EUROPEAN
COMMISSION

Brussels, 23.5.2022
SWD(2022) 617 final

COMMISSION STAFF WORKING DOCUMENT

2022 Country Report - Lithuania

Accompanying the document

Recommendation for a COUNCIL RECOMMENDATION

on the 2022 National Reform Programme of Lithuania and delivering a Council opinion on the 2022 Stability Programme of Lithuania

{COM(2022) 617 final} - {SWD(2022) 640 final}

European Commission

Lithuania

2022 Country Report

Solid recovery hit by economic fallout from Russian invasion of Ukraine

Lithuania's economy had seen several years of strong and balanced growth performance before the COVID-19 crisis. Rising investment and growth of household disposable income resulted in decade-long economic expansion with average real GDP growth of 3.6%. At the same time, labour productivity rose and the financial situation improved for households and companies, keeping the economy on a strong and balanced growth path.

Lithuania's economy withstood the pandemic shock with only limited losses and was gradually returning to the pre-pandemic growth path. In 2020, Lithuania's real GDP contracted only slightly due to its relatively low dependence on tourism ([1]) and its specialisation in manufacturing products for which demand was more resilient. In addition, economic losses were minimised by the strong financial standing of households and companies and swift government support. The economic recovery has been primarily led by the industries dealing in exportable goods, with manufacturing activity growing particularly strongly despite the emergence of supply-side bottlenecks. The launching of new products, such as new pharmaceuticals, enabled Lithuania to increase its export market share during the pandemic. Economic activity was also stimulated by sizeable rise in household income during the crisis partly due to implemented fiscal measures ([2]). Following the slight contraction in 2020, Lithuania's real GDP increased by 5.0% in 2021 (see Annex 18). To ensure Lithuania's income keeps growing towards the EU average, policies will be needed that boost productivity through, among others, research and innovation, digital skills and digitalisation and the uptake of advanced technologies by Lithuanian companies, especially small and medium-sized enterprises and start-ups. Policies to facilitate the transformation towards a green economy will also be key (see Annexes 5, 6 and 7).

Russia's invasion of Ukraine has limited direct impact on the economy but highlights the need to press ahead with reforms in the energy sector. Lithuania's export to Russia, Belarus and Ukraine is rather sizeable; however, most of it consists of re-exported goods, generating relatively low value added compared to export of local origin. Therefore, direct effects of the war and the sanctions on Russia on economic developments in Lithuania are anticipated to be limited. Real GDP is still projected to continue growing, at a rate of 1.7% in 2022 and 2.6% in 2023. This is also in part related to the significant steps taken by Lithuania in the last decade to diversify sourcing of oil and gas to decrease dependence on Russia. However, these commodities remain predominantly imported and still represent nearly three-quarters of the Lithuanian energy mix, with 73% of crude oil and 42% of gas coming from Russia in 2020. ([3]) Thus, additional measures to secure the supply in the region and shift away from fossil fuels are necessary. The Lithuanian government has already stopped importing gas from Russia. Ensuring electricity from alternative sources is more challenging. Approximately two thirds of

([1]) The Lithuanian tourism value chain (direct and spill-over effects) was responsible for less than 7% of total employment in 2019.

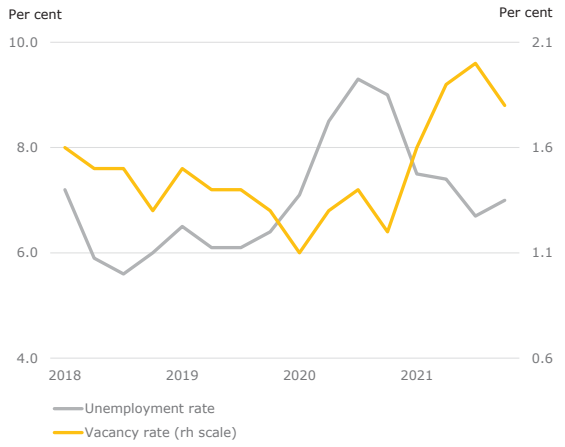
([2]) European Commission Quarterly Report on the Euro Area (QREA), Vol. 20, No. 4 (2021), Chapter I on Assessing the cushioning role of tax-benefit systems on households' income in the euro area during the COVID-19 pandemic: a microsimulation analysis.

([3]) Eurostat (2020), share of Russian imports in total imports. LT figures include intra-EU trade.

the electricity used for domestic consumption is imported, indicating a need to expand electricity production capacity in Lithuania. This could be achieved through greater use of local renewable energy sources. Further measures to improve energy efficiency would contribute to reducing energy consumption, and thus energy dependence.

The swift pick-up in economic activity in 2021 resulted in a tightening of the labour market. The unemployment rate (7.1%) has almost returned to its pre-pandemic level of 6.3%. As a result, the job vacancy rate has been rising and reached a record level of 2.0% in Q3-2021. The tightening of the labour market and persistent shortage of skilled employees is exerting upward pressure on wages. Indeed, wage growth, in annual nominal terms, has stayed close to 10% recently and exceeded labour productivity gains.

Graph 1.1: **Unemployment and vacancy rates**



Source: Eurostat

Inflation surged in Lithuania in late 2021 and early 2022 and currently is among the highest in the EU. Inflation is expected to stand at 12.5% in 2022 and 3.0% in 2023. The pick-up in inflation is mostly driven by energy prices, in part reflecting heightened geopolitical tensions. However, other consumer prices have also been rising more quickly. Recently, the prices of services, which are the most sensitive to domestic economic developments, have been growing at the fastest pace since the global financial crisis driven in part by strong and sustained rise in wages and the rebound in domestic demand. The Lithuanian authorities have taken measures to limit growth of administered prices and to support lower income households amid decelerating real disposable income growth.

Social challenges persist, with some of them exacerbated by the fallout from the pandemic

Income inequality in Lithuania remains among the highest in the EU and is reported as 'critical' in the Social Scoreboard. The Scoreboard also points to other employment and social challenges related to the implementation of the European Pillar of Social Rights. Although on a decreasing trend, the income of the richest 20% of the Lithuanian population was still over six times higher than that of the poorest 20% in 2020. Additionally, while the share of people at risk of poverty or social exclusion has been decreasing from 2016, it remains well above the EU average (24.5% in Lithuania compared to 21.9% in the EU in 2020) (see Annex 12). In particular, social and economic disparities are pronounced in the regions where regional convergence remains a challenge.

Vulnerable groups, including young people, were most affected by the pandemic. Youth unemployment, being below the EU average before the pandemic, increased sizeably in 2020 (from 11.9% in 2019 to 19.6% in 2020), exceeding the EU average, before falling to nearer its pre-pandemic level in 2021. The proportion of young people not in employment, education or training (NEET) also surged and is higher than before the crisis; however, it is still below the EU average. The pandemic highlighted the vulnerability of low skilled workers in the labour market: the unemployment rate among people not having tertiary education increased the most and by considerably more than the average in the EU. Despite the high vacancy rate, unemployment among those having upper secondary or higher-level education still

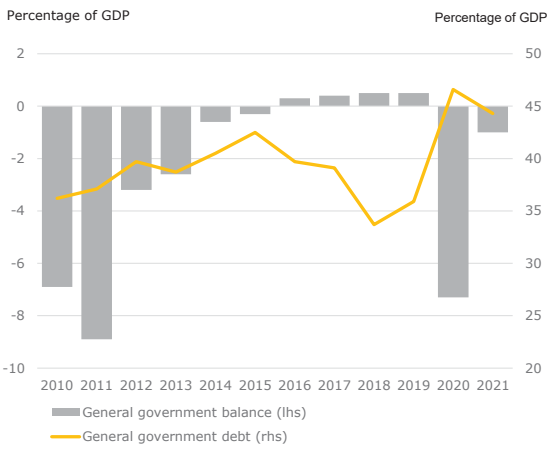
exceeds the pre-crisis level, pointing to a persistent skills mismatch. The weak learning outcomes and labour market relevance of the education system both contribute to this (see Annex 12 and 13).

Since the beginning of Russia's invasion of Ukraine, tens of thousands of displaced people from Ukraine have arrived in Lithuania. To manage the process, the Lithuanian government set up dedicated centres to register the people fleeing Ukraine, help with accommodation and catering. Procedures for employment and issuing a work permit were eased. It was also decided to provide social benefits to those people, e.g. support for accommodation, compensations for heating and other utilities, benefit for children, one-off benefit for settlement, benefit to residents housing people fleeing war in Ukraine. Access to healthcare and education is provided. Stipends will be paid to Ukrainians studying at the Lithuanian high schools. EUR 370 million were earmarked in the revised national budget 2022. The Lithuanian government also considers subsidising loans to Ukrainian businesses relocating to Lithuania. Of particular relevance to Lithuania, exceptional support is made available under the Cohesion's Action for Refugees in Europe (CARE) initiative and through additional pre-financing under the Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU) programme to urgently address reception and integration needs for those fleeing Ukraine.

Increased spending during consecutive crises is weighing on public finances

Recent consecutive crises have disrupted Lithuania's track record of general government budget surpluses. The COVID-19 pandemic triggered a considerable increase in government spending to support affected businesses and households ([4]) and fund healthcare, turning the government balance into deficit (7.3% of GDP in 2020 and 1.0% in 2021 – see Annex 18). At the same time, the government also allowed businesses to defer tax payments and increased the limit of state guarantees to be issued. Support continued in 2021, as a number of the measures were revised and extended. In 2022, additional measures are expected to consist of increased spending on healthcare, defence and measures to mitigate the impact of soaring energy prices that would further deteriorate public finances. Some of the latter measures raise concerns as to their non-targeted nature, notably subsidies to gas and electricity companies and compensations for the heat energy VAT.

Graph 1.2: **General government balance and debt**



Source: Eurostat

Some crisis-related increases in current government spending are of a lasting nature, for which corresponding revenue sources are needed. In addition to spending in response to COVID-19, the government also further increased salaries in the public sector, old-age pensions and other benefits. Although these decisions seem warranted by high rates of poverty, income inequality and price growth, the government has not yet identified corresponding revenue sources. The planned revision of the tax system could help close the gap between revenue and spending by broadening the tax base to taxes less

([4]) Lithuania received a loan of EUR 957 million from the EU to fund the short-time work schemes from the temporary Support to mitigate Unemployment Risks in an Emergency (SURE) instrument (see Annex 3).

detrimental to growth and revising tax exemptions.

Environmental challenges call for policy action

Lithuania's carbon footprint has been increasing in recent years. An ambitious plan is called for to promote the circular economy and protect biodiversity. Trends in greenhouse gas (GHG) emissions from the transport sector are particularly worrying. Emissions have increased by 50% since 2005, making transport the largest emitting sector in Lithuania. The tax system does not provide sufficient incentives to reduce pollution in the transport sector. Moreover, the use of public transport remains the lowest in the EU, requiring additional efforts to promote collective and shared transport. The circular economy rate in Lithuania is nearly three times lower than the EU average, calling for an ambitious circular economy action plan (see Annex 7). In addition, the protection of biodiversity remains weak with a high proportion of protected habitats in unfavourable status.

Towards Sustainable Development Goals

Lithuania is improving on several Sustainable Development Goal (SDG) indicators relating to environmental sustainability, but still needs to catch up. In 2015-2020, Lithuania achieved significant progress in reducing the share of the population unable to keep their home adequately warm, though the rate is still well above the EU average. Progress has also been observed for energy productivity, but it is still lower than the EU average. Lithuania is improving on SDG indicators related to fairness. Lithuania has reduced the risk of poverty or social exclusion, though still this risk remains higher than on average in the EU. The country underperforms on almost all good health and well-being indicators, though some progress has been made in standardised avoidable mortality. Lithuania performs well or is improving on SDG indicators relating to productivity. Its performance on education is progressing, though further efforts are needed to reach the EU average for participation in early childhood education and adult learning (see Annex 12) ([5]). The proportion of households with high-speed internet connections is significantly above the EU average. Lithuania's gross domestic expenditure on R&D is low but slowly improving. Lithuania is also improving on SDG indicators relating to macroeconomic stability. In recent years, the country has increased its investment share of GDP and improved the quality of its institutions, including trust in them (see Annex 1).

([5]) The indicator on adult learning participation over the previous four weeks is used in the country report, rather than the indicator on learning over the previous 12 months, as Adult Education Survey (AES) data for the 12-month indicator are only available for 2016 at the moment, while the new Labour Force Survey (LFS) indicator agreed for use in the social scoreboard and as 2030 headline target on skills will only be available in 2023.

THE RECOVERY AND RESILIENCE PLAN IS UNDERWAY

The Lithuanian recovery and resilience plan (RRP) includes an ambitious set of reforms and investments. The measures in the RRP aim to address a number of challenges facing Lithuania and recommendations issued as part of the European Semester. The objective is to boost economic recovery and growth, and bolster Lithuania's resilience and preparedness for upcoming social, economic and institutional challenges. The RRP, with a total allocation of EUR 2.2 billion (4.6% of GDP in 2019) ([6]), puts a strong focus on promoting digitalisation and the green transition, ensuring the quality and efficiency of health services, improving social protection, prioritising education and innovation and increasing the efficiency of the public sector (see Annex 2). Of the total spending allocated under the plan, 37.8% goes to supporting climate objectives and 31.5% to boosting the digital transition.

The plan tackles Lithuania's climate and environmental challenges. The relatively low share of renewable energy (25%) in the energy mix will be addressed by measures supporting the uptake of renewable energy sources, including steps to develop an offshore wind park. By the end of 2022, new electricity storage facilities are expected to become operational, which will increase energy security and autonomy. The RRP will also speed up building renovations, with renovation packages and standards, an increased supply of construction products and services, and funding. Furthermore, the RRP promotes sustainable transport by supporting the replacement of polluting road transport vehicles, improving public transport services, installing charging/refueling infrastructure for vehicles using alternative fuels, and developing an alternative fuels sector (sustainable biomethane, second generation liquid biofuels, hydrogen). The RRP includes the adoption of a circular economy action plan in 2023, setting a strategy for waste prevention and resource efficiency. The plan also supports the restoration of degraded peatlands – increasing Lithuania's greenhouse gas absorption capacity (see Annex 5).

The plan will address digital challenges by rolling out 5G, with legislative amendments enabling faster installation starting in 2022. Other technological challenges addressed include: the urban-rural broadband access divide; low levels of digital skills and lack of information and communications technology specialists; and limited digitalisation and uptake of advanced technologies across Lithuanian SMEs (see Annex 6, 8 and 15).

The plan aims to improve the resilience, quality, accessibility and efficiency of the healthcare system and address some social challenges, contributing to the implementation of the European Pillar of Social Rights. The RRP features reforms and investments to strengthen emergency care and modernise healthcare infrastructure, develop centres of expertise in infectious diseases, digitalise the health system, build capacity for advanced medical therapies, create a competence platform for healthcare professionals and a system to monitor the quality of care (see Annex 14). In its plan, Lithuania will further focus on improving social protection by reforming the guaranteed minimum income scheme, extending the coverage of unemployment social insurance and improving indexation of pensions. Two reforms, namely introduction of an accreditation scheme for social care and additional benefit for disabled and elderly single persons, have already been reported as completed by Lithuania. Investment in long-term day-care centres and upgrading the infrastructure for health services will contribute to meeting the energy efficiency

([6]) See Annex 2 for a breakdown of the implementation of the RRP.

requirements. The plan also aims to digitalise the Public Employment Service and make it more client-based, with training and entrepreneurship support focusing on the green and digital transitions (see Annex 12).

Lithuania's RRP contains key measures that aim to improve the quality and accessibility of lifelong education. Lithuania strives to improve education, including vocational education and training and adult learning by consolidating the education network, improving school infrastructure and the competences of teachers, implementing competence-based curricula, promoting work-based learning and apprenticeships, and improving digital skills. The RRP also seeks to improve higher education by changing student admission criteria and the funding model for the higher education system (see Annex 13) and provide better support for research and innovation (R&I) by consolidating existing R&I agencies and revising R&I legal framework (see Annex 9).

Lithuania's plan includes steps to improve tax compliance and broaden the tax base to sources less detrimental to growth. The plan aims to create a sustainable revenue base and increase additional redistributive capacity of the tax and benefit system by abolishing inefficient tax exemptions, re-orienting the system towards more growth-friendly and green taxation and improving tax compliance. This will help address income inequality, poverty and social exclusion (see Annex 17). To improve the way government spending is managed, the RRP is expected to boost improvements in human resource management in the public sector and support medium-term budgeting; it also includes the commitment to a first comprehensive spending review in 2023.

Box

Key deliverables under the recovery and resilience plan in 2022-2023

- Improvements in the quality and accessibility of health services
- New electricity storage facilities and circular economy action plan
- Entry into force of amendments enabling faster implementation of the 5G roadmap
- Entry into force of legislation on adult education, and vocational education and training
- Implementation of tax reforms abolishing inefficient tax exemptions and re-orienting the system towards more growth-friendly and green taxation
- Revised higher education funding and admission systems as well as renewed business R&I support framework
- Preparation for the reform of the minimum income scheme and extending coverage of unemployment social insurance.

FURTHER PRIORITIES AHEAD

Beyond the challenges addressed by the RRP, as outlined above, Lithuania faces additional challenges not sufficiently covered in the plan. Problems remain in the areas of public finances, social benefits and services, healthcare, education and skills, and environmental protection. Addressing these challenges will also help to make further progress in achieving the SDGs related to the area of health, energy, education and R&D.

Improving the quality of public finances through reforms in public procurement

Public spending needs to be more efficient so Lithuania can address social and other structural issues in a sustainable manner. On the revenue side, in 2020, the tax-to-GDP ratio was 30.8% and well below the EU average of 40.2%, while the VAT gap – the difference between expected and actual VAT revenue – although declining, was one of the highest in the EU in 2019 at 21.4% (see Annex 17). On the expenditure side, budgetary reforms are slow or have been taking more time than initially planned. Further improvements to public procurement processes and procedures would facilitate material budget savings while empowering the government to achieve key policy outcomes.

The decentralised structure of the public procurement system creates bottlenecks. First, it makes it difficult to build up procurement expertise among officials, possibly contributing to an over-reliance on the price criterion (Lithuania ranks lowest among EU countries on this measure), rather than balancing price and quality considerations (see Annex 11). Second, it means that many tenders are small, thus often attracting few or no participants. Focusing on co-operative procurement is the key to addressing these structural issues. It is estimated that centralising public procurement would improve the functioning of the public procurement system and save 10% of administrative costs and 10% on procurement costs ([7]).

In September 2021, the Lithuanian Parliament endorsed the proposal to centralise public procurement and improve co-operation at the municipality level ([8]). This would enable the smallest public buying entities to achieve economies of scale. It would also introduce an accreditation system to raise the qualification levels of public procurement officials. A challenge here will be to set up a comprehensive training system.

Fostering co-operative public procurement at the central government level and the creation of competence centres is currently not covered by the public procurement reform. Implementing this reform at ministry and government agency level would make it possible for them to create best practices and set up competence centres that would help coordinate the public procurement reform at all levels (central government and municipality level).

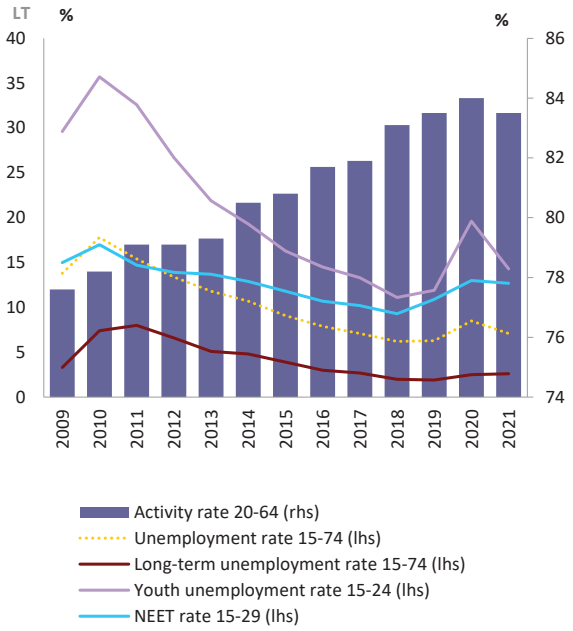
([7]) https://e-seimas.lrs.lt/portal/legalAct/lt/TAK/d3c9fb209b5011eaa51db668f0092944?jfwid=aytc3ihqr

([8]) https://e-tar.lt/portal/lt/legalAct/b9a45bf02d7611ec992fe4cdfceb5666 and https://www.lrp.lt/lt/ziniasklaidos-centras/naujienos/36796

Addressing long-standing social challenges

The adequacy of the social safety net remains relatively weak, as evidenced under the European Pillar of Social Rights. Public expenditure on social protection is persistently low while the rates of people at risk of poverty or social exclusion remain among the highest in the EU (see Annex 12), especially for vulnerable groups such as older people (65+), single parents with dependent children and persons with disabilities. In 2020, both the youth unemployment and the rate of young people neither in employment nor in education or training (NEET) deteriorated but then partially recovered in 2021 (see Graph 3.1). In 2020, almost a quarter of the population were not able to heat their homes properly and there are concerns that rising energy costs may further aggravate the poverty (see Annex 6).

Graph 3.1: **Participation, unemployment and NEET rates**



NEET: young people neither in employment nor in education or training
Source: Eurostat

The planning, organisation and delivery of social services and the awarding of benefits are fragmented and inefficient. Municipalities do not involve local communities and non-governmental organisations enough in annual social services planning, which leads to gaps in knowledge about people's real needs. Lack of collaboration between various ministries and other public bodies (including the Public Employment Service) hinders the provision of social and other services, such as health, education, and employment services, in an integrated way. In particular, the current system of social services is insufficiently oriented towards the provision of services for the unemployed ([9]). In addition, the authorities responsible for providing social services lack information on the quality and effectiveness of the services, which hinders the process of evidence-based decisions. Tackling all these challenges is key for Lithuania to contribute to achieving the 2030 EU headline targets on employment, skills and poverty reduction.

Access to social housing is limited and an overall strategy on how to tackle chronic shortages and increase the quality is currently missing. The social housing stock in Lithuania is small – less than 2% of total housing stock ([10]) – and the quality of social housing is low. Lithuania's spending on social housing was a meagre EUR 10.31 per inhabitant (in constant 2010 prices), compared to an EU average of EUR 101.58 in 2019 ([11]). In 2020, there were more than 10 000 families (around 22 000 people) waiting for social housing with the waiting time ranging from 3 to 12 years depending on the municipality. The steady number of families on a low income unable to obtain housing without assistance, as well as insufficient financing and action by municipalities, both contribute to the persisting scarcity of social housing. Developing a strategic vision to identify the

([9]) Strata (2020). Human capital in Lithuania. Review by government strategic analysis centre Strata: https://strata.gov.lt/images/tyrimai/2020-metai/zmogiskojo-kapitalo-politika/20200511-zmogiskasis-kapitalas-Lietuvoje.pdf#page=28&zoom=100,0,0

([10]) OECD policy brief (2020). Social housing: A key part of past and future housing policy: https://www.oecd.org/social/social-housing-policy-brief-2020.pdf

([11]) https://ec.europa.eu/eurostat/databrowser/view/SPR_EXP_FHO__custom_2036156/default/table?lang=en

necessary legislative changes and make best use of investments planned under the 2021-2027 EU Cohesion policy funds would help the country address these issues.

Strengthening primary and preventive care

The root cause of most challenges in Lithuania's health system is the suboptimal performance of primary care and the low uptake of preventive measures. This is linked to structural underfunding of the health sector and insufficient resources at primary care level and in public health offices. The high level of avoidable hospital admissions in Lithuania sheds light on weaknesses in primary care. Lithuania's treatable and preventable mortality rates remain the fourth highest among EU Member States and life expectancy in Lithuania in 2020 was the third lowest in the EU, 5.3 years below the EU average. Although Lithuania has a high rate of preventable mortality, the level of investment in preventive care is critically low. There are major disparities in the quality of care for cardiovascular diseases, which remain the leading cause of death in Lithuania with mortality rates far above the EU average and one of the highest in the EU. Cancer prevention programmes have gradually been expanded over the past 15 years, but screening rates are below the EU average rates and the pandemic has had a detrimental impact on the availability of cancer screening services (see Annex 14).

The challenges are exacerbated by a shortage of health care workers, particularly in rural areas. The problem of shortages, skills mismatches and difficult working conditions persists across all the health professions, hindering healthcare provision. Nurse shortages remain a particularly persistent issue: in 2019 the nurses-per-doctor ratio was the lowest since 2000.

Further policy efforts could be targeted at strengthening primary and preventive care, improving the quality of healthcare and workforce planning, aimed at better supply of workers and improved skills. While access to and quality of care are expected to be improved following the implementation of health reforms and investments included in Lithuania's RRP, for further efforts are needed to strengthen primary care and prevention. A further shift to outpatient care, pending the reform on hospital network reorganisation, will require adequate measures to offset additional pressure on primary care. Prevention measures also need to be scaled up to achieve faster improvement in health outcomes. Public health offices would need additional resources for this scaling-up and more co-operation with primary care centres, hospitals and others. The pandemic has prompted wider use of e-health, which needs to be further strengthened to improve accessibility of care in the long term.

Bridging the skills gap through education

Skills shortages and brain drain are among the obstacles preventing businesses from expanding their knowledge-based activities. The lack of skills was reported as an obstacle to investment in Lithuania by 80% of companies ([12]). Lithuania ranks 117th (out of 132) globally on the ease of finding skilled employees ([13]) and 108th on brain retention, calling for more effective talent attraction and retention policies at national level. Weak labour market relevance of the education and underperformance of the up- and reskilling systems, contribute to persistent skills

([12]) Compared to the EU average of 79%. EIB investment report 2020/2021: https://www.eib.org/en/publications/investment-report-2020

([13]) The Global Talent Competitiveness Index 2020: https://www.insead.edu/sites/default/files/assets/dept/globalindices/docs/GTCI-2020-report.pdf

mismatches in the country: only 52% of graduates report that their job matches their field and level of education ([14]).

More effective use of public funds on education would result in better education outcomes. In 2019, government expenditure on secondary and tertiary education were slightly above and around the EU average. However, school outcomes, as measured by PISA (the OECD's Programme for International Student Assessment), have been persistently below the EU average and labour market relevance of tertiary programmes is low. The education infrastructure is not adapted to the declining number of students; schools in rural areas with a low number of pupils are cost-intensive and tertiary education institutions are too numerous to achieve high quality of teaching and research. This points to the lack of effective use of resources in Lithuania.

Addressing inequalities in schools and making the teaching profession more attractive could help improve learning outcomes. The school network in rural areas is not well adapted to shrinking student numbers, which leads to significantly lower performance by students in these schools. Though the school network reorganisation is included in the RRP, it will be important for the financing rules to support this reorganisation. In addition, the cooperation between municipalities and between them and the central level could be improved, and greater equality between schools is needed as vulnerable pupils are likely to be more concentrated in the same schools (see Annex 13). Although the teacher workforce is ageing, less than 15% of graduates from initial teacher education actually enter the profession due to low salaries and lack of appropriate career development. Weak initial teacher education system also has a negative impact on teaching quality. Consequently, many pupils turn to private tutoring, which widens performance gaps between students from different socio-economic backgrounds. (see Annex 13). Therefore, beyond the implementation of the measures included in the RRP, it will be important to ensure efficient spending on education, to make the teaching profession more attractive, and address inequalities in the education system.

Reducing dependence on fossil fuels and reversing negative environmental sustainability trends

Lithuania sources most of its energy needs from abroad. The energy mix is mainly comprised of oil and natural gas (see Annex 5), with only around a quarter stemming from renewable energy sources. In the past decade, Lithuania has significantly reduced its dependence on Russian gas and oil. Following Russia's invasion of Ukraine, Lithuania has abandoned gas imports from Russia by redirecting energy imports through the LNG terminal in Klaipėda, the oil terminal in Būtingė and the new gas interconnection with Poland. Although Lithuania already generates almost half of its domestically produced electricity from renewable energy sources, net electricity imports remain high, at around two thirds of gross electricity consumption in Lithuania. Mobilising public and private investment to speed up the growth in locally produced electricity from renewable sources, including offshore renewables, would help to reduce import dependency. Cooperation with other countries in the region through joint projects provides further opportunities. The region's energy security can be improved by the timely implementation of electricity grid synchronisation with the European continental power grid and by ensuring that energy interconnections have sufficient capacity. These should remain a policy priority in the coming years.

The energy efficiency of households and industries should be improved to reduce overall energy consumption. The housing sector remains energy-intensive due to a large

([14]) EUROGRADUATE Pilot Survey: https://op.europa.eu/en/publication-detail/-/publication/300930ef-f88c-11ea-991b-01aa75ed71a1/language-en

proportion of non-renovated buildings, highlighting the need for faster renovation. Lithuania switched a large share of its sources of district heating from gas to biomass, and while it reduces the reliance on imported gas, further diversification could be achieved through heat pumps or solar-thermal solutions. Lithuanian industry's greenhouse gas intensity is among the highest in the EU (Annex 15), meaning that it produces a high volume of greenhouse gases per unit of value added. Energy-intensive industries account for two thirds of the total gas consumption in the country (see Annex 6), so increasing energy efficiency in these sectors, many of which are in decline or transformation anyway, holds significant potential to reduce overall energy consumption and dependence. Beyond the uptake of existing technologies, effective and well-coordinated research and innovation instruments are critical for delivering novel renewable energy and energy efficient technologies and energy storage solutions to underpin the transition.

Transport remains a major contributor to Lithuania's carbon footprint. Lithuania relies heavily on an ageing stock of cars for passenger travel, while opportunities provided by rail are not fully exploited for freight. Despite Lithuania's efforts in the RRP to reduce the reliance on an old and polluting car fleet, additional incentives to promote public transport are needed (see Annex 5). Currently, Lithuania has some of the lowest transport taxes in the EU and is one of the few EU countries without an annual car pollution tax. Public transport accounted for just 9.4% of passenger travel in 2019. Access to public transport is hindered by the lack of central coordination between fragmented municipal and intercity public transport systems, routes and schedules. Additional efforts are needed to promote the use of public transport and a modal switch from individual car use to collective and shared transport. Lithuania has room to further improve the uptake of rail, for instance by implementing Rail Baltica as a key EU cross-border project and a way of boosting multimodal passenger transport. Special attention should also be given to integrating rail within the urban transport system, for example through multimodal travel hubs. Further sustainable mobility efforts would in turn reduce the reliance of Lithuania on oil, which is still a significant part of the energy mix and has been mainly imported from Russia. As such, sustainable mobility measures can further decrease Lithuania's energy dependence on the imports of fossil fuels.

Protecting biodiversity in Lithuania presents a major challenge, with two thirds of protected habitats classed as having an unfavourable status ([15]). The main pressures relate to forestry, agriculture and invasive alien species (see Annex 5). More than 90% of forest habitats protected under the Habitats Directive are in a bad or poor status. Frequent illegal logging is one of the contributory factors ([16]). The Environmental Protection Department is responsible for the monitoring and preventing environmental accidents in Lithuania but lacks resources to perform its role. The proportion of surface-water bodies in a good ecological condition decreased over the last decade, along with an increased use of chemical fertilisers in agriculture. Organic farming accounted for 8% of land use in Lithuania in 2020, which leaves ample room for improvement to reach the EU target of 25% by 2030. More sustainable agricultural and forestry practices could also help to reverse the decline in the amount of carbon being captured by land and forests and contribute to achieving 2030 climate goals.

Improving growth potential remains a priority

Lithuania does not make the most of the opportunities provided by investment in research and innovation. Lithuania's labour productivity per hour worked - output per hour worked – was at 69.9% of the EU average in 2020 (see Annex 10). The productivity gap is closely related to the economy's structure,

([15]) The report submitted by Lithuania on the conservation status of habitats and species covered by the Article 17 of the Habitats Directive for the period 2013-2018.

([16]) SWD(2021) 465 final/2, p.18: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021SC0465R(01)&from=EN

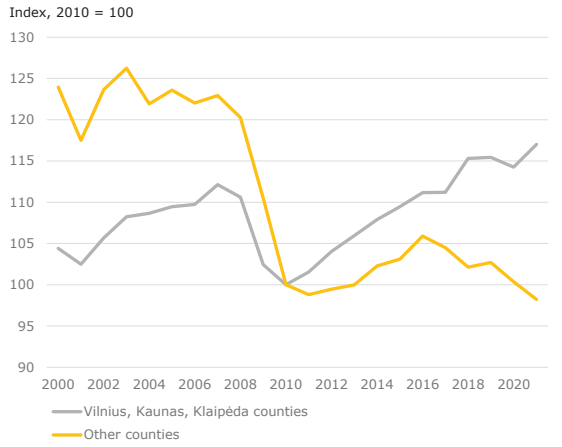
which remains less knowledge-intensive than in the EU as a whole. R&D expenditure in the business sector is low in Lithuania, along with very limited patenting activity, which implies limitations to productivity increases through innovative solutions. Research and innovation capacity is not spread equally in the country: around 40% of small and medium-sized enterprises and 75% of research institutions are concentrated in the Capital region. Ensuring a balanced geographical spread of R&D investment, including the economic centres of Central and Western Lithuania remains challenging. A larger share of R&D spending comes from the public sector, but the output of public R&D is limited (see Annex 9). Achieving the target of increasing R&D spending to 2.2% GDP in 2030 will require additional efforts, including finding sustainable sources of public R&D funding (see Annex 16).

Ensuring the effective functioning of the revised institutional structure to support R&I will be key. To make the most of the opportunities provided by the new institutional R&I support structure, Lithuania would benefit from identifying and adapting international best practices of working and coordination methods ([17]). The efforts to consolidate fragmented research capacities have yielded moderate results so far. Going beyond the measures in the RRP to consolidate higher education institutions, including universities, would increase efficiency and help Lithuania unlock its R&I potential (see Annex 9).

Regional convergence remains a challenge

Regional differences in economic development remain large. In 2019, GDP per capita in purchasing power standards in Vilnius county was 122% of the EU average, and 85% in Kaunas county, while it was less than 50% in some other NUTS3 regions, bottoming at 46% in Tauragė county. Effective, well targeted regional policy measures and efficient use of EU funds will be important in limiting regional disparities (see Annex 15).

Graph 3.2: **Employment level in the counties of the largest cities and other counties**



Source: Statistics Lithuania and European Commission calculations

Regional disparities on the labour market and public services provision remain sizeable. Over the last decade, employment has been growing more in the counties of the largest cities (Vilnius, Kaunas and Klaipėda) than in the rest of the country, supported to some extent by internal migration of the labour force from the rest of the country ([18]). Despite these demographic changes, smaller counties still have higher unemployment than the counties with the largest cities, in part reflecting structural labour market problems.

Ageing and emigration have put pressure on rural areas and remote regions of Lithuania. Depopulation puts pressure on the efficiency and quality of public services, in turn giving rise to disparities in terms of educational and health outcomes. The adaptation to depopulation (e.g. consolidation of existing education infrastructure) has been slow, while a lack of infrastructure and limited access to public transport services reduces mobility (as well as incentivising over-reliance on cars, as noted above).

([17]) OECD. Improving effectiveness of Lithuania's innovation policy: https://www.oecd.org/sti/improving-effectiveness-of-lithuania-s-innovation-policy-a8fec2ee-en.htm

([18]) https://publications.jrc.ec.europa.eu/repository/handle/JRC126047

KEY FINDINGS

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

- support for the uptake of renewable energy and building renovations, improvements to resource efficiency and the sustainability of transport, and preparation of an action plan for the circular economy;
- digitalisation of public administrative services, development of very high capacity networks, including by facilitating the 5G roll-out and connecting enterprises and institutions;
- enhancement of the revenue base by improving tax compliance and by abolishing inefficient tax exemptions and re-orienting the system towards more growth-friendly and green taxation;
- reforms to the minimum income scheme, increasing the coverage of unemployment social insurance, improving the pension indexation mechanism and active labour market measures focused on the green and digital transition, reforms in the healthcare sector to improve its resilience, efficiency, quality and accessibility by reorganising services, modernising infrastructure, developing centres of expertise in infectious diseases and investing in the digitalisation of the health system;
- improvements in preschool, primary and secondary education by consolidating the school network, and in vocational education, training and adult learning; reforming higher education funding and student admission systems, incentivising cooperation and consolidation in the higher education sector;
- setting up a single Innovation Agency and a revision of the research and innovation support framework to make it more coherent and effective.

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

- fostering co-operative public procurement at central government and municipality levels;
- strengthening primary and preventive care, reducing fragmentation in the planning and delivery of social services, improving their personalisation and integration with other services as well as improving access to and quality of social housing;
- improving the efficiency of spending on education, making the teaching profession more attractive, and addressing inequalities in the education system;
- improving coordination of public transport at central level, increasing disincentives for polluting transport, and protecting biodiversity, to achieve the objectives of the European Green Deal;
- further increasing electricity generation capacity from renewable sources, while reducing energy intensity in industry, transport and buildings, and ensuring sufficient capacity of energy interconnections;
- foreseeing sustainable sources of public R&D funding and consolidating research potential, improving national talent attraction and retention policies;
- promoting cooperation among municipalities to improve and integrate the delivery of public services with a view to reducing economic and social disparities between the Capital Region and the Central and Western Lithuania.

ANNEXES

LIST OF ANNEXES

LIST OF TABLES

LIST OF GRAPHS

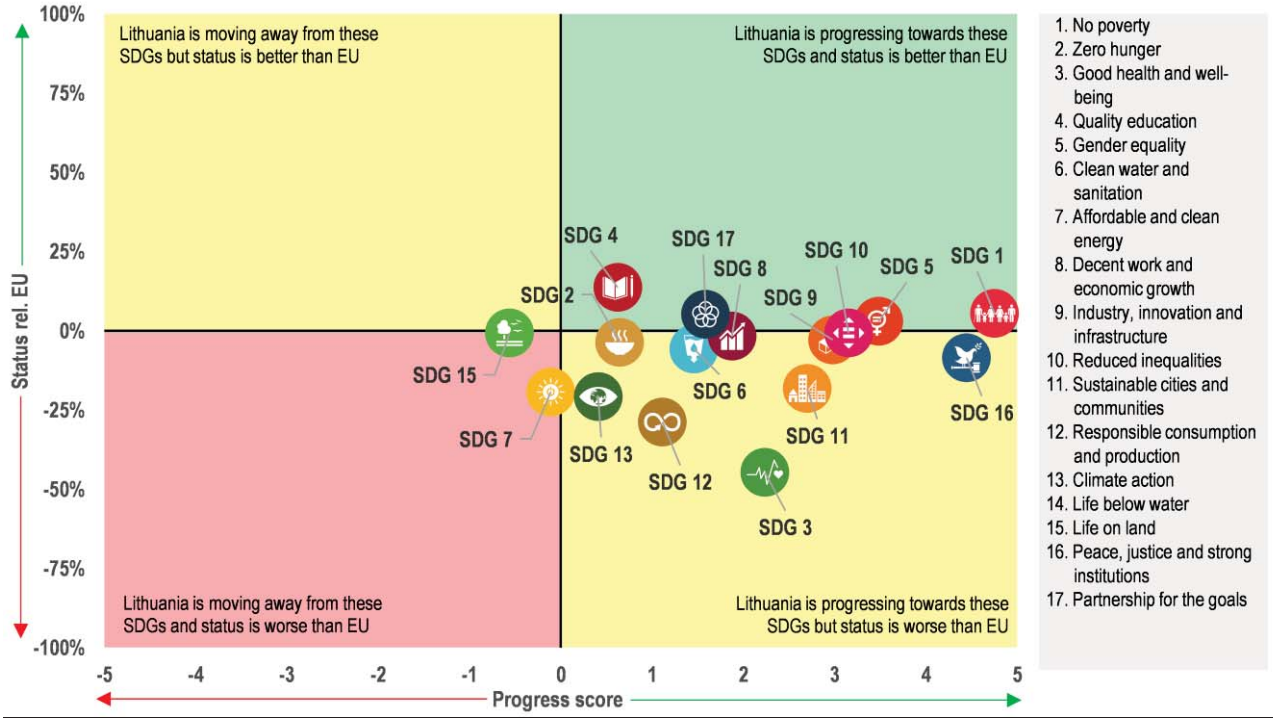
ANNEX 1: SUSTAINABLE DEVELOPMENT GOALS

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, 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 SDGs in an EU context.

Lithuania's performance is improving on several SDG indicators related to *environmental sustainability* (SDG 2, 9, 11, 12 and 13), while still needs to catch up on others (SDGs 7 and 15). On 'affordable and clean energy' (SDG 7), Lithuania has achieved significant progress in regards to the proportion of population unable to keep their home adequately warm, which decreased from 31.1% in 2015 to 23.1% in 2020, still well above the EU average (8.2% in 2020). Similarly, progress has been observed for energy productivity, increasing from EUR 4.7 per kilograms of oil equivalent (kgoe) in 2015 to EUR 5.0 per kgoe in 2020, remaining significantly below the EU average of EUR 8.6 per kgoe in 2020. Measures to increase Lithuania's performance are included in component 2 of the recovery and resilience plan ('Green transformation of Lithuania'). The plan focuses on investments in mobility infrastructure and public transport for sustainable mobility and investment additional solar and wind energy capacity which will provide additional security of supply and flexibility to accommodate renewable energy sources in the grid. The plan also envisages investments to improve the energy efficiency of multi-apartment buildings and the adoption of a circular economy action plan in 2023.

Lithuania is performing well on three SDG indicators relating to *fairness (SDGs 1,4 and 5), and* is improving on several others *(SDGs 2, 3, 8 and 10).* Lithuania has reduced the risk of poverty or social exclusion from 29.4% in 2015 to 24.5% in 2020, although it remains above the EU average of 21.9%. Regional disparities also remain an important problem. While the urban-rural gap for the risk of poverty or social exclusion

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



For detailed datasets on the various SDGs see the annual EUROSTAT report 'Sustainable development in the European Union', https://ec.europa.eu/eurostat/product?code=KS-09-22-019; Extensive country specific data on the short-term progress of Member States can be found here: Key findings - Sustainable development indicators - Eurostat (europa.eu).

Source: Eurostat, latest update of 28 April 2022. Data mainly refer to 2015-2020 and 2016-2021.

decreased from 14.8% in 2015 to 12.2% in 2020, it remains far above the EU average of 2.2% in 2020. Regarding 'good health and well-being' (SDG 3), Lithuania lags behind the EU average for almost all indicators. While progress has been made in standardised avoidable mortality, decreasing from 546.5 in 2014 to 466.0 in 2019, it is still almost double the EU average of 252.1 in 2017. RRP component 7 ('More opportunities for everyone to actively build national well-being') includes measures aimed at reforming the minimum income scheme and improving the social safety net in Lithuania. Measures included in component 1 ('A resilient and future-proof health system') are expected to improve the resilience, accessibility and quality of health services as well as increase the quality, affordability and efficiency of the health care system.

Lithuania performs well or is improving on SDG indicators related to *productivity (SDGs 4, 8 and 9).* Lithuania's performance on 'Quality education' (SDG 4) is improving but further efforts are needed to reach the EU average as regards participation in early childhood education which increased from 87.3% in 2015 to 90.9% in 2020 (compared with 93% for the EU in 2020) and adult learning from 6% in 2016 to 8.5% in 2021 (EU: 10.8% in 2021). In Lithuania, the share of households with high-speed internet connections in 2021 (78%) is materially above the EU average (70%). Lithuania has low, albeit slowly improving gross domestic expenditure on R&D at 1.2% of GDP in 2020, compared to the EU average of 2.3%. Also, Lithuania is lagging far behind in patent applications to the European Patent Office, with 18 applications per million inhabitants in 2020 compared to the EU average of 147. Several reforms and investments in component 3 ('Digital transformation for growth') of 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 SDG indicators related to *macroeconomic stability* (SDGs 8 and 16). Lithuania's performance on the investment share of GDP is below the EU average, but increased from 19.6% in 2015 to 21.1% in 2020 (EU: 22.3% in 2020). Also, Lithuania improved on the quality of its institutions, including trust in institutions (SDG 16), where the percentage of the population in Lithuania with confidence in the European Parliament increased from 61% in 2016 to 69% in 2020, which is high compared to the EU average of 50% in 2020.

The Recovery and Resilience Facility (RRF) is the centrepiece of the EU's efforts to support its recovery from the COVID-19 pandemic, fast forward the twin transition and strengthen resilience against future shocks. Lithuania submitted its recovery and resilience plan (RRP) on 14 May 2021. The Commission's positive assessment on 2 July 2021 and the Council's approval on 20 July 2021 paved the way for disbursing EUR 2.2 billion in grants under the RRF over 2021-2026. The financing agreement and operational arrangements were signed on 6 August 2021 and 5 May 2022, respectively. The key elements of the Lithuanian RRP are set out in Table A2.1.

The breakdown of funds contributing to each of the RRF's six policy pillars is outlined in the graph A2.1 below.

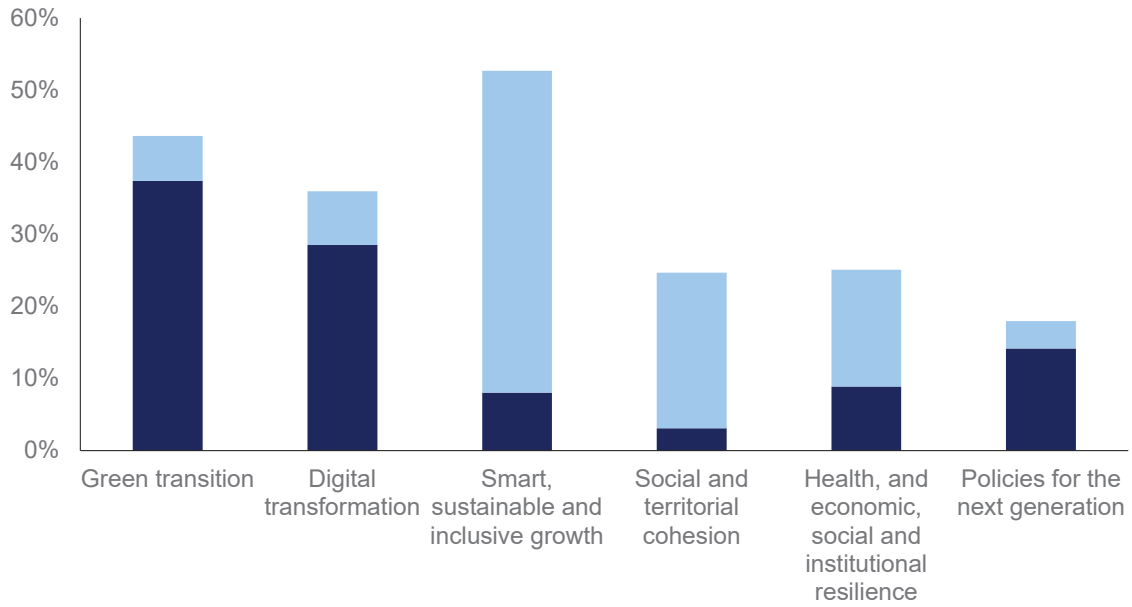
The progress made by Lithuania in the implementation of its plan is published on the Recovery and Resilience Scoreboard. The Scoreboard also gives a clear overview on the progress made in the implementation of the RRF as a whole, in a transparent manner.

Table A2.1:**Key elements of the Lithuanian RRP**

Total allocation	EUR 2.2 billion in grants (4.6% of 2019 GDP)
Investments and Reforms	4 investments and 27 reforms
Total number of Milestones and Targets	191
Estimated macroeconomic impact (1)	Raise GDP by 1.0%-1.6% by 2026 (0.5% in spillover effects)
Pre-financing disbursed	EUR 289 million (August 2021)
First instalment	Lithuania has not yet submitted a first payment request

(1) See Pfeiffer P., Varga J. and in 't Veld J. (2021), "Quantifying Spillovers of NGEU investment", European Economy Discussion Papers, No. 144 and Afman et al. (2021), "An overview of the economics of the Recovery and Resilience Facility", Quarterly Report on the Euro Area (QREA), Vol. 20, No. 3 pp. 7-16.
Source: European Commission 2022

Graph A2.1: **Share of RRF funds contributing to each policy pillar**

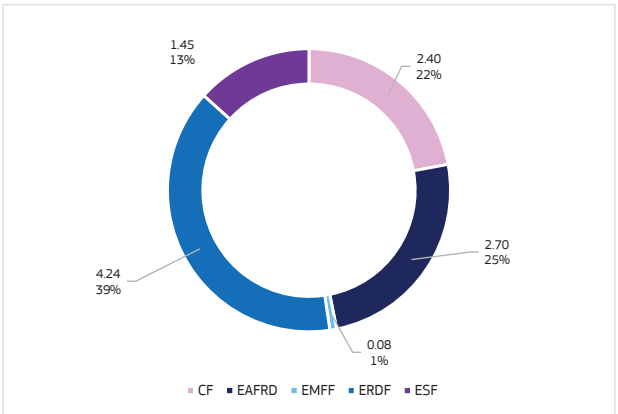


Each measure contributes towards two policy areas of the six pillars, therefore the total contribution to all pillars displayed on this chart amounts to 200% of the estimated cost of the Lithuanian RRP. The bottom part represents the amount of the primary pillar, the top part the amount of the secondary pillar.
Source: RRF Scoreboard
https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

The EU's budget of more than EUR 1.2 trillion for 2021-2027 is the investment lever to help implement EU priorities. Underpinned by an additional amount of about EUR 800 billion through NextGenerationEU and its largest instrument, the Recovery and Resilience Facility, it represents significant firepower to support the recovery and sustainable growth.

In 2021-2027, EU cohesion policy funds ([19]) will support long-term development objectives in Lithuania by investing EUR 6.81 billion ([20]). This includes EUR 273.3 million from the Just Transition Fund directed towards alleviating the socio-economic impacts of the green transition in the most vulnerable regions. The 2021-2027 cohesion policy funds partnership agreements and programmes take into account the 2019-2020 country-specific recommendations and investment guidance provided as part of the European Semester, ensuring synergies and complementarities with other EU funding. In addition, Lithuania will benefit from EUR 4 billion support for the 2023-2027 period from the common agricultural policy, which supports social, environmental, and economic sustainability and innovation in agriculture and rural areas, contributing to the European Green Deal, and ensuring long-term food security.

Graph A3.1: **2014-2020 European Structural Investment Funds - total budget by fund**



EUR billion at current prices, % of total
Source: European Commission, Cohesion Open Data

In 2014-2020, the European Structural and Investment Funds (ESIF) for Lithuania allocated EUR 9.28 billion ([21]) from the EU budget and another EUR 1.66 billion from national financing (Graph A3.1), amounting to around 3.67% of GDP for 2014-2020 annually and 80.18% of public investment ([22]). By 31 December 2021, 110% of the total was allocated to specific projects and 74% was reported as spent, leaving EUR 2.86 billion to be spent by the end of 2023 ([23]). Among the 11 ESIF objectives the most relevant ones in Lithuania are competitiveness of small and medium-sized enterprises, environment protection and resource efficiency, network infrastructure in transport and energy, low-carbon economy and sustainable and quality employment, (approximately EUR 6.79 billion). By the end of 2020, cohesion policy investments had supported 8 000 businesses, contributed to the energy performance upgrades for 42 000 households, reconstructed 339 km of roads and 94 km of railways, improved wastewater treatment services for 340 000 people and, health services for 636 000 people, and renovated schools for 61 000 pupils. More than 761 000 people in Lithuania had participated in projects funded by the European Social Fund, from which 99 000 gained a qualification. About 33 000 young people neither in employment nor in education or training (NEETs) left a Youth Guarantee ([24]) project with a positive outcome: they continued education or training, gained a qualification or were employed or self-employed. Cohesion policy funds are already substantially contributing to the Sustainable Development Goal (SDG) objectives are supporting 11 of the 17 SDGs with up to 95% of the expenditure contributing to the attainment of the goals.

([19]) European Regional Development Fund (ERDF), European Social Fund+ (ESF+), Cohesion Fund (CF), Just Transition Fund (JTF), Interreg.

([20]) Current prices, source: Cohesion Open Data

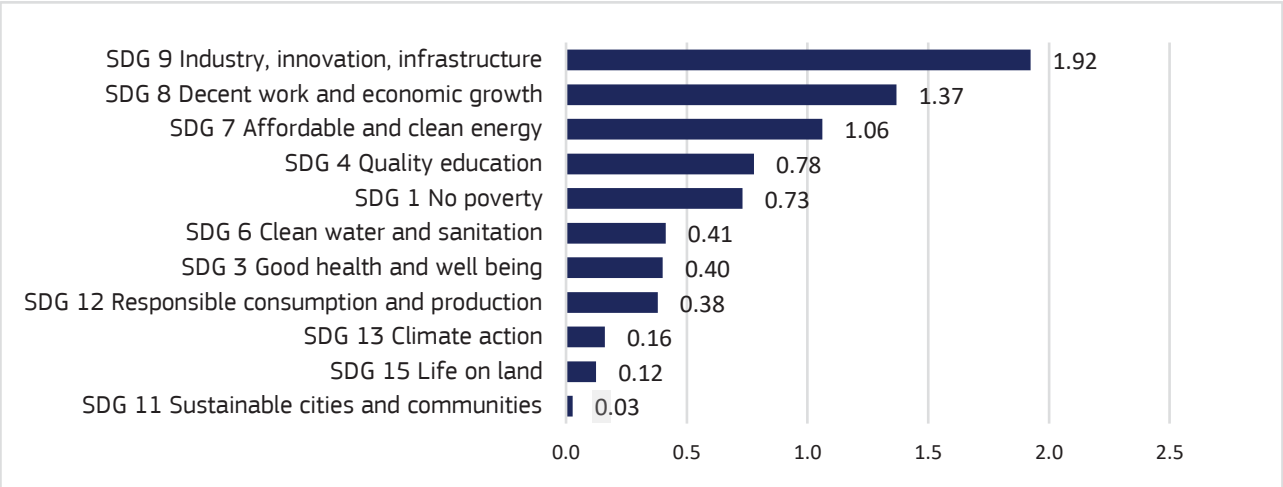
([21]) ESIF includes cohesion policy funds (ERDF, ESF+, CF, Interreg) and European Agricultural Fund for Rural Development (EAFRD) and European Maritime and Fisheries Fund (EMFF). According to the 'N+3 rule', the funds committed for 2014-2020 must be spent by 2023 at the latest (by 2025 for EAFRD). Data source: Cohesion Open data, cut-off date 31.12.2021 for ERDF, ESF+, CF, Interreg; cut-off date 31.12.2020 for EAFRD and EMFF.

([22]) Public investment is gross fixed capital formation plus capital transfers, general government.

([23]) Including REACT-EU. ESIF data on https://cohesiondata.ec.europa.eu/countries/LT

([24]) The Youth Guarantee is a commitment by the Member States that all young people under 30 receive a good quality offer of employment, continued education, apprenticeship or traineeship within 4 months of becoming unemployed or leaving education.

Graph A3.2: **Cohesion policy contribution to the SDGs (EUR billion)**



Source: European Commission, DG REGIO

The REACT-EU instrument under NextGenerationEU provided EUR 273.7 million of additional funding to 2014-2020 cohesion policy allocations for Lithuania to ensure a balanced recovery, boost convergence and provide vital support to regions dealing with the impact of the coronavirus outbreak. REACT-EU provided support in Lithuania for expanding e-business models, research and development of new anti-COVID 19 products, promoting renewable energy sources and energy efficiency as well as providing better access to efficient and innovative healthcare and boosting active labour market policy measures.

The coronavirus response investment initiative ([25]) provided the first EU emergency support for Lithuania in connection with the COVID-19 pandemic. It introduced extraordinary flexibility enabling Lithuania to re-allocate resources for immediate public health needs (EUR 40 million) and support to enterprises (EUR 15 million). For instance, Lithuania shifted resources to purchase protective equipment and healthcare supplies, develop tele medicine services, contribute to the short-time work schemes, and reinforce healthcare staff numbers.

Lithuania received support under the European instrument for temporary support to mitigate unemployment risks in an emergency (SURE) to finance short-time work schemes and similar measures. The Council granted financial assistance under SURE to Lithuania in September 2020 and top-up support in April 2021 for a maximum of EUR 957 million, which was disbursed by 25 May 2021. SURE is estimated to have supported approximately 25% of workers and firms for at least one month in 2020, and 20% of workers and 25% of firms in 2021, primarily in wholesale and retail trade, accommodation and food services, and manufacturing. Lithuania is estimated to have saved a total of EUR 5 million on interest payments as a result of SURE's lower interest rates.

The Commission is engaged in providing tailor-made expertise via the technical support instrument to support Lithuania in designing and implementing growth-enhancing reforms. Since 2017, Lithuania has received assistance through 55 technical support projects. Projects delivered in 2021 aimed for example at building up the analytical capacity of the National Productivity Board, enhancing regional service delivery to individuals and businesses and strengthening multi-level cooperation across the administration. The Commission is also assisting Lithuania in implementing specific reforms and investments in the RRP, such as reforms to assist all sectors of the economy in moving towards climate neutrality by 2050. In 2022, new projects will start to support assessment of the ongoing civil service reform.

Lithuania also benefits from **other EU programmes**. These include the **Connecting Europe Facility**, which allocated EU funding of

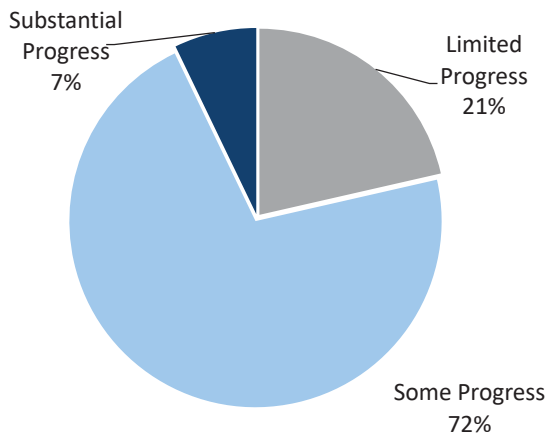
([25]) Re-allocating ESIF resources under Regulation (EU) 2020/460 of the European Parliament and of the Council of 30 March 2020, and Regulation (EU) 2020/558 of the European Parliament and of the Council of 23 April 2020.

EUR 387.1 million to specific projects on strategic transport networks, and **Horizon 2020**, which allocated EU funding of EUR 95.8 million.

ANNEX 4: PROGRESS IN THE IMPLEMENTATION OF COUNTRY-SPECIFIC RECOMMENDATIONS

The Commission assessed the 2019-2021 country-specific recommendations (CSRs) ([26]) addressed to Lithuania in the context of the European Semester. The assessment takes into account the policy action taken by Lithuania to date ([27]), as well as the commitments in the recovery and resilience plan (RRP) ([28]). At this early stage of the RRP implementation, overall 79% of the CSRs focusing on structural issues in 2019 and 2020 have recorded at least "some progress", while 21% recorded "limited" (see Graph A4.1). Considerable additional progress in addressing structural CSRs is expected in the years to come with the further implementation of the RRP.

Graph A4.1: **Lithuania's progress on the 2019-2020 CSRs (2022 European Semester cycle)**



Source: European Commission

([26]) 2021 CSRs: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H0729%2815%29&qid=1627675454457
2020 CSRs: EUR-Lex - 32020H0826(15) - EN - EUR-Lex (europa.eu)
2019 CSRs: EUR-Lex - 32019H0905(15) - EN - EUR-Lex (europa.eu)

([27]) Incl. policy action reported in the National Reform Programme, as well as in the RRF reporting (bi-annual reporting on the progress with implementation of milestones and targets and resulting from the payment request assessment).

([28]) Member States were asked to effectively address all or a significant subset of the relevant country-specific recommendations issued by the Council in 2019 and 2020 in their RRPs. The CSR assessment presented here takes into account the degree of implementation of the measures included in the RRP and of those done outside of the RRP at the time of assessment. Measures foreseen in the annex of the adopted Council Implementing Decision on the approval of the assessment of the RRP which are not yet adopted nor implemented but considered as 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 A4.1: **Summary table on 2019, 2020 and 2021 CSRs**

Lithuania	Assessment in May 2022*	RRP coverage of CSRs until 2026
2019 CSR1	**Some Progress**	
Improve tax compliance and	Some Progress	Relevant RRP measures planned as of 2021 to 2026
broaden the tax base to sources less detrimental to growth.	Some Progress	Relevant RRP measures planned as of 2022
Address income inequality, poverty and social exclusion, including by improving the design of the tax and benefit system.	Some Progress	Relevant RRP measures planned as of 2021 and 2023
2019 CSR 2	**Limited Progress**	
Improve quality and efficiency at all education and training levels, including adult learning.	Limited Progress	Relevant RRP measures planned as of 2021 and 2022
Increase the quality,	Limited Progress	Relevant RRP measures planned as of 2022 and 2024
affordability and	Some Progress	Relevant RRP measures planned as of 2022
efficiency of the healthcare system.	Some Progress	Relevant RRP measures planned as of 2022
2019 CSR 3	**Some Progress**	
Focus investment-related economic policy on innovation,	Some Progress	Relevant RRP measures planned as of 2021
energy and	Some Progress	Relevant RRP measures planned as of 2021
resource efficiency,	Some Progress	Relevant RRP measures planned as of 2022 and 2023
sustainable transport and	Some Progress	Relevant RRP measures planned as of 2021
energy interconnections, taking into account regional disparities.	Substantial Progress	Relevant RRP measures planned as of 2021
Stimulate productivity growth by improving the efficiency of public investment.	Some Progress	Relevant RRP measures planned as of 2022
Develop a coherent policy framework to support science-business cooperation and	Limited Progress	Relevant RRP measures planned as of 2021
consolidate research and innovation implementing agencies.	Substantial Progress	Relevant RRP measures planned as of 2021
2020 CSR1	**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
Strengthen the resilience of the health system, including by mobilising adequate funding and addressing shortages in the health workforce and of critical medical products.	Limited Progress	Relevant RRP measures planned as of 2023
Improve the accessibility and quality of health services.	Limited Progress	Relevant RRP measures planned as of 2022, 2023 and 2024
2020 CSR2	**Some Progress**	
Mitigate the impact of the crisis on employment.	Some Progress	Relevant RRP measures planned as of 2022
Increase the funding and coverage of active labour market policy measures	Some Progress	Relevant RRP measures planned as of 2022
and promote skills.	Some Progress	Relevant RRP measures planned as of 2021, 2022 and 2024
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 planned as of 2021 and 2022
2020 CSR 3	**Some Progress**	
Support liquidity for businesses, especially for small- and medium-sized enterprises and export-oriented sectors.	Some Progress	Relevant RRP measures planned as of 2024
Front-load mature public investment projects	Some Progress	
and promote private investment to foster the economic recovery.	Some Progress	
Focus investment on the green and digital transition, in particular on the coverage and take-up of very high-capacity broadband.	Limited Progress	Relevant RRP measures planned as of 2022
on clean and efficient production and use of energy,	Some Progress	Relevant RRP measures planned as of 2021 and 2022
and sustainable transport.	Some Progress	Relevant RRP measures planned as of 2021
Promote technological innovation in small and medium-sized enterprises.	Some Progress	Relevant RRP measures planned as of 2021

(Continued on the next page)

Table (continued)

2021 CSR1	Some Progress	
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.	Limited Progress	Not applicable
When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.	Substantial Progress	Not applicable
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.	Limited Progress	Not applicable
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.	Substantial Progress	Not applicable

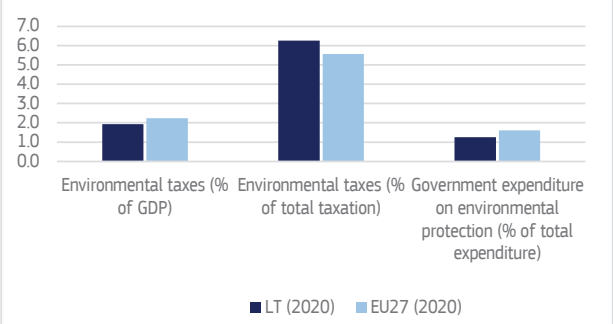
* See footnote 28

Source: European Commission

ANNEX 5: GREEN DEAL

The European Green Deal intends to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use. This annex offers a snapshot of the most significant and economically relevant developments in Lithuania in the respective building blocks of the European Green Deal. It is complemented by Annex 6 on the employment and social impact of the green transition and Annex 7 for circular economy aspects of the Green Deal.

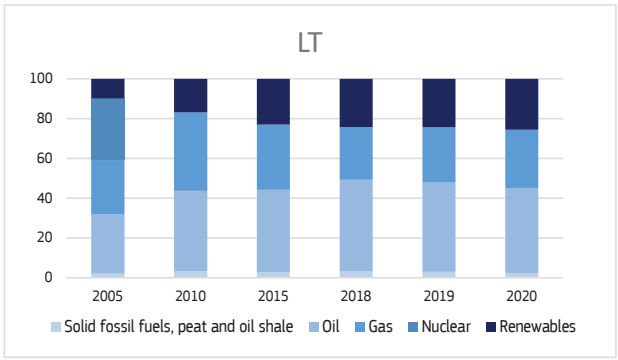
Graph A5.1: **Fiscal aspects of the green transition Taxation and government expenditure on environmental protection**



Source: Eurostat

In previous decades, Lithuania has made significant progress in laying the foundations of a low-carbon economy. There are still large opportunities, however, to make Lithuania's economy more climate resilient and sustainable. Lithuania has reduced its economy-wide greenhouse gas emissions (excluding land use) by 58% since 1990, significantly more than EU average (31%). The reduction was mainly achieved in 1990-1995 due to the closure of heavy industries. However, the emissions stayed broadly stable afterwards. Current emissions per capita are slightly lower than the EU average, although Lithuania's economy has an emission intensity much higher than the EU. The country's emissions from sectors not covered by the EU Emissions Trading System (i.e. buildings, transport, agriculture, waste and small industry) were below its EU 2020 target. However, since the baseline in 2005, increases have been recorded in some sectors, notably transport (+49.7%) and agriculture (+4.7%). In its national energy and climate plan, Lithuania intends to achieve more reductions than its current Effort Sharing Regulation target for 2030 of -9%. Following the adoption of the European Climate Law setting an EU-wide greenhouse gas reduction target of -55% by 2030, the proposed new Effort Sharing Regulation target for Lithuania under the Fit for 55 package is -21%. Under current land management practices, Lithuania is projected to see similar levels of net carbon removals by 2030 as today, but the impact of the LULUCF sector (land use, land-use change and forestry) in reducing emissions has been steadily decreasing over the recent decade. In its recovery and resilience plan (RRP), Lithuania allocates 37.8% of the plan to climate objectives and outlines crucial reforms and investments to further the transition to a more sustainable, low-carbon and climate-resilient economy.

Graph A5.2: **Thematic – Energy Share in energy mix (solids, oil, gas, nuclear, renewables)**

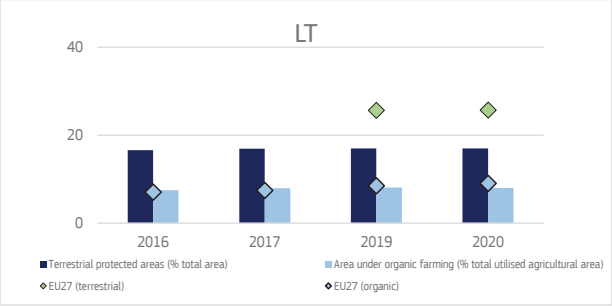


The energy mix is based on gross inland consumption, and excludes heat and electricity. The share of renewables includes biofuels and non-renewable waste.
Source: Eurostat

Lithuania's collection of environmental taxation is above EU average (as a share of total taxes) but government expenditure on environmental protection is below EU average. Lithuania's environmental tax revenues as a share of total tax revenues are above the EU average; this holds especially for energy taxes, which are largely driving total environmental taxes. However, Lithuanian environmental tax revenues are below the EU average as a share of GDP (for more indicators on taxation, see Annex 17). Transport taxes (excluding fuel), as a proportion of GDP, are among of the lowest in the EU. The Lithuanian government spends a smaller share of its expenditure on environmental

protection than the EU overall. Budgetary exposure to climate hazards is considered low.

Graph A5.3: **Thematic – Biodiversity**
Terrestrial protected areas and organic farming



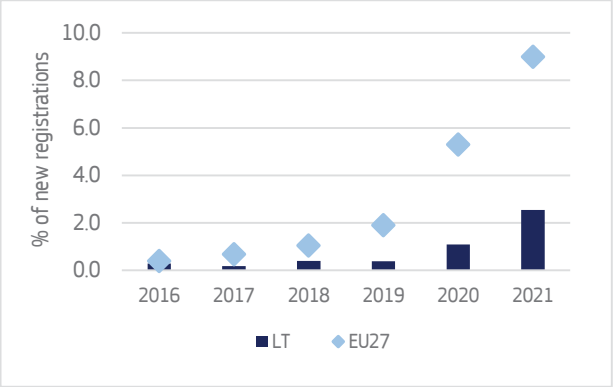
For terrestrial protected areas data for 2018, and data for the EU average (2016, 2017) is lacking.
Source: EEA (terrestrial protected areas) and Eurostat (organic farming).

Lithuania relies heavily on oil and natural gas, which account for 43% and 29% of gross inland consumption respectively. Renewables and biofuels make up 25% of the energy mix, a considerable increase from 10% in 2005, but remaining quite stable since 2015. Finally, primary solid biofuels account for 19% of the energy mix, coal for 2%, and non-renewable waste for just 1%.

The protection of biodiversity in Lithuania presents major challenges, with the conservation status of two thirds of the protected habitats in unfavourable conservation status. No protected grassland habitats and less than 10% of protected forest habitats are classed as having a favourable conservation status. The share of terrestrial protected areas as a proportion of total land is below average, as is the uptake organic farming in Lithuania.

In terms of pollution, air quality in Lithuania is generally good, with some exceptions. According to the projections, Lithuania will likely not meet its emission reduction commitments for nitrogen oxides, non-methane volatile organic compounds (NMVOC) and ammonia for 2020-2029, or for NMVOCs and nitrogen oxides for 2030 onwards. Groundwater quality is generally good in terms of pollution from nitrates. At the same time, a high volume of surface waters are eutrophic. This problem is common to other countries around the Baltic Sea with extremely high levels of waters in the region assessed as having below good eutrophication status.

Graph A5.4: **Thematic – Mobility**
Share of zero-emission vehicles (% of new registrations)



Zero emission vehicles (passenger cars) include battery and fuel cell electric vehicles (BEV, FCEV).
Source: European Alternative Fuels Observatory.

Lithuania has one of the lowest shares of zero-emission passenger cars among new registrations in the EU. At the same time, only 8% of the railroad network is electrified. The use of public transport accounted for 9.4% of passenger travel in 2019 – the lowest share in the EU. Transport emissions have increased by half since 2005.

Table A5.1:**Indicators underpinning the progress on the European Green Deal from a macroeconomic perspective**

						Target	Distance		'Fit for 55' Target	'Fit for 55' Distance	
			2005	2019	2020	2030	WEM	WAM	2030	WEM	WAM
Progress to policy targets	Non-ETS GHG emission reduction target [1]	MTCO2 eq; %; pp [2]	13.1	8%	5%	-9%	-11	3	-21%	-23	-9

									National contribution to 2030 EU target
			2005	2016	2017	2018	2019	2020	
Progress to policy targets	Share of energy from renewable sources in gross final consumption of energy [1]	%	17%	26%	26%	25%	25%	27%	45%
	Energy efficiency: primary energy consumption [1]	Mtoe	8.0	6.0	6.2	6.4	6.3	6.2	5.5
	Energy efficiency: final energy consumption [1]	Mtoe	4.7	5.1	5.3	5.6	5.6	5.3	4.5

			LITHUANIA						EU		
			2015	2016	2017	2018	2019	2020	2018	2019	2020
Fiscal and financial indicators	Environmental taxes (% of GDP)	% of GDP	1.9	1.9	1.9	2.0	1.9	1.9	2.4	2.4	2.2
	Environmental taxes (% of total taxation)	% of taxation [3]	6.4	6.5	6.5	6.6	6.2	6.3	6.0	5.9	5.6
	Government expenditure on environmental protection	% of total exp.	1.75	1.55	1.47	1.44	1.52	1.25	1.66	1.70	1.61
	Investment in environmental protection	% of GDP [4]	0.48	0.42	0.20	0.26	-	-	0.42	0.38	0.41
	Fossil fuel subsidies	EUR2020bn	0.29	0.44	0.26	0.23	0.18	-	56.87	55.70	-
	Climate protection gap [5]	score 1-4	1.3 out of 4 (slight increase from historical level of 1). This is a low risk category (4 being a high risk).								
Climate	Net GHG emissions	1990 = 100	42	42	43	43	43	42	79	76	69
	GHG emissions intensity of the economy	kg/EUR'10	0.68	0.67	0.67	0.67	0.65	0.64	0.32	0.31	0.30
	Energy intensity of the economy	kgoe/EUR'10	0.20	0.20	0.20	0.20	0.19	0.19	0.12	0.11	0.11
Energy	Final energy consumption (FEC)	2015=100	100.0	104.9	110.0	114.5	114.3	109.2	103.5	102.9	94.6
	FEC in residential building sector	2015=100	100.0	105.5	107.1	111.2	106.5	105.5	101.9	101.3	101.3
	FEC in services building sector	2015=100	100.0	104.8	110.3	113.3	109.0	100.2	102.4	100.1	94.4
Pollution	Smog-precursor emission intensity (to GDP) [4]	tonne/EUR'10 [6]	2.97	2.83	2.78	2.88	2.69	-	0.99	0.93	-
	Years of life lost caused due to air pollution by PM2.5	per 100.000 inh.	938	914	895	1068	998	-	863	762	-
	Years of life lost due to air pollution by NO2	per 100.000 inh.	26	6	< 1	3	< 1	-	120	99	-
	Nitrate in ground water	mg NO3/litre	-	-	-	-	-	-	21.7	20.7	-
Biodiversity	Terrestrial protected areas	% of total	-	16.6	17.0	-	17.0	17.0	-	25.7	25.7
	Marine protected areas	% of total	-	24.1	-	-	24.1	-	-	10.7	-
	Organic farming	% of total utilised agricultural area	7.1	7.5	8.0	8.1	8.1	8.0	8.0	8.5	9.1

			2000-2006	2006-2012	2012-2018	00-06	06-12	12-18
	Net land take	per 10,000 km2	4.3	3.5	4.1	13.0	11.0	5.0

			2015	2016	2017	2018	2019	2020	2018	2019	2020
Mobility	GHG emissions intensity of transport (to GVA) [7]	kg/EUR'10	0.97	1.01	1.14	1.36	1.34	1.33	0.89	0.87	0.83
	Share of zero emission vehicles [8]	% in new registrations	0.1	0.3	0.2	0.4	0.4	1.1	1.0	1.9	5.4
	Number of plug-in electric vehicles per charging point		17	23	13	17	18	23	8	8	12
	Share of electrified railways	%	6.5	6.4	8.0	8.0	8.0	-	55.6	56.0	-
	Congestion (average number of hours spent in road congestion per year by a representative commuting driver)		21.4	20.2	21.0	20.9	22.0	-	28.9	28.8	-

			Year	LT	EU
Digital	Share of smart meters in total metering points [9] - electricity	% of total	2018	2.4	35.8
	Share of smart meters in total metering points [9] - gas	% of total	2018	0.2	13.1
	ICT used for environmental sustainability [10]	%	2021	74.2	65.9

(1) The 2030 non-ETS GHG target is based on the Effort Sharing Regulation. The FF55 targets are based on the COM proposal to increase EU's climate ambition by 2030. Renewables and Energy Efficiency targets and national contributions under the Governance Regulation (Regulation (EU) 2018/1999). (2) Distance to target is the gap between Member States' 2030 target under the Effort Sharing Regulation and projected emissions, with existing measures (WEM) and with additional measures (WAM) respectively, as a percentage of 2005 base year emissions. (3) Percentage of total revenues from taxes and social contributions (excluding imputed social contributions). Revenues from the ETS are included in environmental tax revenues (in 2017 they amounted to 1.5% of total environmental tax revenues at the EU level). (4) Covers expenditure on gross fixed capital formation to be used for the production of environmental protection services (i.e. abatement and prevention of pollution) covering all sectors, i.e. government, industry and specialised providers. (5) The climate protection gap indicator is part of the European adaptation strategy (February 2021), and is defined as the share of non-insured economic losses caused by climate-related disasters.
(6) Sulphur oxides (SO2 equivalent), Ammonia, Particulates < 10µm, Nitrogen oxides in total economy (divided by GDP).
(7) Transportation and storage (NACE Section H). (8) Zero emission vehicles include battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV). (9) European Commission Report (2019) 'Benchmarking smart metering deployment in the EU-28'.
(10) European Commission (2021). Each year the DESI is re-calculated for all countries for previous years to reflect any possible change in the choice of indicators and corrections to the underlying data. Country scores and rankings may thus differ compared with previous publications.

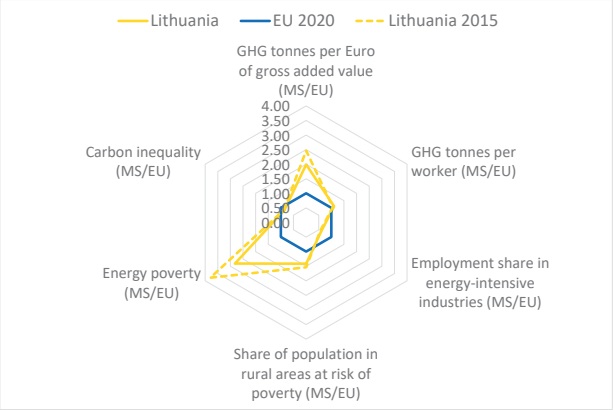
Source: Eurostat, JRC, European Commission, EEA, EAFO

The green transition not only encompasses improvements to environmental sustainability, but also includes a significant social dimension. While measures in this regard include the opportunity for sustainable growth and job creation, it must also be ensured that no one is left behind and all groups in society benefit from the transition. Lithuania's green transition benefits from a relatively strong green economy and promising recent policy measures; at the same time energy-intensive sectors are sizeable and lower-income groups are likely to face challenges.

Lithuania's recovery and resilience plan outlines measures for a fair green transition. A pilot project by the Public Employment Service will support entrepreneurship and job creation in the green sector. Setting up new long-term day care centres and modernising regional hospitals will facilitate energy-efficient provision of services. Lithuania's national energy and climate plan of 31 December 2019 partially addresses the employment and social impact of national measures and policies and presents the tools for addressing energy poverty. It also sets out a 2030 target of only 17% of the population unable to keep their home adequately warm (from 28% in 2018) and a target of 10% for the share of households spending a large share of income on energy (from 17.1% in 2016). Lithuania's draft just transition plan includes industrial facilities responsible for 85% of the total emissions covered by the EU emissions trading system (see Annex 15), and contains measures to address the potential socioeconomic consequences of the green transition in the regions concerned.

Although key energy-intensive sectors remain sizeable, the green economy is relatively large and provides strong potential for job creation. Between 2015 and 2020, greenhouse gas (GHG) emissions increased in Lithuania but, owing to fast economic growth, the carbon intensity of the Lithuanian economy decreased by almost 20% (in terms of gross value added). It is now 11% above the EU average, with the average carbon footprint per worker at 15.10 tonnes of GHG emissions (against 13.61 in the EU) (see Graph A6.1). Petroleum refineries have been identified as a declining sector ([29]) and the fertilisers industry as a transforming sector. Lithuania's energy-intensive industry, including cement and fertilisers ([30]), provides jobs for 1.85% of the total employed workforce, for which up-skilling and reskilling are particularly important (see Annex 12). The environmental goods and services sector already provides jobs to a comparatively large share of the employed population (3.5%, compared with 2.2% in the EU) ([31]). Energy efficiency improvements offer further opportunities for green jobs ([32]).

Graph A6.1: **Fair green transition challenges**



Source: Eurostat, World Inequality Database

As for the social dimension of the green transition, ensuring access to essential transport and energy services is a challenge for Lithuania. A higher-than-average share of the population living in rural areas is at risk of poverty (26.4% against 18.7% for the EU) ([33]). The share of the population unable to keep their homes adequately warm decreased from 31.1% in 2015 to 23.1% in 2020, which is still almost three times the EU average (8.2%). All income groups are affected (see Graph A6.2). Consumption patterns vary across the population: the average carbon footprint of the top 10% of emitters is about 4.5 times higher than that of the bottom 50% of the population (5.3 times in the EU).

([29]) SWD(2021) 275 final

([30]) 2020 European Semester: Overview of Investment Guidance on the Just Transition Fund 2021-2027 per Member State (Annex D)

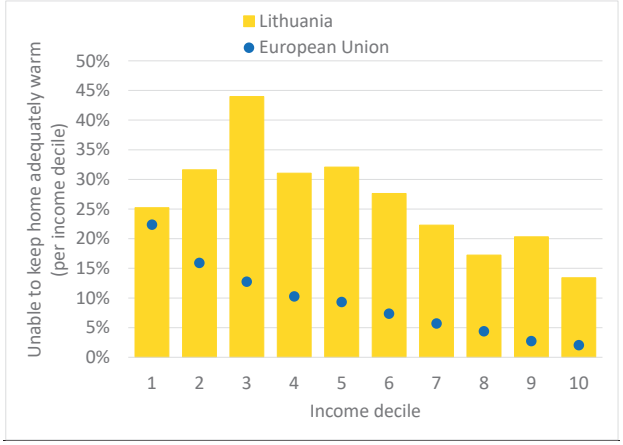
([31]) There is currently no common EU-wide definition of green jobs. The environmental goods and services sector (EGSS) accounts only report on an economic sector that generates environmental products, i.e. goods and services produced for environmental protection or resource management.

([32]) https://publications.jrc.ec.europa.eu/repository/handle/JRC126047.

([33]) Based on COM(2021) 568 final (Annex I) as a proxy for potential transport challenges in the context of the green transition (e.g. due to vulnerability to fuel prices).

Tax systems are key to ensuring a fair transition towards climate neutrality ([34]). Lithuania's revenues from total environmental taxes marginally increased from 1.85% of GDP in 2015 to 1.93% in 2020 (against 2.24% in the EU). The labour tax wedge for low-income earners ([35]) decreased from 37.4% in 2015 to 31.1% in 2021, compared to 31.9% in the EU in 2021 (see Annex 17). Redistributive measures accompanying environmental taxation have the potential to foster progressivity and have a positive impact on the disposable income of households in the lowest segments of the income distribution ([36]).

Graph A6.2: **Energy poverty by income decile**



Source: Eurostat EU-SILC survey (2020)

([34]) COM(2021) 801 final.

([35]) Tax wedge for a single earner at 50% of the national average wage (Tax and benefits database, European Commission/OECD).

([36]) SWD(2021) 641 final PART 3/3, on distributional effects of energy taxation revision, based on the European Commission Joint Research Centre GEM-E3 and EUROMOD models.

ANNEX 7: RESOURCE EFFICIENCY AND PRODUCTIVITY

The efficient use of resources is key to ensuring competitiveness and open strategic autonomy, while minimising the environmental impact. The green transition presents a major opportunity for European industry by creating markets for clean technologies and products. It will have an impact across entire value chains in sectors such as energy and transport, construction and renovation, food and electronics, helping create sustainable, local and well-paid jobs across Europe.

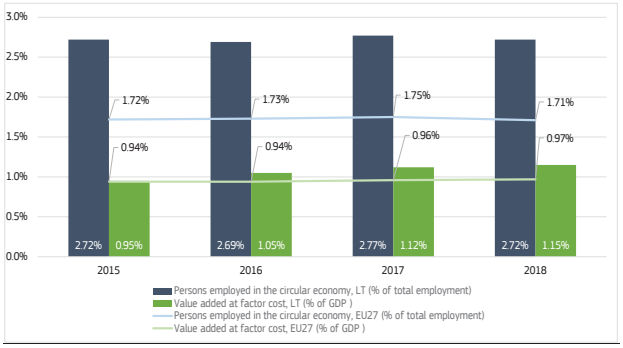
The circular use of materials in Lithuania is almost three times lower than the EU average. The circular (secondary) use of materials in Lithuania has remained close to 4% since 2010. It was 4.4% in 2020 - almost three times lower than the EU average of 12.8%.

Lithuanian resource productivity could be considerably improved. Resource productivity expresses how efficiently the economy uses material resources to produce wealth. Improving resource productivity can help to minimise negative impacts on the environment and reduce dependency on volatile raw material markets. Currently, Lithuania ranks 5th lowest in the EU, with 1.3 purchasing power standards (PPS) generated per kg of material consumed in 2020, compared to the EU average of 2.2 PPS per kg. Material intensity is two-times higher compared to the EU average.

While Lithuania is making progress towards the 2025 reuse and recycling targets, it still needs to reduce landfilling and improve separate collection of different waste streams. The recycling rate for municipal waste showed a steady increase until 2018 but has fallen since then. With 45.1% of municipal waste recycled in 2020, Lithuania missed its target of 50% in 2020 but is still not far off the 55% recycling target in 2025. Lithuania has a well-functioning deposit-refund system for single-use plastic and glass bottles and metal cans. At the same time, municipal waste generation in Lithuania has increased by 20% in the last decade indicating that Lithuania's economic growth is not yet decoupled from its generation of waste.

Further measures can help Lithuania improve its position in environmental technology. A successful transition to a circular economy requires social and technological innovation. Lithuania catching up on eco-innovation, ranking 19th on the 2021 Eco-Innovation Index, with a total score of 88 (compared with an EU average of 121). Lithuania performs above the EU average in only one out of five indicators in the Eco-Innovation Index, which measures exports of products from eco-industries. For the eco-innovation activities indicator, Lithuania performs second worst (total score 30 compared with the EU average of 100). However, Lithuania scores second best in cleantech venture capital investment per capita (the 2021 Cleantech for Europe Annual Briefing). Further measures can help Lithuania develop environmental technology, notably in relation to sustainable product design, resource efficient production processes, digital solutions for industry, technologies that can help solve environmental problems and new circular business models.

Graph A7.1: **Economic importance and expansion of the circular economy – employment and value added in the circular economy sectors**



Source: Eurostat

Table A7.1:**Key indicators for resource efficiency and productivity – Lithuania**

Key indicators – Lithuania

SUB-POLICY AREA	2015	2016	2017	2018	2019	2020	EU27	Latest year EU 27
Circularity								
Resource Productivity (Purchasing power standard (PPS) per kilogram)	1.4	1.4	1.3	1.4	1.4	1.3	2.2	2020
Material Intensity (kg/EUR)	0.7	0.7	0.8	0.7	0.7	0.8	0.4	2020
Circular Material Use Rate (%)	4.1	4.6	4.5	4.3	3.9	4.4	12.8	2020
Material footprint (Tones/capita)	16.8	18.0	20.2	20.2	20.9	-	14.6	2019
Waste								
Waste generation (kg/capita, total waste)	-	2327	-	2527	-	-	5234	2018
Landfilling (% of total waste treated)	-	56.0	-	56.4	-	-	38.5	2018
Recycling rate (% of municipal waste)	33.1	48.0	48.1	52.5	49.7	45.1	47.8	2020
Hazardous waste (% of municipal waste)	-	2.6	-	2.7	-	-	4.3	2018
Competitiveness								
Gross value added in environmental goods and services sector (% of GDP)	2.2	2.3	2.4	2.4	2.7	-	2.3	2019
Private investment in circular economy (% of GDP)	0.1	0.1	0.2	0.2	-	-	0.1	2018

Source: Eurostat

The Digital Economy and Society Index (DESI) monitors EU Member States' digital progress. The areas of human capital, digital connectivity, the integration of digital technologies by businesses and digital public services reflect the Digital Decade's four cardinal points ([37]). This Annex describes Lithuania's DESI performance.

Lithuania has dedicated 31.5% of its **Recovery and Resilience Plan** to measures supporting the digital transition. Over half of these funds are dedicated to digital public services and infrastructure.

The lack of information and communication technology (ICT) specialists remains a key challenge for Lithuania. In the DESI dimension on human capital, the country also scores below the EU average for the proportion of people with basic and above basic digital skills (23% compared to 26% for the EU). It does have a higher-than-average percentage of female ICT specialists, but the scarcity of ICT specialists overall remains a key challenge.

The country could still improve on connectivity, where broader network coverage could enable wider use of digital technologies. Very high capacity network coverage has increased slightly. In rural areas, fast broadband (NGA) coverage recently increased considerably to 51.8%, but still remains well below the EU average of 67.5%. In addition, assignment of 5G spectrum is low (5% compared to the EU average of 56%) ([38]).

Lithuania's performance on integrating digital technology is mixed; the uptake of advanced technologies in SMEs remains a key challenge. The share of small and medium-sized enterprises with at least basic digital skills is slightly above the EU average. However, the use of advanced technologies like artificial intelligence, big data and cloud is less widespread.

In digital public services, Lithuania performs well. It is most notable in the take-up of digital public services for businesses, where it performs comfortably above the EU average. In the provision of digital services for the public, its performance is slightly lower, although still above the EU average.

([37]) 2030 Digital Compass: the European Way for the Digital Decade Communication, COM (2021) 118 final

([38]) Source: Communications Committee (COCOM) based on iDATE

Table A8.1:**Key Digital Economy and Society Index Indicators**

Human capital	Lithuania DESI 2020	Lithuania DESI 2021	Lithuania DESI 2022	EU DESI 2022	EU top-performance DESI 2022
At least basic digital skills	**NA**	**NA**	**49%**	**54%**	**79%**
% individuals			2021	2021	2021
ICT specialists	**3.1%**	**3.3%**	**3.8%**	**4.5%**	**8.0%**
% individuals in employment aged 15-74	2019	2020	2021	2021	2021
Female ICT specialists	**24%**	**24%**	**24%**	**19%**	**28%**
% ICT specialists	2019	2020	2021	2021	2021
Connectivity					
Fixed Very High Capacity Network (VHCN) coverage	**61%**	**67%**	**78%**	**70%**	**100%**
% households	2019	2020	2021	2021	2021
5G coverage (*)	**NA**	**0%**	**33%**	**66%**	**99.7%**
% populated areas		2020	2021	2021	2021
Integration of digital technology					
SMEs with at least a basic level of digital intensity	**NA**	**NA**	**57%**	**55%**	**86%**
% SMEs			2021	2021	2021
Big data	**14%**	**11%**	**11%**	**14%**	**31%**
% enterprises	2018	2020	2020	2020	2020
Cloud	**NA**	**NA**	**28%**	**34%**	**69%**
% enterprises			2021	2021	2021
Artificial Intelligence	**NA**	**NA**	**4%**	**8%**	**24%**
% enterprises			2021	2021	2021
Digital public services					
Digital public services for citizens	**NA**	**NA**	**82**	**75**	**100**
Score (0 to 100)			2021	2021	2021
Digital public services for businesses	**NA**	**NA**	**93**	**82**	**100**
Score (0 to 100)			2021	2021	2021

(*) The 5G coverage indicator does not measure users' experience, which may be affected by a variety of factors such as the type of device used, environmental conditions, number of concurrent users and network capacity. 5G coverage refers to the percentage of populated areas as reported by operators and national regulatory authorities.

Source: Digital Economy and Society Index

This annex provides a general overview on the performance of Lithuania's research and innovation system. According to the 2021 edition of the European Innovation Scoreboard ([39]) Lithuania is a moderate innovator with one of the highest improvements in performance since 2014. R&D intensity in Lithuania was 1.16% of GDP in 2020, just half of the EU average and far below its 1.9 % of GDP target.

The fragmented research system, the need for higher quality science and weak science-business links continue to hinder Lithuania's R&I performance. Though public R&D investment in Lithuania is slightly below the EU average, the fragmentation of the investment results in an inability to achieve critical mass and raise the quality of the science base. This is evidenced by the share of the top 10% most cited scientific publications worldwide, where Lithuania ranks among the lowest performers in the EU. This weak scientific performance and its disconnection from the productive sector results in weak science-business linkages as illustrated by the low share of public-private co-publications. The recovery and resilience plan will introduce measures to address fragmentation of the research system while raising public R&D funding, as well as strengthening the creation of joint business-science R&D missions.

Innovation performance remains weak despite progress in private R&D investment. Over the last decade, business R&D investment increased significantly, from 0.29% of GDP in 2015 to 0.55% in 2020. Yet this investment has not translated into an increase in technological production or an increase in employment in fast growing innovative firms.

([39]) Break in series between 2013 and the previous years. Compound annual growth refers to the period 2013-2019.

Table A9.1:**Key research, development and innovation indicators**

Lithuania	2010	2015	2018	2019	2020	Compound annual growth 2010-20	EU average
Key indicators							
R&D Intensity (GERD as % of GDP)	0.78	1.04	0.94	0.99	*1.16*	4	*2.32*
Public expenditure on R&D as % of GDP	0.55	0.76	0.54	0.56	*0.6*	0.9	*0.78*
Business enterprise expenditure on R&D (BERD) as % of GDP	0.23	0.29	0.39	0.43	*0.55*	9.1	*1.53*
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	2.9	4.6	4.8	:	:	6.4	9.9
PCT patent applications per billion GDP (in PPS)	0.2	0.7	0.6	:	:	11.4	3.5
Academia-business cooperation							
Public-private scientific co-publications as % of total publications	5.6	5.1	5.9	6.5	5.4	-0.4	9.05
Human capital and skills availability							
New graduates in science & engineering per thousand pop. aged 25-34	23.3	18.4	16.8	15.9	:	-5,7[1]	16.3
Public support for business enterprise expenditure on R&D (BERD)							
Total public sector support for BERD as % of GDP	0.068	0.083	0.085	0.126	:	7.2	0.196
R&D tax incentives: foregone revenues as % of GDP	0.013	0.021	0.022	0.026	:	7.8	0.1
Green innovation							
Share of environment-related patents in total patent applications filed under PCT (%)	36.1	19	3	:	:	-26.7	12.8
Finance for innovation and Economic renewal							
Venture Capital (market statistics) as % of GDP	0.0003	0.026	0.008	0.008	0.009	40.8	0.054
Employment in fast-growing enterprises in 50% most innovative sectors	4.5	2.1	2.9	4.1	:	-0.9	5.5

(1) Break in series between 2013 and the previous years. Compound annual growth refers to the period 2013-2019.
Source: DG Research and Innovation - Common R&I Strategy and Foresight Service - Chief Economist Unit
Data: Eurostat, OECD, DG JRC, Science-Metrix (Scopus database and EPO's Patent Statistical database), Invest Europe

Productivity growth is a critical driver of economic prosperity, well-being and convergence over the long run. A major source of productivity for the EU economy is a well-functioning single market, where fair and effective competition and a business friendly environment are ensured, in which small and medium enterprises (SMEs) can operate without difficulty. Businesses and industry rely heavily on robust supply chains and are facing bottlenecks that bear a negative impact on firms' productivity levels, employment, turnover and entry/exit rates. This may impact the Member States' capacity to deliver on Europe's green and digital transformation.

Lithuania's labour productivity lags behind the EU average and differs across regions. Despite the increase in the recent years, the productivity per hour worked was 69.9% of the EU average in 2020 (see Annex 18). The productivity gap is linked to the skills mismatch in Lithuania (labour shortage affected 21% of firms in 2021, well above the EU average of 14%) ([40]) and to the structure of economy, dependent on low-added value sectors. In the short term, there has been some pressure on labour costs but with no obvious impact on cost-competitiveness.

In general, the Lithuanian business environment is favourable. In the World Bank's Doing Business report 2020, Lithuania is ranked 11th (out of 190 countries) in 2020, which reflects the friendly regulatory and administrative environment towards SMEs. The new insolvency regime overhauled in 2020 is expected to be further strengthen with the digital tools proposed in the recovery and resilience plan. The proportion of public procurement contracts going to SMEs is high ([41]). Despite one of the highest business registration index rates (131.2 in Lithuania, compared with 105.6 for the EU), Lithuania has the lowest one-year survival rate (63.6%, compared with the EU average of 80%) ([42]). The country's growth potential is hampered by untapped business innovation potential, slow technological upgrading by SMEs and limited access to banking finance. According to the survey on access to business finance, 40% of Lithuanian SMEs that applied for a bank loan were rejected or refused loans due to high costs (29% and 11% respectively) in 2021, while 15% of SMEs did not apply for fear of rejection, the highest figure in the EU ([43]). The underlying barriers relate to the lack of collateral and equity capital, low financial literacy, the lack of knowledge about alternative financing sources and low-quality financial accounting, which increases the risk for financial institutions. Companies have insufficient access to equity and venture capital, owning to undeveloped financial markets. There is also evidence that tax rules are limiting the growth of companies: microenterprises tend to avoid going beyond the revenue threshold under which they enjoy preferential tax treatment.

The global economic and geopolitical situation affects the economy, causing trade and supply chain difficulties. Lithuania is more dependent on critical raw material imports than the EU average. Also, the total value produced by the economy depends more on imported intermediate goods and services and less on domestic sources compared to the EU average. The contraction in 2020 was moderate mainly because of the resilient exports, as manufacturing companies benefited from stronger foreign demand and demand for newly developed high-value added pharmaceutical products. While public investment was driven by the uptake of the EU funds, the change in private investment relative to GDP was 2.5 times higher in Lithuania than in the EU in 2020 ([44]). This is partly explained by the favourable business environment and the efficient foreign direct investment policy framework.

Although the economy is well integrated into the single market, some barriers remain. Regulation is more restrictive in Lithuania than the EU average for architects, civil engineers, patent agents and tourist guides. Among the professions analysed, restrictiveness is the highest for lawyers ('advokatas') and architects ([45]). According to the Single Market Enforcement Task Force Report 2020-2021, Lithuania has reached a preliminary agreement to abolish the excessive requirement to provide translations of identity documents for all regulated professions.

([40]) ECFIN Consumer and business survey, 2021

([41]) Single Market Scoreboard 2021, Public procurement, Indicator 7,8

([42]) Eurostat 2020, Business demography

([43]) SAFE, 2021

([44]) Ameco 2020, Investment Dynamics_Net private investment

([45]) SWD(2021)185 final

Table A10.1:**Key Single Market and Industry Indicators**

SUB-POLICY AREA	INDICATOR NAME	DESCRIPTION	2021	2020	2019	2018	2017	Growth rates	EU27 average*
HEADLINE INDICATORS									
Economic structure	Value added by source (domestic)	VA that depends on domestic intermediate inputs, % [source: OECD (TiVA), 2018]				56.13			**62.6%**
	Value added by source (EU)	VA imported from the rest of the EU, % [source: OECD (TiVA), 2018]				24.56			**19.7%**
	Value added by source (extra-EU)	% VA imported from the rest of the world, % [source: OECD (TiVA), 2018]				19.3			**17.6%**
Cost competitiveness	Producer energy price (industry)	Index (2015=100) [source: Eurostat, sts_inppd_a]	119	90	107.3	108.2	97.4	**22.2%**	**127.3**
RESILIENCE									
Shortages/supply chain disruptions	Material Shortage using survey data	Average (across sectors) of firms facing constraints, % [source: ECFIN CBS]	22	9	9	8	9	**144%**	**26%**
	Labour Shortage using survey data	Average (across sectors) of firms facing constraints, % [source: ECFIN CBS]	21	11	15	18	15	**40%**	**14%**
	Sectoral producer prices	Average (across sectors), 2021 compared to 2020 and 2019, index [source:Eurostat]						**2.7%**	**5.4%**
Strategic dependencies	Concentration in selected raw materials	Import concentration a basket of critical raw materials, index [source: COMEXT]	0.2	0.2	0.2	0.21	0.21	**-5%**	**17%**
	Installed renewables electricity capacity	Share of renewable electricity to total capacity, % [source:Eurostat, nrg_inf_epc]		49.30	48.90	48.50	48.20	**2%**	
Investment dynamics	Net Private investments	Change in private capital stock, net of depreciation, % GDP [source: Ameco]		6.6	8.4	7.9	6.9	**-4.3%**	**2.6%**
	Net Public investments	Change in public capital stock, net of depreciation, % GDP [source: Ameco]		1.5	0.5	0.6	0.6	**150%**	**0.4%**
SINGLE MARKET									
Single Market integration	Intra-EU trade	Ratio of Intra-EU trade to Extra-EU trade, index [source: Ameco]	1.74	1.73	1.56	1.55	1.59	**9%**	**1.59**
Professional services restrictiveness	Regulatory restrictiveness indicator	Restrictiveness of access to and exercise of regulated professions (professions with above median restrictiveness, out of the 7 professions analysed in SWD (2021)185 [source: SWD (2021)185; SWD(2016)436 final])	3				1	**200%**	**3.37**
Professional qualifications recognition	Recognition decisions w/o compensation	Professionals qualified in another EU MS applying to host MS, % over total decisions taken by host MS [source: Regulated professions database]	47.6						**45%**
Compliance - cooperation EC and MS	Transposition - overall	5 sub-indicators, sum of scores [source: Single Market Scoreboard]		On average	On average	Above average	Above average		
	Infringements - overall	4 sub-indicators, sum of scores [source: Single Market Scoreboard]		On average	On average	On average	On average		

(Continued on the next page)

Table (continued)

Investment protection	Confidence in investment protection	Companies confident that their investment is protected by the law and courts of MS if something goes wrong, % of all firms surveyed [source: Flash Eurobarometer 504]	48						**56%**
BUSINESS ENVIRONMENT - SMEs									
Business demography	Bankruptcies	Index (2015=100) [source: Eurostat, sts_rb_a]		40.8	78.1	107.3	139.6	**-70.8%**	**70.1 (2020)**
	Business registrations	Index (2015=100) [source: Eurostat, sts_rb_a]		131.2	123.4	116	111.7	**0.175**	**105.6**
Access to finance	Late payments	Share of SMEs experiencing late payments in past 6 months, % [source: SAFE]	52.8	52.2	55	n.a.	n.a.	**-4%**	**45%**
	EIF Access to finance index - Loan	Composite: SME external financing over last 6 months, index from 0 to 1 (the higher the better) [source: EIF SME Access to Finance Index]		0.69	0.56	0.55	0.62	**10.9%**	**0.56 (2020)**
	EIF Access to finance index - Equity	Composite: VC/GDP, IPO/GDP, SMEs using equity, index from 0 to 1 (the higher the better) [source: EIF SME Access to Finance Index]		0.3	0.13	0.13	0.14	**112.2%**	**0.18 (2020)**
	% of rejected or refused loans	SMEs whose bank loans' applications were refused or rejected, % [source: SAFE]	39.8	21	22.1	24.4	24.1	**64.8%**	**12.4%**
Public procurement	SME contractors	Contractors which are SMEs, % of total [source: Single Market Scoreboard]		89	73	52	30	**196.7%**	**63%**
	SME bids	Bids from SMEs, % of total [source: Single Market Scoreboard]		94	86	83	78	**21%**	**70.8%**

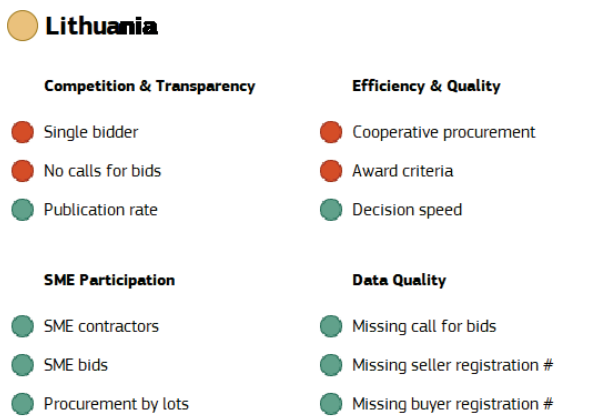
(*) latest available

Source: See above in the table the respective source for each indicator in the column "description".

Good administrative capacity enables economic prosperity, social progress and fairness. Public administrations at all government levels deliver crisis response, ensure the provision of public services and contribute to building resilience for the sustainable development of the EU economy.

Overall, the effectiveness of the public administration in Lithuania is around the EU27 ([46]) average. The administration performs well on evidence-based policymaking, transparency and e-government, with some challenges still remaining with public procurement (graph A11.1). These relate to persistent issues with cooperative procurement, a high share of single bidders and no calls for bids, and over-reliance on price as an award criterion.

Graph A11.1: **Performance on the single market public procurement indicator**



The competition and transparency indicators are triple-weighted, whereas the efficiency and quality indicators have unitary weights. All others receive a 1/3 weighting in the SMS composite indicator.
Source: Single market scoreboard 2020 data.

The Lithuanian recovery and resilience plan aims to tackle some key challenges relating to public administration effectiveness, in particular human resources and digitalisation. Specifically, it contains plans for improving the way public authorities interact with businesses and individuals through better public digital governance and data openness. Furthermore, it aims to make its public sector more efficient by reforming and investing in human resource management for public services and improving competencies for civil service managers.

Lithuania is a relatively good performer on e-government indicators, scoring 83.4 in 2021 and above the EU average of 70.9. The share of individuals who interact with public authorities online is 70%, roughly equal to the EU's average of 70.8%. This share has been steadily improving over the past four years.

Lithuania performs above the EU average on evidence-based policymaking. While it scores well on regulatory impact assessments and stakeholder consultation indicators, it underperforms on *ex post* evaluation indicators (0.25 compared to the EU average of 0.29).

The justice system performs efficiently. In 2020, the duration of civil, commercial, administrative and other cases at first instance was comparatively low at 68 days. The number of pending cases also remains comparatively low. The overall quality of the justice system is good. Lithuania's procedural rules allow the use of digital technology in courts in civil, commercial, administrative and criminal cases in a wide range of situations, relating to the participation of parties using communication technology, and the admissibility of evidence. Courts are well equipped with electronic communication tools. As regards judicial independence, no systemic deficiencies have been reported ([47]).

Lithuania's overall performance in selected human resource management indicators is above the EU average. At 77.2%, the share of public servants with tertiary education in 2021 is far above the EU average of 55.3%, while its adult learning rate is on par with the EU average. Gender parity in senior civil service positions is among the best in the EU-27 countries.

([46]) Worldwide Governance Indicators, 2020.

([47]) For more detailed analysis of the performance of the justice system in Lithuania, see the 2022 EU Justice Scoreboard (forthcoming) and the country chapter for Lithuania of the Commission's 2022 Rule of Law Report (forthcoming)

Table A11.1:**Public administration indicators – Lithuania**

LT	Indicator (1)	2017	2018	2019	2020	2021	EU27
E-government							
1	Share of individuals who used internet within the last year to interact with public authorities (%)	62.0	63.0	67.0	69.0	70.0	70.8
2	2021 e-government benchmark´s overall score (2)	na	na	na	na	83.4	70.9
Open government and independent fiscal institutions							
3	2021 open data maturity index	na	na	na	na	89.2	81.1
4	Scope Index of Fiscal Institutions	58.2	55.7	55.7	55.7	na	56.8
Educational attainment level, adult learning, gender parity and ageing							
5	Share of public administration employees with tertiary education, levels 5-8 (3)	78.4	77.0	79.3	79.9	77.2	55.3
6	Participation rate of public administration employees in adult learning (3)	13.2	16.1	16.7	14.2	17.6	18.6
7	Gender parity in senior civil service positions (4)	1.0	5.6	0.8	2.4	4.4	21.8
8	Share of public sector workers between 55 and 74 years (3)	22.1	22.1	22.1	20.6	19.9	21.3
Public Financial Management							
9	Medium term budgetary framework index	0.77	0.77	0.77	0.77	na	0.72
10	Strength of fiscal rules index	2.3	2.8	2.8	2.8	na	1.5
11	Public procurement composite indicator	-1.0	2.3	3.3	-2.0	na	-0.7
Evidence-based policy making							
12	Index on the degree of stakeholder engagement in the development of new regulations and on ex ante and ex-post evaluation of primary and secondary laws	2.15	na	na	1.85	na	1.7

(1) High values stand for good performance barring indicators # 7 and 8.
(2) 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.
(3) Break in the series in 2021.
(4) Defined as the absolute value of the difference between the share of men and women in senior civil service positions.

Source: ICT use survey, Eurostat (# 1); E-government benchmark report (# 2); Open data maturity report (# 3); Fiscal Governance Database (# 4, 9, 10); Labour Force Survey, Eurostat (# 5, 6, 8), European Institute for Gender Equality (# 7), Single Market Scoreboard public procurement composite indicator (# 11); OECD Indicators of Regulatory Policy and Governance (# 12).

ANNEX 12: EMPLOYMENT, SKILLS AND SOCIAL POLICY CHALLENGES IN LIGHT OF THE EUROPEAN PILLAR OF SOCIAL RIGHTS

The European Pillar of Social Rights provides the compass for upward convergence towards better working and living conditions in the EU. The implementation of its 20 principles on equal opportunities and access to the labour market, fair working conditions, social protection and inclusion, supported by the 2030 EU headline targets on employment, skills and poverty reduction, will strengthen the EU's drive towards a digital, green and fair transition. This Annex provides an overview of Lithuania's progress in achieving the goals under the European Pillar of Social Rights.

Though the labour market is recovering, strengthening the effectiveness of active labour market policies remains key to supporting people to find a job, particularly vulnerable groups. The unemployment rate (7.1% in 2021) remains higher than before the COVID-19 crisis (6.3% in 2019), despite being lower than in 2020 (8.5%). The unemployment rate for low-skilled workers remains among the highest in the EU despite decreasing from 22.8% in 2020 to 16.6% in 2021. To address these issues, Lithuania's recovery and resilience plan (RRP) features reform of the Public Employment Service, investment in entrepreneurship support and up- and reskilling for high-value-added competences related to the green and digital transitions. The rate of young people neither in employment nor in education or training (NEETs) increased considerably to 13% in 2020, but declined to 12.7% in 2021 (and is below the EU average of 13.2%). After spiking during the crisis, youth unemployment dropped to 14.3% in 2021, below the EU average of 16.6% but above the pre-crisis levels (11.9% in 2019). To address this, the EU cohesion policy funds will focus on individualised active labour market policy measures for vulnerable groups, including the low-skilled, long-term unemployed, NEETs, persons with disabilities and other groups facing the biggest barriers to enter into the labour market. Social dialogue remains among the weakest in the EU, with only 7.9% of the workforce covered by collective agreements and only 7.4% by trade unions in 2019 (OECD), with downward trends observed.

Table A12.1:**Social Scoreboard for Lithuania**

Social Scoreboard for LITHUANIA		
Equal opportunities and access to the labour market	Early leavers from education and training (% of population aged 18-24) (2021)	5.3
	Individuals' level of digital skills (% of population 16-74) (2021)	49.0
	Youth NEET (% of total population aged 15-29) (2021)	12.7
	Gender employment gap (percentage points) (2021)	1.4
	Income quintile ratio (S80/S20) (2020)	6.1
Dynamic labour markets and fair working conditions	Employment rate (% population aged 20-64) (2021)	77.4
	Unemployment rate (% population aged 15-74) (2021)	7.1
	Long term unemployment (% population aged 15-74) (2021)	2.6
	GDHI per capita growth (2008=100) (2020)	143.4
Social protection and inclusion	At risk of poverty or social exclusion (in %) (2020)	24.5
	At risk of poverty or social exclusion for children (in %) (2020)	23.1
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP) (2020)	29.4
	Disability employment gap (ratio) (2020)	22.7
	Housing cost overburden (% of population) (2020)	2.7
	Children aged less than 3 years in formal childcare (% of under 3-years-olds) (2020)	16.2
	Self-reported unmet need for medical care (% of population 16+) (2020)	1.7
Critical situation / To watch / Weak but improving / Good but to monitor / On average / Better than average / Best performers		

Update of 29 April 2022. Members States are classified on the Social Scoreboard according to a statistical methodology agreed with the EMCO and SPC Committees. It looks jointly at levels and changes of the indicators in comparison with the respective EU averages and classifies Member States in seven categories. For methodological details, please consult the Joint Employment Report 2022. Due to changes in the definition of the individuals' level of digital skills in 2021, exceptionally only levels are used in the assessment of this indicator; NEET: neither in employment nor in education and training; GDHI: gross disposable household income.
Source: Eurostat

There is scope for improving the labour market relevance of education and training. Of the companies surveyed, 80% reported a lack of staff with appropriate skills as an obstacle to investment (compared to the EU average of 79%; EIB 2021). Insufficient vocational guidance for young people exacerbates skills mismatches. The adult learning participation rate over the past four weeks was below the EU average in 2021 (8.5% compared to 10.8% respectively). The level of basic or higher digital skills lags behind the EU average as well. The fragmented governance of the adult learning system limits the availability of programmes and often leads to low quality and low labour market relevance. Strengthening the

quality, efficiency and inclusiveness of education and training, and expanding adult learning are crucial for the digital and green transition and in helping the EU to meet its 2030 headline target on adult learning. To foster adult learning, the RRP envisages a one-stop-shop model for lifelong learning based on individual learning accounts, encompassing quality assurance and a national human resources monitoring system. The RRP's reforms on vocational guidance, vocational and higher education aim at balancing the supply of skills and increasing their quality to meet labour market needs. The share of children under three in formal childcare decreased significantly in 2020 to 16.2%, from 26.6% in 2019, which may negatively impact education outcomes in the longer term (see Annex 13).

While the share of people at risk of poverty or social exclusion decreased, it remains well above the EU average, especially among vulnerable groups. The at-risk-of-poverty or social exclusion rate is particularly high for single parents with dependent children (46.9% compared with the EU average of 42.3% in 2020), older people (40.2% against the EU average of 20.3% in 2020), and persons with disabilities (38.7% against the EU average of 28.6% in 2020), with limited improvements observed over time. A recent analysis ([48]) shows that the increases in basic social allowance (bazinė socialinė išmoka) and in the single person benefit to the elderly and persons with disabilities (vienišo asmens išmoka) in January 2022 are expected to reduce the poverty risk for families with children (7%) and single individuals older than 65 (12%). Income inequality, although on a decreasing trend, remains among the highest in the EU, with the income of the richest 20% of the population exceeding that of the poorest 20% by 6.14 times.

The adequacy of the social safety net, although improved in recent years, remains relatively weak, with government's expenditure on social protection being among the lowest in the EU. Government's expenditure on social protection was very low (16.1% of GDP in 2019, compared with the EU average of 26.9%), and the impact of social transfers in reducing the risk of poverty was decreasing (29.4% in 2020, over 2 percentage points less than in 2019). The adequacy of minimum income benefits is low (51.4% of the poverty threshold or 39.8% of the income of a low-wage earner (EU averages are 58.9% and 45.5% respectively). Despite relatively low unmet needs for medical care, there are challenges in access to healthcare outside major cities and out-of-pocket payments remain very high. Access to social housing remains limited, as funding for social housing is low in Lithuania (0.1% of GDP, compared to an EU average of 0.4% in 2019). There is also further scope for improvement in the monitoring, planning and delivery of social services. Tackling these challenges is key to enabling Lithuania to contribute towards the 2030 EU headline target on poverty reduction. To foster social inclusion, Lithuania's RRP envisages a reform of the tax-benefit system and minimum income scheme, as well as measures improving the adequacy of pensions and other social benefits, accompanied by European Social Fund Plus (ESF+) measures to address poverty and social exclusion of vulnerable groups.

([48]) European Commission, Joint Research Centre, based on the EUROMOD model.

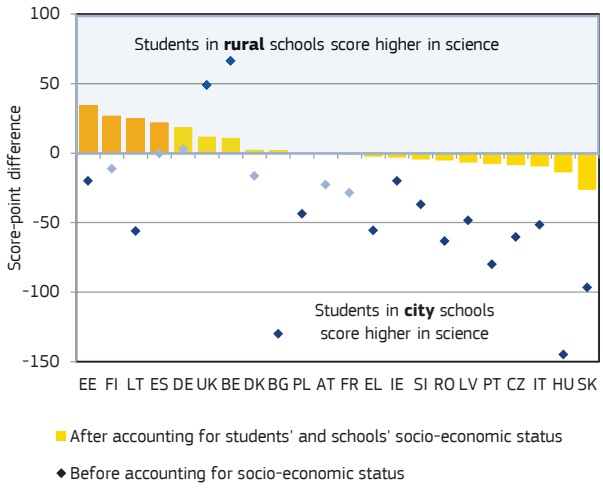
This Annex outlines the main challenges for Lithuania's education and training system in light of the EU-level targets of the European Education Area strategic framework and other contextual indicators, based on the analysis from the 2021 Education and Training Monitor. Lithuania's education and training system struggles with ensuring quality of education across the whole territory and effectiveness of spending.

The rate of children from age 3 to 6 in early childhood education is increasing but remains below the average. In 2020, the proportion of children under 3 in formal childcare dropped by 10.4 percentage points (from 26.6% in 2019). Demand for childcare services is not being fully met. Measures are planned to improve participation and access.

One in five pupils fails to reach a minimum proficiency level in basic skills. Socio-economic background plays a significant role as 40% of pupils in the bottom socio-economic quartile are underachievers in reading (EU 36.4%), compared with 11.2% in the top quartile (EU 9.5%). Pupils in rural areas perform worse than those in urban areas. Evidence shows that rural pupils would actually outperform pupils in urban areas if they and their schools had the same socio-economic profile (Graph A13.1). Extra-curricular activities that might mitigate disparities in achievement related to socio-economic status are more available in cities (2.51 in the index ([49]) than in rural areas (1.87).

Strengthening teachers' competences and the attractiveness of the teaching profession remains a priority. Legislation to determine the workload of teachers is not uniformly applied and school leaders enjoy great autonomy in setting teacher salaries. According to the 2018 teaching and learning international survey, 43.0% of teachers (compared with 38.9% at EU level) consider that the professional development offered is not relevant. While maintenance spending on small schools in rural areas is excessive, little is spent on teacher education. Between 2017 and 2019, the share of funding for teacher training decreased by 13% whereas the share of funding on school maintenance increased by 17.5%.

Graph A13.1: **The rural-urban gap in science**



Results based on linear regression models on PISA 2015. Statistically significant coefficients are marked in a darker tone.
Source: Echazarra and Radinger (2019)

Improving labour market relevance of tertiary programmes is important to reduce skills shortages. Despite Lithuania having one of the highest share of people aged 25-34 with a tertiary qualification in the EU, tertiary graduates tend to experience skills mismatches in the labour market. Universities tend to focus on maximising student numbers to obtain more resources rather than increasing the scope and impact of their research activities.

The reforms and investments under the recovery and resilience plan will help address some of these long-standing challenges. The plan aims to consolidate the education network, improve school infrastructure and the competences of teachers, implement competence-based curricula, modernise vocational education and training, promote work-based learning and apprenticeships, and change the funding formula at tertiary level.

([49]) Higher values in the index indicate greater number of creative extracurricular activities at school. (OECD, PISA 2018).

Table A13.1:**EU-level targets and other contextual indicators under the European Education Area strategic framework**

				2015		2021	
Indicator			**Target**	**Lithuania**	**EU27**	**Lithuania**	**EU27**
Participation in early childhood education (age 3+)			**96%**	**87.3%**	**91.9%**	**89.6%** 2019	**92.8%** 2019
Low achieving 15-year-olds in:		**Reading**	**< 15%**	**25.1%**	**20.4%**	**24.4%** 2018	**22.5%** 2018
		Mathematics	**< 15%**	**25.4%**	**22.2%**	**25.6%** 2018	**22.9%** 2018
		Science	**< 15%**	**24.7%**	**21.1%**	**22.2%** 2018	**22.3%** 2018
Early leavers from education and training (age 18-24)	**Total**		**< 9 %**	**5.5%**	**11.0%**	**5.3%**	**9.7%**
	By gender	*Men*		6.9%	12.5%	6.3%	11.4%
		Women		4.0%	9.4%	4.2%	7.9%
	By degree of urbanisation	*Cities*		2.2% u	9.6%	2.2% u	8.7%
		Rural areas		8.3%	12.2%	8.2%	10.0%
		Native		5.5%	10.0%	5.3%	8.5%
	By country of birth	*EU-born*		: u	20.7%	: u	21.4%
		Non EU-born		: u	23.4%	: u	21.6%
Tertiary educational attainment (age 25-34)	**Total**		**45%**	**54.8%**	**36.5%**	**57.5%**	**41.2%**
	By gender	*Men*		45.0%	31.2%	48.4%	35.7%
		Women		64.9%	41.8%	67.9%	46.8%
	By degree of urbanisation	*Cities*		68.2%	46.2%	70.6%	51.4%
		Rural areas		39.6%	26.9%	43.6%	29.6%
		Native		54.8%	37.7%	57.5%	42.1%
	By country of birth	*EU-born*		: u	32.7%	41.5%	40.7%
		Non EU-born		55.3% u	27.0%	59.9%	34.7%
Share of school teachers (ISCED 1-3) who are 50 years or over				46.7%	38.3%	54.4% 2019	38.9% 2019

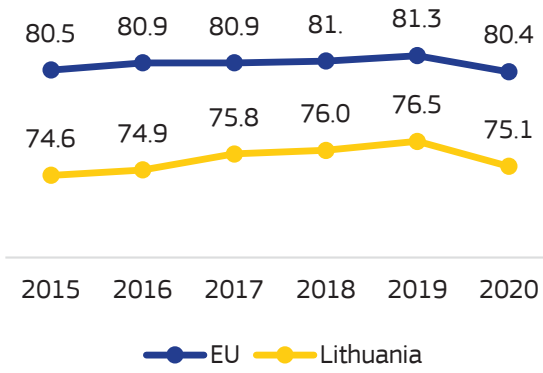
The 2018 EU average on PISA reading performance does not include ES; u = low reliability, : = not available; Data is not yet available for the remaining EU-level targets under the European Education Area strategic framework, covering underachievement in digital skills, exposure of vocational educational training graduates to work based learning and participation of adults in learning.

Source: Eurostat (UOE, LFS); OECD (PISA)

Especially relevant in light of the ongoing COVID-19 pandemic, resilient healthcare is a prerequisite for a sustainable economy and society. This Annex provides a snapshot of the healthcare sector in Lithuania.

Life expectancy in Lithuania was the third lowest in the EU and 5.3 years below the EU average in 2020. It fell in 2020 by almost 17 months due to COVID-19. As of 17 April 2022, Lithuania reported 3.26 cumulative COVID-19 deaths per 1 000 inhabitants and 496 confirmed cumulative COVID-19 cases per 1 000 inhabitants. Lithuania reports one of the highest levels of treatable mortality in the EU. Cardiovascular diseases remain the leading cause of mortality with mortality rates well exceeding the EU average. Cancer mortality is also above the EU average.

Graph A14.1: **Life expectancy at birth, years**

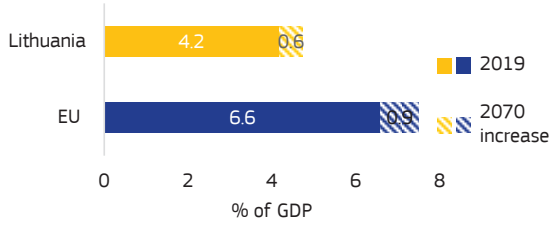


Source: Eurostat database

Health spending relative to GDP and per capita in Lithuania was well below the EU average in 2019. Only two thirds of health spending was publicly financed with the remaining third coming from out-of-pocket payments. Public expenditure on health is projected to increase by 0.6 percentage points (pps) of GDP by 2070 (compared to 0.9 pps for the EU) ([50]).

High treatable mortality rates in Lithuania are linked to long-standing challenges, such as lags in primary care and preventive measures, shortages and uneven distribution of health professionals and varying quality of specialist care. The high reliance on the inpatient care with high levels of avoidable hospital admissions remains a longstanding issue, yet efforts to streamline and optimise hospital care did not lead to major shifts in hospital infrastructure.

Graph A14.2: **Projected increase in public expenditure on health care over 2019-2070 (AWG reference scenario)**



Source: European Commission/EPC (2021)

Through its recovery and resilience plan, Lithuania plans to invest EUR 257 million (11.6 % of the total RRP) to strengthen emergency care and tackle infectious diseases, develop digital health infrastructure, build capacity for advanced medical therapies, create a competence platform for healthcare professionals and a system to monitor quality of care.

([50]) "The 2021 Ageing Report: Economic and Budgetary Projections for the EU Member States (2019-2070)", European Commission (ECFIN) and Ageing Working Group (EPC).

Table A14.1:**Key health indicators**

	2016	2017	2018	2019	2020	EU average (latest year)
Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare)	205.6	184.9	185.6	181.0		92.1 (2017)
Cancer mortality per 100 000 population	280.7	273.6	272.7	271.5		252.5 (2017)
Current expenditure on health, % GDP	6.6	6.5	6.5	7.0		9.9 (2019)
Public share of health expenditure, % of current health expenditure	66.6	66.1	67.2	66.4		79.5 (2018)
Spending on prevention, % of current health expenditure	2.0	2.2	2.3	2.7		2.8 (2018)
Acute care beds per 100 000 population	559.2	543.7	530.5	519.6		387.4 (2019)
Doctors per 1 000 population *	4.5	4.6	4.6	4.6		3.8 (2018)
Nurses per 1 000 population *	7.7	7.7	7.8	7.7		8.2 (2018)
Consumption of antibacterials for systemic use in the community, daily defined dose per 1 000 inhabitants per day **	14.3	14.4	14.0	13.8	11.9	14.5 (2020)

Notes: Doctors' density data refer to practising doctors in all countries except FI, EL, PT (licensed to practice) and SK (professionally active). Nurses' density data refer to practising nurses in all countries (imputation from year 2014 for FI) except IE, FR, PT, SK (professionally active) and EL (nurses working in hospitals only).
More information: https://ec.europa.eu/health/state-health-eu/country-health-profiles_en
Source: Eurostat Database; except: * Eurostat Database and OECD, ** ECDC.

The regional dimension is an important factor when assessing economic and social developments in Member States. Taking into account this dimension enables a well-calibrated and targeted policy response that fosters cohesion and ensures sustainable and resilient economic development across all regions. Regional disparities remain significant in Lithuania with a noticeable difference between the capital on the one hand, and the rest of the country on the other hand.

Despite the progress made by the Lithuanian economy as a whole, significant social and economic disparities persist across counties (NUTS3 regions). In 2019, GDP per capita in Vilnius county was 118% of the EU average, and in Kaunas county 84%, while it was less than 50% in some of the other NUTS3 regions, bottoming at 46% in Tauragė county.

The differences in the economic growth rates of Lithuanian counties also remain sizeable. The highest GDP per capita growth rates were recorded in Tauragės, Šiauliai and Kaunas counties (5.3-5.4% per year between 2010 and 2019). GDP per capita growth in Vilnius county was also high, at 4.9% per year during the same period. Utenos county, one of the least developed, is the region with the slowest GDP per capita growth, at 1.1% per year.

Labour productivity, while generally on the rise, remains low in Lithuania. It is highest in Kaunas county and Klaipėda county at around 86% of the EU average, followed by the Capital region, at 83% of the EU average. At the other end of the spectrum, labour productivity in Tauragė county is just 51% of the EU average.

Large regional differences still exist on social indicators. The unemployment rate was 7.1% in 2021, while in 2020 it increased to 8.5%, from 6.3% in 2019. In cities the unemployment rate in 2020 on average was as low as 6.6%, but much higher in towns and suburbs (8.8%) and in rural areas (10.7%).

The percentage of people at risk of poverty and social exclusion in cities is lower, at 17.7% than the EU average of 22.3% in 2020, but it is much higher in towns and suburbs and in rural areas where it reaches, 28% and 30% respectively. The level of educational attainment has steadily increased in Lithuania over time. However, while the

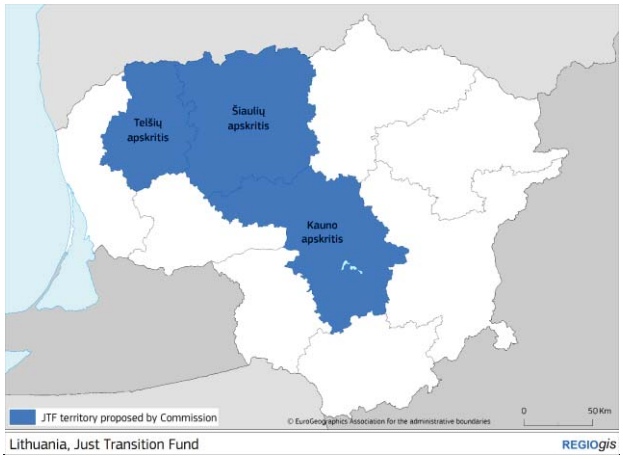
Table A15.1:**Selected indicators at regional level - Lithuania**

NUTS 3 Region	GDP per head (PPS)	GDP (mln of PPS)	Productivity (GVA (PPS) per person employed)	Real productivity growth	GDP growth	GDP per head growth	Transport performance by car
	EU27=100, 2019	2019	EU27=100, 2018	Avg % change on preceding year, 2010-2019	Avg % change on preceding year, 2010-2019	Avg % change on preceding year, 2010-2019	% Pop. within a 1h30 travel / within 120 km radius, 2018
European Union	100	13,963,897.26	100	1.00	1.57	1.39	
Lietuva	84	72,730.72	77	3.04	3.57	4.86	73.6
Vilniaus apskritis	118	28,747.21	83	1.12	4.59	4.95	87.7
Alytaus apskritis	49	2,037.35	54	3.16	2.07	3.99	53.7
Kauno apskritis	84	14,317.99	86	4.43	4.11	5.42	78.2
Klaipėdos apskritis	79	7,553.77	86	2.80	2.20	3.36	73.9
Marijampolės apskritis	48	2,015.07	54	3.99	2.65	4.48	57.9
Panevėžio apskritis	60	3,913.18	73	4.49	2.91	4.78	76.8
Šiaulių apskritis	62	4,935.99	73	5.41	3.45	5.43	52.8
Tauragės apskritis	46	1,320.37	51	3.63	3.29	5.28	68.4
Telšių apskritis	59	2,364.11	61	1.49	1.77	3.53	59.0
Utenos apskritis	47	1,832.96	57	2.30	-0.99	1.06	58.7

Lithuania country-level GDP per head and GDP reference year: 2019
Source: Eurostat

percentage of the population aged 25-64 with a tertiary education is as high as 58.5% in Lithuanian cities, it drops to 32.8% in towns and suburbs and to 32.0% in rural areas.

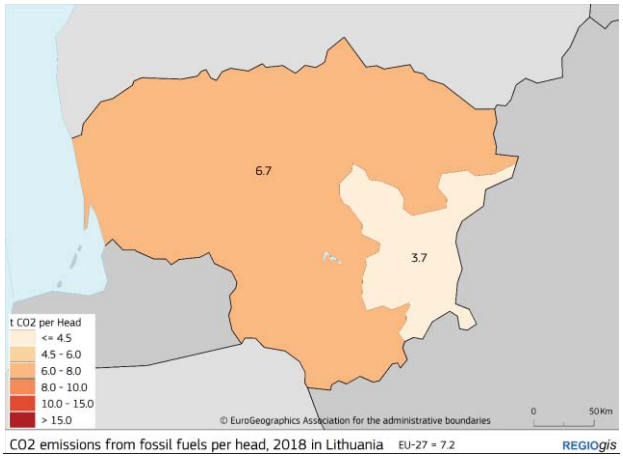
Graph A15.1: **Territories most affected by the climate transition in Lithuania**



Lithuania, Just Transition Fund REGIOgis

Source: European Commission

Graph A15.2: **CO2 emissions from fossil fuels per head, 2018**

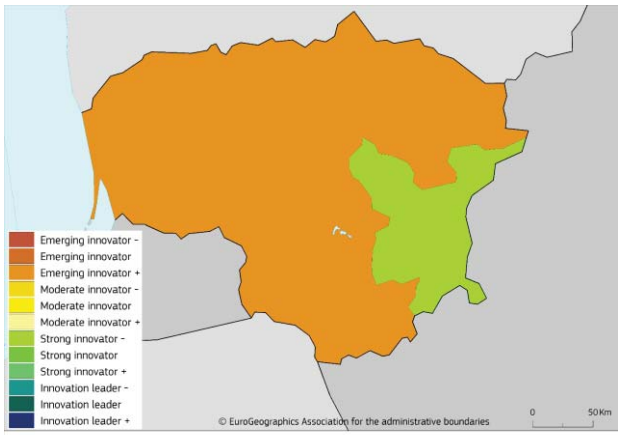


CO2 emissions from fossil fuels per head, 2018 in Lithuania EU-27 = 7.2 REGIOgis

Source: European Commission

The Greenhouse gas (GHG) emissions per capita are below the EU average. However, GHG intensity per value added produced is among the highest in the EU due to the large energy intensity of Lithuanian economy. The counties of Kaunas (with fertiliser plant), Šiauliai (with a cement plant) and Telšiai (with an oil refinery) produce the vast majority of industrial emissions in the country. These are the territories that will need to make largest efforts to achieve climate neutrality, while reducing negative social and economic impacts.

Graph A15.3: **Innovation performance in Lithuania**



Regional performance groups, 2021 in Lithuania REGIOgis

Source: European Commission

There are significant disparities between the two NUTS2 regions according to innovation performance – the Capital region is a strong innovator, while the Central and Western region is lagging as an emerging innovator. The Capital region scores significantly better that the Central and Western region in business sector R&D expenditures, tertiary education, and employment in knowledge-intensive activities ([51]). In terms of connectivity, 65% of all households subscribe to fixed internet access and 31% have at least 100 Mbps fixed broadband, both below the EU average. The fast broadband (Next Generation Access) coverage rate for all households is 71%, although a digital divide is still notable in rural as the coverage drops to 29.6% ([52]).

The COVID-19 pandemic has strongly affected health conditions in Lithuania, with excess mortality at 12.5%. The excess mortality ranged from 12% in the Central and Western region to 16.5% in the Capital region.

([51]) Regional Innovation Scoreboard 2021

([52]) Digital Economy and Society Index (DESI) 2021 Lithuania

ANNEX 16: KEY FINANCIAL SECTOR DEVELOPMENTS

This Annex provides an overview of key developments in Lithuania's financial sector. Banks in Lithuania have ample capital buffers to support a strong economic recovery and they are well equipped to withstand losses. Despite the higher credit risk, banks ensured a sustainable capital adequacy ratio (22.6%) as the majority followed the ECB's recommendation of not distributing dividends. With private sector deposits growing at a rapid pace and lending lagging behind, the loan-to-deposit ratio reached an all-time low of 58.1% in 2021. Although an increase in the credit risk of some debtors has not led to a significant growth in non-performing loans thus far, the share of loans overdue up to 90 days is increasing.

With 450% in 2021, liquidity coverage hit the highest level across the EU. Households and corporate deposits surged by nearly 15% of GDP in large part due to the ample liquidity in the global financial system. As a result, however, this excess liquidity generated costs rather than income, and had a negative impact on profitability. The cost-to-income ratio for banks operating in Lithuania, which historically was one of the lowest in the EU, increased from 48.6% to 61% in 2021.

Banks' loan portfolio to non-financial corporations followed an upward path again. In 2020, most companies still postponed long-term investments and *the ones* affected by *COVID-19* measures received financial support from the government, which stifled demand for banking loans. In 2021, by contrast, the corporate loans portfolio value has been steadily increasing. Especially loans granted to companies engaged in real estate development activities have been buoyant. Mortgage credit performed equally strongly with an annual growth of over 10%, one of the fastest in the EU.

In the real estate market, housing prices are estimated to be in line with fundamentals. Moreover, lending standards are not loosening and continue to be underpinned by loan-to-value and debt service-to-income requirements for mortgage lending. However, the authorities should stand ready to employ macroprudential policies proactively to preserve stability in the event of an overheated housing market.

With a continuously improving business and regulatory environment, Lithuania experienced an impressive growth of fintech companies. By the end of 2021, the number of Fintech companies increased by 15% compared to 2020 and reached 265. The steady growth of Fintech sector has been achieved by implementing the 2021 FinTech action plan. The authorities plan to further support Fintech sector's growth and increase its maturity via 2022 – 2027 Fintech Sector's Development Guidelines which will be published in 2022. The authorities also continue to strengthen the AML/CFT framework to minimise risks linked to the rapidly growing innovative fintech solutions and digitalisation of the entire financial sector. The Centre of Excellence in Anti-Money Laundering, bringing together representatives of both the public and private sectors, started its activities in May 2021.

In 2019, Lithuania launched a project with the European Commission and the EBRD in the field of sustainable finance. At the end of 2021, the recommendations on the Lithuanian Strategy and Action Plan on sustainable finance were made. According to the recommendations the establishment of Lithuania's Green Finance Institute is planned for 2022. These actions should help encourage private investors to participate in funding sustainable projects along with public investors.

Lithuania has played a leading role in improving Baltic capital market integration, in view of offering banks and businesses better access to financing and instruments and attracting investors. Although important progress has been made so far, cross-border barriers such as differing insolvency proceedings and the debt-equity bias hamper further development of a truly pan-Baltic capital market.

Table A16.1:**Financial soundness indicators**

	2017	2018	2019	2020	2021
Total assets of the banking sector (% of GDP)	67.5	66.1	65.9	80.0	81.8
Share (total assets) of the five largest bank (%)	90.1	90.9	90.4	91.8	-
Share (total assets) of domestic credit institutions (%)[1]	8.4	8.9	9.5	9.7	13.0
Financial soundness indicators:[1]					
- non-performing loans (% of total loans)	3.2	2.6	1.7	2.2	1.5
- capital adequacy ratio (%)	19.1	18.6	19.9	21.9	22.6
- return on equity (%)	9.1	12.3	14.5	10.0	10.4
NFC credit growth (year-on-year % change)	5.4	5.1	-0.7	-14.0	11.2
HH credit growth (year-on-year % change)	7.6	8.6	7.1	6.1	10.4
Cost-to-income ratio (%)[1]	48.9	44.9	47.0	48.6	61.0
Loan-to-deposit ratio (%)[1]	78.8	79.5	77.2	63.3	58.1
Central bank liquidity as % of liabilities	1.2	0.7	0.2	0.5	4.2
Private sector debt (% of GDP)	56.2	56.1	55.3	54.7	-
Long-term interest rate spread versus Bund (basis points)	-0.8	-8.7	56.3	73.3	53.3
Market funding ratio (%)	18.0	21.7	22.3	36.7	-
Green bond issuance (bn EUR)	0.3	0.4	-	-	-

(1) Last data: Q3 2021.
Source: ECB, Eurostat, Refinitiv.

This Annex provides an indicator-based overview of Lithuania's tax system. It includes information on the tax structure, i.e. the types of tax that Lithuania derives most revenue from, the tax burden for workers, and the progressivity and redistributive effect of the tax system. It also provides information on tax collection and compliance and on the risks of aggressive tax planning activity.

Lithuania's tax revenues are low in relation to GDP. Total tax revenue amounted to 30.8% of GDP in 2020, well below the 40.1% EU average. Lower revenue from labour and capital taxes explains much of the difference, while consumption taxes generated a relatively high revenue (11.4% of GDP in Lithuania in 2020 compared to the EU average of 10.8%). Revenue from environmental taxes is somewhat below the EU average while revenue from recurrent property taxes is very low (0.3% of GDP compared to the EU average of 1.2%).

Reforms have improved work incentives and made the tax system more progressive. A series of tax reforms making income tax more progressive have reduced the total tax burden on low-wage earners. In particular, the tax wedge for workers earning 50% of the average wage reduced from 36.9% in 2010 to 31.1% in 2021, now below the EU average. (The tax wedge is a measure of the difference between the wage cost for employers and the net wage of employees.) In 2020, the tax wedge was below the EU average for various earnings levels, including for second earners (see Graph A17.1). The ability of the tax and benefits system to reduce income inequality (as measured by the Gini coefficient) increased from below the EU average to above it in 2020.

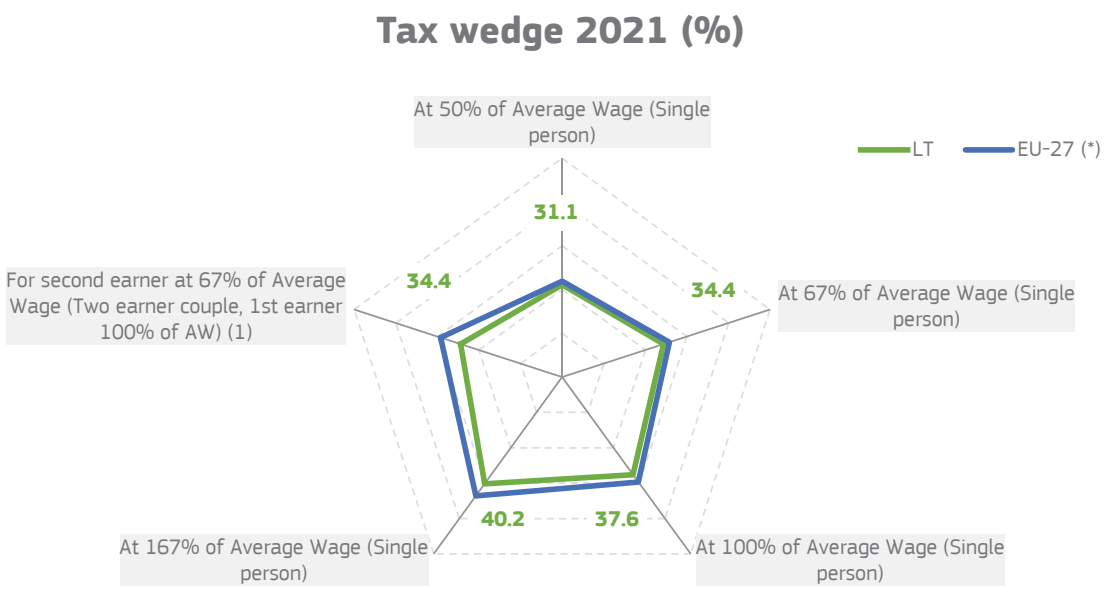
Lithuania faces significant challenges with tax compliance, but is taking action to digitalise tax administration and improve tax collection. Outstanding tax arrears have declined slightly by 1 percentage point to 4.8% of total net revenue. This is significantly below the EU27 average of 31.8%, though that average is inflated by very large values in a few Member States. The VAT gap (an indicator of the effectiveness of VAT enforcement and compliance) is very large in Lithuania at 21.4%, more than double the EU-wide gap of 10.5%, although it did decrease significantly in 2019. The Lithuanian recovery and resilience plan contains measures to enhance tax administration by improving data analytics, developing IT tools, developing staff competences and limiting cash transactions to reduce the size of the shadow economy. Government revenue administration activities are distributed over a number of institutions, which leads to inefficiencies in the system. Finally, average forward-looking effective corporate income tax rates were significantly below the EU average in 2020.

Table A17.1:**Taxation indicators**

		Lithuania					EU-27				
		2010	2018	2019	2020	2021	2010	2018	2019	2020	2021
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	28.3	30.0	30.3	30.8		37.9	40.1	39.9	40.1	
	Labour taxes (as % of GDP)	14.1	15.4	15.4	15.9		20.0	20.7	20.7	21.5	
	Consumption taxes (as % of GDP)	11.2	11.3	11.3	11.4		10.8	11.1	11.1	10.8	
	Capital taxes (as % of GDP)	2.9	3.4	3.5	3.5		7.1	8.2	8.1	7.9	
	Total property taxes (as % of GDP)	0.7	0.3	0.3	0.3		1.9	2.2	2.2	2.3	
	Recurrent taxes on immovable property (as % of GDP)	0.4	0.3	0.3	0.3		1.1	1.2	1.2	1.2	
	Environmental taxes as % of GDP	1.8	2.0	1.9	1.9		2.4	2.4	2.4	2.2	
Progressivity & fairness	Tax wedge at 50% of Average Wage (Single person) (*)	36.9	33.5	31.8	29.9	31.1	33.9	32.4	32.0	31.5	31.9
	Tax wedge at 100% of Average Wage (Single person) (*)	40.6	40.7	37.7	37.1	37.6	41.0	40.2	40.1	39.9	39.7
	Corporate Income Tax - Effective Average Tax rates (1) (*)		13.7	13.7	13.7			19.8	19.5	19.3	
	Difference in GINI coefficient before and after taxes and cash social transfers (pensions excluded from social transfers)	6.2	5.3	5.8	11.6		8.4	7.9	7.4	8.3	
Tax administration & compliance	Outstanding tax arrears: Total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*)		5.8	4.8				31.9	31.8		
	VAT Gap (% of VTTL)		24.4	21.4				11.2	10.5		
Financial Activity Risk	Dividends, Interests and Royalties (paid and received) as a share of GDP (%)		2.3	2.1	1.8			10.7	10.5		
	FDI flows through SPEs (Special Purpose Entities), % of total FDI flows (in and out)		2.5	11.7	25.9			47.8	46.2	36.7	

(1) Forward-looking effective tax rate (OECD)
(*) EU-27 simple average as there is no aggregated EU-27 value
Source: European Commission and OECD

Graph A17.1: **Tax-wedge indicators**



The tax wedge measures the difference between the total labour cost of employing a worker and the worker's net earnings: sum of personal income taxes and employee and employer social security contributions, net of family allowances, expressed as a percentage of total labour costs (the sum of the gross wage and social security contributions paid by the employer).

(1) The second earner average tax wedge measures how much extra personal income tax (PIT) plus employee and employer social security contributions (SSCs) the family will have to pay as a result of the second earner entering employment, as a proportion of the second earner's gross earnings plus the employer SSCs due on the second earner's income. For a more detailed discussion see OECD (2016), Taxing Wages 2016, OECD Publishing, Paris. http://dx.doi.org/10.1787/tax_wages-2016-en
(*) EU-27 simple average as there is no aggregated EU-27 value.

Source: European Commission

Table A18.1:**Key economic and financial indicators**

	2004-07	2008-12	2013-18	2019	2020	2021	forecast 2022	forecast 2023
Real GDP (y-o-y)	8.2	-0.4	3.3	4.6	-0.1	5.0	1.7	2.6
Potential growth (y-o-y)	6.2	1.7	2.3	4.4	4.2	4.6	2.8	3.3
Private consumption (y-o-y)	11.0	-2.2	3.9	3.1	-2.1	7.3	3.9	3.1
Public consumption (y-o-y)	2.9	-0.7	0.2	-0.3	-0.4	0.5	0.1	-0.1
Gross fixed capital formation (y-o-y)	17.2	-6.8	6.8	6.6	-1.8	7.0	2.7	4.5
Exports of goods and services (y-o-y)	10.6	7.3	5.4	9.9	0.4	15.9	-2.1	3.1
Imports of goods and services (y-o-y)	15.7	2.1	5.7	6.1	-4.4	18.7	-0.9	3.6
Contribution to GDP growth:								
Domestic demand (y-o-y)	11.8	-3.5	3.8	3.2	-1.7	5.9	2.9	2.9
Inventories (y-o-y)	0.1	-0.1	-0.3	-1.7	-1.9	-0.6	-0.1	0.0
Net exports (y-o-y)	-3.7	2.8	-0.2	3.0	3.5	-0.3	-1.1	-0.4
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	-0.1	-0.7	0.2	0.5	0.2	0.9	-0.7	-0.1
Capital accumulation (y-o-y)	2.7	1.1	1.3	1.8	1.5	1.6	1.5	1.6
Total factor productivity (y-o-y)	3.6	1.3	0.8	2.1	2.4	2.1	1.9	1.9
Output gap	4.6	-4.3	1.2	3.6	-0.7	-0.3	-1.4	-2.1
Unemployment rate	7.3	13.2	8.8	6.3	8.5	7.1	7.2	7.2
GDP deflator (y-o-y)	6.2	3.3	1.9	2.7	1.5	6.5	7.4	3.0
Harmonised index of consumer prices (HICP, y-o-y)	3.3	4.7	1.3	2.2	1.1	4.6	12.5	3.0
Nominal compensation per employee (y-o-y)	15.2	2.6	6.6	10.6	7.3	11.4	8.7	6.2
Labour productivity (real, hours worked, y-o-y)	6.1	2.5	2.1	3.9	5.9	2.2	1.5	2.3
Unit labour costs (ULC, whole economy, y-o-y)	6.8	0.6	4.5	6.3	5.7	7.3	7.1	3.7
Real unit labour costs (y-o-y)	0.6	-2.7	2.5	3.6	4.2	0.7	-0.3	0.7
Real effective exchange rate (ULC, y-o-y)	4.6	-1.6	3.5	3.1	.	.	.	.
Real effective exchange rate (HICP, y-o-y)	0.1	1.1	1.8	-0.7	3.3	2.1	.	.
Net savings rate of households (net saving as percentage of net disposable income)	-0.9	0.1	-3.0	-0.2	9.0	.	.	.
Private credit flow, consolidated (% of GDP)	16.6	-1.3	2.6	2.6	0.3	.	.	.
Private sector debt, consolidated (% of GDP)	56.9	72.1	55.8	55.3	54.7	.	.	.
of which household debt, consolidated (% of GDP)	17.4	28.0	22.3	23.0	24.3	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	39.4	44.0	33.5	32.3	30.4	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (2)	0.7	11.9	4.9	1.6	1.3	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	-8.0	6.1	6.0	6.3	10.6	3.7	6.0	3.5
Corporations, gross operating surplus (% of GDP)	33.4	35.6	35.2	32.1	31.7	30.2	31.2	29.1
Households, net lending (+) or net borrowing (-) (% of GDP)	-0.3	0.1	-3.1	-1.6	5.7	0.9	-1.6	-1.9
Deflated house price index (y-o-y)	18.1	-9.9	4.3	4.6	6.4	.	.	.
Residential investment (% of GDP)	2.5	2.5	2.7	3.0	3.2	3.0	.	.
Current account balance (% of GDP), balance of payments	-10.3	-3.2	0.4	3.5	7.3	1.4	-2.3	-2.6
Trade balance (% of GDP), balance of payments	-9.4	-3.5	1.2	5.3	9.3	4.2	.	.
Terms of trade of goods and services (y-o-y)	1.8	-0.3	0.6	1.0	1.6	-5.6	-3.5	0.1
Capital account balance (% of GDP)	1.3	3.3	2.2	1.7	1.7	1.5	.	.
Net international investment position (% of GDP)	-47.0	-56.5	-41.9	-24.0	-15.8	-7.2	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (1)	-15.4	-25.6	-11.8	5.1	15.2	21.9	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (1)	51.2	71.6	69.3	60.6	65.4	67.8	.	.
Export performance vs. advanced countries (% change over 5 years)	56.0	37.5	8.3	14.4	39.9	.	.	.
Export market share, goods and services (y-o-y)	5.1	4.4	1.6	6.5	9.4	5.4	-6.5	-1.1
Net FDI flows (% of GDP)	-3.9	-1.1	-0.9	-2.3	-1.1	-2.1	.	.
General government balance (% of GDP)	-0.7	-6.2	-0.4	0.5	-7.3	-1.0	-4.6	-2.3
Structural budget balance (% of GDP)	.	.	-0.9	-1.0	-7.0	-0.9	-4.0	-1.5
General government gross debt (% of GDP)	17.4	31.1	39.0	35.9	46.6	44.3	42.7	43.1

(1) NIIP excluding direct investment and portfolio equity shares
(2) domestic banking groups and stand-alone banks, EU and non-EU foreign-controlled subsidiaries and EU and non-EU foreign-controlled branches.

Source: Eurostat and ECB as of 2022-05-02, where available; European Commission for forecast figures (Spring forecast 2022)

This annex assesses fiscal sustainability risks for Lithuania over the short, medium and long term. It follows the same multi-dimensional approach as the 2021 Fiscal Sustainability Report, updated on the basis of the Commission 2022 spring forecast.

Table 1 presents the baseline debt projections. It shows the projected government debt and its breakdown into the primary balance, the snowball effect (the combined impact of interest payments and nominal GDP growth on the debt dynamics) and the stock-flow adjustment. These projections assume that no new fiscal policy measures are taken after 2023, and include the expected positive impact of investments under Next Generation EU.

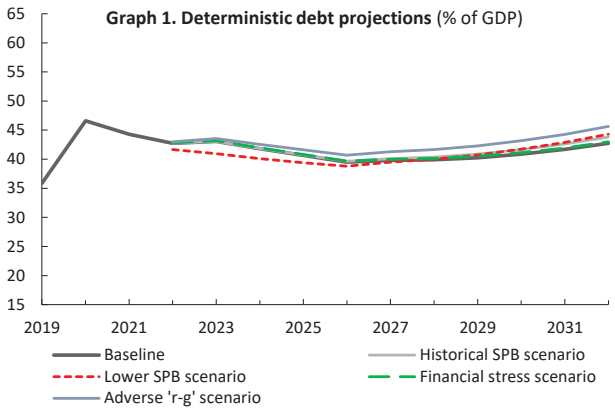
Graph 1 shows four alternative scenarios around the baseline, to illustrate the impact of changes in assumptions. The 'historical SPB' scenario assumes that the structural primary balance (SPB) gradually returns to its past average level. In the 'lower SPB' scenario, the SPB is permanently weaker than in the baseline. The 'adverse interest-growth rate' scenario assumes a less favourable snowball effect than in the baseline. In the 'financial stress' scenario, the country temporarily faces higher market interest rates in 2022.

Graph 2 shows the outcome of the stochastic projections. These projections show the impact on debt of 2 000 different shocks affecting the government's budgetary position, economic growth, interest rates and exchange rates. The cone covers 80% of all the simulated debt paths, therefore excluding tail events.

Table 2 shows the S1 and S2 fiscal sustainability indicators and their main drivers. S1 measures the consolidation effort needed to bring debt to 60% of GDP in 15 years. S2 measures the consolidation effort required to stabilise debt over an infinite horizon. The *initial budgetary position* measures the effort required to cover future interest payments, the *ageing costs* component accounts for the need to absorb the

Table A19.1: **Debt sustainability analysis for Lithuania**

Table 1. Baseline debt projections	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Gross debt ratio (% of GDP)	**35.9**	**46.6**	**44.3**	**42.7**	**43.1**	**41.8**	**40.6**	**39.5**	**39.8**	**39.9**	**40.3**	**40.9**	**41.7**	**42.7**
Change in debt	2.2	10.7	-2.3	-1.6	0.3	-1.3	-1.2	-1.2	0.3	0.1	0.3	0.6	0.8	1.0
of which														
Primary deficit	*-1.3*	*6.6*	*0.6*	*4.2*	*2.0*	*1.3*	*1.1*	*0.9*	*1.5*	*1.6*	*1.8*	*1.9*	*2.0*	*2.1*
Snowball effect	*-1.4*	*0.2*	*-4.5*	*-3.4*	*-2.0*	*-2.6*	*-2.2*	*-2.0*	*-1.2*	*-1.5*	*-1.4*	*-1.3*	*-1.2*	*-1.1*
Stock-flow adjustment	*5.0*	*3.9*	*1.7*	*-2.4*	*0.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Gross financing needs (% of GDP)	6.1	15.4	6.1	5.6	6.0	5.0	4.7	4.5	5.1	5.4	5.6	5.9	6.2	6.4



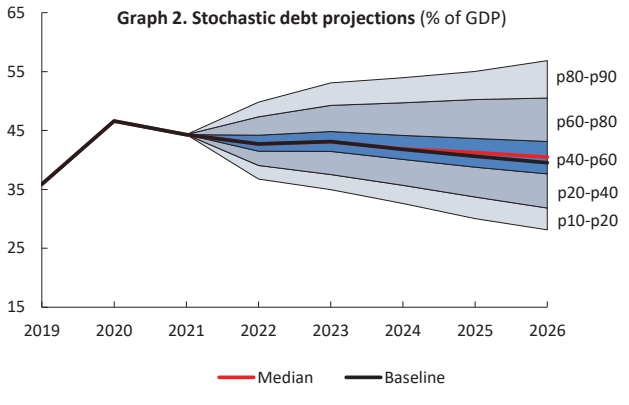


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

		S1	S2
Overall index (pps. of GDP)		**-0.6**	**2.5**
of which			
Initial budgetary position		-0.1	1.4
Debt requirement		-1.3	
Ageing costs		0.8	1.2
of which	*Pensions*	*0.4*	*0.0*
	Health care	*0.2*	*0.5*
	Long-term care	*0.2*	*0.6*
	Others	*0.1*	*0.0*

Source: European Commission.

projected change in ageing-related public expenditure such as pensions, health care and long-term care, and the *debt requirement* measures the additional adjustment needed to reach the 60% of GDP debt target.

Finally, the heat map presents the overall fiscal sustainability risk classification (Table A19.2)**.** The *short-term risk category* is based on the S0 indicator, an early-detection indicator of fiscal stress in the upcoming year. The *medium-term risk category* is derived from the debt sustainability analysis (DSA) and the S1 indicator. The DSA assesses risks to sustainability based on several criteria: the projected debt level in 10 years' time, the debt trajectory ('peak year'), the plausibility of fiscal assumptions and room for tighter positions if needed ('fiscal consolidation space'), the probability of debt not stabilising in the next 5 years and the size of uncertainty. The *long-term risk category* is based on the S2 indicator and the DSA.

Overall, short-term risks to fiscal sustainability are low. The Commission's early-detection indicator (S0) does not signal major short-term fiscal risks (Table A19.2).

Medium-term risks to fiscal sustainability are low. Both elements of the Commission's medium-term analysis lead to this conclusion. First, the debt sustainability analysis (DSA) shows that, in the period to 2032, government debt would remain close to the current level of around 43% of GDP (Table 1). The limited sensitivity of the debt path to possible shocks to fiscal, macroeconomic and financial variables, as illustrated by alternative scenarios and stochastic simulations, confirms this risk assessment (Tables A19.1 and A19.2). Moreover, the sustainability gap indicator S1 signals that no additional fiscal effort is needed to reach a debt ratio of 60% of GDP in 15 years' time (Table 2). Overall, the low risk reflects the modest debt ratio, despite the budgetary pressure stemming from ageing costs.

Long-term risks to fiscal sustainability are medium. Over the long term, the sustainability gap indicator S2 (at 2.5 pps. of GDP) points to medium risks, compared to low risks for the DSA, leading to the overall medium risk assessment The S2 indicator suggests that stabilising debt over the long term would require addressing budgetary pressures, including those stemming from population ageing, notably from long-term care and health care expenditure (Table 2).

Table A19.2:**Heat map of fiscal sustainability risks for Lithuania**

Short term	Medium term										Long term	
				Debt sustainability analysis (DSA)								
					Deterministic scenarios							
Overall (S0)	Overall (S1+DSA)	S1	Overall		Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress	Stochastic projections	S2	Overall (S2+DSA)
				Overall	LOW	LOW	LOW	LOW	LOW	LOW		
				Debt level (2032), % GDP	43	44	44	46	43			
LOW	LOW	LOW	LOW	Debt peak year	2021	2021	2021	2032	2021		MEDIUM	MEDIUM
				Fiscal consolidation space	56%	59%	60%	56%	56%			
				Probability of debt ratio exceeding in 2026 its 2021 level						37%		
				Difference between 90th and 10th percentiles (pps. GDP)						29		

(1) Debt level in 2032: green: below 60% of GDP, yellow: between 60% and 90%, red: above 90%. (2) The debt peak year indicates whether debt is projected to increase overall over the next decade. Green: debt peaks early; yellow: peak towards the middle of the projection period; red: late peak. (3) Fiscal consolidation space measures the share of past fiscal positions in the country that were more stringent than the one assumed in the baseline. Green: high value, i.e. the assumed fiscal position is plausible by historical standards and leaves room for corrective measures if needed; yellow: intermediate; red: low. (4) Probability of the debt ratio exceeding in 2026 its 2021 level: green: low probability, yellow: intermediate, red: high (also reflecting the initial debt level). (5) The difference between the 90th and 10th percentiles measures uncertainty, based on the debt distribution under 2000 different shocks. Green, yellow and red cells indicate increasing uncertainty.

Source: European Commission (for further details on the Commission's multi-dimensional approach, see the 2021 Fiscal Sustainability Report).