I and accelerating digitalisation, enhancing the competitiveness and productivity of SMEs, and driving smart specialisation.

Lithuania bolsters research and innovation activities in the field of defence and security. The country established new venture capital fund MILInvest dedicated to defence innovation and decided to participate in the activities of NATO's Innovation Fund and the Defence Innovation Accelerator for the North Atlantic (DIANA). Innovators, including early-stage technology start-ups, will participate in the development of dual-use technologies in optics and optoelectronics, artificial intelligence, big data, autonomous systems, biotechnology, quantum, ultrasonic and space technologies, and new materials.

Complex public investment management rules hinder effective implementation of innovation support measures. The launch of the R&I support measures often takes more time than expected due to lack of dialogue between different government bodies. Timing for the launch of measures lacks predictability and depends on the administrative capacity of institutions rather than market needs, which burdens planning by potential beneficiaries. Reporting, compliance, and procurement requirements for potential beneficiaries in some cases are not adapted to the specific features of R&I and go beyond what is necessary, making R&I support instruments less attractive for researchers and innovators. Public support for R&I is also adversely impacted by the institutional structure: the involvement of several implementing agencies leads to additional administrative costs and less efficient processes. While the creation of the Innovation Agency and the first round of consolidation were successful, the processes need further substantial simplification.

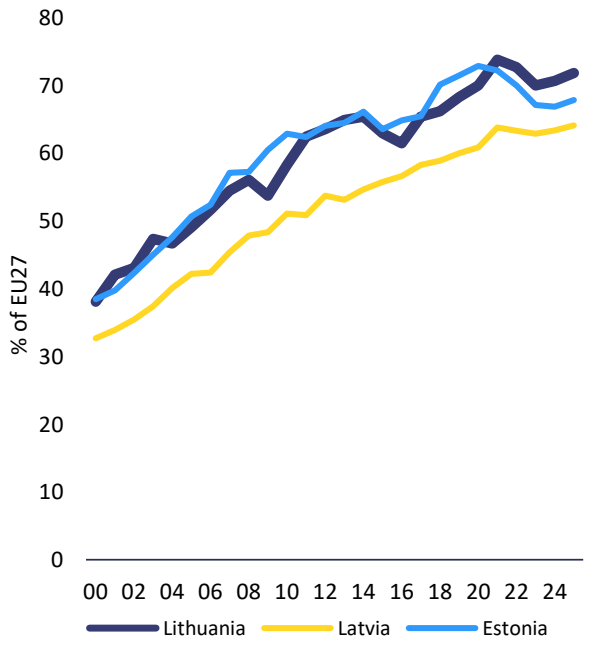
Table A11.1:**Key innovation indicators**

Lithuania	2010	2015	2020	2021	2022	EU average (1)
Key indicators						
R&D intensity (GERD as % of GDP)	0.78	1.04	1.13	1.1	1.02	2.24
Public expenditure on R&D as % of GDP	0.55	0.76	0.6	0.57	0.52	0.73
Business enterprise expenditure on R&D (BERD) as % of GDP	0.23	0.29	0.53	0.54	0.5	1.48
Quality of the R&I system						
Scientific publications of the country within the top 10% most cited publications worldwide as % of total publications of the country	3	4.3	5.49	:	:	9.6
Patent Cooperation Treaty (PCT) patent applications per billion GDP (in PPS)	0.4	0.4	0.52	:	:	3.4
Academia-business cooperation						
Public-private scientific co-publications as % of total publications	5.5	4.8	5.6	5.4	5.1	7.6
Public expenditure on R&D financed by business enterprise (national) as % of GDP	0.082	0.091	0.043	0.056	:	0.054
Human capital and skills availability						
New graduates in science & engineering per thousand pop. aged 25-34	23.3	18.4	14.4	13.2	:	16.9
Public support for business enterprise expenditure on R&D (BERD)						
Total public sector support for BERD as % of GDP	0.067	0.083	0.171	0.221	:	0.204
R&D tax incentives: foregone revenues as % of GDP	0.013	0.021	0.037	0.05	:	0.104
Green innovation						
Share of environment-related patents in total patent applications filed under PCT (%)	36.1	19	8.7	:	:	14.7
Finance for innovation and economic renewal						
Venture capital (market statistics) as % of GDP	0.0003	0.026	0.012	0.043	0.074	0.085
Employment share of high growth enterprises measured in employment (%)	:	15.28	16.11	:	:	12.51

(1) 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 Europe

Lithuania's overall competitiveness ranking has been relatively stable since 2019. According to the IMD World Competitiveness Ranking for 2023, Lithuania ranks 32nd, a slight drop from 29th in the previous year. It trails Estonia (26th) but is well ahead of Latvia (51st) and Poland (43rd). Despite strong external shocks and economic contraction, the Lithuanian economy has still proven to be competitive and resilient. Nevertheless, persistently high inflation, rising interest rates and weak external demand are weighing on its performance. Overcoming the consequences of Russia's invasion of Ukraine has been identified by the Innovation Agency Lithuania as a major challenge to the competitiveness of the country's economy ([92]).

Graph A12.1: **Labour productivity (GDP per hour worked in purchasing power standards, % of EU-27)**



Source: Eurostat

Lithuania builds its competitiveness on a business-friendly regulatory environment, with firms reporting appropriate transport and digital infrastructure. A relatively high share of Lithuanian firms uses online planning tools and has significantly high shares of online sales (32% of small and medium-sized enterprises (SMEs) vs EU average of 18% in 2023) and purchases (33.4% vs 26%). This indicates a higher degree of digitalisation than the EU average. The take-up of digital tools is also widespread in public administration (see Annex 13). Moreover, only 22% of Lithuanian firms reported digital infrastructure as being an impediment to investment, compared to the EU average of 43% ([93]). Considering the results from the 2023 EIB Investment Survey, Lithuanian transport infrastructure seems to be comparably favourable for firms. Only 28% of them reported it to be an impediment to investment (EU average 46%) ([94]). On regulation, flexible labour markets among other factors enabled an efficient reallocation of resources during the multiple crises and therefore contributed to an economic recovery ([95]). In addition, only 47% of Lithuanian firms reported labour regulation to be an obstacle to investment (compared to the EU average of 60%) ([96]).

Productivity growth in Lithuania recovered strongly after the global financial crisis, but has recently stagnated. Over the past two decades, labour productivity per hour worked in Lithuania grew rapidly as the economy converged towards the EU average (see Graph A12.1). However, Lithuania has experienced a slight decline in labour productivity in recent years, but it is still closer to the EU average than Latvia and Estonia. The recent decline in labour productivity can be partly attributable to a wide productivity gap between Lithuania's export and domestic sectors. The former is prone to external shocks such as supply chain disruptions and energy price spikes ([97]). In 2023, Lithuania's labour productivity as a percentage of the EU average stood at 70% in purchasing power parity, ahead both Latvia and Estonia. The still relatively low productivity level attained is due to the structure of the economy, which is concentrated in less knowledge-intensive processing activities ([98]) Nevertheless, Lithuania succeeded in growing the sophistication, product diversity and global interconnectedness of its export market ([99]). Simplification and effective implementation of public support to research and innovation (R&I) and addressing the fragmentation

([92]) IMD World Competitiveness Index 2023.

([93]) EIB Investment Survey (2023).

([94]) EIB Investment Survey (2023)

([95]) IMF Art IV Consultation, Lithuania (2023).

([96]) EIB Investment Survey (2023).

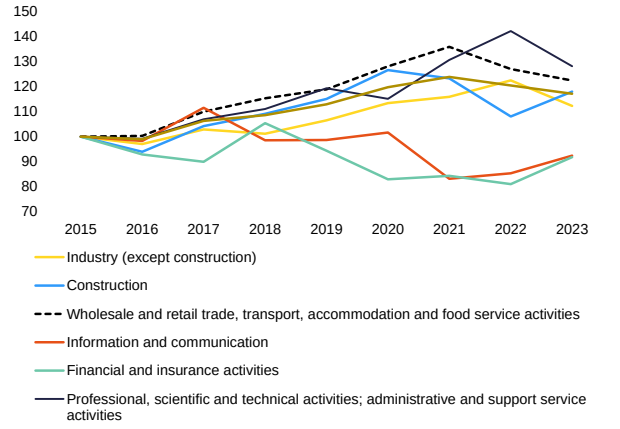
([97]) OECD (2022). Economic surveys: Lithuania, October 2022.

([98]) SME Country Fact Sheet, 2022.

([99]) IMF Art IV Consultation, Lithuania (2023).

of the public science base is therefore crucial (see Annex 11).

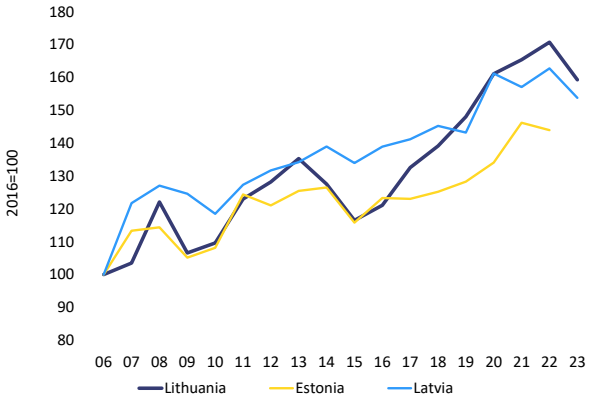
Graph A12.2: **Real labour productivity (GDP per hour worked), 2015=100**



Source: Eurostat

In the last decade, labour productivity has been improving in Lithuania's main exporting sectors – manufacturing, transport and agriculture – driven by increasing export market shares, but recent developments have been challenging. The manufacturing industry has shown big increases in labour productivity in recent decades and has continued to grow ([100]). Also, transportation and agriculture has seen large increases in labour productivity, with the latter recently decreasing (see Graph A12.2). Specifically, export market shares in goods (chemicals, wood and furniture, and agricultural goods) and services (transport and logistics) have been increasing steadily since the global financial crisis (see Graph A12.3), rising from 56% of GDP in 2006 to 87% in 2022 ([101]). Lithuania's economic performance relies heavily on its export sectors. While strong nominal wage growth, even in non-export sectors, was in line with productivity gains, real unit labour costs have been broadly constant. Recently, disposable incomes of households have decreased due to spikes in inflation. Combined with continuing labour shortages, these put pressure on nominal wages, which have risen sharply in the last few years. Nominal unit labour costs were 40% higher in 2023 than in 2019 ([102]). As a small open economy, strong international competition limits Lithuanian firms' ability to increase prices, endangering their competitive position ([103]). Continuing its transformation into a more knowledge-intensive economy and increasing the complexity of its export market is key to securing the competitive position of Lithuania's economy.

Graph A12.3: **Export market share (goods and services), % GDP**



Source: Eurostat

Lithuania has experienced relatively strong investment growth in recent years, which is now challenged by elevated inflation, high borrowing costs, relatively low business confidence and deteriorating expectations of the export sector ([104]). Following a recent strong increase in private investment since 2020, from 10% of GDP to 20% in 2022, there was a slight drop in 2023, mainly caused by the drawing down of inventory, while government investment continued to grow. Since the global financial crisis, private investment has contributed to economic growth and has been directed mainly towards non-residential construction and equipment. This points to an increased build-up of capacities ([105]). With weak private consumption, sluggish external demand and a very low rate of capacity utilisation, the demand for investment is now dampened. Nevertheless, consumer confidence showed the first signs of recovery in 2023, supported by low unemployment, nominal wage growth and declining inflation, all of which point to an upward trend in private domestic consumption. In recent years, public investment has been directed mainly to digital and green infrastructure, energy security,

([100])Eurostat.

([101])Eurostat.

([102])Eurostat.

([103])Central Bank of Lithuania (2023). Lithuanian Economic Review, September 2023.

([104])ECFIN Investment Radar (Eurostat).

([105])ECFIN (Eurostat).

healthcare and R&I projects. This is mainly supported by recurring EU funding programmes. Investment in the construction sector and in renewable energy generation has been increasing in particular ([106]). Overall, public investment in Lithuania has been strongly supported by EU funds in recent years ([107]).

Skills shortages and mismatches are also hampering investment. Despite an increase of the unemployment rate in 2023 (6.9% compared to 6.0 % in 2022) the tightness in the labour market, measured as the ratio of job vacancies to the unemployed continued. End of 2023, the job vacancy rate was one of the highest since the start of the observation period despite the influx of Ukrainian refugees ([108]). While still lower than the EU average (2.7%), the indicator increased from 1.4% in 2019 to 2% in 2023, mainly driven by developments in the public administration and defence, transport and finance. This points to skills mismatches and skills shortages, which are of great concern to Lithuanian firms according to the 2023 EIB Investment Survey (72% of firms surveyed, compared to 81% in the EU).

Lithuania's financial environment and its financial markets are functioning well overall, but the situation has deteriorated in recent years due to tighter monetary conditions and late payments. Amid rising interest rates, the corporate sector continued to increase its financial liabilities in 2023, albeit at a significantly slower pace. The slowdown can be explained by tighter risk management due to elevated interest rates, but this also contributed to a net increase in the financial assets of companies ([109]). Nevertheless, the ratio of financially constrained firms in Lithuania is one of the highest in the EU ([110]), and 22% of Lithuanian firms (EU average 15%) reported that the general availability of bank loans has deteriorated ([111]). While adaption to monetary circumstances is appropriate and points to a well-functioning debt market, this development worsens the financing environment of firms. Compared to their peers in the other Baltic countries, Lithuanian firms rely more on external financing such as bank loans, and 18% (17% in the EU) reported that their demand for bank loans had increased in 2023 ([112]). Moreover, the share of SMEs experiencing late payments increased by roughly 8 percentage points from 51% to 59%, compared to an EU average of 49%.

The pan-European structural problem of a lack of venture capital and equity finance is also evident on Lithuanian markets. While venture capital investments as a percentage of GDP increased slightly from 0.09% to 0.1%, the value of Lithuania's IPO market and the share of SMEs using equity finance decreased significantly in 2022 ([113]). This is especially the case for young and expanding firms in Lithuania ([114]). The development of the fintech sector and the use of venture capital, especially via private management, has further potential, particularly in targeting start-ups in their later life cycle ([115]). However, the financial size of projects is often small and therefore not that attractive for venture capitalists.

Lithuania is well integrated into the single market. Trade integration is high and amounts to more than half of its GDP. Lithuania performs very well when it comes to transposing EU directives, having a deficit of only 0.3% and ranking among the best performing Member States (EU average 0.7%). It also ranks 4th in conformity, with only 0.7% of directives being wrongly transposed (EU average 1.2%). Moreover, in 2023 Lithuania managed to solve all SOLVIT cases (6) it handled as lead centre, which is above the EU average of 88.3 % ([116]).

([106])Central Bank of Lithuania (2024). Lithuanian Economic Review, March 2024.

([107])OECD (2022). Economic surveys: Lithuania, October 2022.

([108])Central Bank of Lithuania (2023). Lithuanian Economic Review, September 2023.

([109])Central Bank of Lithuania (2023). Lithuanian Economic Review, September 2023.

([110])SAFE Survey (2023).

([111])EIB Investment Survey (2023)

([112])EIB Investment Survey, 2023

([113])Torfs, Wouter (2023): The 2022 EIF SME Access to Finance Index. August 2023 update, EIF Research and Market Analysis WP 2023/92.

([114])Foda, K., Shi, Y., and M. Vaziri (2022): Financial Constraints, productivity, and investment, evidence from Lithuania, IMF WP/22/249.

([115])OECD (2022). Economic surveys: Lithuania, October 2022.

([116])Single Market Scoreboard.

Lithuania is a front runner on green and social public procurement, but there is room for improvement in boosting competition on the public procurement market. Lithuania's share of contracts awarded after receiving only a single bid is still high (37% in 2023) ([117]). It is making efforts to address this and has implemented several measures to improve competition and attract new suppliers, in particular SMEs, to public procurement. This includes specific training, the development of marketing tools and new training material. Reforms to promote the centralisation of the public procurement market have been carried out, and improvements can be seen in the health sector and in the establishment of central contracting authorities in each municipality. The relaunch of the project to develop a new IT procurement platform that aims to minimise administrative burden could further help improve the competitive environment.

High dependence on energy imports puts Lithuanian firms under intense price pressure, making a shift in the energy mix necessary. Lithuania is highly dependent on energy imports. Despite successful efforts to diversify sources of energy supply, price pressures on industry and SMEs remain high (see Annex 7). 74% of Lithuanian firms mention energy costs as the main impediment to investment ([118]). To reduce the risks related to the dependency of energy imports, building up the capacity to generate renewable energy sources is important. Despite having adopted a legislative package to ease permitting procedures for wind and solar energy projects, the National Audit Office stated that the 2030 target for the installation of renewable energy sources is at risk due to a lack of investment in the electricity grid. Nevertheless, with 52.6% of total energy production capacity stemming from renewable energy sources (see Table A12.1), Lithuania is ahead of the EU average of 47% (see also Annex 7) ([119]). Lithuania has started implementing measures to increase its share of renewables and other non-hydrocarbon energy. Moreover, Lithuania adopted its revised recovery and resilience plan (RRP) with a REPowerEU chapter in 2023. It includes several ambitious measures to expand renewable energy production and energy efficiency.

Lithuania has reached the preliminary stage of implementing the components needed to connect to the 'Once-Only' technical system (OOTS) ([120]). As part of the Single Digital Gateway Regulation ([121]), 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 Lithuanian competent authorities is crucial for the system to function smoothly and to reduce administrative burden.

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

([118])EIB Investment Survey (2023)

([119])Eurostat, latest data from 2021.

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

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

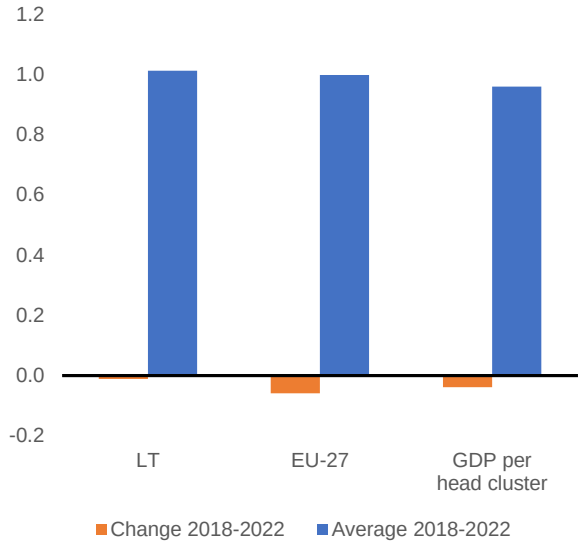
Table A12.1:**Industry and the Single Market**

Lithuania							
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]	8,4	6,4	8,5	9,3	9,6	**3,8**
	Net Public investment, level of public capital stock, net of depreciation, % GDP[1]	0,4	1,8	0,5	0,7	1,8	**1,2**
	Real labour productivity per person in industry (% yoy)[2]	4,9	2,8	3,4	4,2	-6,9	**-1,24**
Cost competitiveness	Nominal unit labour cost in industry (% yoy)[2]	6,2	0	4,9	11,2	13	**9,83**
SINGLE MARKET							
Single Market integration	EU Trade integration, % (Average intra-EU imports + average intra EU exports)/GDP[2]	47,5	45,4	51,2	57,9	51,7	**42,9**
Compliance	Transposition deficit, % of all directives not transposed[3]	0,2	0,8	1,7	0,3	0,3	**0,7**
	Conformity deficit, % of all directives transposed incorrectly[3]	0,8	1,1	1	1	0,7	**1,1**
	SOLVIT, % resolution rate per country[3]	100,0	100,0	100,0	-	100,0	**88,3**
	Number of pending infringement proceedings[3]	10	12	17	16	15	**25,9**
Restrictions	EEA Services Trade Restrictiveness Index[4]	0,04	0,04	0,04	0,04	0,04	**0,05**
Public procurement	Single bids, % of total contractors[3]	28	28	30	34	37	**28,6**
	Direct Awards, %[3]	5	10	6	6	6	**8,1**
ECONOMIC STRUCTURE							
Shortages	Material Shortage (industry), firms facing constraints, %[5]	8,8	8,8	21,2	26,9	9,9	**17,2**
	Labour Shortage using survey data (industry), firms facing constraints, %[5]	15,5	11,6	21,9	25,8	14,2	**23,3**
	Vacancy rate, % of vacant posts to all available ones (vacant + occupied)[2]	1,45	1,3	2,0	1,9	2,0	**2,5**
Strategic dependencies	Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials[6]	0,2	0,2	0,2	0,17	0,18	**0,22**
	Installed renewables electricity capacity, % of total electricity produced[2]	0,5	0,4	0,5	0,7		**50**
BUSINESS ENVIRONMENT - SMEs							
Investment obstacles	Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle[7]	24,5	21,1	22,4	20,0	13,0	**22,2**
Business demography	Bankruptcies, Index (2015=100)[2]	78,0	40,1	38,6	53,8	53,2	**105,6**
	Business registrations, Index (2015=100)[2]	124,2	133,0	145,0	138,5	150,9	**120,2**
Late payments	Payment gap - corporates B2B, difference in days between offered and actual payment[8]	-	16	12	12	13	**15**
	Payment gap - public sector, difference in days between offered and actual payment[8]	-	18	11	17	19	**16**
	Share of SMEs experiencing late payments in past 6 months, %[9]	55,0	52,2	52,8	50,6	59,2	**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]	0,54	0,65	0,34	0,42	-	**0,49**
	EIF Access to finance index - Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values between 0 and 1[10]	0,13	0,25	0,54	0,14	-	**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

Lithuania's public administration is essential for the economy's competitiveness by, in particular, shaping the conditions for the twin transitions and creating a favourable business environment. The perceived effectiveness of government in Lithuania remains stable around the EU average (Graph A13.1). The 2022-2030 public governance development programme ([122]) is still the main framework for reforming human resource management and contains initiatives to improve the quality of interaction between the local, regional and national administrations.

Graph A13.1: **Government effectiveness**

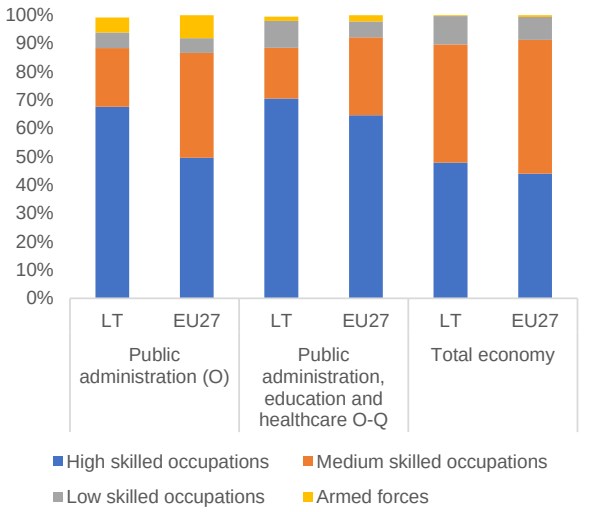


Average value over 2018-2022 and change over 2018-2022. The GDP per head bar shows the mean value of the government effectiveness indicator for the group of EU countries belonging to the same GDP per head cluster as Lithuania (EU countries are ranked in terms of their GDP per head and grouped into three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

Lithuania has improved its e-government and open data and portal maturity (Table A13.1.) The degree of development of e-government services and the share of individuals who interact with public authorities online is high although the latter dropped in the last year. In line with its recovery and resilience plan, Lithuania has launched an overhaul of data management with the aim to strengthen data-based decision-making in the public administration. The State Data Agency is building an inventory of data from over 275 public sector institutions to integrate the resources into a state data lake ([123]).

Lithuania has taken action to strengthen the use of evidence and data in policymaking. Specialised units in several ministries and an analytics and sustainable governance unit at the Government Office aim to promote evidence-informed policymaking and improve sustainable governance. A newly created network of research and innovation advisers in ministries and the Government Office aims to strengthen the R&I component in all fields of policy. Moreover, as part of its open government plan for 2024-2025, Lithuania intends to make it mandatory to carry out public consultations when preparing legislation and to publish the results ([124]).

Graph A13.2: **Share of people employed by occupation and by sector**



2023 data.
High: International Standard Classification of Occupations (ISCO) categories 1-3; medium: ISCO4-8; low: ISCO 9.
Source: Eurostat. Employment by sex, age, occupation, and economic activity.

Lithuania has a highly skilled civil service and gender parity among senior managers (Table A13.1). The share of public administration employees with higher education and their participation in adult learning indicate a high-

([122])Public Management Development Programme 2022-2030, Ministry of Interior, 206 Dėl 2022–2030 metų plėtros programos valdytojos Lietuvos Respublikos vidaus reikalų ministerijos ... (e-tar.lt)

([123])https://experience.arcgis.com/experience/03398d383eca47e4a17cc853d72df2d4

([124])https://e-seimas.lrs.lt/portal/legalAct/lt/TAK/e2e695906cef11eea182def3ac5c11d6?positionInSearchResults=1&searchModelUUID=e35fd987-72f0-4170-90a8-4d69fdea2e7e

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

LT	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	83.1	80.7	75.0
2	E-government benchmark overall score ([3])	n/a	80.7	83.4	85.1	86.0	75.8
3	Open data and portal maturity index	0.5	0.9	0.9	0.9	0.9	0.8
Educational attainment level, adult learning, gender parity and ageing							
4	Share of public administration employees with higher education (levels 5-8, %)	79.3	79.9	77.2 (b)	75.1	76.8	52.9
5	Participation rate of public administration employees in adult learning (%)	14.4	12.4	17.2 (b)	17.7	22.8	17.9
6	Gender parity in senior civil service positions ([4])	0.8	2.4	4.4	7.4	6.6	9.2
7	Ratio of 25-49 to 50-64 year olds in NACE sector O	1.9	2.1	2.0 (b)	1.7	1.9	1.5
Public financial management							
8	Medium-term budgetary framework index	0.7	0.8	0.8	0.8	n/a	0.7
9	Strength of fiscal rules index	2.6	2.6	2.6	2.6	n/a	1.4
Evidence-based policy making							
10	Regulatory governance	n/a	n/a	1.85	n/a	n/a	1.7

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

skilled workforce compared to the EU-27 (Chart A13.2). However, there are challenges in recruiting young talent: only 9% of Lithuanians consider the public administration to be an attractive employer ([125]). Lithuania has approved the new Law on Civil Service. As part of it, the newly created Public Management Agency has moved under the Government Office to ensure consistent implementation of a new civil service policy ([126]). This reform aims to improve the selection and skills development of senior civil servants.

To help address fiscal challenges, the Independent Fiscal Institution (IFI) could be strengthened. The Lithuanian IFI, which is embedded in the National Audit Office, has a relatively broad mandate. Although the IFI has legal grounding and a Memorandum of Understanding, its access to information could be improved. Its embedded nature could also make it difficult to discern its own role.

The justice system continues to perform efficiently ([127]). In 2022, the disposition time at first instance in civil, commercial and administrative cases remained the lowest in the EU. However, at higher instances, the disposition time in civil and commercial cases increased, reaching 450 days. While the case backlog in Lithuania remains comparatively low, in 2022, the number of cases (in all categories) entering the system was slightly higher than those resolved. The use of digital tools in the justice system is widespread. However, concerns have emerged about the remuneration levels for prosecutors and court staff, which were only partially addressed by recent legislative reforms. On judicial

([125])https://europa.eu/eurobarometer/surveys/detail/3054

([126])https://vva.lrv.lt/lt/naujienos/viesojo-valdymo-agentura-taps-pavaldi-vyriausybei/

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

independence, no systemic deficiencies have been reported.

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

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

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)	27.4
	Early leavers from education and training (% of the population aged 18-24, 2023)	6.4
	Share of individuals who have basic or above basic overall digital skills (% of the population aged 16-74, 2023)	52.9
	Young people not in employment, education or training (% of the population aged 15-29, 2023)	13.5
	Gender employment gap (percentage points, population aged 20-64, 2023)	1.5
	Income quintile ratio (S80/S20, 2022)	6.4
Dynamic labour markets and fair working conditions	Employment rate (% of the population aged 20-64, 2023)	78.5
	Unemployment rate (% of the active population aged 15-74, 2023)	6.9
	Long term unemployment (% of the active population aged 15-74, 2023)	2.3
	Gross disposable household income (GDHI) per capita growth (index, 2008=100, 2022)	141.4
Social protection and inclusion	At risk of poverty or social exclusion (AROPE) rate (% of the total population, 2022)	24.6
	At risk of poverty or social exclusion (AROPE) rate for children (% of the population aged 0-17, 2022)	22.4
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2022)	30.33
	Disability employment gap (percentage points, population aged 20-64, 2022)	35
	Housing cost overburden (% of the total population, 2022)	3.5
	Children aged less than 3 years in formal childcare (% of the under 3-years-old population, 2022)	22.8
	Self-reported unmet need for medical care (% of the population aged 16+, 2022)	2.9

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

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

The labour market in Lithuania remained relatively resilient despite economic challenges in 2023. The employment rate in 2023 (78.5% vs EU 75.4%) fell by 0.5 percentage points (pps) year-on-year. The unemployment rate increased by 0.9 pps to 6.9% (vs EU: 6.0%). The influx of more than 52 000 working age Ukrainians since February 2022 did not have a negative impact on the labour market, as more than half of them (around 30 000) were employed in Q3-2023. The disability employment gap recorded a spike from 23.9% to 35.0% in 2022 (vs EU: 21.4%). More than EUR 2 million of ESF+ funds (around 22% more than in 2014-2022) have been allocated to strengthen the capacity of social partners (especially in the private sector), to promote membership of trade unions and employers' organizations and improve collective bargaining.

Labour and skills shortages in the private sector ([128]) in 2023 were most pronounced in the transport and services sectors. The 2024 quota for facilitated hiring of non-EU workers for professions in short supply has been set at 40 250 posts (4 300 more than in 2023) ([129]). The job vacancy rate in Q4-2023 (1.9%) was below the EU average (2.5%), albeit still higher than the pre-pandemic level (46% higher than Q4-2019). The combination of demographic challenges and skills and labour shortages also undermines Lithuania's potential to increase its economic competitiveness. As part of its recovery and resilience plan (RRP), Lithuania is working on the employment service's digital customer service system, with the aim to free up resources for more personalised services with improved quality and better access. Together with other RRP measures and more than EUR 250 million from the European Social Fund Plus (ESF+) for tailored active labour market policy measures, these efforts will support progress towards the national employment rate target of 80.7% by 2030.

The lack of attractiveness of vocational education and training (VET) and the low rate of adult participation in lifelong learning is hindering the development of skills. In 2021, enrolment in upper-secondary vocational education and training was substantially below the EU average (25.6% vs 48.7% in the EU), as was the share of adults who had taken part in learning activities in the previous 12 months (27.4% vs EU: 39.5% in 2022). The relevance of vocational education and training to the needs of the labour market is insufficient, with recent VET participants (ISCED 3 and 4) less likely to be employed (71.3%) than the EU average in 2023 (81%). In 2023, the share of individuals with basic or above basic overall digital skills was 52.9% (vs EU: 55.5%). To address this, a reform under the RRP has been rolled out to create a one-stop-shop model for

([128]) Whereas the public sector suffers from labour and skills shortages in education, healthcare and public administration.

([129]) Including 25 100 workers in haulage and other service companies, 9 800 in construction and 5 050 in industry.

lifelong learning based on individual learning accounts. With other RRP measures to increase the relevance of VET to the labour market, a boost to the digital skills of VET students and trainers, and EUR 64 million of ESF+ funding to implement the Lithuanian skills strategy, this is expected to contribute to achieving the target of at least 53.7% of all adults participating in training every year by 2030.

Income inequality remains critically high and has further increased in 2022. The income of the top 20% of the income distribution was 6.39 times bigger than that of the bottom 20% in 2022 (vs EU: 4.74%). The gap is increasing between the income levels of the richest top 20% and the 20% middle-income population (S80/S50). The impact of social transfers (excluding pensions) in reducing income inequality is below the EU average (31% vs EU: 37%). The record levels of inflation in 2022 (18.9%) eroded much of the value of significant increases in the non-taxable amount of income, the minimum wage, pensions and social benefits ([130]), which is likely to further increase the S80/S50 divide.

Increasing rates of poverty and social exclusion reversed the positive trend observed in 2017-2021. The share of people at risk of poverty or social exclusion (AROPE) increased from 23.5% in 2021 to 24.6% in 2022. The situation is particularly difficult for vulnerable groups, such as older persons (65+) and persons with disabilities. In 2022, the AROPE rate for the 65+ age group was more than twice the EU average (41.4% vs EU: 20.2%). The rate for persons with disabilities increased from 38.9% in 2021 to 44.3% in 2022 (vs EU: 28.8%). Although the AROPE rate for unemployed people aged 18 and above was 61% in 2022 (vs EU: 65.2%), the monetary poverty (AROP) rate of the population (aged 16-64) living in (quasi) jobless households was among the highest in the EU in 2022 (78.2% vs EU: 59.9%). The rate for unemployed people (51% in 2022) was also higher than the EU average (46.1%), albeit on a downward trend since 2018.

The low adequacy of pensions contributes to poverty among older people (65+). In 2022, the monetary poverty (AROP) rate for this group was one of the highest in the EU (39.5% vs EU: 17.3%), and much higher than for the working-age population (15.8%). Women are particularly affected by old-age poverty (46.9%) compared to men (26.3%), mainly due to family care responsibilities during their career. Despite improving for the second year in a row, the share of children under 3 years of age in formal childcare (22.8% in 2022) is still below the EU average (35.7%). The aggregate replacement ratio for old-age pensions fell for a third consecutive year in 2022 (33% vs EU: 58%) and the average pension was below the poverty threshold ([131]). Besides changes in the indexation rules, Lithuania introduced several measures in recent years aimed at improving the adequacy of statutory pension benefits by bringing pensions closer to the poverty threshold in the short to medium term. However, there is still scope to further enhance the adequacy of pensions in the longer term.

Persons with disabilities are also at risk of poverty. The AROP rate of persons with disabilities in 2022 stood at 37.7% (vs EU: 20.5%, up from 32.6% in 2021), driven by low adequacy of social benefits and incapacity pensions for this group. Recent reforms in the assessment of disability (as of 2024) and in the participation of persons with disabilities in an open labour market (as of 2023), along with efforts to improve the adequacy of the minimum income could help address the high levels of poverty for persons with disabilities.

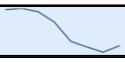
Gaps remain in access to social protection. Self-employed people are not covered by the insurance schemes for unemployment and accidents at work, and some of them are not covered by the insurance scheme for sickness and maternity. To address this, the Parliament is currently discussing an RRP-based reform, which aims, among other things, to include the self-employed in the unemployment insurance scheme and ease the conditions for accessing unemployment benefits. Overall, there is scope for further social policy action to achieve Lithuania's national target of 223 000 fewer people at risk of poverty or social exclusion by 2030. The available quantitative and qualitative evidence and the policy response undertaken and planned analysed in the second-stage analysis of the Social

([130])EUROMOD simulation on the impact of inflation on the increases in non-taxable amount of income, minimum wage, pensions and social benefits in 2022 and 2023.

([131])EUR 539 in 2023 vs the 2023 poverty threshold of EUR 564.

Convergence Framework of May 2024 (SWD(2024)132) point to challenges related to the high at-risk-of-poverty or social exclusion rates and income inequality but do not point to major social convergence challenges for Lithuania overall, in light of the positive developments especially in relation to employment.

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

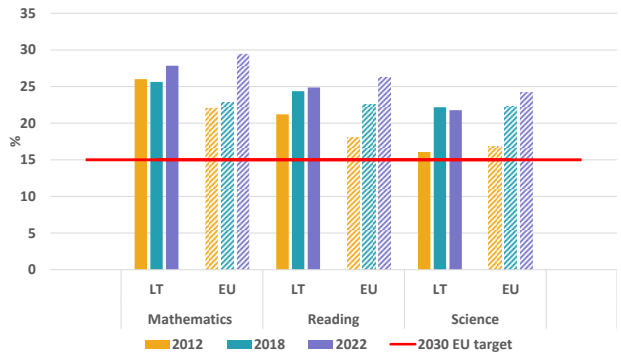
Indicators	Latest data	Trend (2016-2022)	2030 target	EU target
Employment (%)	78.5 (2023)		80.7	78
Adult learning[1] (%)	27.4 (2022)		53.7	60
Poverty reduction[2] (thousands)	-22 (2022)		-223	-15,000

(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.
Source: Eurostat, DG EMPL.

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

According to the latest PISA study, more than 20% of 15-year-olds have insufficient basic skills, putting upskilling and reskilling efforts at risk (Annex 14). The share of underachieving students in mathematics, reading and science, as measured by the 2022 PISA study, is below the EU average (see Table A15.1 and Graph A15.1), although above the EU-level target of 15% set for 2030. Since 2012, it has remained stable in mathematics and reading. In science, however, the share increased by 5.7 pps between 2012 and 2022, less than at EU level (7.5 pps), and reached 21.8% in 2022 (EU 24.2%). The percentage of top performers has remained statistically unchanged since 2012 and is below the EU average in all three domains; this may have negative consequences for the future innovation capacity of the country.

Graph A15.1: **Underachievement rates by field, PISA 2012, 2018 and 2022**



Source: OECD (2023).

Socio-economic background remains a strong predictor of student underachievement. In 2022, underachievement in mathematics was higher among socio-economically disadvantaged students (46.5% v 48.0% at EU level) than among their socio-economically advantaged peers (11.0% vs 10.9%). These figures have not changed significantly since 2012, making equity one of the main challenges for the Lithuanian school system. The socio-economic gap stands at 35.5 pps, just below the EU average (37.2 pps). Student performance is also associated with place of residence: results are higher in Vilnius and in other cities than in rural areas ([132]). Implementation of revised school network rules and the Millennium Schools programme envisaged in the recovery and resilience plan (RRP) may help address inequalities in access to quality education through the closure of small schools, a ban on small classes and the creation of schools networks in municipalities.

Several measures are being implemented to increase learning outcomes. In 2018, Lithuania started to work on a new competence-based curriculum whose implementation started in September 2023. This reform is accompanied by changes in the assessment system. The ministry has prepared a 2023-2030 plan to improve mathematics outcomes. In addition, a plan to increase students' interests in STEAM (science, technology, engineering, arts, and mathematics) competences and careers was adopted in 2023. With the help of EU funds, since 2022, seven regional STEAM centres have been operating and another three are being developed in the three biggest cities. Funded by the Recovery and Resilience Facility, the EdTech Project is also underway promoting educational innovations based on digital technologies.

Teacher shortages are a longstanding issue, varying by region, subjects and level of education, and putting the quality of school education at a risk. The demand for teachers is higher in rural areas, at early childhood education and care (ECEC) and primary level, and in mathematics and Lithuanian. About 39% of all schoolteachers were aged over 55 in 2021 (EU 25%) and are likely to reach retirement age within the next 10 years. Even if Eurostat's baseline projections indicate a 12% decline in the student population (0-16) by 2030, it is expected that many retiring teachers will need to be replaced. Some steps have been taken to renew the teaching workforce and salaries have been increased to improve working conditions and attract more people into the profession. However, the existing career system contributes to the low interest of young graduates in the teaching profession.

([132])Ministry of Education, Science and Sport (2023).Lithuanian pupils' achievements are in line with the average of most advanced OECD countries. Press release, 5 December 2023.

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

				2012		2018		2023	
Indicator			Target	Lithuania	EU-27	Lithuania	EU-27	Lithuania	EU-27
[1]Participation in early childhood education (age 3+)			96%	83.4% 2013	91.8% 2013	88.9%	92.2%	92.1% 2021	92.5% 2021,d
[2]Low-achieving 15-year-olds in:		Reading	< 15%	21.2%	18.0%	24.4%	22.5%	24.9% 2022	26.2% 2022
		Mathematics	< 15%	26.0%	22.1%	25.6%	22.9%	27.8% 2022	29.5% 2022
		Science	< 15%	16.1%	16.8%	22.2%	22.3%	21.8% 2022	24.2% 2022
Early leavers from education and training (age 18-24)	[3]Total		< 9 %	6.5%	12.6%	4.6%	10.5%	6.4%	9.5%
	[3] By gender	Men		8.1%	14.5%	6.1%	12.1%	6.6%	11.3%
		Women		4.6% u	10.6%	3.0% u	8.7%	6.1%	7.7%
	[4] By degree of urbanisation	Cities		: bu	11.2%	2.4% u	9.4%	4.4% u	8.6%
		Rural areas		10.4% b	14.0%	6.6%	11.0%	7.6%	9.9%
	[5] By country of birth	Native		6.4%	11.3%	4.6%	9.2%	6.4%	8.2%
		EU-born		:	26.2%	: u	22.4%	: u	21.0%
		Non EU-born		: u	30.1%	: u	23.0%	: u	21.6%
[6]Socio-economic gap (percentage points)				32.3	:	31.6	29.5	35.5 2022	37.2 2022
[7]Exposure of VET graduates to work-based learning			≥ 60% (2025)	:	:	:	:	57.5%	64.5%
Tertiary educational attainment (age 25-34)	[8]Total		45%	48.6%	34.1%	55.6%	38.7%	57.4%	43.1%
	[8] By gender	Men		39.8%	29.1%	46.6%	33.3%	47.5%	37.6%
		Women		57.6%	39.2%	65.2%	44.2%	68.1%	48.8%
	[9] By degree of urbanisation	Cities		63.9% b	43.5%	70.4%	49.0%	71.1%	53.3%
		Rural areas		29.7% b	24.8%	34.9%	27.7%	42.3%	31.7%
	[10] By country of birth	Native		48.4%	35.4%	55.8%	39.7%	57.1%	44.2%
		EU-born		: u	29.3%	: u	36.7%	: u	40.2%
		Non EU-born		: u	24.2%	44.5% u	31.0%	76.0%	37.1%
[11]Participation in adult learning (age 25-64)			≥ 47% (2025)	:	:	25.0% 2016	37.4% 2016	27.4% 2022	39.5% 2022
[12]Share of school teachers (ISCED 1-3) who are 55 years or over				25.1% 2013	22.7% 2013	34.5%	23.8%	38.5% 2021	24.5% 2021

Source:

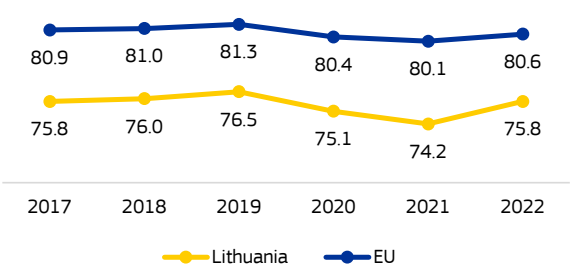
Participation in ECEC continues to increase, but tackling imbalances remains a priority. In 2021, 92.1% of children between the age of 3 and the starting age of compulsory primary education participated in ECEC (EU 92.5%). A positive trend is also observable for children up to 3 years old (see Annex 14). Despite improvements, participation tends remain lower in rural areas and for children at risk of social exclusion, and a lack of public places is recorded in big cities, especially in Vilnius. Investment to gradually extend ECEC accessibility as of September 2023 and compulsory participation for children from disadvantaged families are expected to further increase participation rates.

Lithuania is reforming the higher education sector to improve quality of tertiary programmes. Although Lithuania has one of the highest tertiary education attainment rates in the EU of people aged 25-34 (57.4% vs EU 43.1%, 2023), the higher education system faces challenges with respect to quality and labour-market relevance. This contributes to skills shortages (see Annex 14) and low innovation capacity (see Annex 11). As part of its current reforms, the government aims to promote the development of a more efficient and effective institutional landscape to respond to the decline in the enrolment rates - in particular in colleges - due to demographic changes and the demand for a higher quality of studies and research. While colleges vary considerably in size and focus, only 47% of college graduates find jobs to match their level of education. The RRP includes measures to incentivise a reorganisation of the country's colleges and Lithuania aims to renew the network by the beginning of the 2024-2025 academic year. However, college reorganisation will only result in cost savings and higher quality if mergers lead to better complementarity in terms of programmes, a more efficient use of resources, and if applied research is adequately promoted and supported.

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 Lithuania.

Life expectancy in Lithuania remains among the lowest in the EU – nearly 5 years below the EU average. Following a steep drop of 2.3 years between 2019 and 2021, life expectancy increased in 2022 by 1.6 years compared to 2021. This recent increase can be partially explained by a decrease in COVID-19 mortality in 2022 ([133]). Levels of preventable and treatable mortality in Lithuania remain high compared to the EU overall, suggesting that the effectiveness of the health system is lagging behind. In 2021, the leading causes of death were diseases of the circulatory system ('cardiovascular diseases') followed by cancer and COVID-19. Lithuania has made progress in reducing historically high mortality rates from suicide, but it remains a significant cause of death, particularly among men. At the same time, mortality in the economically active age groups, as a share of total mortality and relative to the workforce size, is among the highest in the EU.

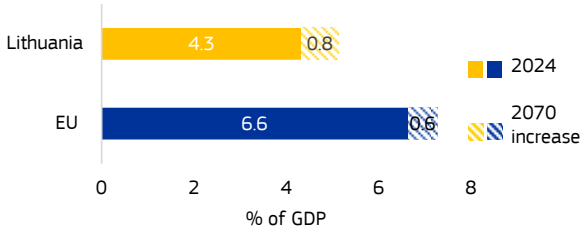
Graph A16.1: **Life expectancy at birth, years**



Source: Eurostat

Health expenditure in Lithuania is among the lowest in the EU and only 68.6% of it was publicly funded in 2021. In 2021, total healthcare spending increased to 7.8% of GDP, up from 7.5% in 2020. Provisional data from the OECD suggest that in 2022 total healthcare spending fell back to 7.5% of GDP. In 2021, the largest share of health expenditure went on outpatient care (35%), followed by inpatient care (27%) and pharmaceuticals and medical devices (24%). There is substantial reliance on out-of-pocket expenditure, which amounts to 30% of total health spending, driven by household spending on medicines and dental care. However, recent policies on reducing co-payments for medicines are expected to lessen the financial burden on the most vulnerable households. Based on the age profile of the Lithuanian population, public expenditure on health is projected to increase by 0.8 percentage points of GDP by 2070, compared to 0.6 percentage points 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 in Lithuania amounted to 5.6% of total spending on healthcare, compared to 6.0% for the EU overall. Between 2019 and 2021, spending on prevention in Lithuania more than doubled, closely following the trend across the EU. Proportionally, budget shares for prevention across the EU increased most for emergency response, disease detection and immunisation programmes., In Lithuania, the main factor behind the big increase in spending on preventive care in 2021 was the massive 2 483% increase in spending on disaster preparedness and emergency response programmes. On the other hand, spending on health promotion programmes seems insufficient considering the very high levels of preventable mortality. It is estimated that in 2019 approximately 44% of all deaths in Lithuania could be attributed to behavioural and environmental risk factors, including dietary risks, tobacco smoking, alcohol consumption and low physical activity. Furthermore, between 2019 and 2021, coverage of some cancer screening programmes fell sharply.

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

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

	2018	2019	2020	2021	2022	EU average (latest year)
Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare)	185,6	181,0	199,7	190,9	NA	93.3 (2021)
Cancer mortality per 100 000 population	272,8	271,5	276,5	259,4	NA	235.4 (2021)
Current expenditure on health, % GDP	6,5	7,0	7,5	7,8	NA	10.9 (2021)
Public share of health expenditure, % of current health expenditure	67,2	66,4	70,2	68,6	NA	81.1 (2021)
Spending on prevention, % of current health expenditure	2,3	2,7	3,9	5,6	NA	6.0 (2021)
Available hospital beds per 100 000 population	643	635	601	605	NA	525 (2021)
Doctors per 1 000 population	4,6	4,6	4,5	4,5	NA	4.1 (2021)*
Nurses per 1 000 population	7,8	7,7	7,8	7,9	NA	7.9 (2021)
Total consumption of antibacterials for systemic use, daily defined dose per 1 000 inhabitants per day ***	16,1	16,3	14,2	14,1	18,5	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.

Structural reforms aim to improve the resilience and efficiency of the health system, but the results are still to be seen. Self-reported unmet needs for medical care went up to 2.9% in 2022 from 2.4% in 2021 - exceeding the EU average of 2.2% (see Annex 14). As in many EU countries, a significant number of people reported unmet needs for mental healthcare during the pandemic. According to a Europe-wide survey ([134]), 28% of Lithuanians reported unmet needs for healthcare, including 8% for mental healthcare. Improving mental health is one of the priorities of the Lithuania's 2022-2030 health protection and promotion development strategy. Primary care services suffer from multiple weaknesses, including a limited range of preventive, early diagnostic and primary-level care services, and a lack of appropriate competencies within primary care teams. Further barriers to improving efficiency include: an uneven distribution of skills among health workers; the limited scope of primary, long-term and palliative care services; over-reliance on the hospital sector; the slow rollout of health technology assessment; a lack of effective systems for updating reimbursable medicines lists; non-rational use of medicines; and financing mechanisms that do not encourage efficiency in service provision. In response, an ongoing structural reform aims to expand the functions of primary care, optimise the network of healthcare providers, centralise ambulance services, create a model for long-term care and strengthen the health system's resilience by 2024. To achieve their goals, the reforms will need to provide sufficient clarity about restructuring the hospital network, ensure cooperation with stakeholders (particularly general practitioners) and overcome longstanding health workforce issues.

Lithuania faces shortages and an uneven distribution of health workers. Lithuania had 7.9 nurses per 1 000 population in 2021, equal to the EU average. However, a shortage of more than 3 000 nurses is forecasted by 2030 in view of the growing demand for care ([135]). Over a third (34.7%) of nursing personnel and 41.5% of physicians are aged 55 years or over. Working conditions are a significant issue, with low pay acting as a deterrent to entering the profession, in particular for nurses. Further, the geographical spread of doctors presents a challenge, with the biggest concentration of doctors being in the Vilnius and Kaunas districts.

EU funds support substantial investments in healthcare in Lithuania. Historically, investments levels in healthcare have lagged behind in Lithuania. This is reflected in the low availability of key diagnostic (medical imaging) technology. Through its recovery and resilience plan (RRP), Lithuania is investing EUR 268 million (7% of the RRP's total value) in healthcare. Measures aim to strengthen emergency care, tackle infectious diseases, develop digital health

([134])Eurofound (2021), Living, working and COVID-19 survey, rounds one, two and three (spring 2020, summer 2020 and spring 2021). Dublin & Eurofound (2022), Living, working and COVID-19 survey, rounds four and five (November 2021 and May 2022). Dublin

([135])National Audit Office (2023a), Review of reorganisation of healthcare network. Vilnius.

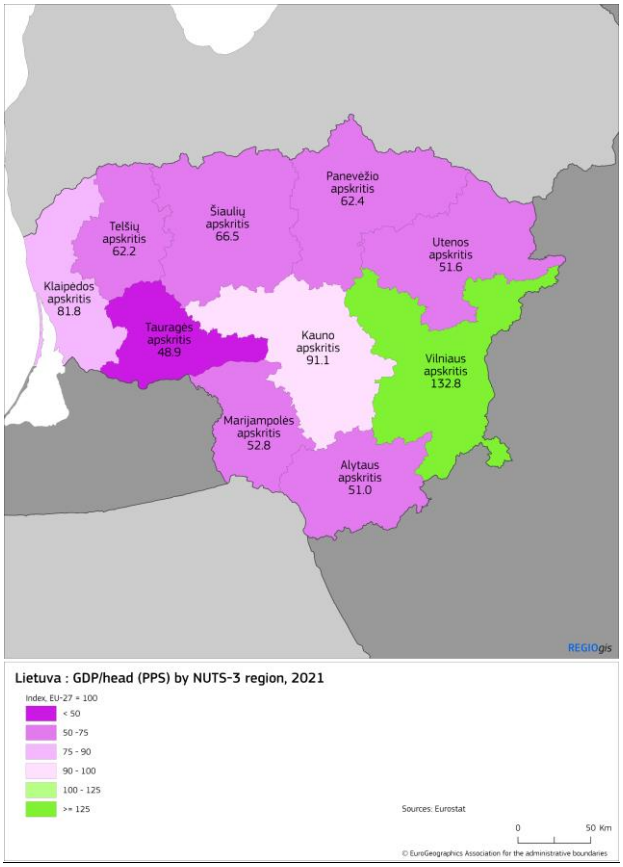
infrastructure, build capacity for advanced medical therapies, create a competence platform for healthcare professionals, and set up a system to monitor quality of care. Lithuania will also invest EUR 475 million from the cohesion policy funds in 2021-2027 to improve the health infrastructure and the accessibility, quality and resilience of health services ([136]).

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

Annex 17 showcases the economic and social regional dynamics in Lithuania. It provides an analysis of economic, social and territorial cohesion in the Lithuanian 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

Map A17.1: **GDP per capita (in PPS) in Lithuania, NUTS3, 2021**

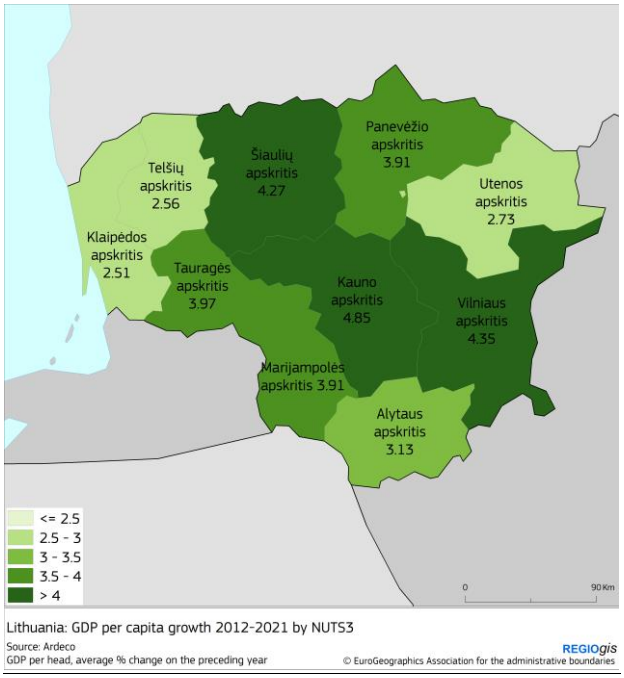


Source: Eurostat, DG REGIO elaboration

Regional disparities in Lithuania remain high. In 2021, GDP per capita was above the EU average only in Vilnius county at around 133%, followed by Kaunas county with 91%. At the other end of the spectrum, GDP per capita was just above half of the EU average in several counties (NUTS 3 regions) in 2021, reaching a low at 49% in Tauragė county ([137]). Most economic development takes place in Vilnius, Kaunas and Klaipeda counties, which contribute 43%, 20% and 10% to the total GDP of the country, respectively ([138]). The three counties attract most of the investment in knowledge intensive industry and locate a major part of high value-added jobs while manufacturing and lower value-added jobs are predominant in the other counties.

Internal convergence was hampered by slower growth in GDP per capita in some counties. GDP per capita has grown at a fast pace in the country (3,87%), much above the EU average (1.44%) ([139]). The highest growth rates were recorded in Šiauliai, Vilnius and Kaunas counties (4.27-4.85% per year between 2012 and 2021). Telšiai and Klaipeda counties had the slowest growth, at 2.5-2.6% per year (Map A17.2).

Map A17.2: **Lithuania, NUTS3: GDP per capita growth 2012-2021**



Source: DG REGIO

Labour productivity in Lithuania, while generally on the rise, remains lower than the EU average in all NUTS 3 regions. In 2021, it was the highest in the region of Kaunas county (99% of the EU average), followed by Klaipėda and Vilnius counties (90%). At the other end of the

([137])For NUTS 3 regions, the latest available GDP per head (PPS) and labour productivity (PPS) are for 2021.

([138])https://osp.stat.gov.lt/lietuvos-regionai-2022/ekonomika/ukis-ir-finansai

([139])GDP per head growth and labour productivity growth are estimated as the average annual real growth rate from 2013 through 2022 for EU27 and for Lithuania and from 2012 through 2021 for NUTS 3 regions.

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

NUTS 3 Region	GDP per head (PPS)	GDP per head growth	Productivity (GVA (PPS) per person employed)	Real productivity growth	Population growth	Net migration	Population aged 0-14 years	Population aged 65+
	EU27=100, 2022, regions 2021	Avg % change on preceding year, 2013-2022; 2012-2021 (regions)	EU27=100, 2022, regions 2021	Avg % change on preceding year, 2013-2022; 2012-2021 (regions)	Avg annual change per 1000 residents, 2013-2021	Avg annual change per 1000 residents, 2013-2021	% of total population, 2023	% of total population, 2023
European Union	100	1.44	100	0.7	1.9		14.9	21.3
Lithuania	89	3.87	83.8	2.0	-7.2	-1.7	14.9	20
Vilnius county	133	4.35	90.2	2.5	1.6	2.8	16.8	17.3
Alytus county	51	3.13	59.4	1.5	-12.7	-4.1	12.2	23.1
Kaunas county	91	4.85	99.3	2.9	-4.5	0.1	15.1	20.3
Klaipėda county	82	2.51	90.7	1.5	-2.5	0.7	16.1	19.5
Marijampolė county	53	3.91	63.2	1.8	-15.2	-8.3	13.7	20.8
Panevėžys county	62	3.91	72.4	2.1	-14.5	-6.4	12.5	23.1
Šiauliai county	66	4.27	76.3	2.7	-11.8	-5.1	13.7	21.4
Tauragė county	49	3.97	54.1	3.2	-17.4	-10.6	13.6	21.4
Telšiai county	62	2.56	68.6	0.0	-12.8	-8.2	14.4	20.4
Utena county	52	2.73	68.3	1.5	-16.5	-4.7	11.4	24.4

Source: Eurostat, EDGAR database

spectrum, labour productivity in Tauragė county corresponded to 54% of the EU average.

Lithuania is one of the most depopulating EU countries with the Central-Western region experiencing acute demographic decline and depopulation. Between 2013 and 2021, the population in the Capital region increased by 1.6% per 1 000 while it decreased by 9.5% in Central-Western Lithuania. Such a decrease mainly caused by a high departure in the population aged 15-39, puts the Central-Western region at risk of falling into a talent development trap in the future ([140]).

Human capital is also considerably limited outside of the Capital region (at NUTS 2 level). In 2022, only 53% of those aged 30-34 held a tertiary education degree in the Central-Western region (albeit well above the EU average) while in the Capital region it was 76%. The population living outside the Capital region also faces less skilled and less advantageous labour market, with employment ([141]) and unemployment rates ([142]) in Central-Western Lithuania, respectively, at 76.6% and 6.6%. In the Capital region employment stood at 84.4% of the population and the unemployment rate at 4.6% of labour force.

Acute depopulation combined with an ageing population in Central-Western Lithuania translates into higher percentages of those at-risk-of-poverty or social exclusion (AROPE ([143]), including suffering from severe material and social deprivation (SMSD ([144]) in the region, especially for older people and persons with disabilities. While in 2022, AROPE was at 19.2% in the Capital region, it reached 26.8% in the rest of the country. Similarly, while 5.4% of the population in the Capital region suffered from severe and social material deprivation, the rate outside the region reached 6.3%. However, in 2022 the SMSD rate increased notably in the Capital region by 0.9 pp. compared to 2021, but, it decreased in Central-Western Lithuania (-0.8 pp.).

Significant disparities remain in the transportation infrastructure, which hinders

([140])Communication Harnessing talent in Europe's regions, COM(2023) 32 final.

([141])Employment rate of people aged 20-64

([142])Unemployment rate is for the age group 15 years and older

([143])Risk of poverty or social exclusion (AROPE) relates to people who are in at least one of the situations: risk of monetary poverty (AROP in the previous year), severe material and social deprivation (SMSD in the concurrent year) and very low work intensity of household (VLWI in the previous year).

([144])Severe material and social deprivation rate is a proportion of population experiencing an enforced lack of at least 7 out of 13 deprivation items (6 individual and 7 household items).

socio-economic development and quality of life. Fragmentation and a lack of coordination in the municipal public transport systems hinders mobility to workplaces and services, which lowers the likelihood to attract investment in the areas outside the major cities. In the Capital region, 81% of the population living in a radius of 120 km can be reached in less than 90 minutes by car ([145]). This ratio drops to less than 68% (national average) in Central-Western Lithuania, reaching a low at 47% in Šiauliai county.

Significant regional disparities emerge when breaking down statistics by the degree of urbanisation ([146]). In 2022, the employment rate in cities was, on average, as high as 83.7% while it was much lower in towns and suburbs, and in rural areas (at 74.9% and 75.1%). The unemployment rate was, on average, as low as 4.6% while it is much higher in towns and suburbs, and in rural areas (at 6.8% and 7.4%). Highly skilled people tend to be concentrated in cities in Lithuania. While 62% of people in cities are tertiary educated, this percentage drops to 34-35% in towns and suburbs and rural areas (2022).

Investment and subnational reform needs ahead

Cohesion policy investments in Lithuania support the country's overall competitiveness and growth, green transition, social inclusion and reducing regional disparities. The investment priorities agreed in the cohesion policy programmes remain relevant.

It would be beneficial if Lithuania speeds up the implementation of the programme, which substantial part (EUR 1.2 bn or one fifth of the total programme EU allocations) is dedicated to the integrated and place-based development leaving it to the municipalities to define the type of interventions needed to best meet their development needs and potential. These investments could play an important role to reduce economic and social disparities and ensure more balanced and polycentric development of the country.

Boosting research and innovation, accelerating digitalisation, promoting competitiveness and productivity of SMEs remains one of the key investment priorities in Lithuania, in particular eliminating the regional innovation divide between the two regions, as the Capital region is a strong innovator while the region of Central-Western Lithuania is an emerging innovator ([147]). Therefore, accelerating SME growth, increasing productivity and development of start-ups in Central-Western Lithuania should be strengthened to improve the region's innovation ecosystem.

Lithuania's progress in reducing energy use has been slow due to a high proportion of unrenovated building stock (88%). The situation is particularly acute in the major cities of Vilnius and Kaunas ([148]), and due to the high energy intensity of Lithuanian industry. Major investment needs remain in energy efficiency measures, increasing the share of renewable energy sources in total energy consumption, deployment of smart electricity technologies and solutions in energy grids. Lithuania should speed up the implementation of the Just Transition Fund investments programmed to Kaunas, Telsiai and Siauliai counties facing serious challenges from the industrial transition process. Lithuania could benefit from facilitating investments in net-zero technologies manufacturing, as well as from the opportunities of the Strategic Technologies for Europe Platform initiative to boost investments in critical technologies to support industry transformation.

Skills shortages and mismatch are among the obstacles preventing businesses from expanding knowledge-based activities throughout the country. This is particularly the case in Central-Western Lithuania due to the

([145])DG REGIO calculations based on the Eurostat population data and TomTom data on the road network

([146])The Degree of urbanisation (DEGURBA) is a classification that indicates the character of an area, based on population grid data and Local Administrative Units (LAU) boundaries. It classifies LAUs into Cities (densely populated areas); Towns and suburbs (intermediate density areas) and Rural areas (thinly populated areas).

([147])According to the Regional Competitiveness Index (RCI) 2022, the two regions differ in terms of competitiveness: RCI in the capital is above the EU average (114) while it is below in Central-Western Lithuania (89).

([148])https://renomap.apva.lt/map.

region's risk of falling into a talent development trap. Therefore, investing in upskilling, reskilling and job-to-job transitions, improving the quality of education, in particular in general and vocational education, and adult learning remains a major investment priority in the years to come.

Life expectancy at birth remains below the EU average, at around 75 years for the whole country. However, it differs among the two regions - lower in Central-Western Lithuania (74 years) and slightly higher in the Capital region (76 years) ([149]). In order to increase life expectancy in the country, primary care should be strengthened by increasing the range of services provided by the primary healthcare teams, expanding their capacity including in integrated services. The difference in health outcomes among the regions are also exacerbated by an uneven distribution of health professionals. Investments from cohesion policy funds into the training of professionals and the initiatives aimed at addressing the shortage of healthcare professionals in Central-Western Lithuania remains key to addressing and ensuring the supply of health professionals in the region.

However, the long-term sustainable regional development cannot be achieved relying solely on the EU funding. Currently, Lithuanian municipalities raise comparatively few own financial resources to fund public investment. Instead, they heavily rely on EU funding and national assistance in mobilising resources. Local governments only account for 33% of public investment in Lithuania while on average subnational governments account for 46% of public investment in the OECD.

The recently adopted amendments to the Constitutional Law on the Implementation of the Fiscal Treaty will provide municipalities wider opportunities to borrow for securing national contributions when implementing projects financed by the EU. This is a positive development in improving access to the finance needed to benefit from the EU funding. However, it is too early to assess if municipalities and the banking sector will use the new law. Other more innovative financing measures for public investments, like financial instruments, civic crowdfunding and other recommendations mentioned in the OECD study ([150]) could be considered, combined with strengthening administrative capacity and strategic planning of municipal services to develop and implement qualitative investment projects.

([149])https://osp.stat.gov.lt/statistiniu-rodikliu-analize?hash=ada0ad7d-4739-4988-acb8-33b7f012f1ae#/

([150])OECD, Raising Local Public Investments in Lithuania, 2021.

The Lithuanian banking sector is relatively small compared with other EU countries and is exposed to concentration and spillover risks due to its integration in the region. At the end of Q3-2023 banks' assets were equivalent to 87.2% of GDP. The two largest banking groups, Swedbank and SEB, are owned by their parent banks in Sweden. The Lithuanian government has no stake in the banking sector. Lithuania's banking sector remains one of the most concentrated in the EU, which implies a high dependency of the sector on individual banks. The parent companies of the two largest banks also serve the housing market in Sweden, so developments in Sweden may also impact their Lithuanian business.

Most performance indicators for banks operating in Lithuania are among the best in the EU. Banks operating in Lithuania are characterised by good loan quality, high capital and high liquidity buffers. This makes them resilient to potential shocks. The current climate of rising interest rates is resulting in exceptionally high bank profits. The current profitability of Lithuanian banks is mostly driven by a strong increase in interest margins as a result of rising key interest rates. Given the predominantly variable-rate loan portfolio of Lithuanian banks, this has quickly fed through to banks' net interest income, as deposit rates have adjusted more slowly. Net interest income as a share of total income reached a record high of 89.2% at the end of Q3-2023. In addition, credit institutions also earn significant returns from their large liquidity reserves held at the central bank. Moreover, the cost-to-income ratio for banks operating in Lithuania, which historically is one of the lowest in the EU, has decreased even further in a significant fall from 51.4% in 2022 to 35.9% in Q3-2023. At the end of Q3-2023, return on equity was 22.9% vs 9.9% in the EU, and return on assets was 1.3% vs 0.5% in the EU. With a liquidity-coverage ratio of 433.9% at the end of Q3-2023 the banking sector remains highly liquid. At 20%, the capital adequacy ratio remains well above the required minimum. As the health of companies and households improved over 2023, the share of non-performing loans in banks fell to its lowest level since 2008 at the end of Q3-2023 (0.7%). A very low loan-to-deposit ratio of 63.6% in Q3-2023 reflects the historically high amount of deposits held with credit institutions. Thanks to the strong and stable domestic customer-deposit base (83% of total funding) credit institutions do not need to draw additional funding from financial markets. This mitigates their exposure to possible global financial stress and capital flight in times of market volatility. It also limits their reliance on cross-border parent banking groups.

Given the high profitability of the banking system, the authorities have introduced a temporary windfall levy on banks. The newly introduced levy will amount to 60% of banks' net interest income earned in 2023 and 2024 that exceeds the 4-year average net interest income by more than 50%. As most banks are profitable and their profits are growing, Lithuania's central bank also decided at the end of 2022 to build up additional capital buffers for credit institutions, and raised the CCyB from 0% to 1%, effective from 1 October 2023. High levels of capital and liquidity will help banks to withstand potential economic difficulties and losses if uncertainty and interest rates remain high and the economic outlook remains weak.

Lithuanian banks have significant exposures to business loans secured by commercial real estate. Banks account for almost 90% of the financial sector's total exposure to commercial real estate in Lithuania. Although mortgages still account for the largest share of bank assets, the share of commercial real estate loans as a proportion of total bank loans was 23% in Q2-2023, according to the European Banking Authority's Risk Dashboard. 61% of all loans to non-financial corporations are for commercial real estate and nearly 70% of all business loans are collateralised with commercial real estate. In the future, variable interest rate loans, which make up more than 50% of commercial real estate loans, will result in higher interest charges. The latter will negatively affect both borrowers' ability to service debt and banks' asset quality, if they are not hedged by borrowers. In case commercial real estate prices decrease, the value of banks' collateral will also go. This means higher loan-to-value ratios, which may force banks to increase their provisions to cover credit risk. Although large capital buffers and profitability are able to absorb potential losses from a likely deterioration in loan performance, it is crucial that banks also have robust credit-risk-management frameworks in place, including frameworks to: (i) identify and classify distressed borrowers at an early stage;

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

	2017	2018	2019	2020	2021	2022	2023	EU	Median
Total assets of the banking sector (% of GDP)	67.5	66.1	65.7	79.4	78.6	85.2	87.2	257.0	184.6
Share (total assets) of the five largest banks (%)	90.1	90.9	90.4	91.8	89.8	90.0	-	-	69.6
Share (total assets) of domestic credit institutions (%)[1]	8.4	8.9	9.5	9.7	11.6	25.5	28.0	-	62.9
NFC credit growth (year-on-year % change)	5.4	5.1	-0.7	-14.0	11.2	18.6	4.9	-	2.4
HH credit growth (year-on-year % change)	7.6	8.6	7.1	6.1	10.4	11.9	7.8	-	1.4
Financial soundness indicators:[1]									
- non-performing loans (% of total loans)	3.2	2.6	1.7	2.2	1.2	0.9	0.7	1.8	1.8
- capital adequacy ratio (%)	19.1	18.6	19.9	21.9	23.5	20.4	20.0	19.6	20.1
- return on equity (%)[2]	9.1	12.3	14.5	10.0	10.4	13.5	22.9	9.9	13.2
Cost-to-income ratio (%)[1]	48.9	44.9	47.0	48.6	60.3	51.4	35.9	52.8	44.9
Loan-to-deposit ratio (%)[1]	78.8	79.5	77.2	63.3	61.8	59.2	63.6	93.3	80.2
Central bank liquidity as % of liabilities	1.2	0.7	0.2	0.5	4.1	3.1	0.9	-	0.7
Private sector debt (% of GDP)	56.2	56.1	55.2	54.3	53.6	51.4	-	133.0	118.4
Long-term interest rate spread versus Bund (basis points)	-0.8	-8.7	56.3	73.4	53.4	-52.9	44.6	107.7	104.2
Market funding ratio (%)	18.0	21.7	22.3	36.7	36.2	33.1	-	50.8	39.8
Green bonds outstanding to all bonds (%)[3]	-	-	-	3.3	3.2	3.1	3.0	4.0	2.7

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

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

and (ii) mitigate any vulnerabilities in the commercial real estate market.

The tighter lending environment is cooling down the residential and commercial real estate market, after both expanded rapidly following the pandemic. From 2010 to end-2023, house prices in Lithuania increased more than 158% – the third highest rate in the EU during this period. In October 2022, the annual growth rate of bank lending for house purchase reached 12.6%, the highest level since the financial crisis. With higher borrowing costs and weakening economic activity, the pace of lending has gradually declined since then, leading to fewer housing sales. The number of house sales already started to decline in the spring of 2022, and by the beginning of 2023 was at its lowest level in the previous 5 years. However, the slump in transactions has not yet translated into falling prices, although the nominal annual increase in residential property prices has slowed down to 10.4% as of October 2023 from an average of 19% in 2022. Similarly, the commercial real estate market has now entered a period of fewer transactions, but there is no sign yet of a broad downturn, with prices holding up relatively well for now. However, the profitability of commercial real estate investors is adversely affected by lagging rent growth. Higher debt-servicing and refinancing costs also pose challenges, most notably for market participants with short-term liabilities and exposures to the retail segment. On the other hand, rental income flows are positively affected by low vacancy rates, and commercial real estate companies have accumulated financial reserves which are helping them to service their loans on time.

Competition from new entrants using financial technology has intensified in recent years for the incumbent players in the financial sector. Such competitive forces are mostly evident in payment services and retail banking. After an exponential expansion since 2014, the fintech sector is now consolidating, with around 280 such companies currently operating in Lithuania. For example, Revolut started as an innovative Lithuanian fintech company, and received a Lithuanian banking licence in 2019. It is now the third biggest bank in Lithuania, with 18% of total banking-sector assets. Since 1 January 2024, Revolut has been supervised by the EU's Single Supervisory Mechanism. With an online banking model, it relies on non-resident EU depositors. Changing consumer habits and the growing popularity of financial technologies have fuelled banking-sector digitalisation and created a strong driver for increased technology adoption by incumbents. The digital transition also brings new challenges for anti-money laundering supervision. In this respect, the authorities have already taken action to increase supervisory resources and strengthen the regulatory framework including for providers of virtual-asset services.

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

Lithuania's revenues from labour and capital taxes are relatively low. Table A19.1 shows that Lithuania's tax revenues as a percentage of GDP remained considerably below the EU aggregate in 2022, falling by 0.3 pps compared with 2021. Lithuania's revenues from labour and capital taxes were significantly lower as a percentage of GDP than the EU aggregate. Revenues from consumption taxes and environmental taxes were close to the EU aggregate as a share of GDP but higher as a share of total taxation (see Graph A19.1).

There is scope for increased use of the income, property and environmental tax bases. The income of the self-employed is taxed comparatively lightly. Revenues from recurrent property taxes, which are among the taxes least detrimental to growth, are currently very low. Environmental taxes could be more based on the application of the 'polluter pays' principle. This includes scope to expand waste disposal taxes (including incineration) and implement taxes on NOx emissions, fertilisers and pesticides.

Lithuania has committed itself to a range of tax reforms as part of its Recovery and Resilience Plan (RRP). The commitments include broadening the tax base with sources less detrimental to economic growth and abolishing inefficient or environmentally unfriendly tax exemptions and special tax regimes (see also Annex 6). The reforms are expected to make the tax system simpler, more transparent and fairer, and to create a more adequate and sustainable revenue base. They should also address the highly differentiated tax treatment of different income sources and reduce incentives for tax arbitrage. The adopted measures include a gradual increase of excise duties and the introduction of a CO_2 tax component that will gradually increase budget revenues, with the yield set to reach 0.6% of GDP by 2028. However, the adoption of other key elements of the tax reform package is currently delayed and the outcome is uncertain. In addition, good progress has been made in some areas, for example with measures to reduce informality and improve tax compliance.

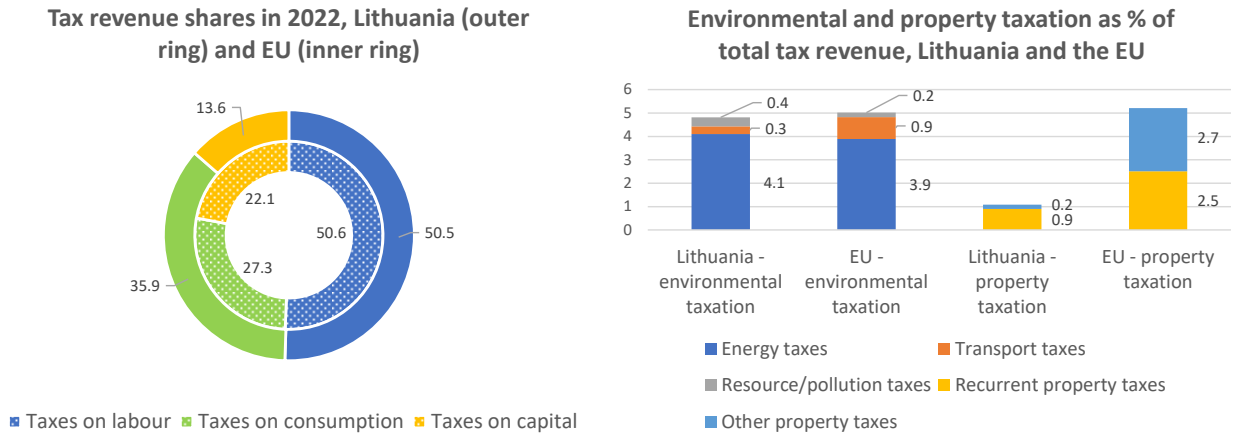
Lithuania has reduced the labour tax wedge in recent years, especially at lower earnings levels. Graph A19.2 shows that the labour tax wedge for Lithuania in 2023 was lower than the EU average for single people at the average wage as well as at wage levels both below and above

Table A19.1:**Taxation indicators**

		Lithuania					EU-27				
		2010	2020	2021	2022	2023	2010	2020	2021	2022	2023
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	28.3	31.2	31.9	31.6		37.9	40.0	40.4	40.2	
	Labour taxes (as % of GDP)	14.1	16.0	16.0	15.9		20.0	21.3	20.7	20.3	
	Consumption taxes (as % of GDP)	11.2	11.6	11.7	11.3		10.8	10.7	11.2	11.0	
	Capital taxes (as % of GDP)	2.9	3.7	4.1	4.3		7.1	8.0	8.6	8.9	
	Of which, on income of corporations (as % of GDP)	1.0	1.7	2.1	2.3		2.4	2.5	3.0	3.4	
	Total property taxes (as % of GDP)	0.7	0.3	0.3	0.3		1.9	2.3	2.2	2.1	
	Recurrent taxes on immovable property (as % of GDP)	0.4	0.3	0.3	0.3		1.1	1.2	1.1	1.0	
	Environmental taxes as % of GDP	1.8	1.9	1.8	1.5		2.4	2.2	2.3	2.0	
Progressivity & fairness	Tax wedge at 50% of average wage (Single person) (*)	36.9	29.9	31.0	29.7	29.1	33.9	31.7	32.1	31.8	31.7
	Tax wedge at 100% of average wage (Single person) (*)	40.6	37.1	37.6	38.4	38.9	41.0	40.1	39.9	40.0	40.2
	Corporate income tax - effective average tax rates (1) (*)		13.7	13.7	13.7			19.5	19.0	19.0	
	Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*)	6.2	6.8	7.4	7.7		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 %) (*)		12.1	8.2				40.9	35.5		
	VAT Gap (% of VAT total tax liability, VTTL)(**)	29.6	18.7	14.5	13.5			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

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

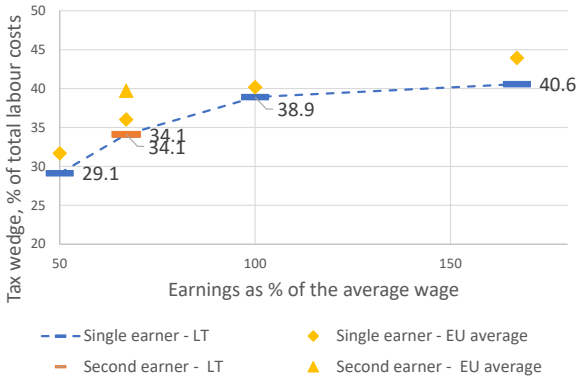


Source: European Commission

the average wage. Second earners at a wage level of 67% of the average wage, whose spouses earn the average wage, are subject to a tax wedge that is lower than the EU average (and equal to the tax wedge of single persons at the same wage level). In recent years, the ability of the Lithuanian tax and benefit system to reduce income inequality (as measured by its ability to reduce the GINI coefficient) has been increasing, although it was still slightly below the EU average in 2022 (see Table A19.1). As part of its RRP, Lithuania has published an OECD-prepared assessment of the effectiveness of its tax-benefit system in preventing poverty and reducing inequality. It has also committed to following this up with relevant reforms to the personal income taxation and social security systems. Changes to the tax-exempt amount of personal income which come into effect in 2024 will increase net earnings, especially for people with comparatively low earnings, which is likely to make the personal income tax system more progressive.

Lithuania is making progress in increasing tax compliance and the effectiveness of its tax administration. Through its RRP, Lithuania is taking a range of actions to strengthen tax administration. This includes digitalisation projects; improving IT tools and automatic collection of data on transactions; and training to improve tax and customs specialists' competences. Measures to limit cash transactions, regulate the sale of used vehicles and track alcohol sales should also help to reduce the size of the shadow economy. Tax arrears fell back by 3.9 pps in 2021 to 8.2% of total net revenue, after a sharp increase in 2020. This is significantly below the EU-27 average of 35.5%, although that average is distorted by very large values in a few Member States. The VAT gap (the gap between revenues actually collected and the theoretical tax liability) remained relatively wide in Lithuania at 13.5% in 2022 (more than double the 2021 EU average of 5.4%), but it has decreased sharply in recent years and is now less than half the 2010 level. VAT compliance appears to have improved most in the sectors where it was previously weakest.

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



A 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

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)	8.2	-0.4	3.0	6.3	2.4	-0.3	2.0	2.9
Potential growth (y-o-y)	.	1.8	2.8	4.1	3.6	2.8	2.5	2.3
Private consumption (y-o-y)	11.0	-2.2	2.6	8.1	2.0	-1.0	3.2	4.5
Public consumption (y-o-y)	2.9	-0.7	-0.2	1.2	0.4	0.2	0.7	-0.4
Gross fixed capital formation (y-o-y)	17.2	-6.8	5.6	9.4	3.6	10.6	3.8	4.4
Exports of goods and services (y-o-y)	10.6	7.3	5.0	17.0	12.2	-3.3	2.2	4.8
Imports of goods and services (y-o-y)	15.7	2.1	4.2	19.9	12.4	-4.9	3.5	5.9
Contribution to GDP growth:								
Domestic demand (y-o-y)	11.8	-3.5	2.7	6.9	2.0	1.7	2.9	3.6
Inventories (y-o-y)	0.1	-0.1	-0.4	-0.4	0.0	-3.5	0.0	0.0
Net exports (y-o-y)	-3.7	2.8	0.6	-0.3	0.4	1.5	-0.8	-0.7
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	.	-0.7	0.3	1.2	1.4	1.0	0.6	0.2
Capital accumulation (y-o-y)	.	1.1	1.4	1.8	2.0	2.2	2.1	2.0
Total factor productivity (y-o-y)	.	1.4	1.1	1.2	0.2	-0.3	-0.1	0.1
Output gap	4.9	-4.5	1.6	2.0	0.9	-2.2	-2.7	-2.1
Unemployment rate	7.3	13.2	8.0	7.1	6.0	6.9	7.0	6.9
GDP deflator (y-o-y)	6.2	3.3	2.1	6.5	16.6	7.1	2.2	1.9
Harmonised index of consumer prices (HICP, y-o-y)	3.3	4.7	1.4	4.6	18.9	8.7	1.9	1.8
HICP excluding energy and unprocessed food (y-o-y)	2.4	3.5	2.1	3.2	13.6	10.7	3.1	2.2
Nominal compensation per employee (y-o-y)	15.2	2.6	7.3	11.9	11.4	10.2	8.2	6.8
Labour productivity (real, hours worked, y-o-y)	6.1	2.5	2.8	3.4	-2.7	-2.8	1.3	2.7
Unit labour costs (ULC, whole economy, y-o-y)	6.8	0.6	5.0	6.5	14.2	12.2	6.3	3.6
Real unit labour costs (y-o-y)	0.6	-2.7	2.8	0.0	-2.0	4.8	3.9	1.7
Real effective exchange rate (ULC, y-o-y)	4.4	-1.5	3.2	6.4	9.6	4.3	1.3	1.1
Real effective exchange rate (HICP, y-o-y)	1.1	1.9	0.8	1.8	7.7	3.5	.	.
Net savings rate of households (net saving as percentage of net disposable income)	-0.9	0.1	-0.5	7.6	1.2	.	.	.
Private credit flow, consolidated (% of GDP)	16.6	-1.3	2.7	5.8	6.8	.	.	.
Private sector debt, consolidated (% of GDP)	56.9	72.1	55.4	53.6	51.4	.	.	.
of which household debt, consolidated (% of GDP)	17.4	28.0	22.7	23.4	21.8	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	39.4	44.0	32.7	30.2	29.6	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (1)	0.7	11.9	3.4	0.7	0.5	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	-8.0	6.1	5.9	-0.7	-1.7	3.4	1.9	0.9
Corporations, gross operating surplus (% of GDP)	33.4	35.6	33.8	31.2	33.1	29.9	27.9	27.0
Households, net lending (+) or net borrowing (-) (% of GDP)	-0.3	0.1	-1.6	4.5	-1.6	-0.5	1.8	2.7
Deflated house price index (y-o-y)	18.1	-9.9	5.1	10.9	0.4	1.1	.	.
Residential investment (% of GDP)	2.5	2.5	2.8	3.1	3.6	3.7	.	.
Current account balance (% of GDP), balance of payments	-10.3	-3.2	1.7	1.1	-5.5	1.9	0.3	-0.3
Trade balance (% of GDP), balance of payments	-9.4	-3.5	2.9	4.5	-2.0	3.8	.	.
Terms of trade of goods and services (y-o-y)	1.8	-0.3	0.9	-5.2	-7.6	5.8	0.3	0.3
Capital account balance (% of GDP)	1.3	3.3	1.9	1.4	1.5	2.0	.	.
Net international investment position (% of GDP)	-47.0	-56.5	-34.3	-7.4	-7.0	1.3	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2)	-15.4	-25.6	-4.6	22.1	21.2	27.9	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (2)	51.2	71.6	69.5	69.2	59.1	60.2	.	.
Export performance vs. advanced countries (% change over 5 years)	.	.	12.5	42.2	33.2	23.9	.	.
Export market share, goods and services (y-o-y)	6.5	4.4	2.7	2.7	3.2	-4.4	-1.2	1.1
Net FDI flows (% of GDP)	-3.9	-1.1	-1.1	-2.2	-2.5	-1.1	.	.
General government balance (% of GDP)	-0.7	-6.2	-0.8	-1.1	-0.6	-0.8	-1.8	-2.2
Structural budget balance (% of GDP)	.	.	-1.6	-2.0	-1.1	0.1	-0.8	-1.4
General government gross debt (% of GDP)	17.4	31.1	39.7	43.4	38.1	38.3	38.9	41.6

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

This annex assesses fiscal sustainability risks for Lithuania 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) ([151]). Government gross financing needs are estimated at 7% of GDP on average in 2024-2025 (Table A21.1, Table 1). Financial markets' perceptions of sovereign risk are positive, as confirmed by the ratings of the main agencies.

2 – Medium-term fiscal sustainability risks appear medium.

The baseline DSA shows that the government debt ratio is projected to remain at a moderate level over the medium term, with debt rising to 52% of GDP in 2034 (Graph 1, Table 1) ([152]). The assumed structural primary balance (0.0% of GDP prior to changes in ageing costs) contributes to these developments. Compared to historical data since 1980, the deficit appears relatively plausible. Indeed, most of past fiscal positions were more stringent than the one assumed in the baseline (Table A21.2) ([153]). The debt dynamics benefit from a small favourable snowball effect in 2025-2034.

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 -1.1% of GDP) the debt ratio would be about 9 pps. higher than under the baseline 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 about 4 pps. of GDP higher in 2034 than under the baseline. Under the *financial stress* scenario (i.e. interest rates temporarily increase by 1 pp. compared with the baseline) the government debt ratio would be similar in 2034. Under the *lower structural primary balance* scenario (i.e. the projected deterioration in the SPB in 2024 is increased by half), the debt-to-GDP ratio would be about 4 pps. higher.

The stochastic projections indicate low risk, pointing to limited sensitivity of the baseline projections to plausible unforeseen events ([154]). These stochastic simulations indicate a 66% probability that the debt ratio will be higher in 2028 than in 2023, implying low risks given the current debt level. There is, however, some uncertainty surrounding the baseline debt projections, as measured by the difference between the 10th and 90th debt distribution percentiles, at 31 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 stabilise debt (S2 indicator) and bring it to 60% of GDP (S1 indicator) in the long term ([155]). This

([151]) 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.

([152]) The assumptions underlying the Commission's 'no-fiscal policy change' baseline include in particular: (i) a structural primary balance, before 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 1.6%); (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).

([153]) 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.

([154]) 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.

([155]) The S2 fiscal sustainability indicator measures the permanent SPB adjustment in 2025 that would be required

assessment is mostly driven by a projected increase in age-related spending.

The S2 indicator points to medium fiscal sustainability risks. The indicator shows that, relative to the baseline, the SPB would need to improve by 3.9 pps. of GDP in 2025 to ensure debt stabilisation over the long term. This reflects the projected increase in ageing-related spending (contribution of 3.6 pps.), which is driven by public pension expenditure (2.5 pps.) and, to a lesser extent, health care and long-term care spending (0.7 pp. each) (Table A21.1, Table 2).

The S1 indicator also points to medium fiscal sustainability risks. The indicator shows that preventing government debt from exceeding 60% of GDP by 2070 would require an improvement of the fiscal position by 2.8 pps. of GDP in 2025. This effort is mostly due to the projected rise in ageing costs (2.3 pps.) (Table A21.1, Table 2).

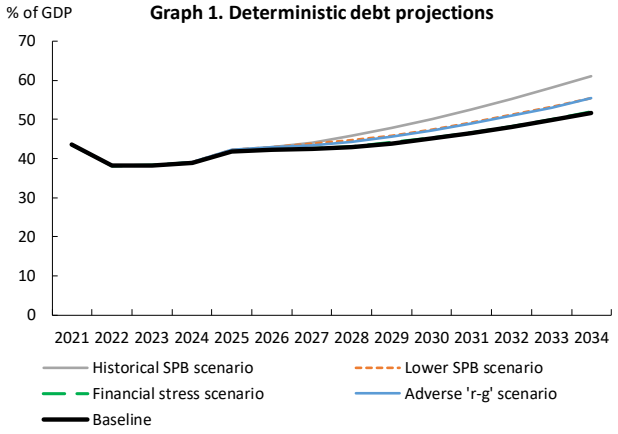
4 – Finally, several additional risk factors need to be considered in the assessment. On the one hand, risk-increasing factors include the recent increase in interest rates and the relatively large share of public debt held by non-residents. On the other hand, risk-mitigating factors include the fact that debt is fully denominated in euro and the low share of short-term debt in total debt.

to stabilise public debt over an infinite horizon. It is complemented by the S1 indicator, which measures the permanent SPB adjustment in 2025 to bring the debt ratio to 60% by 2070. The impact of the drivers of S1 and S2 may differ due to the infinite horizon component considered in the S2 indicator. 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 – Lithuania**

Table 1. Baseline debt projections	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Gross debt ratio (% of GDP)	**43.4**	**38.1**	**38.3**	**38.9**	**41.7**	**42.1**	**42.4**	**42.9**	**43.8**	**45.0**	**46.4**	**48.0**	**49.7**	**51.6**
Changes in the ratio	-2.8	-5.4	0.2	0.6	2.8	0.4	0.2	0.5	1.0	1.2	1.4	1.6	1.7	1.9
of which														
Primary deficit	0.7	0.2	0.2	1.1	1.3	1.3	1.0	0.9	1.1	1.3	1.4	1.6	1.8	2.0
Snowball effect	-5.0	-6.7	-1.8	-0.9	-0.8	-0.9	-0.7	-0.4	-0.1	-0.1	-0.1	0.0	-0.1	-0.1
Stock-flow adjustments	1.5	1.1	1.8	0.4	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross financing needs (% of GDP)	6.0	5.1	5.0	5.9	8.2	6.2	6.0	6.0	6.2	6.5	6.8	7.1	7.4	7.8

Graph 1. Deterministic debt projections



Graph 2. Stochastic debt projections 2024-2028

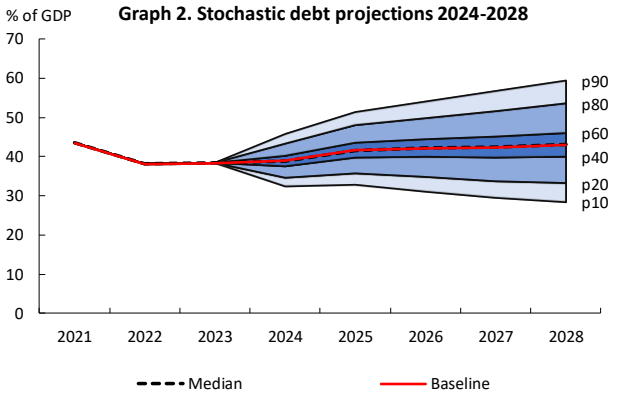


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

		S1	**S2**
Overall index (pps. of GDP)		**2.8**	**3.9**
of which			
Initial budgetary position		0.2	0.3
Debt requirement		-0.4	
Ageing costs		3.0	3.6
of which	*Pensions*	2.3	2.5
	Health care	0.5	0.7
	Long-term care	0.5	0.7
	Education	-0.3	-0.3

Source: Commission services.

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

Short term	**Medium term - Debt sustainability analysis (DSA)**								**Long term**		
Overall (S0)	**Overall**		**Deterministic scenarios**					**Stochastic projections**	**S2**	**S1**	**Overa (S1 + S**
			Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress				
LOW	**MEDIUM**	Overall	**MEDIUM**	**MEDIUM**	**MEDIUM**	**MEDIUM**	**MEDIUM**	**LOW**	**MEDIUM**	**MEDIUM**	**MEDIU**
		Debt level (2034), % GDP	51.6	61.0	55.5	55.4	51.9				
		Debt peak year	2034	2034	2034	2034	2034				
		Fiscal consolidation space	30%	51%	41%	30%	30%				
		Probability of debt ratio exceeding in 2028 its 2023 level						66%			
		Difference between 90th and 10th percentiles (pps. GDP)						31.0			

(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 n 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 coun 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 measure 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 lev (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 increas uncertainty. (For further details on the Commission's multidimensional approach, see the 2023 Debt Sustainability Monitor)

Source: Commission services.