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2026 Country Report – Luxembourg

Accompanying the document

Recommendation for a COUNCIL RECOMMENDATION

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

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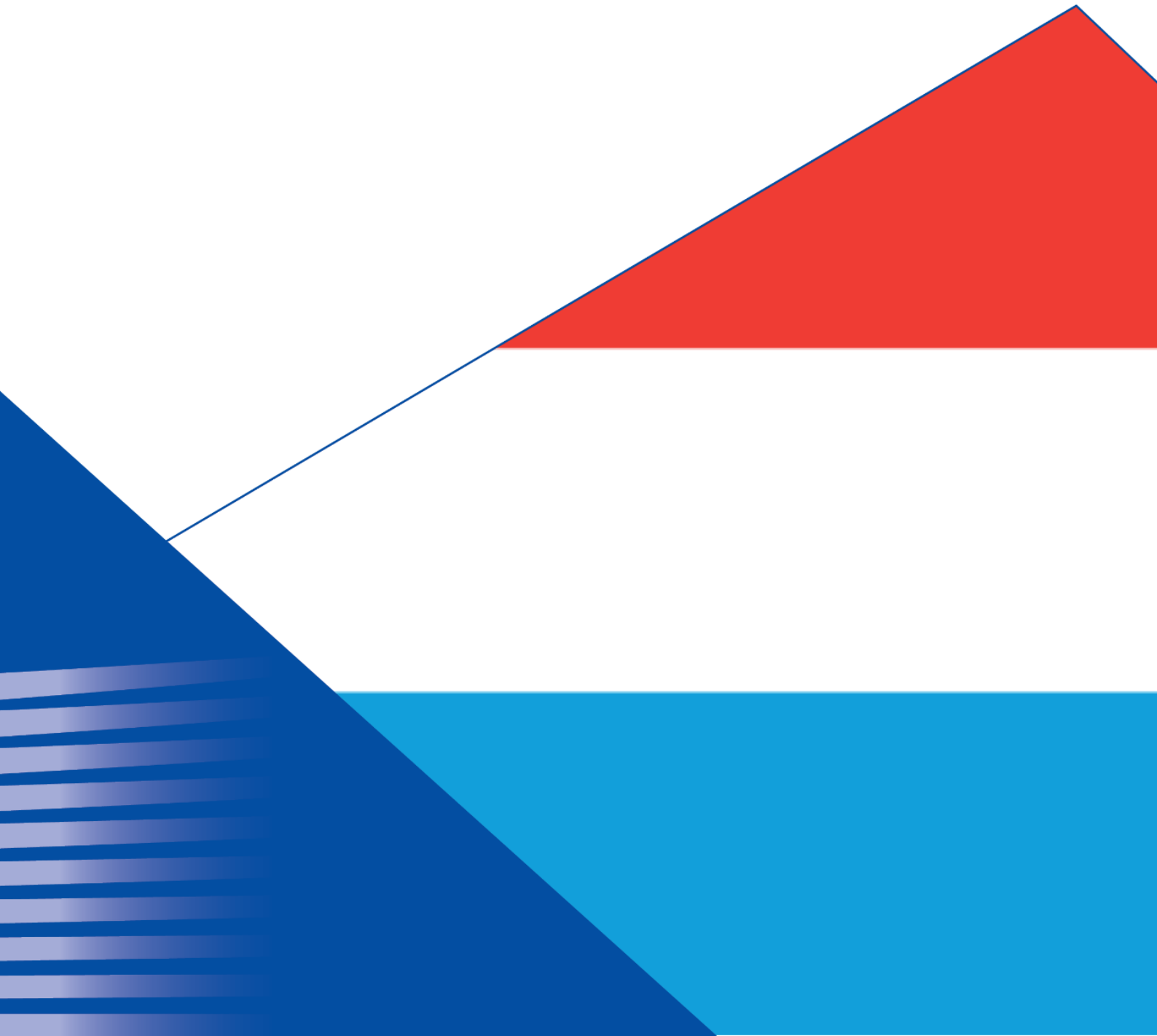
European Commission

Economic and Financial Affairs

Luxembourg

2026 Country Report



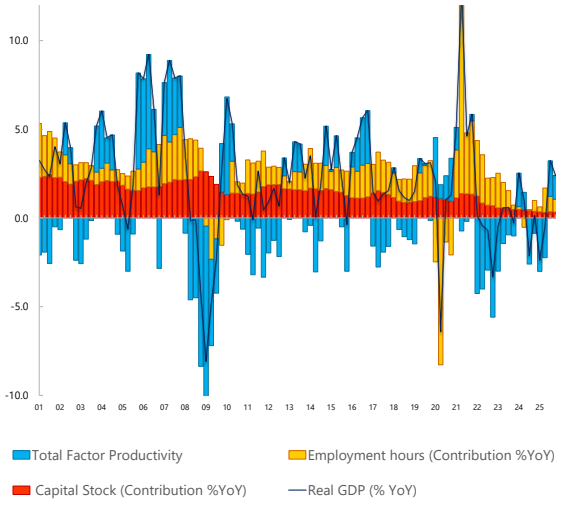
ECONOMIC DEVELOPMENTS AND KEY POLICY CHALLENGES

Growth remains subdued as productivity weakens

Luxembourg features high living standards and productivity, but its economic growth has slowed, and productivity has stagnated since the early 2010s. Luxembourg is among the world's wealthiest economies, with a gross national income per head of around EUR 64 000 in 2024 (60 percentage points above the EU average). That prosperity reflects very high gross value added and labour productivity levels in a service-led economy, driven by a large, externally oriented financial sector, which generates about a quarter of value added. High wages and living standards have exerted a strong pull on labour, which has increased by 70% in two decades: end-2025 Luxembourg counted nearly 526 000 workers, some 43% of whom were cross-border workers ([1]) from neighbouring countries. Before 2007, the economy combined this specialisation with very rapid expansion, as real GDP grew by 4.5% per year between 2000 and 2007, but slowed to 2.5% in 2010-2019 and 1.1% in 2020-2025.

Since 2010, labour productivity growth has been almost exclusively driven by employment and capital stock growth. Luxembourg's economy has a high degree of specialisation in internationally-oriented financial and related services, where value added and measured productivity are closely linked to global financial conditions. As a result, changes in global financial activity translate into disproportionately large swings in output per hour. While productivity remains very high, it has decreased by 0.5% on average per year since 2010, unlike in most advanced economies. This reduction has occurred with a progressive slowdown in the contribution from capital deepening and alongside continued job creation and resulted overall in a slowdown in real GDP.

Graph 1.1: **Real GDP growth, production factors contributions, 2001 Q1 - 2025 Q4, year-on-year percentage changes**



Source: *Quarterly national accounts Luxembourg Eurostat*

Real GDP expanded by 0.6% in 2025, still below the historical performance. Growth was supported by private and government consumption. Net exports contributed negatively as imports accelerated faster than exports. The economic performance was also weakened by investments of which the annual contribution to GDP is negative since 2022. In terms of real gross value added, the main contributors were the public sector and, the finance and insurance sector driven by increases in net issuance in bond funds as a result of interest rate cuts.

Services exports are expected to support the economy despite a challenging

([1]) STATEC: National accounts, seasonally adjusted data.

international context and rising energy costs while private consumption and investment are set to slow down. Economic growth is expected to accelerate to 1.6 % in 2026 and, 2.0 % in 2027 supported mainly by exports of financial services in 2026 then domestic demand in 2027. Strong volatility remains a risk in a context of persistent geopolitical tension. Private consumption is expected to lose some steam in the coming quarters. While confidence improved at the start of the year, it fell by 9.2pp in March, the second biggest fall in the EU, followed by a slight recovery in April Although still below average, the trend in confidence surveys in the construction sector has improved. The activity in the sector is recovering slowly and investment in housing is expected to recover slightly in 2026 but not enough to offset the deceleration in investment in equipment.

Headline inflation is set to increase in 2026 before edging down in 2027. Inflation is expected to accelerate in 2026 as energy prices rise following the conflict in the Middle East. Wage increase based on automatic indexation, expected in May 2026, is set to push services prices up. In 2027, inflation is projected to decelerate below the ECB target due to a contraction in energy prices and lower food inflation.

Structural challenges call for diversification

Luxembourg's labour productivity has declined in recent years, while its productivity levels remain among the highest in the EU. Between 2021 and 2025, productivity growth has been sluggish, with labour productivity decreasing by 1.6% and total factor productivity falling by 1.8%, both on average per year. Further, competitiveness developments remain moderate as unit labour costs grew by 4.1% in 2024 and 4.9% in 2025, well above productivity growth ([2]).

A structural shift in Luxembourg's economic set-up provided some support to labour productivity growth in the last decades while growth within several industries was weak. The information and communication sector, and administrative and support services, have experienced positive productivity growth, while industries such as construction, wholesale and retail trade, and financial services have seen negative growth and declining relative size in the economy ([3]).

Luxembourg's economy is dominated by the financial sector, which accounts for around a quarter of value added and tax revenues, but its productivity growth rate is negative. Luxembourg's growth model is heavily reliant on the financial sector. Although it remains very productive in levels ([4]), its productivity growth has turned negative over the past decades, pointing to diminishing efficiency gains. As this has occurred alongside an expansion of jobs, it nevertheless contributes strongly to overall output growth for the economy. At the same time, regulatory and structural barriers, including limited competition and weak innovation diffusion, constrain productivity improvements ([5]). Improving the efficiency within service activities through digitalisation, innovation or automation and fostering productivity-enhancing investments could be effective strategies to raise productivity growth to former levels ([6]).

Further diversification within the financial sector could reduce Luxembourg's reliance on the funds

([2]) ECB and European Commission Alert Mechanism Report 2026 SWD.

([3]) Eurostat (nama_10_a64, nama_10_a64_e, nama_10_lp_a21).

([4]) The financial sector's gross value added per hour worked in 2025 was around EUR 191, at prices of 2015 (which is equivalent to EUR 268 at current prices).

([5]) OECD 2025.

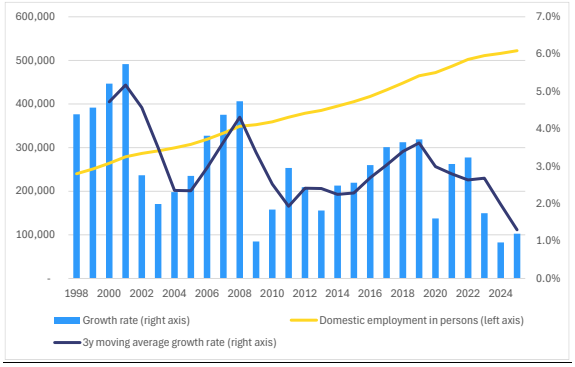
([6]) CNP.

industry. Sustainable finance and innovation offer strong potential, with Luxembourg already established as a leader in ESG-compliant ([7]) investment products. As these areas are expected to grow significantly, further developing climate finance, innovative structures and transparency frameworks will be crucial to maintaining competitiveness and supporting sustainable economic growth**.**

Luxembourg offers a favourable business environment, despite regulatory restrictions, but investment in R&D seems insufficient to boost productivity. The country's large financial sector is facing declining competitiveness, and business investment, particularly in R&D, is low (see Annex 5). Key challenges include the scarcity of skilled staff, high labour costs and late payments, notably from the government to businesses ([8]). This significantly affects small and medium-sized enterprises (SMEs). While the administrative burden is moderate, barriers to regulated professions are high. However, Luxembourg is taking steps to support start-ups, scale-ups and overall competitiveness to enhance productivity growth.

Luxembourg's labour market is growing strongly, with nearly half of workers commuting from neighbouring countries, but housing shortages and transport congestion could hinder further growth. Luxembourg's economy is built on the continued rise in employment (see Graph 1.2). High housing costs, stemming from limited supply, could obstruct labour retention and growth, while strained transport systems exacerbate congestion and reduce working hours, which could impede productivity.

Graph 1.2: **Domestic employment growth between 1998 and 2025**



Source: National accounts, seasonally adjusted data

Increasing housing supply and cross-border connectivity is pivotal

Housing challenges are persistent, and Luxembourg's housing market is the most expensive in the EU. In 2025, house prices in Luxembourg were 60% higher than a decade ago in nominal terms. High house prices are due to a supply-demand imbalance. Luxembourg received a country-specific recommendation (CSR) in 2025 to increase housing supply, by adopting a comprehensive land-use policy and a property tax reform. Limited progress has been observed. A reform of property taxation is in preparation, but its indicative implementation date is not until 2028. Furthermore, ongoing obstacles could cause further delays and the date of this reform's entry into force remains uncertain. In addition, the initial scope of the reform was reduced following amendments (see Annexes 3 and 16).

Mobilising approximately 2 400 ha of land would allow for the development of 125 000 housing units. The 2025 CSR highlighted the need to boost the supply of (affordable) housing and curb house prices. Some steps have been taken, in particular regarding the integration of affordable housing into local development plans via the reform 'Housing Pact 2.0' under the recovery and resilience plan. However, the harmonisation of the different procedures from land mobilisation to housing delivery

([7]) ESG stands for Environmental, Social, and Governance, a framework used to evaluate how organisations manage sustainability, social responsibility, and corporate governance.

([8]) Government to business 1/3 delayed, EU 15.9%, business to business 81.5% delayed, EU 47.1%.

remains incomplete. In addition, several simplifications of the *Pacte Logement 2.0* are still going through the legislative process, although they were expected to be implemented in 2025 (see Annexes 5 and 16).

Cross-border commuting by car is a major source of greenhouse gas emissions. Many workers live across the border due to high house prices in Luxembourg and commute every day. The 2025 CSR pointed out the high reliance on private cars for cross-border travel and its repercussions in terms of emissions and traffic congestion. Progress has been made to encourage the use of public transportation, such as the entry into service of a park-and-ride facility at Thionville and Longwy railway station and new and longer trains during peak hours. Investments are ongoing to increase cross-border train capacity in the short and the long term. Luxembourg had the highest weekly public transport usage among EU countries in 2024. Nevertheless, there is still room for improvements on cross-border connections and multimodal transportation in rural areas more distant to the main rail axis (see Annex 19).

The recommendation to phase out fiscal incentives to borrow for housing has not yet been addressed. Another housing-related challenge identified in 2025 is the support provided by the current tax framework to housing demand. This exerts upwards pressure on house prices, and its effects are exacerbated by limited supply. However, some of the temporary tax benefits – which increase this support – that were implemented in 2024 became permanent or were extended. This is the case for the increase of the '*Bëllegen Akt*' tax credit and of the mortgage interest deductibility (see Annexes 3 and 16).

No progress has been made to address the existing recommendation to strengthen the macroprudential framework. Overvalued housing prices, the significant share of mortgages with variable rates and the high level of household indebtedness pose systemic risks. No new macroprudential policies have been put in place. Additional income-related borrower-based measures such as loan-to-value (LTV) and debt service-to-income (DSTI) limits could be implemented to reduce vulnerabilities.

Improving the quality of public finances would help Luxembourg face the challenges posed by increasing spending pressures

Public finances are projected to weaken in the short term, under increasing spending pressure. The general government balance turned to a deficit of 2.0% of GDP in 2025, after a surplus of 0.9% in 2024. While revenues growth has been moderate at 2.5%, partially due to a shortfall in revenues from taxes on income and wealth, spending has surged by 8.8%, driven by a dynamic current expenditure and high public investment, including in defence, affordable housing, education and climate-related measures. Over the projection period, the government deficit is projected to be only partially corrected.

In 2025, Luxembourg has been found not compliant with its commitments under its medium-term fiscal-structural plan. Under its 2025-2029 medium-term fiscal-structural plan, Luxembourg committed to limiting net expenditure growth, aiming to keep the deficit well below 3% of GDP by 2029 and maintain public debt below the 60% of GDP threshold (see Annex 2). Higher than recommended net expenditure growth in 2025 resulted in a annual and cumulative deviation equal to 1.3% of GDP and 0.6% of GDP, respectively. Risks to the above commitment involve lower than projected economic growth resulting in policies leading to possibly lower fiscal revenue growth, in a challenging political environment, and increasing spending pressures, including the projected increase in age-related spending and the planned increase in Luxembourg's defence expenditure (to reach 5% of gross national income (GNI) by 2035), in line with international commitments.

Expenditure on defence in Luxembourg is steadily increasing. Total government

expenditure on defence is forecast to increase from 0.7% of GDP in 2024 ([9]) to 1.0% of GDP in 2025 and 1.2% in 2026 (see Annex 2) and further increases are planned to reach 3.5% of GNI by 2035 as part of its commitment under NATO and 'ReArm Europe' ([10]). In January 2026, Luxembourg issued a defence bond for EUR 150 million (0.2% of GDP) with a maturity of three years to finance its military spending. Luxembourg has so far not requested support under the SAFE (Security Action for Europe) initiative for defence procurement.

Despite a recent reform, Luxembourg's pension system faces medium and long-term challenges as demographic dynamics are projected to threaten its sustainability. The 2024 Ageing Report projects a rise in pension-related spending, reaching 17.5% of GDP by 2070 – a rise of 8.1 pps from 2025. Luxembourg received a 2025 CSR to address the long-term sustainability of its pension system, by limiting early-retirement options and increasing the participation and employment rate of older workers. End-2025, Luxembourg adopted a pension reform after a public consultation process. The reform mainly consisted of an increase in the contribution rate by 1.5 pps to 25.5%, limited measures to incentivise prolonging careers by providing tax advantages, introducing the right for a progressive pension and increasing the mandatory contribution period for most early retirees ([11]). Overall, the reform seems neither to be sufficient to address the structural issues of the sustainability of the pension system, nor to significantly increase the low participation rate of workers aged 55-64.

Luxembourg has large pension reserves, but they risk running out in the medium-term. Luxembourg has accumulated sizeable reserves in its pay-as-you-go Pillar I pension scheme of around 35.6% of GDP in 2024 ([12]). While this is large for a Pillar I reserve, it is small compared with Pillar II and III funds (e.g. Denmark's 206.4% of GDP and the Netherlands' 150.9% of GDP in 2024). Benefits in Luxembourg remain generous (the average gross pension being around 75% of the final wage ([13]) and the pension system is projected to start running a deficit as of 2029. This deficit is projected to increase due to unfavourable demographic dynamics as employment is projected to grow less than the 2.5-3% needed to keep the system in balance ([14]). The reserve is projected to be entirely depleted by 2048 ([15]).

Luxembourg has the lowest participation rate of workers aged 55-64 of all Member States. In 2025, only 51.9% of people aged 55-64 in Luxembourg were active in the labour market, the lowest rate in the EU (average 68.5%) Although the statutory retirement age is 65, early retirement is possible for many from 57 and for most around 60 ([16]) , with generous entitlements. For an early retirement from 60, contributors can count a multitude of non-contributory years towards their work requirements ([17]). To increase the participation rate, Luxembourg could reinforce incentives to retire at the statutory retirement age ([18]).

Supplementary pension schemes remain underdeveloped, and replacement rates are falling (see Annexes 2 and 6). Luxembourg has one of the lowest

([9]) Nationally financed defence expenditure as defined in the Classification of the functions of government (COFOG) in the framework of the European System of National Accounts (ESA2010).

([10]) Luxembourg's NATO commitment is expressed in terms of GNI and not GDP. GNI is a more pertinent metric for Luxembourg as it just reflects the share of income remaining in the country.

([11]) Loi de 19 Decembre 2025 (Pension reform) loi du 19 Decembre 2025 (Tax incentives).

([12]) Régime général - Compte d'exploitation 2024 - CNAP.lu d'Pensiounskeess - Caisse nationale d'assurance Pension - Luxembourg

([13]) OECD Economic Surveys: Luxembourg 2025.

([14]) IGSS: Aperçu numéro 29, June 2025, p.7.

([15]) Bill 8634.

([16]) IDEA: Working document nr 32, p.16.

([17]) E.g. study years, military service or childcare. Due to the pension reform of 2025, the number of months needed to retire at 60 is stepwise increased by eight between 2026-2030 from 480 to 488 of which 120 must come from contributory periods.

([18]) E.g. IDEA: Working document nr 31.

contribution rates in the EU to its voluntary supplementary pension schemes but the highest wealth per inhabitant. Increased participation in supplementary pension schemes – potentially with auto-enrolment – could allow the pension system to become more resilient by diversifying retirement income sources and boosting funding for European companies through additional equity investment ([19]). In addition, a national pension tracking system could improve transparency and inform retirement and career planning decisions.

There is scope to reduce revenue volatility by broadening the tax base. Approximately 25% of total tax revenues (including social contributions) originate from the financial sector, exposing the country's public finances to external shocks to this sector. Furthermore, revenues depend on a limited number of taxpayers. In 2024, 75% of total corporate taxes were paid by 0.5% of businesses ([20]). To diversify Luxembourg's revenue sources, a national CO_2 price was introduced for sectors not covered by the EU emissions trading system. Luxembourg introduced a CO_2 tax of 20 euros per tonne of CO_2 (€/t) in 2021 with increments of 5 €/t per year to reach 45 €/t in 2026. Luxembourg has comparatively low revenues from environmental taxes; while increasing tax rates should increase tax revenue, there may also be a loss of receipts from sales to non-residents, who currently account for 72% ([21]) of fuel sold, and whose behaviour is sensitive to relative prices ([22]). The share of revenues from recurrent property taxes is the second lowest in the EU at 0.1%, against an EU average of 0.9%. This was a feature covered by the 2025 CSRs, which recommended Luxembourg to increase its housing supply, in particular by adopting a comprehensive land-use policy and a property tax reform. Luxembourg makes limited use of less distortive revenue sources.

Total current public expenditure has substantially increased in recent years. Over the period 2010-2025, current expenditure increased by 5.9 pps of GDP, while it decreased on average in the euro area. The compensation of public employees and social related expenditure are the main drivers behind this increase, which reflects, inter alia, demographic and labour market developments. Since 2010, the number of public employees has grown by 70%, while the population has risen by only 34%. There is room to increase the efficiency of the high level of public spending to create fiscal space in view of new investment priorities. While some principles are embedded in the budgetary process, Luxembourg does not have a formal spending review framework which could contribute to ensure public spending efficiency. In this regard, the recent OECD review ([23]) provides suggestions for a review of the budgetary processes with a view to achieving more efficient public spending (see Annex 2).

The aggressive tax planning challenge remains unaddressed

Aggressive tax planning remains a challenge in Luxembourg. Since it distorts fair competition and compromises a fair tax environment in the EU, tackling the CSR on aggressive tax planning remains essential. Besides the implementation of directives, Luxembourg has adopted limited measures to address this issue. Luxembourg introduced a non-deductibility rule for interest and royalty payments, however the scope of this measure remains limited to jurisdictions on the European Union list of third country

([19]) In Luxembourg only 4.1% of the working-age population participate in a Pillar II or III pension scheme compared with 54.3% in the EU.

([20]) Report (page 3) from the Finances and Budget Commission on the budget available at: https://wdocs-pub.chd.lu/docs/exped/0153/125/307253.pdf.

([21]) Statec, 2026.

([22]) A relative price is the price of a commodity such as a good or service in terms of another, i.e. the ratio of two prices'. https://iate.europa.eu/entry/result/1623392/en

([23]) OECD, Review of public finance system in Luxembourg, OECD papers on budgeting, 2025.

Box 1: **UN Sustainable Development Goals (SDGs)**

Luxembourg performs well on several SDGs related to *macroeconomic stability* (SDGs 16 and 17), *competitiveness* (SDGs 4 and 9) and *social fairness* (SDGs 1, 3, 4, 5 and 10). However, challenges persist for *decent work and economic growth* (SDG 8), as the in-work at-risk-of-poverty rate has risen above the EU average while the investment share of GDP has declined below it.

Although Luxembourg shows signs of improvement, it remains below the EU average on several *sustainability*-related SDGs (7, 12 and 13). This is mainly due to high net greenhouse gas emissions per capita – partly influenced by a large number of cross-border commuters – as well as a relatively high energy import dependency and a low share of renewable energy in gross final energy consumption (see Annex 17).

jurisdictions for tax purposes, which includes those that failed to comply with the EU's tax good governance criteria within a specific timeframe or refused to engage with the EU and do not effectively address the issue of zero- and low-tax jurisdictions. Luxembourg has not taken adequate measures to address the risks of aggressive tax planning on outbound payments, highlighting the need for more comprehensive action to ensure a fair and transparent tax environment.

Ensuring economic security is a challenge

Economic security challenges are significant. Luxembourg's main economic security challenge relates to it being a small open economy with a large dependency on the financial sector. Diversification efforts in the space sector, logistics and ICT have so far had limited success as measured by their relative share in total valued added and employment. Furthermore, the economy is reliant on cross-border workers for a large portion of its labour force, making regional mobility crucial to avoid heavy disruption to its economy. In addition, despite progress in renewable energy deployment (see Annex 9), Luxembourg remains highly dependent on its neighbours to meet its energy needs. In this regard, a coordinated cross-border strategy would be needed to address the needs of its commuting workforce. This includes improving connectivity, integrating rail transport infrastructure with neighbouring countries, integrating ticketing systems and improving last-mile connections. While its material import dependency is the highest in the EU (89.4% in 2024, against an EU average of 22.4%), its circular material use rate is below the EU average and its waste generation and incineration rates remain high, underlining persistent reliance on primary resources (see Annexes 5 and 8).

EU funding instruments provide considerable resources to Luxembourg. They support investments and structural reforms to increase competitiveness, environmental sustainability, skills, social fairness and security, while helping to address challenges identified in the CSRs. Key instruments include the Recovery and Resilience Facility (see Box 2) and Cohesion policy funds (see Box 3). In addition, the Common Agricultural Policy (CAP) provides Luxembourg with an EU contribution of EUR 225 million under the CAP strategic plan for 2023-2027 ([24]). A further EUR 47.7 million are available under the Asylum, Migration and Integration Fund (AMIF), together with the Border Management and Visa Instrument (BMVI) and the Internal Security Fund (ISF). Other EU programmes also support competitiveness in Luxembourg, for instance through open calls under Horizon Europe and the Connecting Europe Facility.

([24]) An overview of Luxembourg's formally approved strategy to implement the EU's common agricultural policy nationally can be found at https://agriculture.ec.europa.eu/cap-my-country/cap-strategic-plans/luxembourg_en

Box 2: **Key achievements of the recovery and resilience plan**

Luxembourg's recovery and resilience plan (RRP) represents a total investment budget of **EUR 241.1 million**, corresponding to **0.3% of GDP**. The RRP aims to support the green and digital transitions, strengthen economic resilience and address long-standing structural challenges identified in the European Semester.

As of 4 May 2026, EUR 90.2 million (around **37%** of the total allocation) has been disbursed following the satisfactory fulfilment of 36 milestones and targets. Implementation has progressed steadily, with a growing number of reforms and investments already fulfilled and delivering tangible results on the ground.

Highlights and impact of the plan

- Strengthened **skills and employability** through a reform which improved coordination between government, employers and training providers to anticipate labour-market needs and expand reskilling opportunities. The RRP also supported vocational pathways and training for jobseekers.
- Supported the supply of **affordable and sustainable housing** by means of the 'Housing Pact 2.0' reform. This reform incentivises municipalities to implement local housing action programmes and is complemented by the expected support for over 6 000 housing energy-efficiency projects.
- Advanced the **green transition** by means of, on the one hand, a reform laying down clean-vehicle procurement rules and, on the other, investments supporting the roll-out of over 6 000 electric vehicle charging points, around 27 000 zero-emission vehicles and approximately 75 MWc of photovoltaic capacity on business premises.
- Accelerated the **digital transformation in public administration** by developing a mobile platform and digital procedures for easier access to public services, alongside the expected roll-out of digital tools for employment services and an electronic document management system for the public administration.

Box 3: **Contribution of cohesion policy funds**

EU cohesion policy funding is supporting Luxembourg's efforts to boost competitiveness, environmental sustainability, as well as skills and social fairness. In the 2021-2027 programming period, EU cohesion policy funds ([25]) are providing EUR 39 million (amounting to EUR 89 million paired with national co-financing) to Luxembourg. The value of selected projects corresponded to 88.4% of the total allocation as of March 2026, with additional calls for projects in the pipeline.

- **Innovation, business environment and productivity.** Over EUR 22 million is allocated to supporting research and innovation, the competitiveness of SMEs and the digitalisation of public services and administrative procedures. Investments target the establishment of start-ups and excellence centres to foster innovation in SMEs, as well as the digitalisation of SME processes.

- **Decarbonisation, energy affordability and sustainability.** EUR 11.7 million is dedicated to clean transition projects, supporting the greening of the public transport fleet, biofuel production units and district heating networks.

- **Skills, quality jobs and social fairness.** With a total of EUR 15.5 million, the European Social Fund Plus (ESF+) supports labour-market measures (EUR 2.3 million), education and training (EUR 5 million) and social inclusion. For the latter, EUR 3.9 million is allocated to active inclusion and EUR 1 million to addressing material deprivation. Moreover, 5.4% of the ESF+ allocation targets measures to combat child poverty and support the Child Guarantee ([26]).

Using the flexibilities offered by the mid-term review was deemed unnecessary due to the already high allocation rate. Nevertheless, the Commission's strategic priorities are reflected in the programme's aims, notably through targeted investments in competitiveness and the energy transition. In addition to cohesion policy funding, Luxembourg will allocate up to EUR 66 million under the Social Climate Fund over 2026-2032 to help mitigate the social impact of the new emissions trading system (ETS2), supporting vulnerable households.

([25]) European Regional Development Fund (ERDF), European Social Fund Plus (ESF+), Cohesion Fund (CF) and Just Transition Fund (JTF).

([26]) The European Child Guarantee is an initiative aimed at ensuring that every child in Europe at risk of poverty or social exclusion has access to essential services.

INNOVATION, BUSINESS ENVIRONMENT AND PRODUCTIVITY

While Luxembourg has made strides in digitalisation and maintaining a strong financial sector, declining productivity, low R&D investment and regulatory barriers pose risks to its long-term economic resilience and competitiveness. In 2025, Luxembourg received a country-specific recommendation (CSR) to refocus its economic policy on driving innovation and bolstering high R&D-intensive industries. The CSR also sought to strengthen competitiveness by promoting greater economic diversification, particularly in the financial sector and accelerating digitalisation, especially among small to medium-sized enterprises (SMEs), through the uptake of advanced technologies. Additionally, the CSR emphasised the need to foster business scale-up, improve productivity and reduce barriers to competition in regulated professional business services. While Luxembourg has made progress in supporting innovation and advancing business digitalisation, persistent structural challenges continue to limit the impact of these investments across all industries.

Declining financial sector's productivity weakens economic resilience

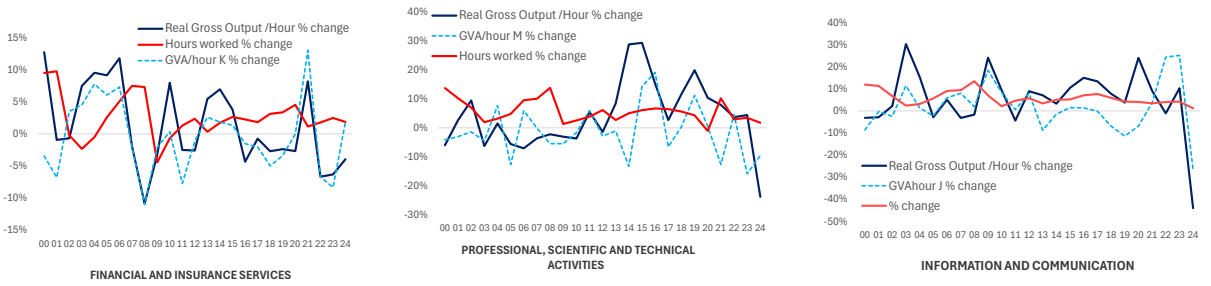
The financial sector has a high productivity level (output per hour worked), but it has declined in recent years. Since 2016, output per hour has declined in most years, while hours and overall output have continued to rise (see Graph 2.1). The recent decline in real gross output per hour in finance implies a greater pressure on fees, interest margins and commissions, revealing a structural issue rather than a squeeze on value added via rising purchased inputs. It also indicates that its processing efficiency has not improved. There is scope for productivity gains, but these gains have not yet materialised.

A decline in gross output per hour is also observed in professional and ICT services, which have developed as complementary activities. Professional ([27]) and information and communication services have expanded strongly in output and employment since 2000 but have recorded falling labour productivity on average per year over 2016–2024 (see Graph 2.1). In both sectors, intermediate inputs substantially contribute to gross output per hour, but are not as dominant as in financial activities. Given this broadly stable employment growth, the fall in gross output per hour implies a corresponding fall in value added per hour.

The reduction in productivity that accompanies the expansion of the financial sector could gradually put pressure on the resilience of Luxembourg's economy. Luxembourg's high-skilled services cluster has been displaying falling labour productivity as its output and employment expands. The financial sector and its main supporting services remain large and high-skill but are becoming more volume-driven and input-intensive. If other financial centres are better able to deliver increases in productivity, they may become more attractive than Luxembourg, particularly if they are able to offer more affordable housing for staff. Given the importance of cross-border finance, this increases the risk that parts of the value chain will move. The gradual reduction in value added per worker limits the growth of the tax base and could make it harder to finance

([27]) This refers to professional, scientific, technical, administrative and support services, filed under classification M in the statistical classification of economic activities.

Graph 2.1: **Real gross output per hour, value added per hour and hours worked. Selected sectors - annual percentage change 2000-2024**



Source: National Accounts of Luxembourg, Eurostat

necessary expenditure such as housing, infrastructure and social services without further reducing the country's fiscal buffers.

The size of the financial sector and its position in global finance represents an opportunity for Luxembourg to develop its own processes and services based on new technologies with a higher domestic value added. Economic growth has been supported by increasing value chain volumes passing through Luxembourg's financial centre. Developing advanced tools within Luxembourg based on new ICT technologies, particularly AI, to raise processing efficiency, rather than relying on ever-greater external business volumes, may help Luxembourg turn its financial sector's role into a genuine capability platform. Without this shift, Luxembourg may remain a central node in global financial flows in gross terms, but its capacity to convert that position into robust, broad-based domestic productivity and income growth will continue to weaken.

The Council of the European Union addressed a recommendation to Luxembourg to boost competitiveness by diversifying the financial sector's activities. National accounts data show that the financial cluster's contribution to productivity growth was -0.8 percentage points on average per year in 2020-2025, which represents a continuation of previous trends. Rising external uncertainty and persistent domestic bottlenecks, increasingly weigh on activity across most sectors. Luxembourg does not appear to be taking specific measures to increase productivity in the financial sector, including in its implementation of the EU's Digital Operational Resilience Act. The transposition of the EU AI Act, tabled in the Luxembourg Parliament on 23 December 2024 (Dossier 8476), is pending approval. Delayed national governance creates a productivity cost. According to Luxembourg's Financial Sector Supervisory Commission (CSSF), only 10% of the entities interviewed were fully ready to implement the Act, while 68% of respondents applied IT outsourcing.

Low R&D investment and administrative barriers impede innovation capacity

Over the past two decades, Luxembourg has experienced a decline in business R&D activity. In 2024, business R&D expenditure accounted for only 0.45% of GDP (EU: 1.49%). However, Luxembourg's economy is heavily concentrated around financial funds and related service sectors, which is less R&D-intensive than other industries. Private-sector investment in R&D remains relatively low. In 2022, the country recorded 1.20 patent applications filed under the Patent Cooperation Treaty per EUR 1 billion of GDP (in purchasing parity standards, well below the EU average of 2.8). In addition, public R&D investment has remained stagnant over the last decade, at a level well below the EU average. This, combined with underexploited science-business linkages, could undermine Luxembourg's innovative capacity in the long run, which is why, in 2025, Luxembourg received a CSR to foster innovation and support R&D.

Public support for business innovation remains limited. Although some recent initiatives have sought to strengthen the innovation ecosystem, their overall impact has been modest. In 2024, total business investment represented 7.1% of GDP, the lowest level in the EU In addition, indirect R&D support mechanisms, such as tax credits, are limited, with most public support provided through direct instruments like grants.

Administrative barriers further constrain R&D investment. The procedures for accessing public funding are often complex, which discourages some firms from applying. At the same time, Luxembourg's strong reliance on traditional financing channels, particularly bank lending, creates additional obstacles for firms seeking to scale up innovation activities. Improving access to R&D funding and diversifying the economic structure would help strengthen Luxembourg's innovation capacity and support convergence with other EU economies.

Complex business procedures and regulatory burdens challenge market efficiency

Luxembourg faces complex business establishment procedures requiring multiple administrative steps, but efforts are underway to streamline these. Currently, business permit applications can be completed online ([28]) using an authenticated eID (see Annex 7). Additionally, the Ministry of the Economy tabled reforms in 2025 ([29]) to further simplify procedures and reduce timelines. Finally, the recovery and resilience plan aims to transform the Luxembourg Business Register, the body administering the Register of Beneficial Owners and the Trade and Company Register, into the primary data source on legal entities, improving information accessibility and reliability for businesses.

Businesses face a moderate regulatory and administrative burden, with scope for additional simplification. In 2025, the proportion of firms citing business regulations as an obstacle to investment is significantly lower in Luxembourg compared with the EU (46% vs 69%) ([30]). However, compared with other OECD countries, the regulatory and administrative burden is higher in Luxembourg than the average (2.13 vs 1.74) ([31]). This is due to several factors, including restrictive regulations on operating permits for classified establishments and the lack of harmonisation of e-invoicing across the EU, which complicates cross-border transitions.

Nonetheless, regulatory and administrative barriers to the single market persist in Luxembourg, affecting in particular freedom of provision of services and freedom of establishment. Luxembourg's barriers to the trade in services within the European Economic Area (EEA) are among the highest in the EU ([32]). Easing administrative requirements regarding implementation of posting of workers rules, for example in the construction sector, could reduce regulatory fragmentation within the single market, facilitate cross-border mobility and foster competitiveness, without undermining workers' protections.

Late payments represent a significant challenge for firms, particularly SMEs. In 2025, Luxembourg was among the Member States with the highest share of SMEs experiencing late payments: around one third faced delays from public entities, and 81.5% from private entities, significantly above the

([28]) Application for, or modification of, a business permit - Guichet.lu - Luxembourg.

([29]) Communiqué du 3 Mars 2025 Lex Delles a présenté de nouvelles mesures de simplification administrative au profit des PME - Le gouvernement luxembourgeois Lex Delles a présenté de nouvelles mesures de simplification administrative au profit des PME - Le gouvernement luxembourgeois.

([30]) European Investment Bank, EIB Investment Survey data dashboard.

([31]) OECD, Product Market Regulation indicators, Medium level indicator: administrative and regulatory burden.

([32]) European Commission calculation based on the OECD, intra-EEA STRI database.

EU average ([33]). Such disruptions to cash flow hinder SMEs' capacity to invest or recruit, impacting growth potential and contributing to business failures, notably in sectors with small profit margins (see Annex 5) ([34]).

Regulatory restrictions limit professional service competition and business benefits. In 2025, Luxembourg received a CSR to reduce barriers to competition in regulated professional business services. Regulatory restrictions remain particularly significant for lawyers, notaries, architects, civil engineers and accountants. Barriers, including limited pathways to access some professions, administrative obligations, binding tariffs and the prohibition of any form of advertising and marketing, limit competition and benefits for businesses buying these services. Regulatory restrictions in retail still exceed those in peer countries, despite decreasing since 2018. To address this, Luxembourg is finalising legislation which streamlines regulations and making entry requirements more flexible for architects and civil engineers ([35]).

Luxembourg successfully advances business digitalisation despite regulatory challenges

Luxembourg is making significant strides in business digitalisation. As of 2024, 70.27% of SMEs in Luxembourg had at least a basic level of digital intensity (up from 66.25% in 2022), remaining slightly below the EU average of 72.91% ([36]). Furthermore, AI adoption by enterprises reached 33.6% in 2025, outperforming the EU average of 20.0%. Although cloud computing usage at 43.7%, and data analytics at 38.2%, lag slightly behind the EU averages ([37]), Luxembourg is participating in the important project of common European interest (IPCEI) on next-generation cloud infrastructure, focusing on cybersecurity tools to enhance data security. Furthermore, the 'Fit 4 Digital – AI' programme supports SME investments in AI and cybersecurity. The recovery and resilience plan fosters the development of a quantum communication ecosystem. This is in line with Luxembourg's 2025 CSR to accelerate digitalisation, in particular the uptake of advanced digital technologies by SMEs. At the same time, digitalisation efforts remain uneven across public services, including in the justice system, where the use of digital tools to initiate and follow proceedings and access judicial decisions remains limited, weighing on efficiency and accessibility.

Limited scale-up financing hampers start-ups despite a strong financial sector

Despite being a global financial hub with a liquid banking sector, Luxembourg struggles to provide accessible growth financing for start-ups. While the country offers broad access to international capital markets, start-ups face challenges in securing growth funding beyond the initial stages due to limited venture capital (VC) availability and banks' risk-averse behaviours. Luxembourg's VC market is slightly bigger than the EU average but shows gaps, particularly for larger growth-stage investments. Banks focus lending on the investment fund industry rather than on supporting the domestic non-financial sector, which limits start-ups seeking larger investment rounds ([38]). Luxembourg received a 2025 CSR to boost competitiveness by enabling business scale-up and productivity growth. The VC ecosystem supports seed

([33]) European Central Bank and European Commission, SAFE survey.

([34]) OECD, STRI- Luxembourg country note, 2/2026.

([35]) Projet de loi 7932 sur l'exercice des professions libérales des secteurs de la construction et de l'aménagement du territoire.

([36]) 2025 Digital Decade country report.

([37]) Luxembourg 2025 Digital Decade Country Report | Shaping Europe's digital future.

([38]) An investment round is a stage of fundraising in which a company raises capital from investors in exchange for equity.

funding and incubation but falls short in financing scale-ups. Institutional investors play a modest role in funding, reflecting a small domestic market. Consequently, companies seeking investment rounds between EUR 25 million and EUR 200 million often turn to foreign VC markets, particularly in the United States or France.

Public support mainly targets early-stage start-ups but falls short in addressing scale-up financing needs. Public support mechanisms provide meaningful assistance during the early development of innovative firms. The government introduced a 20% tax credit for individual investors who invest equity into start-ups which are less than five years old. In addition, initiatives such as the 'Luxembourg Future Fund 2' promote co-investments with VC firms.

Investment preferences among affluent private investors further constrain the availability of capital for start-ups. Start-ups report that high-net-worth individuals often favour traditional asset classes, such as dwellings over early-stage technology ventures. Encouraging greater investment in private equity, corporate bonds and investments funds, including European long-term investment funds (ELTIFs), could help unlock additional funding sources for innovative firms. Institutional investors could play a greater role in financing start-ups. End-2024, the Pillar I reserve fund had 46.2% of its assets in equity, 34.3% in bonds and loans, 5% in property and 5% in the money market ([39]), while Pillar II and III funds have a high variety of asset allocations depending on the fund ranging from equity-focused to even more bond-oriented than the Pillar I reserve.

Lack of regular impact assessments undermines legislative effectiveness

Luxembourg's legislative process lacks regular impact assessments, which undermines its effectiveness. Improvements would be beneficial, particularly in *ex post* and mid-term impact assessments, which are not published regularly. This absence hinders comprehensive evaluation of the effectiveness and impact of legislation. The current practice tends to prioritise analysing costs rather than benefits, potentially limiting the effectiveness of legislation and its positive contribution to society. The absence of mandatory impact assessments for new laws and regulations also hinders competition and limits businesses' capacity to innovate ([40]). More inclusive stakeholder engagement across varied groups would improve the regulatory framework (see Annex 7).

([39]) FDC strategic asset allocation.

([40]) European Commission. Flash Eurobarometer 567 / 568 on satisfaction with administrative services (2026).

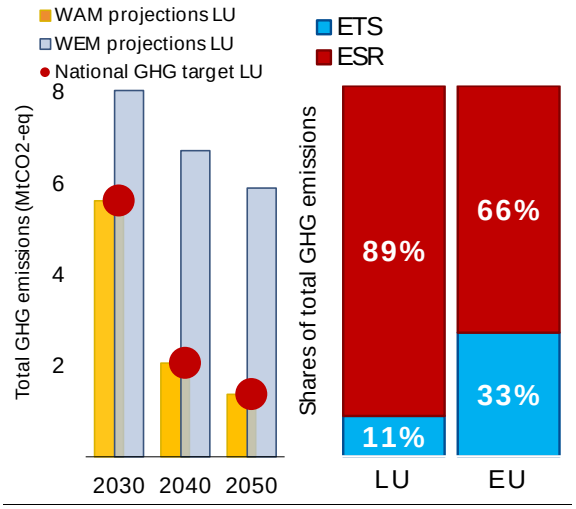
DECARBONISATION, ENERGY AFFORDABILITY AND SUSTAINABILITY

In 2025, Luxembourg boosted investments and reforms in several areas to improve public transport and the energy efficiency of households and industry, and to support local authorities in deploying renewable energy. The country-specific recommendations (CSRs) received in 2025 aimed to (i) reduce overall reliance on fossil fuels by investing in energy efficiency; (ii) improve cross-border interconnections; (iii) ease permitting procedures for renewable energy deployment; and (iv) support municipalities in deploying renewable energy. Despite these efforts, the action taken so far still do not go far enough to address the challenges faced. In addition, gaps in environmental governance have given rise to other challenges, notably related to surface water and groundwater quality and forest health (see Annex 10).

Last year, Luxembourg strengthened its renewable energy policy, supporting energy efficiency and renewable energy installations. In anticipation of growing renewable energy generation and electricity demand, the grid operator aims to expand the high voltage grid and improve interconnections with Germany. Luxembourg also made progress on transport decarbonisation and efficiency by installing electric vehicle charging infrastructure, upgrading rail line and train stations. Finally, Luxembourg has adopted 51 concrete measures to accelerate and simplify the deployment of renewables.

High road emissions persist despite investments in sustainable mobility and public transport infrastructure

Graph 3.1: **Greenhouse gas emissions under EU Emissions Trading System (ETS) projections; and current ETS-ESR relative shares (LU vs. EU)**



Source: STATEC

Luxembourg is investing in sustainable mobility, but road emissions remain high. Luxembourg faces pressure in reducing road transport emissions, which account for 59% of its emissions under the Effort Sharing Regulation (ESR). This is a result of the country's reliance on road vehicles for both passenger and freight transport (see Annex 8). However, a significant portion of these emissions comes from non-residents, with 72% of fuel sales attributable to international carriers and individuals in transit or living in

border regions in 2024 ([41]). It is still the case that Luxembourg's dependence on cars is reflected in one of the highest motorisation rates in the EU and significant congestion issues. The 2025 CSR emphasised the need for Luxembourg to focus on decarbonising its transport sector through enhanced investment in public transport infrastructure and cross-border networks. The country is actively expanding its electric vehicle charging infrastructure and provides incentives for people to use electric vehicles, as financed under the recovery and resilience plan. There are also ongoing investments in rail, tram and bus infrastructure. The delivery of new train sets and work on the new Luxembourg-Bettembourg line are part of these efforts. Furthermore, Luxembourg is cooperating with neighbouring countries, including France and Belgium, to improve cross-border transport and increase capacity, particularly at peak times. To further reduce transport-related emissions, Luxembourg could increase the use of more sustainable modes of transport (rail, inland waterways and public transport) and strengthen environmental taxation (see Annex 8).

Limited energy efficiency improvements challenge fossil fuel reduction efforts despite new standards and incentives

Progress in reducing reliance on fossil fuels through energy efficiency investments in both residential and non-residential sectors remains limited. Despite a supportive financing framework, energy savings are offset by an increasing number of dwellings (see Annex 9). Still, in line with the 2025 CSR, Luxembourg has advanced its energy transition policy by extending the 'Climate Bonus – Living' (*Klimabonus Wunnen*) and 'Climate Bonus – Mobility' (*Klimabonus Mobilitéit*) schemes beyond 2025, providing ongoing financial support for energy-efficient renovations and renewable energy installations ([42]). Despite these plans, further efforts would be useful to meet the targets outlined in Luxembourg's 2020 Long-Term Renovation Strategy.

New standards and incentives target energy efficiency in the non-residential sectors. To promote decarbonisation in commercial buildings, as reflected in the 2025 CSR, Luxembourg offers a range of incentives, including financial support for decarbonisation measures (currently under review), planned assistance for the renovation of commercial premises, the Climate Pact mainly targeting small to medium-sized enterprises, and the Energy Efficiency Obligation Scheme (EEOS).

Streamlined permitting and grid modernisation would be beneficial to achieve renewable energy targets

Efforts are underway to simplify permitting procedures and assist municipalities in renewable energy deployment. Luxembourg took forward its renewable energy transition through the national consultation 'Simple – Quick – Renewable' ('*Einfach – Séier – Erneierbar*') ([43]). In May 2025, 51 measures were adopted to speed up renewable energy deployment and enhance energy sovereignty, including faster permitting, efficient land use for wind and solar, increased participation by individuals and municipalities, strengthened financial support, and grid reinforcement for electricity sharing and storage. In 2025, solar capacity rose to 731 MW and wind to 217.9 MW ([44]). To

([41]) LUSTAT Data Explorer • Consommation de carburant par mode de transport, STATEC, 2026.

([42]) Prolongation et adaptation partielle des régimes d'aides financières 'Klimabonus Wunnen' et 'Klimabonus Mobilitéit' - Le gouvernement luxembourgeois.

([43]) Présentation des mesures concrètes issues de la consultation nationale sur l'énergie renouvelable «Einfach - Séier - Erneierbar»: Un manifesto pour l'avenir énergétique du Luxembourg - Actualités - Portail de l'environnement - emwelt.lu - Luxembourg.

([44]) Energieauer: key energy figures for Luxembourg - Energieauer.

further encourage renewable energy projects and follow the 2025 CSR, Luxembourg launched competitive tenders for large-scale photovoltaic installations. Despite this progress, sustained efforts would be of benefit to meet Luxembourg's target of 37% renewable energy in the energy mix by 2030. In particular, Luxembourg's South Region (the main focus of the Territorial Just Transition Plan) has high untapped potential in solar energy (see Annex 18).

Plans are in place to modernise the high-voltage grid and increase its capacity, including cross-border interconnections. Guided by the 2025 CSR, Luxembourg's grid operator plans to expand the high-voltage grid and reinforce cross-border interconnections by 2040. Doing the latter is critical, given the country's high import dependency rate, with an interconnection rate of 105%. In particular, plans to enhance interconnectivity with Germany could increase this capacity to over 400% by 2030 ([45]). In addition, Luxembourg's near-complete (98.8%) roll-out of smart meters facilitates consumer participation in energy-saving programmes, but technical restrictions limit access by demand-response resources ([46]) to balancing markets, with pooling confined to Luxembourg's bidding zone.

Poor water quality and ecosystem degradation threaten environmental and economic stability

Luxembourg has the worst surface- and groundwater quality in the EU. It is affected by significant chemical and nutrient pollution and physical alteration of water bodies (Annex 10). The 3rd River Basin Management Plan (RBMP) ([47]) revealed a deterioration, with no surface water bodies in good ecological or chemical status and most of groundwater in poor chemical status. This situation poses challenges to the environment and economic activities, with poor surface- and groundwater quality already resulting in the loss of drinking water in protected areas. Water pollution costs EUR 60 million per year ([48]).

Strategic investments and policy enhancement are crucial for ensuring water protection. The urban wastewater treatment system is in line with EU directives. Despite this, Luxembourg's urban wastewater discharges remain a significant pressure, contributing to less than good water quality in 76.9% of river water bodies, 50% of lakes, and 31.5% of groundwater bodies, the highest percentages in the EU. Although Luxembourg's annual investment of EUR 339 million in water management, an investment gap of EUR 125 million annually remains for comprehensive water protection ([49]). Given that Luxembourg does not currently apply environmental taxes on pollution, there is potential to enhance implementation of the "polluter pays" principle.

The economy is vulnerable to nature loss due to significant reliance on ecosystem services and freshwater resources. Over 44% of ([50]) Luxembourg's gross value added is tied to sectors relying on healthy terrestrial and freshwater environments, including agriculture, construction, water utilities, healthcare and tourism. However, freshwater bodies are impacted by dams, construction

([45]) Source: NECP LU 2021-2030, updated by July 2024, section 2.4.1 / p. 82.

([46]) Demand-response resources are devices that facilitate final customers to change the electricity load from their current consumption patterns in response to market signals, whether alone or through aggregation.

([47]) European Commission, Staff working document accompanying the report from the Commission to the Council and the European parliament on the implementation of the Water Framework Directive and the Floods Directive - Member State: Luxembourg, February 2025. Link.

([48]) EC, IEEP, Green taxation and other economic instruments – Internalising environmental costs to make the polluter pay (p. 35-36, Table 5), 2021. Link.

([49]) Environmental investment needs & gaps assessment programme, 2024 update, DG Environment.

([50]) European Commission, Joint Research Centre (JRC), Hirschbuehl et al., *The EU economy's dependency on nature*, 2025.

and urban development. Despite significant portions of Luxembourg's territory being designated protected areas, habitat degradation remains widespread, with ecosystems particularly affected by land take ([51]) and artificialisation ([52]), pollution and climate change. Recent efforts, such as river renaturation projects supporting freshwater ecosystem restoration, should be sustained to align with the EU biodiversity strategy.

Forest health faces growing pressures from both land take and climate change. Rapid artificialisation and ongoing loss of natural land to urban and infrastructure expansion contribute to ecosystem degradation and fragmentation and biodiversity loss, weakening forest resilience. At the same time, heatwaves and droughts in recent years have weakened trees and increased their vulnerability to diseases, notably bark beetle infestations. As a result, forest health has deteriorated significantly: the proportion of healthy trees fell from 79% in 1984 to 15% in 2024 ([53]). These trends reduce forests' capacity to provide ecosystem services, including biodiversity protection, water regulation, and carbon storage. Luxembourg is seeking to strengthen its forest policy framework to better address rising climate-related pressures ([54]).

Fragmented governance hampers effective environmental management and climate resilience efforts

Luxembourg has recently renewed its climate adaptation framework following the end of the 2018–2023 strategy, whose evaluation highlighted significant shortcomings. The Ministry of the Environment, Climate and Biodiversity adopted Luxembourg's new national adaptation strategy on 22 April 2026 to improve resilience to floods, heatwaves and droughts. The 2025-2035 strategy identifies key vulnerabilities and proposes over 150 measures. Luxemburg's decentralised governance sees local authorities playing a crucial role in implementation, supported by national instruments such as the Climate Pact 2.0 and the Nature Pact. Although domestic programme engagement is strong, municipal participation in the EU Covenant of Mayors remains limited. Although some sectors have established efficient cooperation among local actors, fragmented approaches to governance create obstacles, hindering not only large-scale action implementation, but also economic incentive harmonisation, and policy integration of climate and environmental issues.

Advancements are being made in projects to support sustainable agriculture and ecosystem restoration, but environmental pressures remain high. Luxembourg made progress on organic farming, which increased from 4.6% in 2020 to 7.2% in 2024 ([55]), but remains below the 2030 national target of 15% (see Annex 10). Agriculture is impacting Luxembourg's ecosystems, with livestock density contributing to systemic agricultural pressures, notably through ammonia (NH_3) emissions. NH_3 air pollution costs Luxembourg EUR 334 million annually ([56]), indicating gaps

([51]) *'land take' means the conversion of natural and semi-natural land into artificial land*

([52]) *'artificial land' means land used as a platform for constructions and infrastructure or as a direct source of raw material or as archive for historic patrimony at the expense of the capacity of soils to provide other ecosystem services*

([53]) Biodiversity in figures - Statistics Portal - Luxembourg.

([54]) Présentation du troisième Inventaire forestier national: des forêts luxembourgeoises face au défi climatique - Le gouvernement luxembourgeois.

([55]) Eurostat, Share of organic farming in utilised agricultural area, 2026. Link.

([56]) European Commission, Directorate-General for Environment, IEEP, Green taxation and other economic

in nutrient management strategies. Some areas ([57]) in Luxembourg also presented a higher than EU average contribution regarding pesticide residues concentrations in soils.

Efforts are being intensified to strengthen forest conservation to enhance climate resilience. Despite protective measures covering 38.6% of its territory (see Annex 10), Luxembourg faces substantial challenges. Forest health has been severely impacted by climate change and pest outbreaks. To address those problems, Luxembourg has updated its 'Climabonus – Forest' ('*Klimabonus Bësch*') plan and introduced the 'Climabonus – Marsh and Meadow' ('*Klimabonus Mouer a Wiss*') plan in 2025 to support forest conservation and ecosystem strengthening ([58]).

instruments – Internalising environmental costs to make the polluter pay (p. 32-33, Table 3), 2021, Link.

([57]) While only one area was monitored in Luxembourg in the EU-wide study (EC, JRC, Vieira et al., Pesticides residues in European agricultural soils - Results from LUCAS 2018 soil module, 2023. Link), Luxembourg's ministry of environment reports that it is likely that levels are enhanced above natural background in some soils for pesticides, based on a study covering several collecting sites across the country (Government of the Grand Duchy of Luxembourg, M.Kibblewhite, M.Grego, Towards a Holistic Soil Protection for Luxembourg, 2021, Link**).**

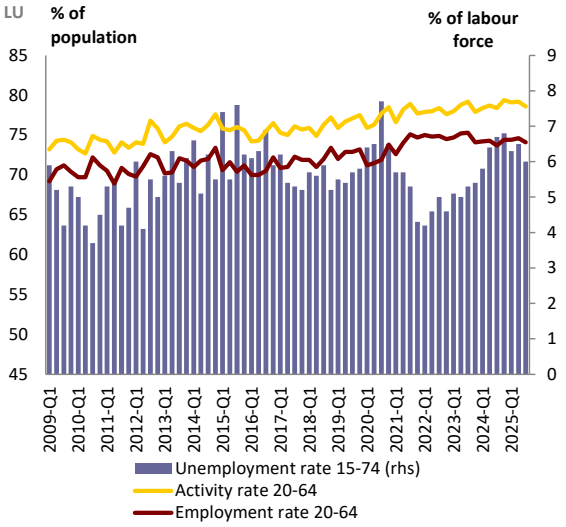
([58]) 'Klimabonus Mouer a Wiss' - Un nouveau soutien financier pour les propriétaires privés engagés dans la préservation des écosystèmes - Ministerium für Umwelt, Klima und Biodiversität - Die Luxemburger Regierung.

SKILLS, QUALITY JOBS AND SOCIAL FAIRNESS

Challenges in skills, labour market participation and social inclusion persist despite ongoing reforms, with implementation of recent policy measures still at an early stage. In 2025, Luxembourg received recommendations to improve educational outcomes and ensure equal opportunities, address skills mismatches and labour shortages, notably by increasing participation in adult learning and among older workers, and strengthen the resilience of the health system, including through better workforce availability. In response, Luxembourg has launched reforms to strengthen skills development, reduce inequalities in education and promote vocational pathways and longer careers, although implementation remains at an early stage and disparities in outcomes persist. There is progress in strengthening the health system, with reforms advancing workforce planning, training capacity, governance and digitalisation. While these efforts address key structural challenges, pressures persist related to skills mismatches, labour market participation and social inequalities (see Annexes 1, 12 and 13).

In the context of subdued economic growth, rising unemployment weighs on competitiveness and social cohesion. The unemployment rate has risen above the EU average for the first time since 2009, although youth unemployment and rates of young people not in employment, education or training fell. Luxembourg has by far the lowest employment and activity rates in the EU for older workers, many of whom leave the labour market early. These trends are linked to structural features of the economy – in particular, a high share of high-wage, high-productivity jobs in specialised sectors – and to persistent inequalities in educational outcomes driven by socio-economic and language background. They also contribute to the high in-work at-risk-of-poverty rate, particularly among low-qualified, non-EU-born workers and single-parent households, in a context where taxes and transfers reduce inequality less than in most other Member States.

Graph 4.1: Activity, employment and unemployment rates (1), Q1-2009 to Q3-2025



(1) *Activity and employment rates (percentage of population), total economy, ages 20-64, seasonally adjusted. Unemployment rate (percentage of labour force), total economy, ages 15-74, seasonally adjusted.*
Source: *Eurostat, LFS [lfsi_emp_q, une_rt_q]*

Skills mismatches are an obstacle to labour market performance and competitiveness

Skills mismatches contribute to rising unemployment. In 2025, the unemployment rate increased for the third year in a row and remains above the EU average (6.5% vs 6.0%). Macroeconomic skills mismatches rose to 34.4% in 2025, far above the EU average (19.2%), pointing to a gap between labour market needs and the outcomes of education and training systems. Employment rates among university graduates continue to

improve, while the rate has fallen in recent years among those with at most a lower-secondary qualification (85.1% vs 54.7% in 2025). In that context, Luxembourg received country-specific recommendations (CSRs) in 2025 to increase the participation and employment rate of older workers and to address skills mismatches by stimulating skills development.

The employability and employment rate of older workers remain a challenge. Luxembourg has the lowest employment and activity rates in the EU for workers aged 55–64, while long-term unemployment is particularly high among jobseekers aged 45 and over. Participation in adult learning is also limited, reducing the ability of older workers to adapt to changing skills needs, including digital skills. To address the CSR on strengthening the employment perspectives of older workers while simultaneously guaranteeing the sustainability of the pension system, Luxembourg has introduced certain measures. These include tax incentives to delay early retirement, an extension of contribution periods and partial pension schemes combined with part-time work. These measures come on top of existing measures, such as reduced social security contributions for employers hiring 45+-year-olds or the 'Boost your skills' project for the same age group, cofinanced by the European Social Fund Plus (ESF+). While these measures go in the right direction, further progress would benefit from a more coordinated approach, including stronger support for training and active ageing.

Youth labour market outcomes have improved overall. Despite remaining above the EU average, youth unemployment declined in 2025 The unemployment ratio, which provides a complementary picture, also improved in 2025. Rates of young people not in employment, education or training have also eased recently, but remain linked to structural factors such as early school leaving, particularly among those who are disadvantaged and those with migrant backgrounds. Only 63.6% of young people aged 16-24 have basic digital skills, below the EU average. Luxembourg will increase the obligatory schooling age from 16 to 18 in September 2026, which should reduce early school leaving and potentially also reduce rates of young people not in employment, education or training. As for youth employment more generally, some measures have been taken, such as the reinforced Youth Guarantee, supported by the ESF+, and targeted national initiatives such as the 'initiation to employment contract'. Additional efforts are needed to strengthen outreach, guidance and the labour market relevance of training.

Vocational education and training (VET) remains underused, particularly in science, technology, engineering and mathematics (STEM) and among women. While employment outcomes for VET graduates are generally favourable, enrolment in STEM-oriented VET programmes remains comparatively low, pointing to persistent challenges in broadening the skills pipeline in technical fields despite ongoing reforms to strengthen STEM education. Luxembourg is taking steps to improve the attractiveness and flexibility of VET pathways, including better links with higher education and more language options, and these further efforts should be beneficial.

Luxembourg has taken steps to strengthen skills matching and intelligence. The skills plan ('*Skills-Plang*') launched in 2025 supports companies in anticipating and financing evolving skills needs, while the 'Skillsbridges' up-/re-skilling initiative, funded by the recovery and resilience plan, was expanded in 2025, with new training modules on AI, green IT and data science. These come on top of existing initiatives, such as the JobInsights tool, which provides real-time data on vacancies, skill needs and labour market developments. However, further progress would benefit from stronger cooperation between education and training providers, the public employment service and employers, as well as more targeted approaches for both young people and older workers.

Educational outcomes are stable, but inequalities and efficiency remain a challenge

Overall, educational outcomes remain relatively stable. National ÉpStan tests data indicate that average competency levels remained broadly stable between 2020 and 2022, although some declines were observed in language subjects. Luxembourg has also improved students' digital skills in recent years. A revised primary school curriculum, to be implemented in the 2026/2027 school year, aims to improve quality and respond to emerging challenges, including digitalisation, multilingualism and well-being.

High levels of education spending are not fully matched by outcomes. Public expenditure on education amounted to 5.0% of GDP in 2024 (EU: 4.8%) and 10.6% of total government spending (EU: 9.6%), with the highest spending per student in the EU. The cost of the system is driven in particular by a low student–teacher ratio (8.8 in 2023 vs an EU average of 12.2), high rates of grade repetition and comparatively high teacher salaries This reflects demanding entry requirements, including fluency in three official languages. However, learning outcomes remain below the EU average in international assessments (PISA 2018; Luxembourg did not participate in 2022), and the efficiency of public spending appears limited, especially in terms of equity.

The language and socio-economic background of students remain key drivers of educational inequalities. The multilingual education system poses challenges, particularly for students who do not speak the language of instruction at home and contributes to persistent performance gaps. These disparities are closely linked to socio-economic background and are reinforced by early streaming into different educational tracks. Luxembourg has one of the largest gaps in the EU in student performance depending on parents' level of education (ICILS 2023).

Reforms aim to address multilingualism and improve equity, but their impact would benefit from being monitored. Luxembourg has adopted a reform allowing greater choice of language of literacy in primary education, with gradual implementation starting in 2027. This has the potential to improve learning outcomes and equity, but close monitoring would be beneficial. Further efforts are required to strengthen basic skills, support disadvantaged students and schools, and increase flexibility between educational pathways.

Health system performance is strong, but workforce shortages and fragmentation remain key challenges

Luxembourg's health system performs well overall, with strong health outcomes, while ongoing reforms aim to address workforce shortages and improve system resilience. Health outcomes remain among the best in the EU, with high life expectancy and low treatable mortality. However, reliance on foreign-trained and cross-border health workers, alongside fragmentation in service delivery and limited use of health data, creates vulnerabilities and constrains efficiency. In response to the 2025 CSR, Luxembourg has stepped up reforms to strengthen workforce availability and system resilience. The National Health Plan 2023 sets targets to increase the number of doctors and nurses, supported by expanded training programmes, recruitment measures and improved workforce planning. Reforms to governance, care organisation and digital health – including integrated care networks, the Hospital Act and investments in digital tools – aim to improve coordination and efficiency. While challenges remain, the reform agenda is ongoing and is expected to gradually address structural pressures on the system.

Enhancing job quality and reducing inequalities is key to fostering social cohesion and sustaining Luxembourg's competitiveness

Income inequality and in-work poverty have been ongoing issues in recent years despite strong labour market performance in some areas. Luxembourg performs well in areas such as gender equality and job stability. Nevertheless, the nominally high social minimum wage still leaves many workers below the poverty threshold (60% of the national median equivalised disposable income after social transfers), with in-work poverty particularly affecting the non-EU-born, the low-qualified and single-parent households.

Luxembourg has taken steps to address poverty, but structural challenges persist. Despite some improvement in overall poverty indicators, child poverty remains elevated, with single-parent households particularly vulnerable. This is due to several factors, including the composition of Luxembourg's labour market, where the financial and insurance sectors in particular play a significant role, contributing to income polarisation. Other factors include high housing costs (see Annex 16) and the inequality-reducing effect of taxes and transfers, which is relatively low in Luxembourg compared with other Member States. Measures under the European Child Guarantee and the new national action plan to prevent and combat poverty aim to address these issues through a comprehensive approach covering education, employment, housing and social services. Continued efforts will improve take-up of social benefits and address the structural drivers of inequality.

These findings are consistent with the second-stage analysis under the social convergence framework. The analysis points to challenges related to the labour market, including rising unemployment, but does not point to overall social convergence challenges for Luxembourg, also in light of the measures implemented or planned ([59]).

([59]) European Commission, SWD(2026)122. The analysis relies on all the available quantitative and qualitative evidence and the policy response undertaken and planned.

KEY FINDINGS

In areas covered by existing country-specific recommendations, Luxembourg would benefit from:

- **strengthening the sustainability of the pension system** by implementing reforms that ensure its long-term financial sustainability, in particular by further limiting early-retirement options and increasing the employment of older workers;

- **preventing distortions of competition, safeguarding public finances and ensuring fair taxation** by taking further action to mitigate aggressive tax planning, through sufficient taxation of outbound payments of interest and royalties to zero-/low-tax jurisdictions;

- **addressing housing affordability** by substantially increasing housing supply through a comprehensive land-use policy and a property tax reform, while reinforcing coordination between housing policy, spatial planning, transport and urban planning;

- **boosting competitiveness** by promoting diversification in the financial sector, with a focus on investing in high R&D-intensive activities and removing barriers to the provision of services and to competition in regulated professions;

- **increasing financing available to the economy** by incentivising more retail participation in financial markets, alongside improved availability of supplementary pension schemes;

- **reducing reliance on fossil fuels and accelerating the green transition** by increasing energy efficiency in buildings, supporting renewable energy initiatives, modernising the high-voltage grid and simplifying permitting processes for renewable energy deployment;

- **enhancing sustainable and efficient transport** by investing in public transport infrastructure, decarbonising transport, strengthening cross-border networks, as well as networks in rural areas, and improving multimodal passenger hubs and last-mile connections;

- **fostering upward social convergence by improving the school system's performance and ensuring equal opportunities in schools** by raising basic skills and providing targeted support for disadvantaged students and schools, to reduce the impact of different linguistic backgrounds on educational outcomes, improve transitions into vocational education and training and higher education;

- **promoting human capital development and addressing skills mismatches** by stimulating lifelong learning and improving active labour-market policies.

In other areas, Luxembourg would benefit from:

- **strengthening environmental policy and resource management** to improve climate and water resilience, including addressing water quality, further promoting sustainable agriculture, promoting sustainable forest management, strengthening cross-sectoral governance and investing in circularity.

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Table A1.1: **2025 CSR implementation and Commission assessment**

Luxembourg faces challenges in a wide range of policy areas, as identified in the country-specific recommendations (CSRs). Luxembourg was recommended, among other things, to strengthen innovation and R&D while boosting competitiveness through diversification, in particular in the financial sector, digitalisation, and more support for business scale-up; accelerate the green transition by promoting sustainable and efficient transport, energy efficiency, renewable energy, and grid upgrades; and address education inequalities and skills mismatches while improving health system capacity and governance.

The Commission has assessed the degree of implementation of the 2025 CSRs considering the policy action taken by Luxembourg to date*. To do so, the Commission has taken into account the information provided by Luxembourg in its Annual Progress Report as well as other information sources. This annex provides summary information on the policy actions taken or planned by Luxembourg for each CSR. More detailed information on these actions is included in the relevant chapters and other annexes of the report.

**CSR 2 is not assessed in CeSaR. RRP implementation is monitored through the assessment of RRP payment requests and analysis of the bi-annual reporting on the achievement of the milestones and targets, to be reflected in the country reports. Progress with the cohesion policy is monitored in the context of the Cohesion Policy of the European Union.*

Recommendation text	**Main measures adopted or implemented** *By 30 April 2026*	**Preparatory steps/ credibly announced measures** *By 30 April 2026*	**Assessm. of progress**
1.1 Reinforce overall defence and security spending and readiness while ensuring debt sustainability in line with the European Council conclusions of 6 March 2025.	Total general government defence expenditure in 2026 is projected at 1.2% of GDP, corresponding to an increase of 0.5 ppt. compared to 2024.	Total general government defence expenditure in 2027 is projected at 1.2% of GDP, corresponding to an increase of 0.5 ppt. compared to 2024.	Substantial progress
1.2 Ensure that net expenditure respects the path recommended by the Council on 21 January 2025.	Annual and cumulated deviations in 2025 amounted to 1.3% of GDP and 0.6% of GDP, respectively. Annual and cumulated deviations in 2026 projected to -0.6% of GDP and 0.0% of GDP, respectively.		Limited progress
1.3 Address the long-term sustainability of the pension system, in particular by limiting early-retirement options and increasing the participation and employment rate of older workers by enhancing their employment opportunities and employability.	Increase in the contribution rate from 24% to 25.5%. Extension of the contribution period for early retirement at age 60 from 40 years to 40 years and 8 months by 2030. Introduction of tax incentives to encourage older workers to remain professionally active. Introduction of partial pension schemes to promote longer careers, allowing part-time work while drawing part of the pension. Measures to reduce expected increase in spending are largely absent. Adoption of a reform to postpone the time the pension system balance would start returning recurrent deficits by 3-4 years, around 2029 according to calculations by IGSS (page 2 and 3 of fiche financier of bill 8634).	Implementation of main structural pension-related measures to run gradually until 2030.	Limited progress
1.4 Increase housing supply, in particular by adopting a comprehensive land-use policy and a property tax reform, developing large-scale district projects on public land,		The draft Bills on the reform of the recurrent land and property taxation and the new Tax on unoccupied property, presented to the Parliament in 2022, are still pending approval, and have been watered down through the Parliamentary process.	Limited progress
1.5 and strengthening coordination with urban planning	Introduction of Bill 8481 establishing guarantees for 10–30% of affordable housing in all new developments. Adoption of Article 29bis reform as part of the Housing Pact 2.0.	Planning of draft bill for mid-2026: 1) Simplified and consolidated building code; 2) 2-month implicit approval procedure. Ongoing broader structural alignment between land mobilisation, spatial	Some progress

(Continued on the next page)

Table (continued)

Recommendation text	**Main measures adopted or implemented** *By 30 April 2026*	**Preparatory steps/ credibly announced measures** *By 30 April 2026*	**Assessm. of progress**
		planning, and housing supply. Amendments to Housing Pact 2.0 to simplify procedures and improve municipal support (tabled in 2025 and remain under parliamentary consideration). Planned adoption of reform of pre-emption rights in the Housing Pact 2.0 (part of the urban planning package).	
1.6 and cross-border public transport.	Continuation of investments, e.g. entry into service of park & ride at Thionville railway station. Expansion of public bus network. Investment in rail infrastructure (e.g., Bettembourg rail hub). Execution of preparatory work on fare harmonisation and mobility planning. Renewal of rolling stock. Continued cooperation under the framework of the Greater Region, contributing to the betterment of sustainable urban mobility and cross-border connectivity.	Continued implementation of the 2035 national mobility plan. Increase of train capacity between FR and LU to 13 500 seats by 2026. Redevelopment of the Bettembourg train station by 2029. Planning of national projects financed by each border country reinforcing cross-border mobility (FR-LU) + (BE-LU).	Some progress
1.7 Mitigate risks related to the housing market by phasing out fiscal incentives to borrow			No progress
1.8 and by strengthening the macroprudential framework.	A uniform 80% loan to value (LTV) cap for all investor loans is in effect again from June 2025 following the expiry of the temporary flexibility, thereby maintaining borrower based macroprudential safeguards.		No progress
1.9 Take further action to effectively tackle aggressive tax planning, in particular by ensuring sufficient taxation of outbound payments of interest and royalties to zero-/low-tax jurisdictions, other than those included in the agreed EU list of non-cooperative jurisdictions for tax purposes.			No progress
3.1 Focus economic policy related to investment on fostering innovation and supporting high R&D intensive activities.	Launch of a grant programme supporting spin-offs from public research. Reform of the aid scheme for R&D to prioritise strategic innovation areas.	Revision of the National Research Strategy. Commitment of EUR 300 million of the Société National de Crédit et d'Investissement to support companies in strategic sectors. Introduction of the Fit 4 Scale programme. Establishment of science and technology parks dedicated to collaborative research among innovative companies, start-ups, and public research.	Limited progress
3.2 Boost competitiveness, including by promoting	Adoption of the EU's Digital Operational Resilience Act.	The transposition of the EU AI Act, tabled in the Parliament on 23 December 2024	Limited progress

(Continued on the next page)

Table (continued)

Recommendation text	**Main measures adopted or implemented** *By 30 April 2026*	**Preparatory steps/ credibly announced measures** *By 30 April 2026*	**Assessm. of progress**
diversification, in particular in the financial sector,	Luxembourg's financial regulator, the CSSF, has taken a future-forward approach to digital assets, and has issued detailed guidance and FAQs that clarify how alternative investment funds can invest in virtual assets. In February 2025, Luxembourg published a law on digital finance in the Official Journal, aligning national law with the EU Markets in Crypto-Assets Regulation (MiCAR) and establishing a national framework for crypto-asset service providers.	(Dossier 8476), is pending approval.	
3.3 accelerating digitalisation, in particular in the uptake of advanced digital technologies by SMEs,	Launch of a series of new co-funding packages aimed at raising the uptake of digital technologies by SMEs, including an AI package and a cybersecurity package. Launch of the "Cyber Factory" providing SMEs access to AI models, source codes, and data.Launch of AI Factory to support organisations integrating AI technologies. Continuation of the Fit 4 Digital programme to help companies adopt AI solutions.		Some progress
3.4 and enabling business scale-up and productivity growth.	Introduction of SICAR's (Société d'Investissement en Capital à Risque) tax exemptions to increase venture capital investments. Introduction of a "start-up tax credit" to encourage investment in young companies. Launch of the financial aid scheme for the creation of spin-offs from public research.	Introduction of the Fit 4 Scale programme to support scale-ups, with initial support limited to five companies. Launch of the Scale-Up Action Plan.	Some progress
3.5 Reduce barriers to competition in regulated professional business services.	Adoption of law to adapt opening hours in the retail sector for more flexibility and freedom, including the possibility to extend opening hours.	Adoption of a law on the practice of liberal professions in the construction and land use planning sectors. Adoption of a law on the access to and training for the professions of barrister, notary and bailiff.	Limited progress
4.1 Improve sustainable and efficient transport by further promoting the decarbonisation of transport	Provision of financial incentives for electric vehicles. Expansion of EV charging infrastructure. Increase of CO_2 tax on fossil fuels, reaching EUR 45/tCO_2 in 2026.		Some progress
4.2 and investing in public transport infrastructure	Upgrade of the Luxembourg–Bettembourg rail line. Optimisation of the public bus network. Purchase of 34 new railcars.	Deployment of real-time transport information systems. Operationalisation of TEN-T multimodal hubs.	Some progress
4.3 and cross-border networks.	Opening of a 2x3-lane motorway section linking Croix de Gasperich to the Berchem service area and introducing key innovations including a continuous priority lane for carpooling and buses, as well as a bus lane using the hard shoulder.	Upgrade of Thionville-Metz rail line. Redevelopment of Bettembourg station.	Some progress
4.4 Reduce overall reliance on fossil fuels by investing in energy efficiency in both the	Support for existing building renovations via	RRP-funded subsidies for the deployment of photovoltaic power	Some progress

(Continued on the next page)

Table (continued)

Recommendation text	**Main measures adopted or implemented** *By 30 April 2026*	**Preparatory steps/ credibly announced measures** *By 30 April 2026*	**Assessm. of progress**
residential and non-residential sectors.	Klimabonus Wunnen, pre-financing, and a 3% annual renovation mandate for public buildings. Continuation of long-standing voluntary agreement for energy efficiency involving large electricity and gas consumers, with mandatory energy audits under EU guidelines. Progressive implementation of the national decarbonisation roadmap, which includes reforms and financial support, renewable self-consumption, and carbon contracts for different uses. Introduction of prefinancing for the installation of photovoltaic panels.	generation units in business premises. Introduction of an aid scheme for energy efficiency renovations and calls for tenders for renewable energy deployment.	
4.5 Modernise the high-voltage grid and increase its capacity, improve cross-border interconnections, and ease permitting procedures for renewable energy deployment.	Adoption of 51 measures to accelerate and simplify permitting procedures for renewable energy production: installation of photovoltaic panels, wind turbines and heat pumps. Adoption of a law for the establishment of a hydrogen transport network. Improved granularity of the solar cadastre.	Development of the high-voltage grid and improvement of interconnections, particularly with Germany, between now and 2040. Commissioning of the 380kV interconnection line between Luxembourg and Germany by 2029. Introduction of network expansion projects to increase Luxembourg's electricity interconnectivity with Germany to more than 400% by 2030. Review of legislative texts to speed up permitting procedures for decarbonisation and renewable energy projects.	Some progress
4.6 Support municipalities in deploying renewable energy.	Continuation of the provision of financial and technical assistance to local authorities to deploy renewable energy. Continuation of the provision of advisory services and data tools to municipalities to plan and implement the deployment of renewable energy. Availability of subsidy schemes to aid renewable energy investments like PV-deployment and district heating development. Launch of "Einfach – Séier – Erneierbar" initiative to simplify renewables deployment through digitalised permitting procedures, optimised land use, and citizen involvement, as well as enhanced financial support schemes and strengthened electricity grid for sharing and storage.		Some progress
5.1 Improve performance and ensure equal opportunities in schools,	Introduction of a guichet unique (one-stop-shop) for inclusive education to simplify procedures and centralise information for inclusive education support procedures. Launch of the "Service d'Intégration et d'Accueil" to inform students and parents (particularly those from abroad) about the education system. Adoption of the chèque-service accueil (CSA) reform to ensure financially accessible	Introduction of a new competency-based curriculum in fundamental education in the 2026/2027 school year. Adaptation of national assessment tools (EpStan). Modernisation of the secondary education curriculum.	Limited progress

(Continued on the next page)

Table (continued)

Recommendation text	**Main measures adopted or implemented** *By 30 April 2026*	**Preparatory steps/ credibly announced measures** *By 30 April 2026*	**Assessm. of progress**
	access to early childhood education and care.		
5.2 including by adopting a national school quality framework	General national school quality framework was adopted in 2023.		No progress
5.3 and an external school evaluation system,	The government relies on existing elements for school evaluation, including the National School Quality Report, achievement reports, and international studies.	Development of dashboards and of a national education data strategy.	No progress
5.4 and by adapting teaching to the needs of disadvantaged students and those from various linguistic backgrounds.	Increase in resources to increase the number of full-time equivalents for support teams and specialised staff for students with special educational needs. Introduction of co-education classes for socio-emotional development and new socio-therapeutic centres. Continued implementation of the plurilingual education programme and homework support in education and care services. Launch of the "Service d'Intégration et d'Accueil" to inform students and parents (particularly those from abroad) about the education system.	Adoption of the ALPHA reform ("zesumme wuessen") to allow families to choose literacy in French or German, benefitting students who don't speak German or Luxembourgish at home. Updates of secondary education curriculum. Increase in the number of public European schools and international tracks, to address the linguistic needs of students.	Some progress
5.5 Address skills mismatches, in particular for the green and digital transitions, by stimulating skills development.	Expansion of RRP-funded Skillsbridges initiative to include modules on Green IT & AI, Data Science, and Soft Skills. Expansion of ADEM training offers. Launch of Skills Plang to support upskilling and reskilling for employees undergoing major green and digital transitions. Launch of new digital platform to improve talent attraction. Launch of the "Work in Luxembourg" portal. Expansion of national AI training course to wide public accessibility. Training initiatives supporting the green transition, delivered notably through the Centre National de Formation Professionelle Continue (CNFPC). Introduction of an accelerated one-year vocational qualification pathway ("1re DAP – 1 an, 1 métier"). Launch of three specialised academies focusing on Data & AI, Cybersecurity, and Quantum Computing to address labour shortages in strategic tech sectors. Creation of a database for vocational trainings.	Bill 8635 on youth employment: Under parliamentary review with expected adoption in Q2 2026, the bill seeks to expand traineeship access for all registered jobseekers and harmonise social protection for youth employment measures, aiming to improve pay stability and employment prospects for those under 30. Launch of a digital strategy with a skills component. Ongoing work to establish a legal framework for higher vocational education. Presentation of the second digital inclusion action plan.	Some progress
5.6 Improve the resilience of the health system by accelerating the reforms and ensuring appropriate availability of health workers.	Introduction of incentives and training programmes to increase the domestic supply of health professionals. Introduction of measures to strengthen primary and ambulatory care.	Development of a comprehensive public health legal act. Recruitment of 1,200 doctors and 3,800 nurses by 2030 according to the 2023 National Health Plan.	Substantial progress

(Continued on the next page)

Table (continued)

Recommendation text	**Main measures adopted or implemented** *By 30 April 2026*	**Preparatory steps/ credibly announced measures** *By 30 April 2026*	**Assessm. of progress**
		Ongoing discussions regarding the introduction of a master's degree in medicine at the University of Luxembourg to complement the bachelor's programme, with a potential launch targeted for 2029, pending evaluation results. RRP-funded reform on the remits of health professionals. RRP-funded reform on telemedicine solutions for remote medical follow-up of patients.	

Source: Luxembourg's reporting and Commission assessment

ANNEX 2: FISCAL DEVELOPMENTS AND DEBT SUSTAINABILITY

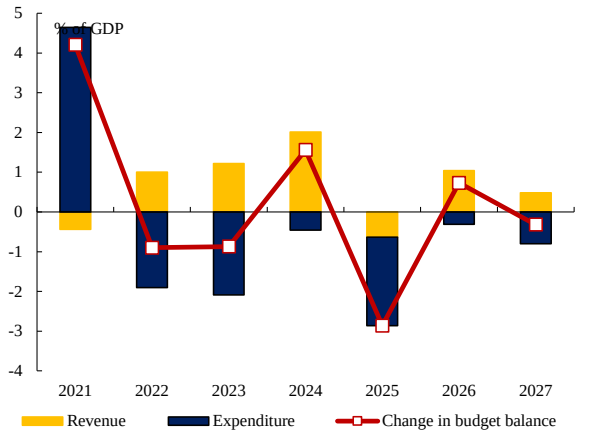
This annex discusses selected topics in public finances and developments on fiscal-structural country-specific recommendations (CSRs) addressed to Luxembourg in July 2025. These CSRs include a call to reinforce defence spending and readiness while implementing a fiscal strategy in line with the Council Recommendation of 21 January 2025. Luxembourg was also recommended to address the long-term sustainability of the pension system.

On 21 January 2025, the Council adopted the Recommendation endorsing Luxembourg's medium-term fiscal-structural plan ([60]). The plan includes a fiscal adjustment over four years ([61]).

Developments in the government balance, debt and public expenditure ([62])

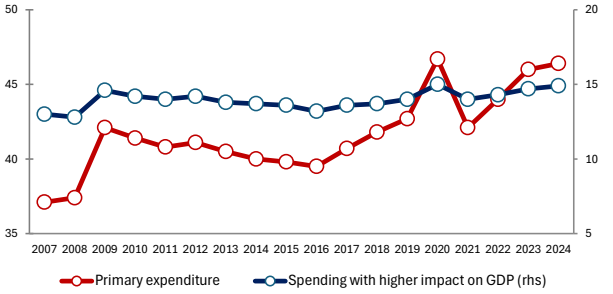
Luxembourg's government deficit amounted to 2.0% of GDP and the country's debt-to-GDP ratio amounted to 26.5% of GDP at the end of 2025. In 2025, the government deficit is mostly explained by a shortfall in revenues from taxes on income and wealth, and by sustained spending, primarily driven by a dynamic current expenditure and higher public investment, including in defence, affordable housing, education and climate-related measures (graph A2.1). In the Commission Spring 2026 Forecast, the general government balance is projected to remain in deficit over the forecast horizon: the deficit is expected to decline to 1.2% of GDP in 2026 and to raise again to 1.5% of GDP in 2027, as ageing-related costs, defence spending and interest expenses continues to push spending higher. Public debt is expected to increase from around 26.5% in 2025 to 30.2% in 2027, mostly due to due to the budget deficits and social security fund-related stock-flow adjustments.

Graph A2.1: **Contributions to the change in general government balance (% of GDP)**



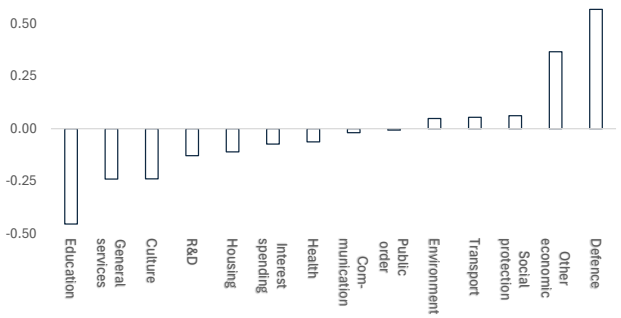
Source: European Commission 2026 Spring Forecast

Graph A2.2: **Primary spending evolution and composition - percentage of GDP -**



Source: Eurostat

Graph A2.3: **Compositional change (% total spending) since 2019**



Source: Eurostat.

Note: Based on economic literature, the categories considered to have the higher growth impact include education, R&D, health, transport and communication (See Barbiero and Cournede (2013), Gemmel et al. (2016), Lupu et al (2018), Cepparulo and Mourre (2020) and OECD (2025)).

([60]) OJ C, C/2025/650, ELI: EUR-Lex - 32025H00650 – EN – EUR-Lex

([61]) Compliance by Luxembourg with the maximum growth rates of net expenditure recommended by the Council is assessed in COM(2026)200.

([62]) Figures underpinning fiscal surveillance (net expenditure growth) are provided in the Fiscal Statistical Tables (SWD(2026)200) providing background data relevant for the assessment of the budgetary policies of the Member States.

While primary expenditure has increased sharply, expenditure with a higher impact on GDP had remained broadly stable over three decades. As regards the composition of spending, social protection accounts for the largest proportion of total expenditure (above 40%), followed by health, economic affairs ([63]), general public services and education, all above 10%. In the case of education, spending is among the highest on average in the EU. However, performance in basic skills remains below the EU average, which suggests that there are inefficiencies in public spending (see Annex 13).

Since 2019, public expenditure on defence and other economic affairs has increased sharply, with the rise in defence spending reflecting recent security developments (see Graph A2.2). Spending on transport, social protection and environment has risen more modestly. By contrast, spending on communication has remained broadly stable, while spending on research and development, health and education has fallen. This trend deserves attention, as these categories are generally considered conducive to growth.

Public investment is set to remain at a high level. After accounting for 5.0% of GDP in 2025, investment is projected to decline to 4.9% of GDP in 2026. This reflects government plans to support the green and digital transitions, mobility, economic diversification and military related expenditure. As part of its recovery and resilience plan, Luxembourg supports the construction of photovoltaic power-generation units on business premises. The government is also pursuing its ambitions in the hydrogen sector, harnessing regional cooperation (see Annex 9).

Luxembourg has high tax revenues as a proportion of GDP. In 2024 Luxembourg's total tax revenues as a percentage of GDP (including compulsory social-security contributions) amounted to 42.7%, compared to an EU average of 40.4%. Total tax revenues are projected to fall to 42.3% of GDP in 2025 and increase again to 43.4 % of GDP in 2026, according to Commission Spring 2026 Forecast ([64]).

Labour taxes make up the largest proportion of total tax revenues, but the tax mix in Luxembourg also relies strongly on capital taxation, including taxation of household capital income, compared to the EU average. Luxembourg is planning a property tax reform, but it is unclear when it will be implemented. Tax relief for mortgage interest incentivises debt-financed property ownership and will probably lead to house-price increases. Legal tax provisions combined with the relevant economic indicators strongly suggest that the country is used as a conduit for capital flows and financial optimisation by multinational groups and that there might be a high risk of aggressive tax planning (see Annex 3).

Cost of ageing

Total ageing-related spending in Luxembourg is projected to rise by about 2.5 percentage points (pps) of GDP by 2040, and by nearly 11 pps by 2070 (see Table A2.1**).** The overall increase is the result of a projected steep rise in pension expenditure; spending on long-term care and healthcare are also expected to increase significantly.

Public pension spending as a proportion of GDP is projected to rise by about 2 pps in the

Table A2.1: **Projected change in age-related expenditure in 2025-2040 and 2025-2070**

	ageing-related expenditure 2025 (% GDP)	change in 2025-2040 (pps GDP) due to: pensions	healthcare	long-term care	education	total	ageing-related expenditure 2040 (% GDP)	
LU	17.3	*1.9*	*0.3*	*0.3*	*-0.1*	***2.4***	19.8	**LU**
EU	24.3	*0.5*	*0.3*	*0.4*	*-0.3*	***0.9***	25.2	EU

	ageing-related expenditure	change in 2025-2070 (pps GDP) due to: pensions	healthcare	long-term care	education	total	ageing-related expenditure	
LU	17.3	*8.1*	*1.0*	*1.6*	*-0.2*	***10.6***	27.9	**LU**
EU	24.3	*0.2*	*0.6*	*0.8*	*-0.3*	***1.3***	25.6	EU

Source: 2024 Ageing Report (EC/EPC).

Table A2.2: **Supplementary pension schemes – Scope for expansion**

	Assets in 2024 (% GDP)	**Gross replacement rate at retirement:** (pps change 2025-2040)	**Participation in 2024** (% working-age population)	
LU	1.6	*-4.0*	4.1	**LU**
EU	32.4	*-2.8*	55.9	EU

Source: European Commission.

coming decades and by around 8 pps by 2070. At 17.5% of GDP in 2070, gross spending on public pension benefits is projected to be by far the highest in the EU. In 2025, Luxembourg received a CSR to address the long-term sustainability of the pension system, in particular by limiting early-retirement options and increasing the participation and employment rate of older workers. In December-2025, after a public consultation Luxembourg adopted a pension reform, which consists of i) an increase in the contribution rate by 1.5 pps to 25.5%, ii) limited measures, such as tax advantages, to encourage people to extend their careers iii) introducing the right for a progressive pension, and iv) increasing the mandatory contribution period for most early retirees ([65]). Overall, the reform does not go far enough to address the structural issues of the sustainability of the pension system or to significantly increase the currently low participation rate of workers aged 55-64.

Supplementary pension schemes can boost the resilience of the pension system by diversifying retirement income sources. In Luxembourg, however, there has been limited uptake: at the end of 2024, private pension assets amounted to around 2% of GDP while participation rates were around 4% of the working-age population (see Table A2.1) ([66]). This coincides with rising medium-term spending pressures on public pensions and a projected decrease in the replacement rate by 4 pps between 2025 and 2040 (Table A2.2) ([67]).

([65]) Loi de 19 Decembre 2025 (Pension reform) ; Loi de 19 Decembre 2025 (Tax incentives).

([66]) Source: OECD Pension Market in Focus 2025. The highest participation rate in at least one supplementary pension plan is reported.

([67]) The (gross) replacement rate refers, depending on data availability, to both public and private pensions. It is based on projections from the 2024 Ageing Report.

Public healthcare expenditure is projected to be 4.1% of GDP in 2025 (below the EU average of 6.6%) and is expected to increase by 0.4 pps by 2040 and by a further 0.7 pps by 2070([68]). Public expenditure on long-term care is projected to be 1.1% of GDP in 2025 (below the EU average of 1.7%) and is expected to increase by 0.3 pps of GDP by 2040 and by a further 1.3 pps of GDP by 2070.

National fiscal frameworks

In Luxembourg there are two independent fiscal institutions (IFIs). The National Council of Public Finances (CNFP) has a narrow mandate: monitoring compliance with fiscal rules, while its sister IFI, the national institute of statistics and economic studies (STATEC), produces the macroeconomic forecast. The CNFP is ostensibly a stand-alone entity, yet when it comes to staff expenses and other operating expenses it seems to be fully integrated into the MoF budget, and funding is not enshrined in law. Its access to information is currently regulated only by a memorandum of understanding. STATEC's forecasts are subject to *ex post* assessment by the CNFP. As a statistical office, STATEC has undergone external reviews, albeit not focusing on its IFI function.

Luxembourg does not have a formal, institutionalised spending-review process. The impetus to launch spending reviews depends on the fiscal situation. However, the difficulty of phasing out energy-support measures could be an indication of some political resistance to altering

([68]) Key performance characteristics, recent reforms and investments of the Luxembourgish healthcare system are discussed in Annex 15 'Health and health systems'.

Table A2.3: **Fiscal Governance Database indicators and Public Accounting Maturity**

2024	Luxembourg	EU Average
Country Fiscal Rule Strength Index (C-FRSI)	10.91	14.81
Medium-Term Budgetary Framework Index (MTBFI)	0.78	0.72
2025 Public accounting maturity of general government	43%	65%

(1) "The Country Fiscal Rule Strength Index (C-FRSI) shows the strength of national fiscal rules aggregated at the country level based on i) the legal base, ii) how binding the rule is, iii) monitoring bodies, iv) correction mechanisms, and v) resilience to shocks. The Medium-Term Budgetary Framework Index (MTBFI) shows the strength of the national MTBF based on i) coverage of the targets/ceilings included in the national medium-term fiscal plans; ii) connectedness between these targets/ceilings and the annual budgets; iii) involvement of the national parliament in the preparation of the plans; iv) involvement of independent fiscal institutions in their preparation; and v) their level of detail. A higher score is associated with higher rule and MTBF strength.
The score for public accounting reflects the degree of maturity in relation to the International Public Sector Accounting Standards (IPSAS). Countries with an accounting maturity of 70% or more in relation to IPSAS are deemed to apply accrual accounting. For more information, see the report on public accounting in the EU (COM(2025)746 and accompanying Staff Working Document SWD(2025)396)."
Source: Fiscal Governance Database, European Commission

spending priorities. Accrual accounting improves the transparency of a public body's financial position and performance and can support sustainability and intergenerational equity. Most Member States (14) have implemented accrual accounting across the general government sector and five are set to do so by 2030 ([69]). Luxembourg currently lags behind the EU average (see Table A2.3) as it has not yet implemented accrual accounting at central and local government level and is set to improve it at central government level in the medium term ([70]).

([69]) Report on public accounting in the EU (COM(2025)746 and accompanying Staff Working Document SWD(2025)396). Countries with an accounting maturity of 70% or more in relation to International Public Accounting Standards are deemed to apply accrual accounting.

([70]) Annexes 3.1 and 3.4 of SWD(2025)396.

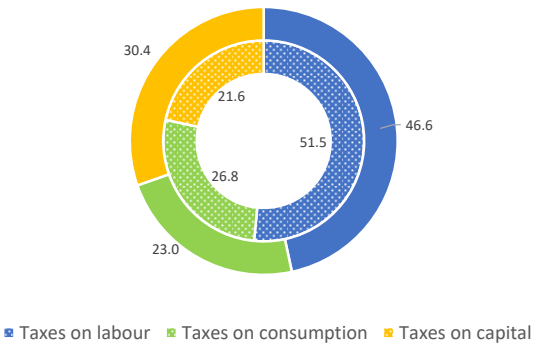
This annex provides an indicator-based overview of Luxembourg's tax system. It includes information on the tax mix, on competitiveness and fairness aspects of the tax system, and on tax collection and compliance. It also provides information on the risk of aggressive tax planning in Luxembourg. In the area of taxation, the 2025 CSRs for Luxembourg highlighted the need for a property tax reform and to phase out fiscal incentives to borrow, as well as for further action to effectively tackle aggressive tax planning.

The tax burden in Luxembourg is 2 percentage points (pps) above the EU average. In 2024, tax revenues in Luxembourg (including social security contributions) reached 41.4% of GDP, slightly higher than the previous year (40.1%) (see Table A3.1) ([71]). The difference with the EU average reached 2 pps, up from 1.1 pp. in 2023. Luxembourg's tax revenues from labour taxation in 2024 as a share of GDP were 19.3%, a decrease from 2023 (19.8%) and below the EU average for 2024 (20.3%). Meanwhile, the share of consumption taxes (9.5% of GDP) was below the EU average (10.6%), including a below-average contribution of VAT revenues.

Revenues from capital taxes as a share of GDP remained the highest in the EU in 2024, likely driven by the high share of corporate income tax revenues (6.5%). While the share of revenues from property taxes is relatively high, the share of revenues from recurrent property taxes is the second lowest in the EU at 0.1% against an EU average of 0.9%. Capital taxes have increased as a share of GDP and reached 12.6% of GDP in 2024, up from 11.2% the previous year.

Revenues from environmental taxes as a share of GDP have decreased in recent years, from 1.7% in 2019 to 1.2% in 2024, below the EU average of 2.1%. There is room for a greater use of environmental taxes, which come largely from taxes on energy, as environmental taxation mostly consists of transport fuel taxes. Luxembourg has begun to pivot its tax policy to support the clean and digital transitions, for example via the increased investment tax credit regime ([72]) and a specialised tax credit targeting digital and ecological transformation. However, gaps in green tax policies remain, with limited incentives for the manufacturing of related technologies, and the limited reach of these instruments to early-stage firms.

Graph A3.1: **Tax revenue by economic function in 2024, LU (outer ring) and EU-27 (inner ring)**



Source: Taxation Trends Data, DG TAXUD

Luxembourg's corporate income tax (CIT) rate is higher than the EU average. It was stable at 24.9% between 2019 and 2024 and was reduced to 23.9% in 2025 to bring it closer to the EU average. Since 2013, it includes a 7% surcharge to support a national employment fund. In comparison, the EU average CIT rate was 22.2% in 2025. Luxembourg's average effective CIT rate stood at 24.6% in 2024, still above the EU average of 19.1%. Luxembourg's tax base is highly concentrated, with approximately 25% of total tax revenues (including social contributions) provided by the financial sector. This means that external shocks to this sector can have a sizeable impact on Luxembourg's tax revenues. It is also concentrated within the financial sector, where 0.58% of businesses pay 75% of total corporate taxes ([73]).

Luxembourg's tax framework provides for various incentives that effectively lower households' and companies' tax burden. The intellectual property (IP) tax regime, in place since 2018, establishes conditions under which a taxpayer may benefit from a partial exemption of 80% on eligible net income generated by qualifying IP assets. This translates into an overall

([71]) Preliminary Eurostat data point to a tax-to-GDP ratio of 40.9% in 2025.

([72]) Modernisation of the tax relief for investment - Guichet.lu - Luxembourg.

([73]) Cour des comptes, Avis sur le budget pour l'exercice 2025 et relative à la programmation financière pluriannuelle 2024 à 2028.

Table A3.1: **Taxation Indicators**

		Luxembourg					EU-27				
		2019	2022	2023	2024	2025	2019	2022	2023	2024	2025
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	40.0	39.3	40.1	41.4	40.9	39.9	39.7	39.0	39.4	
By tax base	Taxes on labour (% of GDP)	18.3	18.8	19.8	19.3		20.6	20.1	19.9	20.3	
	of which, social security contributions (SSC, % of GDP)	11.0	10.9	11.2	10.8		13.0	12.7	12.7	13.0	
	Taxes on consumption (% of GDP)	9.3	9.4	9.1	9.5		11.2	10.9	10.5	10.6	
	of which, value added taxes (VAT, % of GDP)	6.3	6.8	6.4	6.7		7.1	7.4	7.1	7.1	
	Taxes on capital (% of GDP)	12.4	11.2	11.2	12.6		8.1	8.7	8.5	8.5	
Some tax types	Personal income taxes (PIT, % of GDP)	9.5	10.5	11.2	11.3		9.6	9.4	9.3	9.6	
	Corporate income taxes (CIT, % of GDP)	6.0	4.5	4.8	6.5		2.6	3.2	3.2	3.1	
	Total property taxes (% of GDP)	2.4	2.6	2.3	1.8		2.2	2.1	1.9	1.8	
	Recurrent taxes on immovable property (% of GDP)	0.1	0.1	0.1	0.1		1.2	1.0	0.9	0.9	
	Environmental taxes (% of GDP)	1.7	1.2	1.2	1.2		2.6	2.1	2.1	2.1	
	Effective carbon rate in EUR per tonne of CO_2 equivalents	na	na	112.9	na		na	na	84.8	na	
Progressivity & fairness	Tax wedge at 50% of average wage (single person) (*)	24.9	26.7	26.4	26.3	27.1	32.4	31.6	31.5	31.5	31.6
	Tax wedge at 100% of average wage (single person) (*)	38.8	40.4	41.2	40.4	40.7	40.1	39.7	39.9	39.9	40.0
	Corporate income tax - effective average tax rates (1) (*)	24.6	24.6	24.6	24.6		20.0	19.2	19.0	19.3	
	Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*)	5.2	5.3	5.9	6.3		7.8	8.0	7.9	7.8	
Tax administration & compliance	Outstanding tax arrears: total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*)	12.8	9.8	17.4	na		31.8	32.6	30.7	na	
	VAT gap (% of VAT total tax liability, VTTL) (**)	1.7	-2.9	0.2	na		10.5	7.3	8.2	na	

(1) Forward-looking effective tax rate (KPMG).
(2) A higher value indicates a stronger redistributive impact of taxation.
(*) EU-27 simple average.
(**) Forecast value for 2024. Estimates for Luxembourg fall outside plausible ranges. EU-27 refers to the median value. For more data on tax revenues as well as the methodology applied, see the Data on Taxation Trends webpage.
Source: European Commission, OECD, ISORA.

effective tax rate of 4.8% on such income. A tax credit of 18% is applied to investments and operating expenses to engage in digital, ecological, and energy transformation. Certain entities benefit from specific regulatory requirements, such as a full CIT exemption on investment funds, or a 0.25% subscription income tax on private wealth-management companies.

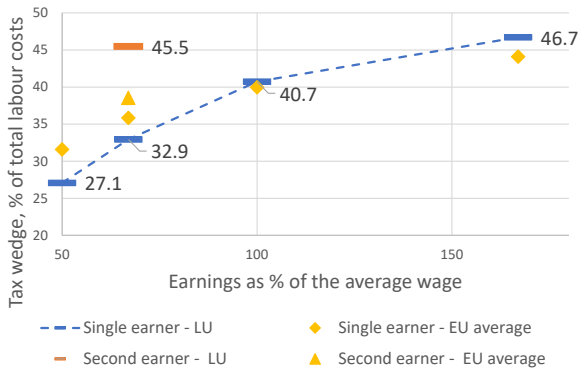
Venture capital investments in start-ups and other early-stage ventures grew by 51% in 2024. SICAR – an investment vehicle designed for investments in private equity and venture capital – also benefits from exemptions on income and gains from transferable securities qualifying as investment in risk capital and from net wealth tax. Starting in 2026, a new measure proposes to introduce a 'start-up tax credit' to encourage individuals to invest in young and innovative companies. The tax credit is limited to 20% of the investment amount (up to a maximum of EUR 100 000 per tax year).

Luxembourg's income-tax burden is relatively low across the income distribution. Luxembourg's tax wedge ([74]) in 2025 was lower than the EU average at lower income levels (i.e. for single earners at 50% and 67% of the average wage), slightly higher than the EU average at 100%, and higher than the EU average at 167% of the average wage. Incentives for second earners, who are often women, to take up work, could be improved further. The tax wedge for second earners at 67% of the average wage was noticeably higher than the EU average. In addition, the difference between the tax wedge for second earners and the tax wedge for single persons at 67% of the average wage was the largest among all EU countries. While the difference between the tax wedge at 50% and at 167% of the average wage was higher than for the EU average, the tax-and-benefit system as a whole has a relatively small impact in reducing income inequality as measured by the difference in the Gini coefficient

([74]) The tax wedge is an indicator of the tax burden on labour that can be assessed at various levels of earnings. It is defined as the sum of personal income taxes, employee and employer social-security contributions and other mandatory contributions, expressed as a percentage of total labour costs (composed of the net wage, personal income tax, social security contributions, and other mandatory contributions). Tax wedge data in the 2026 country reports are calculated by the Joint Research Centre of the European Commission and based on the EUROMOD model, while in the past reports they were based on the OECD tax and benefit model. While the underlying methodology is very similar, differences in the assumptions can lead to different results between both models.

([75]) before and after taxes and social transfers. For Luxembourg the tax-benefit system reduces the Gini coefficent by 6.3 pps, less than the EU average reduction of 7.8 pps.

Graph A3.2: **Tax wedge for single and second earners as a % of total labour costs, 2025**



Note: The second earner tax wedge shows a household's tax wedge resulting from the wage that a second earner taking up a job at 67% of the average wage receives. It does not show the total tax wedge of the household. The household is assumed to have a first earner at 100% of the average wage and no children. For the methodology of the tax wedge for second earners, see OECD (2024), Taxing Wages 2024.
Source: European Commission

Revenue from estate and inheritance taxes amounted to 0.2% of GDP in 2024, the sixth-largest share among the EU-27. While capital gains derived from the disposal of movable properties are subject to progressive income tax rates, they are not taxed if the holding period exceeds six months or if they amount to less than EUR 500. Capital gains on the sale of a taxpayer's main residence are also exempt from tax. A CO_2 tax credit is in place for employees, pensioners, and the self-employed to mitigate the impact of the CO_2 tax for people with lower incomes. The 2026 budget increases the tax credit from EUR 192 to EUR 216 per year for gross salaries or net profits between EUR 936 and EUR 40 000, and for pensions between EUR 300 and EUR 40 000. For incomes above EUR 80 000, the credit is reduced to zero.

To address a severe housing challenge, and a 2025 country-specific recommendation, Luxembourg has initiated a property taxation reform, that is undergoing parliamentary review. The ongoing reform of property taxation aims to overhaul land-related taxes, including a reform of the land tax (impôt foncier) and a new national tax on the mobilisation of land (impôt national à la mobilisation de terrains). However, subsequent changes reduced its initial ambition. The indicative timeline envisages implementation in 2028 and the first fiscal exercise in 2030 ([76]).

At the same time, progress on the phasing out of fiscal incentives supporting housing demand has been limited. Some of the temporary tax benefits for housing introduced in 2024 are becoming permanent ([77]). For example, the increase of the 'Bëllegen Akt' tax credit on notarial instruments to EUR 40 000, available for the purchase of a primary residence, was made permanent in 2025. The 2024 increase of the mortgage interest deductibility has also been maintained. As discussed in the Housing Annex 16, the demand-side support risks further inflating house prices.

Tax expenditures related to direct and indirect taxes are expected to result in foregone tax revenues of 2.07% of GDP in 2026, or EUR 1 949 million ([78]). National authorities report 25 types of direct and 10 types of indirect tax expenditures. In terms of direct taxes, tax credits are expected to have the largest effect on tax revenues (0.54% of GDP in 2026), including the introduction of a new tax credit for start-ups. Deduction rules are also expected to significantly impact tax revenues (0.52% of GDP in 2026) linked to the increase in the mortgage interest deductibility. On the indirect tax side, the greatest expected impact on tax revenues comes from registration and transcription fees – the 'Bëllegen Akt' tax credit (0.37% of GDP in 2026), followed by the super-reduced VAT rate of 3% (0.27% of GDP in 2026).

([75]) The Gini coefficient measures the extent to which the distribution of income within a country deviates from a perfectly equal distribution. A coefficient of 0 expresses perfect equality where everyone has the same income, while a coefficient of 100 expresses full inequality where only one person has all the income.

([76]) Projet de loi sur l'impôt foncier et l'impôt à la mobilisation de terrains.

([77]) Nouvelles modalités pour bénéficier des avantages fiscaux temporaires en matière de logement.

([78]) Ministry of Finance (Luxembourg), 2025. Budget 2026 – Volume 2 : *Projet de loi de programmation financière pluriannuelle pour la période 2026-2029*.

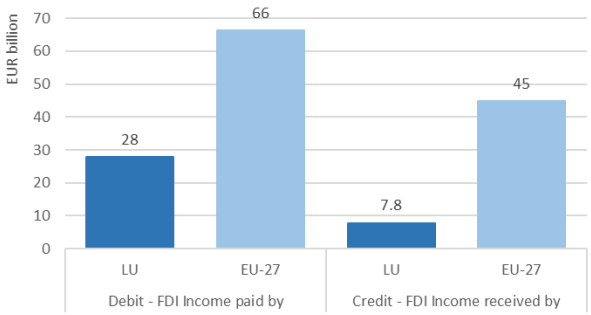
While Luxembourg regularly reports on tax expenditures, efforts on monitoring compliance gaps are limited to VAT. Tax expenditures are reported annually as part of Luxembourg's budgetary cycle. Although Luxembourg collaborates with the Commission in the estimation of the VAT compliance gap, it does not conduct compliance gap estimation activities in CIT, PIT, or excise duties ([79]).

In the latest 'VAT gap in Europe' study, the estimates of Luxembourg's VAT compliance gap fall outside plausible ranges ([80]). They show negative or near-zero values for several consecutive years, which is not feasible as it implies that collected VAT exceeds theoretical liability. Luxembourg's particular economic structure, in which household consumption accounts for less than 40% of total VAT liability and where cross-border purchases by non-residents generate a large share of VAT revenues but are not reflected in domestic consumption, complicates the estimation. Further research and discussions with the national authorities will aim to reconcile VAT revenue and national accounts data in Luxembourg in the future.

Luxembourg's tax administration is generally very effective. For VAT, Luxembourg uses a system of automatic information exchange between tax administrations and other national bodies. Since 2020, the tax administration manages VAT arrears through an IT system that consolidates information on taxpayers from various databases. In direct taxation, Luxembourg launched a contact centre in 2024, allowing for faster responses, and a pre-completed tax declaration was launched in 2025 for certain individuals. Despite these efforts, outstanding tax arrears saw a strong increase in 2023, reaching 17.4% of total revenue collected, up by 7.6 pps since 2022. Although it is the ninth largest share among EU countries, it remains below the EU average of 30.7%.

Luxembourg's tax administration is also efficient. The cost-of-collection ratio stood at 0.9% in 2023 and remained stable over the preceding four years. This is slightly above the EU average of 0.7%. ICT operating costs stood at 2.9% of total operating expenditure in 2023 and have remained stable over time. The e-filing rate for VAT returns stood at 99.8% in 2023, above the EU average of 99.2% and up 4.7 pps since 2018.

Graph A3.3: **FDI income paid to/received from zero- and low-tax jurisdictions, 2024**



Refers to total net FDI income paid to, or received from, Guernsey, Jersey, Bermuda, Bahamas, Barbados, British Virgin Islands, Cayman Islands, Bahrain, and United Arab Emirates.
Source: European Commission based on bop_fdi6_inc

Luxembourg's legal tax provisions combined with the relevant economic indicators ([81]) strongly suggest that the country is used as a conduit for capital flows and financial optimisation by multinational groups. In 2024, Luxembourg's net inward stock of foreign direct investment (FDI) stood at EUR 2.696 billion, and its outward stock at EUR 3.788 billion, making it the second largest origin and destination country in absolute terms for FDI in the EU-27 after the Netherlands. The net inward FDI stock in Luxembourg was about 31 times larger than the size of its economy (equivalent to 3 128% of its GDP), and its net outward stock of investment about 44 times larger than its economy (equivalent to 4 395% of its GDP), making it by far the largest origin and destination country for FDI in the EU-27 relative to the size of its GDP. Furthermore, around 60% of Luxembourg's inward and outward stock of FDI is held through special purpose entities, compared to around 18% for the other EU-26.

([79]) European Commission, Directorate-General for Taxation and Customs Union, Mind the gap - 2025 report.

([80]) See European Commission, Syntesia, Poniatowski, G., Bonch-Osmolovsky, M., Śmietanka, A. et al., VAT gap in Europe – Report 2025, Publications Office of the European Union, Luxembourg, 2025.

([81]) International Taxation and Luxembourg's Economy", IMF Working Papers 2020, https://doi.org/10.5089/9781513560922.001

Luxembourg is also a major conduit for dividend and interest flows (see Graph A3.3). The share of direct investment income flowing to the nine low- and zero- tax jurisdictions identified represents 20.5% of the total, compared to 3.6% for the remaining EU 26.

Luxembourg is a major financial hub in the EU and globally, but the scale of these figures suggests that there might be a high risk of aggressive tax planning. As part of its recovery and resilience plan, Luxembourg introduced a conditional measure of non-deductibility of interest and royalty payments in 2021. However, the scope of this measure is limited to jurisdictions on the EU list of third country jurisdictions for tax purposes, which includes those that failed to comply with the EU's tax good governance criteria within a specific timeframe or refused to engage with the EU ([82]), which are not Luxembourg's main economic partners. Furthermore, the measure does not specifically target low- or zero-tax jurisdictions ([83]). Although some of these jurisdictions have implemented measures related to Pillar 2, their expected economic impact is not yet clear. At the same time, as most EU countries have introduced defensive measures targeting interest and royalty payments made to zero- and low-tax jurisdictions, this increases the risk of Luxembourg being used as a conduit country.

Available figures suggest that the financial links between Luxembourg and low- and zero-tax jurisdictions are not negligible. 7% of all net FDI income received by the EU-27 from the 9 identified zero- and low-tax jurisdictions and 40% of all net FDI income paid by the EU-27 to those jurisdictions go to/come from Luxembourg. In 2024, Luxembourg received EUR 2.6 billion from low- or zero- tax jurisdictions, while it paid EUR 23 billion to low- or no-tax jurisdictions. Luxembourg's measures have been mostly limited to implementing EU legislation and Council conclusions. The EU Pillar 2 Directive on global minimum effective corporate taxation has been in force in the EU since 1 January 2024, and Luxembourg has notified the Commission of its transposition into national law. However, its impact on the issue of outbound payments is expected to be limited, as its scope covers only large companies with an annual revenue over EUR 750 million and is subject to certain sectoral exemptions.

([82]) American Samoa, Anguilla, Guam, Palau, Panama, Russia, Turks and Caicos Islands, US Virgin Islands, Vanuatu, Viet Nam.

([83]) Guernsey, Jersey, Bermuda, Bahamas, Barbados, British Virgin Islands, Cayman Islands, Bahrain, United Arab Emirates.

Despite a strong science base, weak business innovation and science-business linkages limit Luxembourg's innovation-driven growth. The 2025 European Innovation Scoreboard (EIS) ([84]) ranks Luxembourg as a 'strong innovator'. However, Luxembourg has been unable to raise its research and development (R&D) intensity, which has been on a downwards trend for over two decades and fell below 1% in 2024, far below other strong innovators ([85]). This has been driven by stagnant public R&D intensity (standing at around 0.5% since 2011) and a sustained decline in business R&D investments ([86]). The 2025 country-specific recommendation (CSR) recommended *focusing investment policy on fostering innovation and supporting high R&D intensive activities*. Despite ongoing policy measures, business R&D intensity has not recovered, and science-business linkages remain underexploited. Luxembourg has significant potential to strengthen its competitiveness and further diversify its economic base by leveraging its scientific excellence and deepening the connections between its research community and the business ecosystem. Well-designed public support schemes could help unlock this potential and create favourable conditions for the emergence of disruptive innovation in key sectors.

Excellent science

Luxembourg's solid and highly internationalised science base is a key asset. The quality of Luxembourgish research outputs, as measured by the proportion of scientific publications within the top 10% most-cited scientific publications worldwide is the second-highest in the EU. Luxembourg's research performers are very well connected internationally, as evidenced by the high proportion of international co-publications among the country's scientific publications (7.7% in 2024 vs 55.9% for the EU average, the highest in the EU) ([87]). The robustness of Luxembourg's research system and its integration into international research networks make it an attractive hub for foreign students and researchers. Luxembourg notably performs very well when it comes to attracting foreign doctorate students, as shown in the 2025 edition of the EIS. More generally, Luxembourg ranked particularly high in the 2025 Global Talent Competitiveness Index ([88]) and re-entered the top 10 for the first time since 2021.

However, public R&D investment has remained stagnant over the last decade, at a level well below the EU average, which risks undermining its scientific excellence in the long term. Public R&D investment stood at 0.54% of GDP in 2024 compared to 0.72% for the EU average. With strong international competition and very rapid research and innovation developments, these low and stagnating levels of public R&D investment could weaken Luxembourg's scientific position worldwide and its attractiveness vis-à-vis foreign talents. The revised national research strategy by the government and the forthcoming bill on the National Research Fund ([89]) represent important steps to strengthen the research and innovation framework. However, to be effective, these initiatives must be backed by sustained and adequate investments.

Business innovation

Business R&D intensity has been declining over the last two decades and is among the lowest in the EU, holding back innovation-driven growth. Over the last two decades, business R&D intensity has been on a downward trend and fell to 0.45% of GDP in 2024, far below the EU average of 1.49%. This is in stark contrast to the investment levels and trends observed in neighbouring countries which are also classified as

([84]) 2025 European Innovation Scoreboard (EIS), country profile: Luxembourg. The EIS provides a comparative analysis of innovation performance in EU countries, including the relative strengths and weaknesses of their national innovation systems.

([85]) 2025 Eurostat. R&D intensity is defined as gross domestic expenditure on R&D as a percentage of GDP (see table A4.1)

([86]) 2025 Eurostat.

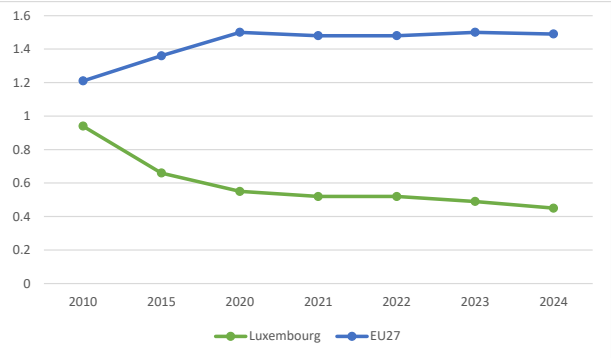
([87]) 2025 Eurostat.

([88]) Global Talent Competitiveness Index 2025 | INSEAD.

([89]) Address on the state of the nation 2025 by Luc Frieden - The Luxembourg Government.

strong R&I performers or innovation leaders according to the EIS.

Graph A4.1: **Business R&D expenditure as % of GDP, 2010-2024**



(1) EU average for the last available year or the year with the highest number of country data. * break in series (relevant numbers in the table need to be tagged, e.g. 8.8*)
Source: Eurostat

This weak business R&D intensity, which is partly explained by the country's economic structure being based on finances and services, keeps hampering productivity growth ([90]). This is reflected in the number of researchers (FTEs) employed by businesses per thousand active population, which is well below the EU average (3.20%, 2024) (see table A.41) and very low if compared to other strong innovator countries or innovation leaders. Low private R&D investments also weigh on Luxembourg's innovation output as measured by patents. Patent applications filed under PCT per billion GDP (in purchasing power standards, PPS EUR), which is at 1.20 PPS EUR (2022), is well below the EU average (2.8). (see table A4.1).

Public support for business innovation remains low, despite recent efforts to develop and expand relevant support instruments. Small-scale schemes such as the Fit 4'= programmes for SMEs are complemented with specific schemes for digital, sustainable and health tech companies. In 2024, 891 small scale business were funded under FIT 4 and 67 under sustainability and digital ([91]). In 2025, a dedicated pilot funding instrument (Fit 4 Scale ([92])) was launched to help business scale and accelerate. However, public support for business R&D is still marginal (0.037% of GDP in 2019, compared to an EU average of 0.100%). Unlike most EU countries, Luxembourg does not provide indirect support to R&D in the form of tax credits, only 'direct' support (i.e. in the form of grants or procurements). Moving forward, it will be essential to assess the efficiency and impact of the Fit4 programmes and recent initiatives in the midterm, with further fine-tuning and expanding the policy mix aimed at stimulating business R&D and innovation.

Despite the high quality of Luxembourg's public research system, linkages with the business sector remain underexploited. Science-business linkages remain weak, as evidenced by the low proportion of public expenditure on R&D financed by businesses (0.02% in 2023, compared to an EU average of 0.05%). To tackle this challenge, Luxembourg's National Research Foundation (FNR) has put in place several schemes since 2019 to encourage public-private cooperation and science transfer to commercialisation. These include schemes to consolidate public-private partnerships in priority areas such as health tech, high-performance computing, defence, space and lightweight materials. In 2024, the FNR invested approximately EUR 5.3 million in the BRIDGES and JUMP programmes ([93]), strategically fostering public-private collaboration and the translation of research into innovative products and technologies. Approximately EUR 995 000 was committed by the FNR for the KITS (knowledge & innovation transfer support) programme to strengthen knowledge and technology transfer capacities within Luxembourg's public research institutions in 2024 ([94]). Furthermore, the innovation fund provides specific incentives for private sector companies entering public-private research and innovation partnerships. While these initiatives represented important steps and are fully operative now, a thorough evaluation of their effectiveness over time will be needed to assess their impact on consolidating science-business linkages.

([90]) OECD Economic Surveys: Luxembourg 2025 | OECD

([91]) Annual report 2024: Nearly 900 companies supported - Luxinnovation

([92]) Be part of the first Fit 4 Scale programme - Luxinnovation

([93]) FNR JUMP and BRIDGES programmes support the translation of research into practical innovation. *JUMP* funds projects that advance proof-of-concept and technology readiness toward commercialisation or spin-offs, while *BRIDGES* fosters collaborative R&D between public research institutions and companies to promote innovation.

([94]) Annual Report 2024 - FNR

The uptake of digital technologies by firms in Luxembourg is increasing, supported by continued policy efforts. As of 2024, 70.27% of SMEs in Luxembourg had at least a basic level of digital intensity (up from 66.25% in 2022), remaining slightly below the EU average of 72.91%([95]). The uptake of artificial intelligence by businesses enterprises increased to 33.6% in 2025, significantly above the EU average of 20.0%. Cloud computing adoption reached 43.7% of businesses in 2025, below the EU average of 46.7%. Similarly, 38.2% of businesses used data analytics in 2025, slightly below the EU average of 39.9% ([96]). In line with the CSR 2025 on *accelerating the digitalisation of businesses, in the uptake of advanced digital technologies by SMEs,* Luxembourg supports further digital uptake by continuing to implement and expand SME-focused measures. The Fit 4 Digital – AI programme helps SMEs identify relevant AI use cases, conducting feasibility studies and developing implementation roadmaps. The SME packages covering AI and cybersecurity provide co-funding for concrete technology investments. In parallel, Luxembourg contributes to the IPCEI on Next-Generation Cloud Infrastructure and Services (IPCEI-CIS), including through the development of open-source cybersecurity tools and trusted cloud and edge services, aiming to facilitate secure data processing and interoperability. Luxembourg's RRP also includes a reform aimed at fostering a new ecosystem for quantum communication in Luxembourg, encouraging the participation of private companies and researchers, as well as an investment to develop and deploy the research infrastructure needed to build knowledge and experience in this field. Luxembourg has moved above the EU average in SME basic digital intensity and continues to perform above the EU average in the uptake of artificial intelligence by enterprises. However, cloud computing and data analytics adoption remain below the EU average and well below the 2030 Digital Decade targets ([97])). Furthermore, digitalisation of SMEs and the uptake of technology by business, as a critical enabler of innovation and productivity remain a key challenge.

([95]) 2025 Digital Decade country report.

([96]) Luxembourg 2025 Digital Decade Country Report | Shaping Europe's digital future.

([97]) Luxembourg 2025 Digital Decade Country Report.

Entrepreneurial dynamism

Luxembourg's startup ecosystem is gradually maturing and diversifying, supported by a strengthened strategic and policy framework. Luxembourg has an evolving startup ecosystem, with over 810 active startups and scaleups, more than 690 of which are domestically based. In 2025, 58 new startups emerged, approximately half of them active in AI, underscoring the country's commitment to digitalisation and technological innovation ([98]). Luxembourg's initiatives to support startups aim to improve framework conditions for innovation. The 2024 'From Seed to Scale' roadmap sets a clear direction for growth across sectors such as AI, fintech and space. It was complemented by the 10-point action plan for startups and the Fit 4 Scale, which provide non-financial support like incubators and a new tax credit for business angels to encourage investments in start-ups (2026). These efforts build on the success of the Fit 4 Start programme, which supported 891 companies and launched 48 startups in 2024, strengthening Luxembourg's position in healthtech and biotech innovation. While these initiatives represent key steps towards a more supportive environment for startups and scaleups, achieving its full effect will require to ensure effective, timely and adequate funding, as well as and rigorous monitoring.

Despite rising investment activity, access to finance – particularly venture capital – remains a bottleneck hindering the growth of Luxembourgish startups. Investment activity has increased in recent years, with nearly 1 000 funding rounds amounting to EUR 7.8 billion, including EUR 1.8 billion for domestically headquartered companies. In 2025, total funding reached EUR 407 million, a 52% increase compared to 2024, with an average round size of EUR 5.4 million, pointing to stronger investor confidence and greater availability of later-stage funding. Investment patterns illustrate larger funding rounds highlighting the ecosystem's capacity to support scaling companies ([99]). Nevertheless, venture capital investment as a

([98]) Annual Report 2024 - Luxinnovation

([99]) Startups and scaleups ecosystem - Facts & Figures - Luxinnovation

percentage of GDP (0.10% in 2024 – see table A4.1), while well above EU average, remains lower than the best performers ([100]) (see Annex 6). As part of the 10-point action plan, efforts are being undertaken to consolidate public risk financing. In particular, the *Société Nationale de Crédit et d'Investissement* (SNCI) will dedicate an additional EUR 300 million over the next five years to complement its funding deployed through the Luxembourg Future Fund 1 and 2 ([101]). While these measures are important steps to strengthen public support, the mobilisation of private and institutional venture capital remains limited, pointing to scope for further measures to crowd in private investment, particularly for scaleups with a high R&D intensity.

Skills shortages are a key challenge for Luxembourg, whose research and innovation performance relies heavily on the country's ability to attract foreign talents. Luxembourg has the lowest proportion of new science and engineering graduates in the EU (per thousand population aged 25-34), and thus a very limited 'domestic' pool of human resources for research and innovation. In the field of computing specifically, Luxembourg has the second-lowest proportion of graduates per thousand population aged 25-34. The country has various schemes in place to attract and retain outstanding researchers ([102]) like the 'national talent desk' set up in 2026 and a single contact point for foreign talents wishing to join a Luxembourgish startup or scaleup. These initiatives are urgent to secure critical mass, which is essential for strengthening the scientific system, Luxembourg's most important asset, and ensuring effective transfer to the market. To achieve these goals, it is crucial that these initiatives are adequately funded and monitored for impact, ensuring that they effectively contribute to the country's long-term innovative and economic growth (see Annex 13).

Luxembourg supports entrepreneurship education through various initiatives, but these have not been evaluated. Students in upper secondary schools learn entrepreneurship either as a stand-alone subject or as a component of other courses. Since the 2016–17 school year, 15 000 high school students across 18 schools have been supported under the national project Sustainable Entrepreneurial Schools, which aims to promote entrepreneurship as a career choice ([103]). The University of Luxembourg supports youth entrepreneurship through several initiatives, including its entrepreneurship programme (open to all students and staff), ideation camp, startup bootcamp, and an entrepreneurial summer school programme. The university also offers incubation and acceleration services. Other private and non-governmental organisations are also active in the area of youth entrepreneurship, such as Jonk Entrepreneuren Luxembourg, the Luxembourg Federation of Young Business Leaders (Fédération des jeunes dirigeants), and Junior Chamber International Luxembourg (JCEL), a platform enhancing leadership skills. Although Luxembourg has many interesting initiatives in this area, there are no evaluations or studies demonstrating their effectiveness.

([100]) OECD Economic Surveys: Luxembourg 2025 | OECD

([101]) EUR 300 million and action plan for Luxembourg startups - Luxinnovation.

([102]) European Commission / EACEA / Eurydice, 2025, Entrepreneurship education at school in Europe – 2025. Eurydice Report.

([103]) European Commission / EACEA / Eurydice, 2025, Entrepreneurship education at school in Europe – 2025. Eurydice Report.

Table A4.1: **Key innovation indicators**

LUXEMBOURG	2010	2015	2020	2022	2023	2024	2025	EU average (1)	US
Headline indicator									
R&D intensity (gross domestic expenditure on R&D as % of GDP)	1.42	1.25	1.1	1.07	1.06	0.99	:	2.24	3.44
Science and innovative ecosystems									
Public expenditure on R&D as % of GDP	0.48	0.59	0.55	0.55	0.56	0.54	:	0.72	0.64
Scientific publications of the country within the top 10% most-cited publications worldwide as % of total publications of the country	12.9	14.09	13.05	13.1	:	:	:	9.44	12.31
Researchers (FTEs) employed by public sector (Gov+HEI) per thousand active population	5	5.7	6.4	6.8	7.1	7.1	:	4.3	:
International co-publications as % of total number of publications	71.52	75.66	77.41	79.06	77.91	77.89	:	57.24	:
R&D investment & researchers employed in businesses									
Business enterprise expenditure on R&D (BERD) as % of GDP	0.94	0.66	0.55	0.52	0.49	0.45	:	1.49	2.69
Business enterprise expenditure on R&D (BERD) performed by SMEs as % of GDP	:	0.13	:	:	0.13	:	:	0.47	0.30
Researchers employed by business per thousand active population	6.4	3.8	3.6	3.7	3.5	3.2	:	5.9	:
Innovation outputs									
Patent applications filed under the Patent Cooperation Treaty per billion GDP (in PPS €)	1.27	1.4	1.66	1.2	:	:	:	2.81	2.20
Employment share of high-growth enterprises measured in employment (%)	:	:	:	1.28	1.24*	:	:	0.87	:
Digitalisation of businesses									
SMEs with at least a basic level of digital intensity % SMEs (EU Digital Decade target by 2030: 90%)	:	:	:	:	57.85	:	76.68	71.39	:
Data analytics adoption % enterprises (EU Digital Decade target by 2030: 75%)	:	:	:	:	32.41	:	38.24	39.85	:
Cloud adoption % enterprises (EU Digital Decade target by 2030: 75%)	:	:	:	:	32.63	:	43.71	46.69	:
Artificial intelligence adoption % enterprises (EU Digital Decade target by 2030: 75%)	:	:	:	:	14.45	23.73	33.61	19.95	:
Academia-business collaboration									
Public-private scientific co-publications as % of total number of publications	9.56	9.32	10.95	13.39	13.55	12.89	:	7.62	:
Public expenditure on R&D financed by business enterprises (national) as % of GDP	0.01	0	0.01	0.01	0.02	:	:	0.06	0.02
Public support for business innovation									
Total public sector support for BERD as % of GDP	0	0	0	0	:	:	:	0.21	:
R&D tax incentives: foregone revenues as % of GDP	0	0	0	0.0	0.0	0.0	:	0.10	:
BERD financed by the public sector (national and abroad) as % of GDP	:	:	:	:	:	:	:	0.11	:
Financing innovation									
Venture capital (market statistics) as % of GDP (calculated as a 3-year moving average)	0.03	0.01	0.03	0.13	0.12	0.10	:	0.06	:
Seed stage funding share (% of GDP)	0.00	0.00	0.00	0.00	0.00	0.00	:	0.01	:
Start-up stage funding share (% of GDP)	0.00	0.01	0.03	0.12	0.10	0.08	:	0.03	:
Later stage funding share (as % of GDP)	0.03	0.00	0.00	0.01	0.02	0.02	:	0.03	:
Innovative talent									
New graduates in science & engineering per thousand population aged 25-34	:	1.93	2.48	3.06	3.12	2.99	:	16.8	:
Graduates in the field of computing per thousand population aged 25-34	:	1.13	1.24	1.85	2.08	1.85	:	3.8	:

(1) EU average for the last available year or the year with the highest number of country data. * break in series

Source: Eurostat, OECD, DG JRC, Science-Metrix (Scopus), Invest Europe, European Innovation Scoreboard

Luxembourg offers an attractive business environment, yet further improvements into support for firms' investment, innovative potential and scale-up, together with a reduction in certain regulatory barriers to the Single Market, could boost productivity and growth. Country-specific Recommendation (CSR) 2025.3 called on Luxembourg to foster innovation, to boost competitiveness including by promoting diversification in particular in the financial sector, accelerating digitalisation and enabling business scale-up and productivity growth, and to reduce barriers to competition in regulated professional business services. Luxembourg's economy is characterised by a large financial sector whose competitiveness is eroding. Business investment is very low, especially in R&D, harming innovation and productivity growth. The main obstacles to investment include availability of skilled staff and the high cost of labour. Late payments also represent a significant challenge for small to medium-sized enterprises (SMEs): in 2025, Luxembourg was among the Member States with the highest share of SMEs experiencing late payments. While the administrative burden is moderate, there is still room for improvement. Barriers for regulated professions are high. Although EU trade integration is the highest of all Member States, barriers to cross-border services provision hinder the efficient functioning of the Single Market. Entrepreneurship is insufficiently developed, but Luxembourg is taking some measures to support start-up and scale-ups. Luxembourg is also taking steps to boost competitiveness and productivity growth.

Business dynamics

Business dynamism in Luxembourg is relatively low, but the new insolvency framework has potential to enhance it. In 2023, both the enterprise birth rate and the death rate were lower than the EU average, resulting in a business churn of 16.8% against 19% in the EU ([104]). This was stable compared with the previous year, but it represented an increase from 15.4% on 2021. The sectors with the highest birth rates were (i) information and communication technologies (ICT) and (ii) professional, scientific and technical activities. By contrast, construction and housing market activities had the lowest enterprise birth rates, and slightly more firms have been dissolved than created in such sectors. The 2023 insolvency framework reform sought to improve reallocation of resources to productive firms by enabling non-viable firms to exit the market and viable ones to restructure. It also encourages entrepreneurship by giving a second chance to failed entrepreneurs ([105]) ([106]). According to the OECD ([107]), the reform has addressed many of the problems of the old framework, yet areas such as the treatment of failed entrepreneurs could benefit from further enhancements.

Entrepreneurship is insufficiently developed, but Luxembourg has taken some measures, including for scale-ups. For total early-stage entrepreneurial activity, Luxembourg ranks just 16th out of the 25 upper-income countries ([108]). In 2023, the enterprise birth rate was below the EU average (8.9% vs 10.5%) ([109]). In 2025, the government introduced a 10-point action plan aimed at strengthening its start-up ecosystem (see Annex 4). In December 2025, Luxembourg approved Draft Law No 8526 ([110]) introducing a new tax credit, effective from the 2026 tax year, to encourage investments by Luxembourg residents (or assimilated) individuals in start-ups (see Annex 3). The government is also planning to introduce a new tax system for stock options of employees of start-ups. Targeted support for the scale-up phase is more limited, but the government has introduced the *Fit 4 Scale* programme to support scale-ups ([111]). However, this programme will support only up to five companies in 2026 ([112]). A key reason for the difficulty experienced by firms in securing investment for scale-ups is that they rely mostly on bank financing. Alternative sources such as

([104])Eurostat, bd_size.

([105])Global Entrepreneurship Monitor 2025/2026, p.29.

([106])Loi du 7 août 2023 relative à la préservation des entreprises et portant modernisation du droit de la faillite.

([107])OECD, Economic surveys: Luxembourg 2025, 04/2025.

([108])Global Entrepreneurship Monitor 2024/2025, pp. 152-153.

([109])Eurostat, bd_size.

([110])Projet de loi no. 8526

([111])CSR 2025(3) on *boosting competitiveness, including by... enabling scale up.*

([112])Luxembourg, Luxinnovation

venture capital are growing, but they remain limited (see Annex 4 and Annex 6).

SMEs in Luxembourg have experienced weaker growth than in the rest of the EU. SMEs in the non-financial business sector in Luxembourg represent 64% of value added and 66.2% of employment, against the EU average of 53.6% and 65.1%, respectively ([113]). In 2024, SMEs in Luxembourg declined on both indicators. Despite the employment growth rate for micro firms of 0.7%, the declines for small and medium-sized enterprises negatively affected the SME aggregate (-0.2% vs 1.1% in the EU). SME real value added declined by 3.5% (against -0.2% in the EU). Since 2022, the decline in real value added has reached 9.2%. In 2025, SME employment and value added are expected to grow by 0.7% and 1.8%, respectively. The highest growth is expected for professional, scientific and technical activities, while manufacturing is predicted to decline more severely than other sectors.

A quarter of Luxembourg's economy is made up by the financial services sector, but productivity in this sector has been declining. Luxembourg's economy is characterised by the large share of the financial sector, which represents around 25% of total value added, against 5% on average in the EU. Professional and administrative activities also play a major role, with 15% of the value added (against 12% in the EU). By contrast, industry only represents 6% of the value added (against 20% in the EU). However, labour productivity in the financial sector has been declining in the last decade ([114]). Another sector where the productivity decline has been particularly steep is the construction sector, posing significant challenges (see below and Annex 16). Conversely, productivity growth has been in line with the EU average in the manufacturing sector, and even higher for transportation and storage ([115]).

Luxembourg is taking some measures to diversify its economy. Given the declining productivity of the financial sector and the increasing competition it faces, there is a need to diversify the economy (CSR 2025.3) ([116]). The government has taken some steps in this direction by introducing economic activity zones for sectors such as defence and space. The latter represents 4% of GDP ([117]). Moreover, the information and communication technology (ICT) sector has experienced rapid growth. As part of its recovery and resilience plan (RRP) ([118]), Luxembourg has put in place a reform and investment in relation to quantum communication technologies with a view to fostering the creation of a new innovation ecosystem.

While public investment in Luxembourg is above the EU average, business investment is very low, harming innovation and productivity growth. Public investment as a share of Luxembourg's GDP is above its pre-pandemic level. It amounted to 4.5% in 2024, above the EU average of 3.6%. By contrast, business investment stood at just 7.1% of GDP in 2024 (vs 10% in 2019), representing the lowest value in the European Union, where the average is 12.6%. Investment in equipment fell by 11.1% in 2024 and is projected to decrease by 3.4% in 2025, against the EU's respective decline of 1.4% and expected increase of 1.1% ([119]). Furthermore, business expenditure on research and development has been decreasing since 2018 and its share of GDP was only one third of the EU average in 2024 ([120]). The low level of business investment, especially in research and innovation, is partly explained by the sectoral structure of Luxembourg's economy, which is largely specialised in financial services. The very limited public support for business research and development also plays a role ([121]) (see Annex 4).

Lack of skilled staff and the high labour cost are highlighted by firms as main investment obstacles. Despite the high number of cross-border workers (47% of the workforce), the availability of skilled staff was the obstacle to

([113])European Commission, Annual report on European SMEs, Luxembourg, 05/2025.

([114])European Commission, DG ECFIN productivity fiche, Luxembourg.

([115])OECD, Economic surveys: Luxembourg 2025, 04/2025.

([116])CSR 2025(3) on *boosting competitiveness, including by promoting diversification, in particular in the financial sector.*

([117])OECD, Economic surveys: Luxembourg 2025, 04/2025.

([118])Luxembourg's recovery and resilience plan.

([119])European Commission, Autumn forecasts statistical annex, p. 195, 11/2025.

([120])Eurostat, rd_e_gerdtot

([121])European Commission, Innovation scoreboard 2025, Luxembourg, 07/2025.

investment most cited by firms in Luxembourg in 2025 (84% vs 79% in the EU), according to the EIB Investment Survey ([122]). It has eased only slightly since 2024 (91%). The figure is even higher for the construction sector, rising to 86%. The other main challenge for Luxembourgish firms is the cost of labour ([123]). In 2024, hourly labour costs in the EU (average of EUR 33.5) were the highest in Luxembourg (EUR 55.2) ([124]). If not matched by an increase in labour productivity, an increase in the cost of labour could harm firms' competitiveness.

Luxembourg is taking steps to boost competitiveness and productivity growth. Labour productivity in Luxembourg is the second highest in the EU and in 2024 it stood at 169% of the EU average (GDP per hour worked, in purchasing power standards). However, labour productivity and total factor productivity (TFP) growth have been declining. To address the 2025 CSR on competitiveness and productivity growth ([125]), the government has recently introduced a series of new SME packages aimed at raising the uptake of digital technologies by SMEs, including an artificial intelligence (AI) package and a cybersecurity package. Since 2024, a new tax credit system has been in place, allowing small businesses to benefit from a tax credit of up to 18% for expenditures related to digital transformation or green projects. Moreover, in 2025, Luxembourg reformed its aid scheme for research and innovation to stimulate greater innovation and include areas such as AI (CSR 2025.3 ([126]) (see Annex 4).

([122])European Investment Bank, EIB Investment Survey 2025, p. 30.

([123])Luxembourgish Chamber of Commerce, baromètre de l'économie 2eme semestre 2025.

([124])Eurostat.

([125])CSR 2025(3) on *boosting competitiveness, including by… accelerating digitalisation, in particular in the uptake of advanced digital technologies by SMEs, and enabling…productivity growth.*

([126])CSR 2025(3) on *fostering innovation and supporting high R&D intensive activities.*

Business environment

Business establishment procedures in Luxembourg are cumbersome ([127]). Currently, three different administrations need to be consulted to open a business. Before they can operate, companies need to obtain a business permit from the Ministry of Economy, their ADE number ([128]) and their social security registration ([129]). Business organisations also regard opening a bank account as burdensome. 60% of the business registration procedures are currently carried out online. The government aims to further enhance digitalisation and reduce the time needed to start a business to six days (see Annex 7).

The regulatory and administrative burden for businesses is moderate, but there is still room for improvement. In 2025, the proportion of firms that cite business regulations as an obstacle to investment was significantly lower in Luxembourg compared with the EU (46% vs 69%) ([130]). Moreover, 15% of firms deem them a major obstacle, well below the EU mean of 34%. By contrast, as many firms in Luxembourg as in the EU overall find labour market regulation to be an issue (65%). The share of firms employing more than 10% of staff to meet regulatory requirements is around 14%, above the EU average (11%) ([131]). Compared with other OECD countries, the regulatory and administrative burden is higher in Luxembourg than the average (2.13 vs 1.74) ([132]). The main reasons for this include the fact that there is no requirement for impact assessments to be conducted on how new laws and regulations affect competition and businesses' ability to innovate ([133]). In addition, business organisations consider the regulations

([127])Part of the barriers highlighted in the 2025 Single Market Strategy ('Terrible 10'), COM(2025) 500, 21/05/2025.

([128])Administration de l'enregistrement [Registration Duties Authority].

([129])Meeting between European Commission's services and business associations, 27/11/2025.

([130])European Investment Bank, EIB Investment Survey data dashboard.

([131])European Investment Bank, EIB Investment Survey, Luxembourg, 12/2025.

([132])OECD, Product Market Regulation indicators, Medium level indicator: administrative and regulatory burden.

([133])OECD, Economic surveys: Luxembourg 2025, 04/2025.

regarding operating permits for classified establishments to be overly restrictive ([134]). They also see new regulatory barriers arising from the lack of harmonisation of electronic invoicing across the EU, which complicates cross-border transactions. The implementation of the once-only principle is still in progress.

Firms increasingly regard transport infrastructure as on obstacle to investment, while Luxembourg performs well on digital infrastructure. The share of firms seeing transport infrastructure as an obstacle to investment increased from 26% in 2024 to 39% in 2025, against 44% in the EU ([135]). The firms reporting it as a major obstacle increased from 5% to 19% (EU 15%). Regarding digital infrastructure, only one third of Luxembourgish firms considered it an obstacle to investment, against 44% in the EU. In 2024, very high-capacity network (VHCN) coverage reached 95.2%, significantly above the EU average of 82.5%, and remains on track towards the 2030 target of 100%. Fibre-to-the-premises (FTTP) coverage increased to 81.8%, also above the EU average of 69.2%, although the annual growth rate remained below the EU average. Overall 5G coverage stood at 99.6% (EU 94.3%), approaching saturation levels. Coverage in the 3.4-3.8 GHz band reached 70.6%, slightly above the EU average. Luxembourg continued to implement its national ultra-high-speed broadband strategy (2021-2025) and monitors deployment through the national regulatory authority. The copper network phase-out and transition to fibre are ongoing, with full migration expected by 2030. No major new connectivity measures were introduced recently but existing rollout and monitoring frameworks remain in place.

Access to finance constraints have eased. The share of finance-constrained firms decreased from 10% in 2023 and 11% in 2024 to only 3.4% in 2025, below the EU average of 6.1% ([136]). The firms facing such constraints are all micro or small firms. Moreover, 44% of firms see the non-availability of finance as a long-term barrier to investment, which is line with the EU average and previous years. According to the European Investment Fund (EIF) loan index, in 2024 SMEs' ease of access to loans was greater than the EU average (0.50 vs 0.43). Conversely, Luxembourg slipped in the rankings of the EIF equity index due to a decline in equity financing activity, notably venture capital and initial public offering activity (see Annex 6).

Late payments ([137]) represent a significant challenge for Luxembourgish firms, in particular SMEs. Overall, in 2024, only 42% of invoices were settled by their due date, which is 14 percentage points less than in 2023. This reverses a positive trend between 2021 and 2023, and it makes Luxembourg the sixth worst country in the EU in terms of payment performance ([138]). In 2025, Luxembourg was among the Member States with the highest share of SMEs experiencing late payments: around one third of firms experienced late payments from public entities (vs 15.9% in the EU), and 81.5% from private entities, significantly above the EU average of 47.1% ([139]). According to the Chamber of Trades, 42% of businesses in the craft sector are reporting an increase in business payment delays, which have been rising since the pandemic. For SMEs in sectors with small profit margins, late payments are a leading cause of business failure. By disrupting firms' cash flows, late payments may also impact firms' ability to undertake new investments or recruit staff, thus harming their growth potential.

Luxembourg has made substantial progress in the provision of digital public services (see Annex 7). As part of its RRP, Luxembourg is putting in place measures to expand its digital offer of services to individuals and business through the development of the MyGuichet platform and the digitisation of the public employment agency's (ADEM) services. Luxembourg's RRP also includes a measure to support the development of a national platform to enable public administrations to create and manage public surveys.

([134])Luxembourg, Guichet glossary.

([135])European Investment Bank, EIB Investment Survey 2025, p. 30.

([136])European Investment Bank, EIB Investment Survey, Luxembourg, 12/2025.

([137])Part of the barriers highlighted in the Single market strategy ("'Terrible 10"') and the 2026 Annual Single Market and Competitiveness Report.

([138])EU Payment Observatory, Annual Report 2025, p. 97.

([139])European Central Bank and European Commission, SAFE survey.

Single Market and barriers

Luxembourg is a small, open economy with the strongest EU trade integration of any Member State. The volume of its exports and imports of goods and services to/from other EU countries represented 108.4% of its GDP in 2025 (EU average: 40.7%) (see Table A5.1). This is mainly explained by Luxembourg's trade in services, especially financial services: in 2025, service exports and imports stood at 83.3% of GDP, far ahead of the EU average of 7.6%. Exports and imports of goods represented 25.2% of GDP, which was above the EU average (18.7%) ([140]).

Nonetheless, regulatory and administrative barriers to the Single Market persist in Luxembourg, affecting in particular freedom of provision of services and freedom of establishment. Luxembourg's barriers to intra-European Economic Area (EEA) services trade are the highest in the EU ([141]). They were the highest in the EU in 2025, as well as over the five last years. Looking at specific sectors, Luxembourg had the highest barriers to intra-EEA service trade among all EU Member States for construction and accounting. The OECD ([142]) points out that certain rules regulating the entry of individuals seeking to provide services in Luxembourg on a temporary basis as contractual or independent services suppliers remain more cumbersome than international best practice. Apart from limited exceptions, regular economic activity is subject to a prior business permit, and that obtaining/maintaining that permit can involve requirements such as a fixed physical establishment in Luxembourg and effective and permanent day-to-day management with physical presence, which can increase compliance steps for firms seeking to establish or expand activities ([143]). Likewise, the framework for newly relocated staff is complex. The OECD calls for improved market access conditions, more transparent licensing, and lower barriers to the movement of people ([144]).

For several regulated professions, regulatory barriers are more stringent in Luxembourg than in other Member States. Some 214 professions are regulated in Luxembourg ([145]), which is more than the EU median (200). The OECD Product Market Regulation (PMR) indicator shows that regulatory barriers to competition are high compared with OECD countries, especially in professional services. According to the OECD ([146]), regulatory restrictions are particularly rigorous for lawyers, notaries, architects, civil engineers, and accountants ([147]). For notaries, the restrictions are among the strictest in the EU, in particular due to the regulation imposing the legal form of their business, and the regulation on entry into the profession. Entry regulations for lawyers are also particularly restrictive. Progress in addressing barriers in the field of business services has remained limited. In response to a survey carried out by the European Commission between December 2025 and February 2026, Luxembourg reported that it had fully implemented one and partially implemented 6 out of 10 of the 2021 Commission recommendations ([148]). To address the 2025 CSR ([149]) Luxembourg is finalising legislation which seeks to streamline regulations and make entry requirements more flexible for architects and civil engineers ([150]). In the retail sector, regulatory restrictiveness is greater than the OECD average (1.31 vs 1.04), but this has significantly improved since 2018.

Luxembourg performs well on Single Market enforcement indicators, except on the timely transposition of directives. In 2025, the share of Single Market directives not transposed by

([140])Eurostat, bop_c6_a.

([141])European Commission staff calculation based on the OECD, intra-EEA STRI database.

([142])OECD, Services Trade Restrictiveness Index (STRI): Luxembourg, 2/2025.

([143])OECD, STRI: Luxembourg, 2/2025

([144])OECD, STRI: Luxembourg, 2/2026.

([145])European Commission, Regulated Profession Database.

([146])OECD, Product Market Regulation indicators, 2023.

([147])OECD, Product Market Regulation indicators, 2023.

([148])EC, 2021, *Communication on updating the reform recommendations for regulation in professional services, COM (2021)385. 9/7/2021*, Eur-lex.europa.eu.

([149])CSR 2025(3) on *reducing barriers to competition in regulated professional business services.*

([150])Projet de loi 7932 sur l'exercice des professions libérales des secteurs de la construction et de l'aménagement du territoire.

Luxembourg (the 'transposition deficit' ([151])) increased to 1.8% (it was 1.2% in 2024 and 1% in 2023). It is now higher than both the EU average of 1.1% and the 1% target set by the EU Council ([152]). The average delay in transposing directives is also above the EU average (10.8 months vs 9.7 months). All other indicators show a good performance. In 2025, Luxembourg transposed only 0.7% of the Single Market directives incorrectly ([153]), better than the EU average of 1.1%. It had only 12 open infringements, against an EU average of 25. In 2025, Luxembourg ranked third among Member States for the shortest average duration to solve Single Market infringement proceedings at 34.2 months, well below the EU average of 44.5 months. In 2025, Luxembourg resolved 85.7% of the SOLVIT cases it handled as lead centre, slightly above the EU average of 84.6%.

Compliance of products circulating in the Single Market ([154]) is key to ensuring a level-playing field for law-abiding companies and the safety of consumers. In Luxembourg, the number of market surveillance investigations has increased compared with 2019. In 2025, national authorities reported in the EU system for market surveillance (ICSMS) a total of 671.6 investigations per one million inhabitants, which is higher than the EU median of 136.2. The number of notifications remains limited in absolute terms, which may also be the result of insufficient IT national interoperability to the ICSMS system.

Without sustained support from Luxembourg for standardisation ([155]), there is a risk for Luxembourg to fall behind in strategically important technological domains, which could weaken both the integrity of the Single Market and the EU's strategic autonomy. As technological change accelerates, the effectiveness of the European Standardisation System increasingly depends on the ability of National Standardisation Bodies to mobilise a broad and highly skilled pool of experts. For Luxembourg's Institute for Standardization, Accreditation, Safety and Quality of Products and Services ("the Institute"), strengthening capacity is essential to ensure the continued and meaningful involvement of a critical mass of stakeholders in standardisation activities. Emerging technologies such as artificial intelligence and quantum computing require not only wider participation but also continuous upskilling and reskilling of experts to keep pace with the digital transition. Reinforcing the Institute will enable it to attract specialised talent, maintain and develop expertise, and remain agile in responding to innovation.

Luxembourg is an average performer in public procurement. The percentage of contracts awarded based on a single bid was below the EU average between 2019 and 2024, but it reached 31% in 2025, higher than the EU median of 27%. The share of direct awards equalled the EU median (6%) (see table A5.1). Regarding the strategic use of public procurement, the government has set up a working group to support the integration of sustainability and innovation criteria in public procurement. Moreover, in its medium-term fiscal structural plan, it committed to carrying out an analysis of the effectiveness of the law on public procurement.

Luxembourg's e-procurement landscape and data quality issues highlight the need for interoperable systems, common standards, and stronger data governance. Luxembourg's centralised e-procurement service allows economic operators to use a single system to access all national public procurement procedures. However, concerning cross-border procurement, barriers to participation for firms from other Member States remain. This is specifically relevant for the relatively high rate of foreign economic operators registered in the country's eSubmission service ([156]). This fragmentation underscores the need for introducing interoperability and common standards. The once-only principle is only partially implemented at national level (see Annex 7), and buyers across the EU still lack digital access to

([151])Part of the barriers highlighted in the 2025 Single Market Strategy ('Terrible 10'), COM(2025) 500, 21/05/2025.

([152])European Commission, Single Market and Competitiveness Scoreboard, 1/2026.

([153])Part of the barriers highlighted in the 2025 Single Market Strategy ('Terrible 10'), COM(2025) 500, 21/05/2025.

([154])Part of the barriers highlighted in the Single market strategy ('Terrible Ten') and the 2026 Annual Single Market and Competitiveness Report.

([155])Rigid and outdated standardisation system has been identified as one of the 'Terrible Ten' barriers in the 2025 Single Market Strategy, COM(2025) 500, 21/5/2025.

([156])Between 2% and 9.99%, as reported in the e-procurement matrix.

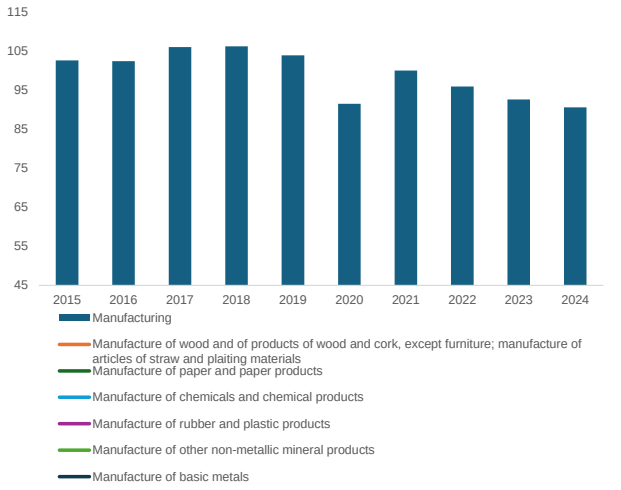
relevant evidence. Some monitoring exists and Luxemburgish national authorities are establishing a public procurement data strategy on the objectives and management of public procurement processes. Luxembourg would still benefit from having a dedicated public procurement data collection and analysis service within the government to support data-driven oversight of the procurement lifecycle ([157]).

Businesses' views on corruption risks in public procurement are below the EU average. In Luxembourg, 43% of companies (EU average: 58%) consider tailor-made specifications for particular companies in public procurement procedures to be a 'very' or 'fairly widespread' practice and 38% of companies (EU average: 51%) consider involvement of bidders in the design of specifications to be a 'very' or 'fairly widespread' practice. Among companies that have experience of and have participated in a public procurement procedure, 18% think that corruption has prevented them from winning a public tender or a public procurement contract in practice (EU average: 25%) ([158]). 77% of companies perceive the level of independence of the public procurement review body (Administrative Court) to be 'very' or 'fairly good' when it is reviewing public procurement cases ([159]). Public procurement is considered a sector at high risk of corruption, and corruption cases in this area continue to be reported and prosecuted ([160]).

Industry and economic security

Luxembourg attempts to decarbonise its energy-intensive industries mainly through electrification. Luxembourg's main energy-intensive industries include steel, cement and plastic. Electricity prices for non-household consumers in Luxembourg are among the lowest in the EU when adjusting for purchasing power parity ([161]). The overall electrification rate is lower than the EU average but is the second highest in the EU when it comes to the industry sector (51.2% vs EU average of 32.7% in 2023). This reflects the government's efforts to increase the electrification rate of energy-intensive industry and reduce reliance on natural gas. To support decarbonisation of industrial processes, in 2025 Luxembourg introduced an aid scheme worth EUR 500 million ([162]). As part of its RRP, Luxembourg has in place a subsidy scheme for the construction of photovoltaic power generation units in business premises. The government also has an interest in the hydrogen sector, particularly in cross-border projects that could connect it with neighbouring countries (see Annex 9).

Graph A5.1: **Manufacturing industry production: total and selected sector, index (2021=100), 2015-2024**



Source: Eurostat

The construction sector has been facing particular challenges (see Annex 16). Labour productivity in the sector has been declining by an average of 1.5% per year since 2010 ([163]). Since 2022, 6 000 houses fewer than the 2016-2020 average have been built, and employment in construction has fallen by 8% ([164]). Moreover, the

([157])European Court of Auditors, Special Report 28/2023: *Public Procurement in the EU. Less competition for contracts awarded for works, goods and services in the 10 years up to 2021*, 2023, Special report 28/2023: Public procurement in the EU.

([158])Flash Eurobarometer 557, p. 133.

([159])Justice Scoreboard (2025), p. 53; Flash Eurobarometer 555, p. 39.

([160])Rule of Law Report- Country Chapter Luxembourg (2025), p. 10.

([161])Eurostat, nrg_pc_205.

([162])Loi du 3 juillet 2025 instituant un régime d'aides en faveur de la transition vers une économie à zéro émission nette.

([163])OECD, Economic surveys: Luxembourg 2025, 04/2025.

([164])Chambre des Métiers, Avis sur le projet de budget 2026, 11/2025.

sector is suffering from labour shortages. The exacerbation of the housing shortage undermines Luxembourg's attractiveness. The government has recently introduced some measures to speed up permitting procedures for construction. However, business associations are also calling for national harmonisation of building regulations and increased digitisation of procedures.

While the net-zero manufacturing industry is underdeveloped, Luxembourg has not made significant progress in implementing the Net-Zero Industry Act (NZIA). Net-zero manufacturing output in Luxembourg remains limited. The country has a small production capacity for solar photovoltaics, amounting to 50 MW/y ([165]), which is a negligible share of EU capacity ([166]). Luxembourg's clean tech manufacturing capacity is supported only by a few relevant policy frameworks. In 2025, Luxembourg introduced an aid scheme for investments in production in strategic sectors such as batteries, heat pumps, wind turbines and solar panels ([167]). The lack of relevant skills for the transition to a net-zero economy is also limiting production. Regarding the implementation of the NZIA, Luxembourg has designated a single point of contact, which is crucial for streamlining communication and coordination among stakeholders. However, it has not designated any net-zero strategic projects ([168]), nor established a national contact point to administer applications.

Manufacturing depends heavily on imports of critical raw materials. With 27.3 tonnes of raw material consumption per capita in 2024, Luxembourg has the third highest material footprint in the EU ([169]). This reflects the high demand for material usage of Luxembourg's economy. Reflecting the small size of the country, its material import dependency is the highest in the EU (89.4% in 2024 against an EU average of 22.4%) ([170]). Imports from some countries might be affected by geopolitical instability. However, due to a relatively high diversification of countries of origin, Luxembourg's imports of raw materials are slightly less concentrated than the rest of the EU (0.21 vs 0.23) ([171]). By contrast, Luxembourg's circular material use rate was below the EU average in 2024 (10.7% vs 12.2%) ([172]).

([165])European Commission - Net-zero technologies (NZT) Monitoring Dashboard.

([166])European Commission, The net-zero manufacturing industry landscape across the Member States. Annex 2, Country fiches, Luxembourg.

([167])Loi du 3 juillet 2025 instituant un régime d'aides en faveur de la transition vers une économie à zéro émission nette.

([168])European Commission, Overview of strategic projects under NZIA, 4/2026.

([169])Eurostat, env_ac_rme.

([170])Eurostat, env_ac_mid.

([171])The import concentration measures how much a country relies on a limited number of sources for a basket of critical raw materials. The scale is 0-1, where 0 would mean no dependence. Source: COMEXT.

([172])Eurostat, env_ac_cur.

Table A5.1: **Single Market and Industry**

Luxembourg								
POLICY AREA	**INDICATOR NAME**		**2021**	**2022**	**2023**	**2024**	**2025**	**EU-27 average**
Business environment and investment								
Productivity and investment	Labour productivity (GDP per hour worked in PPP terms), % of EU27[1]		176.8	171.7	172.0	171.5	168.4	100.0
	Business investment (share of GDP)[1]		9.8	8.1	7.7	7.1	-	12.6
	Public investment (share of GDP)[1]		4.1	4.3	4.6	4.5	-	3.9
Business environment and simplification	Impact of regulation on long-term investment, % of firms reporting business regulation as a major obstacle[2]		12.3	10.7	14.5	13.3	15.0	34.0
SME liquidity	EIF Access to Finance for SMEs index - loans[3]		0.89	0.70	0.39	0.50	-	0.43
	EIF Access to Finance for SMEs index - equity[3]		0.48	0.37	0.41	0.05	-	0.19
Late payments	Payment gap - corporates B2B, difference in days between offered and actual payment[4]		-	-	-	-	-	17.4
	Payment gap - public sector, difference in days between offered and actual payment[4]		-	-	-	-	-	13.6
	Share of SMEs experiencing late payments, %[5]	from private entities in the previous or current quarter	-	-	-	60.9	81.5	47.1
		from public entities in the previous or current quarter	-	-	-	25.4	32.6	15.9
Single Market								
Integration	EU trade integration, average(intra-EU imports + intra EU exports)/GDP, %[1]		117.6	124.4	122.6	108.2	108.4	40.7
	EEA Services Trade Restrictiveness index[6]		0.067	0.067	0.067	0.067	0.067	0.050
Public procurement	Single bids, % of total contractors[7*]		18	23	25	0	31	27
	Direct awards, % of negotiated procedures[7*]		6	6	4	4	6	6
Compliance	Transposition deficit, % of all directives not transposed[8]		1.8	1.5	1	1.2	1.8	1
	Conformity deficit, % of all directives transposed incorrectly[8]		0.8	0.8	0.5	0.3	0.7	1.1
	SOLVIT, resolution rate per country, %[8]		76.92	80	83	100	85.7	84.6
	Number of pending infringement proceedings[8]		13	12	10	11	12	25
Industry and economic security								
Energy-intensive industries	Electricity prices for non-household consumers[1]		0.0763	0.1213	0.1488	0.1186	0.1146	0.1462
	Electrification (electricity as a share of total energy consumption in industry)[1]		41.7	49.3	51.2	-	-	32.7
	Share of energy from renewable sources (renewable energy generation as a share of overall energy consumption)[1]		11.7	14.3	14.3	14.7	-	25.2
Critical raw materials	Material import dependency, %[1]		89.5	90.1	89.0	89.4	-	22.4
	Circular material use rate[1]		8.7	12.0	10.1	10.7	-	12.2
Operational cleantech manufacturing capacity in 2025[9]	- Solar PV (c: cell, w: wafer, M:module), GW		0.05 (m)		- Electrolyzer, GW		-	
	- Heat pump assembly		-		- Battery, GW		-	

Source: (1) Eurostat, (2) EIB Investment Survey, (3) EIF SME Access to Finance Index, (4) Intrum Payment Report, (5) SAFE survey, (6) OECD, (7) data up to 2024: Single Market and Competitiveness Scoreboard, 2025: Commission calculation based on TED data, accessible at the Public Procurement Data Space (PPDS) (*) the value represented here under EU average is the median, (8) Single Market and Competitiveness Scoreboard, (9) European Commission calculations.

Table A6.1: **Savings and Investments Union summary diagnostics**

Luxembourg		
Topic	***Main features***	***Relative EU positioning***
Assets-backed pension schemes	Assets at 35.7% of GDP (32.3% in the EU) 10-year real return of 2.4 (1.4% in the EU)	Above average-sized pension system yielding a relatively high real return
Households' financial assets	EUR 186,795 per capita (EUR 85,098 in the EU) o/w 9.6% in listed shares and bonds (7.6% in the EU) o/w 13.1% in investment funds (11.0% in the EU) o/w 9.9% in life insurance (13.4% in the EU) o/w 2.9% in pension claims (13.6% in the EU)	Very high financial assets due to highest per capital wealth in the EU, moderately invested in financial products. No savings and investments account
Venture capital (VC) **Private equity (PE)**	VC at 0.109% of GDP (0.064% in the EU) PE at 0.292% of GDP (0.487% in the EU)	Very high venture capital but very modest private equity investments.
Capital taxation	Gains on stocks and ETFs are tax-free after 6 months. Gains realized within 6 months are taxed at progressive income rates (up to 45.78%), with a €500 annual exemption. New for 2026: A 20% tax credit (up to €100,000) now applies for residents investing at least €10,000 in qualifying startups, provided the investment is held for three years.	Most retail investors in Luxembourg pay 0% capital gains tax on stocks and ETFs held for longer than six months, making it one of the most attractive regimes in the EU. No savings and investments account.
1-3 **4-10** **11-17** **18-24** **25-27**	Colours indicate the country's relative ranking based on five groups, ranging from the three best to the three worst performers. The relative ranking as regards an SIU diagnostic topic derives from a consistent cross-country comparison, the starting point of which is the average of the underlying main features.	

Source: OECD (pensions), Eurostat (households' financial wealth), FISMA CMU dashboard (VC and PE), national sources (capital taxation).

Luxembourg's economy is closely linked to its role as a globally integrated financial centre, which provides firms with broad access to international capital markets*. The financial centre is anchored by Luxembourg's position as a leading domicile for investment funds and a hub for cross-border banking, insurance, and wealth management. The Luxembourg Stock Exchange is a key global venue for the issuance and listing of international debt securities, while equity market activity is comparatively limited and predominantly domestic. Nevertheless, corporate investment remains largely financed through internal resources, indicating a continued preference for retained earnings despite favourable market conditions. Affluent households maintain substantial exposures to equities and investment funds, alongside high cash holdings. The banking sector is exceptionally large relative to GDP, reflecting its international orientation. Banks remain well capitalised, highly liquid, and profitable, with asset quality generally sound, although vulnerabilities persist in segments of corporate lending. Institutional investors are the principal drivers of capital market activity, and the insurance sector continues to expand. However, the contribution of domestic institutional investors to start-up financing remains limited. While the venture capital market outperforms the EU average, structural financing gaps persist, particularly in the scale-up phase, despite the presence of public support schemes for innovative firms. Luxembourg's actions to address its 2025 CSR3 to 'boost competitiveness, including by promoting diversification, in particular in the financial sector' include implementing the interest reform (Bill 8590) already in force and the Luxembourg House of Financial Technology (LHoFT), which is aimed at integrating innovation to move beyond traditional fund administration.*

Business landscape and company funding

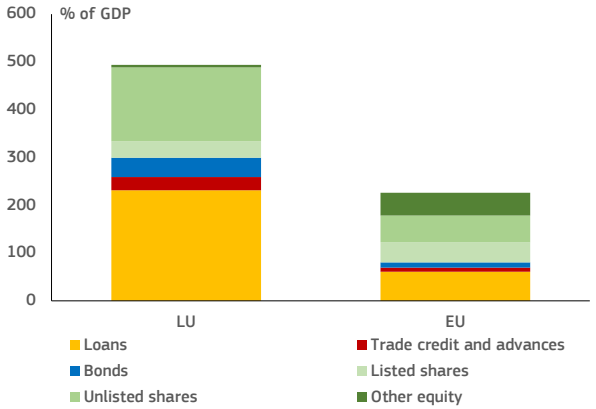
Luxembourg's economy is characterised by its role as a global financial centre and a non-financial corporate sector dominated by medium-sized companies. The financial sector is the backbone of the economy, accounting for 23% of the country's total value added. Many multinational companies use Luxembourg as their central finance hub. Large firms often set up local subsidiaries to issue debt or take out loans to fund their global operations. However, in comparison to the EU average, the Luxembourgish economy, in terms of structure and size, relies more on medium-sized companies, which represent a critical pillar of its value added. As at end-2024, medium enterprises contributed 26.2% of value added (vs 16.9% in the EU) and provided 25.5% of labour employment (vs 15.5% in the EU), and large enterprises produced 36.0% of the value added (vs 46.4% in the EU), while providing work to 33.8% of the employed (vs 34.9% in the EU) (see Annex 5). This ecosystem, dominated by high-productivity medium firms, requires tailored financial instruments that move beyond traditional bank lending toward more sophisticated capital market instruments. However, a significant share

of corporate activity reflects intragroup financial operations and holding structures, with assets highly concentrated in a limited number of large entities, including traditional holding companies such as SOPARFIs.

The international role of Luxembourg's financial centre is reflected in how non-financial corporations (NFCs) are funded. In 2024, unlisted shares and other equity reached 160.1% of GDP, and loans stood at 231.4% of GDP. These figures are much higher than the EU averages of 103.2% for equity and 60.8% for loans. Corporate bonds reached 40.2% of GDP, nearly four times the EU average, although listed shares are a smaller part of the mix at 34.5% of GDP, compared with the EU average (42.5%).

Even with easy access to markets, many firms rely on internal funding sources to finance their investments. Most investments are funded internally or through parent companies, mostly because of the high number of multinationals. While most businesses feel they invest the right amount, about 10% ([173]) (13% in 2024) say they face funding constraints. However, the cost of borrowing is rarely the problem as Luxembourg has some of the lowest interest rates in the euro area.

Graph A6.1: **Composition of non-financial corporations' funding**



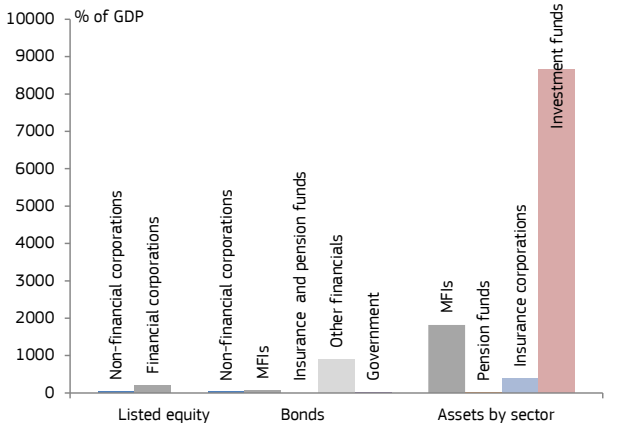
Source: Eurostat and FISMA E2 calculations, end-2024.

([173])EIB Investment Survey 2025: Luxembourg overview.

Size and structure of the financial sector

Luxembourg is a leading global financial centre thanks to its role a as a fund domicile and a hub for cross-border banking, insurance and wealth management. Not only has Luxembourg established itself as a globally leading domicile for investment funds, but also for multinational companies that choose Luxembourg as a financial centre for their internal finances. In 2025, investment funds domiciled in Luxembourg managed assets equivalent to eight-times Luxembourg's GDP. International banks play a crucial role in supporting the investment fund industry through services such as custody, fiduciary, and post-trading services. Ten banks are headquartered in the country. On 22 January 2026, Luxembourg formally adopted its new carried interest regime, introducing a clear and competitive framework that distinguishes between contractual carried interest, taxed as extraordinary income at one quarter of the individual's overall income tax rate; and equity-linked carried interest, which is subject to the capital gains tax regime.

Graph A6.2: **Capital markets and financial intermediaries**



Source: ECB, EOPIA, AMECO and FISMA E2 calculations, end-2024

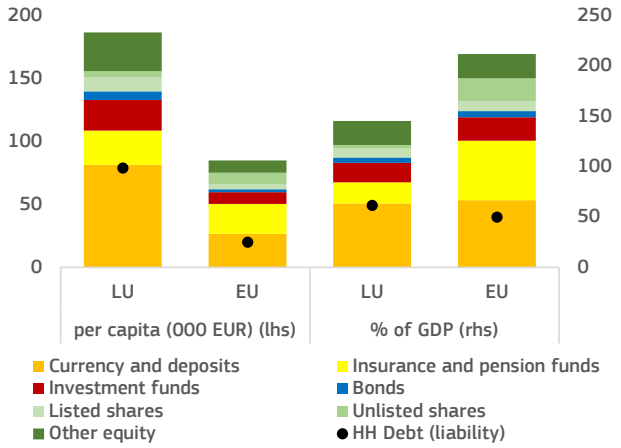
Luxembourg's Stock Exchange (LuxSE) is one of the world's leading exchanges for listing international debt securities, while the equity market is more domestically oriented. Luxembourg has positioned itself as the preferred listing destination for bonds issued by public international bodies, sovereigns, and public

agencies. In 2024 new debt securities raised EUR 1.5 trillion, giving LuxSE a 33% global market share in listed international bonds. In contrast, LuxSE is comparatively smaller for equities, with only 18 listed companies, ranking as the eighth largest in the EU by market capitalisation and with total shares amounting to 215% of GDP by 2023. The LuxSE ([174]) exchange-regulated multilateral trading facility (MTF) serves as an efficient venue for issuers seeking broad European listing visibility without the full regulatory burden of the main regulated market, attracting global entities like sovereigns and large corporations. In September 2016, LuxSE became the first stock exchange worldwide to launch a platform dedicated exclusively to green financial instruments – the Luxembourg Green Exchange (LGX). LGX features issuers who allocate 100% of their raised funds to green investments and requires green securities to meet strict eligibility criteria. In 2024, there were over 2 100 green, social sustainability and sustainability-linked bonds listed on LGX worth EUR 1.2 trillion.

Households' participation in capital markets

Luxembourg's affluent households have an affinity for investing in equities and investment funds but also holding large cash buffers. Luxembourgish households are among the wealthiest in the European Union, with financial assets of c. EUR 186 800 per capita in 2024. While their total assets as a percentage of GDP (145.7%) appear lower than the EU average due to Luxembourg's outsized GDP, the absolute wealth per person is nearly triple the European mean. Households maintain a sophisticated balance between liquidity and investment, though they carry higher debt levels, averaging c. EUR 79 000 per capita, primarily as mortgages. The composition of these assets shows a preference for liquid and market-based instruments. Currency and deposits remain the largest single component at 63.7% of GDP (EUR 81 700 per capita), which is slightly below the EU average of 67%. However, Luxembourgish households show a strong appetite for capital markets and alternative investments. Combined, their holdings in investment funds (19.1% of GDP), listed shares (8.8%), and other equity (23.9%) represent a significant portion of their wealth, with per capita values for these categories far exceeding those of their EU peers. In contrast to the broader EU, there is less reliance on traditional insurance and pension funds, which account for only 21.1% of GDP in Luxembourg compared with an EU average of 59%. This suggests that households in the Grand Duchy prefer more direct or flexible forms of wealth accumulation. Financial resilience is notably high; nearly half of the population can cover unexpected expenses for over six months. While 18% of residents show high financial literacy, the government continues to promote educational initiatives to help households manage their personal finances and their high debt-to-income ratios. In December 2025, the Ministry of Education, Children and Youth launched a 10-point plan to embed financial education into all Luxembourgish schools, with a main rollout starting in 2026 and international benchmarking set for 2029.

Graph A6.3: **Composition of HH financial assets per capita and as % of GDP**



Source: Eurostat and FISMA E2 calculations, end 2024.

Luxembourg currently lacks a retail-focused savings and investment account. While the existing tax framework on capital gains for retail investment is generally attractive — as capital gains on private assets held for more than six months are exempt from taxation, and dividends are taxed at a relatively low rate of 15% — its complexity may nonetheless act as a practical disincentive, particularly for smaller investors and cross-border providers. Developing a simple, standardised savings and investment account (SIA) could add value in the Luxembourg context by streamlining the tax treatment of retail

([174])in the meaning of Mifid II.

investments. Such an instrument could increase transparency and ease of use for households, while also facilitating tax compliance, including features like pre-filled reporting.

The banking sector: resilience and financing of the economy

Luxembourg's banking sector is characterised by its exceptionally large size relative to GDP, consistent with its role as a major international financial centre. Total assets of the Luxembourg's banks amount to about 11-times domestic GDP. Luxembourg's role as a hub for investment funds allows them to derive a large share of their income from fees and commissions (35% of total income, compared with an EU average of 27%) -- and rely less on net interest income. Banks also play a major role as employers in the country. According to the Central Bank of Luxembourg (BCL), 26 394 people worked for credit institutions at the end of June 2025, that is 3 891 bank employees per 100 000 inhabitants, well above the EU average of 421.2. Employment peaked at 27 269 in 2008 before declining during the global financial crisis and has since remained broadly stable. While banking remains the largest employer in absolute terms (35.9% of total financial sector employment in 2024), its share has declined significantly over the decade, from nearly 48% in 2014, reflecting broader consolidation trends across the EU.

Luxembourg's banks are not constrained in their role of funding the economy as they are well capitalised, hold abundant liquidity, and their profitability has caught up with their European peers. The average common equity tier 1 (CET1) ratio stood at 18.4% in September 2025, above the EU average of 16.8%. Including Tier 1 and Tier 2 capital instruments, the total capital adequacy ratio stood at 19.7%, just below the EU average of 20.2% ([175]). Profitability has improved in recent years, though remains moderate compared with the EU average. Return on equity improved from 5.2% in 2022 to 8.6% in the year to September 2025 (slightly below the EU average of 9.6%), while return on assets rose to 0.8%, exceeding the EU average of 0.6% (see Table A6.2) Luxembourg's banks benefit from abundant funding thanks to a large deposit base from international clients, which is reflected in the loan-to-deposit ratio of 57.8% in 2025, significantly below the EU average of 93.9%. A large proportion of deposits originates from the financial sector itself: credit institutions and other financial intermediaries account for 75.3% of total deposits in November 2025. The net stable funding ratio (NSFR) remains high at 127%, slightly below the EU average. Banks significantly exceed minimum liquidity requirements. The banks' aggregate level of Own Funds and Eligible Liabilities (MREL) stood at 38.4% of risk-weighted assets (RWA) in June 2025 – 3.8 percentage points above the EU average and significantly above the binding requirement of 25.8%. In parallel, the countercyclical capital buffer (CCyB) continues to be set at 0.5% to further strengthen resilience against emerging cyclical risks.

Luxembourg's role as an international financial centre is reflected in the banks' lending portfolio with solid asset quality but some weaknesses in segments of corporate lending. Only a few of the 115 banks (end-2024) present in Luxembourg focus on the local economy. Most international banks serve the fund industry by providing services like custody and fiduciary management. Of the total outstanding loans of EUR 808 billion in June 2025, 76.2% was extended to credit institutions and other financial intermediaries. Just 12.2% of all loans were given to NFCs, and of these, only 23%, amounting to EUR 23.5 billion, went to domestic companies, highlighting the international orientation of Luxembourg's banks. Despite abundant liquidity, and strong capitalisation of domestic banks, vulnerabilities persist among NFCs in the real estate development sector. Household loans amounted to EUR 77.8 billion, or 9.6% of the total. Summarising, only 8.8% of all outstanding bank loans were directed towards the non-financial, domestic, private sector. The aggregate non-performing loans (NPL) ratio at just 0.9% in September 2025, stood well below the EU average of 1.9%. NPL ratios for loans to NFCs and households stood at 3.3% and 2.3% respectively, roughly in line with EU averages. Asset quality deteriorated in 2024 due to defaults in the commercial real estate sector with the NPL ratio for these specific exposures peaking at 6.9% at

([175])Data refer to all banks in Luxembourg, including foreign-owned subsidiaries and branches.

the end of 2024, but they have improved since and dropped to 5.8% in December 2025 ([176]). However, the banks' asset quality outlook is subject to increased uncertainty due to the current conflict in the Middle East and its impact on energy prices and economic growth.

Role of non-bank financial intermediaries

Institutional investors are the primary force behind Luxembourg's capital market development. Assets under management show consistent growth, bolstered by strong international performance. The investment fund sector remains a global leader, further reflected in the country's external financial position; by the end of 2024, when external financial assets reached EUR 13.1 trillion, driven overwhelmingly by portfolio investments which rose by EUR 303 billion in a single quarter.

Luxembourg functions primarily as the EU's main cross-border insurance distribution hub, with the bulk of premiums coming from clients in other Member States, rather than from domestic asset accumulation. As at December 2025, the Luxembourg insurance sector demonstrated significant scale, with total assets reaching EUR 350.3 billion. The investment strategy is heavily centred on Collective Investment Undertakings (CIC 4), which represent the largest asset class at EUR 138.6 billion, reflecting the sector's predominantly unit-linked business model, in which policyholders direct their premiums into fund structures, rather than an active portfolio allocation by insurers themselves. The remainder of the portfolio includes further allocations in corporate bonds (EUR 52.3 bn), equity (EUR 39.0 bn), government bonds (EUR 22.8 bn) and cash positions (EUR 20.9 bn) ([177]). On the balance sheet, these assets primarily cover EUR 296.4 billion in technical provisions, reflecting the scale of the sector's policyholder liabilities, the majority of which are unit-linked and therefore market-value driven.

Luxembourg's pension fund sector experienced a consolidation in size and a significant shift in asset allocation between recent years. Luxembourg's public pension fund (*Fonds de Compensation*) had reserves of EUR 29.3 billion at end-2024, representing 4.39 times the amount of annual pension benefits. This fund was created in 2004 for pensions to benefit from the growth in financial markets and invests in a mix of equities, fixed income, and alternative investments. In 2024 alone, the fund's SICAV generated a return on investment of 12% (approximately EUR 2.91 bn), primarily driven by equity valuation gains. The fund's asset allocation at year-end was diversified across equities (48%), fixed income (45%), money market instruments (3.6%) and real estate (3.4%). Projections nonetheless suggest that absent policy reform, these reserves may be insufficient to sustain the system beyond 2050. Public pensions are complemented by privately run occupational pension schemes that invest mainly in bonds and mutual funds. These schemes are relatively limited in scale. The total number of funds dropped from a peak of 16 in early 2023 to 10 funds by September 2025 while total assets contracted from a high of EUR 2 462 million in late 2021 to EUR 1 892 million. Overall, only a small number of employees in Luxembourg benefit from an occupational pension and active membership in these schemes has steadily declined from 20 617 in 2020 to 16 357 in 2024. Moreover, new member inflows have been volatile, with a peak of 2 413 in 2022, followed by a decline to 1 282 in 2024, suggesting a slowdown in scheme participation. The investment strategy of private pension funds saw a notable decline in equities and investment fund shares, which dropped from EUR 1 126 million in the middle of 2021 to EUR 509 million in September 2025. Meanwhile, remaining assets became the largest single category at EUR 781 million, suggesting a diversification into alternative or less traditional asset classes. To encourage broader private participation and address the gap left by low occupational pillar development, the government has increased the annual tax deduction ceiling for private pension schemes from EUR 3 200 to EUR 4 500 per taxpayer effective from 2026.

Despite hosting one of Europe's largest financial centres, Luxembourg channels only a limited share of institutional investment towards domestic start-ups and SMEs. Local institutional investors play a modest role in

([176])EBA Risk Dashboard, Q4 2025

([177])EIOPA Insurance Statistics

funding start-ups, reflecting the small scale of the domestic market, the prevalence of family-run SMEs that traditionally rely on bank credit rather than equity financing, and the strong international orientation of the financial centre. To encourage more long-term investment, policy efforts have focused on the European Long-term Investment Fund (ELTIF) 2.0 framework, where Luxembourg holds a leading position, accounting for around 64% of ELTIFs by number in 2025. As of July 2025, the ESMA register lists 211 ELTIFs across the EU, of which 124 are domiciled in Luxembourg, close to 60% of the total. While these vehicles are intended to broaden access to private markets and support long-term financing, most operate on a cross-border basis, which, again, limits their direct impact on domestic start-up and SME financing.

Venture capital ecosystem

Luxembourg's venture capital (VC) performs better than the EU on average but financing gaps remain, especially in the scale-up phase. Despite Luxembourg's role as a global hub for fund administration, only a small share of that capital is typically deployed in local start-ups, as the investments in private market are not meaningfully larger than in the EU on average. In the decade to 2024, PE (private equity) investments amounted to 0.58% of GDP, slightly exceeding the EU average of 0.46%, while VC investments stood at 0.01% of GDP, well below the EU average ([178]). As in other European countries, VC deals dropped in 2023 after two quite buoyant years. Start-ups often cite a lower risk appetite among local investors compared with those in the US or larger EU hubs, noting that high-net-worth individuals in Luxembourg often prefer more traditional investments like real estate over early-stage tech. As in other European countries, the most critical deficiency identified by both founders and the government is the growth phase, also known as the 'scale-up gap'. Although Luxembourg is relatively successful at providing seed funding and incubation support, there is a significant gap in the funding for companies seeking rounds between EUR 25 million and EUR 200 million. Since local specialised growth-stage funds are rare, start-ups ready to scale are often forced to look toward foreign VC (primarily from the US or France) or move their headquarters to larger markets to secure the necessary capital.

Luxembourg offers some attractive start-up support programmes for young innovative businesses. The state budget 2026 introduced a 20% tax credit (capped at EUR 100 000/year) that is available for individual investors who invest equity into start-ups less than five years old, aiming to incentivise local high-net-worth individuals to fund early-stage innovation. The Luxembourg Future Fund 2 was established in 2023 with a volume of EUR 200 million and focuses on co-investments to encourage venture capital firms to deploy capital into companies with a clear substance and economic link to Luxembourg. It was set up by the European Investment Fund (EIF) and the SNCI (*Société Nationale de Crédit et d'Investissement*), building on experience with the Future Fund 1. In addition to the Future Fund, the SNCI will dedicate an additional EUR 300 million over the next five years., targeting companies in strategic sectors such as cybersecurity, deeptech, sustainable technologies, healthtech, space, and fintech. In 2026, the government introduced a revised carried interest regime, enhancing and clarifying the tax treatment of carried interest to attract alternative investment fund managers to Luxembourg, including venture capital funds.

([178]) https://finance.ec.europa.eu/document/download/1ea4a733-cc31-4096-9953-10a1823b4afc_en?filename=250903-capital-markets-union-indicators_en.pdf&prefLang=de

Table A6.2: **Financial sector indicators**

		2018	2019	2020	2021	2022	2023	2024	2025-Q3	EU
Banking sector	Total assets of MFIs, % of GDP	1785.6	1862.3	1936.4	1895.9	1789.9	1784.2	1820.0	1797.2	246.1
	Common equity Tier 1 ratio	20.3	18.8	19.5	18.3	17.6	18.0	17.9	18.4	16.8
	Total capital adequacy ratio	21.4	19.7	21.7	20.5	18.8	19.5	19.2	19.7	20.2
	Overall NPL ratio, % of all loans	0.8	0.6	0.7	0.6	0.7	0.8	0.9	0.9	1.9
	NPL ratio, loans to NFCs	2.3	1.7	2.4	1.9	2.2	2.7	3.4	3.3	3.5
	NPL ratio, loans to HHs	1.9	1.4	1.5	1.4	1.3	2.1	2.2	2.3	2.1
	Return on equity ratio[1]	5.5	5.2	4.4	5.5	5.2	8.3	8.9	8.6	9.6
	Loans to NFCs, % of GDP	43.7	45.0	43.8	38.4	36.6	31.4	25.5	23.3	29.3
	Loans to HHs, % of GDP	58.5	60.7	63.6	60.9	60.9	56.3	53.9	53.1	43.6
	NFC credit growth rate, %	8.2	6.5	1.0	-1.2	-0.3	-8.2	-14.9	-9.1	2.5
	HH credit growth rate, %	7.0	7.4	8.3	8.5	5.1	-1.2	0.4	2.1	2.6
Non-banking sector	Stock market capitalisation, % of GDP	231.3	236.0	278.6	288.2	188.6	208.4	247.8	277.3	69.9
	Initial public offerings, % of GDP	5.76	1.52	2.70	20.47	0.26	0.11	0.27	-	0.06
	Market funding ratio	81.0	79.7	79.9	79.2	78.4	78.3	81.1	-	49.7
	Private equity, % of GDP	0.909	0.338	0.319	0.260	0.327	0.270	0.292	-	0.487
	Venture capital, % of GDP	0.014	0.022	0.032	0.039	0.124	0.119	0.109	-	0.064
	Financial literacy, composite index	-	-	-	-	-	49.0	-	-	45.5
	Bonds, % of HHs' financial assets	3.8	3.9	2.9	2.5	3.0	3.7	3.6	-	2.8
	Listed shares, % of HHs' financial assets	4.6	4.9	5.3	6.1	5.3	5.6	6.0	-	4.8
	Investment funds, % of HHs' financial assets	10.9	11.9	12.7	14.5	12.7	12.5	13.1	-	11.0
	Insurance/pension funds, % of HHs' financial assets	15.1	15.6	15.1	15.1	13.6	14.4	14.5	-	27.8
	Total assets of insurers, % of GDP	370.4	442.0	446.0	424.9	372.7	366.8	381.9	385.9	53.9
	Pension assets, bn EUR	-	-	-	28.3	24.7	28.5	30.8	-	5813.8
	Pension assets, % of GDP	-	-	-	38.7	32.1	34.8	35.7	-	32.3
	10y real return average of pension assets, %	-	-	-	-	-	2.6	2.4	-	1.4
	Pension funds assets, ECB (% of GDP)	-	3.6	3.6	3.4	2.7	2.4	2.3	2.1	23.0

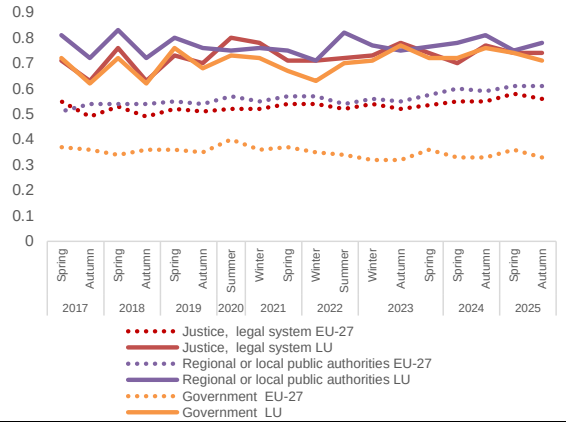
1-3 | 4-10 | 11-17 | 18-24 | 25-27 — Colours indicate performance ranking among the 27 EU Member States.

(1) Annualized data.
Credit growth and the ECB pension funds EU data refer to the euro area average.
Private equity and Venture capital, % of GDP is calculated 3 year moving average.
Pension assets consist of pension providers' assets and public pension reserve funds' assets (OECD data).
Source: ECB, ESTAT, OECD, EIOPA, DG FISMA CMU Dashboard, AMECO

An effective institutional framework is essential for competitiveness. This requires public trust built on integrity, high-quality legislation, regulatory simplification and efficient services for people and for businesses.

Public trust

Graph A7.1: **Trust in the justice system, regional / local authorities and in government**



(1) EU-27 since 2019; EU-28 before
Source: European Commission, Standard Eurobarometer surveys

People maintain high overall trust in public institutions (Graph A7.1). Trust in government (71%) is well above the EU average (33%). This has remained relatively consistent in the past three years. Trust in the legal system and in regional and local authorities is also above the EU average. People have confidence in the ability of public administration to handle their data securely and responsibly. Businesses agree that the public administration handles their data securely and responsibly and is transparent about how it uses the data ([179]). These are metrics that may contribute to the high sense of trust as the relationship between governments and the public becomes ever more digital.

Quality of lawmaking

Luxembourg's rules for lawmaking demonstrate limited alignment with best practice in reducing the regulatory burden and ensuring effective implementation (Table A7.1). For example, the proportion of impact assessments carried out for all primary laws during the legislative development process is relatively low compared to other EU countries. The government is not required to identify and quantify the benefits of new primary laws, with the impact analysis primarily focusing on the cost of the legislation. A number of factors undermine the ability to monitor the implementation of legislation. When the government is developing new primary legislation there is no formal requirement to i) draw up procedures for measuring progress towards achieving a primary law's objectives, ii) assess the level of compliance, and iii) identify and evaluate potential enforcement mechanisms. Additionally, the oversight of better regulation tools is hindered by the lack of an external body responsible for reviewing the quality of Regulatory Impact Assessments and *ex post* evaluations.

Limited focus on proportionality, impact on small business and different social groups leads to overly restrictive regulations ([180]). Regulatory costs affect small companies much more than larger ones ([181]). Stakeholder engagement for developing primary laws and secondary regulations is confined to formal consultation with professional groups and open consultation via two websites. It has been reported that such consultations are working well in practice. However, regulators are under no obligation to take into account consultation comments or the impact of assessments on small businesses, social groups and regional areas.

***Ex post* evaluations of existing regulations have not been carried out in the past three years** ([182]). *Ex post* evaluations are below the EU

([179])European Commission, 2026, Flash Eurobarometer surveys 567 and 568 on satisfaction with administrative services.

([180])Missions - Ministry of the Economy - The Luxembourg Government.

([181])Survey on the cost of regulation and its impact on the Luxembourg financial centre | EY Luxembourg.

([182])OECD, 2025, Luxembourg: Better Regulation Practices across the European Union 2025.

Table A7.1: **Luxembourg. Selected indicators on better regulation practices for primary legislation**

Tools for smart legislation:	
Share of possible impacts assessed for all primary laws when developing legislation	●
Regulators are required to identify and quantify the benefits of a new primary law	●
Regulators are required to identify and assess the impacts of alternative non-regulatory options	●
Tools for effective implementation: when developing laws, regulators are required to:	
Assess the level of compliance	●
Identify and assess potential enforcement mechanisms	●
Specify the methodology of measuring progress in achieving the law's goals	●
Oversight of better regulation:	
There is an external body responsible for reviewing the quality of RIAs and of ex post evacuations	●
There are publicly available assessments of the effectiveness of RIA in modifying regulatory proposals	●
There are reports on the level of compliance by government department with the requirements of RIA	●
There are indicators on the percentage of ex post evaluations that comply with guidelines	●
The effectiveness of ex post evaluations in improving the regulatory stock has been assessed in the last five years	●

● High / yes / for all primary laws ● Medium / in part / for major primary laws ● Low / for some primary laws ● Very low / no / never

Source: OECD, 2025, Regulatory Policy Outlook 2025 [https://doi.org/10.1787/56b60e39-en] and Better Regulation across the European Union 2025

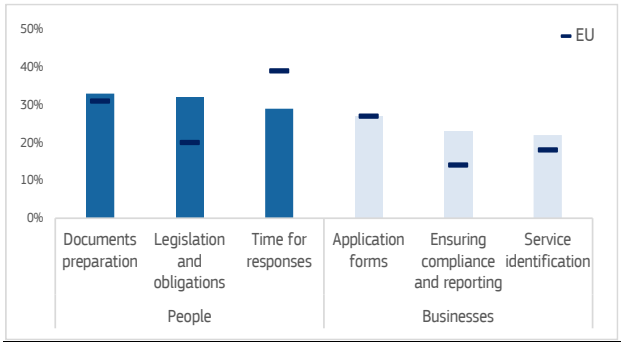
average for primary laws and subordinate legislation for methodology, oversight and the systematic adoption of quality control and close to the EU average for transparency ([183]).

Public service delivery and digitalisation

Luxembourg continues to lead the way in digital and user-friendly public-administration services. 75% of people are satisfied with the public administration, the highest proportion in the EU ([184]). However, 65% of people found that to obtain a service more correspondence was required than they had expected. There is scope to increase the reuse of data and provide pre-filled forms for services as people would want more pre-filled documents (75%) and reminders for important deadlines (72%), since 67% of people report that the administration repeatedly asks for the same personal data.

A large proportion of people would like a single point of contact when making requests and clearer information about procedures and services. The number of people describing the administration as fast and effective has decreased by 5 percentage points since 2023. The most time-consuming aspect of obtaining a service for people is collecting and preparing documents (33%) followed by understanding the applicable legislation (32%). In the case of businesses it is completing and submitting application forms (27%) (Graph A7.2). One of the main challenges for companies is the lack of visibility, centralisation and access to information for the public administration. Strategic use of digital technologies could overcome these challenges.

Graph A7.2: **Most time-consuming aspects of service delivery**



Source: European Commission, 2026, Flash Eurobarometer surveys 567 and 568 on satisfaction with administrative services.

The availability of digital public services for people is very high, but access to electronic records lags behind (Table A7.2). The proportion

([183])European Commission, forthcoming, Simplification of key life events.

([184])European Commission, 2026, Flash Eurobarometer surveys 567 and 568 on satisfaction with administrative services.

Table A7.2: **Digital Decade key performance indicators: availability of digital public services**

	Luxembourg			EU-27
	2023	2024	2025	2025
Digital public services for citizens (0 to 100)	**95**	**95**	**98**	**82**
Digital public services for businesses (0 to 100)	**97**	**97**	**100**	**86**
Access to electronic health records (0 to 100)	**67**	**76**	**76**	**83**

(1) Digital Decade target by 2030: 100. (2) Publishing year, data was collected in the previous year
Source: European Commission, State of the Digital Decade report 2025

of e-government users is high at 88% (EU: 76%) ([185]). 67% of people state that digital public-administration services save time and effort ([186]). Luxembourg provides access to a central and digital portal for people to access public services. This portal is designed to streamline interactions by providing quick, user-friendly access to information. The national digital inclusion action plan, published in 2021, was aimed at ensuring that all individuals, irrespective of age, income, education, location, disability and language, can participate meaningfully in the digital society ([187]). Digital services would be more attractive with mobile access. Luxembourg used 27% of available funds from the Recovery and Resilience Facility to support its digital objectives. It spent EUR 13 million digitalising public administration and simplifying internal and front-facing processes ([188]).

All applicable public services are available to businesses online (Table A7.2). Whereas 88% of businesses acknowledge that digital services reduce time and effort to obtain a service, 15% never or rarely use digital public services. Businesses are supported throughout their lifecycle with an online portal that offers comprehensive digital services ([189]). Luxembourg structures information around key business life events to simplify interactions with the public administration and to promote clear, user-friendly approaches ([190]). The Ministry for Digitalisation has run a number of initiatives in recent years to incorporate emerging technologies in the public sector ([191]). As part of the 2023–2028 coalition agreement, the government has made a commitment to promoting innovation with a view to placing Luxembourg at the forefront of new technologies, particularly in the digital sector ([192]).

Luxembourg is in the process of digitalising its permitting processes. The current focus is on accelerating, simplifying, streamlining and securing administrative procedures for businesses and residents. Applications for business permits can be completed online ([193]) with an authenticated eID but can also be printed and posted.

Luxembourg is not yet ready to enable the cross-border exchange of data and documents between authorities through the EU once-only technical system (OOTS)([194]). When services ([195]) become accessible, people and businesses will no longer have to search, download and upload information across e-government portals in different Member States. Luxembourg has yet to identify the types of documents and data to be exchanged through the system and

([185])European Commission, 2025, Digital Decade: eGovernment Benchmark.

([186])European Commission, 2026, Flash Eurobarometer surveys 567 and 568 on satisfaction with administrative services.

([187])National action plan for digital inclusion - The Luxembourg Government.

([188])Luxembourg's recovery and resilience plan - European Commission.

([189])European Commission, 2025, IOPEU Monitoring Collection - Digital Public Administration Factsheets.

([190])European Commission, forthcoming, Simplification of key life events.

([191])Projects supported by the Ministry for Digitalisation - Ministry for Digitalisation - The Luxembourg Government.

([192])The strategic initiative "Accelerating digital sovereignty 2030" - Ministry for Digitalisation - The Luxembourg Government.

([193])Application for, or modification of, a business permit - Guichet.lu - Luxembourg.

([194])European Commission, *Once-Only Technical System Acceleratormeter*, Ec.europa.eu.

([195])Procedure types under Annex II of the SDGR (2018/1724/EU) and directives 2005/36/EC, 2006/123/EC, 2014/24/EU and 2014/25/EU.

explore ways to shift from the submission of documents to exchange of structured data. If enabled, OOTS would aid cross-border exchanges and foster cooperation on EU-wide projects.

Civil service

Luxembourg has been modernising the civil service workforce and processes; challenges remain in the uptake of continuous learning and in gender parity. Luxembourg continues to have a younger civil service than the EU average ([196]). However, the proportion of civil servants with higher education remains below the EU average ([197]). The proportion of civil servants over the age of 50 is 26.9% (EU 39.93%). Despite the availability of continuous learning, the proportion of civil servants participating in adult learning is below the EU average. ([198]).

Luxembourg introduced a new reform in the civil service in December 2025. The reform will strengthen the mobility of civil servants and skill-sharing across administrations. It provides clear development for career paths ([199]). Luxembourg's gender parity in senior civil service positions - 70% men, 30% women in 2024 - is below other EU countries.

Integrity

Fewer companies than the EU average perceive corruption as widespread in Luxembourg, but perceptions of corruption as a business obstacle and reported experiences are in line with the EU average. Only 40% of companies view corruption as widespread (EU: 63%) and 47% cite overly close links between business and politics as a cause (EU: 76%). However 35% still say corruption is a problem when doing business – exactly the EU average) ([200]). This suggests that, despite relatively low perceptions of systemic corruption, practical concerns for firms remain as significant as elsewhere in the EU. Public procurement and the financial sector are sectors at higher risks of corruption ([201]) (see Annex 5). Reported requests for gifts, favours or extra money in exchange for permits, services or procurement are in line with the EU average (Luxembourg 13% vs EU 10% ([202]), suggesting that, despite comparable exposure to solicitation, enforcement is perceived as a more credible and effective deterrent.

Luxembourg is considering adopting a more coherent framework for the prevention and detection of corruption. There is no such overarching framework currently in place. However, the government is considering adopting a formal anti-corruption strategy, and the corruption prevention committee is looking into drawing up an anti-corruption plan. In the meantime, efforts have focused on sector-specific measures, including steps to increase transparency around lobbying activities ([203]).

Steps are being taken to address the drop in prosecution numbers in corruption cases and to strengthen law-enforcement entities. Reported corruption cases fell sharply in 2024, from 31 cases referred to the State Prosecutor's Office in 2023 to 9 in 2024. The government and the corruption prevention committee are examining the reasons for this decline. At the same time, additional staff are being recruited to strengthen the capacity of police and prosecution services handling economic and financial crimes ([204]).

([196])European Commission, Eurostat, 2026, European Union Labour Force Survey, Employed persons by economic activity (NACE Rev. 2) (2008-2026).

([197])European Commission, Eurostat, 2026, European Union Labour Force Survey, Employees by educational attainment level and NACE Rev. 2 activity (2008-2026).

([198])European Commission, Eurostat, 2026, European Union Labour Force Survey, Participation rate of employees in education and training (last 4 weeks) by NACE Rev. 2 activity (2008-2026).

([199])Reform of the change of administration in the civil service - Ministry of the Civil Service - The Luxembourg Government.

([200])European Commission, 2025, Flash Eurobarometer survey 557 on Businesses' attitudes towards corruption in the EU.

([201])European Commission, 2025 Rule of Law Report, p. 10.

([202]) European Commission, 2025, Flash Eurobarometer survey 557 on Businesses' attitudes towards corruption in the EU.

([203])European Commission, 2025 Rule of Law Report, P. 8 and 9.

([204])European Commission, 2025 Rule of Law Report, P. 7 and 8.

Justice

The justice system continues to perform well overall, though some efficiency challenges have emerged over time. According to the 2026 EU Justice Scoreboard, the time taken to reach a decision in civil and commercial cases at first-instance courts continued to rise, from 221 days in 2023 to 251 in 2024. Delays are more pronounced at higher instances. The estimated time taken to resolve administrative cases in first-instance courts increased from 479 days in 2023 to 720 days in 2024, among the longest in the EU.

The digitalisation of justice continues to progress slowly. Luxembourg lags well behind in digital solutions to initiate and follow proceedings in civil/commercial and administrative cases, and in online access for the general public to published judgments. At the same time, it performs well regarding arrangements for producing machine-readable judicial decisions. Taking firm steps towards digitalisation could improve the judiciary's accessibility and efficiency ([205]).

([205])For a more detailed analysis of the performance of the justice system in Luxembourg, see the upcoming 2026 EU Justice Scoreboard and the 2025 Rule of Law Report.

Luxembourg is making progress in its transition to a low-carbon and more circular economy though it faces persistent challenges on transport emissions, resource use and pollution. Luxembourg has made progress on industrial decarbonisation. It has halved its industrial emission intensity since 2019, increased electrification in manufacturing and is developing frameworks for hydrogen and carbon management. It is projected to exceed its 2030 effort sharing target. However, transport remains a major challenge, generating over half of all effort sharing greenhouse gas emissions. In line with the 2025 country-specific recommendations on the challenges in decarbonising transport, public transport infrastructure and cross-border networks, Luxembourg is investing more in rail, tram and cross-border capacity and promoting electric transport. It is also making progress in the transition to a circular economy, with rising employment in green sectors, strong resource productivity and relatively high recycling rates. However, it has one of the highest material footprints and waste generation rates in the EU. Several sectors generate air and water pollution. Limited economic incentives have hindered progress in resource management, therefore continued action is needed to reduce pollution and improve environmental governance.

Industry decarbonisation

- Greenhouse gas emissions from industry

Luxembourg's manufacturing emissions are largely driven by energy use; they have been declining recently ([206]). Industry generates around 9% of Luxembourg's total greenhouse gas emissions ([207]). In 2024, manufacturing emitted about 232 g CO_2eq/EUR gross value added (GVA). Since 2019, Luxembourg has reduced its industrial emission intensity by 50%. Energy-related emissions account for 69% of industrial emissions, while process-related (non-energy) emissions represent about 31%. Between 2018 and 2023, energy-related emission intensity declined by 40%. The share of electricity and renewables in manufacturing energy consumption rose sharply to reach 56.1% in 2024, and energy efficiency improved as energy use per GVA fell from 2.4 to 2.0 GWh/EUR.

- Policies to promote industry decarbonisation

Luxembourg's industrial decarbonisation strategy combines cooperation agreements with structured support schemes. An important aspect of Luxembourg's industrial decarbonisation policy mix is the long-standing voluntary agreement between the government, *Klima-Agence* and the industry federation FEDIL on improving energy efficiency and decarbonising Luxembourg's industry ([208]). This agreement has been in place since 1996 and is regularly updated. Compared to past editions, the 2024-2030 agreement expands beyond energy efficiency to include an explicit decarbonisation objective. In 2024, 42 of the country's largest consumers of electricity and gas became party to the agreement ([209]). In parallel, Luxembourg has developed the Climate Pact for Enterprises (*Klimapakt fir Betriber*) ([210]). Launched in 2022 and

([206]) This Annex discusses the transition of Luxembourg's manufacturing industry, specifically its energy-intensive industries, to low-carbon and net-zero modes of production, which is key to preserving competitiveness on the path towards climate neutrality as mandated by the European Climate Law. A broader perspective on the current competitiveness challenges facing Luxembourg's manufacturing industry is provided in Annex 5. For a more detailed description of greenhouse gas emissions from industry, see European Commission (2025), 2025 Country Report - Luxembourg, Commission staff working document, SWD (2025) 205 final, Brussels, 4.6.2025, Annex A7. Clean industry and climate mitigation.

([207]) Data on the manufacturing sector exclude the NACE division C19 – manufacture of coke and refined petroleum products, for better match of the sectoral data from Eurostat (gross value added) with those from the UNFCCC under the Common Reporting Format. Also see further indicators on industry decarbonisation, as well as the annotation for further information, in table A8.1 at the end of this Annex.

([208]) For more information on the agreement, see KLIMA Agence.

([209]) In recognition of the efforts made and the fulfilment of all the above requirements, participating companies may access a range of benefits, including those allowed under European Directive 2003/96/EC on the taxation of energy products and electricity during the first phase, and dedicated support from *Klima-Agence* under a working agreement with FEDIL.

([210]) Further information on this initiative is available on a dedicated website.

operated by *Klima-Agence* and *Luxinnovation*, the Pact provides a structured framework to help SMEs navigate support schemes, identify standardised decarbonisation measures and access best-practice examples. Together, these initiatives provide both a suite of 'soft' policy measures (guidance, coordination, monitoring) and a platform for scaling investment uptake across firms with very different capacities.

To accelerate the transition and move beyond incremental efficiency gains, Luxembourg increasingly uses targeted investment support and risk mitigation. In addition to voluntary and advisory instruments, Luxembourg is increasingly providing targeted State aid and de-risking to accelerate investments in decarbonisation technologies. A national roadmap for decarbonising the manufacturing sector was developed in 2021-2022 and is being updated ([211]), with the explicit purpose of identifying potential for sector-specific decarbonisation and the support required to turn potential into reality. The roadmap highlights a set of strategic measures to transform industry. An aid scheme to support the transition to a net-zero economy ([212]) (see Annex 8) has been set up to help close the funding gap for decarbonisation projects, reflecting a shift to more active industrial policy to promote net-zero investment. In addition, large companies are required to conduct energy audits every four years ([213]), in line with EU requirements, helping to identify cost-effective energy savings opportunities and investment priorities, and providing an evidence base for project pipelines.

Luxembourg is developing complementary policy frameworks for renewable hydrogen and carbon management to tackle hard-to-abate emissions. Hydrogen and carbon management policies complement action on decarbonisation by targeting the residual emissions that cannot be eliminated through direct electrification alone. Luxembourg's hydrogen strategy ([214]), which was published in 2021 and is being updated, positions renewable hydrogen as a limited but strategic resource, prioritised for replacing fossil hydrogen and serving hard-to-electrify industrial processes, consistent with the energy-efficiency-first approach. In October 2024, the Ministry of Economy launched a call for projects with a budget of EUR 110 million to encourage companies to produce renewable hydrogen in Luxembourg. Two projects were selected: LuxHyVal ([215]) (focusing on a 5 MW electrolyser in an industrial park) and ECHO-WAVE ([216])"sq) (combining electrolysis with on-site renewables and storage). According to the Ministry, these projects will provide alternatives to substitute almost all fossil hydrogen currently used in Luxembourg. Drawing on the lessons learned from this pilot call for projects, the Ministry plans to draw up a general framework to promote calls for projects to build further electrolyser capacity in Luxembourg. In parallel, the Ministry and stakeholders prioritise infrastructure projects to import large quantities of hydrogen ([217]). In March 2025, Luxembourg approved a law to boost the development of hydrogen transport networks across the country ([218]).

On carbon management, Luxembourg has assessed its potential for carbon capture, utilisation and storage (CCUS) to develop an enabling framework, with a specific focus on sectors such as cement. A CCUS and carbon dioxide removal (CDR) framework was adopted in July 2025 ([219]), signalling recognition that reaching climate neutrality will require a portfolio approach combining energy sufficiency, energy efficiency, electrification using renewable electricity, renewable hydrogen and carbon management for

([211]) Measure no 510 of the final national energy and climate plan, link.

([212]) Law of 3 July 2025 establishing an aid scheme to support the transition to a net-zero economy, link.

([213]) Law of 5 August 1993 on the rational use of energy as amended by the Law of 5 July 2016. The latter transposes Directive 2012/27/EU on energy efficiency which requires an energy audit every four years for large companies.

([214]) Government of the Grand-Duchy of Luxembourg, 2021, Stratégie hydrogène du Luxembourg.

([215]) A project that has been also awarded co-funding by the Horizon Europe programme, link.

([216]) A project that has been awarded co-funding also by the European Innovation Fund, link.

([217]) Ministry of Economy, 2025, Résultats de l'appel à projets visant la production d'hydrogène renouvelable au Luxembourg.

([218]) Law of 31 March 2025 on the establishment of hydrogen transport networks.

([219]) Ministry of Economy, 2025, Le Luxembourg adopte un cadre d'action pour les technologies de captage et d'élimination du dioxyde de carbone.

remaining process emissions ([220]). A CCUS & CDR taskforce was set up to gather feedback and prepare the ground for discussions at national, EU and international levels. It first met in December 2025 ([221]).

Reduction of effort sharing emissions

- Compliance with effort sharing limits through domestic measures

Luxembourg is projected to overachieve its effort sharing target for 2030 ([222]). In 2024, greenhouse gas emissions from Luxembourg's effort sharing sectors are expected to have fallen by 33% below 2005 levels. By 2030, with current and planned policies and measures, these emissions are expected to fall by 55.6%, resulting in the country exceeding its 2030 target (a 50% reduction) by 5.6 percentage points. Luxembourg is projected not to exceed its effort sharing emission limits in any year over the 2021-2030 period. Its provisional 2024 greenhouse gas emissions review ([223]) indicates that it has achieved the yearly emission limits set by the Grand-Ducal Regulation of 22 June 2022 ([224]). Emissions from the transport sector, along with agriculture and forestry, remain within the set limits. By contrast, emissions in the energy and manufacturing industries, construction, residential and commercial buildings, waste and wastewater treatment sectors exceed the limits.

- Sustainable transport

Road transport emissions are a particular challenge in Luxembourg, despite the strong reduction achieved since 2005. In 2024, road transport generated 59% of Luxembourg's effort sharing emissions ([225]), a 44% reduction from 2005 levels. Luxembourg's 2025 CSRs highlighted challenges in decarbonising transport and investment in public transport infrastructure and cross-border networks. Luxembourg has taken steps to address the challenges identified. Progress is visible in the continued reduction in road transport emissions, the accelerating uptake of zero-emission vehicles, and the expansion of charging infrastructure. In parallel, it has committed substantial public investment in rail, tram and bus infrastructure, including cross-border capacity increases and network modernisation. These measures are further detailed below.

Emissions from road transport remain persistently high, due to road transport being the dominant form of land transport. In 2023, the modal split of freight transport on land expressed as tonne-kilometres was 86% for road, 7.3% for rail and 6.9% for inland waterways. The modal split of passenger transport on land was 81% for passenger cars, 14.4% for public transport (tram, buses and coaches) and 4.9% for railways ([226]). The heavy reliance on private cars is also shown by the one of the highest numbers of cars per person in the EU (673 passenger cars per 1000 inhabitants against the EU average of 563)

([220]) Government of the Grand-Duchy of Luxembourg, 2025, Cadre d'action pour le déploiement des technologies CCUS & CDR au Luxembourg.

([221]) For further information, see Luxembourg's Environment Portal.

([222]) The national GHG emission reduction target is set out in Regulation (EU) 2018/842 (the Effort Sharing Regulation). It applies jointly to buildings (heating and cooling), road transport, agriculture, waste and small industry (known as the effort sharing sectors). The emissions from effort sharing sectors for 2024 are based on approximated inventory data. The final data will be established in 2027 after a comprehensive review. Projections about the impact of current policies ('with existing measures', WEM) and additional policies ('with additional measures', WAM) as per Luxembourg's 2025 reporting under Article 17 of Regulation (EU) 2018/1999 (the Governance Regulation). Also see European Commission (2025), Climate Action Progress Report 2025 – Technical Information, Commission staff working document, Brussels, Chapter 9 (pp. 111 ff.), and in particular Tables 25 and 26.

([223]) Government of the Grand-Duchy of Luxembourg, 2025, Bilan provisoire des émissions de gaz à effet de serre de l'année 2024.

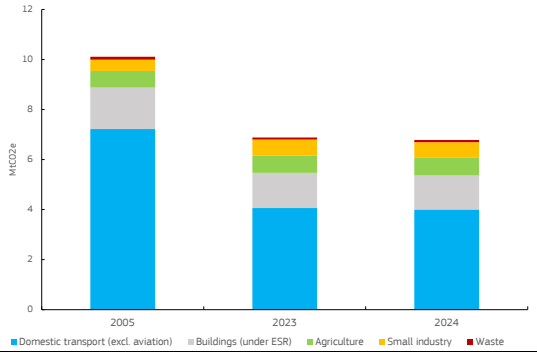
([224]) Règlement grand-ducal du 22 juin 2022 déterminant les allocations d'émissions de gaz à effet de serre annuelles pour la période allant jusqu'au 31 décembre 2030 des secteurs visés à l'article 5 de la loi modifiée du 15 décembre 2020 relative au climat.

([225]) See Graph A8.1, and Table A8.1 at the end of this Annex. A specific feature of the transport sector is that the majority of the corresponding emissions attributed to Luxembourg are generated by non-residents. Two thirds of fuel sales are made to international transport operators or private individuals in transit or residing in the border region. These sales are mainly explained by lower pump prices in Luxembourg than in neighbouring countries (STATEC, Analyses No 3, 11/2023, page 17, link).

([226]) European Commission (EC), 2025, EU Transport in figures, link.

([227]) and high congestion rates ([228]). To decarbonise freight and passenger transport, it is essential to increase the use of more sustainable modes of transport: rail, inland waterways and public transport.

Graph A8.1: **Greenhouse gas emissions in the effort sharing sectors, 2005, 2023, and 2024**



Source: European Environment Agency.

Throughout 2025, Luxembourg made major investments in sustainable transport and plans further projects for the coming years. This includes the ongoing delivery of new train sets (2023–2026) ([229]) and key works linked to the new Luxembourg–Bettembourg line ([230]). The Chamber of Deputies approved the financing law to redevelop the Bettembourg station ([231]). Cross-border transport remains a central focus. The partners of the Greater Region committed to a joint and coordinated development of infrastructure and services, in line with their respective competencies ([232]). Cooperation with France targets a major increase in peak rail capacity with a short-term objective to provide 13 500 seats by 2026 (up from 9 000 in 2025), alongside more park-and-ride facilities to promote intermodal commuter transport ([233]). Luxembourg and Belgium stepped up cooperation on cross-border transport ([234]) and aim to improve rail connections between their capitals ([235]). Based on the state budget for 2026, over the next four years Luxembourg will spend EUR 3.4 billion on modernising the railways, EUR 2.5 billion on bus transport, and will continue to expand the tram network ([236]). On top of investing in public transport, which has been free country-wide since 2020, Luxembourg continued to promote sustainable transport through support schemes for people to purchase zero-emission vehicles and install chargers for such vehicles ([237]).

The country is recording increasing sales of zero-emission vehicles. The share of newly registered passenger cars has risen from 5.5% in 2020 to 22.5% in 2023 to reach 27.4% in 2024. Similarly, the share of newly registered light goods vehicles has risen from 1.4% in 2020 to 8% in 2023 and 7.4% in 2024. With a total power output of charging infrastructure of 142 887 kW, Luxembourg has exceeded the Alternative Fuels Infrastructure Regulation target of 65 947 kW ([238]), ensuring that infrastructure deployment is aligned with vehicle uptake. A CO_2 tax on fossil fuels has been in place since 2021 and progressively increased ([239]), most recently on 1 January 2026 ([240]).

([227]) European Commission (EC), 2025, EU Transport in figures, link.

([228]) Joint Research Center (JRC) data based on TomTom, 2023.

([229]) Ministry of Mobility and Public Works, 2024, Entrée en service du premier train Coradia des CFL, link.

([230]) Project co-funded by the EU, see here for more details.

([231]) See the website of the Chamber of Deputies for more information.

([232]) Government of the Grand-Duchy of Luxembourg, 2026, Réunion de travail dans le domaine de la mobilité ferroviaire à l'échelle transfrontalière, link.

([233]) Ministry of Mobility and Public works, 2025, La coopération franco-luxembourgeoise au profit d'une meilleure mobilité transfrontalière de demain, link.

([234]) In September 2025, the two countries signed a letter of intent to further enhance passenger and freight rail cooperation, reinforcing long-term coordination of cross-border transport planning and investment, link.

([235]) Government of the Grand-Duchy of Luxembourg, 2026, Mobilité transfrontalière: Un nouvel élan pour la collaboration belgo-luxembourgeoise, link.

([236]) Ministry of Finances, 2025, *Matenee wuessen*: une croissance et une cohésion sociale qui vont de pair, Gilles Roth présente le budget de l'État pour 2026, link.

([237]) The Recovery and Resilience Fund supports both the purchase of zero-emission vehicles within Luxembourg's support scheme for mobility (*Klimabonus Mobiliteit)*, as well as the expansion of the network of charging points for electric vehicles installed by businesses across the country. Furthermore, the recovery and resilience plan includes a reform targeted at the electrification of the fleet of contracting authorities.

([238]) Status in December 2025. EC, European Alternative Fuels Observatory, Target tracker. Link.

([239]) The CO_2 tax, set at EUR 20 per tonne in 2021, has risen by EUR 5 per tonne annually to reach EUR 45 per tonne in 2026.

([240]) Government of the Grand-Duchy of Luxembourg, 2025, Nouveautés 2026.

Luxembourg supports the scaling up of sustainable aviation fuels, despite having no domestic production. Luxembourg has no domestic aviation fuel production but is eager to develop a European eSAF (sustainable aviation fuel) ecosystem, and its airports and aircraft operators have invested in eSAF uptake. Luxembourg is encouraged to further deploy eSAF value chains across Europe to support passenger and freight transport departing from Luxembourg.

Sustainable industry

- Circular economy industry

Luxembourg is making progress on the circular economy, but implementation is uneven. In 2021, Luxembourg adopted a National Circular Economy Strategy (NCES) ([241]) which includes targets covering products' entire life cycle. In 2023, Luxembourg reached a recycling rate of 56.5% for municipal waste (against the EU average of 48%) and a recovery rate of 94.4% for construction and demolition waste ([242]) in 2022 (above the EU average of 89%). However, Luxembourg's recycling rate of plastic packaging, at 38.8% in 2023, is below the EU average of 42% ([243]). Luxembourg is making a small but consistent contribution to green innovation with a few patents related to recycling and secondary raw materials ([244]) filed every year. There is scope to further develop the research and innovation sector in this field.

Luxembourg's economy is benefiting from the transition to the circular economy, but it is still resource-dependent. Progress is reflected most notably in the 225% increase in people employed in the sector between 2014 and 2023, the largest increase in the EU ([245]). The circular economy sector accounted for 4.2% of total employment in 2023 (up from 1.7% in 2014), above the EU average of 2%. Luxembourg's resource productivity was the second highest in the EU in 2024, at about EUR 6.25/kg. It has increased significantly, at a faster pace than the EU average (rising by 40% between 2019 and 2024, against the EU average of 37%) ([246]), illustrating the ability to produce (on average) more value with each unit of resource.

However, Luxembourg's raw material consumption, a measure of its material footprint, is one of the highest in the EU, reaching 27.305 tonnes/capita in 2024 ([247]). This unique situation illustrates how, paradoxically, Luxembourg's financial wealth can mask a level of resource consumption that remains physically significant and impactful on the environment. Although waste generation is gradually decreasing, it remains high at 712 kg/capita of municipal waste generated in 2023 ([248]), as does the incineration rate (41% in 2023). The use of secondary materials was below the EU average in 2024 (with a circular material rate at 10.7% against the EU average of 12.2%), while material import dependency was the highest in the EU (89% vs the EU average of 22.4% in 2023), underlying persistent reliance on primary resources and scope to further develop circular economy solutions ([249]).

Luxembourg currently makes limited use of fiscal tools to promote circular practices and has potential to further increase environmental revenue and reduce waste. Total environmental tax revenue in Luxembourg is the lowest in the EU (at 1.3% of GDP in 2023, against the EU average of 2%) ([250])([251]). Taxes on resources make up a very low share of the total tax revenue (0.83% in 2023) and Luxembourg

([241]) Luxembourg's Ministry of Energy and Spatial Planning, *Stratégie pour une économie circulaire Luxembourg - Strategie Kreeslafwirtschaft Lëtzebuerg*, 2021. Link.

([242]) JRC, *Techno-economic and environmental assessment of CDW management*, 2024. Link.

([243]) Eurostat, *Plastic packaging recycling rate,* 2025. Link.

([244]) Eurostat, *Patents related to recycling and secondary raw materials*, 2025. Link.

([245]) Eurostat, *Persons employed in circular economy sectors*, 2025. Link.

([246]) Eurostat, *Resource productivity*, 2025. Link.

([247]) Eurostat, *Material footprints*, 2025. Link.

([248]) Eurostat, *Municipal Waste by waste management operations*, 2025. Link.

([249]) Eurostat, *Circular material use rate*, 2025. Link.

([250]) EC, Directorate-General for Environment, Camboni, M., Markandya, A., Tyrer, D., Goonesekera, S. et al., *Greening the European Semester – Resource and pollution taxes*, Publications Office of the European Union, 2026. Link.

([251]) EC, *Environmental Implementation Review (EIR), Luxembourg country report,* 2025. Link.

does not currently levy pollution taxes. Bringing in specific taxes on pollution and resource management, especially in sectors like water quality, material efficiency and waste reduction, would give the country the potential to make significant environmental improvements and further align with the polluter pays principle.

Luxembourg has significantly improved its landfilling rate but still has a high incineration rate. Landfilling of municipal waste is below the EU average (22%) in 2023, continuing the significant downward trend since 2010 (from 16% in 2010 to 3% in 2023). However, over the same period, the incineration rate increased from 38% to 41%, far above the EU average of 26% in 2023 ([252]). The country does not levy taxes on municipal waste landfilling or incineration. Overall, waste management revenues differ across the country, with some municipalities implementing a 'pay as you throw' system, tax by collection frequency or a standard levy. Revenues from this system pay for the service and do not constitute an environmental tax on resource. There is scope to expand voluntary deposit return systems and increase the capture of recyclable waste, as it currently only applies to specific types of reusable packaging. Several extended producer responsibility schemes are in place in Luxembourg ([253]) to increase waste prevention, re-use, recycling and other recovery, but there is scope to develop schemes to cover more waste streams ([254]).

Luxembourg would benefit from more targeted financing for the circular economy. There is an estimated investment gap of EUR 125 million per year needed for Luxembourg to reach its circular economy objectives. EUR 30 million of this investment gap is for recent initiatives in eco-design, packaging, labelling, digital tools, critical raw material recycling and measures proposed under the amended Waste Framework Directive. A further investment of EUR 86 million is needed to unlock Luxembourg's circular economy potential.

- Bioeconomy industry

Luxembourg's bioeconomy industry remains underdeveloped, representing only 0.1% of the country's GDP in 2023 ([255])([256]). Between 2018 and 2023, the value added annually by the bioeconomy industry in Luxembourg increased by an average of 1.9%, driven by the growth of the wood products and furniture sector, but still below the annual EU-27 average growth of 5.1%. On average annually, over the same period, employment in the bio-based chemicals and plastics and the wood products and furniture sectors, increased by 4.3% and 1.8% respectively ([257]). Research and development (R&D) business expenditure in bioeconomy grew at the same level then overall R&D business expenditure (1.2%) ([258]). However, labour productivity in the bioeconomy decreased from 39.6% to 35.8% of the national average ([259]).

- Zero-pollution industry

Luxembourg has made significant progress in reducing key air pollutants, but industry still generates substantial levels of air pollution. Several air pollutant emissions have decreased since 2005, while GDP growth has continued ([260]). Between 2010 and 2022, overall, air emissions of carbon dioxide (CO_2), nitrogen oxides (NO_x), Non-Methane Volatile Organic Compounds (NMVOC), particulate matters (PM) 2.5 and 10, and sulfur oxides (SO_x) have decreased ([261]). However, these global figures mask significant increases in recent years of industrial air emissions of NH_3 (132% between 2016 and 2023), PM_{10} (124% between 2019 and 2023), and NMVOC (10% between 2017 and 2023), showing that the sector still generates

([252]) Eurostat, *Municipal Waste by waste management operations*, 2025. Link.

([253]) Government of the Grand-Duchy of Luxembourg, *Loi du 9 juin 2022 modifiant la loi modifiée du 21 mars 2012 relative aux déchets et la loi modifiée du 31 mai 1999 portant institution d'un fonds pour la protection de l'environnement*. Link.

([254]) EC, *EIR – Luxembourg*, 2025. Link.

([255]) Bioeconomy sub-sectors: food and beverages; bio-based textiles; wood products and furniture; bio-based chemicals and plastics.

([256]) JRC, *Jobs and wealth in the EU bioeconomy*, 2025. Link.

([257]) Labour productivity is measured as value added per person employed. JRC, ibid. (footnote n°161). Link.

([258]) JRC, *Business expenditure in Research and Development (R&D) in the EU bioeconomy*, 2025. Link,.

([259]) JRC, *Jobs and wealth in the EU bioeconomy*, 2025. Link.

([260]) EC, *EIR – Luxembourg*, 2025. Link.

([261]) Eurostat, *Air emissions accounts,* Link.

substantial levels of air pollution ([262]). The main industrial emitters of air pollutants ([263]) in Luxembourg are the metals sector, followed by the waste and energy sector for dioxins, as well as the metals, energy and mineral sectors for mercury.

Despite some improvements, pollution is extremely costly to Luxembourg's public health and economy. An estimated 197 years of life are lost (YLL) per 100 000 inhabitants attributable to air pollution due to $PM_{2.5}$ concentrations that exceed the World Health Organization's air quality guidelines. A further 85 YLL/100 000 inhabitants are attributable to nitrogen dioxide (NO_2) and 130 YLL/100 000 inhabitants to ozone pollution ([264]). Overall, the cost of air pollution from the main pollutants (ammonia, NMVOC, SO_2, NO_x and $PM_{2.5}$) is estimated at EUR 2 billion a year in Luxembourg ([265]), showing the significant economic impact of transport-related pollution, with NO_x pollution generating half of all costs. In addition, damage to health and environment due to the main industrial air pollutants cost Luxembourg around EUR 103.9 million in 2021 ([266]). These figures underscore the importance of continued action to tackle major pollutant emissions from all sources.

Luxembourg does not levy environmental taxes on major air pollutants such as NO_x, sulfur oxides, or PM, despite the potential these economic incentives have in encouraging cleaner production, especially in the energy and construction sectors. Considering Luxembourg's dense traffic and persistent air quality challenges in urban areas, a targeted emission-based levy on large stationary sources or heavy-duty vehicles could potentially complement existing measures and deliver local co-benefits for health and climate policy ([267]).

While significant improvements have been made to tackle water pollution from industrial sources, maintaining these improvements remains a critical challenge. The ferrous metal processing industry (particularly the processing of heavy metals) places the largest burden on the environment in terms of industrial emissions to water ([268]). Between 2010 and 2022, the data reported under the Industrial Emissions Directive demonstrated a significant reduction in heavy metal (cadmium, mercury, nickel and lead), nitrogen, total organic carbon (TOC), and phosphorus emissions from industrial releases. However, 2023 data show that emissions have increased since 2022 (although they remain below 2010 levels). Specifically, Luxembourg reported increases of 299% of heavy metal, 130% of nitrogen, 108% of TOC, and 119% of phosphorus industrial releases into water ([269]). This highlights the need to not only maintain efforts but also to step up measures to tackle water pollution over the long term. As highlighted in the annex on climate adaptation, preparedness and environment, Luxembourg faces the most significant challenges in the EU on water quality, as 100% of surface water bodies still fail to achieve good chemical status, due notably to uPBT substances and airborne deposits of mercury from combustion processes, heavy metal releases (mainly Cadmium) and pesticides ([270]).

Despite these pressures on health, the environment and the economy, investments to tackle pollution remain insufficient. Meeting national and EU targets for pollution prevention and control requires an additional EUR 201 million every year of investment ([271]). It would require targeted funding to achieve air

([262]) EEA, Industrial Reporting under the Industrial Emissions Directive 2010/75/EU and European Pollutant Release and Transfer Register Regulation (EC) No 166/2006, 2026, Link.

([263]) EC, *EIR – Luxembourg*, 2025. Link.

([264]) EEA, 2025, *Harm to human health from air pollution in Europe: burden of disease status*, 2025, Link.

([265]) EC, Directorate-General for Environment, IEEP, *Green taxation and other economic instruments – Internalising environmental costs to make the polluter pay* (p. 32-33, Table 3), 2021, Link.

([266]) EEA, European Industrial Emissions Portal, *Industrial pollution intensity indicators – EU large industry water pollution intensity*, 2024. Link.

([267]) EC, *Greening the European Semester*, op.cit. (footnote n°155). Link.

([268]) EC, *EIR – Luxembourg*, 2025. Link.

([269]) EEA, Water pollutant releases changes from 2010 to 2022 for the EU Member States, 2024, Link, updated 2023 data from the EEA.

([270]) EC, *Staff working document accompanying the report from the Commission to the Council and the European Parliament on the implementation of the Water Framework Directive and the Floods Directive - Member State: Luxembourg*, February 2025, Link.

([271]) EC, *EIR – Luxembourg*, 2025. Link.

Table A8.1: **Key clean industry and climate mitigation indicators: Luxembourg**

Climate mitigation	Luxembourg							Trend	EU	
Industry decarbonisation	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**		**2018**	**2023**
GHG emissions intensity of manufacturing production, g/€ ([1])	521	468	438	430	397	266	232	↘	330	-
Share of energy-related emissions in industrial GHG emissions ([2])	65.1	65.3	64.4	67.7	65.4	68.6	-	↗	55.5	57.9
Energy-related GHG emissions intensity of manufacturing and construction, g/€ (3)	418.1	378.3	358.9	360.4	341.1	251.6	-	↘	203.9	163.0
Share of electricity and renewables in final energy consumption in manufacturing, % (4)	44.5	42.3	44.2	43.9	51.6	52.9	56.1	↗	42.8	43.9
Energy intensity of manufacturing, GWh/€ ([4])	2.54	2.18	2.05	2.10	2.05	1.55	1.56	↘	1.27	1.05
Share of energy-intensive industries in manufacturing production, % in GVA ([5])	-	-	-	-	-	-	-		-	-
GHG emissions intensity of production in sector [...], g/€ ([6])										
- paper and paper products (NACE C17)	-	-	-	-	-	-	-		722	619
- chemicals and chemical products (NACE C20)	94	108	55	74	59	53	55	↗	-	-
- other non-metallic mineral products (NACE C23)	-	-	-	-	-	-	-		2,495	2,352
- basic metals (NACE C24)	-	-	-	-	-	-	-		2,842	3,099
Reduction of effort sharing emissions	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**		**2018**	**2023**
GHG emission reductions relative to base year, %				-20.1	-30.0	-31.9	-33.0			
- domestic road transport	-16.7	-14.5	-36.0	-31.8	-41.6	-43.7	-44.5	↘	-1.4	-5.6
- buildings	-1.5	-1.8	-3.1	-1.1	-14.5	-15.5	-18.3	↘	-20.3	-33.5
	2005			**2021**	**2022**	**2023**	**2024**	**Target**	**WEM**	**WAM**
Effort sharing: GHG emissions, Mt; target, gap, %	10.1			8.1	7.1	6.9	6.8	-50.0%	-33.0%	-55.6%
Sustainable road transport	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**		**2018**	**2021**
New zero-emission vehicles, electricity motor, % (7)	0.93	1.79	5.47	10.48	15.18	22.48	27.40		↗	1.03	8.96
Number of publicly accessible AC/DC charging points ([8])	-	-	1065	1027	2358	2322	2651	3238	↗	446956	n/a
Share of electrified railways, % of total ([9])	96.80	96.80	96.68	96.68	96.68	96.68	96.68		-	55.47	56.49

Sustainable industry	Luxembourg							Trend	EU-27	
Circular economy transition	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**		**2018**	**latest data**
Material footprint, tonnes per person	28.3	27.1	27.4	27.6	31.7	27.9	27.3	↘	14.8	13.7
Circular material use rate, %	10.8	9.1	9.7	8.7	12.0	10.1	10.7	↘	11.6	12.2
Resource productivity, €/kg	4.3	4.4	4.6	4.7	5.0	5.7	6.2	↗	2.1	3.0
Employees in circular economy	1.5	1.5	1.7	1.7	3.9	4.2	-		2.1	2.0
Patents in circular economy	2.27	2.8	4.4	1.1					12.3	12.0
Recycling rate	49.0	48.9	52.8	55.3	55.6	56.5	-		46.40	48.1
Plastic recyling	32%	33%	35%	40%	40%	39%	-		41%	42%
Construction and demolition waste (CDW) recovery	98	-	99						88	89
Bioeconomy industry	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**CAGR 2018-2023**	**2018**	**2023**
Value added, million EUR	503	499	499	507	565	561	-	1.9%	642,438	863,436
Employment, total number of people employed	10,402	10,272	10,914	10,609	10,661	10,688	-	0.5%	17,649,040	17,085,642
Productivity										
Valued added per worker, thousand EUR	48.3	48.6	45.8	47.8	53.0	52.5	-	1.4%	36.4	50.5
Valued added per worker, % of national average	39.6	39.8	36.8	35.0	38.3	35.8	-	-	62.2	70.7
R&D business expenditure										
Total bioeconomy (biomass producing and converting sectors)	16	17	16	18	19	18		2.2%	15,672	23,335
Total R&D business expenditure	375	401	353	382	399	402	-	1.2%	196,587	259,525
Zero pollution industry	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**		**2018**	**2021**
Damage cost for industrial pollution	0.5	0.5	0.5	0.5	-	-	-		414.9	352.7
Water industrial pollutants releases	Cd, Hg, Ni, Pb		nitrogen		TOC		Phosporus			
	2021	change (2010)	2021	change (2010)	2021	change (2010)	2021	change (2010)		
	69	-61%	118,000	-70%	192,000	-73%	14,200	-54%		
Water chemical status	Good		-	Good (%)	-		Poor	106.0	Poor (%)	100%

Source: Industry decarbonisation: All data are from Eurostat; data following the UNFCCC Common Reporting Format (CRF) are from the European Environment Agency (EEA), republished by Eurostat. (1) Sectors covered: all divisions of section C - Manufacturing - of the NACE Rev. 2 statistical classification of economic activities, except C19 (manufacture of coke and refined petroleum products). (2) GHG emissions as per UNFCCC Common Reporting Framework (CRF) categories 1.A.2 - fuel combustion in manufacturing in industries and construction (that broadly correspond to the broadly correspond to the NACE sections C - Manufacturing and E - Construction, excluding C-19), and CRF2 - industrial processes and product use. The figures shows the emissions in the 1.A.2 category as a share of the sum of CRF1.A.2. and CRF2 emissions. (3) Sectors covered: CRF 1.A.2 as described above. Gross value added (GVA) data in the denominator aligned in sectoral coverage, in 2020 prices. (4) Sectors covered: NACE section C excluding C19. (5) Nominator: NACE divisions C17, 20, 23, 24; denominator: NACE section C excluding C19 (see above). (6) GVA (denominator) in 2020 prices. Reduction of effort sharing emissions: Data source: European Environment Agency, greenhouse gas data viewer; European Commission, Climate Action Progress Report, 2025. For details, see the footnote in the "Reduction of effort sharing emissions" section. Sustainable road transport: (7) Source: Eurostat; (8) Source: European Alternative Fuels Observatory; (9) Source: Eurostat. For all climate mitigation indicators, the trend arrows compare the latest available data (year t) with the data four years earlier (t-4). Sustainable industry: Bioeconomy value added, employment and productivity: JRC, Developments of Economic Growth and Employment in Bioeconomy Sectors across the EU. Bioeconomy R&D business expenditure: JRC, Business expenditure in Research and Development (R&D) in the EU bioeconomy. Damage cost for industrial pollution: EEA, The costs to health and the environment from industrial air pollution in Europe, 2024. Water industrial pollutants releases: EEA, Industrial releases of pollutants to water and economic activity in the EU-27, 2024. Water chemical status: WISE, Surface water bodies: Chemical status, 2024 and WISE Groundwater bodies: chemical status, 2024. Other indicators: Eurostat. For circular economy indicators, the trend arrows compare the latest available data (year t) with the data two years earlier (t-2).

quality improvements, notably measures to support sustainable energy and transport, and action to reduce ammonia emissions.

This annex outlines the progress made and the ongoing challenges faced in increasing energy affordability, while advancing the transition to net zero. It reflects the implementation of past energy-related country-specific recommendations.

The 2025 energy-related country-specific recommendations for Luxembourg highlight the need to generally reduce reliance on fossil fuels by investing in energy efficiency in both the residential and the non-residential sector. They also call for the high-voltage grid to be modernised and its capacity increased, for cross-border interconnections to be improved and for permitting procedures for renewable energy deployment to be eased. Lastly, it recommends support for municipalities in deploying renewable energy.

Luxembourg took steps to increase energy efficiency in residential buildings through the extension of the 'Klimabonus Wunnen' scheme beyond 2025 and is planning to align with EU's minimum energy performance standards to improve energy savings in non-residential buildings. Luxembourg needs to modernise its high-voltage grid for the near future, in anticipation of growing renewable energy generation and electricity demand, despite being sufficient for its current needs. Luxembourg continues making progress in renewable energy expansion through the adoption of 51 concrete measures in 2025, but the full and timely implementation of those is key to reach its 2030 renewables energy target of 37%.

Energy prices and costs

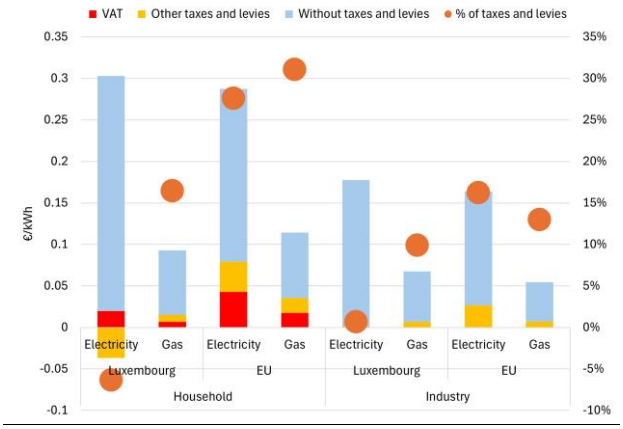
Despite government measures such as covering half of the projected 30% electricity price increase for 2025, Luxembourg's household energy prices have risen since 2024, but remained below the EU average, while its retail energy prices have dropped yet remained above EU levels.

In the first half of 2025, household electricity prices in Luxembourg increased significantly (highest increase in the EU) but remained below the EU average, at EUR 0.2665/kWh. Likewise, household gas prices have increased slightly since 2024 but are still below the EU average, at EUR 0.0929/kWh. Conversely, retail energy industrial prices have decreased since 2024 but have remained above the EU average.

Nevertheless, final energy prices in Luxembourg in the first half of 2025 remained unbalanced. For large businesses, electricity was 2.6 times more expensive than gas in the first half of 2025 even though taxes and levies (excluding VAT) accounted for 1% of electricity bills and 10% of gas bills. Excluding taxes and levies, the electricity-to-gas price ratio would have increased to 2.9, signalling a positive balancing effect of Luxembourg's fiscal measures. For household consumers, the impact of taxes and levies on the electricity-to-gas price ratio was even more substantial, with the ratio increasing from 2.9 to 3.7 excluding taxes, showing the effect of negative taxes on the overall electricity retail price for household consumers ([272]).

([272])Analysis based on Eurostat data from the first half of 2025.

Graph A9.1: **Electricity and gas prices for household and non-household consumers, first half of 2025**



(i) For household consumers, the consumption band is DC for electricity and D2 for gas.
(ii) For non-household consumers, the consumption band is ID for electricity and I4 for gas. VAT and recoverable charges are not displayed for non-household consumers as these are typically recovered by businesses. This also applies to the '% of taxes and levies', which is shown excluding VAT and recoverable charges for non-household consumers.
(iii) 'Without taxes and levies' indicates the retail price excluding all taxes and levies. It always includes the energy/supply and network cost components, which are not disaggregated in Eurostat's six-monthly price dataset.
Source: Eurostat

The wholesale electricity prices in the Germany-Luxembourg bidding zone averaged EUR 90/MWh in 2025, above the EU average of EUR 85/MWh ([273]), driven largely by price dynamics in Germany, despite the high share of 59.2% renewables in Luxembourg's electricity mix in 2025. Natural gas maintained its structural role as the dominant, and costly, marginal price-setting technology. As a result of exposure to natural gas and coal-fired generation units in Germany, average day-ahead electricity prices increased by 15% in 2025 amid rising natural gas procurement cost. Short-run marginal costs ([274]) of natural gas in the EU increased from EUR 96/MWh in 2024 to nearly EUR 103/MWh in 2025.

Although daytime prices have fallen in recent years owing to the growing penetration of solar power, Luxembourg remains vulnerable to severe price spikes during peak-demand hours. This is because falling solar output in the evening and early morning, combined with limited non-fossil flexibility, has led to a significant ramp-up of gas-fuelled plants to cover the supply–demand gap. As a result, the average price spread ([275]) in Luxembourg was EUR 122/MWh in 2025, up 14% from 2024 and nearly matching the EU average of EUR 121/MWh.

Graph A9.2: **Low-carbon electricity generation vs. electricity wholesale prices, 2025**

Unavailable data for Cyprus and Malta. Wholesale price is given as average of day-ahead electricity prices over 2025. EU-27 average is calculated as consumption-weighted. EU low-carbon share is calculated out of total EU electricity generation. Low-carbon share by country is calculated out of total public electricity generation. Low-carbon includes renewables and nuclear.
Source: Eurostat

Flexibility and electricity grids

Luxembourg is making some progress towards modernising the high-voltage grid and increasing its capacity, improving cross-border interconnections. But those upgrades are still in the planning phase.

Luxembourg is highly interconnected, with an interconnection rate of 105%, but is also highly dependent on its neighbours to meet its energy needs. Its electricity grid is sufficient for its current needs.

([273])Ember.

([274])Short-run marginal costs (SRMCs) are the sum of the variable costs associated with producing electricity using hard coal and fossil gas. These are fuel costs, carbon costs and variable operating and maintenance costs. Estimates are provided by Ember.

([275])'Spread' refers to the difference between the highest and lowest hourly day-ahead electricity prices in a single day.

According to the electricity transmission grid development plan for 2024-2034, about 75% of total import and transmission capacity is already used during peak import ([276]). The transmission system operator sees a need to both increase and modernise electrical energy import transmission capacity.

In anticipation of growing renewable energy generation and electricity demand, the grid operator is planning to further develop the high-voltage grid and improve interconnections, with Germany in particular, between now and 2040. Luxembourg plans to commission the announced 380 kV interconnection line between Luxembourg and Germany by 2029 ([277]). With planned network expansion projects, its electricity interconnectivity with Germany may reach more than 400% by 2030. This will provide sufficient reserves to cope with future consumption increases in all areas. Smart meters are being rolled out to 98.8% of grid connection points ([278]).

Luxembourg is part of the North Seas Energy Cooperation (NSEC). In line with the other Member States, a specific chapter on this regional cooperation in the North Sea has been included in the integrated national energy and climate plan. The chapter includes acknowledgement of the need to speed up permitting procedures ([279]). Luxembourg has a one-stop shop for permitting (the Facilitation Unit for Urban Planning and the Environment) and has complied with most requirements, but the lack of clear, binding timelines creates uncertainty regarding the duration of permitting procedures ([280]).

Luxembourg participates in the Hy4Link project of common interest included in the second Union PCI/PMI list ([281]), and that will allow the delivery of hydrogen to decarbonise hard-to-electrify sectors and processes ([282]). The projected demand for hydrogen by 2030 is 230 GWh ([283]).

Renewable hydrogen (to be produced through electrolysers) can play a role in the integration of energy sectors. Luxembourg is pursuing its hydrogen ambitions by means of regional cooperation, including via the NSEC and the Pentalateral Energy Forum (PENTA) ([284]).

Luxembourg issued a national battery storage strategy in July 2025 to promote and develop battery storage. Luxembourg has committed to taking steps to develop dynamic electricity prices and a legal framework for aggregators, as required by the EU legislation. In the retail market, suppliers with more than 15 000 customers can now offer dynamic tariffs. For aggregators, a significant step was taken in January 2025, when access to all balancing market products was opened. However, pooling with these markets remains restricted to Luxembourg only, and is not allowed across the Germany/Luxembourg bidding zone.

With 99% smart meter roll-out, Luxembourg has the infrastructure in place for informed consumers. The first dynamic contract came to the market in 2024, but market uptake has been very limited so far. Switching rates increased threefold for private customers between 2023 and 2024, but the rate is still only 1.0% in terms of the number of customers and 2.4% in terms of volume. Luxembourg has 33 cooperatives and energy communities**.**

The share of energy in the total expenditure of a Luxembourg resident is among the lowest in the EU. But price differences between

([276])NDP_2024-2034_–_Electricity_Transmission_Grid.pdf.

([277])NECP LU 2021-2030, updated by July 2024, Section 2.4.2 / p. 82.

([278])NECP LU 2021-2030, updated by July 2024, Section 2.4.1 / p. 82 and Section 4.5.1 / p. 380, Table 60.

([279])NECP LU 2021-2030, updated by July 2024, Section 1.4.2 / p. 26.

([280])Study on national permit granting process applicable to energy transmission infrastructure projects with a focus on projects of common interest and projects of mutual interest under Chapter III of Regulation (EU) 2022/869 – Publications Office of the EU, pp. 46-47 and pp. 105-106 with an overview of the permit granting process in Luxembourg.

([281])Draft delegated act on the second PCI and PMI list C(2025) 8144.

([282])Stratégie hydrogène du Luxembourg – relever les défis de la décarbonation – Le gouvernement luxembourgeois.

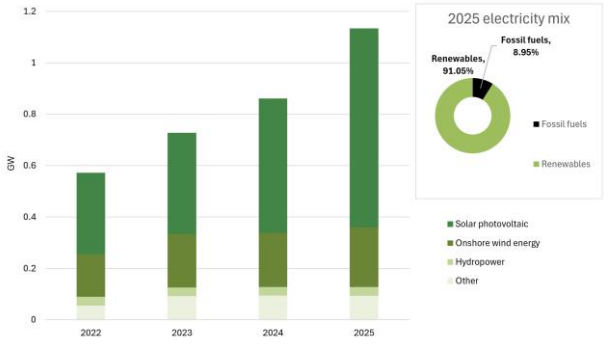
([283])NECP LU 2021-2030, updated by July 2024, Section 2.1.2.12 / pp. 52-53 and Section 3.1.2 / pp. 299-300.

([284])energy.ec.europa.eu/topics/infrastructure/high-level-groups/north-seas-energy-cooperation_en.

suppliers' products increased significantly in 2024. Nevertheless, the small national market, along with the requirement for a supplier to accommodate Luxembourg-specific regulatory, contractual and procedural aspects, limits the appeal for foreign suppliers.

In 2024, electricity accounted for 18.3% of Luxembourg's final energy consumption, below the EU average of 23.4%, and this share has increased slightly in the past decade ([285]). When it comes to households, electricity accounts for 17.1% of final energy consumption, while in industry it represents 51.9% (see also Annex 8). For the transport sector, this share remains negligible, at 1.6%. Accelerating electrification across sectors would support cost-effective decarbonisation and make affordable renewable energy more accessible to consumers.

Graph A9.3: **Luxembourg's installed renewable capacity vs electricity generation mix**



Electricity mix is given as net electricity generation (gross electricity production minus consumption of power stations' auxiliary services). Electricity produced in pumped hydro plants is excluded from total net electricity production, as it was previously counted as electricity produced from another source.
"Other" includes renewable municipal waste, solid biofuels, liquid biofuels, and biogas.
Source: IRENA, Eurostat

Renewables and long-term contracts

Luxembourg is making some progress in simplifying permitting procedures for renewable energy deployment and helping municipalities deploy renewable energy.

Installed capacity for renewables in Luxembourg represented 1,133 MW in 2025, an increase of 27.6% compared to 2024 (888 MW). Installed capacity for wind energy grew to 232 MW in 2025 (compared to 213 MW in 2024, +8.9%), whilst installed capacity for solar grew strongly (+41.2% compared to 2024), reaching 774 MW. Total renewable electricity generation, including from sources other than wind and solar, increased by 8.8% from 2024. In 2025, renewable energy sources (RESs) accounted for 59.2% ([286]) of the electricity mix (vs an overall EU RES share of 44.8%).

To meet its energy targets, Luxembourg needs to increase deployment of renewables, especially solar and wind power, and exploit the potential of renewable hydrogen for long-term energy sector integration. According to Luxembourg's national energy and climate plan (NECP), the country aims to increase the share of renewable energy in its energy mix to 37% by 2030 ([287]).

Luxembourg advanced its renewable energy transition through the 'Einfach – Séier – Erneierbar' national consultation, which led to the adoption of 51 concrete measures presented in May 2025 to accelerate and simplify the deployment of renewables while strengthening energy sovereignty and increasing climate resilience. The measures focus on: faster and digitalised permitting procedures; better land use for wind and solar projects (including agri-PV and infrastructure-adjacent sites); stronger public and municipal involvement; enhanced and pre-financed financial support schemes; and reinforcement of the electricity grid to enable electricity sharing and storage. Together, these actions should significantly streamline the regulatory framework, reduce administrative barriers and empower the public, businesses and municipalities to scale up

([285]) CAGR (compound annual growth rate) of 2.14% between 2015 and 2024 and minimum/maximum share of 14.5% and 18.3% respectively (source: Eurostat).
([286])Data based on the ENTSO-E transparency platform.

([287])Luxembourg: national energy and climate plan (NECP).

renewable energy production with minimal environmental and social impact.

In 2025, Luxembourg launched two competitive tenders to support company-led large-scale photovoltaic installations, offering either investment aid or operating aid via 15-year market premium contracts. The investment aid tender is backed by a EUR 20 million budget for installations of between 30 kW and 3 MW, while the operating aid tender allocates a total capacity of 45 MW across rooftops, industrial sites, innovative building-integrated systems and carports. Both tenders include dedicated sub-lots for photovoltaic systems combined with battery storage, aiming to increase solar electricity production and improve grid integration ([288]).

Energy efficiency

Luxembourg is making limited progress in reducing overall reliance on fossil fuels by investing in energy efficiency in both the residential and the non-residential sector. Luxembourg deploys a supportive national financing framework mobilising energy efficiency investments composed mainly of grants, tax rebates and financial instruments. Luxembourg also implements the energy efficiency obligation scheme.

However, in 2024, Luxembourg made significant progress in energy efficiency overall. In that year final energy consumption (FEC) decreased slightly, compared to 2023, to 3.5 Mtoe, continuing the sharply declining trend since 2019. Luxembourg's FEC in 2024 was in line with the trajectory to its expected contribution in 2030.

A clear decrease in FEC can be observed in all three sectors: in 2024 industry displayed a 15.7%; services a 13.5%; and transport a 24.3% reduction compared to 2019.

Last year, Luxembourg strengthened its renewable energy and energy transition policy by extending and adapting the 'Klimabonus Wunnen' and 'Klimabonus Mobilitéit' schemes beyond 2025, maintaining high financial support for energy-efficient renovations, renewable heating systems (such as heat pumps) and sustainable new buildings. The reforms integrate previous bonuses into base aid, introduce new subsidies for ecological insulation, green facades, home energy management systems and photovoltaic installations with pre-financing, while phasing out support for certain fossil-related or less sustainable technologies. At the same time, support for e-mobility was expanded through enhanced aid for smart and bidirectional electric vehicle charging infrastructure, reinforcing Luxembourg's shift towards renewable energy and low-carbon mobility ([289]) (see Annex 8).

For the non-residential sector, Luxembourg intends to introduce future requirements for non-residential buildings in line with the minimum energy performance standards laid down in the EU Energy Performance of Buildings Directive (EPBD). To support the decarbonisation of commercial buildings, the state offers various incentives, including: financial assistance for decarbonisation initiatives (currently under review); financial backing for the renovation and decarbonisation of commercial premises (in development); the Climate Pact, which primarily targets small and medium-sized enterprises; and the energy efficiency obligation scheme (EEOS).

Between 2019 and 2024, Luxembourg's final energy consumption in the residential sector plateaued. The energy saved due to technical energy savings of households is offset by the increased number of dwellings. Luxembourg needs to make further efforts to reach the objectives set in its 2020 long-term renovation strategy.

Given that 25.1% of the energy consumed in Luxembourg is used in buildings, highlighting the importance of the sector in increasing energy security, Luxembourg is encouraged to submit its draft national building

([288]) Lancement de deux nouveaux appels d'offres auprès des entreprises pour stimuler la production d'électricité à partir de centrales photovoltaïques – Le gouvernement luxembourgeois.

([289]) Prolongation et adaptation partielle des régimes d'aides financières 'Klimabonus Wunnen' et 'Klimabonus Mobilitéit' – Le gouvernement luxembourgeois.

renovation plan (NBRP) pursuant to the recast EPBD in order to ensure a clear and predictable pathway towards an energy-efficient and decarbonised building stock. Heating and cooling account for 88% of the country's residential final energy consumption, with renewables supplying 19% of the total energy used for heating and cooling in all sectors. Around 5 000 heat pumps are in operation in the residential sector according to the latest figures.

Security of supply and diversification

Despite making some progress in renewables, Luxembourg's overall energy mix in 2024 remained heavily reliant on fossil fuels, with oil accounting for 67.9% and natural gas for 16.2% of gross inland consumption, while renewables (together with biofuels) accounted for 14.4% ([290]). This reliance underscores the importance of Luxembourg's ongoing efforts to diversify its energy sources and increase energy security.

As indicated in its final updated NECP ([291]), Luxembourg is planning to reduce its dependence on oil products by decreasing oil consumption through carbon pricing and by increasing the share of renewable energy sources and offering incentives to switch to electric cars and electric heating systems. Natural gas plays a relatively marginal role in Luxembourg's energy system. It shares infrastructure and a common market area with its neighbouring country Belgium, and is also interconnected with Germany. Luxembourg intends to reduce its dependence on gas imports by increasing energy efficiency and encouraging all sectors of society to switch from gas to electricity, in particular in the heating and cooling sectors, as targets for renewable energy deployment become more ambitious.

In response to rising energy prices following the regional crisis in the Middle East, Luxembourg has not, as of today, introduced any measures beyond releasing a limited quantity of its strategic oil reserves. Luxembourg contributed to the IEA collective action to release 400 million barrels of emergency oil reserves.

Fossil fuel subsidies

In 2024, environmentally harmful ([292]) fossil fuel subsidies without a planned phaseout before 2030 represented 0.14% ([293]) of Luxembourg's GDP ([294]). Additionally, Luxembourg's 2023 effective carbon rate ([295]) averaged EUR 112.92 per tonne of CO_2 – above the EU weighted mean of EUR 84.80 ([296]).

([290])Source: Eurostat. Electricity and heat are excluded from gross inland consumption to avoid double counting. The focus is on primary energy sources.

([291])Source: NECP LU 2021-2030, updated by July 2024.

([292])Explicit fossil fuel subsidies (e.g. direct transfers) and implicit fossil fuel subsidies (i.e. tax expenditures linked to forgone tax revenues that have an identifiable fiscal impact for the central budget) that support fossil fuel energy production, transmission and/or consumption.

([293])European Commission calculation based on underlying data from the *Study on energy subsidies and other government interventions in the EU – 2025 edition,* Enerdata.

([294])2024 gross domestic product at market prices, Eurostat.

([295])The effective carbon rate is the sum of carbon taxes, ETS permit prices and fuel excise taxes, representing the aggregate effective carbon rate paid on emissions.

([296])OECD (2024), Pricing Greenhouse Gas Emissions 2024.

Luxembourg has made progress in strengthening its climate adaptation and environmental policy framework, but it continues to face significant challenges linked to climate risks, ecosystem degradation, and high investment needs. The country is increasingly exposed to extreme weather events, including floods, heatwaves and droughts. Flooding recorded in January and September 2025 caused economic losses and exposed critical infrastructure, highlighting investment needs for flood protection. Climate change is putting pressure on forests through droughts, rising temperatures and pest outbreaks. Forest health has deteriorated markedly, and forests have recently shifted from acting as a carbon sink to becoming a net source of CO_2 emissions. Water resilience is another major concern. Luxembourg faces the most significant water quality challenges in the EU. Nutrient and pesticide pollution causes water quality deterioration and eutrophication, impacting public health, ecosystems, and economic activities. Despite investments in water infrastructure and nature-based solutions, funding gaps and governance challenges remain.

Climate adaptation and preparedness

Luxembourg has faced growing climate pressures in recent years, marked by recurring floods, heatwaves and droughts. Extreme events have occurred in the last 10 years, such as major floods in 2016, 2018, and 2021, and severe droughts in 2020 and 2022. These highlighted the country's vulnerability to climate change ([297]). Climate-related losses accounted for EUR 488 million over the period 2016-2024 ([298]). Last year was one of the 10 warmest years recorded in Luxembourg since 1947, confirming a long-term warming trend, but it also featured record rainfall ([299]). Abundant precipitation, partly in the form of snow, combined with rapid snowmelt following a rise in temperatures, caused flooding in the Alzette, Sûre and Moselle regions in January 2025. Torrential rainfall caused flooding again in September 2025 ([300]). The 2025-2035 national adaptation strategy, adopted in April 2026 ([301]), acknowledges the main climatic vulnerabilities of the country and identifies over 150 measures in 17 policy fields to address them ([302]). Detailed budget allocations for the measures have not yet been publicly specified ([303]). A recent study ([304]) estimates that Luxembourg will need to invest almost EUR 133 million per year on adaptation up to 2050 (0.12% of annual GDP, below the EU average of 0.5%): first and foremost in the infrastructure sector (almost two thirds of the total), followed by ecosystems (16% of the total) and the food sector (12% of the total), while investments in the health, economy and finance sectors play a relatively smaller role ([305]).

Luxembourg has recently renewed its climate adaptation framework following the end of the 2018-2023 strategy, with a temporary gap before the adoption of the new 2025-2035 strategy and ongoing challenges in

([297]) European Commission (EC), *Commission Staff Working Document (SWD) 2025 Country report - Luxembourg*, COM(2025), 216 final, page 81, 2025. Link.

([298]) European Environment Agency (EEA), *[EU SDG 13_40] Climate-related economic losses*, 2025. Link.

([299]) MeteoLux, *2025 dans le top 10 des années les plus chaudes*, 2026. Link.

([300]) MeteoLux et al., *Bulletin météorologique Année 2025*, 2026. Link.

([301]) Government of the Grand Duchy of Luxembourg, *Stratégie et plan d'action pour l'adaptation aux effets du changement climatique: accroître la résilience au Luxembourg*, 2026. Link.

([302]) Government of the Grand Duchy of Luxembourg, *Stratégie et plan d'action pour l'adaptation aux effets du changement climatique au Luxembourg (2025 – 2035)*, 2026. Link.

([303]) The climate adaptation strategy published online does not include a consolidated budget table.

([304]) EC, Directorate-General for Climate Action, Monteleone, L., Roberti, G., Fossati, F., Davies, W. et al. (2026), *Assessment of EU and Member States adaptation investment needs – Study on the macroeconomic impacts of the climate transition*, Tables 8 and 25, Link. The study provides detailed estimates of adaptation investment needs at the level of the EU and individual Member States per type of measure. It relies on a common methodology that makes estimates comparable across the EU. Four accompanying methodological reports provide a detailed description of how the results were estimated to ensure full transparency.

([305]) Typical investments in climate adaptation related to the infrastructure sector include measures for flood protection, prevention and disaster response, building retrofitting and reinforcement of energy assets. For the ecosystem sector they include for instance adaptive forest management, restoration of terrestrial ecosystems, biodiversity and species conservation.

coordination, local engagement and financing. Adaptation to climate change is embedded in Luxembourg's national climate legislation ([306]), making the country one of the 13 EU Member States to have adopted such a legal basis as of 2025. The Ministry of the Environment, Climate and Biodiversity coordinates the national adaptation strategy in cooperation with other relevant ministries. Given Luxembourg's territorial organisation, there is no administrative level between the State and municipalities; as a result, the national adaptation strategy and action plan apply to the entire national territory. The previous national adaptation strategy covered the period 2018-2023. Its evaluation identified key weaknesses ([307]). Following the end of this strategy, Luxembourg adopted an updated 2025-2035 national adaptation strategy and action plan in April 2026, following a transitional gap between the two frameworks. The update builds on the lessons learned from the 2018-2023 strategy with involvement of stakeholders and the public ([308]). The new strategy aims to deliver more targeted, measurable and accountable actions through an adaptive and iterative governance approach. Local authorities play a central role in implementing adaptation measures and are supported through national instruments such as the Climate Pact 2.0 and the Nature Pact ([309]). However, despite strong engagement in national programmes, Luxembourg's municipalities remain only marginally involved in the EU Covenant of Mayors, covering around 3% of the population between 2018 and 2024 (EU27: 34% in 2024). Implementation of adaptation objectives is supported by river basin management plans, flood risk management plans and flash flood management programmes. Coordination mechanisms are in place to link climate adaptation and disaster risk reduction, with designated focal points in each relevant ministry. The adaptation strategy is intended to be aligned with the forthcoming national water resilience strategy, with the aim of strengthening coherence across policy frameworks.

Climate risks already generate substantial economic losses in Luxembourg and, despite relatively high insurance coverage, rising climate impacts pose increasing challenges. Between 1980 and 2024, Luxembourg recorded around EUR 1.4 billion in economic losses from weather- and climate-related extreme events, ranking second in the EU in per capita losses and third in losses per square metre ([310]). These impacts are partly offset by relatively high insurance coverage: at 49%, Luxembourg is among the best covered EU countries for such events (EU27: 19%) ([311]). The estimated protection gap score for 2025 is 1.5 (low) for floods and even lower for other extreme events ([312]), even though insurance coverage is not legally mandatory. In the event of a disaster, compensation is provided on an ad hoc basis. The 2025-2035 national adaptation strategy includes a measure to promote insurance coverage in the agricultural sector, with the aim of protecting farmers against climate-related crop losses. No equivalent measure is included for households. However, the strategy notes that escalating climate impacts may raise insurance premiums, widen protection gaps, increase economic losses, and heighten vulnerability for low-income groups. It also highlights that rising flood risks can affect real estate assets and mortgage portfolios, with implications for property values and financial stability.

Luxembourg's energy and transport infrastructure faces growing climate risks, calling for further investments to strengthen adaptation preparedness and resilience. The Commission encouraged Luxembourg to use the update of its national climate adaptation strategy to conduct a comprehensive vulnerability

([306]) The national climate law requires the government to put in place an adaptation strategy by 1 January 2029 and every 10 years thereafter, with a planning horizon of at least 50 years, and to update it every five years if needed.

([307]) Overly broad measures, unclear responsibilities, coordination challenges, and the absence of measurable indicators.

([308]) A series of workshops with public and private stakeholders and five public meetings were held in 2025, and an online public consultation took place in December 2025 - January 2026. The analysis led to the addition and strengthening of the draft measures presented in February 2025 and to a new focus on education and public awareness of climate risks (Government of the Grand Duchy of Luxembourg, 2026, Error! Hyperlink reference not valid.).

([309]) EC, *Commission SWD 2025 Country report - Luxembourg*, COM(2025), 216 final, page 82, 2025. Link.

([310]) EEA, *Economic losses from weather- and climate-related extremes in Europe*, 2024. Link.

([311]) EEA, Ibid. Link.

([312]) EIOPA, *Dashboard on insurance protection for natural catastrophes*, 2025. Link.

assessment of the energy network and infrastructure under different climate scenarios ([313]). Instead, the 2025-2035 national adaptation strategy provides a qualitative discussion of climate risks to energy security and infrastructure and refers to existing risk preparedness work. The strategy notes that Luxembourg's energy system is increasingly exposed to climate-related risks, even though energy is not among the country's top three climate adaptation priority sectors ([314]). The adaptation strategy stresses the importance of regional cooperation for electricity and gas supply, as well as diversifying energy sources. The strategy also underlines the need to reduce dependence on imported energy by improving energy efficiency and expanding renewable energy production, supporting a more sustainable and resilient energy system. The document further identifies the transport sector as increasingly vulnerable to climate change. One of Luxembourg's adaptation objectives is therefore to strengthen the continuity, safety and reliability of transport services under changing climate conditions. These challenges are also reflected on a study on the TEN-T network, according to which Luxembourg is positioned at the lower end of the scale for general adaptation preparedness based on the Transport Vulnerability Index ([315]). This study estimates that Luxembourg would need to invest around EUR 20 million by 2030 to address flood risks ([316]). This is relevant for EuroCap Rail, a key cross-border TEN-T project aimed to modernise the Brussels–Luxembourg–Strasbourg corridor ([317]).

Luxembourg is gradually expanding the use of nature-based solutions, particularly river renaturation, to support climate resilience. In recent years Luxembourg implemented some river renaturation measures to restore natural river dynamics, enhance biodiversity and reduce flood risk by removing barriers. The country secured a EUR 9 million loan under the Natural Capital Financing Facility (part of the EU LIFE programme) to support the ecological restoration of the Alzette River and its tributary, the Pétrusse ([318]). In November 2025 Luxembourg launched a new initiative on river renaturation ([319]) ('Renaturéierungsdësch'). The 2025-2035 national adaptation strategy also includes an action on river renaturation.

Water resilience

Luxembourg's economy heavily relies on freshwater, posing sustainability challenges. In 2023, Luxembourg achieved the highest EU water productivity at EUR 1 213/m^2 ([320]). However, the national water exploitation index plus (WEI+) ([321]), rose from 0.4 in 2016 to 1.88 in 2023, indicating increased resource use. 47% of abstracted water came from fresh surface waters. Groundwater remains in good quantity but risks deterioration by 2027. Climate change heightens seasonal water shortage risks ([322]), affecting crucial activities like water supply, agriculture, and energy cooling ([323]), and increasing risks of

([313]) EC, *SWD accompanying the EU-wide assessment of the final updated national energy and climate plans Delivering the Union's 2030 energy and climate objectives*, NECP assessment COM (2025/274 final), page 147. Link.

([314]) The sectors that Luxembourg identifies as the most affected by climate change are agriculture and food, forestry, and water management, based on Luxembourg's reporting under Article 19 of the Regulation on the Governance of the Energy Union and Climate Action (2018/1999). Link.

([315]) EC, Directorate-General for Mobility and Transport, *Support study on the climate adaptation and cross-border investment needs to realise the TEN-T network*, Publications Office of the European Union, 2024, page 69, Link.

([316]) EC, Ibid., page 121, Link.

([317]) EC, Ibid., page 273. Link.

([318]) European Investment Bank, *Luxembourg: Biodiversity and climate change adaptation - EU finances ecological restoration of Alzette river network*, 2023. Link.

([319]) Government of the Grand Duchy of Luxembourg, Premier "Renaturéierungsdësch": Serge Wilmes mise sur la nature pour renforcer la résilience climatique, 2025. Link.

([320]) Water productivity measures efficiency in water use, indicating the average economic value a country creates for each unit of water it takes from nature.

([321]) Eurostat, *Water Exploitation Index plus*, 2025. Link.

([322]) EC, *SWD on the implementation of the third River Basin Management Plans (RBMP), second Flood Hazard and Risk Maps (FHRM) and second Flood Risk Management Plans (FRMP) (Member State: Luxembourg)*, 2025. Link.

([323]) Energy production is the most water-dependent sector, representing 69% of freshwater abstraction in 2023. EEA, *Water abstraction by economic sector 2000-2023*, 2025. Link.

pollution, eutrophication, algae blooming, and flash floods ([324]).

Luxembourg faces the most significant water quality challenges in the EU, as 0% of its surface water bodies are reported to be in good ecological or chemical status ([325]) whereas the EU average is 37.7% and 30% respectively. 79% of groundwater areas are also in poor chemical status. Conditions have worsened due to significant nutrient and pesticide pollution, impeding access to high-quality water for human consumption and economic activities Nutrient pollution has led to cyanobacteria contamination at several bathing sites, posing health risks. Freshwater bodies are heavily modified due to dams, construction, and urban development. 14% of surface water bodies lack sufficient flow, threatening aquatic life ([326]).

Water pollution challenges Luxembourg's long-term drinking water availability. The country reported that two groundwater bodies failed to pass the drinking water protected area test due to pesticides. Addressing water pollution and meeting EU environmental objectives for surface and ground water quality remain essential to ensure drinking water sustainability.

Luxembourg's urban wastewater treatment network meets EU requirements, but waterbodies remain affected by discharges. Wastewater discharges significantly contribute to less than good water quality in 76.9% of rivers, 50% of lakes, and 31.5% of groundwater bodies, while discharges of storm water overflows impact 98.1% of river water bodies and 100% of lakes, the highest percentage in the EU for these types of pressure ([327]).

Luxembourg's investments in water management are insufficient. The country needs EUR 464 million annually to achieve water protection objectives for the 2021-2027 period but only invests EUR 339 million annually ([328]). On this amount, annual investments in the wastewater network represent EUR 123/person ([329]), above the EU average (EUR 49/person). Despite this, an investment gap remains each year, estimated at EUR 13 million for wastewater measures, EUR 18 million for drinking water, and EUR 94 million for other aspects of the Water Framework Directive (WFD). Given the absence of environmental taxes on pollution ([330]) and the limited number of taxes on resources, there is potential for the country to better implement the 'polluter pays' principle, increasing contributions from polluters to help address existing gaps.

Nature restoration

Luxembourg's economy is exposed to nature loss with a significant dependency on ecosystem services ([331]). 44% of its gross value added relies directly on healthy fresh and terrestrial ecosystems, particularly for sectors such as agriculture and food, construction, water utilities, healthcare, and tourism.

Despite a significant share of protected areas at 38.6% of Luxembourg's territory ([332]), habitat degradation is widespread, with wetlands, grasslands and freshwater being particularly affected ([333]). Healthy habitats provide vital ecosystem services and their protection through reducing pollution and hydro-morphological pressures is key for the country's economic sustainability.

([324]) Luxembourg's current assessment of the quantitative status of the ground water bodies does not yet include, as required by the law, the water needs of aquatic and terrestrial dependent ecosystems. This may lead to an assessment that is an overestimation of the good quantitative status.

([325]) EC, *SWD on the implementation of the third RBMP, second FHRM and second FRMP (Member State: Luxembourg)*, 2025. Link.

([326]) Ibid. Link.

([327]) EEA, WISE Freshwater, *Country profiles on urban waste water treatment (Luxembourg)*. Link.

([328]) EC, *Environmental Implementation Review (EIR) – Luxembourg*, 2025. Link.

([329]) EEA, WISE Freshwater, *Country profiles on urban waste water treatment (Luxembourg)*. Link.

([330]) See also the Annex 8 on *Industry decarbonisation, circularity, and climate mitigation*.

([331]) EC, Joint Research Centre (JRC), Hirschbuehl et al., *The EU economy`s dependency on nature*, 2025. Link.

([332]) Eurostat, *Protected Areas Indicator*, 2025. Link.

([333]) EC, *EIR – Luxembourg*, 2025. Link.

In line with the EU biodiversity strategy, some river renaturation projects have been implemented in Luxembourg ([334]), supporting freshwater ecosystems and rivers' natural function restoration, pollution reduction, and flood mitigations. Free-flowing rivers generate broader socio-economic benefits, including enhanced rural landscape quality, new recreation and tourism opportunities, strengthened local job creation, and improved water quality. Luxembourg's rivers are mostly up-stream where renaturation projects face fewer obstacles, and benefit a broader area, leaving room for more green infrastructures, although some difficulties remain. A recognised obstacle is the fragmented approach to environmental governance that hinders harmonised strategies for water renaturation. As the distance to reach good status is significantly longer and more costly for Luxembourg's water bodies ([335]), measures to address pollution, enhance cooperation and governance, and provide targeted financing may play important roles in achieving environmental objectives.

Nature degradation is further amplified by invasive alien species, with 22 recorded in Luxembourg in 2024 ([336]), inflicting estimated damages of EUR 80 million up to 2020, primarily affecting agriculture and public health ([337]).

Sustainable agriculture and land use

Luxembourg's carbon removal policy may not have the level of ambition needed to fully meet its 2030 target for land use, land-use change and forestry (LULUCF), due in particular to the deteriorating condition of forests. Luxembourg's forests emitted more carbon than they absorbed between 2010 and 2023, becoming a net source of CO_2 emissions due to climate-related damage and bark beetle infestations ([338]). As a result of these challenges, the phytosanitary condition of forests is deteriorating dramatically: the proportion of healthy trees fell from 79% in 1984 to 15% in 2024 ([339]). To meet its 2030 LULUCF target, additional carbon removals of 0.03 million tonnes of CO_2 equivalent (CO_2-eq) are needed ([340]). The latest available projections show a slight gap to target of 0.05 $MtCO_2$-eq for 2030 ([341]). Thus, additional actions are needed in the LULUCF sector to ensure the country reaches its 2030 target. In addition to increasing LULUCF net removals, further investments in healthy forests and soils are key to building resilient bio-based product value chains and enabling a growing, competitive EU bioeconomy. Continued improvements in the monitoring system of net removal data and projections will be crucial in supporting timely and effective action in the sector.

Luxembourg is seeking to reinforce its forest policy framework to address growing climate-related pressures. In 2023, Luxembourg adopted a new Forest Code (Law of 23 August 2023), which lays down the principles of sustainable forest management for both public and private forests. A specific aid scheme ('Klimabonus Bësch') was introduced in 2021 to help private forest owners implement climate action measures ([342]). This scheme was revised in 2025, when the minimum eligible surface was reduced from 0.5 ha to 0.3 ha. Building on the success of these subsidies, the Grand-Ducal Regulation of 6 March 2025 introduced a new premium ('Klimabonus Mouer a Wiss') aimed at encouraging the conservation, restoration and enhancement of species-rich sensitive wetlands and grasslands ([343]). Looking ahead, Luxembourg is finalising its national forest programme in

([334]) Government of the Grand Duchy of Luxembourg, *Réaménagement écologique de la vallée de la Pétrusse*, 2025. Link.

([335]) EC, Directorate-General for Environment, EMRC, Logika Group and RPA Europe, *Update of the costs of not implementing EU environmental law*, 2025. Link.

([336]) EC, *EIR – Luxembourg*, 2025. Link.

([337]) Neobiota, *Economic cost of invasive alien species across Europe*, 2021. Link.

([338]) Government of the Grand Duchy of Luxembourg, *Présentation du troisième Inventaire forestier national: des forêts luxembourgeoises face au défi climatique*, 2025. Link.

([339]) STATEC, *Biodiversity in figures*, page 10, 2025. Link.

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

([341]) Climate action progress report 2025, Link.

([342]) Government of the Grand Duchy of Luxembourg, *Klimabonus Bësch*, 2025. Link.

([343]) Government of the Grand Duchy of Luxembourg, *'Klimabonus Mouer a Wiss' - Un nouveau soutien financier pour les propriétaires privés engagés dans la préservation des écosystèmes*, 2025. Link.

consultation with all relevant stakeholders, drawing on the findings of the third National Forest Inventory, which highlighted the increasing challenges posed by climate change ([344]).

Luxembourg is particularly affected by land take and artificialisation, leading to soil and ecosystems degradation. Between 2012 and 2018, land take in Luxembourg increased artificial surfaces the most among the Member States, including in Natura 2000 sites, resulting in biodiversity losses and ecosystem fragmentation ([345]). Ongoing soil sealing results in less resilient ecosystems and decreased carbon sequestration and flood protection. Between 2006 and 2012, Luxembourg has experienced one of the biggest losses ([346]) of areas providing a flood control ecosystem service, with a 52% decrease due to soil sealing, far above the EU average decrease of 29% ([347]). Net land take affected mostly arable lands (49.4%) and pastures (38.9%), converted into mine, dump, and construction sites, or into industrial and commercial areas ([348]), thereby threatening sustainable agriculture objectives.

Pesticide and nutrient contamination remain the main pressures on surface and ground water quality, compromising long-term sustainability of the resource and its availability for human activities, including water supply, agriculture and ecosystem services. Luxembourg reported that 60% of groundwater monitoring stations recorded average nitrate concentrations exceeding 25 mg/l (including 20% above 50 mg/l, the EU threshold for safe drinking water) between 2016 and 2019 ([349]). Livestock density, at 1.18 livestock units per hectare in 2023 ([350]), is higher than the EU average of 0.75 in 2020, contributing to systemic agricultural pressures. The share of agriculture area under organic farming has increased from 3.39% in 2013 to 7.19% ([351]) in 2024 but remains below the 2030 national target of 15% ([352]), leaving room for more sustainable agriculture practices. Eutrophication poses a major threat to biodiversity and ecosystem integrity, as Luxembourg has the highest accumulated nitrogen exceedance in the EU. Contrary to the declining trend in the EU ([353]), all areas in Luxembourg remain affected by atmospheric nitrogen deposition, primarily due to ammonia (NH_3) emissions from agriculture, representing 96% of national total emissions in 2023, despite a 12% reduction between 2018 and 2023 ([354]). Nitrate pollution remains among the highest in the EU (39.6 kg/ha in 2023, far above the 19.1 kg/ha EU average), indicating gaps in nutrient management strategies. NH_3 air pollution costs Luxembourg EUR 334 million annually ([355]), and a 11.81% reduction in emissions is needed for Luxembourg to reach its 2030 emission reduction commitment ([356]). Water pollution imposes direct and indirect costs of EUR 60 million annually in Luxembourg ([357]); half of it can be attributed to agriculture, particularly nitrogen leaching into drinking water. Some areas ([358]) in Luxembourg also presented a

([344]) Government of the Grand Duchy of Luxembourg, *Présentation du troisième Inventaire forestier national: des forêts luxembourgeoises face au défi climatique*, 2025. Link.

([345]) While land take in Luxembourg increased significantly in core cities, Luxembourg is one of the member states where Natura 2000 sites were the most affected by land-take (EEA, *Land take and land degradation in functional urban areas*, 2022. Link).

([346]) EC, INCA Platform (Integrated system for Natural Capital Accounting), *Accounting for ecosystems and their services in the European Union*, 2021. Link.

([347]) EU-28 average, including the figures for the EU and the United Kingdom.

([348]) EEA, *Net land take in cities and commuting zones in Europe, Land take flow*, 2025. Link.

([349]) EEA, *Nitrate in groundwater in Europe*, 2025. Link.

([350]) Eurostat, *Livestock density index*, 2026. Link.

([351]) Eurostat, *Share of organic farming in utilised agricultural area*, 2026. Link.

([352]) Government of the Grand Duchy of Luxembourg, *PAN-Bio 2030 - Plan d'action national pour la promotion de l'agriculture biologique 2026-2030*, 2025. Link.

([353]) EEA, *Eutrophication caused by atmospheric nitrogen deposition in Europe*, 2025. Link.

([354]) EEA, *Air pollutant emissions data viewer (Gothenburg Protocol, Air Convention) 1990-2023*, 2026. Link.

([355]) EC, IEEP, *Green taxation and other economic instruments – Internalising environmental costs to make the polluter pay* (p. 32-33, Table 3), 2021, Link.

([356]) EEA, *Air pollution in Europe, 2025 reporting status under the National Emission reduction Commitments Directive*, 2025. Link.

([357]) EC, IEEP, *Green taxation and other economic instruments – Internalising environmental costs to make the polluter pay* (p. 35-36, Table 5), 2021. Link.

([358]) While only one area was monitored in Luxembourg in the EU-wide study (EC, JRC, Vieira et al., *Pesticides residues in European agricultural soils - Results from LUCAS 2018 soil module*, 2023. Link), Luxembourg's ministry of environment reports that it is likely that levels are enhanced above natural background in some soils for pesticides, based on a

higher than EU average contribution regarding pesticide residues concentrations in soils.

study covering several collecting sites across the country (Government of the Grand Duchy of Luxembourg, M.Kibblewhite, M.Grego, *Towards a Holistic Soil Protection for Luxembourg*, 2021, Link).

Table A10.1:**Key Adaptation Indicators**

Climate adaptation and preparedness:							EU-27
	2019	2020	2021	2022	2023	2024	latest data
Drought impact on ecosystems *[area impacted by drought as % of total]*	17.05	69.83	0	70.54	0.12	-	2.76
Forest fires burned area [1] *[burned area in ha. per year]*	-	-	-	-	-	-	354.510
Economic losses from extreme events *[EUR million at constant 2022 prices]*	172	22	200	-	-	25	40.452
Insurance protection gap [2] *[composite score between 0 and 4]*	-	-	-	1	1	1	-
Sub-national climate adaptation action *[% of population covered by the EU Covenant of Mayors for Climate & Energy]*	4	3	3	3	3	3	34

Water resilience:							EU-27
	2019	2020	2021	2022	2023	2024	latest data
Water Exploitation Index Plus, WEI+ [3] *[total water consumption as % of renewable freshwater resources]*	0.75	2.28	1.77	2.61	1.88	-	4.53
Water productivity *[EUR per m^3]*	1.062	1.091	1.210	1.196	1.213	-	151
Water abstraction							
Water abstraction by source (% from surface water)	53.36%	51.28%	51.53%	46.16%	47.47%		-
Water abstraction by sector	Agriculture	Electricity cooling	Manufactu-ring	Public water supply	Mining and Quarrying	Constru-ction	
	0.34%	69.65%	1.08%	28.94%	0.00%	0.00%	
Status of water bodies [4] *[% of water bodies in a good status]*							
Surface water bodies (ecological)	-	-	-	-	-	0%	38%
Groundwater bodies (quantitative)	-	-	-	-	-	100%	93%

Nature restoration:							EU-27
	2019	2020	2021	2022	2023	2024	latest data
Ecosystem dependency *[% of direct dependency]*	-	-	-	44%	-	-	44%
Protected area *[% of terrestrial protected areas]*	36.3	37.1	37.9	37.9	38.6		26.4
Invasive alien species (IAS) *[number of IAS of Union concern]*	-	-	-	-	-	22	29.2
Damage cost of IAS *[EUR billion]*	-	-	-	-	0.08		1.69
Eutrophication *[AAE of area at risk of euthrophication]*				787	787		295

Sustainable agriculture and land use:							EU-27
			2012-2018		2018-2021		latest data
Yearly net land taken by country *[ppm of total urban surface per country]*			700		491		670
Land conversion in functional urban area *[% of total land taken from 2018-2021]*							
Arable land					49%		
Complex and mixed cultivation					0%		
Forests					7%		
Herbaceous vegetation associations					3%		
Open spaces with little or no vegetation					0%		
Pastures					39%		
Permanent crops					2%		
Water					0%		
Wetlands					0%		
	2019	2020	2021	2022	2023	2024	latest data
Livestock density *[number of livestock units per hectare of utilised agricultural area]*		1.24			1.18		0.75
Ammonia emissions *[% of total utilised agricultural area]*	95%	96%	96%	95%	96%	-	94%
Pesticide contamination in soil *[% of samples with a concentration over 0.5 mg/Kg^{-1}]*					100%		57%
Net greenhouse gas removals from LULUCF [5] *[$ktCO_2$-eq]*	-459.0	-543.9	-703.3	-745.0	-675.6	-	-198.421

(1) EFFIS (European Forest Fire Information System). Link.
(2) The climate protection gap refers to the share of non-insured economic losses caused by climate-related disasters, based on modelling of the risk from floods, wildfires, windstorms, and the insurance penetration rate. Scale: 0 (no protection gap) – 4 (very high gap). EIOPA, 2025, Dashboard on insurance protection gap for natural catastrophes.
(3) Measures total water consumption as a percentage of the renewable freshwater resources available for a given territory and period. Values above 20% are generally considered to be a sign of water scarcity, while values equal or greater than 40% indicate situations of severe water scarcity.
(4) European Commission, 2024, 7th Implementation Report from the Commission to the Council and the European Parliament on the implementation of the Water Framework Directive (2000/60/EC) and the Floods Directive (2007/60/EC) (Third River Basin Management Plans and Second Flood Risk Management Plans).
(5) Net removals are expressed in negative figures, net emissions in positive figures. Reported data are from the 2025 greenhouse gas inventory submission. 2030 value of net greenhouse gas removals as in Regulation (EU) 2023/839 – Annex IIa.
Source: Eurostat, EEA, JRC

Employment growth in Luxembourg has eased since 2022, reflecting weaker activity and structural challenges. Slow economic growth, skills mismatches and labour shortages in some sectors have weighed upon labour market performance and competitiveness, particularly affecting older workers, those with low levels of qualification and migrant backgrounds. Significant wage disparities have contributed to high levels of in-work poverty. Medium-term prospects remain positive thanks to ongoing reforms. Luxembourg's 2030 employment target is still within reach, supported by a comprehensive set of planned and ongoing labour market, pension and cost-of-living policies. The 2025 country-specific recommendations highlighted the need to address skills mismatches in the context of the digital and green transitions and to increase the participation and employment rates of older people by enhancing their employment opportunities and employability, in order to address the issue of the pension system's long-term sustainability.

Unemployment has increased, while growth in employment and activity rates have stalled in recent years. In 2025, the unemployment rate (15-74) increased slightly for the third year in a row, reaching 6.5%, above the EU average of 6.0% ([359]), after Luxembourg's unemployment rate exceeded the EU average for the first time in 2024. The employment rate (among people aged 20-64) has fallen two years in a row (from 74.8% in 2023 to 73.9%, below the EU average of 76.2%, which continued to increase). In addition, employment rates in rural areas are 10 pps lower than in urban areas. While the activity rate (among people aged 15-64) has been rising since the early 2010s, it has consistently been below the EU average, standing at 74.3% in 2025 (EU: 75.7%). These developments point to a softening of demand across the labour market, as economic growth remains subdued in the context of weaker investment and net exports. Labour market slack reached 12.5% in Q4-2025, up from 12.0% in Q2-2024, exceeding the EU average (11%). In the medium term, Luxembourg's 2030 employment rate target of 77.6% is still within reach, though the recent slowdown makes it more challenging.

Employment fell or slowed in several key sectors in 2025. The construction sector, representing almost 10% of national employment, recorded a year-on-year decline of 1.2% in the number of employees in Q4 2025, following a sharp decline of 4.1% in the previous year ([360]). Business confidence in the construction industry continued to drop. At the beginning of 2025, around 60% of companies in the sector reported insufficient demand, compared to 10% at the start of 2022([361]). As for the financial and insurance sector, job creation remained subdued and grew by just 0.6% in the year to Q4 2025. Job vacancies in the financial sector fell from 2.2% in mid-2022 to 1.0% at the end of 2025. As from 2026, however, the financial sector is forecast to recover, benefitting from lower interest rates. The labour market in ICT/IT-related roles significantly weakened during the same period, with job vacancies dropping from 4.0% in mid-2022 to 1.3% by the end of 2025. The vacancy rate in professional, scientific and technical activities, covering sectors such as accounting and legal services, fell from over 6.0% in 2022 to 2.4% in Q4 2025. Overall, the job vacancy rate peaked in mid-2022 across all sectors and positions, had halved by the end of 2024 and remained low in 2025 ([362]), indicating continued weakness in the demand for labour.

Labour shortages remain contained overall but persist in some sectors. The job vacancy rate stood at 1.4% in Q4-2025, below the EU average of 2.1% and slightly below its pre-pandemic level (1.7% in Q4-2019). Shortages – while having eased over time – are still highest in professional, scientific and technical activities (2.4%), administrative and support service activities (2.4%) and accommodation and food services (2.2%). Shortage of health professionals is a persisting challenge (see Annex 15). In October 2025, the share of employers expecting labour shortages to constrain their production was below

([359])Cross-border workers, who accounted for 47% of workers in Luxembourg in 2024, are excluded from the resident labour force and are not taken into account when calculating the employment rate, etc.

([360])See Eurostat [namq_10_a10_e].

([361])STATEC: Conjoncture Flash February 2025: https://statistiques.public.lu/en/actualites/2025/conjflash-02-25.html.

([362])See Eurostat [jvs_q_nace2]

the EU average in industry (10.8% vs 17.5%), but above the EU average in construction (34.1% vs 27.5%).

Labour market transformation due to the green transition remains slow, though green employment is relatively high. In 2023, the share of employment in the environmental goods and services sector in Luxembourg was higher than in all other Member States (5.4%), and substantially higher than the EU average (2.7%), reflecting an increase of 1.5 pps since 2018. In 2025, occupational shortages linked to the green transition and climate adaptation were reported for civil engineers, air conditioning and refrigeration mechanics, and mechanical engineering technicians.

Following steady growth, youth unemployment and NEET rates fell in 2025. Having increased by 4 pps to 21.6% between 2022 and 2024, youth unemployment (15-24) fell back to 18.6% in 2025, though it remained above the EU average in 2025 (15.2%). The youth unemployment rate is particularly prone to volatility in Luxembourg, and the unemployment ratio is often considered more informative ([363]). Luxembourg's youth unemployment ratio also improved in 2025, following increases between 2022 and 2024. Among 15-29-year-olds, the unemployment rate (11.9% vs EU: 11.6%) was closer to the EU average and the unemployment ratio (6.5%) was equal to the EU average in 2025. This is consistent with the unemployment rate among 25-29-year-olds being below the EU average for at least the past decade. The share of young people neither in employment nor in education and training (NEETs) increased overall between 2019 and 2024, before easing in 2025. This recent improvement reflects partly cyclical labour market developments, while structural factors such as early school leaving and skills mismatches have affected school-to-work transitions (see Annex 13).

Measures to address youth unemployment include the improved Youth Guarantee scheme. The scheme, supported by the European Social Fund Plus (ESF+), has yielded mixed results, working effectively for those whom it successfully engages, which is achieved through instruments like the 'Initiation to Employment Contract' *(Contrat d'Initiation à l'Emploi)*, whereby employers receive financial incentives to provide paid work placements to jobseekers under the age of 30. On the other hand, 29.1% of NEETs aged under 29 were registered in the Youth Guarantee scheme at the end of 2024, which was lower than in 2022 (32.9%) and 2023 (34.3%), and considerably below the EU average of 41.3%. Other youth employment measures include the 'Start Your Career/Business' programmes and the Interreg project 'atWork4NEETs', which are supported by Luxembourg's public employment service (ADEM). These measures aim to improve the prospects of NEETs by exchanging good policy practices. There is scope for improving the personalised outreach, guidance and labour-market relevance of the training provided, and for organising more internships as part of secondary education, to ensure long-term labour market integration. This would require enhanced coordination and data-sharing between all actors in the Youth Guarantee ecosystem.

Integrating older people into the labour market remains a challenge. In 2025, Luxembourg had the lowest employment rate among workers aged 55-64 in the EU (49.5%, a 0.1 pps increase from 2024, vs EU: 66.2%); the activity rate among this group was also low in 2024 (51% vs EU: 68.2%). Long-term unemployment is also an issue among older people: more than half of jobseekers aged 45 and over have been registered with ADEM for more than twelve months ([364]), and they struggle to meet the rapidly changing market demands such as digital literacy skills. The level of older workers' participation in adult learning is lagging behind the EU average (see Annex 13), and the levels of demotivation and disconnection from the labour market of older residents of working age who remain outside the workforce are the highest among all age groups ([365]). Health- and disability-

([363]) Luxembourg has particularly high numbers of young people in secondary, vocational and post-secondary education. The labour force denominator being unusually small, a slight change in the number of unemployed residents aged 15-24 can have a large impact on the youth unemployment rate. The unemployment ratio is often considered more informative, as it has as its denominator the total population in a given age group rather than the total number of people who make up the labour force.

([364]) CSL Panorama social 2025, p. 77.

([365]) CSL 2025, p. 91. The youngest (15-24) and the oldest (50-64) who are outside the workforce are most likely to not

related barriers are also key challenges: in 2024, almost 75% of long-term unemployed people aged 45 and over had reduced capacity for work or a disability ([366]). The participation of older people in the labour market is also linked to hitherto favourable early retirement schemes (the average age at the time of early retirement in 2024 was 60.2 years, vs EU: 61.3), which are gradually being reformed.

Luxembourg is taking measures to increase the employment rate of older people. Following a large-scale consultation in 2024-2025, a pension reform entered into force in January 2026, aimed at safeguarding the fiscal sustainability of the pension system while rewarding older people for staying active on the labour market. The measures include an increase in contributions, adjustments allowing workers to meet the conditions for early retirement, and a monthly tax deduction of up to EUR 750 to encourage those eligible for early retirement to continue working. The employment agency ADEM proposes several measures targeting older workers, including a hiring aid scheme (ACA – *aide à l'embauche des chômeurs âgés*), whereby employers who hire 45+-year-olds can claim back their share of social contributions, and the 'Reintegration employment contract' (CRE – *Contrat de réinsertion-emploi*), whereby jobseekers aged 45 and over can gain practical and theoretical experience while the employer benefits from reduced salary costs. The 'Boost your skills' project (2024-2025), cofinanced by the ESF+, aims to increase the employability of jobseekers aged 45 and over, while the 'Future skills' initiative under the recovery and resilience plan set a modest (30%) participation target for this age group.

Skills mismatches are increasing in the context of the twin transitions, with low-qualified workers finding it harder to secure work in the country's specialised economy. Macroeconomic skills mismatches across all levels rose to 34.4% in 2025, significantly above the EU average (19.2%), indicating a widening gap between low- and high-skilled workers. The employment rate of university graduates increased by 0.3 pps to 85.0% in 2025, while the rate for those with only lower secondary qualification fell again by 0.4 pps to 42.9%. Luxembourg's economic model, which is specialised and largely finance-oriented, tends to favour high-qualification, high-productivity sectors: in Q4-2023, the country had the highest share of high-wage, high-productivity jobs in the EU (27.6%) ([367]) – see Annex 12. The gap in demand for high- and low-qualified workers is strong and the European Centre for the Development of Vocational Training Cedefop ([368]) forecasts that this trend will continue up until 2035: most job openings are expected to require high-level qualifications (70%, around 11 pps more than the EU-27 average), compared with 23% for low-level qualifications (compared with a share of slightly above zero for the EU-27 average). In 2024, almost 40% of jobseekers registered with the national employment agency (ADEM) had low-level qualifications, equivalent to the lower cycle of secondary education, compared with 29% for those with post-secondary studies. However, even people with a post-secondary level of education are finding it increasingly difficult to find work ([369]). Migrant families in particular, who are over-represented among the working poor compared with the native population, have low to medium skill levels and tend to work either in elementary occupations or services. The need to improve professional training is emphasised in the 2025 CSL Quality of Work Index ([370]), with a record-low general score of 53.4/100. Regarding digital skills, while Luxembourg performs very strongly in terms of ICT specialists, with 8.0% of the workforce employed in ICT roles in 2024, the share of individuals with at least basic digital skills reached 62.4%, slightly above the EU average (60.4%) but was below the 2025 Digital Decade national target of 71% (see Annex 13). Despite a strong performance in high-skilled digital employment, the development of basic digital competences across the broader population remains comparatively slower, which may further exacerbate existing skills mismatches and weigh on the inclusiveness of the digital transition.

want to work (78% and 88% respectively) as compared with 56% of 25-49-year-olds.

([366])CSL, Panorama social 2025, p. 77.

([367])European Commission: Labour market and wage developments in Europe – Annual review 2025.

([368])European Centre for the Development of Professional Training, 2025: skills_forecast_-_luxembourg_2025.pdf.

([369])CSL, Panorama social 2025, p. 73.

([370])CSL, Quality of Work Index 2025.

Skills gaps are partly filled by cross-border workers. In 2024, for instance, cross-border workers carried out almost 75% of interim work, which is concentrated in lower- to medium-skilled segments such as construction, commerce and administrative support services. However, high-skilled sectors, such as finance, ICT and specialised, scientific and technical activities, are also affected, since net job creation has been mainly positive for non-resident – especially French – cross-border workers since 2009, up to and including 2024 ([371]) (see Annex 19).

Luxembourg has strengthened its capacity as regards skills intelligence and matching ([372]). Measures to address skills mismatches include ADEM's 'JobInsights.lu', which provides real-time data on job openings, skills requirements and labour market trends for jobseekers, employers and training providers, and 'Skills Plang', a government programme launched in November 2025 to help companies forecast and finance future skills needs. Systematic language testing by ADEM helps to reduce linguistic mismatches at an early stage of candidate profiling. However, there is scope for improving cooperation between all national actors involved in quantitative and qualitative skills data intelligence and matching, from education and training providers to ADEM and employers. This can be supported by easily accessible labour market intelligence (also for the mid- and longer-term), employer involvement in curriculum design and incentives for reskilling in priority sectors. More generally, continuing professional development should be promoted for adults of all ages, both in and outside the workplace, supported by personalised guidance and higher uptake of individual training leave (*congé individuel de formation*).

Wage disparities and slow growth in households' purchasing power contribute to high rates of in-work poverty. Real wages in 2025 remained below their pre-pandemic levels due to sluggish economic and labour productivity growth, as well as persistent inflation, felt most acutely by low-income households. The share of low-wage earners increased by almost 3 pps between 2018 and 2022, from 11.4% to 14%, while it decreased overall in the EU from 15.2% to 14.7% during the same period ([373]). The growth in households' purchasing power is not keeping up with the overall EU average: while the gross disposable household income in Luxembourg has almost invariably been above the EU average since 2008, it dipped slightly below the EU average in 2024 and over the previous decade it has grown more slowly (8.2% in total) than in the EU overall (16.4%), a trend which should be monitored. Wage disparities and other factors such as the limited inequality-reducing effect of taxes and transfers (see Annexes 12 and 16), led to a high share of the population experiencing in-work poverty. While the in-work poverty rate decreased from 14.8% in 2023 (well above the EU average of 8.3%) to 13.4% in 2024, this share has been consistently higher than the EU average since 2010 (then at 10.6% vs EU: 8.5%). In 2025, in-work poverty was recorded at 9.5% (EU: 8.3%), however this follows a change in how Luxembourg collects data on income and living conditions ([374]). In-work poverty continues to particularly affect non-Luxembourg nationals, low-qualified people as well as single-parent households, especially those with dependent children. In 2025, the risk of in-work poverty affected, for instance, 13.4% of people with non-Luxembourgish citizenship against only 4.6% of the Luxembourgish. Furthermore, the nominally high social minimum wage in Luxembourg appears insufficient to lift people out of poverty, given the high poverty threshold (see also Annex 12). Luxembourg is working with social partners to improve the implementation of the EU Directive on Adequate Minimum Wages, which includes raising collective bargaining coverage – which reached 57.3% in 2022 ([375]) – through continued social dialogue. Collective bargaining coverage in Luxembourg is consistent with the decline in unionisation, as union density among resident workers declined from 41% in 2010 to 29.7% in 2020.

([371])CSL, Panorama social 2025, p. 77, pp. 106-8, p. 116.

([372])As recommended in the 2023 OECD Skills Strategy and in the proposed Council Recommendation on Human Capital in the EU.

([373])European Commission, *Labour market and wage developments in Europe 2025*, pp. 50-53.

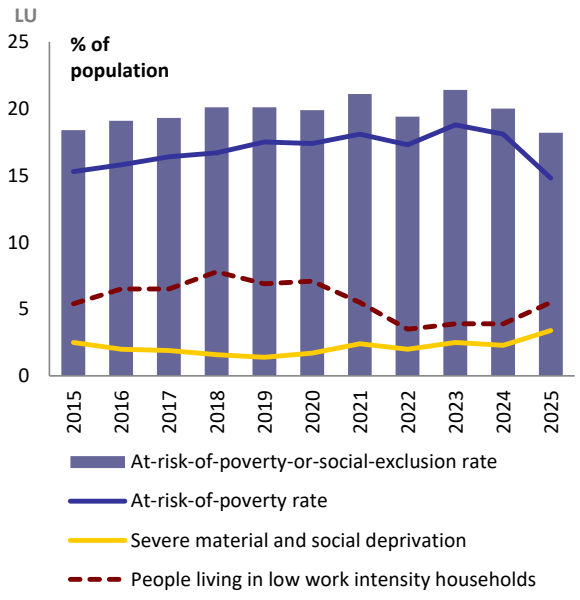
([374])See Annex 12 for further details.

([375])OECD, 2025.

Luxembourg faces challenges linked to child poverty, wage disparities and the cost of living, though significant measures are being taken. These challenges are underpinned by a number of structural issues, including the composition of Luxembourg's labour market and high housing costs. Vulnerable groups, such as the non-EU-born, the low skilled and single-parent households, are particularly affected. However, a new, wide-ranging, multiannual national action plan to combat poverty is expected to bolster Luxembourg's already comprehensive social welfare system, helping to rectify the situation and boost inclusive growth and competitiveness.

Recorded levels of poverty were lower in 2025 as data collection on income and living conditions improved, although previous data showed levels were already decreasing. The at-risk-of-poverty or social exclusion (AROPE) rate had fallen from slightly above the EU average in 2023 (21.4% vs 21.3%) to 1 percentage point (pp) below the EU average in 2024 (20.0% vs 21.1%), driven primarily by a slight drop in the at-risk-of-poverty (AROP) rate (18.8% to 18.1%) and an even smaller drop in the severe material or social deprivation (SMSD) rate (2.5% to 2.3%). This may be attributed to the easing of inflation over the 2023-2024 period as well as the support provided to lower-income families: minimum-wage increases and automatic wage indexation, increased cost-of-living and energy allowances, as well as easier access to the latter. Luxembourg's 2025 data on income and living conditions incorporates administrative data for the first time ([376]). AROPE now stands at 18.2%, AROP is significantly lower at 14.8% and SMSD is higher at 3.4%, as is the share of people living in households with very low work intensity (5.5%). People living in rural areas are twice as likely to be at risk of poverty and social exclusion compared to those in cities. This is due to numerous factors, including labour market dynamics and the limited absorption of social transfers, as detailed below. The number of people at risk of poverty or social exclusion is 4 000 higher in 2025 than in 2019 and now stands at 123 000. Luxembourg's 2030 target is to reduce the number of people at risk of poverty or social exclusion by 4 000 compared to 2019.

Graph A12.1: **At-risk-of-poverty or social exclusion rate and its components (AROP, SMSD, LWI)**



(1) AROPE: At-risk-of-poverty or social exclusion rate (% of total population).
Source: Eurostat, EU-SILC [ilc_peps01n]

Poverty or social exclusion are much higher among children than the overall population. As with overall rates of poverty, a declining trend was observed before the change to data collection in 2025. The AROPE rate for children had fallen from 26.1% in 2023 (vs EU 24.9%) to 25.6% in 2024 (vs EU 24.2%), with a drop in the SMSD rate from 3.8% in 2023 to 3.4% in 2024 (well below the EU average of 7.9%), at least partly due to targeted cost-of-living subsidies and in-kind child transfers such as the *chèque-service accueil*. However, the percentage of children living in households with very low work intensity had risen from 1.9% in 2023 to 2.6% in 2024, reflecting the deterioration in labour-market conditions over the period (see Annex 11) although this too remains well below the EU average of 7.4%. Following the methodology change in 2025, AROPE for children is 25.2%, AROP is only slightly lower at 22.2%, while SMSD is almost double the previous recorded level, at 5.8%. The most significant sub-component of the child AROPE rate remains the AROP rate, pointing to uneven income distribution as the main driver. Single-parent households are particularly vulnerable, with 40.5% of them facing poverty risks in 2025.

([376]) https://statistiques.public.lu/en/actualites/2026/stn14-26-silc.html; the inclusion of administrative data should improve the accuracy and reliability of the statistics, though the break in series makes comparison across time less reliable.

Luxembourg is taking significant steps to reduce poverty. A national action plan to combat poverty was presented in December 2025, backed by around EUR 1 billion from the pooling of existing social funding. The action plan intends to address the challenges outlined above from a holistic, interministerial perspective, with over 100 measures such as increased benefits (especially for families with children and low-income households), improved take-up of benefits through automation and simplification (particularly through the rollout of the *guichet social unique* – a 'one-stop shop' for issues relating to social welfare), more affordable housing (including through affordable rental housing, though homelessness will be addressed in a separate strategy), better healthcare for the most vulnerable, lifelong learning and employment (with a focus on vocational training and youth employment). The action plan is supported by a governance structure with indicators and deliverables to be achieved as from 2026. A comprehensive approach, as set out both in Luxembourg's action plan and in the EU anti-poverty strategy, remains key to addressing the multiple dimensions of poverty and achieving the national anti-poverty target.

Luxembourg has taken measures to reduce child poverty. Several actions have been taken within the framework of the European Child Guarantee, including free meals for children in need at various stages of their schooling, as well as free health screenings and vaccinations. Nevertheless, there are persistent social challenges linked to migration and multilingualism and data monitoring gaps, making it difficult to assess whether all children in need truly have effective access to various initiatives ([377]).

Several factors contribute to income inequality, including sectoral differences and the wage gap between low-skilled and high-skilled jobs. Average annual gross salaries in Luxembourg's financial and insurance sector – which plays a significant role in the economy – are around 50% higher than the average for the entire economy. Salaries earned in this sector are, for instance, 2.8 times higher than those in the hospitality sector ([378]). High salaries, while not limited to the financial sector, contribute to increased wage polarisation. Income polarisation is often a reflection of the wage gap between low-skilled and high-skilled jobs: workers without upper-secondary education earn on average 25% less than those with upper-secondary education (above the OECD average of 17%), while those with tertiary education earn about 55% more than those with only upper-secondary education (slightly above the OECD average of 54%) ([379]). Income inequality, combined with other factors such as high housing costs (see Annex 16) and the limited inequality-reducing effect of taxes and transfers, also means Luxembourg has a poverty threshold and in-work poverty rate above the EU average (9.5% vs 8.3%) (see Annex 11 for further details).

The impact of social transfers in reducing monetary poverty fell consistently between 2010 and 2024, but the underlying level is likely to have been underestimated. The impact had decreased further from 27.4% in 2023, when it was well below the EU average of 34.7%, to 27.0% in 2024. This is largely explained by low take-up rates of social benefits (excluding pensions), which are affected by numerous factors, including limited awareness of the benefits available, complex information channels and application processes, low-income thresholds and the fear of stigmatisation ([380]). However, following the change in methodology for collecting data on income and living conditions, the impact of social transfers was recorded at 44.0% in 2025, suggesting that the old methodology underestimated the impact. In January 2025, Luxembourg also simplified the application process for benefits: households receiving social inclusion benefits also automatically receive the cost-of-living benefit and the energy allowance. It should be noted that Luxembourg provides other in-kind contributions which are not captured by poverty risk indicators, such as free public transport, free schoolbooks and free meals for school students ([381]). Social economy organisations

([377])https://reform-support.ec.europa.eu/publications-0/strengthening-monitoring-evaluation-childrens-rights-and-establishing-sustainable-stakeholder_en.

([378])STATEC, *Work and Social Cohesion Report* (2024).

([379])OECD, *Education at a Glance* (2024).

([380])Franziskus, A., & Guio, A.-C. (2024), *Précarité et (non-)recours aux aides financières au Luxembourg: Une étude qualitative* (LISER study commissioned by the Luxembourg Chamber of Employees, CSL).

([381])For all children in Early Childhood Education and Care (ECEC) and primary schools, and for children from low-income families in secondary schools.

could play a complementary role by facilitating outreach, supporting benefit take-up and providing locally rooted social and care services for vulnerable households.

The inequality-reducing effect of taxes and transfers is also relatively low. In 2023, the figure was 34%, significantly below the 49% average in the EU ([382]). The Commission's 2025 Annual Report on Taxation ([383]) shows that Luxembourg's tax-benefit system does not reduce inequality as effectively as in other Member States. In 2023, Luxembourg had relatively high revenues from personal income taxes as a share of GDP (11.6% vs an EU average of 9.3%), but this largely reflected the mechanical effects of automatic wage indexation on taxable incomes rather than a deliberate increase in redistribution through targeted transfers to lower-income households. In addition, since 2010, this share has increased from 7.4%, while revenues from corporate income taxes have decreased from 5.4% to 5%.

Energy poverty is relatively low. In 2025, 3.5% of the population was unable to keep their homes adequately warm, compared with 8.8% on average in the EU. However, the extension of the new EU emissions trading system to buildings (ETS2) may increase pressure on vulnerable households. Heating expenditure in Luxembourg is expected to rise more than the EU average under ETS2, as ETS2-covered fuels, primarily oil and gas, account for 75% of the final energy consumption of households, compared with just 42% across the EU. In this context, it would be beneficial to increase energy-efficiency investments targeting households experiencing energy poverty. From 2026 onwards, the European Social Climate Fund will support the most vulnerable households through investments of this kind.

([382])https://employment-social-affairs.ec.europa.eu/economic-inequalities-eu-key-trends-and-policies_en.

([383])https://taxation-customs.ec.europa.eu/taxation/economic-analysis/annual-report-taxation_en.

Luxembourg is seeking to improve student performance and skills, but challenges remain, including education inequalities and participation in adult learning. Early school leaving remains below the EU average, although recent estimates point to some volatility. The youth unemployment and the rate of young people not in employment, education or training (NEET) have improved. People who have completed vocational education and training (VET) typically enjoy high employment rates, but there is scope to further improve the attractiveness of VET, particularly in science, technology, engineering and mathematics (STEM) areas, as a pathway into work. Participation in tertiary education is high, but it does not fully respond to labour market needs due to insufficient enrolment in STEM programmes, particularly among women. Training participation among adults could increase substantially, particularly for older workers and the low qualified, and especially regarding digital and green skills, to address skills mismatches and sustain a competitive workforce and economy. The 2025 country-specific recommendations highlighted the need to improve performance and ensure equal opportunities in schools, including through a national school quality framework and an external school evaluation system, and to address skills mismatches by stimulating skills development.

Luxembourg will introduce a childcare place guarantee by 2030, while measures improving the quality of early childhood education and care (ECEC) are ongoing. In 2024, 82.5% of children from birth to the start of compulsory primary education participated in ECEC, the highest share in the EU. Children aged 1 to 4 attending childcare facilities participating in the childcare service voucher scheme (Chèque-Service Accueil, CSA) are entitled to 20 hours of free childcare per week, to ensure social equity and reduce financial burden on low-income families. However, providers of non-contracted (non-conventionné) facilities may charge additional fees. Measures to improve the quality of ECEC are ongoing, including strengthening staff-to-child ratios, continuing longer-term efforts to expand childcare capacity and improve access to full-time ECEC provision across municipalities, and introducing additional pedagogical support in pre-primary settings.

Challenges linked to multilingualism in ECEC persist. To reflect the linguistic diversity of society, childcare services are mainly offered in Luxembourgish or French, while German remains a key language of instruction in primary education. Literacy in German and Luxembourgish is treated as a single competence, with the expectation that language skills acquired in Luxembourgish will transfer into German language skills. However, research conducted by LUCET does not confirm ([384]) such transfer effects. Children who are not exposed to Luxembourgish at home – nearly 70% of children – tend to experience difficulties in German reading comprehension at later stages of education ([385]).

The quality of education remains relatively stable; however, disparities linked to the language background of students persist. Between 2020 and 2022, average competency levels measured by the national tests (ÉpStan) remained relatively consistent in primary and secondary schools ([386]). Unlike international trends, declines were observed more in language subjects than in mathematics. Also, contrary to cross-country patterns, language background has a greater impact on school results than socio-economic characteristics ([387]). Positively, Luxembourg improved the level of students' digital basic skills between 2018 and 2023.

The roll-out of the French literacy reform, catering for linguistic diversity among pupils, is planned for the 2027/2028 school year. The government has adopted a law introducing French literacy in all primary schools starting in 2027/2028. This far-reaching reform grants parents and pupils the right to choose the language of literacy – German or French. In the longer term, it is expected to improve the performance of children who do not speak German or Luxembourgish at home. It builds on the ALPHA pilot project, which demonstrated promising results in terms of performance, motivation, classroom participation and language-appropriate

([384]) Early Childhood Education and Care in Luxembourg (LUCET).

([385]) ÉpStan Dashboard: Results from the Luxembourg school monitoring programme 'Épreuves Standardisées'. http://dashboard.epstan.lu.

([386]) Présentation : Rapport national sur l'éducation – Luxembourg 2024.

([387]) Ibidem.

literacy ([388]). The reform will be rolled out gradually as the first cohort progresses through primary education, with full implementation expected by the 2032/2033 school year. Its success in improving students' skills will depend on schools' capacity to provide targeted, differentiated support to students and on teachers' readiness to manage diverse linguistic profiles. Teacher unions (SNE/CGFP) have highlighted issues that need to be tackled before the national roll-out of the reform, including scheduling and classroom availability for parallel French and German tracks and the process for choosing the literacy language.

Students at European public schools (EPS) perform better, but the impact on inequalities warrants close monitoring. Early evidence from the National Education Report 2024 indicates that learning in familiar or preferred languages can enhance academic performance. The share of pupils attending EPSs is increasing, with 4.9% in the 2024/2025([389])), and demand surpasses the number of available places. However, EPSs can enrol students selectively, which has led to an over-representation of students from higher socio-economic backgrounds.

Starting from the 2026/2027 school year, a revised curriculum for primary education will be implemented. Key drivers of the curriculum reform (*plan d'études*) are new challenges in society, such as digital transformation, well-being issues, multilingualism and democratic citizenship. The curriculum defines competency frameworks for each developmental and learning domain, specifying the skills students are expected to acquire by the end of each cycle, as well as the annual number of lessons across these domains. However, Luxembourg still lacks a unified quality framework and external evaluation system (except the ÉpStan system used to monitor learning outcomes).

Luxembourg promotes digital well-being and responsible use of artificial intelligence (AI) in schools. The government has introduced a ban on the use of mobile phones in primary schools and limited their use in secondary schools, as part of efforts to support a better screen-life balance. In 2025, the Ministry of Education, Children and Youth introduced the 'KI Kompass' strategic framework, which aims to guide the responsible integration of AI into the education system. The framework categorises AI use in education into three phases based on age and digital maturity of students: learning without AI (with emphasis on human skills), learning about AI (understanding systems and risks), and learning with AI (critical, creative use of AI as a learning tool). Additionally, the ministry has launched the ki-kompass.lu platform, which offers validated AI tools for schools, professional development modules for educators and a dedicated support service for AI queries.

Early school leaving, particularly among vulnerable pupils, contributes to higher NEET rates. Although the early school leaving rate remains below the EU average, challenges in educational attainment and school-to-work transitions persist for some categories. The highest dropout rates occurred in introductory or integration pathways. These are typically attended by socio-economically vulnerable pupils with learning gaps – including in languages – and those who have recently arrived in Luxembourg ([390]). In addition, boys were 50% more likely to drop out than girls in the 2023/2024 school year ([391]) (see also Annex 11). Young people leaving education early are more exposed to inactivity and unemployment, as reflected in relatively high youth unemployment and NEET rates. NEET rates also tend to rise with lower levels of education: in 2024, the NEET rate (among those aged 15-29) stood at 11.9% for those with less than primary, primary or lower secondary education (ISCED 2011 levels 0-2), at 9.8% ([392]) for those with upper secondary or post-secondary non-tertiary education (levels 3-4), and at 8.7% for those with upper secondary, post-secondary non-tertiary or tertiary education (levels 3-8).

Luxembourg is implementing measures to combat early school leaving. By September 2026, the mandatory school age will be raised from 16 to 18 – a third of dropouts occur between

([388])Hornung, C., Colling, J., Esch, P., Keller, U., Hellwig, A., Ugen, S. (2024). *Erste Ergebnisse zum Pilotprojekt „Alpha – zesumme wuessen"*. Nationaler Bildungsbericht Luxemburg 2024. www.bildungsbericht.lu.

([389])Luxembourgish Education Ministry press release.

([390])Ibid, p. 16.

([391])Education and Training Monitor, 2025.

([392])Data flagged as being 'unreliable' by Eurostat, but the general trend is confirmed over many consecutive years.

these ages – and this reform is expected to significantly reduce early school leaving. The National Youth Service contacts early school leavers to assess their needs and helps them reconnect to the labour market or further education. The network of Centres d'insertion socioprofessionnelle (CISP) provides alternative schooling pathways with highly individualised support, and is currently being expanded.

The student population is growing, and projections for 2025-2030 indicate a substantial number of extra teachers needed in secondary education. Between 2019/2020 and 2024/2025, the number of students in primary and secondary education increased by almost 9%. This demographic change puts pressure both on school infrastructure and on teachers. According to government projections, over 500 teachers will be needed by 2030 to fill vacancies in secondary education: over 400 teachers in German, French and English, and more than 160 in mathematics. These needs arise mainly from reducing supplementary teaching hours, replacing retiring teachers and responding to enrolment growth ([393]). Teaching is a very attractive profession in Luxembourg due to high salaries, good job security ([394]). However, high entry requirements, including proficiency in all three national languages, make it difficult to recruit enough prospective teachers. Although around 1 000 students are currently enrolled in language or mathematics and statistics programmes at higher institutions, it is unclear how many intend to pursue a teaching career.

There is scope to improve the attractiveness of vocational education, particularly in STEM, as a pathway into work. In 2023, 6 out of 10 students in medium-level education were enrolled in programmes with a vocational orientation (58.0%; EU average: 52.9%), although this figure has fallen since 2018 (62.6%). The proportion of initial VET students in combined school- and work-based programmes (ISCED level 3) was only 21.8% in 2023, compared to an EU average of 29.6% and countries with higher rates such as the Netherlands (89.3%) and Germany (89.2%) ([395]). In 2023, only 34.5% of people who had recently completed VET had experienced work-based learning ([396]), well below the EU average (64.6% in 2023, 65.2% in 2024). Despite this, in 2023, people who had recently completed VET had an employment rate of 80.0%, similar to the EU average (80.9% in 2023, 80.0% in 2024). Luxembourg had the lowest share of female graduates (17.2%) in post-secondary non-tertiary vocational programmes in 2023. Enrolment in STEM fields in medium-level VET, which stood at 26.8% in 2024, is well below the EU average ([397]) (36.6%) and the proposed EU-level 2030 target (45%). In 2024, 17.0% of medium-level VET students in STEM subjects were female, above the EU average (15.9%).

Several initiatives aim to promote vocational pathways, involving skills for the green and digital transitions. A 2024 law introduces financial support for employers who take on employees in basic vocational or initial vocational training during employment. *YEP!-Schoulfoire* is an annual education and career fair, including campaigns for vocational education and apprenticeships, bringing together candidates, companies and training providers. Luxembourg is currently developing a legal framework to allow individuals with VET degrees to continue into higher education, aiming to increase flexibility between pathways. In September 2024, it launched one of the milestones under its recovery and resilience plan – the 'Skillsbridges' vocational training initiative – which will offer around 20 courses, helping adults to adapt to new technologies (upskilling) and facilitating career changes (reskilling). From the 2025/2026 school year, up to 800 people should benefit from these sessions, which aim to cover areas such as AI, the green transition, renewable energies, construction and hospitality. There is scope to better align the supply of candidates with employers' demand for apprentices, notably by closely involving professional chambers and employer organisations, including in STEM subjects. To

([393]) QP 2915 : Pénurie de professeurs dans certaines disciplines - Nachrichten - Éducation nationale, Enfance et Jeunesse - Luxembourg.

([394]) Education and Training Monitor 2023.

([395]) https://www.cedefop.europa.eu/en/data-insights/2-how-many-students-participate-work-based-initial-vet.

([396]) No data for 2024, although the figures for Luxembourg and the EU average have been stable in recent years.

([397]) The definition used by Luxembourg differs from the standard Eurostat definition, and comparisons with other countries should be made with caution.

address issues of multilingualism in VET, starting in the 2025/2026 school year, three new French-language programmes were introduced: *Diplômes d'Aptitude Professionnelle* (DAP) in opticianry, tattooing and carpentry. In total, 39 DAP and six *Diplômes de Technicien* (DT) will be offered in French, and 27 programmes leading to the *Certificat de Capacité Professionnelle* (CCP) will be bilingual in instruction, with some courses in French and others in German. Programmes in English are also being expanded: from 2025/2026, the DT in administration and commerce and the DAP in machining are offered in English.

Luxembourg is among the EU leaders in tertiary attainment, but a mismatch persists between programmes preferred by students and labour market needs. In 2025, 65% of 25-34-year-olds held a tertiary degree, compared with the EU average of 44.8%. Luxembourg has a substantial urban-rural gap in tertiary education attainment among young people (aged 25-34) at 36.6 percentage points (pps), while the EU average is 22.0 pps. However, this gap is partially due to the highest participation in tertiary education in cities (89.4%) within the EU. Attainment levels are particularly high among the foreign-born population, at 74.8% vs 52.7% for those born in Luxembourg. However, a misalignment exists between students' programme choices and labour market needs, with many graduates holding degrees in fields that are not among those most in demand ([398]) (see Annex 11). Skills shortages are particularly severe in IT and engineering, while the share of tertiary students enrolled in STEM subjects in 2023 was 27.4% (EU average: 26.9%), below the EU-level target of 32%. The share of female students in STEM subjects also remained below the EU. The share of ICT graduates reached 8.5% in 2024, among the highest in the EU (DESI 2026), but declined from 9.7% in 2023, when Luxembourg recorded the highest share. The employment rate of recent tertiary graduates stood at 92.4% in 2025, close to the EU average of 87%. In 2025, the government proposed a reform of the state financial aid for higher education students to enhance fairness and better adapt financial support to socio-economic realities. The draft reform maintains the existing four-pillar structure of financial support, while introducing several targeted adjustments.

The participation of older workers and adults with low levels of qualification in learning programmes is relatively weak, while digital skills levels could be strengthened. Adult participation in learning (excluding guided on-the-job training) according to the adult education survey (AES) rose from 42.6% in 2016 to 45.2% in 2022, and was above the EU average in both years (37.4% in 2016 and 39.5% in 2022). Luxembourg nonetheless remains far (−17.3 pps) from its ambitious 2030 national target of 62.5% ([399]). More recent data, from the labour force survey, suggest a possible further increase in participation between 2022 and 2024. In 2022, participation of older workers was slightly below the EU average (29% vs 29.9%) and only just above average for those with low qualification levels (20% vs 18.4%) ([400]). There is scope to implement a more comprehensive strategy for upskilling and reskilling the 45+ working population, including through individual learning accounts. Regarding digital skills, in 2025, 62.4% of individuals (16-74) had at least basic digital skills, just above the EU average of 60.4%, but a reduction on 2021 (63.8%), against a background where most Member States recorded more significant rises. The share of women with digital skills (60.9% in 2025; EU average: 59.0%) is lower than that of men (63.8%; EU average: 61.8%), but it has increased since 2021 while men's levels have fallen. Among people aged 16–24, only 63.6% had at least basic digital skills in 2025, significantly below the EU average of 74.5% (DESI 2026). The European Social Fund Plus (ESF+) cofinances measures promoting lifelong learning in connection with skills needs for both jobseekers and employees, including older workers. Disadvantaged groups are covered via integrated pathways into work, including training and workshops for social and professional reintegration. The 'Skills4Job' programme is cofinanced by the ESF+ as an operation of strategic importance and aims to support labour market reintegration. Overall, 35.4% of the ESF+ allocation targets the development of green and digital jobs and skills (EUR 5.5 million).

([398])OECD Economic Surveys: Luxembourg 2025.

([399])AES data are used for monitoring progress towards the 2030 adult learning target.

([400])Education and Training Monitor 2024.

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

Equal opportunities and access to the labour market	Adult participation in learning (during the last 12 months, excl. guided on the job training, % of the population aged 25-64, 2022)	45.2
	Early leavers from education and training (% of the population aged 18-24)	
	Share of individuals who have basic or above basic overall digital skills (% of the population aged 16-74, 2025)	62.4
	Young people not in employment, education or training (% of the population aged 15-29, 2025)	8.7
	Gender employment gap (percentage points, population aged 20-64, 2025)	6.8
	Income quintile ratio (S80/S20, 2025)	4.60
Dynamic labour markets and fair working conditions	Employment rate (% of the population aged 20-64, 2025)	73.9
	Unemployment rate (% of the active population aged 15-74, 2025)	6.5
	Long term unemployment (% of the active population aged 15-74, 2025)	2.0
	Gross disposable household income (GDHI) per capita growth (index, 2008=100, 2024)	113.1
Social protection and inclusion	At risk of poverty or social exclusion (AROPE) rate (% of the total population, 2025)	18.2
	At risk of poverty or social exclusion (AROPE) rate for children (% of the population aged 0-17, 2025)	25.2
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2025)	44.2
	Disability employment gap (percentage points, population aged 20-64)	
	Housing cost overburden (% of the total population, 2025)	8.1
	Children aged less than 3 years in formal childcare (% of the under 3-years-old population, 2025)	56.4
	Self-reported unmet need for medical care (% of the population aged 16+, 2025)	1.1

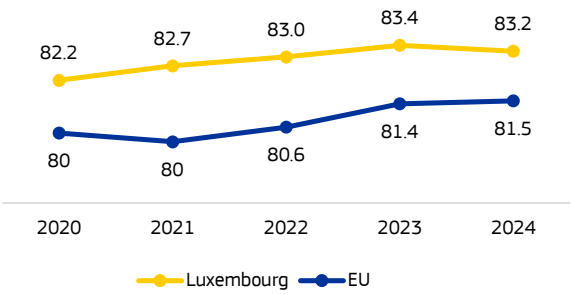
Critical situation	To watch	Weak but improving	Good but to monitor	On average	Better than average	Best performers

Update of 4 May 2026. Members States are categorised based on the Social Scoreboard according to a methodology agreed with the EMCO and SPC Committees. Please consult the Annex of the Joint Employment Report 2026 for details on the methodology (https://employment-social-affairs.ec.europa.eu/joint-employment-report-2026_en).

Source: Eurostat

Luxembourg's health system performs comparatively well, with high life expectancy at birth and low treatable and preventable mortality. However, access to healthcare in Luxembourg is affected by staff shortages and fragmented service delivery. There are also opportunities to enhance efficiency through better use of data and technology. These challenges affect the public's health, social fairness and productivity. The *2025 country-specific recommendations (CSRs)* highlighted the need to *ensure availability of health workforce and accelerate reforms ([401]).*

Graph A15.1: **Life expectancy at birth, years**



Source: Eurostat (indicator: demo_mlexpec)

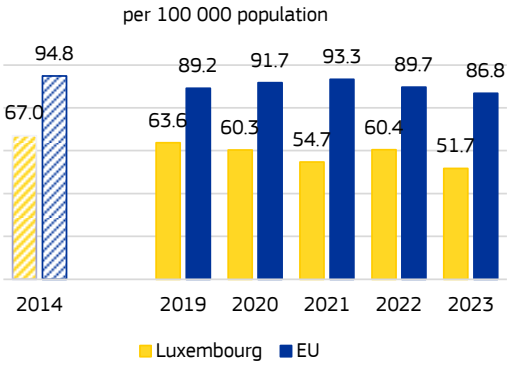
Life expectancy at birth in Luxembourg rebounded above its pre-COVID-19 level and was among the highest in the EU in 2024. The gender gap in life expectancy in Luxembourg is smaller than in most EU countries: women could expect to live 4.7 years longer than men in 2024, compared with an EU average gap of 5.2 years.

Cardiovascular diseases (CVDs) and cancer remained the leading causes of death in 2023, with behavioural and environmental risk factors accounting for around one quarter of all deaths ([402]). Tobacco use is the main risk factor, followed by dietary risks, highlighting the scope for stronger preventive measures.

Luxembourg combines very low levels of treatable mortality (Graph A15.2) **– among the lowest in the EU, reflecting an effective health system – with high health spending.** Health expenditure per capita was around 20% above the EU average in 2023, alongside a high share of public spending, suggesting potential scope to improve efficiency while maintaining strong health outcomes.

Luxembourg has put in place a range of measures to address preventable and treatable health risks but lacks an overarching public health strategy. Action on CVDs has been strengthened through a dedicated 2023-2026 CVD Plan and the 2023 National Health Plan, which promote early diagnosis and stronger care pathways for people living with CVDs. The National Cancer Plan (2020-2024), focused on prevention, care coordination and research, has been extended until 2026. However, there is no overarching public health strategy, and several national action plans targeting key risk factors have recently expired without renewal or evaluation. A public health law is currently under development. In 2023, spending on prevention accounted for around 3% of total health expenditure, below the EU average of 4%.

Graph A15.2: **Treatable mortality**



Age-standardised death rate - mortality that could be avoided through optimal quality healthcare.
Source: Eurostat (indicator: hlth_cd_apr)

Greater emphasis on prevention has the potential to generate efficiency gains while further improving health outcomes. Preventable mortality declined faster than the EU average between 2014 and 2022; however, the gap narrowed in 2022, as preventable mortality increased in Luxembourg, while the EU average fell compared with 2021. Significant risk factors persist and are unevenly distributed, with

([401]) CSR 5.3 *Improve the resilience of the health system by accelerating the reforms and ensuring appropriate availability of health workers.*

([402]) OECD/European Observatory on Health Systems and Policies (2025), *Country Health Profile 2025: Luxembourg. State of Health in the EU.*

substantial differences by education level and higher rates of smoking and obesity among men. Smoking among adolescents has decreased markedly, with the share of 15-year-olds reporting that they had smoked in the past month falling from 21% in 2014 to 14% in 2022, below the EU average. However, vaping has become increasingly prevalent: in 2022, 17% of 15-year-olds reported e-cigarette use in the past month, exceeding conventional cigarette smoking and highlighting emerging risks to young people's health. New legislative measures, effective from 1 January 2026, extend tobacco-equivalent obligations and restrictions to nicotine pouches and other novel nicotine products. Obesity remains relatively high and above the EU average, with a sharper increase among adolescents: the share of overweight and obese 15-year-olds rose from 18% in 2014 to 22% in 2022, particularly among boys, driven mainly by poor nutrition and physical inactivity. To respond, Luxembourg launched a one-year pilot in January 2026 introducing a preventive medicine programme for physical activity prescription, enabling doctors to refer eligible patients to specialised facilities offering therapeutic physical activity, notably for cancer, type 2 diabetes and cardiovascular diseases. Luxembourg benefits from the Technical Support Instrument (TSI) project focused on cancer screening and treatment, which aims to implement a lung cancer screening programme and to comprehensively assess all existing population-based cancer screening programmes.

Fragmentation in healthcare delivery and the use of data continue to present challenges, which may limit potential efficiency gains. Recent measures focus on improving the general governance framework and strengthening the use of evidence in policymaking and are a step in the right direction to address the *2025 CSR*. The first national health plan, published in 2023 following the *Gesondheetsdësch* roundtable and supported by the Recovery and Resilience Plan (RRP), identifies key system challenges and sets strategic priorities, although without concrete or measurable targets. To address this gap, the government is developing public health legislation to clarify roles, responsibilities and financing arrangements. The 2023 merger of two ministries into the Ministry of Health and Social Security marked an important step towards stronger governance and improved policy coordination, although an interministerial body could further enhance thematic and budgetary alignment across sectors. Additional progress includes the establishment of the National Health Observatory in 2022 and of the health system performance assessment framework under the TSI project, with the launch and implementation of the new methodology in 2026. This should strengthen evidence-based policymaking and data use and support better planning and mechanisms for priority setting. Further efficiency gains are expected from the law establishing a National Central Purchasing and Logistics Agency, which entered into force on 1 February 2026 and aims to streamline procedures, reduce administrative burdens on health professionals, improve productivity and deliver budgetary savings.

Luxembourg's health system remains hospital-centred, with a strong reliance on specialised services Avoidable hospital admission rates are above the EU average contributing to inefficiencies. The country's small population limits the availability of some specialised services, often requiring treatment abroad. Waiting times remain a public concern, particularly for emergency, specialist, diagnostic and cancer care.

Reforms are underway to strengthen ambulatory and primary care, but their impact remains uneven. To address these challenges, several initiatives have been introduced to bolster ambulatory and primary care, also helping to contain costs. Since 2023, integrated care networks linking primary and specialised providers have been established for specific conditions, including chronic pain, neurodegenerative diseases, and adult and paediatric immuno-rheumatology, with additional networks for diabetes and severe obesity authorised in 2025. Expanding these networks presents an opportunity to further strengthen primary care and support greater adoption of the 'referring physician' model. The impact of voluntary registration with a referring physician alongside electronic health records remains mixed due to low uptake by providers and patients and limited incentives. Discussions are ongoing regarding the development of doctors' group practices and other primary care structures, including extended opening hours and funding frameworks to compensate for longer service times. Measures have also included reforming diagnostic services, setting waiting-time targets, decentralising and expanding imaging capacity, and improving triage in emergency departments.

Table A15.1:**Key health indicators**

	2020	2021	2022	2023	2024	10-year change**	EU average* (latest year)
Cancer mortality per 100 000 population	203.1	203.4	195.4	191.6	n.a.	0.74	233.1 (2023)
Mortality due to circulatory diseases per 100 000 population	224.4	213.2	220.3	213.1	n.a.	0.72	313.0 (2023)
Current expenditure on health, purchasing power standards, per capita	3 811	4 127	4 303	4 567	4 972	1.45	3834.9 (2023)
Public share of health expenditure, % of current health expenditure	86.5	86.2	86.1	85.6	85.8	1.03	80.6 (2023)
Spending on prevention, % of current health expenditure	5.3	6.4	4.6	3.2	2.7	1.28	3.7 (2023)
Available hospital beds per 100 000 population***	340	335	320	316	n.a.	n.a.	440 (2023)
Doctors per 1 000 population*	3.7	3.8	3.9	4.0	n.a.	1.33	4.3 (2023)*
Nurses per 1 000 population*	11.4	11.4	11.4	11.4	n.a.	1.05	7.6 (2023)*
Mortality at working age (20-64 years), % of total mortality	15.6	16.4	16.3	15.6	15.3	0.92	14.3 (2023)
Consumption of antibiotics in the community and hospital sectors, defined daily doses per 1 000 inhabitants	16.1	15.9	19.1	20.2	21.6	0.92	20.3 (2024)

*The EU average is weighted for all indicators except for doctors and nurses per 1 000 population, for which the EU simple average is used based on 2023 data (or latest available). Doctors' density data refer to practising doctors in all countries except Greece, Portugal (licensed to practise) and Slovakia (professionally active). Density of nurses: data refer to practising nurses (EU recognised qualification) in most countries except Portugal (licensed to practice) and Slovakia (professionally active). Latest data update on nurses for Belgium and Sweden: 2022; for France: 2021; for Luxembourg: 2017.
** latest available 10-year trend: ratio 2023/2014 or 2024/2013; a factor of 2.00 means that it has doubled in 10 years.
***'Available hospital beds' covers somatic care, not psychiatric care.
Source: Eurostat

As a result, delays have been significantly reduced. However, challenges persist due to uneven waiting times across hospitals, high use of services by non-residents, and high diagnostic exam rates, raising concerns about the suitability of care and low-value care. The Hospital Act, adopted by the Chamber of Deputies on 18 December 2025, supports a shift towards day care and ambulatory services by creating additional outpatient sites and satellite units for minor procedures, particularly in dermatology and ophthalmology. The act also strengthens acute and medium-stay care capacity by integrating beds from the health reserve and updating maximum hospital bed numbers to better reflect current activity levels and local needs. The TSI will help modernise primary care and provide recommendations for incentive and financing mechanisms to support efficient primary care delivery.

Shortages of health professionals remain a key challenge in Luxembourg. The country's strong reliance on foreign-trained and cross-border health workers creates vulnerabilities, as fluctuations in workforce availability can directly affect access to care. The density of doctors in Luxembourg is below the EU average (see Table A15.1). According to government projections, between 59% and 69% of medical doctors are expected to retire by 2034. The 2023 National Health Plan aims to recruit over 1 200 additional doctors by 2030 to reach the EU average. While the share of general practitioners (GPs) is above the EU average, there are notable geographical disparities, with higher GP densities concentrated in cantons hosting hospitals. Nursing staff numbers are higher than the EU average (see Table A15.1). Nevertheless, Luxembourg faces a significant future shortage: around 900 nursing positions need to be filled over the next five years, far exceeding domestic training capacity, which produced only 68 graduates in 2023-24. The 2023 National Health Plan aims to recruit 3 800 additional nurses by 2030.

Luxembourg's reliance on cross-border healthcare workers was a critical issue during the 2020 border closures, underscoring the need for strategic health system planning. In 2017, 68% of GPs and 49% of specialist doctors were Luxembourgish. Additionally, 75% of doctors resided in Luxembourg, while 25% lived in neighbouring countries. In 2019, 30% of nurses were Luxembourgish, and only 35% of nurses resided in Luxembourg ([403]). The proportion of hospital employees commuting from neighbouring countries has risen from 44.9% in 2019 to 48% in 2023. Luxembourg's small population also means that certain specialised treatments are only available abroad. The Emergency Preparedness and Response Unit, established in 2021, is to develop a legal framework to formally recognise and enable the rapid deployment of a permanent health professional reserve. This initiative builds

([403])Observatoire National de la Santé, European Observatory on Health Systems and Policies, Luxembourg: Revue du système de santé, 2025.

on lessons from the COVID-19 pandemic, when a temporary workforce reserve proved essential. Measures to address *the 2025 CSR* through an increase of the domestic supply of health professionals are in progress. There are new study programmes at the University of Luxembourg – a three-year bachelor's programme in medicine (introduced in 2020), four specialised bachelor's programmes in nursing (2023) and a general nursing bachelor's programme (2024), although it is too early to fully assess their impact. Discussions are ongoing regarding the introduction of a master's degree in medicine at the University of Luxembourg to complement the bachelor's programme, with a potential launch targeted for 2029, pending evaluation results. To enhance health workforce planning, a digital health workforce registry, supported under the RRP, was developed. To address the *2025 CSR* Luxembourg also launched campaigns such as the healthcareers.lu, which aim to attract more students to healthcare careers. In addition, targeted financial incentives are available for hospital doctors and general medicine interns. Progress on legal frameworks to support task sharing and the establishment of group practices has been slow; however, measures are still planned to promote multiprofessional care models based on stronger collaboration and shared responsibilities. On 17 December 2025, the Government Council adopted preliminary regulations enabling doctors, dentists, psychotherapists and veterinarians to create companies. The bill will now enter the legislative process as part of the implementation of the 2023-2028 coalition agreement, which sets out a legal framework allowing these professionals to practise within companies composed exclusively of their respective professions.

While Luxembourg has been developing and streamlining digital health tools, fewer than one in four people accessed their personal health records online in 2024, below the EU average. The uptake of the electronic health record remains limited due to voluntary adoption and low acceptance by both providers and patients. The increase in usage in 2024 was driven by the discontinuation of CDs for medical imaging and the automatic filing of hospital discharge letters. The *GesondheetsApp*, launched in 2019, will be expanded. It currently facilitates appointment booking and administrative exchanges. It will be adapted for the secure exchange of medical information and payment of medical bills. Although Luxembourg has a unique patient identifier, it lacks a national health information system that enables systematic collection, quality control and analysis of data for population health monitoring, service use and system performance assessment. A comprehensive national digitalisation strategy adopted in May 2025 identifies three strategic priorities: artificial intelligence, data and quantum technologies. To implement the European Health Data Space, an interministerial programme led by the Ministry of Health and Social Security is under development. Luxembourg has also initiated efforts to implement the Data Governance Act. Digital health infrastructure has been a government priority, although per capita investment in health sector information and communication technology remains below the EU average (EUR 1.4 million per 100 000 population in Luxembourg vs EUR 2.4 million in the EU in 2022) ([404]). In addition to national efforts, EU funding supports digitalisation. Luxembourg participates in national and European initiatives, including Clinnova and Dataspace4Health, which connect hospitals, research institutes, the digital health agency and the National Data Service to create federated, secure health data infrastructures in line with EU legislation and Gaia-X standards. Investments under the RRP aim to accelerate telemedicine and further boost the digital transformation of the health sector.

Luxembourg's pharmaceutical sector is characterised by relatively low economic significance, as employment in pharmaceutical manufacturing is modest. Luxembourg is among the EU countries with a relatively low level of public spending on health research and development, in part reflecting the overall limited size of the country and its health system. However, participation in clinical trials relative to its population size is quite substantial. Despite smaller scales, Luxembourg's extra-EU exports have shown growth potential, reaching 0.8% in 2025. Additionally, Luxembourg's healthcare infrastructure is noteworthy, with developments in medical imaging capacity and appropriate levels of CT scanners and MRI units, enhancing its overall capabilities in healthcare services.

([404]) *Country Health Profile 2025: Luxembourg* – see earlier footnote.

Luxembourg faces persistent housing supply constraints. Land mobilisation remains limited, due, in particular, to land hoarding, the concentration of land ownership ([405]) and slow activation of planned plots. Combined with strong demographic growth and sustained cross-border labour demand, these factors have long outpaced new construction. In recent years, the slowdown in residential development has been exacerbated by higher interest rates, rising construction and material costs, labour shortages in the construction sector, and lengthy planning and permitting procedures. Against this background, Luxembourg received a 2025 country-specific recommendation (CSR) which called for increasing the housing supply through: (i) adopting a comprehensive land-use policy; (ii) a property tax reform; (iii) developing large-scale district projects on public land; and (iv) strengthening coordination with urban planning and cross-border public transport, and for mitigating risks related to the housing market by phasing out fiscal incentives to borrow and by strengthening the macroprudential framework. While first steps to partially tackle some of these problems are underway, key aspects remain unsolved.

The current tax framework does not appear to be aligned with the 2025 CSR which calls for the phasing out of fiscal incentives to borrow and by strengthening the macroprudential framework. Key demand-side tax advantages, especially mortgage interest deductibility and the permanent increase of the Bëllegen Akt (tax credit for the purchase of a primary residence), remain in place and continue to support borrowing and housing demand (Annex 3).

Pressures are particularly acute in the social and affordable housing segments. Despite policy efforts, the supply of social and affordable housing still fails to meet demand, leading to long waiting lists and limited turnover. High land prices and fiscal constraints weigh on the ability of public authorities and housing funds to scale up supply at the required pace. As a result, access to affordable housing has become increasingly constrained for low- and middle-income households, including key workers, undermining social cohesion and labour market functioning.

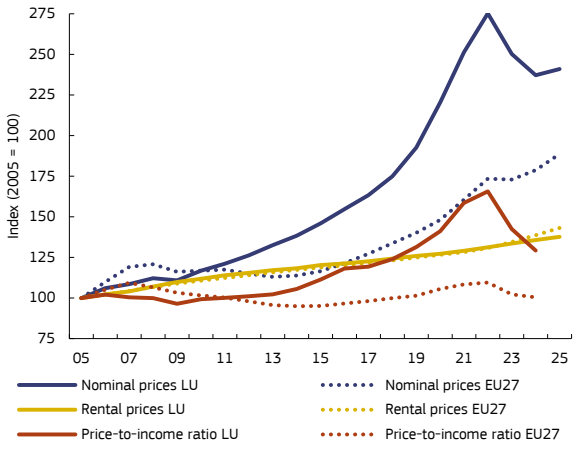
Housing affordability remains a major challenge, in particular, for vulnerable groups. Housing costs in Luxembourg are among the highest in the EU relative to income, absorbing a growing proportion of household expenditure and pushing many households into cost overburden. This affects, in particular, lower-income households, young people and single-parent families, who are facing increased risks of overcrowding, housing insecurity and energy poverty. These dynamics risk entrenching social inequalities, constraining labour mobility and weighing on long-term economic growth, while increasing pressures on social assistance systems and cross-border commuting.

Housing market developments

Despite a decline over 2023 and 2024, house prices continue to be overvalued. After doubling over a decade, house prices started to correct in 2022, falling over 15% in two years. Since late 2024, house prices have started to grow again recording 1.6% year-on-year growth in 2025. Based on the standard European Commission methodology, house price overvaluation peaked at around 40% in 2022. The gap then narrowed but remained at around 10% in 2025. Although the price-to-income ratio, which measures purchase affordability, is decreasing, it was still 9 percentage points above its long-term average in 2025. Moreover, the house price level remains high. In 2022, the average time needed to buy 100 m^2 increased to 16.1 years but fell to 12.1 years in 2025. That same year, 8.9 years were needed on average in the EU.

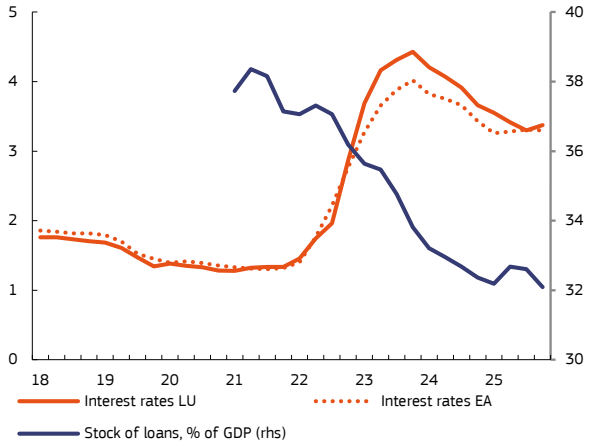
([405])Observatoire de l'Habitat, 'Note de l'Observatoire de l'Habitat n°32', 2023.

Graph A16.1: **House prices, rents and price-to-income evolution in LU and EU27 since 2005**



Source: Eurostat

Graph A16.2: **Borrowing costs and housing loans**



Source: ECB

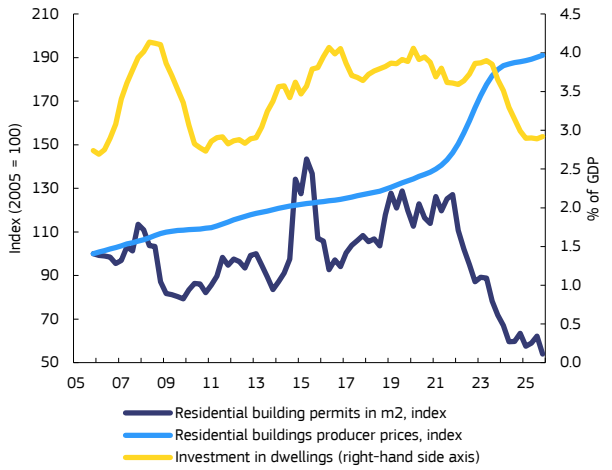
Demand for newly built housing remains relatively low despite rising demand for existing housing. In Luxembourg, there has been a sharp rise in the population. Since 2010, it has risen by around 35%. This is due to immigration, which, together with rising earnings, supports demand for housing. After a decline in prices in 2022-2023 due to the rise in interest rates and falling demand (Graph A16.2), there has been a pickup in demand for household loans and in consumer confidence. This led to a slow but steady recovery in the housing market in 2025. However, the current market improvement is mainly observed for existing buildings. This appears to be linked to two factors: (i) the price of new builds still reflecting the very high land prices from before the cooling of the housing market; and (ii) buyers being wary of the solvency of constructors and unwilling to risk their capital by buying new housing off plan.

The proportion of households renting their home has increased and rents have been rising in recent years. In 2024, 36.5% of households were renting their homes, up from a long-term average of 29%. Rental prices (including standing and new rental contracts) continued to rise. In 2024, tenants in Luxembourg spent 27% of their income on rent, making it the second highest in the euro area for rent costs as a percentage of income. The lack of housing supply alongside sustained demand, supported by a range of tax incentives has fuelled a steady rise in prices, especially since the 2000s, which over time has led to persistent tension in the rental market in Luxembourg.

Building permits are decreasing, implying that the supply shortage is expected to persist. Too few dwellings have been completed in recent years to accommodate the growing population. With permits granted for the construction of 737 m^2 per thousand people in 2024, permitting remains high compared with the EU average. However, it is falling and is historically low for Luxembourg (Graph A16.3). This leading indicator shows that the housing shortage is not expected to be addressed in the short term. Investment in residential real estate has remained low or has fallen since 2020, influenced by high construction costs, protracted planning procedures and uncertainties surrounding project profitability. In terms of investment needs, 29 432 dwellings are expected to be completed by 2035, while an estimated 133 360 new dwellings will be needed

by that year ([406]). This leaves a predicted housing construction gap of 103 928 dwellings.

Graph A16.3: **House supply indicators in LU since 2005**



Source: Eurostat

Structural policies

The shift from passive planning to more interventionist land-use tools remains limited. Municipalities are entrusted, within their autonomy, to adopt general and specific development plans (PAG/PAP). However, these tools mainly regulate how land may be used, rather than whether it must be developed, despite being legally binding and explicitly encouraging densification. The 2025 CSRs called on Luxembourg to adopt a comprehensive land-use policy. The *Bauvertrag* reform aimed to strengthen the link between planning decisions and actual housing construction implementation. However, none of its most impactful aspects (construction deadlines with sanctions, fast-track PAG amendments, ministerial land consolidation) are in force yet. The bill has remained stalled in the legislative process due to concerns over proportionality, legal certainty and the constitutional protection of property rights, resulting in multiple amendments and prolonged negotiations. In addition, its effective implementation depends on close coordination between the state and municipalities, whose administrative capacity and willingness to enforce such obligations vary (Annex 19). The 2025 CSRs also called on Luxembourg to develop large-scale district projects on public land. While Luxembourg continues to advance ongoing large-scale district developments, while also launching pilot to mobilise private land for the creation of affordable rental housing by partnering with private developers and social landlord ([407]), broader land mobilisation tools are still pending.

Luxembourg has taken steps to improve coordination between housing policy and urban planning and cross-border public transport. Luxembourg received a 2025 CSR on strengthening the coordination with urban planning and cross-border public transport. The adoption of the Article 29bis reform under the 'Pacte Logement 2.0' strengthens the integration of affordable housing requirements into local development plans by mandating a minimum proportion of affordable units in new neighbourhood projects and providing planning flexibilities to support implementation. Nevertheless, the broader structural alignment between land mobilisation, spatial planning and housing delivery remains incomplete. Amendments to the 'Pacte Logement 2.0' that aim to simplify procedures and strengthen support for municipalities were tabled in 2025 and remain under parliamentary consideration. Furthermore, Luxembourg stepped efforts to strengthen cross-border public transport to ease commuting bottlenecks and supporting labour mobility in a context of strong cross-border workforce dependence: expansion and reorganisation of the Régime Général des Transports Routiers (RGTR) on key routes, rail infrastructure investment (Annex 19), preparatory work on fare harmonisation and mobility planning (Luxmobil 2025 survey).

The property taxation reform aims to update valuations and incentivise development, but its implementation remains delayed and uncertain. Luxembourg received a 2025 CSR on adopting a property tax reform. The ongoing reform covers both the land tax and a new tax on the non-mobilisation of buildable land and seeks to address the structural inequities of the existing system, which is still based on outdated unit values, lacks automation and results in uneven taxation across municipalities. The tax on the non-

([406])Balouktsi et al. (2026) Housing investment needs in the EU. JRC Technical Report 144419.

([407])Chronicle.lu, 293 Housing Units Acquired as Affordable Housing PPP Initiative Launched, 2025.

mobilisation of buildable land seeks to address land hoarding by targeting buildable but undeveloped plots by exponentially increasing tax rates to incentivise development, alongside exemptions and abatements for agricultural use. Although the initial bill was tabled in 2022 and extensive government amendments were introduced in 2025, the absence of binding legislative deadlines makes its entry into force uncertain. The indicative timeline envisages implementation in 2028 and fiscal effects from 2030 ([408]). Based on the estimates presented, mobilising approximately 2 400 hectares of land would enable around 125 000 housing units to be developed. The tax on vacant dwellings was decoupled from the original draft legislation to prevent additional delays in the adoption of the land tax reform and the tax on the non-mobilisation of buildable land, all currently under parliamentary scrutiny.

The favourable tax treatment of owner-occupied housing may put upward pressure on house prices and prevent lower-income households from owning property. The deductibility of mortgage interest payments has been in place since 1983 and was significantly expanded in 2017 and 2023. The scheme allows for the deduction of interest payments of up to EUR 3 000 per person annually during the first six years of occupancy, corresponding to EUR 12 000 per year for a household of four. In a context of relatively inelastic housing supply, such tax relief is largely capitalised into higher property prices rather than translating into sustained affordability gains for buyers. By increasing households' borrowing capacity and willingness to pay, the measure puts upward pressure on house prices, with a significant share of the benefit accruing to property sellers. While higher-income households may have easier access to credit and may be less affected by this dynamic, the overall effect is likely to inflate prices, weaken housing affordability and potentially crowd out lower-income households from owning property, while at the same time generating substantial fiscal costs. Reflecting these challenges, Luxembourg received a 2025 CSR to phase out fiscal incentives to borrow.

Housing-related tax support introduced in 2024 was only partially withdrawn in 2025 (Annex 3), **thereby prolonging demand-side pressures in a structurally tight housing market.** Luxembourg received a 2025 CSR to mitigate risks related to the housing market by phasing out fiscal incentives to borrow and by strengthening the macroprudential framework. Although some temporary measures expired, the increased 'Bëllegen Akt' (tax credit of up to EUR 40 000 for the purchase of a primary residence) was made permanent, thereby sustaining demand-side support. Given structural supply rigidities, these instruments are unlikely to expand housing supply in the short term and may instead contribute to higher prices. As such, their continuation may weaken efforts to address affordability challenges and moderate demand pressures. Overvalued house prices, the large share of variable-rate mortgages, and high household indebtedness pose systemic risks. No new macroprudential measures have been introduced.

Despite recent reforms, the private rental market in Luxembourg remains under pressure, reflecting both regulatory frictions and insufficient supply. An increase in the proportion of rental housing could improve the dynamics of the housing market and ease constraints on labour mobility, investment and economic growth. The law on residential leases entered into force in 2024, introducing significant changes to landlord–tenant relationships, including a reduction of the rental guarantee to two months' rent, a formal system for co-tenancy, equitable sharing of agency fees, mandatory written leases and procedural protections for tenants. However, the reform has not fundamentally altered rent-setting mechanisms. As annual rent remains capped at 5% of the capital invested, the framework continues to influence expected returns and investment decisions and thus may limit supply ([409]).

The sharp decline in new housing construction in Luxembourg is primarily driven by a simultaneous deterioration in production conditions and access to finance. Construction producer prices have increased

([408]) Chambre des députés Grand-Duché de Luxembourg 'Présentation du projet de réforme de l'impôt foncier', 2025.

([409]) Kholodilin, 'Rent control effects through the lens of empirical research: An almost complete review of the literature', 2024.

significantly (+30% between Q1 2021 and Q3 2025 ([410])), while financing has become more restrictive, particularly for small and medium-sized developers. Off-plan sales (Vente en l'état futur d'achèvement, VEFA) are often a prerequisite for bank financing, as lenders rely on pre-sales to mitigate risk. Although the required threshold has fallen from around 50% to 30%, securing these pre-sales has become increasingly difficult due to declining buyer confidence, driven by recent developer bankruptcies and concerns over the effectiveness of completion guarantees. At the same time, tighter banking regulation and prudential requirements (including Basel II and European Central Bank standards) oblige banks to allocate more own funds to risky projects, discouraging smaller developments and favouring large players with strong balance sheets. In this context, building permits fell by 26.6% between Q1 2021 and Q3 2025 (a fall of 45% in terms of m^2 of useful floor area), reflecting households' and developers' *ex ante* decisions to defer or abandon planned projects. Investment in dwellings represents only 3% of GDP, vs 5.3% at EU level, and has been falling since 2019 ([411]). This contraction underscores that the current slowdown is less the result of insufficient demand or excessive prices than of weakened project viability and constrained financing conditions, especially for actors with limited balance-sheet capacity.

Vulnerable groups

Housing affordability in Luxembourg remains a concern, particularly for young people and households with modest incomes. With an annual housing price index of 162.50 in 2024, Luxembourg's residential housing prices are roughly 6% higher than the EU-27's average index level of 153.44 (2015 = 100 as the reference year). Luxembourg's standardised house price-to-income ratio was 119.39, significantly above the EU average of 98.89, indicating particularly low housing affordability. The latest Housing in Europe report shows that overall housing costs in Luxembourg in 2024 (including water, electricity, gas and other fuels) remained among the highest in the EU (78% above the EU average) ([412]). The housing cost overburden rate decreased in 2024([413]). While Housing cost overburden has been flagged as a critical issue in Luxembourg for several years, it decreased from 11.5% in 2023 (above the EU average of 8.8%) to 8% in 2024 (below the EU average of 8.2%) ([414]). In 2024, tenants in Luxembourg spent on average 27.0% of their disposable income on rent, compared with an EU average of 22.3%, showing that renting is particularly costly in Luxembourg. Nevertheless, the lower overburden rate since 2023 was particularly pronounced among tenants and can be partially explained by Luxembourg's increase of the rent subsidy by an average of 50% from late 2022, where eligibility is limited to those whose rent is greater than 25% of their net income. At the same time, a recent LISER study ([415]) also highlights an overburden which is almost three times higher for households with modest incomes than for the most affluent ones. Young people are also particularly affected, since the proportion of income which 18-29-year-olds spent on housing in 2023 was 52% (vs EU average of 32([416]) (). Other salient social aspects of housing in Luxembourg include the relatively high proportion of people living in under-occupied homes (57.5% of the total population vs EU average of 33.1%) and the comparatively high percentage of people living in dwellings with structural deficiencies (18.0% vs EU average of 15.6%).

Social housing is still a challenge, despite measures to expand supply. A major obstacle to social housing supply is the difficulty public providers face in acquiring private plots, combined with strong population growth. In 2024, the Société Nationale des Habitations à Bon Marché (SNHBM, a public developer also acting as a social landlord) began building 301 affordable housing

([410])Eurostat, 'Building permits - quarterly data'.

([411])Eurostat, 'Gross fixed capital formation by main asset type'.

([412])https://ec.europa.eu/eurostat/web/interactive-publications/housing-2025.

([413])It should be noted that this indicator is subject to volatility, with breaks in the series from 2020 up to and including 2023. See also Annex 12.

([414])The overburden rate should be read together with the tenure structure (homeowner, tenants), that may differ across country and regions.

([415])https://logement.public.lu/fr/publications/observatoire/note-44.html.

([416])Eurofound 2025: living conditions and quality of life. Foundational challenges: the housing struggles of Europe's youth.

Graph A16.4: **Selected housing affordability indicators**

		EU27				LU							
	unit	2000-25 avg.	2023	2024	2025	2000-25 avg.	2023	2024	2025	unit	2023	2024	2025
House price to income ratio	*2000-25 avg = 100*	100.0	102.0	100.2		100.0	131.6	119.4		YoY%	-14.0	-9.3	
Rent to income ratio	*2000-25 avg = 100*	100.0	85.1	83.5	84.5	100.0	87.0	84.6	82.5	YoY%	-3.8	-2.8	-2.4
Overburden rate, total	%	9.9	8.8	8.2		6.6	11.5	8.0		PPS/y	2.5	-3.5	
Overburden rate, tenant with market rent	%	23.8	20.3	19.2		21.5	33.0	20.0		PPS/y	10.1	-13.0	
Overvaluation gap	%					0.2	22.0	12.0	10.1				
Deflated construction production price	*2010 = 100*	102.2	112.2	111.8	110.5	104.8	123.8	123.4	122.3	YoY%	8.4	-0.3	-1.1
Building permits	*m^2 per ths persons*	483.5	376.9	362.9	379.9	1475.7	898.5	737.0		YoY%	-15.9	-18.0	
Residential construction investment	*% GDP*	5.5	5.8	5.1	5.0	3.3	3.7	3.0	2.9	YoY%	-5.1	-18.9	-3.3
Share of ownership	%	70.0	69.1	68.4		71.0	67.6	63.5		PPS/y	-6.6	-6.1	
Share of people living in overcrowded homes	%	17.7	16.8	16.9		7.5	7.4	6.8		PPS/y	1.7	-0.6	

Source: Eurostat and European Commission calculations. The overburden rate should be read together with the tenure structure (homeowner, tenants), that may differ across country and regions.

units, up from 230 in 2023. SNHBM's medium-term objective is around 400 units per year, subject to land availability. The state also buys housing units under construction to add to the affordable stock (e.g. the 2024-2027 VEFA programme, with a target of 800 units). More broadly, the 2025 budget law raised spending for the Fonds Spécial pour le Logement (Special Fund for Affordable Housing) by EUR 130 million compared with the 2024 budget, and a further EUR 2 billion in spending was announced for the development of affordable housing over 2025-2028. Despite these and other initiatives (e.g. the Housing Pact 2.0 and the Affordable Housing Law ([417]), there is still considerable scope to increase the availability of social housing, which represents only 3-4% of the total stock. Around 6 000 households were on the waiting list for social housing in 2025, a number which has almost doubled since 2021.

Affordability and availability pressures disproportionately affect homeless people and those with disabilities. According to a June 2024 census ([418]) there were 300 homeless people in Luxembourg, although this was a point-in-time snapshot, dependent on specific criteria rather than an exhaustive overview, focusing for example on people living in the street (ETHOS ([419]) 1) or in emergency accommodation (ETHOS 2). According to OECD data from 2022 (OECD 2024), the estimated proportion of homeless people was 0.11% of the national population in that year, or about 696 people. The main challenges in Luxembourg are a lack of affordable and permanent housing, the absence of a national homelessness strategy, and limited access to income support and benefits for the homeless. Luxembourg has nevertheless committed to implementing a new housing-led homelessness and housing exclusion strategy, which is separate from the recently published anti-poverty plan. Since 2022, monitoring and data quality have been improved through twice-yearly national homelessness counts and there is a robust supply of NGO-based, largely state-financed, emergency and transitional housing. People with disabilities suffer from an insufficient supply of accessible housing. Legal accessibility requirements for new housing, through the Accessibility Act (2022), require at least 10% of homes in all new collective residential buildings to be accessible. However, this means that many existing homes are inaccessible or expensive to retrofit. People with disabilities are also over-represented among low-income households and consequently face higher housing cost overburden rates. There is also a lack of disability-related data, with no systematic monitoring of housing accessibility, retrofit implementation or the residential autonomy of people with disabilities.

([417])Housing Pact 2.0 (part of Luxembourg's Recovery and Resilience Plan) is a partnership between the national government and the municipalities that provide funding, planning tools and support to increase the supply and quality of affordable housing and mobilise land for development. Luxembourg's Affordable Housing Law (2023) sets up a framework for state-supported creation, financing, allocation, and management of affordable homes to expand supply and ensure rents or prices remain accessible to households struggling to find suitable housing. It also incorporates existing provisions on social rental management as a specific social housing strand.

([418])ESPAN, *The fight against homelessness and its links with anti-poverty policies in Luxembourg*, Jeff Weitzel, 2025.

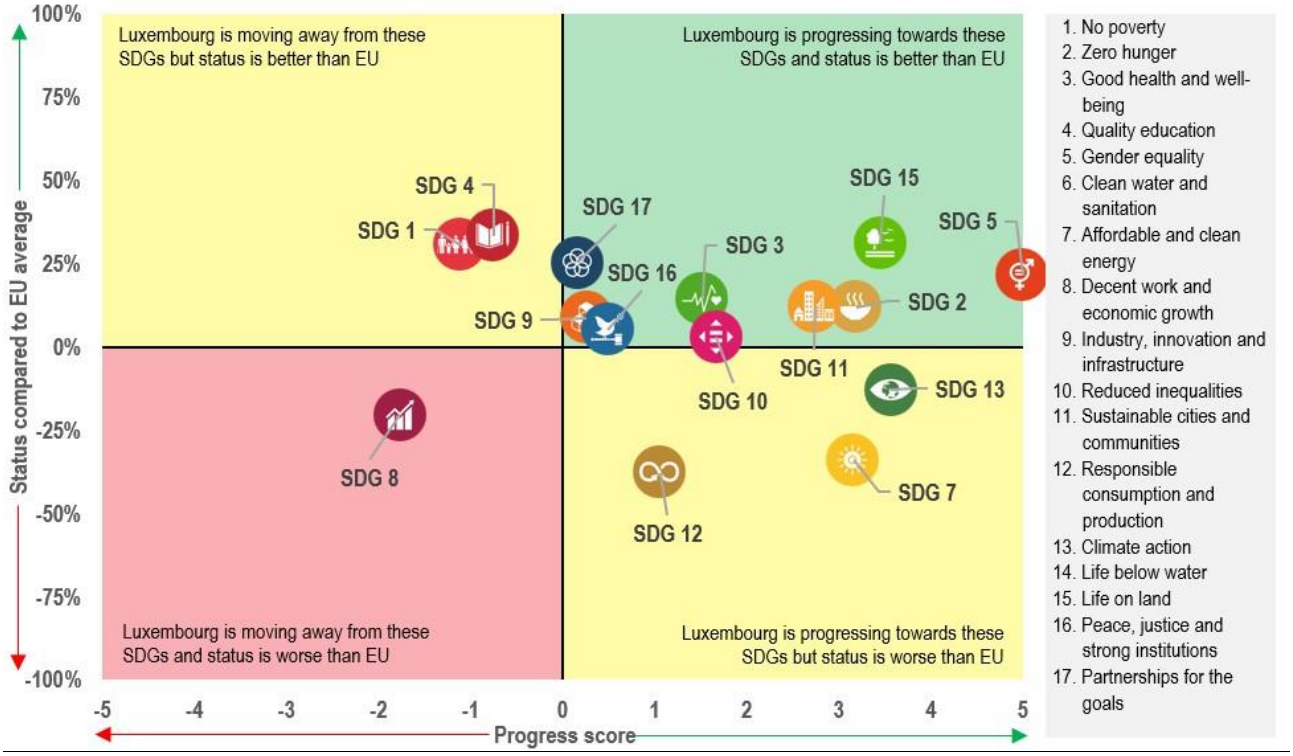
([419])European Typology of Homelessness and Housing Exclusion

This annex assesses Luxembourg's progress on the sustainable development goals (SDGs) along the dimensions of competitiveness, sustainability, social fairness and macroeconomic stability. The 17 SDGs and their related indicators provide a policy framework under the UN's 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty, fight inequalities and tackle climate change and the environmental crisis, while ensuring that no one is left behind. The EU and its Member States are committed to this historic global framework agreement and to playing an active role in maximising progress on the SDGs. The graph below is based on the EU SDG indicator set developed to monitor progress on the SDGs in the EU.

Luxembourg performs well on SDGs 4 and 9 but needs to catch up with the EU average on SDG 8. The number of patent applications to the European Patent Office is above the EU average (236 applications per million inhabitants vs 156 in the EU in 2025) (SDG 9). Furthermore, the percentage of adults with at least basic digital skills decreased from 63.8% of individuals aged 16 to 74 in 2021 to 62.4% in 2025 (above the EU average of 60.4%) (SDG 4). Meanwhile, the rate of young people aged 15-29 neither in employment nor in education and training increased from 6.5% in 2019 to 8.7% in 2025 but remains below the EU average of 11% (SDG 8). The recovery and resilience plan (RRP) envisages reforms and investments to promote a data-based economy and digitalisation of public administration. It also includes measures on improving skills and on up- and reskilling to help people join the labour market, with additional skills measures financed by the ESF+. For instance, training under the RRP's 'Future Skills' measure targeted jobseekers, with a target participation rate of 30% for those aged 45 and above.

Luxembourg is improving on several

Graph A17.1: **Progress towards the SDGs in Luxembourg**



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

Source: Eurostat, latest update of 29 April 2026. Data refer mainly to the period 2019-2024 or 2019-2025. Data on SDGs may vary across the report and its annexes due to different cut-off dates.

sustainability **indicators SDGs 2, 6, 7, 9, 11, 12, 13 and 15) and performs well on SDGs 9, 11 and 15.** Luxembourg has a greater proportion of terrestrial protected areas than the EU average, with 38.6% of its total area consisting of terrestrial protected areas compared to 26.4% across the EU in 2023 (SDG 15). The country further improved its performance on the recycling of municipal waste as a percentage of total waste generated (SDG 11) from 49.0% in 2018 to 56.5% in 2023, well above the EU average (47.9%). The air emission intensity of fine particulate matter from industry decreased from 0.05 grams per euro in 2018 to 0.03 in 2023 below the EU average of 0.05 (SDG 9).

However, it needs to catch up with the EU average on SDGs 2, 6, 7, 12 and 13. It has made progress on organic farming, increasing the proportion of agricultural land dedicated to organic farming from 4.4% in 2019 to 7.2% in 2024, albeit still below the EU average of 10.9% (SDG 2). On SDG 6, Luxembourg's Water Exploitation Index improved from 0.6% of renewable water resources in 2018 to 1.9% in 2023, still below the EU average of 5.2%. On SDG 7, the percentage of renewable energy in gross final energy consumption increased from 7% in 2019 to 14.7% in 2024 (still below the EU average of 25.2%). In contrast, energy import dependency as a percentage of imports in gross available energy decreased from 95% in 2019 to 91% in 2024 but remains above the EU average of 57.3 %. Despite a slight decrease from 4.34 in 2019 to 4.09 in 2024, the consumption footprint by unit of transgression of planetary boundaries (SDG 12) still exceeds the EU average (3.15). Luxembourg decreased its net greenhouse gas emissions (SDG 13) from 16.8 tonnes per capita in 2019 to 10.1 tonnes in 2024, but it remains above the EU average of 6.5 tonnes.

Luxembourg is improving on SDG indicators related to *social fairness* for SDGs 3, 5, 7 and 10. The percentage of people aged 16 or over who perceive their health as good or very good increased from 71.9% in 2019 to 73.1% in 2024 against an EU average of 68.5% (SDG 3). Furthermore, the relative median at-risk-of-poverty gap showed improvement, decreasing from 24.6% in 2019 to 19% in 2024 (SDG 10). The percentage of the population unable to keep their home adequately warm did increase from 2.4% in 2019 to 3.6% in 2024 but remains well below the EU average of 9.2% (SDG 7). On SDG 5, Luxembourg reduced its gender employment gap (from 9.1 pps of those aged 20-64 in 2019 to 6.8 pps in 2025, well below the EU average of 9.6 pps). Positions held by women in senior management as a percentage of board members did increase from 13.1% in 2019 to 23.5% in 2025 but remained below the EU average of 33.6%. Luxembourg's percentage of the population self-reporting an unmet need for medical care (SDG 1) is better than the EU average (1% vs 2.5% for the EU in 2024).

Conversely, it is moving away on some indicators for SDGs 4 and 8. On SDG 4, tertiary educational attainment as a percentage of the population aged 25-64 jumped from 56.1% in 2019 to 65% in 2025, well above the EU average of 44.8%. However, while still below the EU average of 9.4%, the number of early leavers from education and training as a percentage of the population aged 18 to 24 also increased from 7.2% in 2019 to 7.8% in 2024. The in-work-at-risk of poverty rate increased from 12.1% in 2019 to 13.4% in 2024, remaining above the EU average (8.2%) (SDG 8).

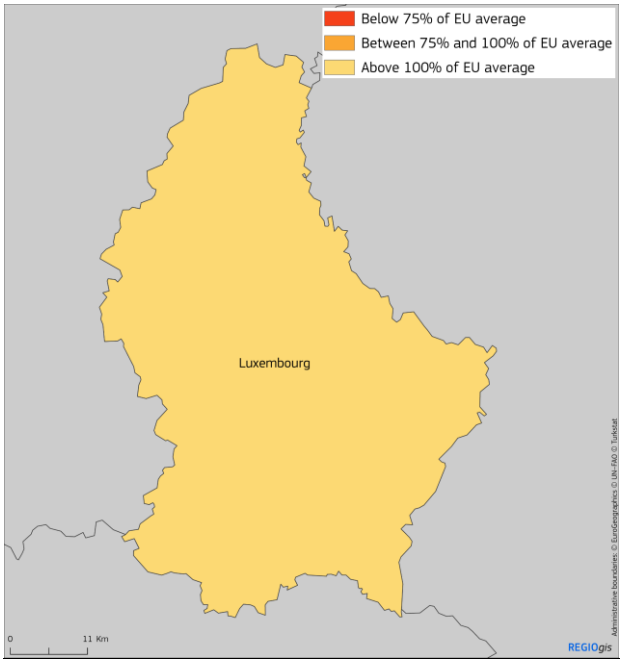
While Luxembourg is improving on one indicator related to *macroeconomic stability* (SDG 16), it is moving away from others (SDGs 8 and 17). It performs well on SDGs 16 and 17 but needs to catch up with the EU average on SDG 8. General government gross debt (SDG 17) increased from 22.3% of GDP in 2019 to 26.5% in 2025 but remains very low compared to the EU average of 81.7%. Meanwhile, the investment share of GDP decreased from 18.1% in 2019 to 15.4% in 2024, remaining below the EU average at 21.7% (SDG 8). On SDG 16, the percentage of the population that perceived the independence of the justice system as very good or fairly good increased from 70% in 2019 to 77% in 2025, much higher than the EU average of 54%. Luxembourg's RRP includes measures to promote a transparent and fair economy, such as making anti-money laundering supervision of professionals that provide trust and company services more effective and increasing the quality and transparency of the business register, which will help authorities better identify the ultimate beneficiaries of legal entities.

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

Regional development trends

Although Luxembourg performs well above the EU average in most indicators, GDP per head is largely driven by Luxembourg city and is undergoing a steady relative decline. Between 2004 and 2014, GDP per head increased steadily, peaking at 282% of the EU average. Since 2014, it has stagnated, growing slower than the EU average but remaining well above it (242% of the EU average as of 2024). Similar patterns can be observed in gross national income over the same period. Luxembourg's development model relies heavily on cross-border workforce inflows and fast population growth, which outpace productivity gains. This results in long-term convergence issues between rural and urban areas.

Map A18.1: **GDP per head compared with the EU average**



2021-2023 average GDP per head in purchasing power standard compared with the EU average.
Source: Commission calculation based on Eurostat 16 July 2025 data

Luxembourg's productivity, driven by the capital, remains high but is slowly declining (Table A18.2**).** The country's economy is characterised by its large, highly productive financial sector, which is concentrated in the Luxembourg city area. This sector accounts for 25% of GDP, 11% of employment and 25% of tax revenues. The concentration of financial sector jobs in Luxembourg city means that peripheral zones struggle to attract knowledge-intensive activities, resulting in most of productivity gains remaining in urban areas.

Employment and unemployment rates vary by territorial type in Luxembourg. The average rate of employment is lower in towns and suburbs (71.8%) and rural areas (72.9%) than in cities (81.3%). The unemployment rate is higher in towns and suburbs (7.6%) than in rural areas (5.5%) and cities (6.0%). Both employment and unemployment rates deteriorated in all areas compared with 2023 (see Annex 11).

The population is growing faster in cities, driven by a positive net migration of young workers. Both positive net migration and natural population growth result in higher demographic growth than the EU average (Table A18.2).

Key challenges for regional competitiveness

Luxembourg's large cross-border workforce strongly contributes to housing and mobility challenges both in cross-border territories and the main commuter belts. Tackling territorial disparities through more efficient housing, transport and territorial planning is necessary for economic growth. Luxembourg's land planning strategy (PDAT) aims to ensure horizontal coordination among national sectoral policies (such as for transport, housing, economic activity and environmental conservation) and vertical alignment with municipalities' responsibilities ([420]). The national mobility plan sets out guidelines for strengthening multimodal capabilities and cross-border cooperation, particularly for rail and road public transport ([421]). The 2025 county-specific recommendations (CSRs) for Luxembourg point to the need to "improve cross-border connections". Local transport challenges are to be tackled in close collaboration with municipalities. Land planning efficiency is hindered by a lack of coordination at national level

([420])Ministry of Housing and Spatial Planning, 2023, PDAT.

([421])Ministry of Mobility and Public Works, 2025, PNM 2035.

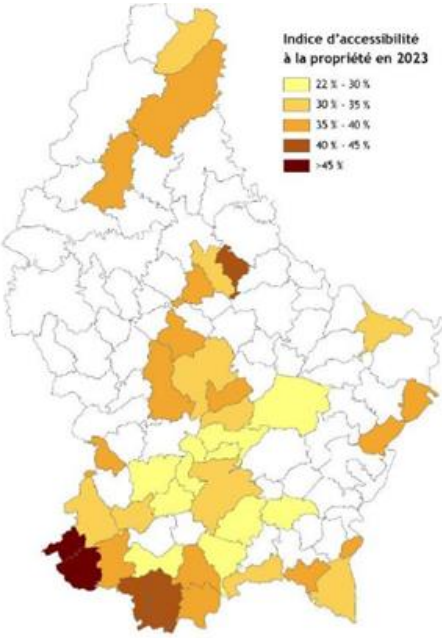
Table A18.1:**Main development trends, challenges and the concentration of resources**

	Main development trends
More developed regions (population 682 000)	Although Luxembourg's average GDP per head (in purchasing power standard, PPS) between 2021 and 2023 was above the EU average, relative performance across key indicators is weakening, with population growth outpacing economic expansion. The regional development model is characterised by strong territorial concentration of highly-skilled jobs in the capital, with rural areas facing moderate labour market outcomes and higher risks of social exclusion. Rapid population growth and cross-border employment have created great pressure on housing prices and availability, hindering further growth and highlighting a continued need for more effective urban and suburban spatial planning. Urban mobility infrastructure is efficient but remains underused due to commuters' reliance on road infrastructure, particularly on cross-border routes. Long-term, sustained competitiveness and quality of life will require increased diversification of the economy, better coordination in land planning and targeted decarbonisation efforts, including tapping rural areas' potential for producing solar energy.
Specific territories	Measures under the Just Transition Fund focus on the 11 municipalities that make up the South region. This area is the second development pole of Luxembourg, historically shaped by its industrial and manufacturing activities. It accounts for more than a third of national jobs affected by the green transition, making it highly exposed to the transition's impact on the economy and employment. The region also has higher concentrations of low-income households and an ageing building stock, making it more vulnerable to energy poverty risks and increasing the need for targeted energy-efficiency and renovation investments. The strong flow of cross-border commuters creates acute and growing pressure on the transport system, requiring continued support to smart urban planning and investments in low-carbon local transport solutions.

Source: Commission analysis based on Eurostat data; categories of regions based on Map A18.1

due to the high autonomy of municipalities ([422]). Furthermore, the PDAT lacks a legal basis for enforcement, leading to a lack of coordination between planning and sectoral policies ([423]). Although the national land-use plan sets out a long-term vision and identifies paths to solutions, high decentralisation in spatial planning is a major bottleneck to achieving that vision.

Map A18.2: **Effort rate for accessing property by municipality (2023)**



Source: Fondation IDEA (2024)

Housing affordability is an increasingly acute issue in cities and a major bottleneck to competitiveness. The household effort rate for housing (the share of household disposable income spent on housing costs) rose by more than 10 percentage points between 2017 and 2022 ([424]). The effort rate for accessing property varies by municipality, with the highest rates in municipalities with low socio-economic indicators

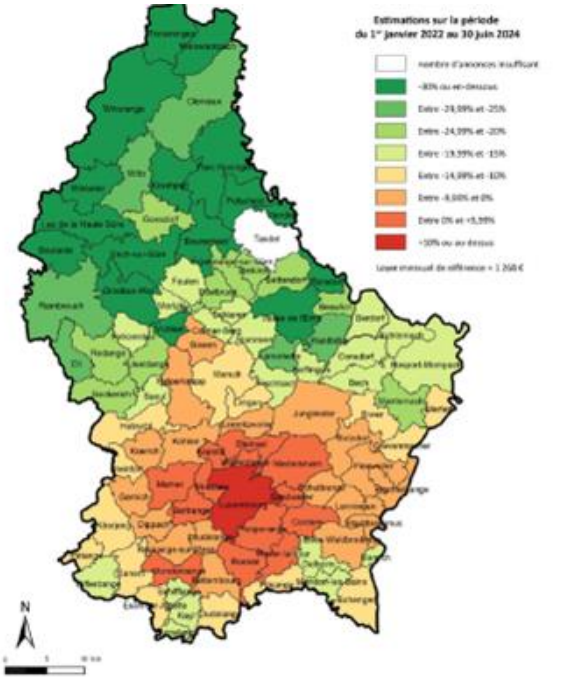
([422])Ministry of Housing and Spatial Planning, 2023, PDAT; OECD, 2020, 'Policies for a more efficient and inclusive housing market in Luxembourg'.

([423])Ministry of Housing and Spatial Planning, 2023, PDAT; OECD, 2025, OECD Economic Surveys Luxembourg 2025.

([424])National Institute for Statistics, 2023, PIBien-être Report - Statistics Portal - Luxembourg.

(Map A18.2). Rental prices also spike closer to Luxembourg city (Map A18.3). Housing supply has failed to meet the rising demand. Despite the availability of serviced land, much of it has remained vacant due to a lack of incentives for both municipalities and private owners to develop it ([425]) (see Annex 16). Housing investments are hindered by insufficient capacity at municipal level. Although municipalities are responsible for several aspects of housing in Luxembourg – including for providing affordable housing – fiscal and planning capacity constraints limit sufficient investment and construction ([426]). The 2025 CSRs for Luxembourg highlight the need to 'increase housing supply, in particular by adopting a comprehensive land-use policy and property tax reform'.

Map A18.3: **Rental prices by municipality, 2022-2024**



Source: LISER (2024)

This generates high commuter flows, especially in the south-west of the country which lead to major transport bottlenecks. Following the introduction of free public transport in 2020 and the introduction of the tram, capacity was close to its limits, emphasising the need for more frequent and higher-capacity services ([427]). Therefore, new tram lines in the city and to the south region are in the making. Public transportation solutions implementation is advancing between the Agglo-centre and the South Region. There is however still room for multimodal improvements in rural areas more distant to the main rail axis ([428]) ([429]). Most commuters travel to the two main employment centres: the Agglo-Centre around Luxembourg city and the south agglomeration (Map A18.4). Under the national mobility plan, investments in developing the rail infrastructure are planned or already being implemented ([430]). Besides, the insufficient availability of affordable housing leads to heavy and long cross-border commuting which is a major source of greenhouse gas emissions. Cross-border commuting remains a persistent challenge, with reportedly inefficient connections leading to an overreliance on car usage thus aggravating congestion on the main road axes (see Annex 8).

([425])LISER, 2024, Les cahiers de la Grande Région : Le logement, une problématique transfrontalière; OECD, 2022, OECD Economic Surveys Luxembourg 2022.

([426])Syvicol, 2023, Priorités d'action du comité pour la période 2024 – 2029; OECD, 2025, OECD Economic Surveys Luxembourg 2025.

([427])OECD, 2025, OECD Economic Surveys Luxembourg 2025.

([428])OECD, 2025, OECD Local Data Portal.

([429])IDEA, 2024, Le codéveloppement dans l'aire métropolitaine transfrontalière du Luxembourg.

([430])Ministry of Mobility and Public Works, 2025, PNM 2035.

Table A18.2:**Key indicators for Luxembourg**

	GDP per head (PPS, index)	Population growth	Growth in natural population	Net migration of population aged 15-39	Real GDP per head growth	Productivity: GDP (PPS) per hour worked (index)	Population aged 25-34 with high educational attainment	Employment in knowledge-intensive services	Employment rate 20-64	Unemployment rate	At-risk-of-poverty or social exclusion rate (AROPE)
	EU27=100	Average annual change per 1000 residents	Average annual change per 1000 residents	Average annual change per 1000 residents aged 15-39	Average annual % change	EU27=100	% of population aged 25-34	% of total employment	% of population aged 20-64	% of labour force	% of population
	2024	2015-2024	2015-2024	2014-2023	2014-2024	2024	2025	2025	2025	2025	2024
EU	100	1.8	-1.7	7.1	1.4	100.0	44.8	41.7	76.1	6.0	21.0
Luxembourg	245	18.7	3.2	34.6	-0.1	169.1	65.0	58.6	73.9	6.5	20.0

Dark green – the indicator is at least 120% of the EU average.
Light green – the indicator is at least 100% but less than 120% of the EU average.
Yellow – the indicator is at least 90% but less than 100% of the EU average.
Light red – the indicator is at least 75% but less than 90% of the EU average.
Dark red – the indicator is less than 75% of the EU average.
This colour scale applies to 'positive' indicators where higher values are favourable.
For 'negative' indicators (where higher values are unfavourable), the colours are reversed.
Source: Eurostat data

Rural areas struggle with access to services, and innovation and companies are highly concentrated in Luxembourg city and the Agglo-Centre. Policies, such as the research and innovation smart specialisation strategy ([431]), aim to promote economic diversification into ICT, data-driven services and high-end health, space and green technologies by spreading productive assets beyond the Agglo-Centre ([432]). However, public R&D investment was lower than the EU average in 2024, with the risk of insufficient investment impeding the attainment of the smart specialisation objectives (see Annex 4). In addition, continuing to improve digital connectivity and broadband speeds in rural areas could improve local business environments ([433]). Territorial disparities in access to education and educational attainment levels are driving competitiveness gaps in rural areas. The urban-rural divide in adult participation in education and training in Luxembourg is higher than the EU average. Only 48% of rural residents hold a tertiary degree against 81% in cities. Luxembourg has a relatively substantial urban-rural gap in tertiary education attainment (TEA) among young people (aged 25-34) at 36.6% (EU: 22%) (see Annex 13). Additionally, closing the rural-urban broadband speed gap could attract more new businesses to rural areas ([434]).

Luxembourg has untapped potential for renewable energy, including in just transition territories with high emissions. Under the Just Transition Fund, transition territories are supported in increasing the share of renewable energy produced. The South region (composed of 11 municipalities) is the main area of focus of the territorial just transition plan due to the concentration of manufacturing industries generating high emissions ([435]). Wind energy production is close to reaching its maximum technical potential. However, solar energy production remains underused, particularly in the post-industrial South region where investments are specifically targeted at solar energy deployment. This is particularly relevant as Luxembourg stands among the Member States with the highest production potential per unit area in urban zones. The 2025 CSRs highlight the need to 'support municipalities in deploying renewable energy'. Meanwhile, exploration campaigns,

([431])Smart specialisation strategies are strategic, territorially based frameworks for innovation and industrial policy that help Member States and regions identify and leverage their unique comparative advantages to address structural challenges, foster economic transformation and enhance competitiveness.

([432])Ministry of the Economy, 2024, RIS3.

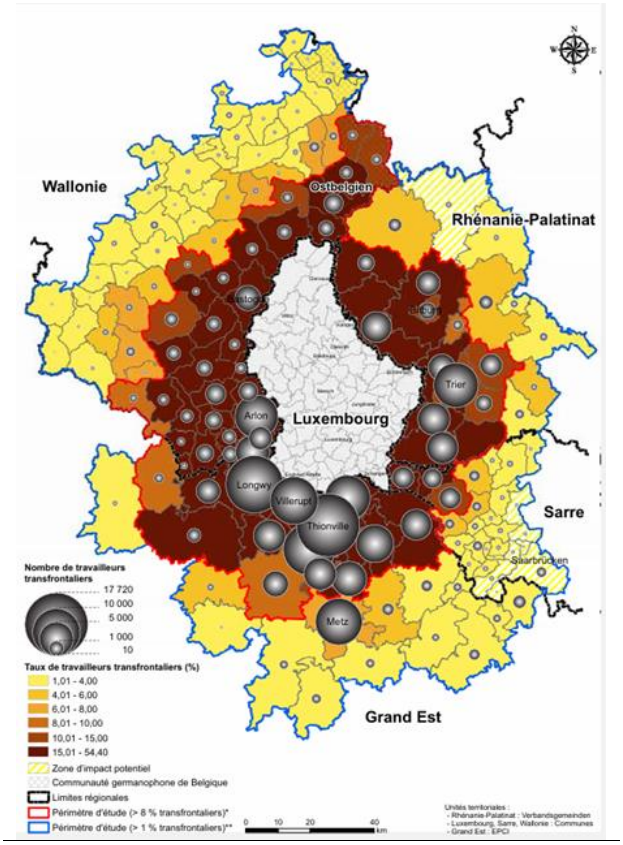
([433])JRC, 2025, 'Entrepreneurship in the EU: key insights into business dynamics in rural regions', JRC143536; European Commission, Rural observatory – Broadband speed (mobile networks) and Rural observatory – Broadband speed (fixed networks).

([434])European Commission, 2025, 'Digital Decade Country report (Luxembourg)'; European Commission, Rural observatory – Broadband speed (mobile networks) and Rural observatory – Broadband speed (fixed networks).

([435])Fonds Européens, 2023, Plan territorial pour une transition juste.

including test drilling in the southern part of the country, are under way to tap into geothermal energy, with the objective of developing district heating networks ([436]).

Map A18.4: **Cross-border workers in Luxembourg by place of residence, 2022**



Source: LISER (2024)

([436])Department of Energy, 2022, Activity report 2022.

This Transport Annex presents the state of play and the challenges Luxembourg faces with the implementation of the trans-European transport network (TEN-T), the European railway traffic management system (ERTMS) and the roll-out of Sustainable Aviation Fuels (SAF).

The North Sea – Rhine – Mediterranean corridor is the only TEN-T corridor that crosses Luxembourg. The TEN-T in Luxembourg comprises 216 km of rail (of which 117 km are on the core network) and 90 km of road (of 69 are on the core network). Luxembourg has 37 km inland waterways on the TEN-T, one airport (a core airport), one port (a core port) and one urban node ([437]).

Luxembourg focuses on capacity improvement and station modernisation. Following the completion of the EuroCap-Rail direct link between Luxembourg and Bettembourg, works continue on the Bettembourg station (new track layout and signal box, completion set for 2035) and peripheral stations at Howald and Hollerich to improve passenger flows. The Wasserbillig line upgrade will remove level crossings by 2030, enhancing safety and reliability. The Bettembourg marshalling yard redevelopment adds reception sidings and train-splitting facilities, addressing freight handling bottlenecks by 2036.

Given the role that inland waterways play in the county's logistics, Luxembourg also plans to invest in upgrades of locks along the Moselle river (EUR 240 million by 2034).

The ERTMS is essential to digitalising the railways and to modernising and harmonising railway operations across Europe. The ERTMS ensures the safety of rail networks by providing a unified signalling system that significantly reduces the risk of accidents. It also provides interoperability between national rail systems, improving cross-border train movements. Finally, the ERTMS enhances network capacity and operational efficiency, increasing the competitiveness of the rail sector.

The ERTMS has been fully rolled out across the Luxembourgish network (except for a new line of 9 km on which it will be deployed in 2026) ([438]). Harmonising technical and operational rules with the minimisation of national rules in line with the EU directives on rail interoperability and safety remains critical to ensuring seamless cross-border rail transport.

Table A19.1:**ERTMS deployment in Luxembourg.**

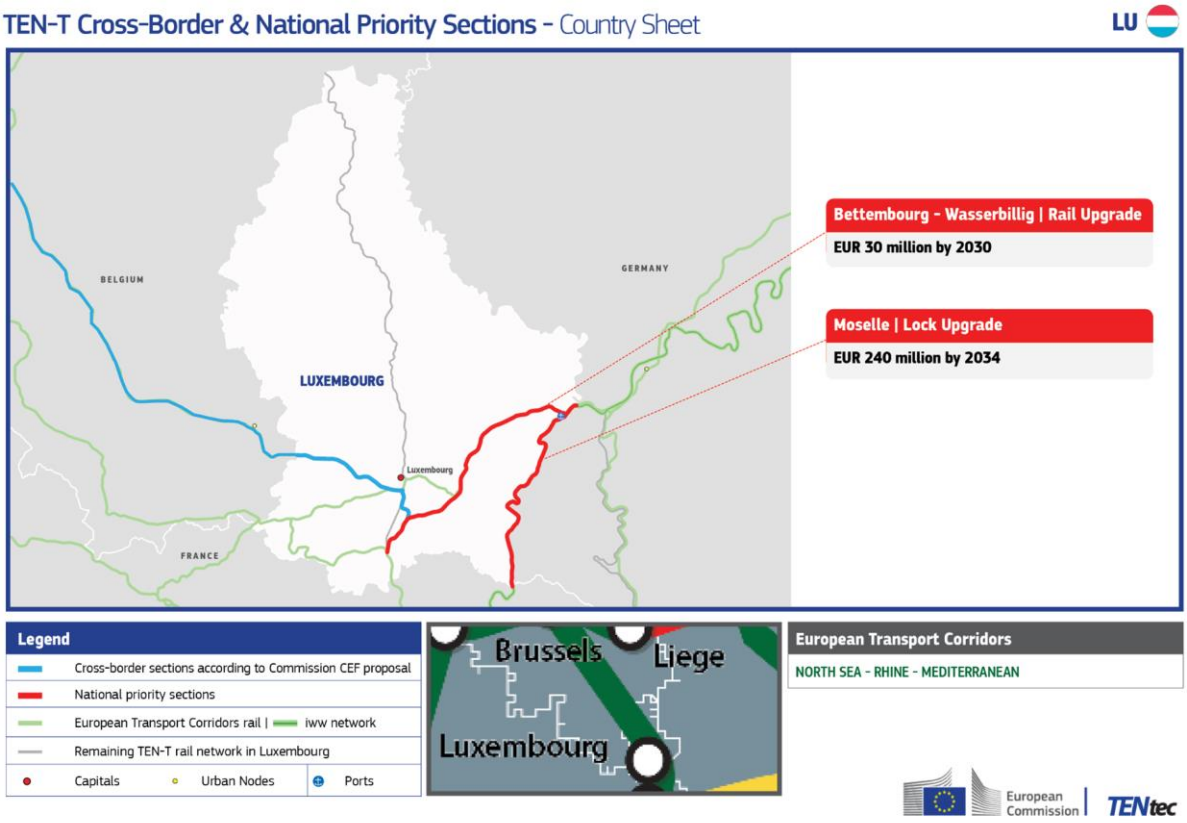
Luxembourg				
TEN-T rail network	ERTMS (trackside) in operation			Minimum estimated cost of additional deployment until 2035
216 km	year	length	% of total TEN-T	
	end 2024	207 km	96 %	
	by 2035	216 km	100 %	EUR 0 million

Source: Based on ERTMS – Third work plan of the European Coordinator Matthias Ruete.

([437])TENtec Information System, according to Reg. 2024/1679.

([438])Based on ERTMS – Third work plan of the European Coordinator Matthias Ruete.

Map A19.1: **TEN-T Cross-Border & National Priority Sections in Luxembourg**



The railway network in Luxembourg does not yet achieve the travel speed required for passenger trains under the TEN-T Regulation by 2040.

Luxembourg has no domestic national sustainable aviation fuel (SAF) production but is eager to develop an eSAF (produced from hydrogen) ecosystem in Luxembourg. To this end, Luxembourg participates in the eSAF Early Movers Coalition and Luxembourg airports, as well as aircraft operators invested in European eSAF projects. However, achieving ReFuelEU Aviation's objectives in Luxembourg requires scaling up SAF production, both SAF of biological origin (bioSAF) and eSAF. Luxembourg could further deploy eSAF supply chains to its airports to support passenger and freight transport departing from Luxembourg, notably by ensuring sufficient revenues (EU ETS, ReFuelEU Aviation penalties) are used for production support, such as double-sided auction mechanisms.