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## 2026 Country Report - Estonia

***Accompanying the document***

**Recommendation for a COUNCIL RECOMMENDATION**

**on the economic, social, employment, structural and budgetary policies of Estonia**

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European Commission

Economic and Financial Affairs

# Estonia

## 2026 Country Report

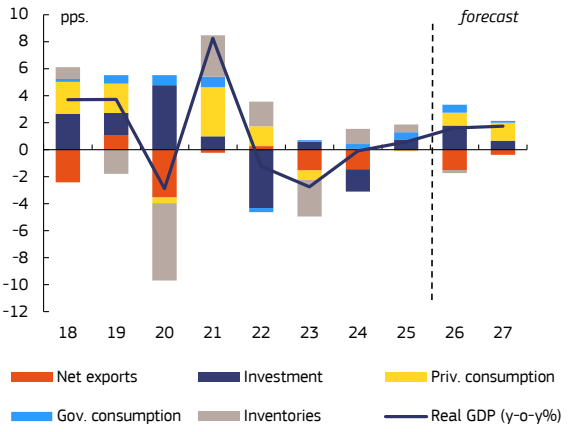
# ECONOMIC DEVELOPMENTS AND KEY POLICY CHALLENGES

## The modest recovery driven by domestic demand and inventories faces geopolitical headwinds

**High geopolitical uncertainty and weak external demand coupled with persistently high inflation weigh on Estonia's growth.** After a few years of contraction and stagnation, the Estonian economy grew by a modest 0.6% in 2025. The tense geopolitical situation over the past few years has led to the private sector postponing investment. Public spending increased, in particular for defence, although most of it was imported, thereby not stimulating the domestic economy. In parallel, the weak economies of Estonia's main trading partners (Sweden, Finland and Germany) weighed on the country's exports. In 2025, growth was therefore driven by domestic demand, i.e. a combination of public spending, some rebound in investment and accumulation of inventories. Net exports contributed negatively but negligibly to growth. Inflation in Estonia has been high in recent years and was still at 4.8% in 2025, roughly half of which can be attributed to higher and new taxes ([1]). Inflation was set to slow in 2026 as some tax effects end, but rising energy prices caused by the war in the Middle East might jeopardise this process.

**Domestically, a fast rise in nominal wages, a higher debt burden and downbeat sentiment slowed real growth**. The large wage increases that followed the energy-related inflationary shock after Russia's invasion of Ukraine eroded Estonia's competitiveness. Credit growth slowed, with higher ECB policy rates directly affecting interest rates, most of which are variable. Households therefore dedicated a larger proportion of income to debt servicing, which reduced private consumption over the last years. Only in the second half of 2025 did lower interest rates start lightening the debt burden and reviving credit expansion. Amid high uncertainty, consumer sentiment remains downbeat, weighing on retail spending.

Graph 1.1: **Real GDP growth and contributions**




***Source:*** AMECO

**In 2026, the Estonian economy is projected to grow by 1.6% in real terms.** The economy has been gaining momentum before the outbreak in the Middle East, supported by fiscal reforms that raised real disposable incomes, and more favourable financing conditions, which were set to encourage investment. Since the outbreak of the conflict, prospects for private consumption have become more muted, while geopolitical concerns are weighing on private investment and exports. Meanwhile, inflation is now expected to be higher due to the energy price shock and its potential spillovers, averaging 4.4% in 2026.

([1]) Bank of Estonia estimates.

Box 1:

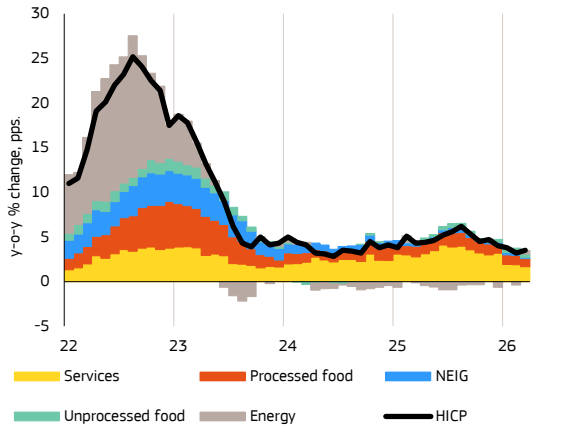
## UN Sustainable Development Goals (SDGs)

Estonia performs above the EU average and is further improving on most SDGs related to sustainability (SDGs 2, 6, 7, 11 and 15) but needs to catch up with the EU average on others (SDGs 9, 12, 13 and 14).

The country's performance on SDG-related competitiveness is mixed. On the one hand, the quality of education (SDG 4) is above the EU average and improving, as illustrated by an increase in adult participation in learning. On the other hand, decent work and economic growth (SDG 8) is below the EU average, and Estonia is moving away from the goals, as illustrated by the stagnant real GDP per capita. Industry and innovation (SDG 9) is below the EU average, but improving, as exemplified by trends in gross domestic expenditure on R&D.

Out of the 17 SDGs, 8 remain below the EU average. Besides SDGs 8 and 9 discussed above, these relate to health (SDG 3), gender equality (SDG 5), responsible consumption and production (SDG 12), climate action (SDG 13), life below water (SDG 14) and personal security (SDG 16) (see Annex 15.)

Graph 1.2: **HICP breakdown 2022-2026**




***Source:*** Eurostat

## There has been a healthy adjustment in the labour market but structural issues persist

**The labour market is adjusting to the economic growth cycle but faces structural issues such as ageing** population, skills shortages and high youth unemployment. The unemployment rate rose to 8.6% at the beginning of 2025, following the protracted economic weakness, but fell to 6.4% towards the end of 2025 on the back of lower labour participation and the nascent recovery. The shift was accompanied by slower wage growth (6% year-on-year) than in previous years, and a smaller pool of vacancies. Despite the positive drop in unemployment, several structural issues exist. The ageing population is causing the labour force to shrink; a trend that has been only temporarily reversed by the inflow of Ukrainians. This is offset to a certain extent by the historically very high participation rate, also among women (although the gender wage gap is one of the largest in the EU). Shortages of certain professions persist, especially of healthcare and STEM professionals and teachers. Regional differences, in particular in Ida-Viru, are pronounced, with some areas facing language barriers and structurally high unemployment. Youth unemployment is on the rise (above 20%), as is the proportion of young people not in employment or in education or training (see Annex 11).

## Public finances face growing pressures from defence and social spending

**In 2025, Estonia received country-specific recommendations to broaden the tax base and ensure sustainable financing for spending needs including defence, healthcare and long-term care.** From 2024 to 2027, the excise duty rates on alcohol,

tobacco and energy goods will be subject to additional yearly increases ([2]). In 2025, personal and corporate income tax (PIT and CIT) increases (both from 20% to 22%) entered into force. In 2026, expected PIT and CIT rate increases (both to 24%) were cancelled. Still, the tax rate for advance income tax paid by credit institutions was raised from 14% to 18%. In 2025, a new motor vehicle tax was introduced. In July 2025, the VAT rate was increased from 22% to 24% and there were increases in the reduced VAT rates for accommodation services (from 9% to 13%) and for press publications (from 5% to 9%). Since 2025 an upward correction of the land tax is taking place. Despite these efforts, Estonia's tax base remains narrow and continues to be heavily reliant on labour and consumption taxes. New revenue-increasing or expenditure-reducing measures will be needed to ensure the sustainable financing of priority spending needs, mainly defence and social policies.

**The general government deficit increased to 2.0% of GDP in 2025 and is set to continue widening.** In 2025, the deficit remained low thanks to: (i) increases in the PIT and CIT rates to 22%; (ii) a rise in the VAT rate to 24%, (iii) a new motor vehicle tax; and (iv) improved tax collection amid the economic recovery. However, the deficit is forecast to increase to 4.5% of GDP ([3]) in 2026. Revenue is set to be impacted by the transition to a universal tax system that also raises the income threshold to EUR 700 monthly. This measure will lead to significant revenue losses even if it improves work incentives by removing the current hump in effective marginal tax rates (see Annexes 2 and 3). Expenditure is set to increase mainly due to defence spending. Public debt was 24.1% of GDP in 2025 and is set to rise to 26.9% in 2026 on the back of planned higher public spending, particularly on defence.

**Estonia appears to be on track to meet its commitments under its medium-term plan.** Under its 2025-2029 medium-term plan, Estonia committed to limiting expenditure growth, aiming to keep the deficit well below 3% of GDP by 2029 and public debt below the threshold of 60% of GDP (see Annex 2). The above commitment could be jeopardised by lower than projected economic growth resulting in lower fiscal revenues and backtracking on certain revenue-increasing decisions. On the expenditure side, increasing spending pressures, such as the planned increase in defence spending, surpassing 5% of GDP already by 2026, could also jeopardise the commitment.

**Budget pressures continue to build on the expenditure side.** Under Estonia's State Budgetary Strategy ([4]), welfare expenditure (including social and other subsidies, funded social contributions and unemployment insurance premiums) is expected to increase by around EUR 1 billion between 2025 and 2029, followed by health expenditure and security and defence expenditure, which are expected to increase by almost EUR 480 million and 560 million respectively. To counterbalance this trend, certain areas of expenditure, such as family benefits, are being targeted. As of 2026, the maximum rate for parental benefits has been reduced from three times to two times the average wage, with no provision for progressivity.

**Defence spending, with support from EU funds, is on the rise due to heightened security needs.** To enable Estonia to increase public spending on defence, the Council has activated the country's national escape clause ([5]). Defence spending increased from 2% of GDP in 2021 to 4.2% in 2025 and is expected to reach 5.0% of GDP in 2026. By composition, the proportion of defence investment in total

([2]) To help counteract the high energy prices stemming from the conflict in the Middle East, the government decided to postpone to 2027 the increases in energy (fuel and electricity) excise duty rates foreseen for 2026.

([3]) Commission 2026 Spring Forecast.

([4]) State Budget Strategy | Ministry of Finance.

([5]) The activation of the national escape clause provides Member States with budgetary flexibility to increase defence expenditure, without an immediate need to finance such an increase with spending cuts or revenue-raising measures. The flexibility gives Member States the necessary time to accommodate higher defence expenditure within national budgets.

defence spending will increase from approximately 32% to around 50% in 2026. In terms of EU funding, in February 2026, the Council agreed to make available to Estonia a loan amounting to a maximum of EUR 2.3 billion (5.9% of GDP) under the Security Action for Europe instrument ([6]) to finance defence projects in 2026-2030. In 2026, Estonia introduced two new specific objectives focused on improving security and defence in its cohesion programme. Both objectives prioritise the dual-use nature of new defence capabilities and together amount to almost EUR 386 million. Additionally, the Border Management and Visa Policy Instrument ([7]), with an overall budget of EUR 170 million, supports Member States bordering Russia and Belarus in upgrading surveillance systems, telecommunications and counter-drone capabilities. Complementing these efforts, the EU space and secure connectivity programmes provide secure and resilient space-based services able to operate effectively in diverse environments.

**New sources of revenue are needed to cover increased expenditure.** Estonia's revenue composition relies predominantly on labour and consumption taxes, which made up 90% of total tax revenue in 2024 (see Annex 3). In particular, the contribution of consumption taxes far exceeds the EU average. Such reliance is expected only to increase with the raising of the standard VAT rate in 2025, for a second consecutive year, to 24%. Environmental taxes (at 2.6% of GDP) already exceed the EU average as well. As it stands now, property taxation plays a very minor role in public revenues. Even though Estonia is currently undertaking new land valuations, a tax on residential buildings could improve long-term fiscal sustainability and broaden the tax mix. Furthermore, to guarantee progressivity, special provisions for low-income households could be envisaged.

**Performing consistent public spending reviews and policy evaluations could also improve fiscal sustainability.** Expenditure reviews have been carried out since 2017 but not in a consistent and comprehensive manner (see Annex 2). Estonia recently completed a training project, under the umbrella of the Commission's Technical Support Instrument, with the aim of better integrating regular spending reviews and policy evaluations into the medium-term budgetary framework. Estonia could benefit from using this know-how to help alleviate budgetary pressures and redirect the savings obtained to priority areas such as defence and social policies.

## Addressing regional disparities to support competitiveness, growth and resilience

**Persistent territorial disparities hamper convergence and growth.** Estonia's convergence with the EU average is still driven largely by the two major cities of Tallinn and Tartu (see Annex 18). The capital region (Northern Estonia, including Tallinn) stands out as the only region with income levels above the EU average, while the other regions remain substantially below it. This reflects the strong concentration of economic activity, high-value services and skilled labour around Tallinn. The regions (excluding the capital region) face structural challenges linked to sparse population, demographic decline and connectivity constraints. These challenges interact with institutional factors, as municipalities operate with relatively limited fiscal capacity, which constrains their ability to support the local economy and provide services to the local population. As the country transitions away from fossil fuels, Ida-Viru county is also undergoing a major industrial and economic transformation as the oil shale-based industry is phased out and its mainly Russian-speaking population faces obstacles to education and labour mobility due to language barriers. While Kagu-Eesti includes the second-largest city Tartu, it also comprises large parts that are among Estonia's most peripheral areas. Like other remote and rural parts of Estonia, they face challenges regarding (digital) connectivity and access to

([6]) Implementing Decision - EU - 2026/407 - EN - EUR-Lex.

([7]) Communication on the EU's eastern regions bordering Russia, Belarus and Ukraine.

basic public services, undermining the ability of residents to stay outside the major cities. Finally, investment and innovation activities also remain strongly concentrated in Tallinn and Tartu, while linkages between foreign investors and local SMEs are uneven across regions, not least due to impeded access to finance (see Section 2). Estonia could benefit from stronger place-based policy coordination that could support economic diversification and strengthen the resilience of regions (including those along the eastern border) that are facing structural adjustment. Strengthening inter-municipal cooperation and regional planning capacity would help to ensure the sustainable provision of public services.

**Estonia, as a country on the eastern external border of the EU, faces additional challenges hindering its prospects for economic and social development ([8]).** Russia's war of aggression against Ukraine not only exacerbates some of the existing structural challenges, but also increases security pressures, disrupts cross-border economic activities and decreases investment attractiveness, thereby making it even more difficult to access finance in the country. Security concerns for people and critical infrastructure require investments in civil protection, preparedness and military mobility. This is recognised by Estonia and has led to a significant increase in defence spending. While these investments could have the double benefit of addressing security concerns and providing opportunities for the regions' economies, they will also put further pressure on the financing of public services.

## Efforts are being made to address economic security challenges related to energy

**Estonia faces several challenges related to economic security, mostly in the energy sector.** As one of the most resource-intensive economies in the EU, Estonia depends heavily on fossil fuel imports for its energy needs, while phasing out the domestic production of oil shale at the same time. Russia's invasion of Ukraine, which was followed by sanctions, has led to significant energy price increases and competitive pressures in energy-intensive industries. Estonia also faces significant risks to the physical security of critical grid infrastructure, having experienced hybrid attacks on undersea cables by the Russian shadow fleet in the past. Efforts to increase energy security include ceasing Russian gas imports, expanding imports from alternative suppliers, and strengthening the grid infrastructure resilience and interconnections. The recent war in the Middle East nevertheless exposes Estonia's vulnerability to energy imports. Further investments in renewables, energy storage and energy efficiency are needed to boost energy security.

([8]) The Commission's 2026 Communication on the EU's eastern regions bordering Russia, Belarus and Ukraine defines eastern border regions as NUTS 2-level areas that are geographically proximate to Russia, Belarus or Ukraine. Estonia is classified as an eastern border region.

Box 2:

### Key achievements of the recovery and resilience plan

**Estonia's** recovery and resilience plan has a total budget of **EUR 953 million** (corresponding to **3.0 % of 2023 GDP**) to support reforms and investments contributing to the green and digital transitions, strengthen economic resilience and address the long-standing structural challenges identified in the European Semester.

As of 5 May 2026, **EUR 763 million** (around **80%** of the total allocation) have been disbursed to Estonia following the satisfactory fulfilment of **86 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**

- **Accelerated renewable energy deployment.** Streamlined permitting procedures for renewable energy generation and storage facilities and an investment is to increase the installed capacity for the production of sustainable biomethane by at least 4 000 000 cubic metres by 2026 (expected).
- **Energy efficiency in buildings.** At least 80 multi-apartment buildings and at least 900 small residential buildings have been renovated.
- **Strengthening access to healthcare.** The new general hospital and health centre in Viljandi provides access to healthcare and social services in an integrated way. Furthermore, doctors, nurses and pharmacists are incentivised to work in remote areas to improve access to healthcare across the country.
- **Supporting youth employment.** The 'My First Job' scheme enables young people with no or little work experience to gain work experience and improve their skills so they can find a job.
- **Developing new green technologies.** The Green Fund provides EUR 90 million to be invested in venture capital for the development of new green technologies in different sectors such as energy, agriculture and the food industry.
- **Increased internet access in rural areas.** This will be achieved by expanding very high-capacity broadband networks, which offer a connection of at least 100 Mbps, to over 8 000 dwellings and other sites (expected).

## Broader productivity gains still need to be unlocked

Estonia faces the challenge of achieving stronger labour and resource productivity beyond maintaining its position as a digital front runner. While Estonia has a digitally-savvy public service and buoyant ICT sector, it lacks private investments in research and innovation (R&I) and new technologies are not used in the economy. Significant steps have been taken to close this gap, including the strengthening of the applied R&I framework through the establishment of a national applied research centre and the launch of the TemTA programme to support use-oriented R&D in smart specialisation areas. Estonia has also: (i) advanced regulatory simplification efforts; (ii) expanded digitalisation support in traditional sectors such as manufacturing, construction and transport and logistics through RRF measures, cohesion policy funds and the Just Transition Fund; and (iii) updated the investment account system in 2025 to broaden investment opportunities for households. In future, sustaining competitiveness will require: (i) a coordinated approach to strengthen investment in skills across the workforce; (ii) faster diffusion of AI and advanced digital technologies; (iii) stronger incentives for private-sector innovation combined with improved access to finance for SMEs, particularly outside major urban centres; and (iv) a predictable, efficient business environment. Resource productivity in Estonia is dragged down by resource-intensive industries and considerable use of oil shale in

the energy sector. To boost resource productivity, Estonia needs to shift away from oil shale, further develop resource-efficient green technologies and further improve circularity. Without stronger diffusion of innovation and new technologies and broader mobilisation of private investment, Estonia may find it difficult to achieve broad-based productivity gains (see Section2).

## There is still scope to strengthen the social protection of vulnerable groups, and access to and the affordability of healthcare and long-term care

**While the overall poverty rate has decreased, poverty risks remain high for persons with disabilities, older people and single-parent households.** The main drivers remain: (i) the low spending on social protection; (ii) the limited effectiveness of social transfers; (iii) the adequacy of pensions (); (iv) high housing costs; and (v) uneven access to and affordability of healthcare and long-term care. High out-of-pocket payments, long waiting times and workforce shortages coupled with regional disparities are persistent challenges to accessing care services. Estonia has taken steps to address these challenges, but the lack of adequate funding remains a key obstacle to eliminating poverty and addressing the key challenges related to the affordability of and access to healthcare and long-term care. As for pensions, around a quarter of working-age Estonians take advantage of the tax break on contributions and participate in the third (supplementary) pillar pension scheme, which will help to address the issue of pension adequacy for participants in the future. However, contributions remain relatively low and are often irregular (Annex 6).

**Since the mid-2010s, Estonia has experienced one of the longest and most pronounced increases in nominal house prices and in the price-to-income ratio in Europe.** Several factors have contributed to this, including high demand, rising construction costs, lack of construction workers and low productivity in the sector. The increase in rents was lower but still substantial. Because of the very limited social housing stock, this led to a rising cost overburden, particularly for low-income households and single parents, with single parents at risk of poverty devoting one of the highest proportions of disposable household income to rent in the EU (Annex 16). While affordability challenges are most pronounced in urban areas, housing issues in the rest of the country relate more to quality and availability (Annex 18). To address this issue, Estonia is currently designing a general housing policy for 2025–2035 to cover a series of aspects relevant to housing affordability.

**Energy efficiency in the Estonian housing stock is very low.** As a result, Estonians spend a very high proportion of their disposable incomes on heating (see Section 3). This affects the whole population significantly but hits vulnerable groups particularly hard, highlighting the need to accelerate the energy efficiency renovation of old buildings and residential buildings, in particular.

**EU funding instruments provide considerable resources to Estonia**. 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 Estonia with an EU contribution of EUR 1.4 billion under the CAP strategic plan for 2023-2027([9]). A further EUR 168.7 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

([9]) An overview of Estonia '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/estonia_en

competitiveness in Estonia, for instance through open calls under Horizon Europe and the Connecting Europe Facility.

Box 3:

### Contribution of cohesion policy funds

**EU cohesion policy funding is supporting Estonia's efforts to boost competitiveness, environmental sustainability, skills and social fairness.** In the 2021-2027 programming period cohesion policy funds ([10]) are providing EUR 3.4 billion (amounting to EUR 4.1 billion with national co-financing), or 9% of 2024 GDP to Estonia. This makes cohesion policy one of the main sources of public investment in the country. The value of selected projects corresponded to 110% of the total allocation as of March 2026, with additional calls for projects in the pipeline.

- **Innovation, business environment and productivity.** Over EUR **1.1 billion** are allocated to R&I, SMEs' competitiveness and to the regions most affected by the transition away from carbon-intensive activities. Around 14 000 firms have already had their projects approved.

- **Decarbonisation, energy affordability and sustainability.** Around **EUR 690 million** are dedicated to the green transition, supporting renewable energy deployment and energy efficiency improvements in buildings and district heating systems. Investments also support drinking water supply and wastewater treatment, improving environmental performance and service quality, while reducing greenhouse gas emissions and energy consumption.

- **Skills, quality jobs and social fairness.** The total European Social Fund Plus (ESF+) allocation amounts to EUR 491 million. The Fund's main activities cover active labour market measures (EUR 47 million), work ability reform (EUR 31.3 million), and investments in education and skills (EUR 227.5 million). In addition, digital skills, youth measures, long-term care reform and integration are also supported. Around EUR 157 million are dedicated to fostering social inclusion, with EUR 24.9 million allocated to addressing child poverty and EUR 16.2 million to supporting the most deprived.

The mid-term review ([11]) strengthened the contribution of cohesion policy funds to emerging strategic priorities in Estonia, reallocating **around EUR 396 million** (including EUR 42.7 million from the ESF+). A significant proportion of the reallocations supports security and resilience, including military mobility and civil preparedness.

([10]) ERDF, ESF+, CF and JTF.

([11]) The mid-term review is carried out halfway through the 2021-2027 programming period. It is a formal assessment process required under Article 18 of the Common Provisions Regulation that aims to assess the implementation of programmes and, where necessary, propose adjustments to improve their performance, ensure their relevance in light of new and emerging needs and keep them aligned with other EU policies.

# INNOVATION, BUSINESS ENVIRONMENT AND PRODUCTIVITY

**In 2025, Estonia received country-specific recommendations (CSRs) to: (i) raise resource productivity; (ii) invest in skills; (iii) focus investment on research and innovation; and (iv) improve access to finance.** Several measures have been implemented to prioritise funding for applied research, but the private sector's leverage of public investment in research and innovation (R&I) remains limited. Similarly, extensive reforms are under way to strengthen the supply of specialist skills . Several funding programmes are available for improving resource productivity and transitioning to green technologies, but the industry uptake remains limited (Annex 1).

**Translating policy efforts into stronger innovation performance and productivity growth remains difficult**, **particularly for small and medium-sized enterprises (SMEs).** Patenting activity has declined and collaboration between science and business remains uneven. While start-ups benefit from a developed venture capital market, SMEs in general continue to face constraints in accessing finance to invest, innovate and scale up, and companies still report the need for skilled workers. Low resource productivity also indicates scope to improve the efficient use of materials and accelerate the transition towards a more circular economy.

## Low labour and resource productivity hamper competitiveness and convergence

**Low productivity growth reflected both weak labour productivity and low resource productivity, as highlighted in the 2025 CSR.** Productivity growth has been subdued amid weak investment, labour hoarding and uneven technology diffusion across firms (see Section 1), with persistent productivity gaps across firms and regions (see Annex 18). Despite strong digital public infrastructure and generally good connectivity, these strengths have yet to translate fully into business digitalisation and productivity gains. In particular, relatively high fixed broadband prices, especially for higher speeds, together with gaps in very high capacity network deployment (see Annex 5), may constrain firms' ability to adopt advanced digital solutions and innovate. The uneven uptake of digital technologies across firms continues to weigh on productivity performance, pointing to the scope for diffusing digital tools and capabilities more effectively across the economy.

**The supply of specialist skills remains a challenge, as highlighted in a 2025 CSR.** While the shortage of labour has somewhat eased, the lack of skilled workers still poses a challenge for 80% of businesses, and the shortage of highly skilled workers holds back Estonia's innovation capacity (see Annexes 4, 5 and 11). Despite major ongoing initiatives (see Section 4), there is still a critical gap in science, technology, engineering, maths, computers and software. Current challenges are likely to intensify as the diffusion of AI requires a broader and more advanced skills base than the current education system seems to supply. Without an effective skills policy with strong outreach, Estonia risks getting stuck in a low-skills trap, limiting firms' capacity to move into higher value-added activities and widening regional disparities.

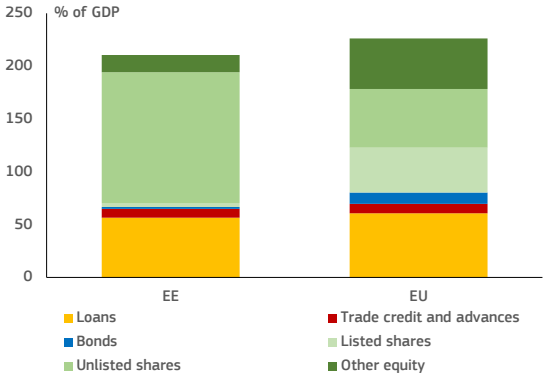
**Estonia is still among the worst performers in the EU in terms of resource productivity and needs green skills, as flagged in the 2025 CSR.** Estonia ranks 24th among the EU-27 Member States for resource productivity (see Annexes 5 and 8). The economy is highly energy-intensive due to

the still quite considerable use of oil shale in the energy sector (see Section 3), and for transport and heating. Resource productivity is also dragged down by resource-intensive industries, especially as the construction, wood and metalworking industries are heavy consumers of energy and raw materials. The development of new green and energy-efficient technologies by innovative start-ups continues to be supported by national programmes, cohesion policy funds and the Recovery and Resilience Facility-financed Green Fund and measures to improve the supply of green skills. Estonia has adopted a circular economy roadmap and introduced several circular economy support measures, including a resource-efficiency measure for manufacturing that is of particular importance to improving resource productivity. However, despite the available funding, the implementation by industry is lagging. Beyond the shift away from oil shale, further development of green technologies is hindered by regulatory and demand uncertainty, with permitting procedures also having room for improvement (see Annex 5). Other significant measures could include support for energy and resource efficiency in major sectors, as outlined in the 2023 circular economy action plan, and further improvements in circularity.

## Improving access to finance, leveraging public funding and improving the regulatory framework to support investment

**Access to finance remains a constraint for businesses, hampering innovative investment, as highlighted in the 2025 CSR.** The availability of finance is increasingly an investment obstacle to companies ([12]) and the proportion of companies constrained by a lack of finance also continues to be higher than the EU average, demonstrating the need for improved financial instruments and market access (see Annexes 5 and 6). While venture capital markets in the Baltics have developed and Estonia's per capita venture capital investments are among the highest in the OECD ([13]), the size of institutional investors, including pension funds, is small. Thus, overall, Estonian firms rely only marginally on funding from capital markets, with three quarters of investment funded internally (see Graph 2.1); a much larger proportion than the EU average.

Graph 2.1: **Composition of non-financial corporation (NFC) funding in % of GDP**




(1) The sum of NFC liabilities reflects only the total of the NFC liabilities considered. Reference period 2024.
***Source:*** Eurostat, FISMA E2 calculations

**Outside the ICT sector, the financing gaps persist and are increasingly structural and regional**. Lending to SMEs and firms in regions outside main urban centres is constrained by perceived higher risk and limited collateral (see Annexes 5 and 18). Targeted initiatives, such as the EUR 17 million regional grant scheme for SMEs in Ida-Viru attracted more applications than the budget permitted, demonstrating strong demand ([14]). Proposed state loan guarantees for energy projects represent another step forward. Strengthening risk-sharing instruments that blend grants with guarantees and equity-type instruments, could crowd in private investment more effectively than isolated schemes. This positive effect could be increased further by better integrating policies that target investment, SME support and innovation. Especially outside urban centres, more effective leveraging of national, private and

([12]) EIB Investment Survey 2025: Estonia overview.

([13]) OECD (2026). Economic survey: Estonia (forthcoming).

([14]) Ida-Viru väike- ja keskmise suurusega ettevõtjate investeeringute toetus - EIS.

institutional financing to improve access to finance at regional level would also require a coherent regional development strategy that takes into account the cross-cutting regional needs (Annex 18).

## A growing need to boost private investment in innovation and R&D, also in the defence sector

**Underinvestment in applied research and development impedes technological advancement, as flagged in the 2025 CSR.** Estonia has significantly strengthened its applied R&I framework (see Annex 4), and public R&I expenditure (0.78% of GDP in 2024) exceeds the EU average. Yet the translation of public R&I into scalable business innovation remains uneven, and private R&D intensity (1.21%) remains below the EU average. Moreover, patent activity has declined recently, suggesting limited commercialisation and diffusion. New applied research capacities and thematic funding instruments have been rolled out, and performance-based components in research funding increasingly reward collaboration and commercialisation. Ensuring that public R&I spending crowds in private investment and leads to marketable products and productivity gains is therefore essential. This could be addressed by stronger science–industry collaboration, better alignment of funding with market demand, and improved financing conditions for innovative SMEs, especially in areas with limited access to finance.

**Estonia's defence sector is undergoing rapid transformation, evolving from niche services into a high-tech innovation hub.** Russia's war of aggression against Ukraine has acted both as a significant driver of innovation and as a real-world evaluation environment for Estonia's military tech sector. Currently, over 10 Estonian firms are supplying a diverse array of hardware and services to Ukraine, including autonomous vehicles, surveillance sensors, anti-unmanned aircraft systems technology, mobile medical facilities and specialised training programmes ([15]). As of late 2025, the Estonian defence industry comprises over 180 companies ([16]), with the startup ecosystem growing from a dozen to at least 100 players in just three years. However, the sector faces challenges such as a small domestic market, a shortage of highly qualified specialists, and grant and other procedures that are not adapted to the rapidly evolving pace of technology and innovation. For example, developments in the battlefield might result in a need to alter product design or requirements, but grant and other procedures tailored to civilian activities could, at times, be too slow or rigid in such situations.

([15]) https://defence.ee/news/the-estonian-defence-and-aerospace-industry-association-is-growing.

([16]) ibid.

# DECARBONISATION, ENERGY AFFORDABILITY AND SUSTAINABILITY

**In 2025, Estonia received country-specific recommendations (CSRs) to: (i) reduce the overall reliance on fossil fuels and the proportion of oil shale in the energy mix; (ii) invest in renewable energy and promote energy storage; (ii) increase energy security; (iii) improve energy efficiency; and (iv) increase the availability of sustainable transport.** Several measures have been implemented to increase the proportion of renewables in the energy mix and promote energy storage, but further investments are needed to improve energy security. Progress has been limited in improving energy efficiency and the emissions from transport remain high, indicating the need for further steps to implement the CSR (see Annex 1).

## Promoting renewable energy and energy storage to reduce the reliance on oil shale

**In 2025, Estonia received a CSR to invest in renewable energy and promote energy storage.** Estonia's energy mix saw a notable shift towards renewables, between 2023 and 2024, from 35% to 40%**.** Domestically sourced oil shale remains an important part of the mix but it share of the energy mix has decreased importantly, from 30% in 2023 to 25% in 2024. Oil and petroleum products still represents 27% of the mix as it did in 2023, and the share of natural gas increased slightly from 6% to 7% Estonia had one of the highest proportions of renewables in net electricity generated in the EU (67.9%) in 2025,an increase of 5.3 percentage points compared to the previous year (62.7% in 2024)., with wind power being the main source of renewable electricity (see Annex 9).

**The implementation of key reforms to improve the energy infrastructure permitting process has enabled progress to be made in the uptake of renewables.** In 2024, legislative amendments under the Estonian recovery and resilience plan streamlined planning, permitting and environmental assessments for wind projects, and led to designating priority development areas with a total capacity of 1 000 MW. In addition, Estonia has aligned its permitting procedures with the European Commission's Recommendation on Permitting, by introducing a single contact point for developers, early public consultations and full digitalisation of permit processes. Clear deadlines for environmental assessments and overall permitting timelines have also been set to improve efficiency and transparency. Advancing the Estonia-Latvia offshore Elwind project, which has a planned capacity of 700-1000 MW, remains a priority.

**While Estonia is expanding its energy flexibility through energy storage solutions, demand response mechanisms, and market integration, price hikes remain a challenge.** In its 2035 energy sector development plan Estonia aims to remove market and regulatory barriers to the development of electricity storage, while preparing long-term financial guarantee mechanisms. As of 2024, 734 MW of battery storage infrastructure was in the process of being connected to the grid (see Annex 9). However, there is scope for additional measures to promote investment in renewables and support flexibility technologies such as battery storage systems. Such measures will also ensure grid stability, renewable energy integration and tackle price hikes, to which Estonia remains vulnerable. Severe price hikes take place during peak-demand hours and in winter when the high supply-demand gap is covered by ramping up

oil-shale fired power plants for short periods. As a result, price spreads in Estonia averaged EUR 159/MWh in 2025, significantly above the EU average of EUR 121/MWh (Annex 9).

**In 2025, Estonia received a CSR to reduce overall reliance on fossil fuels and the proportion of oil shale in the energy mix.** Shifting away from fossil fuels could also improve resource productivity (see Section 2). Under the recovery and resilience plan, the government adopted the national energy development plan in December 2025, which sets a clear deadline for the phasing out of oil shale in electricity generation by 2035 (with a strategic reserve exception). However, the impact is expected to start materialising only as of 2026, with oil shale remaining a significant part of the energy mix today. Oil shale-based energy production is concentrated in the eastern border regions (Kirde-Eesti), and its phasing out adds to the region's structural challenges. The just transition plan supports economic diversification and reskilling in these areas.

**Rural and coastal areas in Estonia offer potential for renewable energy generation as the country transitions away from oil shale-based production.** Electricity network reliability challenges are particularly relevant in rural and coastal areas. The potential of solar and wind power, together with strengthening the grids, particularly in rural, coastal and sparsely populated areas, could therefore also support regional development, in addition to increasing energy security.

## Strengthening energy security through interconnections and grid infrastructure resilience

**Estonia is well interconnected but further investments are needed to improve the resilience of the grid infrastructure**. In 2025, Estonia received a CSR to increase energy security, for example by ensuring the sufficient capacity of electricity interconnections. Estonia has achieved an electricity interconnection level of 89.04%, significantly surpassing the EU target of 15% (see Annex 9). This high level of interconnection was a key factor in the successful synchronisation of Estonia's electricity system with the EU grid in February 2025. The investment phase of the synchronisation project is progressing well, although upgrades to Estlink 1 and Estlink 2 have faced delays. In January 2026, EU funding was secured for a project on the protection of critical synchronisation infrastructure, which will be jointly implemented by the transmission system operators of Lithuania, Estonia, Latvia and Poland. Recent attacks on grid infrastructure and undersea cables underline the need to improve the resilience of the grid infrastructure and to ensure the efficient functioning of the energy market.

**Estonia remains vulnerable to hybrid threats, highlighting the importance of cross-border connections.** Estonia is pursuing major cross-border interconnection projects, such as EstLink 3 (Estonia-Finland) and the Estonia-Latvia 'fourth interconnection', which are both expected to be completed by 2035. Price differences between Finland and Estonia, along with incidents affecting undersea cables, highlight the importance of these initiatives. Estonia also actively participates in the Baltic energy market interconnection plan to strengthen regional energy cooperation.

## Progress in energy efficiency slowing down

**Estonia has made no significant progress in energy efficiency**. In 2025, Estonia received a CSR on improving energy efficiency by taking new financing and support measures to meet the targets of the long-term renovation strategy. Between 2019 and 2024, Estonia's final energy consumption in the residential sector remained largely unchanged. Although buildings are responsible for 46.1% of energy use in the country, Estonia has not set an energy savings objective in its long-term renovation strategy. Households have

made little progress in reducing their energy use through energy efficiency improvements such as insulation or heating upgrades. Recovery and Resilience Facility (RRF) investments in energy efficiency are yet to produce an impact. The cost of renovating apartment buildings and private houses is estimated at EUR 15 billion (see Annex 16). Estonia continues to rely mostly on grant-based funding schemes for energy efficiency and the use of financial instruments remains limited. Increasing the availability of financial instruments (e.g. loan guarantees for remote areas) could advance decarbonisation and make housing more affordable through lower heating costs in renovated dwellings (see Section 1). In addition to preparing a clear path toward a decarbonised and energy-efficient building stock, better national-level planning in housing renovation could also help to tackle the need for climate adaptation and increase overall crisis resilience.

## Decarbonisation of transport and the finalisation of Rail Baltica

**Emissions from the transport sector remain high. Road transport remains dominant and the use of private cars is increasing.** The 2025 CSR highlighted challenges concerning the availability and use of sustainable and less polluting transport. Estonia has made some progress with investments, notably through the RRF and cohesion policy funds, including rail electrification, a new tramline in Tallinn, Rail Baltica viaducts and the construction of the Ülemiste terminal. The RRF also contributed to a new strategic approach to mobility through the adoption of a new transport and mobility development plan and the implementation of a common transport system for the Tallinn capital region. However, emissions remain high, as 48% of Estonia's effort-sharing emissions came from road transport in 2024, up 27% from 2005 levels. The proportion of electric vehicles in the total fleet remains low. Not only has Estonia seen the number of cars increase significantly over the last decade to over 635 cars per 1 000 inhabitants in 2024 (which is above the EU average), but its car fleet is also the oldest in Europe ([17]). Meanwhile, charging infrastructure is expanding, with almost 2 000 publicly accessible charging points in 2025. The motor vehicle tax introduced in 2025 provides for lower tax on fully electric vehicles, however its overall impact on car fleet renewal remains still to be seen.

**Further efforts are needed to implement the objectives of the 2021-2035 transport and mobility development plan,** including on increasing the use of public transport and improving road safety. There is a general lack of integrated solutions and further development is needed to improve multimodal connection and services for passengers (see Annex 18). Moreover, to improve decarbonisation and connectivity, it will be important to ensure sufficient funding to complete Rail Baltica and further encourage sustainable transport, multi-modality and the integration of public transport.

## Strengthening climate resilience

**Climate adaptation, resilience and preparedness could be strengthened through more investments and a systemic approach to climate-proofing across sectors.** Investment needs for climate adaptation measures in Estonia are estimated to amount to EUR 650 million per year up to 2050 (1.3% of GDP), with the most beneficial investments being in ecosystems restoration (around 48% of the total), followed by infrastructure retrofitting and reinforcement (around 40% of the total) ([18]). As for ecosystems restoration, scaling up the deployment of nature-based solutions would contribute both to land use, land-use change and forestry (LULUCF) objectives and to

([17]) Eurostat https://ec.europa.eu/eurostat/databrowser/view/road_eqs_carhab__custom_9275964/default/table?lang=en.

([18]) European Commission, 2026, Assessment of adaptation investment needs https://op.europa.eu/en/publication-detail/-/publication/d2039eac-f742-11f0-b9bc-01aa75ed71a1/language-en%20(Table%208).

increased climate resilience. Net carbon removals turned into net emissions in 2014 and have remained above zero since then. Restoring wetlands and improving forest management will help to increase climate resilience and reverse the decline in net carbon removals from the atmosphere. Further investments in healthy forests and soils as natural carbon stores will also help to contribute to a competitive bioeconomy.

**Challenges in strengthening climate adaptation remain due to: (i) the high vulnerability of the transport infrastructure; (ii) the low insurance coverage of climate-related risks; and (iii) gaps in the adaptation governance framework.** The high vulnerability of the transport infrastructure is reflected in the transport vulnerability index of the TEN-T network, where Estonia ranks among the highest in the EU. Insurance coverage of climate-related losses remains limited, with coverage of only 15% of the economic losses caused by weather- and climate-related extreme events in Estonia between 1980 and 2024 (EU-27: 19%). While Estonia has had a national climate change adaptation strategy and action plan in place since 2017 and is seeking to further strengthen its governance framework, progress has been constrained by delays in adopting key legislation. In particular, the adoption of the Climate-Resilient Economy Act, which is expected to provide the legal basis for further sectoral integration, has been delayed. At the same time, a national climate change adaptation roadmap is under development. The systematic application of climate-proofing across sectors and key infrastructure would further strengthen preparedness and resilience.

# SKILLS, QUALITY JOBS AND SOCIAL FAIRNESS

**In 2025, Estonia received country-specific recommendations (CSRs) to: (i) improve the skills supply; (ii) reduce early school leaving; (iii) better attract and retain talent; and (iv) strengthen social protection, also through improving the benefit system and ensuring sustainable financing for healthcare and long-term care.** Several measures have been implemented to address these challenges, but there is still a high rate of early school leaving, and further efforts are needed to improve the skills-related policy outreach. There is scope to further strengthen social protection for vulnerable groups and improve access to and the affordability of healthcare and long-term care.

**Despite Estonia's progress with reforming its education and training and social protection systems, the country still faces major challenges.** Extending skills policies and training opportunities to those who do not yet fully benefit from them remains a challenge. Evaluating recent education reforms and measures will be important to assess their effectiveness to inform future policy adjustments. Regional differences in education and training opportunities and attainment levels remain significant and young people face barriers to getting into work or training. Vulnerable groups such as older people, persons with disabilities and single-parent households are still at a relatively high risk of poverty in Estonia. In particular, challenges remain regarding the adequacy and coverage of social protection and the affordability of and access to healthcare and long-term care, which could become more acute if no effective policy action is taken.

## Expanding the supply of skills is essential to meet future labour market needs

**Improving the labour market relevance of education is essential for productivity growth, as highlighted in the 2025 CSR.** As discussed in Section 2, demand for specialist skills remains high, especially in some sectors such as ICT, healthcare and education, while emerging green and technical fields face shortages of engineers and technical specialists. Although ICT enrolment at tertiary level has grown, enrolment in engineering remains low and drop-out rates in the first year of undergraduate studies and at PhD level are high. To improve the supply of specialists in science, technology, engineering and maths (STEM), Estonia is preparing a new STEAM ([19]) strategy covering all education levels (see Annex 13). The green skills programme strengthens the supply of green skills ([20]). The increasing adoption of AI in the economy is reflected in education policy.

**The ongoing vocational education and training (VET) reform is set to improve the skills supply.** In 2025, Estonia introduced applied VET programmes in high-demand fields like ICT, engineering, construction and healthcare to improve the employment prospects of VET graduates. To be successful, the reform would require strong employer engagement, and VET schools to be adequately prepared and funded to accept students with learning difficulties. The professional qualification reform planned to take effect in 2026 could also improve responsiveness to labour market needs by

([19]) Science, technology, engineering, arts and maths.

([20]) Roheoskused - uue aja oskused | Haridus- ja Noorteamet.

better integrating the qualifications and skills systems with the OSKA forecasting framework.

**To address skills shortages, Estonia has taken measures to attract highly qualified professionals from abroad, in line with the 2025 CSR.** In particular, in 2025, it introduced the EU Blue Card scheme and targeted visa pathways, such as the Startup Visa and Digital Nomad Visa. Further measures to simplify the recruitment and retention of foreign talent are planned through amendments to the Aliens Act and the integration of the 'Work in Estonia' and 'Study in Estonia' initiatives under the upcoming 2026–2029 talent strategy.

**Early school leaving continues to constrain educational attainment, as flagged in the 2025 CSR.** One in ten young people lacks an upper-secondary qualification, limiting the pool of skilled workers. Estonia has taken significant steps to address this by extending compulsory education to age 18 from 2025 and launching a comprehensive reform of vocational education. At the same time, schools face increasingly diverse student needs, including a rising number of pupils requiring additional learning support, while teacher training and support services have struggled to keep pace (see Annex 13). Strengthening specialised training for teachers and expanding access to specialised support services would help improve pupils' outcomes and increase upper-secondary completion rates.

**Growing difficulties in maintaining the teaching workforce pose a risk to the quality of education.** The country's teaching workforce is one of the oldest in the EU. Around half of newly trained teachers do not remain in the profession for more than five years. This results in an increasing proportion of teachers who are not fully qualified (26% in 2025) being hired to compensate for the shortages, undermining the effectiveness of education spending. Teacher shortages are particularly severe in STEM subjects, in Estonian as a second language and in rural schools (see Annex 13). Initiatives like the new teacher career model, Teachers' Academy micro-credentials and creating more places in initial teacher education are promising measures. However, without further policy efforts and suitable funding, shortages risk increasing further. Implementing incentives targeting STEM teachers, as well as extending the teacher action plan beyond 2026 and focusing on retention would provide additional support.

**Youth unemployment and the rising proportion of young people neither in employment, nor in education or training highlight persistent challenges faced by young people leaving school and entering the labour market.** It is increasingly difficult for young people entering the labour market to find a job, with youth unemployment above the EU average of 15%. At the same time, the proportion of **young people neither in employment, nor in education or training** rose to 11.2% in 2025, matching the EU average and signalling growing risks of labour market detachment among young people. Young people with limited qualifications or work experience are particularly exposed to unemployment or precarious jobs (see Annex 11). Limited job opportunities, particularly in rural areas, and gaps in the effectiveness and coverage of support to help young people transition from school to work also contribute to these trends. Estonia has introduced several reforms to address these issues, including initiatives funded by the Recovery and Resilience Facility. Strengthening integrated education-to-work pathways, scaling up preventive and outreach measures, and further developing initiatives that help to get young people into work or training at an early stage could help improve their employment prospects.

**Targeted adult learning could help address skills disparities across age groups, regions and socio-economic backgrounds.** While overall adult skills in Estonia remain above the OECD average, proficiency declines markedly with age, with the strongest results among younger adults and the weakest among those approaching retirement age. Disparities in adults' skills persist by region (e.g. Ida-Virumaa scores significantly lower in literacy and numeracy) and by socio-economic background (see Annex

13). Expanding targeted upskilling and reskilling programmes for low-skilled and older adults, particularly in regions that are lagging behind, could narrow these gaps. The basic level of digital skills slightly exceeds the EU average, but a high proportion of employees still report inadequate computer and software skills (Estonia 12% vs OECD 4%), while demand for AI and ICT skills is expected to grow further. Providing stronger digital and AI skills and improving rural access to online learning infrastructure could also improve adults' skill levels. Future adult education and retraining offers should better target the areas identified by OSKA studies as most needed.

**Increasing social dialogue could improve labour market outcomes.** Collective bargaining coverage and trade union density remain among the lowest in the EU (see Annex 11). Not only are the in-work poverty rate and the proportion of low-wage earners among the highest in the EU, but the gender pay gap is also high. The involvement of social partners in labour market reforms, wage setting and policymaking remains limited, partly due to weak institutional capacity. Resuming the tripartite dialogue, implementing the 2025 action plan on strengthening collective bargaining and increasing social partner involvement could help improve labour market outcomes.

## Strengthening social protection remains a challenge

**Low social expenditure and gaps in social protection coverage put vulnerable groups at high risk of poverty.** In 2025, Estonia received a CSR to reduce poverty risks by strengthening social protection for older people, single-person households, persons with disabilities and the unemployed. Estonia has taken steps to address these challenges. Planned reforms to the unemployment insurance system aim to improve coverage, also for workers with limited employment histories and persons with disabilities. Preliminary analysis suggests that most self-employed workers are covered through a secondary job, although some gaps in effective coverage still exist. The minimum income support remains relatively low compared with commonly used adequacy benchmarks, while overall social benefit expenditure remains below the EU average, limiting the poverty-reducing impact of social transfers (see Annex 12). In-work poverty also remains relatively high despite some gradual improvement. Persons with disabilities, including those in employment, are at a much higher risk of poverty than the general population, partly reflecting relatively low disability benefits and the limited effectiveness of social transfers. Single-parent households are also particularly exposed to poverty and housing cost pressures. Housing affordability further exacerbates poverty risks, especially among tenants, while the supply of social housing remains very limited, pointing to structural gaps (see Annex 16). Reforms to the minimum income system aim to improve the adequacy and efficiency of subsistence benefits, but as these reforms remain at an early stage, their impact has yet to be seen. Strengthening benefit adequacy and broadening access to social protection could improve the system's capacity to reduce poverty risks among vulnerable groups.

**Low pension adequacy contributes to high risks of poverty among older people in the context of population ageing**. Despite recent reforms, pension adequacy in Estonia remains a challenge, with poverty risks among older people remaining among the highest in the EU, as also highlighted in the 2025 CSR. Although the aggregate replacement ratio has improved in recent years, it remains below the EU average, reflecting relatively low pension levels (see Annex 12). Risks are particularly high for women and older people living alone, with the latter recording the highest risk of poverty or social exclusion in the EU. This is linked to longer life expectancy, household composition patterns and limited survivor pension coverage. These factors result in many older women living alone with relatively low incomes. Estonia has taken measures to support pension adequacy, notably through regular pension indexation, linking retirement age to life expectancy, and initiatives to strengthen pension literacy and increased

flexibility in contribution to funded pension schemes (second pillar). However, complementary pension savings remain largely voluntary. Strengthening complementary pension savings and improving participation in the second and third pension pillars could therefore help support future pension adequacy while limiting long-term pressures on the public pension system.

## Regional socio-economic disparities are compounded by unequal access to social services

**Structural factors, such as reliance on the oil shale industry in the Ida-Viru region, limited economic diversification and lower disposable incomes continue to weigh on remote regions' socio-economic performance (see Annex 11)**. Labour market outcomes differ markedly across regions, with significantly higher unemployment in rural areas. In North -East Estonia, the unemployment rate reached 12.7% in 2025, compared with 6.2%–7.4% in other regions, contributing to higher poverty risks.

**Access to social services also varies across municipalities**. Smaller and rural municipalities often face administrative and financial capacity constraints, affecting service availability and quality. Differences in local provision and pricing contribute to uneven access, while the out-of-packet payment by users do not systematically take individual economic circumstances into account. The Ida-Viru region benefits from EU support, including through the Just Transition Fund, but further efforts are needed to strengthen labour market opportunities, improve access to services and support economic diversification.

## There is scope to improve access to and the affordability of healthcare and long-term care

**Estonia has made some progress in implementing the 2025 CSR to improve access to and the affordability of healthcare and long-term care.** Estonia has undertaken reforms and investments with the support of the Recovery and Resilience Facility and the European Social Fund Plus to: (i) address healthcare workforce shortages; (ii) strengthen primary care and the hospital network; and (iii) promote the integration of healthcare and social services (Annexes 12 and 15). However, Estonia still faces challenges regarding access to and the affordability of healthcare and long-term care, particularly in regions outside the main urban centres and among vulnerable groups. The government's proposal to integrate social and healthcare services and the undertaking of a broader review of healthcare financing to improve long-term sustainability are steps in the right direction.

**Access to healthcare and long-term care remains constrained by limited funding.** Public expenditure on healthcare and long-term care is well below the EU average, leading to significant unmet needs and high out-of-pocket payments that disproportionately affect lower-income groups. Significant inequalities in life expectancy and healthy life years that are closely linked to education, income and place of residence persist in Estonia (see Annex 12). The current social health insurance model is not financially sustainable in the long term, as expenditure is projected to grow faster than revenues due to the ageing population, rising demand and labour market changes.

**Access to care is further hindered by persistent workforce shortages, particularly in rural areas, exacerbated by an ageing workforce.** Strengthening financial and non-financial incentives for healthcare professionals to work in regions outside main urban areas, including improved

reimbursement, housing support and professional development opportunities, could help address shortages. While the care reform implemented since 2023 has reduced out-of-pocket costs for residential care, it has also increased demand for nursing home places and exacerbated staff shortages, while not sufficiently strengthening home-based care (see Annexes 12 and 15). It remains crucial to continue implementing reforms to: (i) better integrate healthcare and social services; (ii) prioritise prevention; (iii) ensure sustainable funding; (iv) address workforce shortages; and (v) reduce regional disparities in access to and the affordability of care.

# KEY FINDINGS

In the areas **covered by existing country-specific recommendations**, Estonia would benefit from:

- **increasing tax revenue from sources that are less detrimental to growth, increasing spending efficiency**, and directing spending to priority areas, such as healthcare, social policies and defence, while guaranteeing fiscal sustainability;
- **improving access to financing,** particularly for small businesses and firms outside main urban areas, by expanding targeted grants and guarantees, and moving towards a more integrated innovation and business support framework;
- **boosting innovation and R&D investment** by addressing obstacles to the commercialisation of research and by better leveraging public investment in R&I;
- **boosting the competitiveness and resilience of Estonia's regions**, in particular, those at the eastern border, also by supporting the transition to new resource-efficient technologies;
- **reducing overall reliance on fossil fuels** and the proportion of oil shale in the energy mix by promoting renewable energy and energy storage;
- **accelerating the energy-efficiency renovation** and improving the crisis resilience of old buildings and, in particular, residential buildings, by introducing new financing and support measures, including financial instruments;
- **increasing energy and economic security**, also by investing in the resilience of the grid infrastructure and cross-border interconnections;
- **further decarbonising transport and improving connectivity** by completing Rail Baltica, further encouraging sustainable transport, multi-modality and integrating public transport;
- **promoting human capital development** by strengthening STEM education across all levels, expanding upskilling and reskilling for adult learners, and improving artificial intelligence skills across the workforce;
- **reducing early school leaving** by addressing teacher shortages and providing support to students with special needs;
- **strengthening social protection to reduce poverty** among older people, persons with disabilities and single-parent households, including by increasing the adequacy and efficiency of the benefit system, targeting vulnerable groups, and increasing the affordability of housing and the availability of social housing;
- **improving access to and the affordability of healthcare and long-term care** to reduce unmet needs and out-of-pocket payments by reforming the funding of healthcare and long-term care, tackling workforce shortages to address geographical disparities and investing, among other things, in integrated care models and prevention.

In **other areas**, Estonia would benefit from:

- **reducing youth unemployment** by strengthening active labour market policy outreach to young people not in employment, education or training and improving the transition from education to work, while improving social dialogue.

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# ANNEX 1: CSR IMPLEMENTATION

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

Estonia faces challenges in a wide range of policy areas, as identified in the country-specific recommendations (CSRs). Estonia was recommended, among other things, to boost defence spending, expand the tax base, prioritise research funding and access to finance for SMEs, to encourage investment into venture capital, improve energy efficiency, invest in renewables and energy storage, strengthen energy security and promote bio-based innovation, expand sustainable transport, enhance productivity and skills including green transition skills, and to reduce poverty by strengthening social protection whilst ensuring fiscal sustainability.

The Commission has assessed the degree of implementation of the 2025 CSRs considering the policy action taken by Estonia to date*. To do so, the Commission has taken into account the information provided by Estonia in its Annual Progress Report as well as other information sources. This annex provides summary information on the policy actions taken or planned by Estonia 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 5.0% of GDP, corresponding to an increase of 0.9 ppt. compared to 2024. | Total general government defence expenditure in 2027 is projected at 5.4% of GDP, corresponding to an increase of 1.2 ppt. compared to 2024. | Substantial progress |
| 1.2. In line with the requirements of the reformed Stability and Growth Pact, limit the growth in net expenditure in 2025 and 2026 to a rate consistent with putting the general government debt on a plausibly downward trajectory over the medium term and maintaining the general government deficit below the 3% of GDP Treaty reference value, while making use of the allowance under the national escape clause for higher defence expenditure. | Cumulated deviation in 2025 amounted to -1.4% of GDP.<br>Cumulated deviation in 2026 projected at 1.5% of GDP but it is fully explained by the NEC flexibility (1.5pps of GDP). | | Full implementation |
| 1.3. Broaden the tax base by tapping into taxes that are less detrimental to growth. | From 2024 to 2027, the excise duties on alcohol, tobacco and energy goods will have additional yearly increases. In January 2025 personal and corporate income tax increases (both from 20% to 22%) entered into force and certain personal income tax benefits (housing loan interest, spouse's additional basic allowance, additional basic allowance for children) were abolished. Also, the advance income tax rate for credit institutions was increased from 14% to 18%. In 2026, expected PIT and CIT rate increases, both to 24%, were abrogated. Still, the advanced income tax rate for credit institutions was raised from 14% to 18%. In January 2025 a new motor vehicle tax was introduced. In July 2025 the VAT rate was increased from 22% to 24% and the reduced VAT rates of accommodation services (9% to 13%) and press publications (5% to 9%) were increased. In 2025 an upward correction of the land tax is taking place. | | 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** |
|---|---|---|---|
| 1.4. Ensure sustainable financing for spending needs including healthcare and long-term care to improve accessibility and affordability. | The RRP reform regarding the **Hospital Network Development Plan** was adopted in 2025 and Strategic Framework on health workforce shortages is being implemented.<br>Law passed in 2025 to boost the **Health Insurance** Fund reimbursements for essential primary care services and dental treatments and adding protections, higher benefits for vulnerable adults. | Estonia took preparatory steps to present a legislative proposal to improve the **integration of health and social services** in mid-2026 aimed at more efficient use of resources and better access to care. Estonia is also planning to review health care financing to ensure its sustainability. | Some Progress |
| 3.1. Focus investment on research and innovation by prioritising funding for applied research. | Support to business R&I has increased with direct public support around 0.15% of GDP, above the EU average. New instruments include the **national applied research centre** (established 2023; operational in 2025), the EUR 102 million **TemTA programme** (2024–2029) supporting applied research with commercialisation requirements, performance-based funding incentives for science–business collaboration, and Structural Funds-backed measures to strengthen IP management and technology transfer. | Estonia is piloting **tax-based and voucher support** for innovation. Since 2024, there is a grant covering up to 50% of the income tax paid on R&D employees' salaries, while innovation vouchers provide small grants for SMEs to purchase services supporting innovative activities. | Some Progress |
| 3.2. Improve access to finance, especially for small and medium-sized enterprises and companies in remote regions, to facilitate innovative investment, for example investment in the green and digital transitions, including by promoting institutional investor participation in the venture capital and equity market. | The three Baltic states have integrated their capital market infrastructure. The **investment account regime** (expanded in 2025) has promoted retail participation in capital markets. Support from national and supranational institutions have fostered private equity and venture capital. **Region-specific call** (EUR 13 million) in 2025. Targeted **guarantee scheme for energy sector** (EUR 100 million) was launched. | In 2025, Enterprise Estonia signed a landmark agreement with the EIF (EUR 109 million) in **financing to support Estonian businesses** with more favourable loans and guarantees. | Some Progress |
| 4.1. Improve energy efficiency by taking new financing and support measures to meet the targets of the long-term renovation strategy. | RRF and Cohesion Policy support the energy efficiency investments, especially the renovation of apartment buildings and dwellings, through grants, loans, guarantees and other support instruments. | RRF **investments in energy efficient renovation** account for EUR 76 million and should be completed by mid-2026. | Limited Progress |
| 4.2. Reduce overall reliance on fossil fuels and the share of oil shale in the energy mix by investing in renewable energy and by promoting energy storage. Increase energy security, for example by ensuring the sufficient capacity of electricity interconnection. | The Government has adopted the **National Energy Development Plan** 2035 in December 2025 (a measure in RRP). Estonia has successfully **connected** to the EU electricity system in February 2025, and its level of electricity interconnections is four times higher than the EU target of 15% by 2030. | Phase-out of direct burning of oil shale for electricity production by 2035 with an exception for out-of-market oil shale for potential strategic reserve needs in case of deviation from the reliability standard.<br>Phase-out of the use of shale oil in domestic heat production by 2040. | Some Progress |
| 4.3. Raise resource productivity through bio-based innovation | Estonia has a **circular bioeconomy roadmap** which is being implemented and has national, cohesion policy and RRF funding allocated for bioeconomy topics and green technologies. Estonia also introduced several **circular economy** | | 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** |
|---|---|---|---|
| | **support measures** where calls were opened in late 2024 and 2025, including a resource efficiency measure for manufacturing industry which has particular importance to improve resource productivity, and which will be continued. | | |
| 4.4. Take further action to increase the availability and use of sustainable and less polluting transport, including by electrification of the rail network, renewal of the stock of road vehicles, and integration of public transport systems. | RRF contributed to decarbonisation and sustainability of the Estonian transport sector. A new strategic approach to mobility was facilitated through adoption new **Transport and Mobility Development Plan** and implementing a common transport system for the Tallinn capital region. RRF also contributed to connecting Rail Baltic to sea connections with the Nordic countries via the construction of the **Tallinn Old Port tram line.** In addition, RRF and cohesion policy invested in **Rail Baltica:** Ülemiste Terminal and viaducts. Estonia adopted a Motor Vehicle Tax in 2025 with lower taxation on electric and other less polluting vehicles. | Continued **rail electrification** (Tallinn-Tartu in 2026, Tallinn-Narva in 2027) and infrastructural improvements from cohesion policy funds and RRF. Cohesion funds are planned to support more sustainable and connected mobility in Estonia through tram and multimodal transport investments, rail electrification and upgrades, better integrated public transport, and safer walking and cycling links to services, Cohesion policy funds, through to mid-term review allocation, are planned to support dual-use transport infrastructure for military mobility and civil preparedness, including upgrades to the Tallinn–Pärnu–Ikla (Via Baltica) and Tallinn–Tartu TEN-T corridors and further investment in Rail Baltica. | Some Progress |
| 5.1.Improve labour productivity and skills supply through action on reskilling and upskilling. | Estonia has significantly **strengthened its skills policy framework** through expanded upskilling and reskilling, reinforced skills forecasting and governance, major VET reform, micro-credentials, and digital skills infrastructure. Recent measures to address skills shortages include initiatives in **career services**, special measures for those working in the oil shale sectors, and programs to develop skills through obtaining qualifications or employer training grants. The activation criteria for the unemployed was updated and ALMP measures revised in 2025-2026, including to improve career services. | All major reforms are ongoing | Some Progress |
| 5.2. Step up policy measures aimed at the provision and acquisition of skills and competences needed for the green transition. | RRP measures on supporting the green skills are still under way and planned to be completed by August 2026. The **Green Technologies Development Programme** was set-up and is being implemented. | | Some Progress |
| 5.3. Improve labour productivity and skills supply} by reducing early school leaving, by improving the job market relevance of the education and training system, in particular by meeting the growing demand for STEM specialists, and by better attracting and retaining talent. | Estonia **amended the Aliens Act in 2025**, tightening employer oversight and adjusting conditions for labour migration. In education, **compulsory schooling** was extended in 2024 to age 18, with 2025 measures introducing a preparatory year to prevent early school leaving. Comprehensive **VET reforms** are underway to improve labour market relevance, a shift to competence-based qualifications by 2026, and consolidation of the VET network into regional centres. | The new **Aliens Act** is expected to enter into force as of 2027. Policy discussions focus on **possible exemptions** from the immigration quota for skilled workers and sectors facing labour shortages | Some Progress |

*(Continued on the next page)*

*Table (continued)*

| **Recommendation text** | **Main measures adopted or implemented**<br>*By 30 April 2026* | **Preparatory steps/ credibly announced measures**<br>*By 30 April 2026* | **Assessm. of progress** |
|---|---|---|---|
| 5.4. Reduce the risk of poverty by strengthening social protection for older people, single-person households and people with disabilities by increasing the adequacy and efficiency of the benefit system, and for the unemployed, inter alia by extending the coverage of unemployment benefits, in particular to those in non-standard forms of work, while maintaining fiscal sustainability. | In 2025, contributions to the second **pension pillar** were increased from the usual 2% to 4% or 6% of gross salary. Reform was adopted so that the retirement age will be linked to life expectancy (for 2027 this has been set at 65 years and one month). Due to indexation in 2025, pensions have been increased. The tax-free income threshold for old-age pensioners was increased.<br>From June 2025, **disability benefits increased**.<br>Reform of **unemployment** allowance and unemployment insurance and extension of unemployment insurance coverage to new forms of work was adopted in 2025 and entered into force on 1 January 2026. | Estonia plans reforms in 2026: including replacing its unemployment insurance system with a single scheme and improving social protection, especially for workers with disabilities; increasing flexibility in second-pillar contributions, and shorter waiting periods to rejoin the mandatory second pillar is being under preparation to enhance pension adequacy and participation;<br>reviewing its minimum income methodology, | Some Progress |

***Source:*** Estonia's reporting and Commission assessment

# ANNEX 2: FISCAL DEVELOPMENTS AND DEBT SUSTAINABILITY

This annex discusses selected topics in public finance and developments in fiscal-structural country-specific recommendations (CSRs) addressed to Estonia in July 2025. These CSRs include a call to strengthen defence spending and readiness while implementing a fiscal strategy in line with the Council Recommendation of 21 January 2025. Estonia also received a recommendation in 2025 to improve the accessibility and affordability of healthcare and long-term care while safeguarding against inflationary pressures.

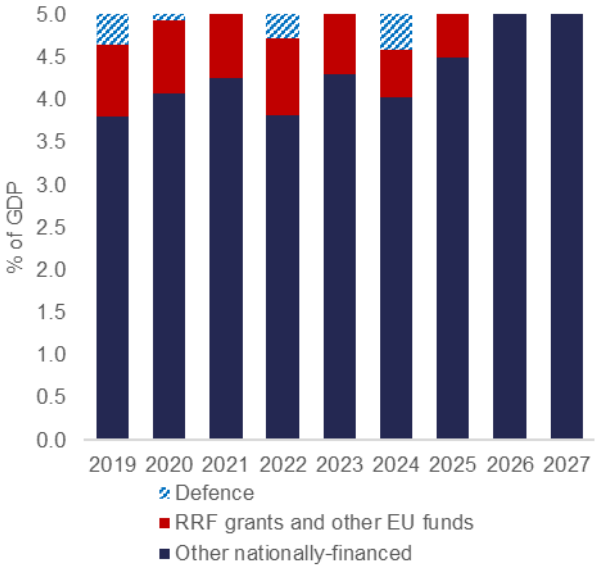
On 21 January 2025, the Council of the European Union adopted the Recommendation endorsing Estonia's medium-term fiscal-structural plan ([21]). The plan includes a fiscal adjustment over four years. On 8 July 2025, the Council also activated the national scape clause for Estonia in order to facilitate the transition to higher levels of defence spending ([22])([23]).

## Developments in the government balance, debt and public expenditure ([24])

**At the end of 2025, Estonia's government deficit was equivalent to 2.0% of GDP and the government debt-to-GDP ratio stood at 24.1%.** Based on the Commission Spring 2026 Forecast, Estonia's government deficit is projected to widen to 4.5% of GDP in 2026 and to 4.8% of GDP in 2027, driven by developments on both the revenue and expenditure sides. On the revenue side, the main reason behind the forecast for lower revenue is Estonia's planned transition to a universal tax system and the increase in the tax-free income threshold to EUR 700 per month. This measure raises concerns about significant revenue losses even though it improves work incentives by removing the previous hump that existed in effective marginal tax rates. Given rising public spending needs, Estonia should consider a more revenue-neutral design of changes to its tax system. On the expenditure side, defence spending, rising from 3.8% of GDP in 2025 to 5.1% in 2026, will also contribute to a higher deficit.

**Rising defence expenditure and EU funds are contributing to growth in public investment over the medium term.** Following the Commission 2026 Spring Forecast, public investment is expected to reach 7.9% of GDP in 2026, up from 5.8% in 2021. It is set to decrease somewhat in 2027 due to a relatively smaller contribution by defence investment (See Graph A2.1).

Graph A2.1: **Public investment composition**




***Source:*** AMECO

**Spending on defence is forecast to increase in the coming years, but policy areas such as healthcare and social protection remain underfinanced.** Estonia received a CSR in 2025 to ensure the sustainable financing of spending needs, including defence, healthcare and long-term care. The current budget and the medium-term budgetary plan commit Estonia to higher spending on defence, but they fall short of providing sufficient funding to address structural

([21]) OJ C, C/2025/655, ELI: EUR-Lex - 32025H00655 – EN – EUR-Lex.

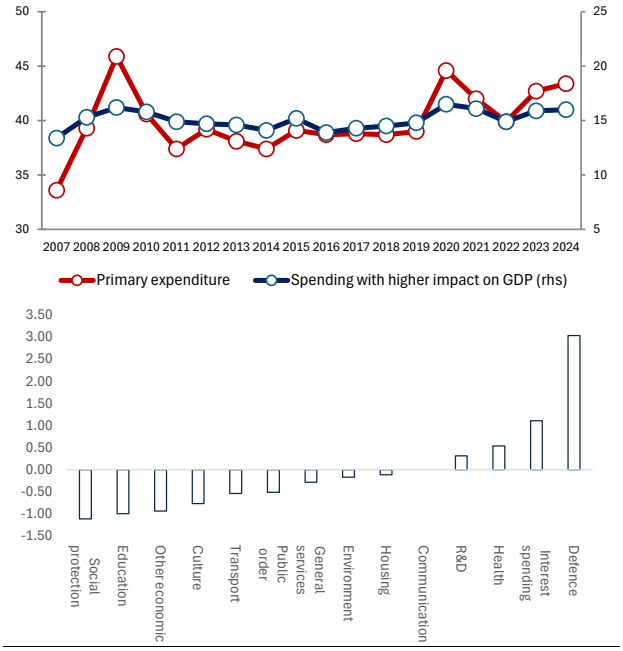
([22]) OJ C, C/2025/3964, ELI: EUR-Lex - 32025H03964 – EN – EUR-Lex.

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

([24]) 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.

spending needs in healthcare and social protection. Total government expenditure on defence was equivalent to 3.7% GDP in 2024 and is forecast by the Commission to be equivalent to 4.2% GDP in 2025 and 5% in 2026. In 2023, government spending on healthcare and social protection stood at only 6.4% and 13.5% of GDP, respectively – 0.6 pps and 5.7 pps below the EU average.

Graph A2.2: **Primary spending evolution and composition**




*Notes:* Based on economic literature, the categories considered to have a greater 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)).
***Source:*** Eurostat

**The type of expenditure that has a greater impact on GDP had remained broadly stable over three decades but has slightly increased since 2019.** This may be related to the impact of the Recovery and Resilience Facility (RRF), which possibly facilitated a more quality-based fiscal strategy. Between 2022 and 2026, Estonia's recovery and resilience plan is forecast to have allocated an average of 0.15% of GDP annually to public investment. Zooming in on the composition of spending, in 2024 social protection accounts for the largest share of total expenditure (around 30%), followed by health, education, economic affairs([25]) and general public services (each of which is above – or at – 10% of total spending). Since 2019, public expenditure on interest on debt and defence has increased sharply, with the increase in defence spending reflecting recent security developments (See Graph A2.2). Spending on health and R&D has risen more modestly in that time. By contrast, spending on transport and education expenditure has declined. This trend deserves attention, as these categories (transport and education) are generally considered growth-friendly spending categories.

**Estonia has relatively low tax revenues as a share of GDP, mostly relying on labour and consumption taxes, while recurrent property taxes are underused.** In 2024 Estonia's total tax revenues as a percentage of GDP (including compulsory social contributions) amounted to 34.3% compared with an EU average of 39.5%. Total tax revenues are projected to increase to 36.2% of GDP in 2025 and fall back to 34.6% of GDP in 2026 according to the Autumn 2025 Forecast ([26]). The tax mix in Estonia relies heavily on labour and consumption taxation. Meanwhile, recurrent property taxation, considered less detrimental to growth, is underused (see Annex 3).

## The costs of ageing

**Total ageing-related spending in Estonia is projected to remain broadly stable.** Total ageing-related spending, in both the medium and long term, is set to hold steady at a level well below the EU average (see Table A2.2). Limited increases in spending on healthcare and long-term care are expected to be more than offset by a fall in spending on pensions and education.

**Spending on public pensions as a share of GDP is projected to fall, especially in the longer term.** Between now and 2070, public

([25]) This refers to the set of government activities, policies, and expenditures aimed at regulating, supporting, and developing economic activity across major sectors, including general economic and labour policies, agriculture and natural resources, energy, industry, construction, and other economic functions not elsewhere classified. Although transport and communication, as well as research and development activities, are normally considered part of this function, they are treated separately in the graph presented.

([26]) Data retrieved from the AMECO database (https://economy-finance.ec.europa.eu/economic-research-and-databases/economic-databases/ameco-database_en)

Table A2.1: **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) | |
|---|---|---|---|---|
| **EE** | 18.0 | *-3.4* | 66.7 | **EE** |
| EU | 32.4 | *-2.8* | 55.9 | EU |

***Source:*** European Commission.

pension outlays are set to fall by about 1 pp. of GDP, to around 7% of GDP, which would be substantially lower than the projected EU average of around 12%.

**Supplementary pension schemes can make the pension system more resilient by diversifying retirement income sources**. In Estonia, the uptake of these supplementary schemes remains modest. At the end of 2024, private pension assets amounted to around 20% of GDP while participation covered around 67% of the working-age population([27]). This coincides with decreasing medium-term public pension spending pressures and a projected decrease in the replacement rate by 3.4 pps between 2025 and 2040 (Tables A2.2 and A2.3) ([28]).

**Estonia's expenditure on public healthcare and long-term care remains below the EU average and is set to remain mostly stable over the forecast horizon.** Public healthcare expenditure is projected to be 5.1% of GDP in 2025 (below the EU average of 6.6%) and is expected to increase by 0.3 pps between 2025 and 2040 and by a further 0.3 pps between 2040 and 2070. Public expenditure on long-term care is projected to be 0.5% of GDP in 2025 (below the EU average of 1.7%) and is expected to increase by 0.2 pps of GDP between 2025 and 2040 and by a further 0.4 pps of GDP between 2025 and 2070.

## National fiscal framework

**The Fiscal Council of Estonia (FCE) is a relatively small independent fiscal institution with a secretariat of only three people and a narrow mandate.** It focuses on endorsing the government's macroeconomic forecast and assessing compliance with the budget balance rule. It is also involved in assessing the government's budgetary plans but does not provide an endorsement of these. The FCE is strongly connected to the Estonian central bank, from which it receives its budget. All members of the FCE's secretariat are central bank employees. Its policy dialogue with both the government and the national parliament and its communication activities are not fully developed, and it has never been subject to an independent external evaluation.

**Estonia's spending review framework is relatively well established, but could be used in a more regular and comprehensive manner.** Since 2017 several technical support instrument projects were directed at increasing Estonia's know-how to: (i) improve the integration of spending reviews into the budget cycle; and (ii) strengthen the link between spending reviews and performance management, helped by the high digitalisation of the administration. Estonia's latest spending reviews covered culture and museum

Table A2.2: **Projected change in ageing-related expenditure in 2025-2040 and 2025-2070**

| | ageing-related expenditure | change in 2025-2040 (pps GDP) due to: | | | | | ageing-related expenditure | |
|---|---|---|---|---|---|---|---|---|
| | | *pensions* | *healthcare* | *long-term care* | *education* | *total* | | |
| **EE** | 17.4 | *-0.3* | *0.3* | *0.2* | *-0.4* | ***##*** | 17.1 | **EE** |
| 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: | | | | | ageing-related expenditure | |
|---|---|---|---|---|---|---|---|---|
| | | *pensions* | *healthcare* | *long-term care* | *education* | *total* | | |
| **EE** | 17.4 | *-1.1* | *0.5* | *0.6* | *-0.5* | ***##*** | 16.9 | **EE** |
| EU | 24.3 | *0.2* | *0.6* | *0.8* | *-0.3* | ***1.3*** | 25.6 | EU |

***Source:*** 2024 Ageing Report (EC/EPC).

funding in 2022 and a permit procedure and supervision enhancement plan by the Ministry of Social Affairs in 2025. The spending review tool is expected to help make public spending more efficient by redirecting any savings resulting from spending reviews to spending priorities. Nevertheless, this link between savings made by spending reviews and increased spending on budget priorities should be made clearer.

Table A2.3: **Fiscal governance database indicators and public accounting maturity**

| 2024 | Estonia | EU Average |
|---|---|---|
| Country Fiscal Rule Strength Index (C-FRSI) | 13.65 | 14.81 |
| Medium-Term Budgetary Framework Index (MTBFI) | 0.72 | 0.72 |
| 2025 Public accounting maturity of general government | 91% | 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

**This annex provides an indicator-based overview of Estonia's tax system.** It includes information on the: (i) tax mix; (ii) competitiveness and fairness aspects of the tax system; and (iii) tax collection and compliance. In the area of taxation, the 2025 country-specific recommendations for Estonia highlighted challenges in broadening the tax base by tapping into taxes that are less detrimental to growth.

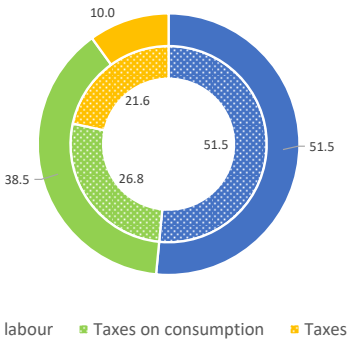
**The tax burden in Estonia remains relatively low as a percentage of its economy, although it has risen recently.** In 2024, tax revenues in Estonia (including social security contributions) reached 35.2% of GDP (see Table A3.1) ([29]). This represents a marked increase compared to the previous year (33.7%), partly due to new tax measures. The difference with the EU average decreased to 4.2 percentage points (pps), down from 5.3 pps in 2023. Estonia relies heavily on labour and consumption taxes, which made up about 51.5% and 38.5% of total tax revenue respectively in 2024.

**The reliance on consumption taxes is particularly high and far exceeds the EU average (26.8%).** Recent tax reforms have further tilted the tax mix towards consumption. The standard VAT rate was raised from 20% to 22% as of January 2024. Reduced VAT rates were also increased for certain goods and services. The standard VAT rate was increased once more to 24% from 1 July 2025. The latest 2 pp. increase was originally planned as temporary but is now expected to be permanent. In contrast, revenue from capital remains low (10.0%) compared to the EU average (21.8%).

**Estonia still raises very little revenue from property taxes despite their growth-friendly potential.** Property tax revenue amounts to only 0.3% of GDP, significantly below the EU average (1.8%), reflecting Estonia's approach of taxing land rather than property. Recent analysis has pointed to the potential merits of moving beyond land taxation alone by exploring a phased-in tax on unoccupied residential property to discourage vacancy and ease housing-market pressures ([30]).

**Environmental tax revenue, by contrast, is higher than the EU average (2.6% versus 2.1% of GDP).** This is largely due to relatively high fuel excise duties though certain excise tax reductions and exemptions remain in place. In 2025, Estonia introduced a new motor vehicle tax to encourage cleaner transport, complementing other existing pollution and resource taxes (i.e. NOx emissions, waste landfilling, water discharges, plastics).

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




***Source:*** Taxation Trends Data, DG TAXUD

**Despite recent reforms, Estonia's corporate income tax (CIT) system is expected to remain competitive, while contributing more to public revenues.** Estonia increased the statutory tax rate on distributed profits from 20% to 22% in 2025. In addition, it abolished the previously available reduced CIT rate of 14%, which had applied to regular dividends. These rate increases will generate additional revenue but may somewhat diminish Estonia's tax attractiveness for businesses. At the same time, Estonia's investment-friendly approach of not taxing corporate profits as they are earned, but only when profits are distributed or deemed distributed, remains in place. This preserves incentives for companies to reinvest profits, while raising the cost of payouts. Furthermore, Estonia's effective CIT rate remains significantly below the EU average (15.7% versus 19.1% in 2024), indicating a relatively low tax burden faced by companies. In international comparisons, Estonia continues to score very highly on tax system competitiveness, ranking first globally in 2024, according to the Tax Complexity Index ([31]).

([29]) Preliminary Eurostat data point to a tax-to-GDP ratio of 36.4% in 2025

([30]) See In-Depth Review 2025 Estonia

([31]) See Tax Complexity Index 2024

Table A3.1: **Taxation Indicators**

| | | Estonia | | | | | EU-27 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2019 | 2022 | 2023 | 2024 | 2025 | 2019 | 2022 | 2023 | 2024 | 2025 |
| **Tax structure** | Total taxes (including compulsory actual social contributions) (% of GDP) | 33.0 | 32.9 | 33.7 | 35.2 | 36.4 | 39.9 | 39.7 | 39.0 | 39.4 | |
| **By tax base** | Taxes on labour (% of GDP) | 16.5 | 17.1 | 17.7 | 18.1 | | 20.6 | 20.1 | 19.9 | 20.3 | |
| | of which, social security contributions (SSC, % of GDP) | 11.4 | 11.4 | 12.0 | 12.2 | | 13.0 | 12.7 | 12.7 | 13.0 | |
| | Taxes on consumption (% of GDP) | 13.9 | 13.2 | 13.1 | 13.6 | | 11.2 | 10.9 | 10.5 | 10.6 | |
| | of which, value added taxes (VAT, % of GDP) | 8.7 | 9.1 | 9.1 | 9.6 | | 7.1 | 7.4 | 7.1 | 7.1 | |
| | Taxes on capital (% of GDP) | 2.6 | 2.7 | 2.9 | 3.5 | | 8.1 | 8.7 | 8.5 | 8.5 | |
| **Some tax types** | Personal income taxes (PIT, % of GDP) | 5.4 | 6.3 | 6.2 | 6.5 | | 9.6 | 9.4 | 9.3 | 9.6 | |
| | Corporate income taxes (CIT, % of GDP) | 1.8 | 1.6 | 1.9 | 2.4 | | 2.6 | 3.2 | 3.2 | 3.1 | |
| | Total property taxes (% of GDP) | 0.3 | 0.3 | 0.3 | 0.3 | | 2.2 | 2.1 | 1.9 | 1.8 | |
| | Recurrent taxes on immovable property (% of GDP) | 0.2 | 0.2 | 0.2 | 0.1 | | 1.2 | 1.0 | 0.9 | 0.9 | |
| | Environmental taxes (% of GDP) | 3.4 | 2.5 | 2.6 | 2.6 | | 2.6 | 2.1 | 2.1 | 2.1 | |
| | Effective carbon rate in EUR per tonne of $CO_2$ equivalents | na | na | 73.4 | na | | na | na | 84.8 | na | |
| **Progressivity & fairness** | Tax wedge at 50% of average wage (single person) (*) | 32.2 | 32.9 | 31.2 | 31.8 | 32.8 | 32.4 | 31.6 | 31.5 | 31.5 | 31.6 |
| | Tax wedge at 100% of average wage (single person) (*) | 38.8 | 39.8 | 40.4 | 41.1 | 42.6 | 40.1 | 39.7 | 39.9 | 39.9 | 40.0 |
| | Corporate income tax - effective average tax rates (1) (*) | 15.7 | 15.7 | 15.7 | 17.1 | | 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) (*) | 5.3 | 6.7 | 7.2 | 7.7 | | 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 %) (*) | 6.1 | 4.9 | 4.9 | na | | 31.8 | 32.6 | 30.7 | na | |
| | VAT gap (% of VAT total tax liability, VTTL) (**) | 5.9 | 5.2 | 10.3 | 10.0 | | 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. 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.

**Estonia's personal income taxation (PIT) continues to prioritise simplicity and work incentives.** Built around a flat rate, which was increased from 20% to 22% in 2025, Estonia's PIT system remains simple and transparent. Recent reforms have further streamlined the system by replacing the progressive basic exemption with a uniform tax-free allowance of EUR 8 400 per year for all taxpayers. While this will remove an undesired hump in marginal tax rates, it may lead to significant revenue losses ([32]). The tax wedge ([33]) at the average wage (at 42.6% in 2025) was slightly above the EU average of 40% (see Table A3.1). In contrast, at low earnings levels that are considered especially relevant for employment (in particular at 50% of the average wage), the Estonian tax wedge (32.8%) was close to the EU average (31.6%). The tax wedge for second earners earning 67% of the average wage was at 37.4% and remains equal to that of single earners and slightly below the EU average (38.5%; see Graph A3.2).

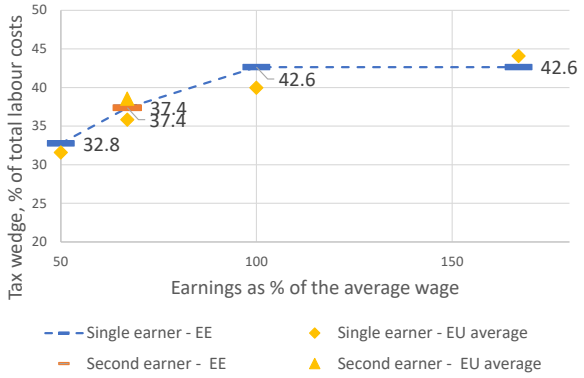
**However, in recent years the overall redistributive effect of Estonia's tax and benefits system has increased.** The reduction in income inequality caused by the tax and benefits system, as measured by the Gini coefficient ([34]), was 7.7 points in 2024, showing an increased trend in recent years and now close to the EU average of 7.8 points (Table A3.1).

([32]) See International Monetary Fund. European Dept. "Republic of Estonia: 2025 Article IV Consultation-Press Release; and Staff Report"

([33]) The tax wedge is an indicator of the tax burden on labour that can be assessed at various levels of earnings. It is calculated as the sum of personal income tax, employee social-security contributions, employer social-security contributions and other mandatory contributions, net of cash family benefits where relevant, expressed as a percentage of total labour costs (composed of the gross wage plus employer social-security contributions). In other words, the tax wedge measures the gap between the total cost of employing a worker and that worker's net earnings, as a share of total labour costs. 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 country reports 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.

([34]) 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.

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.

**Estonia reports tax expenditures annually alongside the budget, but lacks a dedicated framework to systematically evaluate tax expenditures.** Over 30% of tax expenditure schemes are not assessed for cost-effectiveness or unintended consequences ([35]), limiting evidence-based prioritisation. Foregone revenues due to PIT-related tax expenditures have a modest budgetary impact, amounting to around 4% of total PIT revenues in 2022. Most tax expenditures are related to employment and households, with a limited impact on reducing income inequality. Reduced VAT rates have also had limited effects on regressivity due to limited pass-through effects, suggesting that reduced VAT rates are not optimally achieving policy objectives ([36]).

**Estonia performs well on tax compliance, but the monitoring of tax gaps still has some scope for improvement.** It lacks comprehensive practices for monitoring tax gaps. Currently, it does not estimate compliance gaps for corporate income tax (CIT) extensively, despite having a CIT compliance gap estimate of around 5% (based on Commission estimates). The VAT compliance gap in Estonia is impacted by several socio-economic factors, including the increasing share of services in the economy, which traditionally pose higher compliance risks.

**In 2023, the VAT compliance gap (measuring VAT enforcement and compliance effectiveness) was estimated at 10.3% of the VAT total tax liability (EUR 398 million).** In comparison, the EU average VAT compliance gap was 9.5% in 2023, and Estonia had the ninth-largest VAT compliance gap among EU Member States. This represents an increase over time, with an exceptional fall to 2.2% in 2021, followed by a rebound in 2022 and a further increase in 2023. Despite some reforms, VAT losses due to missing trader intra-community fraud were estimated at approximately EUR 155 million in 2023. Improving awareness and integration of data could enhance tax gap assessments and compliance practices across all tax categories.

**The level of outstanding tax arrears for Estonia was stable from 2020 to 2023, at 5% in 2023, and the country was among the best EU performers in 2023.** The amount of arrears that the Estonian tax administration considers collectible was consistent between 2021 and 2023, at around 88%, reflecting strong performance in the EU.

**Estonia's tax administration is highly digitised, ensuring efficiency in tax collection but still faces challenges in reducing compliance costs.** Estonia is a leader in digital tax administration, with 98% of tax returns filed electronically, significantly reducing administrative burdens and costs. It is one of only seven EU countries which has both launched and implemented: (i) a strategy for digital transformation; (ii) a strategy to identify the skills required for a successful digital transformation; and (iii) a strategy for building a digital culture within the tax administration. Estonia's tax administration pre-fills personal-income-tax files, but not corporate-income-tax and value-added-tax returns. Nevertheless, the percentage of e-filing stands at above 95% for corporate-income-tax returns, personal-income-tax returns and VAT returns (100% of all three types of returns have been submitted electronically since 2018).

**Estonia continues to prioritize advanced data analysis to tackle fraudulent activities and to enhance efficiency in tax collection.** Recent reforms have focused on expanding these

([35]) See the Mind the Gap Report.

([36]) Gini coefficient: less than 0.001% (upcoming DG ECFIN/JRC Publication on VAT reduced rates).

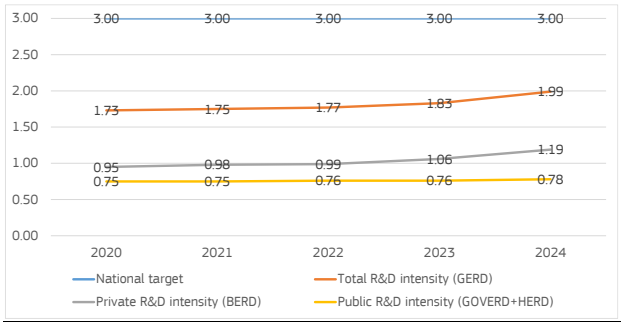
frameworks, aligning with commitments under the Recovery and Resilience Facility, and enhancing technological infrastructure for improved tax administration outcomes. The cost of collecting taxes expressed as a percentage of total net tax revue remained stable and below 0.5% between 2018 and 2022.

**Estonia's innovation system is performing above the EU average, but the quality of the public science base does not yet fully translate into technological performance and business innovation.** According to the 2025 European Innovation Scoreboard ([37]), Estonia continues to belong to the 'strong innovators'. In 2025, Estonia's performance in the Summary Innovation Index reached 104.8% of the EU average, while the figure was still below EU average in 2022 (98.6%). Its performance is, however, below the average of strong innovators in the EU (104.8% vs 114.1% of the EU average in 2025). Estonia's R&D intensity ([38]) steadily increased over the 2018-2024 period: R&D intensity was 1.99% in 2024, compared to 1.38% in 2018, with the main growth coming from business R&D while public R&D intensity remained stable. For Estonia, the 2025 country-specific recommendations (CSRs) highlighted the need to focus investment on research and innovation (R&I) by prioritising funding for applied research and to improve access to finance to facilitate innovative investment. The dynamic R&D base and the good framework conditions for tech startups support the innovativeness of Estonia's economy. Digital transformation among small and medium-sized enterprises has been steadily advancing. Notably, Estonia's adoption of AI has almost doubled within a year. However, technological developments as captured by patent data have declined in recent years, cooperation between public research and businesses remains suboptimal and there are still gaps in the innovation support system, in particular in relation to access to finance for SMEs.

## Excellent science

**Estonia has a good quality public research base, with stable funding.** The quality of research outputs, as measured by the proportion of scientific publications within the top 10% most-cited publications worldwide, increased over the last decade (from 7.13% in 2012 to 9.84% in 2022) and is now slightly above the EU average (9.44%). Public expenditure on R&D as a percentage of GDP (0.78% in 2024) is also just above the EU average (0.72%), without any major change over the last years, as under the national target of 1% ([39]) for public funding of R&D, the priority has been public support to business R&D. The public research system is well connected to the international research networks, as witnessed by the proportion of international co-publications among total publications, which has been growing steadily over the last decade (69.4% in 2024).

Graph A4.1: **R&D intensity (GERD, GOVERD, BERD as % of GDP)**




***Source:*** Eurostat, 2025

**Estonia faces difficulties in ensuring that the next generation of scientists is large enough.** The number of PhD students has decreased over the last decade from 2 983 in 2013 to 2 283 in 2023 while the number of foreign PhD students has risen from 241 to 792 during the same period ([40]). The national objective of at least 300 new PhD graduates per year has not been reached yet. To achieve it, a doctoral studies reform was initiated in 2022, and the government has decided to raise the number of new PhD positions from 300 to 350 in 2026 with the aim to reach a further 500 by 2035. At the same time, it is also important to ensure that PhD graduates are coming from fields matching the existing and future needs of the economy and society (see Annex 13).

([37]) 2025 European Innovation Scoreboard (EIS), country profile Estonia. The EIS provides a comparative analysis of innovation performance in EU countries, including the relative strengths and weaknesses of their national innovation systems (also compared to the EU average).

([38]) Defined as gross domestic expenditure on R&D as a percentage of GDP.

([39]) Estonian research, development, innovation and entrepreneurship strategy 2021-2035.

([40]) Eesti Teadus 2025, Eesti_Teadus_2025.pdf

**R&I funding of data and computer science is lagging behind, despite the increasing pace of developments in digital and AI tools.** Estonia has established itself as a hub for data science and ICT. The new national Applied Research Centre has health data solutions as one of its five priorities and is hosting a new competence centre for chips, established in 2025. The European Digital Innovation Hub in Estonia, AI and Robotics Estonia (AIRE), has successfully completed its first period and is continuing to support SMEs and technology transfer in the field of AI over 2026-2029 period. However, computer science and ICT continue to receive just a small percentage of funding allocated by the Estonian Research Agency ([41]). Further investments in AI research and applications in the fields where Estonia has developed scientific excellence could allow it to exploit many underused and untapped opportunities. For instance, Estonia could further capitalise on its extensive work on health data and genome research.

**Estonia reformed its R&I system governance in 2025, clarifying roles and responsibilities.** A significant reform of the R&I system governance was completed in 2025 with the adoption of the new Organisation of Research and Development and Innovation Act replacing the 1997 act and bringing the research and innovation organisation under one umbrella while clarifying the roles and responsibilities of various R&I actors and funders ([42]).

## Business innovation

**Business R&D activities have significantly increased in recent years, but technological performance as measured by patents applications has declined.** Many Estonian businesses have increased R&D investments, particularly by hiring researchers. This is reflected in the researchers employed by business per thousand of the active population which increased from 2.50 in 2018 to 5.40 in 2024, almost reaching the EU average of 5.90. Since 2019, business R&D intensity exceeds public R&D intensity and has continued to grow steadily in recent years: business enterprise expenditure on R&D reached 1.19% of GDP in 2024, compared to 0.58% in 2018. Despite this remarkable growth, it remains below the EU average of 1.49% and below the targeted 2% level. On technology developments captured by patent data, Estonia's patent applications per billion euro of GDP filed under the Patent Cooperation Treaty have steadily declined from 1.52 in 2017 to 0.72 in 2022 and remain significantly below the EU average (2.81).

**While the level of direct public support to business R&D strongly increased in recent years, gaps remain in the innovation support system beyond grant schemes.** Support to business R&I has been substantially strengthened in recent years. Direct public support to business R&D increased from 0.06% of GDP in 2017 to 0.15% in 2023, well above the EU average. However, there are still gaps in the innovation support system, in particular in relation to access to finance. As indicated in the 2025 CSRs, Estonia needs to *improve access to finance, especially for small and medium-sized enterprises, to facilitate innovative investment.* While startups benefit from a well-developed venture capital market (see 'Entrepreneurial dynamism' below), there is still significant market failure in financing innovation ([43]). Estonia is planning to address this deficiency by increasing the volume of financial instruments offered by the Estonian Business and Innovation Agency and by introducing an innovation loan in 2026. While Estonian corporate income tax system has no special provisions to favour investment in R&D. In 2024. dedicated support for hiring R&D personnel by compensating part of the personal income tax was introduced and is continuing in 2026.

**Cooperation between public research and businesses remains limited, but the Applied Research Centre is expected to improve the situation.** In 2023, R&D activities commissioned by businesses to universities and public research organisations represented 5.61% of public R&D. This has remained almost stagnant since 2018

([41]) The share of public R&D funding allocated to computer sciences and informatics was 5,4% in 2023, 4,5% in 2024, and 5,8% in 2025 according to data from Estonian Research Information System

([42]) Teadus- ja arendustegevuse ning innovatsiooni korralduse seadus, Riigi Teataja I, 12.07.2025

([43]) Innovatsioonimahukate investeeringute rahastamise turutõrke uuring koos kaitsetööstuse valdkonna analüüsiga, Saaresalu, 2025

(5.81%) and is still below the EU average of 7.51%. In 2023, Estonia launched the national Applied Research Centre ([44]) and all five focus areas started to become operational during 2025. When it becomes fully functional it will benefit a wide range of businesses and reaching its objective to receive at least one third of its income from contract research. This will require significant public investment to build capacities, as highlighted in the 2025 CSR which called for *prioritising funding for applied research*. While no new additional measures were taken to speed up the development of the Applied Research Centre, a EUR 30 million programme to support the institutional knowledge transfer capacity of research and higher education institutions (Astra+) ([45]) was implemented in 2025. In addition, the second call under the TemTA (Thematic R&D programmes), established in 2024 to strengthen applied and use-oriented research in smart specialisation priority areas and fund public-private applied research projects, is planned for 2026 ([46]). The programme has a total budget of around EUR 102 million for 2024–2029([47]).

**Investments in green technologies are not fully translating in innovation outputs.** According to the European Innovation Scoreboard, Estonia ranks 24th among EU Member States for resource productivity and 23rd for production-based $CO_2$ productivity, indicating a need to invest in the development and adaptation of green technologies. The Applied Research Programme continues to invest in innovative startups developing and adapting new green and energy-efficient technologies, and through the SmartCap Green Fund. In 2025, the Green Fund decided to broaden its investment portfolio to leverage private investment and make investments in other venture capital and private equity funds investing in green technologies. However, despite several notable R&D projects funded by Horizon Europe and national programmes in the field of hydrogen and bio-based industry, the implementation of the solutions by industry has been lagging.

([44]) Estonian Applied Research Centre, https://metrosert.ee/en/services/applied-research-center/

([45]) https://rtk.ee/Teadusuuringute-moju-suurendamine-ning-teadusasutuste-ja-korgkoolide-institutsionaalse-teadmussiirde-suutlikkuse-toetamine

([46]) Teadmussiirde programm 2026-2029.

([47]) https://etag.ee/en/funding/programmes/temta-thematic-rd-programmes/

**Estonia has made steady progress in digital transformation among small and medium-sized enterprises, but areas like AI adoption need further attention to align with its EU Digital Decade targets ([48]).** Estonia has made positive strides in digitalisation, with 72.12% of SMEs achieving a basic level of digital intensity, (EU average 71.39%). Estonia also outperforms the EU average in cloud adoption, with a rate of 56.23% against the EU 46.69%, and in data analytics, with 55.99% to the EU's 39.85%. Estonia has demonstrated remarkable growth in AI adoption, rising from 13.89% in 2024 to 23.40% in 2025. The digital innovation hub AIRE alongside with the Technopol AI development programme provide support for business digitalisation. Additionally, the AI startup incubator has launched 30 businesses, with another 19 new AI-based products entering the market.

## Entrepreneurial dynamism

**Estonian startups achieved a record turnover in 2024: however, the growth rate of the sector has slowed compared to previous years.** Estonian startups recorded a turnover of EUR 3,9 billion in 2024([49]), representing an increase of almost 15% from 2023 (EUR 3,4 billion) outperforming the economy amid economic pressures. Despite the strong increase, annual growth has slowed over the last years (73% in 2021, 46% in 2022, 19% in 2023). Deep-tech startups continued to gain momentum, accounting for 63% of total investments in the Estonian startup sector in 2024 and generating EUR 325 million in turnover (+19.3% year-over-year). They employed 2 439 people, representing 17% of all startup's employees ([50]).

**Venture capital (VC) market intensity decreased in 2024 but remains the highest in the EU.** VC investments picked up from 2018 to 2023 (from 0.06% of GDP to 0.33%) but decreased to 0.24% of GDP in 2024. This is still four times higher than EU average (0.06%) ([51]).

([48]) Estonia 2025 Digital Decade country report

([49]) Estonia's Startup Sector in 2024: Growth, Challenges, and Key Insights, Startup Estonia, 2025

([50]) idem

([51]) see also Annex 6.

Estonia has a well-established tech ecosystem that has attracted investments of over 1% of GDP in the last decade ([52]). The Estonian government recently launched a EUR 100 million DefenceTech fund, which will further increase the development of new defence-oriented deep-tech companies. In addition, Enterprise Estonia signed an agreement with the European Investment Fund in 2025 unlocking EUR 109 million in financing to support Estonian businesses with more favourable loans and guarantees. The startup sector's ability to attract talent, secure funding and scale innovations will be crucial in maintaining its competitive edge.

**Estonia's innovation strategy emphasises the development of regulatory experimentation frameworks**. Estonia is planning to introduce a national experimentation framework that allows startups to test unregulated or non-compliant solutions under controlled conditions, effectively shortening the path from concept to deployable product. The government has prepared draft legislation for the national experimentation framework which is expected to be adopted in 2026. This complements the existing regulatory sandbox initiatives supported by Accelerate Estonia and major cities (e.g. Test in Tallinn, Test in Tartu).

**The innovation procurement framework has been improving but significant effort is still needed.** In the benchmarking of national innovation procurement policy frameworks across Europe, Estonia ranks second with a total score of 52.43% compared to the EU average of 33.05% ([53]). Most national horizontal policies, including the public procurement, R&I and ICT policies, advocate for wider use of innovation procurement. A good expenditure measurement system for innovation procurement has been put in place. Innovation procurement target levels of 2% in volume and 5% in value were set for the year 2025. However, the policy framework for innovation procurement still requires significant reinforcement measures such as developing a national action plan and incentives for procurers, recognising the strategic importance of innovation procurement in all sectoral policies and strengthening capacity building measures further spreading innovation procurement practices.

**The shortage of highly skilled workers holds up Estonia's innovation capacity**. While the number of new graduates in the field of ICT per thousand population aged 25-34 is above the EU average, there has been a downward trend over the last years (4.61 in 2023 vs 4.90 in 2022 and 5.50 in 2021). The declining number of new graduates in science and engineering is also a matter of concern, as it has constantly fallen since 2013 (from 13.11 to 8.98 per thousand of those aged 25-34 in 2023, significantly behind the EU average of 16.82). These declines may hinder Estonia's innovation performance in the long run. Foreign talent plays a vital role in Estonia's startup sector, with 31% of employees holding foreign citizenship ([54]). The high proportion of global talent plays a major part in the startup ecosystem's dependence on international expertise and the necessity of policies that facilitate worldwide hiring and talent retention.

**Entrepreneurship education in Estonia is fully embedded in its education system through teacher competence frameworks, curricula and guidance to school leaders.** Teacher competence frameworks applicable to all teachers specifically refer to entrepreneurship, making it one of the few European countries to do so ([55]). The professional qualification standard for general education teachers includes entrepreneurship as one of the defined competences. The national curriculum specifies eight general competences, including entrepreneurship, which are intended to be incorporated across all subjects, extracurricular activities and out-of-school initiatives.

Estonia also offers designated subjects relating to entrepreneurship within the primary and general secondary education curriculum. Additionally, entrepreneurship education is integrated through practice-oriented and project-based learning components, especially in upper secondary education, with projects such as the Junior Achievement (JA) programme ([56]). Estonia provides

([52]) 'State of European Tech 24: The definitive take on European tech'.

([53]) ESTONIA. COUNTRY PROFILE – Benchmarking of national policy frameworks for innovation procurement, 2024

([54]) Estonia's Startup Sector in 2024: Growth, Challenges, and Key Insights, Startup Estonia, 2025

([55]) Eurydice Report, Entrepreneurship education at school in Europe, https://eurydice.eacea.ec.europa.eu/publications/entrepreneurship-education-school-europe-2025

([56]) JA Europe, https://jaeurope.org/

schools with guidance for promoting a whole-school approach to entrepreneurship education, assisted by material from the Edu&Tegu entrepreneurship and career education programme ([57]), including cooperation between schools and businesses. School leaders receive advice on how to implement this whole-school approach effectively. Certificates like the entrepreneurial school quality label ([58]) recognise schools that systematically integrate entrepreneurship education and foster partnerships with local communities and businesses. Estonian higher education institutions also make efforts to integrate entrepreneurship courses into curricula in various fields of study. Even so, OSKA's 2022 study on generic work-life skills pointed out that employers expect better skills related to entrepreneurship from graduates of higher education programmes ([59]).

([57]) Entrepreneurship and Career Education Programme Edu ja Tegu, https://ettevotlusope.edu.ee/

([58]) Kvaliteedimärgise taotlemise protsess - Ettevõtlik Kool, https://evkool.ee/vorgustiku-liikmele/seire/

([59]) Leemet, A. & Ungro, A. (2022). Tööelu üldoskuste klassifikatsioon ja tulevikuvajadus (Classification and future needs of generic work life skills). Tallinn: SA Kutsekoda. https://uuringud.oska.kutsekoda.ee/uuringud/tooelu-uldoskutse-klassifikatsioon-tulevikuvajadus.

Table A4.1: **Key Innovation Indicators**

| Estonia | 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) | 1.58 | 1.44 | 1.73 | 1.77 | 1.83 | 1.99 | : | 2.24 | 3.44 |
| **Science and innovative ecosystems** | | | | | | | | | |
| Public expenditure on R&D as % of GDP | 0.77 | 0.76 | 0.75 | 0.76 | 0.76 | 0.78 | : | 0.72 | 0.64 |
| Scientific publications of the country within the top 10% most cited publications worldwide as % of total publications of the country | 7.62 | 8.48 | 9.36 | 9.84 | : | : | : | 9.44 | 12.31 |
| Researchers (FTEs) employed by public sector (Gov+HEI) per thousand active population | 4.1 | 4.5 | 4.3 | 4.7 | 4.9 | 5.2 | : | 4.3 | : |
| International co-publications as % of total number of publications | 45.39 | 55 | 65.71 | 67.62 | 68.41 | 69.4 | : | 57.24 | : |
| **R&D investment & researchers employed in businesses** | | | | | | | | | |
| Business enterprise expenditure on R&D (BERD) as % of GDP | 0.79 | 0.66 | 0.95 | 0.99 | 1.06 | 1.19 | : | 1.49 | 2.69 |
| Business enterprise expenditure on R&D (BERD) performed by SMEs as % of GDP | 0.55 | 0.31 | 0.5 | 0.51 | 0.56 | : | : | 0.47 | 0.30 |
| Researchers employed by business per thousand active population | 1.9 | 1.3 | 3.2 | 4.3 | 4.3 | 5.4 | : | 5.9 | : |
| **Innovation outputs** | | | | | | | | | |
| Patent applications filed under the Patent Cooperation Treaty per billion GDP (in PPS €) | 3.29 | 1.25 | 1.46 | 0.72 | : | : | : | 2.81 | 2.20 |
| Employment share of high-growth enterprises measured in employment (%) | : | : | : | 0.85 | 1.02 | 0.99 | : | 0.87 | : |
| **Digitalisation of businesses** | | | | | | | | | |
| SMEs with at least a basic level of digital intensity % SMEs (EU Digital Decade target by 2030: 90%) | : | : | : | : | 55.93 | : | 72.12 | 71.39 | : |
| Data analytics adoption % enterprises (EU Digital Decade target by 2030: 75%) | : | : | : | : | 25.57 | : | 55.99 | 39.85 | : |
| Cloud adoption % enterprises (EU Digital Decade target by 2030: 75%) | : | : | : | : | 52.60 | : | 56.23 | 46.69 | : |
| Artificial intelligence adoption % enterprises (EU Digital Decade target by 2030: 75%) | : | : | : | : | 5.19 | 13.89 | 23.40 | 19.95 | : |
| **Academia-business collaboration** | | | | | | | | | |
| Public-private scientific co-publications as % of total number of publications | 6.87 | 6.14 | 8.7 | 8.46 | 8.66 | 9.15 | : | 7.62 | : |
| Public expenditure on R&D financed by business enterprises (national) as % of GDP | 0.02 | 0.03 | 0.05 | 0.05 | 0.04 | : | : | 0.06 | 0.02 |
| **Public support for business innovation** | | | | | | | | | |
| Total public sector support for BERD as % of GDP | : | : | 0.08 | 0.10 | 0.15 | : | : | 0.21 | : |
| R&D tax incentives: foregone revenues as % of GDP | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | : | : | 0.10 | : |
| BERD financed by the public sector (national and abroad) as % of GDP | : | : | 0.08 | 0.10 | 0.15 | : | : | 0.11 | : |
| **Financing innovation** | | | | | | | | | |
| Venture capital (market statistics) as % of GDP (calculated as a 3-year moving average) | 0.03 | 0.04 | 0.10 | 0.34 | 0.33 | 0.24 | : | 0.06 | : |
| Seed stage funding share (% of GDP) | 0.01 | 0.01 | 0.02 | 0.05 | 0.05 | 0.03 | : | 0.01 | : |
| Start-up stage funding share (% of GDP) | 0.02 | 0.01 | 0.02 | 0.16 | 0.15 | 0.12 | : | 0.03 | : |
| Later stage funding share (as % of GDP) | 0.01 | 0.02 | 0.06 | 0.13 | 0.12 | 0.08 | : | 0.03 | : |
| **Innovative talent** | | | | | | | | | |
| New graduates in science & engineering per thousand population aged 25-34 | : | 11.77* | 9.5 | 9.18 | 8.98 | 10.05 | : | 16.82 | : |
| Graduates in the field of computing per thousand population aged 25-34 | : | 2.69* | 4.19 | 4.90 | 4.61 | 5.38 | : | 3.84 | : |

(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 database), Invest Europea, European Innovation Scoreboard.

**Estonia is prioritising competitiveness and economic growth, and taking action on the problems it is facing in its economy.** SMEs are particularly important to the Estonian economy, and they have been struggling despite the slow recovery of the economy. This is linked with problems in accessing finance, lack of skilled labour and regulatory burdens, coupled with insufficient use of digital tools. More widely, the economy is still very resource-intensive and measurable progress in terms of resource-productivity remains for now limited. Green technologies, also for industrial decarbonisation, face challenges in scaling up due to finance issues and regulatory and demand uncertainty. Estonia is also falling behind the EU average in connectivity infrastructure, while showing an impressive 5G coverage in sparsely populated areas. The 2025 country-specific recommendations linked with Single Market and Industry called on Estonia to improve access to finance, particularly for SMEs and for companies on remote regions (CSR 3 2025), and to raise resource-productivity through bio-based innovation (CSR 4 2025).

## Business dynamics

**The Estonian economy has begun to slowly recover and the government has set raising competitiveness and economic growth as its priority**. Industry's gross value added makes up 14.7% of Estonia's GDP ([60]). While industrial output as well as value added ([61]) decreased in 2024 in both industry and manufacturing, the decline in value added was less marked than in the two previous years ([62]). Estonia also saw two years of quick growth in unit labour costs before the pace finally eased in 2024, when also the real labour productivity per hour worked in industry increased for the first time since 2021. In terms of structure of the economy, within manufacturing, wood products and fabricated metals constitute the two largest manufacturing sub-sectors in terms of value added. Wood products in particular had a large drop in value added in 2023, following the 2022 energy shock to energy-intensive industries (EIIs) ([63]). Fabricated metals and construction are both important sectors to Estonia, and also sectors where Estonia is particularly affected by industrial decline and would struggle to cope with the decline of the industry based on a recent economic brief ([64]). See also the Annex on Housing. Nevertheless, Estonia retained its 33rd position in the IMD World Competitiveness Ranking 2025, following a significant drop in position in 2024. The 'Estonia 2035' strategy targets the 10th place in this ranking and the government is currently strongly prioritising competitiveness and economic growth, along with defence.

**Estonia continues to stay within the EU countries with highest total investment in relation to GDP.** Despite a decrease of 1.5 p.p. in total investment as share of GDP in 2024, Estonia still has the sixth highest investment rate among EU countries (EE 23.9% vs EU 21.7%). Business investment however continued in 2024 on the decreasing trend, and was barely over EU average (EE 12.9% vs EU 12.6%) ([65]). Inward foreign direct investment also decreased in 2024 ([66]). Estonian firms are yet signalling a more growth-oriented approach towards investment than the EU average. In the last financial year, over half of the investment was used on capacity expansion, new products or services and other areas – in comparison to replacement investment, which in the EU was more common. In future investment priorities, Estonian firms are also more strongly focusing on growth than EU average ([67])

**SMEs are particularly important for Estonian economy but have had difficult few years.** Estonian SMEs make up 99.9% of Estonian enterprises, and 81.1% of total value added, significantly higher than the average in the EU (53.6%). Particularly the number of micro enterprises, employing 0 to 9 persons, is high as they represent 94.9% of Estonian companies (EU

([60]) Eurostat: [nama_10_a10] Gross value added and income by main industry (NACE Rev.2 )

([61]) Eurostat: [nama_10_a10] Gross value added and income by main industry (NACE Rev.2 )

([62]) Eurostat: nama_10_lp_a21] Labour productivity and unit labour costs by industry (NACE Rev.2)

([63]) Eurostat: [nama_10_a64] Gross value added and income by detailed industry (NACE Rev.2 )

([64]) Mapping the impact of industrial decline, European Commission 2025

([65]) Eurostat: Investment share of GDP by institutional sectors [sdg_08_11]

([66]) Eurostat: [tec00105] Inward FDI stocks in % of GDP

([67]) EIB Investment Survey 2025: Estonia overview

average 93.6%) and 32.2% of the value added. ([68]). Integrating micro enterprises in clusters through a dedicated cluster policy could improve their productivity and competitiveness, because of the synergies it could create and the innovation spillovers deriving from connections with other stakeholders, such as research institutions. In 2024, SMEs in Estonia grew in employment but their real value added dropped significantly for the second consecutive year: the decline of -5.8% in 2023 was followed by a further drop equal to -5.4 Only the information and communication, an important sector for Estonia, grew in SME real value added in 2024([69]). Gross value added has generally decreased in Estonia since 2021, and even the well performing information and communication sector decreased slightly in the overall gross value added in 2024 ([70]).

**The Estonian economy is quite dynamic.** The business churn rate is continuously well above the EU average (in 2023, EE 41.74% vs EU 18.97%). In 2023, the business death rate rose starkly from 8.91% to 27.48%, reflecting the economic challenges companies are facing. Bankruptcies in Estonia continued to increase in 2024([71]). The business birth rate is also trending down but is still above the EU average at 14.26% ([72]). A recent paper on allocative efficiency in the Baltics however suggests that new firms in general have lower labour productivity than incumbent peers in Estonia, indicating that there is room to support in particular entry for businesses with high growth potential (such as R&D intensive start-ups). Similarly, the paper stressed the importance of streamlined insolvency procedures([73]). See the annexes on Capital Markets, Financial Stability and Access to Finance.

**Now a strong innovator according to the European Innovation Scoreboard,** Estonia is looking to increase its R&D investment. In particular direct, and also R&D expenditure in the business sector is relatively low ([74]), ([75]), ([76]). The Estonian Recovery and Resilience Plan also has measures on digital state, including e.g. a digital gateway for entrepreneurs. See also the annexes on Innovation to Business and Effective Institutional Framework).

**Uncertainty about the future, availability of skilled staff and energy costs remain Estonia's three biggest investment obstacles.** According to the 2025 EIB Investment Survey, 89% of Estonian firms consider uncertainty about the future to be an investment obstacle, higher than EU average 83%. Similarly slightly higher than EU average, 80% of Estonian firms consider the lack of available skilled staff an investment obstacle ([77]), and this issue has also been recently highlighted in a report to Riigikogu ([78]), a paper by IMF ([79]) and by business stakeholders([80]). Estonia has taken steps to address skills mismatches and the issue of skilled labour, and labour shortages have eased overall (see the annexes on Labour Market and Education and Skills). Lack of demand is not a major obstacle to investment in Estonia, but it has still been limiting industrial production as well as business activity for services ([81]). The situation is gradually improving for both the industry and service sectors ([82]). Increasing domestic consumption and export demand from key markets should support in this. Estonian government is taking action to boost competitiveness by helping increase companies' export capacity and reach new markets to diversify exports ([83]). 72% of Estonian exporters, higher

([68]) 2025 SME country fact sheet Estonia

([69]) 2025 SME country fact sheet Estonia

([70]) Eurostat: [nama_10_a10] Gross value added and income by main industry (NACE Rev.2 )

([71]) Eurostat: [sts_rb_a] Business registration and bankruptcy index by NACE Rev.2 activity - annual data

([72]) Eurostat: Business demography by size class and NACE Rev. 2 activity [bd_size__custom_19037959]

([73]) Hu, Bingjie and Can Ugur, 2025. Allocative Efficiency, Firm Dynamics, and Productivity in the Baltics; Republic of Estonia; IMF Selected Issues Paper No. 2025/103; June 23, 2025

([74]) ec_rtd_eis-country-profile-ee.pdf

([75]) Estonia 2025 Digital Decade Country Report | Shaping Europe's digital future

([76]) Government information.

([77]) EIB Investment Survey 2025: Estonia overview

([78]) Kaasik, Ülo; Männasoo, Kadri; Varblane, Urmas; Varblane, Uku (2025). Eesti majanduse olukord ja väljavaated 2025. Konkurentsivõime eksperdikogu raport Riigikogule. Tallinn: Riigikogu Kantselei. Majanduse konkurentsivõime tulevik - Arenguseire Keskus

([79]) Hu, Bingjie and Can Ugur, 2025. Allocative Efficiency, Firm Dynamics, and Productivity in the Baltics; Republic of Estonia; IMF Selected Issues Paper No. 2025/103; June 23, 2025

([80]) Stakeholder feedback

([81]) ECFIN business and consumer survey data

([82]) E.g. Estonia's Recovery and Resilience Plan

([83]) Government information

than the EU average of 62%, reported that they have to comply with different standards and consumer protection rules in different EU Member States. This share however decreased 16 pp. compared to the previous year ([84]).

## Business environment

**In the areas of simplification, burden reduction and permitting/licensing, there is still scope for Estonia to improve.** Business regulations are stated as an obstacle to investment by 53% of Estonian companies and labour regulations by 46% of Estonian companies, both lower than EU average (69% and 64%). However, among micro/small companies, this percentage is higher (65% for business regulations), indicating that there would be room to reduce regulatory burden particularly for the smallest companies. In fact, 29% of Estonian companies, and 52% of micro/small companies, reported that they need to dedicate over 10% of their personnel to comply with the regulatory requirements ([85]). According to the OECD Product Market Regulation indicator, in particular in licensing Estonia could simplify its regulatory and administrative burden ([86]) and simplifying obtaining licenses and permits could improve the regulatory environment overall ([87]).

**Estonia is taking significant steps to alleviate its regulatory burden.** This issue has been tackled through the Council for Economic Growth and Efficiency, which was first convened in March 2025 and operated until September 2026. Consisting of Estonian business leaders, the council received has received over 700 proposals to cut red tape from various stakeholders. Government has reviewed and approved over 200 of these proposals ([88]) ([89]). Some of the proposals that have already been implemented include a significant easing of sustainability and reporting for companies, abandoning the obligation to send paper invoices, and simplifying cybersecurity requirements for small businesses. In addition to the Council, ministries and the government have also submitted proposals, some of which have already been implemented ([90]).

**Estonia is positioning itself as a leader in e-government, with its digital public services continuing to outperform the EU average.** The country also focuses on digital sovereignty, emphasising government resilience. Measures have also been put in place to ensure that it can continue to be digitally governed beyond its geographical borders in various disaster scenarios. Estonia also scored above the EU average for cross-border digital public services for citizens and businesses in 2024 ([91]). The provision of digital public services cross-border is also expected to improve with the advancing implementation of the Single Digital Gateway (see the Effective Institutional Framework Annex). Estonia has also set a long-term vision to establish the country as a leading in data economy and an AI-powered state by 2030 across private and public sector.([92])

**However, the country is falling behind the EU average in terms of its connectivity infrastructure (VHCN, 5G), while showing impressive 5G coverage in sparsely populated areas.** Estonia faces challenges in matching EU averages for Very High Capacity Networks (VHCN) and 5G coverage but excels in 5G coverage in sparsely populated areas and the assignment of 5G spectrum. As of 2024, Estonia's VHCN and Fiber to the premises (FTTP) coverage stands at 76.27%, below the EU's 82.49% for VHCN but above the EU's 69.24% for FTTP. The stagnating coverage for VHCN (it stood at 76.94% in 2023) can be attributed to drops in DSL, VDSL and VSDL 2 vectoring caused by network decommissioning. Estonia's competitive telecom market includes significant efforts towards improving infrastructure, backed by initiatives like the Recovery and Resilience Facility support scheme. As Estonia progresses towards its

([84]) EIB Investment Survey 2025: Estonia overview

([85]) EIB Investment Survey 2025: Estonia overview

([86]) Estonia_PMR country note.pdf

([87]) OECD Economic Outlook, Volume 2025 Issue 2 (EN)

([88]) Majanduskasvu ja efektiivsuse nõukoda: kestlikkusaruandluse lihtsustamine hoiab 2 aasta jooksul kokku 115 miljonit eurot | Riigikantselei

([89]) Efektiivsuse ja majanduskasvu nõukoda | Riigikantselei

([90]) Economic Growth Council: abandoning paper invoices and strict sustainability requirements is only the beginning of cutting red tape | Government Office

([91]) European Commission, 2025, *Digital Decade Country Report Estonia*, Ec.europa.eu.

([92]) The White Paper on Data and AI 2024-30

2030 targets for VHCN and 5G, its policies continue to foster private investment and enhance spectrum accessibility for innovative applications.

**The availability of finance is a major investment obstacle for more Estonian companies than in the previous year.** 19% of companies state it as a major obstacle to investment and 29% as a minor obstacle to investment. Altogether, this represents an increase of 13 pp. to the previous year and is also slightly higher than EU average (45%). The share of finance-constrained companies also more than doubled in 2024 and continues in 2025 to be significantly higher than the EU average. Rejections are the key issue causing finance constraint. Access to finance is a significant issue in particular for SMEs, and Estonia has a 2025 CSR (3) on improving access to finance, especially for SMEs and companies in remote regions. Estonia is taking action on this issue through offering grants, loan guarantees and loans to businesses, notably increasing existing loan volumes by 55 MEUR in 2026. Estonia has also recently introduced a new innovation loan to finance higher-risk investment in novel technologies, and a specific support measure for large-scale investment ([93]) (see also the annexes on the Capital Markets, Financial Stability and Access to Finance).

**Late payments remain an issue in Estonia**. 63 % of Estonian companies reported issues due to late payments in 2024 and 53% of Estonian SMEs experienced late payments in 2025. While higher than EU average, this is a decrease to previous year. Their direct operational and financial impacts on companies also seem to have eased in 2024 ([94]).

## Single Market

**Recent economic volatility and trade tensions underlined the importance of the EU Single Market for growth and resilience**. Estonia continues to be well integrated into the Single Market and to actively engage in international trade. 72% of Estonian companies engage in international trade ([95]) and Estonia continued to be placed fifth among EU countries in terms of EU trade integration, demonstrating a high level of EU trade integration (measured using the percentage ratio of trade volumes to GDP). This percentage increased slightly from last year (58.6% in 2025, 57% in 2024).

**Estonia's compliance with Single Market law shows mixed results.** Its Single Market transposition deficit (which measures the percentage of all directives not transposed into national law) increased in 2025 to 1.3% and is now worse than both the EU average 1.1% and the 1% target set up by the EU Council, signalling a need to work on the timely transposition of directives. The conformity deficit (the percentage of wrongly transposed Single Market directives) in Estonia is still below EU average at 0.8% (vs 1.1%). The transposition of 13 Single Market directives was overdue (in December 2025) and the average delay in transposing those directives was lower than EU average. Estonia had 14 pending Single Market infringement proceedings in December 2025, which was well below the EU average (25). This represented an increase compared to the three previous years, but Estonia is still one of the best performers in the number of infringements this year (6th out of 27 Member States). The same remark applies to the duration of infringement proceedings (4th position) ([96]). In 2025, Estonia resolved 100% of the SOLVIT cases it handled as lead centre (the EU average was 84.6%).

**Compliance of products circulating in the Single Market** ([97]) **is key to ensuring a level-playing field for law-abiding companies and the safety of consumers.** In Estonia, 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 231.4 investigations per one million inhabitants, which is higher than the EU median of 136.2. The number of notifications remains limited in

([93]) Government information

([94]) EU Payment Observatory Annual Report 2025

([95]) EIB Investment Survey 2025: Estonia overview

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

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

absolute terms, which may also be the result of insufficient IT national interoperability to the ICSMS system. The upcoming revision of the Market Surveillance Regulation will upgrade ICSMS to a fully interoperable EU digital platform.

**Limited resources of the Estonian National Standardisation Body (EVS) are negatively affecting the functioning of the Single Market([98]), and the competitiveness of EU companies**. While National Standardisation Bodies play a key role in the functioning of the European Standardisation System, the Estonian EVS has limited resources, reporting having a staff of 18 people. Consequently, strengthening its capacity is essential to ensure sufficient participation of experts and stakeholders in European standardisation processes. It is therefore recommended that Estonia supports the EVS to reduce market fragmentation, improving the competitiveness of Estonian companies, and fully benefiting from the opportunities of the Single Market.

**While barriers persist in some professions, regulatory restrictiveness as well as restrictions to trade in services ([99]) continue to be comparatively lower than EU and OECD averages.** In terms of services trade, Estonia is the fifth most open country among the Member States surveyed ([100]). However, in terms of regulated professions, lawyers and notaries are subject to relatively heavy regulation as they face particularly stringent entry and conduct regulations ([101]). This can impact competitiveness in the legal sector and easing rules for notaries and lawyers could improve the regulatory environment ([102]).

**Estonia continues to be an average performer in public procurement.** In single bids, Estonia scored slightly above the EU median in 2025 with 30%. Estonia continued to be among the worst performers in direct awards in 2025 (the percentage of public procurement negotiated without any call for bids), but the percentage slightly decreased from previous year (from 13% to 11%).

**Estonia is advancing on strategic public procurement.** National statistics show that in 2024, 12.3% of all procurement was recorded as green public procurement (GPP) and the trend for 2025 seems increasing, largely due to awareness-raising efforts as well as national action in the context of the 2024-2026 GPP action plan([103]). To tackle the lack of professionalism in strategic public procurement, Estonia and OECD have a project called 'Promoting the Uptake of Strategic Public Procurement in Estonia through Professionalising the Public Procurement Workforce'. A recent report on this pointed out that the uptake of strategic public procurement in Estonia remains somewhat limited, despite wide recognition of its strategic value. The report also pointed out the need for further clarity on the legal framework and guidance on its use, transparency on compliance, a stand-alone policy on professionalisation of workforce and capability building. Importantly, the challenges faced by SMEs in the tendering processes were highlighted ([104]). Beyond this project, Estonia has taken action on the professionalisation, e.g. through training and a novel skills matrix for buyers. Simplification of public procurement processes is a key consideration for Estonia ([105]).

**Businesses' views on corruption risks in public procurement are below the EU average.** In Estonia, 49% of companies (EU average: 58%) consider tailor-made specifications for particular companies in public procurement procedures, and 39% (EU average: 53%) conflicts of interest in the evaluation of bids, 'very' or 'fairly widespread' practice. Among companies that have experience in and/or participated in a public procurement procedure, 17% think that corruption has prevented them from winning a public tender or a public procurement contract in practice (EU average: 25%). 31% of businesses perceive the

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

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

([100]) OECD, 2026, *Services Trade Restrictiveness Index (STRI),* Services trade restrictiveness index | OECD.

([101]) Estonia_PMR country note.pdf

([102]) OECD Economic Outlook, Volume 2025 Issue 2 | OECD

([103]) Government information.

([104]) OECD (2025), Strategic Public Procurement and Professionalisation Initiatives in Estonia: Diagnostic Report, OECD Public Governance Reviews, OECD Publishing, Paris.

([105]) Government information.

level of independence of the public procurement review committee as 'very' or 'fairly good' when it is reviewing public procurement cases. The National Audit Office has consistently highlighted the need to improve transparency in public procurement to prevent corruption, increase competition and enhance efficiency in the use of public funds and a level playing field for businesses.

**Estonia's eProcurement landscape and data quality issues highlight the need for interoperable systems, common standards, and stronger data governance.** Estonia's centralised eProcurement service allows economic operators to use a single system to access all national public procurement procedures. However, concerning cross-border procurement issues remain creating complexity and barriers to participation for firms of other Member States. This fragmentation underscores the need for introducing interoperability and common standards. Although the once-only principle is implemented at national level, the service needs updating to prevent the need for additional registering for this service. Additionally, buyers across the EU still lack digital access to relevant evidence. Despite some monitoring, Estonian national authorities do not provide a public procurement data strategy with clear objectives and management of public procurement processes data. Therefore, the Estonian system would benefit from a dedicated public procurement data collection and analysis service within the government to support data-driven oversight of the procurement lifecycle ([106]).

## Industry and economic security

**Energy-intensive industries have been facing particular challenges.** Energy prices in Estonia have been an issue, also one of the biggest obstacles to long-term investment ([107]), and Estonian government recently introduced a renewable energy fee reduction for large industrial energy consumers, notably to attract investment in EIIs and boost industrial competitiveness ([108]). Electricity prices for non-household consumers in Estonia in 2024 and early 2025 were also lower than previous years and EU average (EE 0.1405 vs EU 0.1462([109])). In 2025, the key issue for the industry seems to have been the volatility of the energy price (see Annex on Affordable Energy).

**Beyond energy topics, the resource intensity of Estonian industries continues to be an issue.** In terms of resource productivity, measured as gross domestic product (GDP) over domestic material consumption (DMC), Estonia was still among the worst EU performers in 2024. Estonia's performance also slightly worsened compared to 2023 (index value 2023:127.7, 2024: 124.7) ([110]). Estonia has a 2025 CSR (4) on raising resource-productivity through bio-based innovation. Estonia has a circular bioeconomy roadmap, which it is implementing, and has both national and Recovery and Resilience Facility funding allocated for bioeconomy topics and green technologies ([111]). Estonia also introduced several circular economy support measures where calls were opened in late 2024 and 2025, including a resource efficiency measure for manufacturing industry which has particular importance to improve resource productivity and which will be continued. However, Estonia reports that the results will not be visible in statistical terms quickly ([112]). See more in the annexes on Industry Decarbonisation, Circularity and Climate Mitigation.

**Estonia has progressed effectively in implementing the Net-Zero Industry Act (NZIA).** It has successfully designated a Single Point of Contact, which is crucial for streamlining communication and coordination among stakeholders, as well as establishing a dedicated website. Furthermore, Estonia has established a national contact point to administer applications, facilitating the advancement of Net-Zero Strategic Projects. However, so far, Estonia has not

([106])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.

([107])EIB Investment Survey 2025: Estonia overview

([108])Government information and Planned amendment to lower major consumers' electricity costs | News | ERR

([109])kw-hour at PPS, excluding taxes and levies, all consumption bands

([110])Resource productivity statistics - Statistics Explained - Eurostat

([111])Government information

([112])Government information

confirmed any Net-Zero Strategic Projects and has not designated any Net-Zero Acceleration Valleys. Overall, Estonia's manufacturing capacity across all net zero technologies remains modest, but there is potential for innovative technologies ([113]) and there are some frontrunner companies such as Eleon (wind turbines), Stargate Hydrogen (electrolysers) and UpCatalyst (carbon materials from CO2). See more information on net zero technologies in Estonia in Annex 7 of the 2025 Country Report ([114]).

**Estonia is taking action to support the development of its clean-tech sector**. For example, its permitting framework is being reviewed by the Estonian Ministry of Economy to reduce uncertainties ([115]). The Estonian Ministry of Climate and Cleantech Estonia are in the process of creating an Estonian Cleantech Roadmap 2025-2035 ([116]) and the government has also introduced several support measures to clean technologies through Enterprise Estonia, Estonia's SmartCap Green Fund and the green accelerator programmes. Furthermore, Estonia has also introduced a support measure for large-scale investment, with grants of up to EUR 20 million. This support measure is not only for net-zero technologies, but in the first round one of the three selected projects was on green hydrogen. ([117]) This large-scale measure is meant to address the lack of large-scale investment to scale up green technologies. This, together with regulatory hurdles and lack of demand, is hindering these technologies in Estonia.

**Estonia is taking a leading role in rare earth metal separation and is a key player in magnet manufacturing.** A new rare earth magnet manufacturing facility, the largest in Europe, was recently opened in Narva. One strategic project under the Critical Raw Materials Act was also selected in Estonia, a project focusing on graphite processing by the previously mentioned UpCatalyst. Estonia largely relies on imports for critical raw materials, but recently prepared the Estonian National Programme of Geological Studies on Critical Raw Materials ([118]) which will guide exploration of critical raw materials in Estonia. More generally, Estonia's material import dependency in 2024 is 22.8%, slightly higher than EU average. Dependency on imports of non-metallic minerals, biomass and fossil energy materials is relatively low, but Estonia is fully dependent on metal ores.

([113])European Commission: Directorate-General for Energy, The net-zero manufacturing industry landscape across the Member 2025, https://data.europa.eu/doi/10.2833/2181110.

([114])753a50ca-44e7-410a-a845-41e4c91fbf6a_en

([115])Government information.

([116])Estonian Cleantech Roadmap 2025-2035 in progress

([117])Government information.

([118])Kriitiliste_toormete_uuringuprogramm

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

| Estonia | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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] | | 78.1 | 76.1 | 73.0 | 72.7 | 73.0 | 100.0 |
| | Business investment (share of GDP)[1] | | 19.0 | 14.2 | 13.6 | 12.9 | - | 12.6 |
| | Public investment (share of GDP)[1] | | 5.8 | 5.4 | 6.5 | 6.2 | - | 3.9 |
| **Business environment and simplification** | Impact of regulation on long-term investment, % of firms reporting business regulation as a major obstacle[2] | | 5.6 | 9.5 | 14.7 | 14.9 | 20.0 | 34.0 |
| **SME liquidity** | EIF Access to Finance for SMEs index - loans[3] | | 0.47 | 0.36 | 0.23 | 0.31 | - | 0.43 |
| | EIF Access to Finance for SMEs index - equity[3] | | 0.41 | 0.19 | 0.37 | 0.22 | - | 0.19 |
| **Late payments** | Payment gap - corporates B2B, difference in days between offered and actual payment[4] | | 13.9 | 13.2 | 15.3 | - | - | 17.4 |
| | Payment gap - public sector, difference in days between offered and actual payment[4] | | 11.0 | 15.9 | 18.1 | - | - | 13.6 |
| | Share of SMEs experiencing late payments, %[5] | from private entities in the previous or current quarter | - | - | - | 56.7 | 53.1 | 47.1 |
| | | from public entities in the previous or current quarter | - | - | - | 9.0 | 6.3 | 15.9 |
| **Single Market** | | | | | | | | |
| **Integration** | EU trade integration, average(intra-EU imports + intra EU exports)/GDP, %[1] | | 58.1 | 65.6 | 59.4 | 57.0 | 58.6 | 40.7 |
| | EEA Services Trade Restrictiveness index[6] | | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 | 0.050 |
| **Public procurement** | Single bids, % of total contractors[7*] | | 25 | 31 | 31 | 28 | 30 | 27 |
| | Direct awards, % of negotiated procedures[7*] | | 9 | 11 | 11 | 13 | 11 | 6 |
| **Compliance** | Transposition deficit, % of all directives not transposed[8] | | 1.2 | 0.4 | 0.9 | 0.9 | 1.3 | 1 |
| | Conformity deficit, % of all directives transposed incorrectly[8] | | 0.9 | 0.9 | 1.1 | 0.8 | 0.8 | 1.1 |
| | SOLVIT, resolution rate per country, %[8] | | 100 | 100 | 100 | 100 | 100 | 84.6 |
| | Number of pending infringement proceedings[8] | | 8 | 7 | 10 | 12 | 14 | 25 |
| **Industry and economic security** | | | | | | | | |
| **Energy-intensive industries** | Electricity prices for non-household consumers[1] | | 0.1556 | 0.2225 | 0.1597 | 0.1470 | 0.1405 | 0.1462 |
| | Electrification (electricity as a share of total energy consumption in industry)[1] | | 49.5 | 50.1 | 45.5 | - | - | 32.7 |
| | Share of energy from renewable sources (renewable energy generation as a share of overall energy consumption)[1] | | 37.3 | 38.5 | 41.0 | 42.2 | - | 25.2 |
| **Critical raw materials** | Material import dependency, %[1] | | 30.5 | 26.4 | 21.9 | 22.8 | - | 22.4 |
| | Circular material use rate[1] | | 19.9 | 21.8 | 20.5 | 20.5 | - | 12.2 |
| **Operational cleantech manufacturing capacity in 2025[9]** | - Solar PV (c: cell, w: wafer, M:module), GW | | 0.07 (m) | | - Electrolyzer, GW | | 0.500 | |
| | - 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 diagnostic**

| *Topic* | *Main features* | *Relative EU positioning* |
|---|---|---|
| **Asset-backed pension schemes** | Assets at 18.0% of GDP (32.3% in the EU)<br>10-year real return of 0.0 (1.4% in the EU) | The medium pension assets yield a low real return. |
| **Households' financial assets** | EUR 40 636 per capita (EUR 85 090 in the EU)<br>o/w 3.8% in listed shares and bonds (7.6% in the EU)<br>o/w 13.9% in investment funds (11.0% in the EU)<br>o/w 0.7% in life insurance (13.4% in the EU)<br>o/w 0.0% in pension claims (13.6% in the EU) | A very low share of households' low financial assets is invested in listed shares and bonds, in life insurance and pensions. Savings and Investment Account available, |
| **Venture capital (VC)**<br>**Private equity (PE)** | VC at 0.246% of GDP (0.064% in the EU)<br>PE at 0.609% of GDP (0.487% in the EU) | Very high venture capital and high private equity investments. |
| **Capital taxation** | Capital gains are taxed at 22%. No tax on dividends since companies only pay when benefits are distributed. Tax on interest income of 22%. Third pillar pension contributions tax refund (calculated on 15% of annual gross income or up to 6 000 EUR) | Relatively low taxes on capital without debt equity bias |
| **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). End-2024

*Estonia's companies rely mainly on internal financing for investments and rely only marginally on funding through the capital markets. The country's financial sector is dominated by a very concentrated banking sector. Capital markets could play a bigger role in providing financing to the economy. The market capitalisation of Estonia's stock market is one of the smallest in the EU. Despite joint efforts by Estonia, Latvia and Lithuania to support an integrated regional capital market, low levels of depth and liquidity prevent them from being upgraded from 'frontier markets' to 'emerging markets'. This acts as a deterrent for institutional investors to invest in those markets. To promote retail investor participation in financial markets, the government introduced an investment account in 2011. Estonia ranks very high in terms of financial literacy.* Private-equity and venture-capital funds aimed at SMEs have largely benefited from the support of national and European institutions. Estonia shows some weaknesses in the main indicators of progress with the policy goals of the Savings and Investments Union (see Table A6.1) For Estonia, the 2025 CSRs highlighted the need to improve access to finance, including by promoting institutional investors' participation in the venture-capital and equity markets.

## Business landscape and company funding

**The business landscape in Estonia is largely dominated by SMEs, and by micro enterprises in particular.** Micro firms represent 94.9% of firms in the country (vs 93.6% in the EU). They employ 38.8% (vs 30.1% in the EU) of the working population and produce 32.2% (vs 20.1% in the EU) of total value added ([119]) (See Annex 5 for more details). This business landscape has concrete implications for the corporate sector's demand for funding.

**Companies in Estonia fund a large share of their investments internally.** According to the 2025 EIB Investment Survey ([120]), 75% of Estonian firms' investment needs are covered by internal funding, compared with an EU average of 66%. The dominant role of internal funding in financing companies is partly due to the Estonian corporate income tax system, under which profits are not taxed until they are paid out as dividends. Another reason for the reliance on internal funding is the fact that Estonian companies are generally micro firms, and external funding is more expensive for smaller companies than it is for large companies. Overall, the number of Estonian firms that report being finance-constrained is one of the highest in the EU (11.6% vs an EU average of 6.1%).

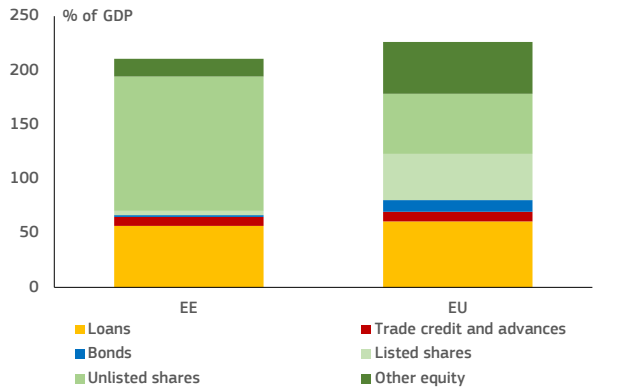
**Estonian companies rely only marginally on funding through the capital markets.** At the end of 2024 (see Graph A6.1), finance through loans accounted for 26.7% of total corporate funding in Estonia, similar to the EU average, while listed shares and bonds accounted for only 1.8% of funding (19.1% in the EU). The value of finance

([119]) SME Performance Review - Internal Market, Industry, Entrepreneurship and SMEs.

([120]) EIB Investment Survey 2025: Estonia overview.

though unlisted shares in Estonia was the equivalent of almost 124% of GDP (55% in the EU).

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




***Source:*** Eurostat. End-2024..

## Size and structure of the financial sector

**Banks represent the largest share of the Estonian financial sector, accounting for about 70% of the country's financial assets.** Nevertheless, the banking system remains relatively small in comparison with other euro area countries. In Q3 2025, Estonian banks' total assets were equivalent to 112.3% of GDP, significantly below the EU average of 246.1% (see Table A6.2).

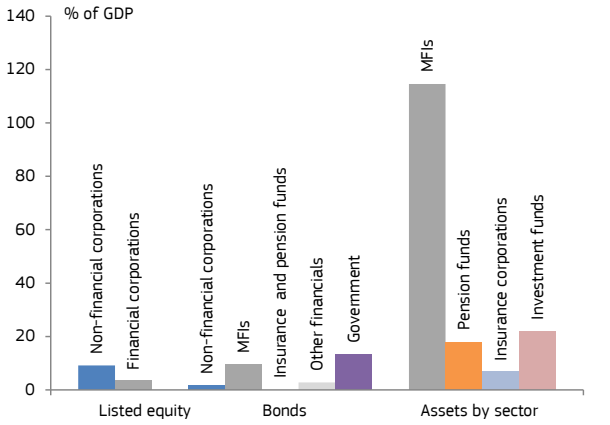
**The institutional investor base remains small.** Total assets under management by pension funds, insurance corporations and investment funds (see Graph A6.2) were equivalent to 47% of GDP in Estonia in 2024, (where the average in the EU is equivalent to around 188% of GDP). Domestic institutional investors place only a small portion of their assets on the domestic market.

**Authorities from Estonia, Lithuania and Latvia have made efforts to develop an integrated capital market in the Baltic region.** These three Baltic states have been working towards integrating their capital markets' infrastructure and signed a memorandum of understanding in 2017 to 'cooperate in developing a deeper and more efficient regional capital market'. This commitment was followed by efforts to harmonise regulation between the three countries and create pan-Baltic products. The three national central securities depositories (CSDs) were also merged in 2017, resulting in the creation of Nasdaq CSD SE, legally based in Latvia.

The market capitalisation of Estonia's stock market expressed as a percentage of national GDP is one of the lowest in the EU. Nasdaq Tallinn belongs to the Nasdaq group, which in the EU operates other trading venues in Lithuania and Latvia, as well as in Sweden, Finland and Denmark. Nasdaq Tallinn operates the only regulated market in Estonia, as well as a multilateral trading facility. The country's equity market is small in terms of both capitalisation and volumes traded. The market capitalisation of listed stocks was equivalent to 10.7% of GDP in Estonia in Q3 2025, which is more than in Lithuania (6.2%) and Latvia (0.8%), but significantly lower than the EU average of 70% of GDP (see Table A6.1). Capital markets in Estonia have contracted in recent years, partly due to the country's 2021 pension reforms, which enabled savers to withdraw funds from pillar 2 pension schemes. In addition, the start of Russia's war of aggression against Ukraine has led to a deterioration in investor sentiment. Despite the sound macro-economic and institutional frameworks of Estonia and the pan-Baltic region, benefiting from a single market classification by MSCI, index providers continue to classify the three countries as 'frontier' markets because of the small size and low liquidity of their securities markets. This 'frontier' designation can in turn act as a deterrent for institutional investors to invest in those markets, which can also prevent the markets from reaching the scale and liquidity necessary to be upgraded.

**Estonian debt markets remain undersized.** Although the level of government debt sharply increased in 2025, it remains the lowest in the EU, at 23.5% of GDP. This has resulted in a very limited float of sovereign bonds, which typically serve as a benchmark for pricing debt securities. The corporate bond market (see Graph A6.2) is also very small (equivalent to only 1.8% of GDP vs 10.7% in the EU) and activity there was very weak, even when low interest rates prevailed in financial markets over the previous decade.

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




***Source:*** ECB, OCDE, AMECO. End-2024.

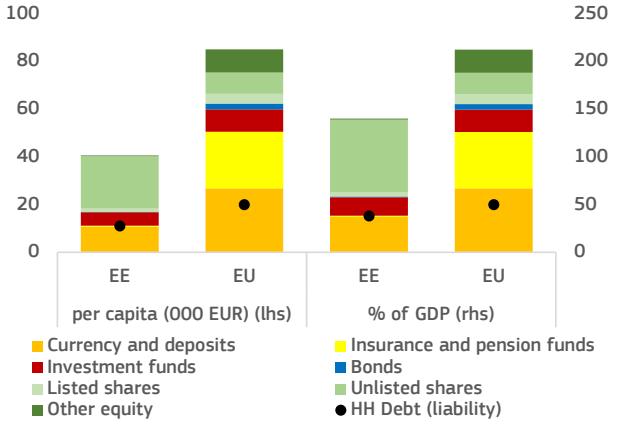
## Households' participation in capital markets

**Estonian households' financial assets are mainly held in non-listed shares, followed by deposits and investment funds.** The saving rate of Estonian households is relatively low and, in absolute terms, they hold relatively few financial assets compared with their EU peers. Unlisted shares (i.e. the capital invested by firms' owners and kept within firms as retained earnings) represent the largest share of household assets (54% vs 10.6% in the EU). This is followed by bank deposits, equivalent to 37% of GDP, which is slightly below the EU average. Since the country's 2021 pension reform, households' financial assets held in insurance and pension funds has fallen from the equivalent of 21% of GDP in 2020 to 1.3% of GDP in 2024 (vs 59% in the EU on average in 2024) (Graph A6.3). However, the percentage of households' financial assets held in investment funds has increased over the last couple of years, rising to 19.6% of GDP in 2024 (this is still below the EU average of 23.5% of GDP in 2024). Both interest income and capital gains are taxed at 22%.

**To promote retail participation in capital markets, the Estonian government introduced an investment account in 2011.** This account allows taxpayers to invest in a variety of financial instruments, deferring taxes on their investment gains until money is withdrawn from the account. The investment account regime was amended in 2025 to allow for greater flexibility by: (i) adding new financial instruments such as crowdfunding investments and crypto assets; and (ii) allowing other service providers to offer these investment accounts in addition to credit institutions (e.g. investment firms and payment service providers). This investment account initiative helps to address the 2025 CSR on access to finance. Since its creation in 2025, the number of taxpayers in Estonia who declared an investment account has increased steadily. However, Estonian companies are taxed only when profits are distributed, and many taxpayers use a company to make their investments as this provides more flexibility.

**Estonia ranks very high in terms of financial literacy**. According to the 2023 Eurobarometer survey, 39% of Estonians have a high level of financial knowledge, 47% have a medium level, and the remaining 14% possess a low level. In contrast, the EU average is 26% for high literacy, 50% for medium, and 24% for low. The Estonian authorities have put in place a financial literacy strategy for 2021–2030 and from 2023 a separate strategy for pension awareness, the Estonian pension literacy strategy for 2023-2027.

Graph A6.3: **Composition of households' financial assets**




***Source:*** Eurostat. End-2024.

## The banking sector: resilience and financing of the economy

**Estonian banks have remained strong, despite facing a challenging macroeconomic environment; they are thus not constrained in their role of funding the economy.** Estonia's

banking sector has coped relatively well with multiple shocks in recent years, from the pandemic crisis to Russia's aggression against Ukraine and the subsequent energy crisis. The common equity tier 1 (CET1) ratio (see Table A6.2) has exhibited a marked downward trajectory in recent years, falling from 30% in 2017 to 19.7% in Q3 2025. However, this ratio is still above the EU average of 16.8%. The return on equity ratio of Estonian banks fell to 14.2% in Q3 2025, but also still significantly exceeds the EU average (9.6%). Banks' balance sheets show improved asset quality in recent years, with an aggregate non-performing loan ratio of 1.3% in Q3 2025, which is below the EU average of 1.9%. 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. Funding risk remains low in general and liquidity ratios remain at a good level ([121]). The Estonian Central Bank has kept the countercyclical capital buffer rate for banks at 1.5%, in face of rapid growth in lending.

**Credit growth to both households and non-financial companies accelerated in 2025.** After the interest rate cycle turned downwards in 2024, Estonian banks' portfolio of loans to non-financial companies and households started to grow strongly, reaching an annualised 12% and 9.9% respectively by Q3 2025, which is well above the average in the EU (see Table A6.2) (see Annex 18 for more on access to finance in remote regions). Growth in 2024 and 2025 was driven by strong take-up of both: (i) corporate loans in construction and real estate; and (ii) housing loans to households. Increased demand for loans has also been boosted by falling interest rates on both corporate and household loans ([122]).

## Role of non-bank financial intermediaries

**The Estonian insurance sector is very small.** The total value of assets of the insurance sector in EU countries is equivalent to 53.9% of GDP on average. By contrast, the figure for insurers registered in Estonia was only 6.6% in Q3 2025 (see Table A6.2). The small size of the insurance sector in the country can be explained by the underdevelopment of life insurance. Non-life insurance has the largest share of the total insurance market (87% at the end of Q2 2025) ([123]). A major role in the Estonian insurance sector is played by mandatory insurance products that are compulsory either by law or as a requirement of a lender financing the purchase of an asset. About half of all insurers operating in the Estonian market are branches of foreign insurance companies. Several Estonian insurers also operate in the Latvian and Lithuanian markets.

**The private pension sector remains underdeveloped and has a limited role in providing long-term investments to the economy and contributing to the pension system.** The value of assets of Estonian pension funds dropped after the second pillar was made voluntary in 2021 and citizens were free to make early withdrawals. However, pension fund assets have started to rise again more recently, reaching 18% of GDP in 2024, albeit remaining below the EU average of 32.3% (see Table A6.2). No separate occupational pension scheme is in place in Estonia. Nevertheless, employers may contribute to their employees' pillar 3 pension schemes, although, in practice, this option is not widely used and contributions remain relatively low and irregular. Estonia benefits from a pension tracking system in line with the European Commission Recommendation ([124]) in this area. In addition, according to OECD data, private pension funds in Estonia invest 79% of their assets in shares (the highest percentage in the EU). Despite this, the 10-year real rate of return in 2024 for these private pension funds was close to zero (despite the high real returns in 2023 and 2024) (see Table A6.2)

**Estonia has a relatively small domestic fund sector.** Assets of investment funds were equivalent to 22% of GDP in 2024 (see Graph A6.2), below the EA average of 130%. However, they have increased steadily in recent years, especially for 'non-public investment funds' aimed at professional investors. These non-public

([121]) Consolidated banking data | ECB Data Portal.

([122]) The Financial Stability Review 2/2025.

([123]) The Estonian financial services market.

([124]) Commission Recommendation on Pension tracking systems, pension dashboards and auto-enrolment.

investment funds constitute 80% of total assets ([125]) in Estonia's fund sector.

## Venture-capital ecosystem

**Venture and growth capital financing has gained traction in the Estonian financial ecosystem thanks to the combination of: (i) a thriving ecosystem for start-ups and tech businesses; and (ii) publicly funded initiatives (see Annex 4).** Over the past decade, new private-equity and venture-capital funds targeting innovative companies in Estonia have largely benefited from the support of both national promotional institutions (e.g. Enterprise Estonia) and supranational organisations (European Investment Fund, Baltic Innovation Fund, European Bank for Reconstruction and Development). Public support has played an essential role in expanding alternative sources of funding and creating a critical mass of investors. Initiatives such as EstFund (established in 2016 by the Estonian government and the European Investment Fund) have encouraged the growth of local private-equity/venture-capital funds. The ecosystem of Baltic SMEs with high growth potential has also benefited from initiatives such as the Baltic Innovation Fund in 2012, which was extended for a further five years in July 2019. This public support has been complemented by a range of organisations that not only foster the entrepreneurial spirit among Estonians but also seek to attract foreign founders and investors, such as pension funds and other private institutional investors. This has injected significant momentum into the Estonian private-equity market. The country's business-friendly legislation and tax system also support entrepreneurship**.** These initiatives help to address the 2025 CSR on access to finance.

**Even though its venture-capital and private-equity markets are very young, Estonia (when adjusted for the size of its economy) is one of the leading private-equity/venture-capital ecosystems in the EU.** According to the CMU dashboard (see Table A6.2), Estonia ranks among the leading countries in private-equity investments relative to GDP (its three-year average of 0.609% in 2024 compares favourably with an EU average of 0.487%) and leads Europe in venture capital relative to GDP (a three-year average of 0.246% in 2024 vs an EU average of 0.064%) ([126]). Nevertheless, financing gaps ([127]) have been identified at both: (i) the very early stages of financing of firms, when risk is too high for some investors, and (ii) the later financing stage, when companies need to 'scale-up' and raise large amounts of capital.

([125])Eesti Pank Investment and pension funds statistics.

([126])Differences in VC/PE indicators across annexes reflect the use of distinct data sources. Annex 6 uses CMU dashboard data for consistency across CMU indicators, while Annex 4 uses InvestEurope data, which are disaggregated by investment stage. Variations in reported figures are therefore due to underlying source definitions.

([127])See EBRD Estonia diagnostic paper.

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

| | | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025-Q3 | EU |
|---|---|---|---|---|---|---|---|---|---|---|
| Banking sector | Total assets of MFIs, % of GDP | 99.1 | 101.1 | 123.4 | 121.4 | 105.1 | 108.9 | 114.6 | 112.3 | 246.1 |
| | Common equity Tier 1 ratio | 30.3 | 25.7 | 27.0 | 23.3 | 20.9 | 20.9 | 18.9 | 19.7 | 16.8 |
| | Total capital adequacy ratio | 31.0 | 26.3 | 27.8 | 24.3 | 22.0 | 22.2 | 21.3 | 23.1 | 20.2 |
| | Overall NPL ratio, % of all loans | 1.3 | 1.6 | 1.6 | 1.1 | 0.8 | 1.1 | 1.2 | 1.3 | 1.9 |
| | NPL ratio, loans to NFCs | 2.2 | 2.5 | 1.9 | 1.4 | 1.2 | 1.0 | 1.2 | 1.4 | 3.5 |
| | NPL ratio, loans to HHs | 1.3 | 1.7 | 1.6 | 0.9 | 0.6 | 1.0 | 1.0 | 1.0 | 2.1 |
| | Return on equity ratio[1] | 9.8 | 8.3 | 7.4 | 9.5 | 10.9 | 18.5 | 16.4 | 14.2 | 9.6 |
| | Loans to NFCs, % of GDP | 27.7 | 25.6 | 27.4 | 26.3 | 25.4 | 25.6 | 27.0 | 27.6 | 29.3 |
| | Loans to HHs, % of GDP | 32.9 | 32.5 | 35.0 | 32.9 | 31.6 | 31.8 | 33.2 | 34.1 | 43.6 |
| | NFC credit growth rate, % | 4.7 | 2.7 | 3.4 | 6.8 | 11.7 | 5.8 | 9.3 | 12.0 | 2.5 |
| | HH credit growth rate, % | 6.6 | 6.4 | 5.1 | 7.9 | 11.1 | 6.4 | 7.7 | 9.9 | 2.6 |
| Non-banking sector | Stock market capitalisation, % of GDP | 9.9 | 9.8 | 9.7 | 17.2 | 12.9 | 13.1 | 12.6 | 10.7 | 69.9 |
| | Initial public offerings, % of GDP | 0.84 | 0.00 | 0.02 | 0.84 | 0.23 | 1.45 | 0.00 | - | 0.06 |
| | Market funding ratio | 24.5 | 24.1 | 22.3 | 22.5 | 20.5 | 15.8 | 16.1 | - | 49.7 |
| | Private equity, % of GDP | 0.359 | 1.041 | 1.451 | 1.762 | 1.379 | 1.057 | 0.609 | - | 0.487 |
| | Venture capital, % of GDP | 0.055 | 0.076 | 0.104 | 0.222 | 0.331 | 0.338 | 0.246 | - | 0.064 |
| | Financial literacy, composite index | - | - | - | - | - | 46.5 | - | - | 45.5 |
| | Bonds, % of HHs' financial assets | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | - | 2.8 |
| | Listed shares, % of HHs' financial assets | 1.4 | 1.6 | 2.0 | 3.4 | 2.8 | 3.2 | 3.4 | - | 4.8 |
| | Investment funds, % of HHs' financial assets | 1.2 | 1.3 | 1.4 | 11.9 | 10.4 | 12.1 | 13.9 | - | 11.0 |
| | Insurance/pension funds, % of HHs' financial assets | 14.3 | 15.4 | 15.4 | 1.4 | 1.1 | 1.0 | 0.9 | - | 27.8 |
| | Total assets of insurers, % of GDP | 7.2 | 7.0 | 7.3 | 7.2 | 5.9 | 6.3 | 6.8 | 6.6 | 53.9 |
| | Pension assets, bn EUR | - | - | - | 5.2 | 4.7 | 5.8 | 7.2 | - | 5813.8 |
| | Pension assets, % of GDP | - | - | - | 16.4 | 12.9 | 15.3 | 18.0 | - | 32.3 |
| | 10y real return average of pension assets, % | - | - | - | - | - | -0.5 | 0.0 | - | 1.4 |
| | Pension funds assets, ECB (% of GDP) | - | 16.7 | 19.0 | - | - | - | - | - | 23.0 |

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

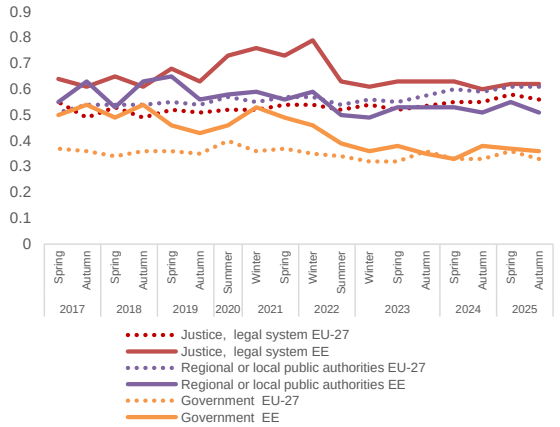
(1) Annualised data. EU data for credit growth and pension funds refer to the EA average.

***Source:*** ECB, Eurostat, European Insurance and Occupational Pensions Authority, 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 businesses. For Estonia, the 2025 country specific recommendations emphasise strengthening fiscal sustainability, enhancing competitiveness and innovation, and ensuring the effective use of EU funding.

## 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.

**Public trust in the government is slightly above the EU average** (Graph A7.1). Although trust has risen (Estonia 0.36, EU 0.33) from a historic low in spring 2024, the long-term downward trend is continuing. Confidence in local government is higher, but the overall trend is also downward. To address concerns about the ability of local governments to handle crises, Estonia has worked to increase transparency, accountability and civic engagement by reducing bureaucracy and enhancing regional governance through digital solutions and drawing up regional agreements ([128]). (See Annex 18).

## Quality of lawmaking

**Estonia has a good lawmaking framework but could improve in terms of reducing regulatory burdens and effective implementation** (Table A7.1). Estonia applies preliminary and simplified regulatory impact assessments (RIAs) to all draft laws. Assessments are expected to explore the impact on competition, innovation, regions and social groups, and the costs and benefits for business, people and government. This approach is backed by systematic training for drafters and a network of public officials, but full RIAs remain rare.

**Non-regulatory options are available for all new primary laws**. Compliance and enforcement assessments are conducted only for certain proposals, which may limit the effectiveness of legislation on complex or high-impact issues. Under recent reforms the government is required to review all draft laws twice before approval, and a new procedure for assessing the quality of RIAs is being tested. Estonia is boosting legislative quality through initiatives such as the "Principles for legislative policy" covering the period to 2030, *ex post* evaluations must be carried out systematically to strengthen post-implementation scrutiny. Estonia also identified ways to strengthen evidence-informed policymaking by means of the Technical Support Instrument ([129]).

**Public consultations are conducted via multiple channels.** Early involvement of stakeholders remains inconsistent, limiting opportunities to consider policy options and their impact. Consultation is required for all primary and secondary legislation. Mandatory *ex post* evaluations focus on effectiveness, competition, the administrative burden and regulatory overlap. These evaluations provide valuable insights, yet their publication is discretionary, which reduces transparency and public accountability. The Ministry of Justice and Digital Affairs (Justiits- ja Digiministeerium) and the Government Office (Riigikantselei) coordinate regulatory quality, stakeholder engagement, EU law transposition and reviews of subordinate regulations. While this

([128])OECD, 2025, Strengthening Place-Based Regional Development Policy in Estonia (TSI2022).

([129])OECD, 2025, Strengthening National Evidence-Informed Policymaking Ecosystems: Lessons from Seven European Countries.

Table A7.1: **Estonia. 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 | ● |

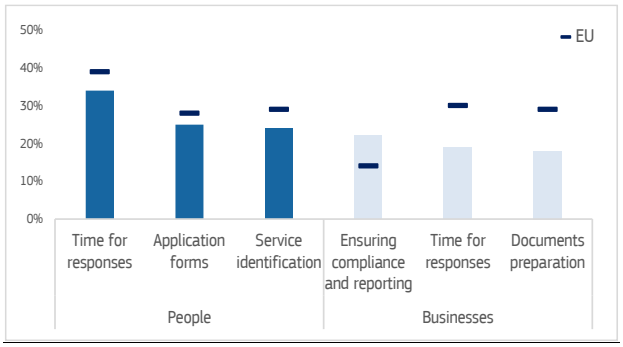
● High / yes / for all primary laws ● Medium / in part / for major primary laws ● Low / for some primary laws ● Very low / no / never

***Source***: OECD, 2025, Regulatory Policy Outlook 2025 and Better Regulation across the European Union 2025.

provides structured oversight, there is limited evidence on how effectively these mechanisms improve actual legislative outcomes.

## Public service delivery and digitalisation

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.

**Estonia stands out as a pioneer in digitalisation and user-friendliness of public services.** Both the public (68%) and businesses (59%) are among the most satisfied in the EU ([130]). However, 40% of people would welcome a single point of contact, 39% want more intuitive services and 38% need clearer guidance on procedures. ID delivery time ([131]) remains a concern. Although most businesses do not report any challenges in interacting with administrative bodies, 22% find that compliance and reporting is still time-consuming (Graph A7.2).

**Estonia offers almost all public services for people and businesses online** (Table A7.2). It has enabled full online access to electronic health records (See also Annex Health and health systems). Digital public administration services are widely valued by both people (81%) and businesses (94%) but remain underused. Companies still prefer email communication with the administration, which suggests potential shortcomings in terms of usability, traceability and guidance. Repeated information requests affect 58% of people — a striking figure given Estonia's state-of-the-art interoperability infrastructure. The infrastructure exists but not all administrative processes have been redesigned to use it ([132]).

**Estonia has made progress in the digitalisation of permitting, including — building, environmental and business licences.** Estonia's e-construction platform, operational and gradually expanding since 2016, benefits from automated compliance checks and cross-referencing of data from the land, planning

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

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

([132])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**

| | Estonia | | | EU-27 |
|---|---|---|---|---|
| | 2023 | 2024 | 2025 | 2025 |
| **Digital public services for citizens** (0 to 100) | 94 | 96 | 96 | 82 |
| **Digital public services for businesses** (0 to 100) | 99 | 99 | 98 | 86 |
| **Access to electronic health records** (0 to 100) | 89 | 98 | 100 | 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

and property registers. A notification tool launched in 2025 simplified the process for large infrastructure projects involving hundreds of stakeholders. Many environmental permits can be obtained online ([133]) with pre-filled forms, automatic preliminary controls, helper calculators and deadline reminders. The digitalisation of spatial planning is lagging behind. Under its recovery and resilience plan ([134]), Estonia is working to simplify the overall process, create uniform standards and automate procedures.

**Estonia ranks among Europe's top digital performers, yet monitoring has highlighted gaps in data quality and deployment.** Part of the problem is staff capacity: this is especially true at local level, where most data owners are small organisations without dedicated data personnel ([135]). The technical interoperability infrastructure is mature, but the internal workflows and legal frameworks governing data responsibility lag behind ([136]). That gap complicates the path forward. Estonia is addressing this through its Data and AI White Paper 2024–2030, which sets out reforms encompassing data governance, the once-only principle and AI transparency, acknowledging that infrastructure alone is not enough ([137]).

**Estonia has enabled the cross-border exchange of data and documents between authorities through the EU Once-Only Technical System (OOTS)([138]).** As services via this system become accessible, people and businesses will no longer have to search for their data, download and upload documents manually across e-government portals in different EU Member States. Estonia has yet to identify the types of documents and data they need to exchange through the system and explore ways to shift from the submission of unstructured to structured data formats. Estonia has one connected registry in the field of education([139]).

## Civil service

**Estonia plans to reduce public-sector staff numbers as part of broader spending and state-reform measures.** The government will cut labour, management, operating and targeted subsidy costs in public administration and state-owned companies by 10% over three years (5% in 2025, 3% in 2026, 2% in 2027) ([140]). It will also review public sector tasks to remove duplication and bureaucracy. The measures aim to make administration more efficient and reduce the projected budget deficit from 5.6% of GDP in 2025 to around 3% or below in subsequent years ([141]).

**Estonia has a highly skilled civil service and continues to invest in skills in this field.** Participation in lifelong learning has fluctuated in

([133])Keskkonnaamet, link

([134])Planeerimine.ee, 2026, Planning database and proceedings information system.

([135])European Commission, 2024, Government data-driven decision-making (DDDM) framework implementation.

([136])2024 Digital Public Administration Factsheet for Estonia (interoperable-europe.ec.europa.eu)

([137])Estonian Ministry of Economic Affairs and Communications, 2024, Data and AI White Paper 2024–2030.

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

([139])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.

([140])Government of the Republic of Estonia, Estonia Coalition agreement 2024-2027.

([141])Ibid.

recent years, yet remains well above the EU average (Estonia 42%, EU 19% in 2025) ([142]). The public administration workforce remains younger than the EU average, but is visibly ageing – the ratio of staff below 50 years and those above has declined from 2.6 in 2023 to 1.9 in 2025([143]). Aging affects especially local administrations. Gender representation is strong, with women making up 56% of the senior civil service, well above the EU average of 48%, and this proportion has remained stable ([144]).

**The attractiveness of civil service remains hindered by high workloads and limited resources.** Salary growth for senior positions is capped until 2028. Around 10% of Estonia's labour force hold two jobs concurrently and 2.4% have three or more ([145]), above the EU average of around 4%. Multiple employment is particularly common in healthcare and social welfare, and the proportion of civil servants with more than one job has increased, partly due to inflation-related income pressures.

## Integrity

**The perception and experience of corruption when doing business is low among Estonia's businesses**. Only 32% of businesses consider corruption to be widespread, (EU 63%). Nevertheless, a significant 74% of respondents believe that overly close links between business and politics lead to corruption, broadly in line with the EU average of 76% ([146]). Only 9% of businesses consider corruption as a problem when doing business, well below the EU average of 35% ([147]).

**The authorities report good implementation of the rules on prevention of conflicts of interest**. These rules are still implemented through anti-corruption contact points set up in every ministry. The secondary purpose of this scheme is to familiarise the ministers themselves and their advisers with the rules. It includes compulsory e-training and awareness raising among ministers and political advisers. According to the authorities, those rules have helped to standardise corruption-prevention procedures, which had previously varied between different institutions.

**Several measures were introduced to help combat financial crime, including corruption.** According to the authorities, the creation of a district service dedicated to fighting economic crime, including corruption, has led to better streamlining of activities, ensuring consistency and easier access to tools, including training. In 2024, the Ministry of the Interior published a report on how to improve the effectiveness of investigation and prosecution of financial crimes, including corruption.

## Justice

**The justice system is performing efficiently.** The time taken to reach a decision in civil and commercial cases in first-instance courts decreased from 196 days in 2023 to 185 days in 2024. The estimated time taken to resolve administrative cases at first instance also decreased, from 167 days in 2023 to 137 days in 2024. The quality of the justice system is good overall. Estonia is leading the way digitalising its justice system, reaping the benefits in terms of efficiency and access to justice for people and businesses alike. Estonia performs very well in digital solutions to initiate and follow proceedings in civil/commercial and administrative cases, and in online access for the public to published

([142])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).

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

([144])European Institute for Gender Equality, 2025, Gender Statistics Database.

([145])Estonia Statics report, 2024, 12% töötajatest on korraga rohkem kui üks töökoht | Statistikaamet.

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

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

judgments and regarding arrangements for producing machine-readable judicial decisions ([148]).

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

**Estonia's industry is undergoing a transformation to meet climate targets and remain competitive in a net-zero and circular setting**, but Estonia faces challenges to reduce emissions from effort-sharing sectors**.** Despite progress, the electrification of road transport and rail — including the upcoming Tallinn-Tartu line — proceeds slowly. For Estonia, the 2025 country-specific recommendations highlighted challenges in raising resource productivity through bio-based innovation and regarding the availability and use of sustainable and less-polluting transport, including by electrifying the rail network, renewing the stock of road vehicles and integrating public transport systems.

## Industry decarbonisation

**Manufacturing production in Estonia has a low greenhouse gas (GHG) emission intensity and only accounts for a small share of total emissions ([149]).** Around 5% of Estonia's total emissions are from manufacturing, which is among the lowest in the EU ([150]). At 189 g $CO_2$eq per euro of gross value added (GVA) in 2024, emission intensity of manufacturing in Estonia lies above the EU average of 200 g $CO_2$eq. Between 2019 and 2024, the emission intensity of Estonia's manufacturing industry fell by 43%, among the highest in the EU. The share of energy-related emissions in industrial GHG emissions is low at 46%, compared with 58% in the EU overall in 2023; it has fallen by 58 % since 2018. The paper and paper products sector is the largest industrial GHG emitter in Estonia's manufacturing, with emissions that exceed the EU average for this sector.

## Reduction of effort sharing emissions

**Compliance with effort sharing limits with domestic measures**

**Estonia's effort sharing emissions are projected to be above its target in 2030; previous years' unused emission allocations would not suffice to cover the gap** for compliance with the Effort Sharing Regulation ([151]). In 2024, GHG emissions from Estonia's effort sharing sectors are expected to have been 4.3% below 2005 levels ([152]). By 2030, current and planned policies and measures are expected to lead to a decrease by 18.1%, leaving a gap of 5.9 percentage points to the 2030 target of −24%. Estonia could bridge part of this gap with own unused annual emission allocations from previous

([149])This Annex discusses the transition of Estonia'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 Estonia'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 - Estonia, Commission staff working document, SWD (2025) 205 final, Brussels, 4.6.2025, Annex A7. Clean industry and climate mitigation.

([150])In 2024. 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. – The manufacture of coke and refined petroleum has been a significant source of greenhouse gas emissions in Estonia, with about 1 mn tons of CO2eq in 2023, accounting for more than 7 % of Estonia's total greenhouse gas emissions.

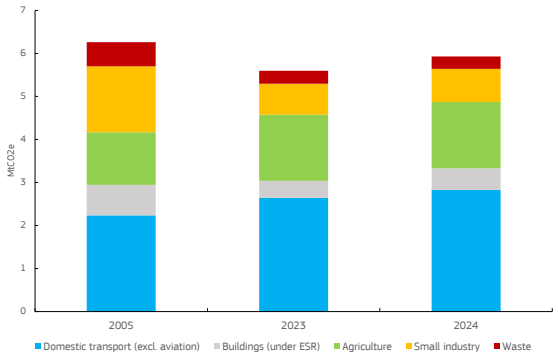
([151])The national GHG emission reduction target is set out in Regulation (EU) 2018/842 (the Effort Sharing Regulation). It applies jointly to buildings (heating and cooling), road transport, agriculture, waste and small industry (known as the effort sharing sectors). The emissions from effort sharing sectors for 2024 are based on approximated inventory data. The final data will be estimated 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 Estonia's 2025 reporting under Article 17 of Regulation (EU) 2018/1999 (the Governance Regulation). Estonia's additional measures will be outlined in the Climate-Resilient Economy Act, tentatively expected by mid-2026. Also see European Commission (2025), Climate Action Progress Report 2025 – Technical Information, Commission staff working document, Brussels, Chapter 9 (pp. 111ff.), and in particular Tables 25 and 26.

([152])Based on final GHG inventories notified in 2026, Estonia's effort sharing emissions in 2024 were 7.3 % below the levels of 2005. The change may also impact the above assessment of progress under the Effort Sharing Regulation, which will only be fully established after the publication of the European Semester country report.

years but would also need transfers of allocations from other Member States to comply with the Effort Sharing Regulation. The timely implementation of its additional measures and identification of new ones will remain crucial for Estonia to progress towards climate neutrality.

### Sustainable transport

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




***Source:*** European Environment Agency.

**Swift action on decarbonising transport appears particularly pressing in Estonia, as road transport retains its dominant share in land transport.** In 2024, 48% of Estonia's effort sharing emissions came from road transport ([153]), which is a 27% increase from 2005 levels. For Estonia, the 2025 country-specific recommendations highlighted a number of challenges concerning the availability and use of sustainable and less-polluting transport. They included electrification of the rail network, renewal of the stock of road vehicles and integration of public transport systems.

**Estonia is making progress on charging infrastructure and electrification of the railway network, but the uptake of electric vehicles remains slow**. In 2023, four fifths of inland freight transport in Estonia took place by road and one fifth by rail. For passenger transport, cars accounted for 83%, buses and coaches for 1% and rail for 2.3% ([154]). Estonia has over 635 cars per 1 000 inhabitants (2024), a figure that has increased significantly over the last decade and is above the EU average. Estonia also has the oldest car fleet in Europe, with about one third of its cars being more than 20 years old ([155]). The share of battery electric vehicles in new car registrations has remained low and even fell from 2023 to 2024, to 5%. Including plug-in hybrid electric vehicles increases the share of electric vehicles to 10%, which is 11% lower than the EU average. The share of electric vehicles in the total fleet remains below 1% ([156]). The Motor Vehicle Tax Act, in force since January 2025, provides for a lower tax for fully electric vehicles, but its overall impact on car fleet renewal and decarbonisation needs to be further monitored, particularly because older (non-electric) cars also enjoy lower rates. Meanwhile, the infrastructure needed to support the use of electric vehicles is improving, with almost 2 000 publicly accessible charging points in 2025, representing a year-on-year increase of 88% ([157]). Estonia is also expected to finalise the electrification of the Tallinn-Tartu railway line by the end of 2026, while the electrification of the Tallinn-Narva railway line is not expected before 2027. However, the construction of the Rail Baltica railway system, connecting Estonia to the rest of Europe, is delayed and is not expected before 2030 (see also Annex 19).

## Sustainable industry

### Circular economy industry

**Estonia's circular economy strategy is ambitious, but implementation remains uneven, with slow adoption of secondary materials.** In 2023, Estonia published an action plan for a circular economy under its recovery and resilience plan. The action plan groups together 10 key actions from various policy sectors. Other circular-economy-related activities in the plan include support for the digitalisation of the economy, the reskilling of workers and the adoption of resource-efficient green technologies. Between 2021 and 2023, a project was carried out to promote a circular economy by developing circular economy road maps for all municipalities

([153])See Graph A8.1, and Table A8.1 at the end of this Annex.

([154])Eurostat.

([155])32.3%, [road_eqs_carhab] Passenger cars - per thousand inhabitants.

([156])New registrations of electric cars in Europe | Indicators | European Environment Agency (EEA).

([157])See Infrastructure | European Alternative Fuels Observatory.

in Estonia. As a result, 79 road maps were prepared. The road maps are mostly informative and their implementation is not monitored ([158]).

**Estonia is on track to decouple municipal waste generation from economic growth.** It has made slow but steady progress over the past decade in increasing its recycling rate. Although Estonia is one of the Member States with the lowest municipal waste generation per capita, concerns have been raised about the lack of a unified data management system at local level and the quality of the data provided. Estonia has diverted municipal waste away from landfill. In 2022, the incineration rate reached 42%, while the landfill rate fell to 13%, which is close to the 2035 target ([159]).

**Resource productivity** in Estonia is dragged down by resource-intensive industries. In 2024, Estonia generated EUR 1.15 per kg of material, compared with the EU average of EUR 2.99. In domestic extraction used, which is a significant component within the domestic material consumption, fossil fuels (including oil shale) still represent a large share for Estonia (around 20%, at 6.9 tonnes per capita) ([160]). (see also Annex 5)

**Only 4.5% of all procurements and 17% of the total procurement costs are accounted for by green public procurement (GPP) ([161]).** The total value of public procurement in Estonia was EUR 3.7 billion, which makes up 14% of Estonia's GDP and 32% of the state budget (). On 1 January 2022, mandatory GPP criteria were introduced for the central government sector for furniture, cleaning products and services, copying and graphic paper, and computers and monitors. In 2023, a Regulation entered into force on environmental criteria and conditions in procurement documents for the procurement of road vehicles comprising the subject matter of the procurement contract. It sets out the conditions for procuring environmentally friendly light vehicles, trucks and buses.

**The 2021-2028 waste management plan** envisages the implementation of measures under the circular economy strategy for products containing critical raw materials. It also sets the following aims: (i) increasing qualifications and skills for the effective use of resources under the green transition and the circular economy; and (ii) raising awareness of practices and behaviours for sustainable consumption and in relation to the circular economy.

**The circular material use rate (CMUR)** is a measure of one aspect of circularity: the share of the total amount of material used in the economy that is accounted for by recycled waste. Estonia's CMUR has been increasing since 2014 and reached 20.5% in 2023 and still remained above the EU average of 12.1% ([162]).

Finally, as of September 2024, Estonia had 1 874 of the 109 096 products and 22 of the 3 384 licences registered under the EU Ecolabel scheme, indicating a low take-up of licences in particular([163])). Moreover, 19 organisations from Estonia are currently registered in the Eco-Management and Audit Scheme (EMAS), one fewer than in 2021.

**Bioeconomy industry**

**Estonia's bioeconomy vision ([164]) is guided by the Circular Bioeconomy Road Map for 2023-2035, which aims to increase the added value derived from local bio-resources and to position Estonia as a competitive, innovation-driven bioeconomy within the European context ([165])**. While bioeconomy value added has lagged behind domestic GDP growth in Estonia in recent years, it has nonetheless remained in positive territory, reflecting an upward trend. A notable exception is the bio-based chemicals and plastics manufacturing sector, which has outpaced GDP, with value added growth

([158])Based on available assessments of Estonia's circular economy policy framework, which indicate that while many road maps exist, they mainly serve as guidance documents and lack formal monitoring or enforcement mechanisms.

([159])[env_wasmun] Municipal waste by waste management operations.

([160])Statistics Estonia

([161])European Commission, Environmental Implementation Review, *Estonia country report,*2025 Link.

([162])Eurostat, circular material use rate, Link.

([163])Ecolabel facts and figures – European Commission.

([164])Bioeconomy | Ministry of Regional Affairs and Agriculture.

([165])Estonian Ministry of Rural Affairs (2023), *Circular Bioeconomy Roadmap 2023–2035*, Available at: https://www.agri.ee.

averaging 7.5% between 2018 and 2023, signalling the emergence of higher-value, innovation-driven activity within Estonia's traditionally resource-based bioeconomy ([166]). Employment trends tell a similar story: overall bioeconomy employment has fallen slightly. This pattern was observed across most subsectors, but the bio-based chemicals and plastics subsector stands out again, with strong employment growth of 7.4% over the same period ([167]). Labour productivity in the bioeconomy, measured as value added per person employed, stood at 75.0% of the national average and has edged slightly downward from 79.5% in 2018. On the innovation front, R&D business expenditure from bioeconomy-relevant subsectors has grown marginally faster than overall R&D expenditure in Estonia (18.5% compared with an average of 17.4% between 2018 and 2023), a modest but encouraging signal of rising private sector interest in bioeconomy research ([168]).

**Zero-pollution industry**

**The air quality in Estonia is generally good, with some positive development trends in recent years**. The latest available annual estimates (for 2022) by the European Environment Agency (EEA) for Estonia attribute 90 deaths each year (or 880 years of life lost (YLL)) to fine particulate matter (PM2.5), 20 deaths each year (or 180 YLL) to nitrogen dioxide ($NO_2$) and 130 deaths each year (or 1 300 YLL) to ozone ([169]).

**Emissions of several air pollutants have decreased significantly in Estonia since 2005, while GDP growth has continued** (see Figure 16). According to the inventories submitted under Article 10(2) of the National Emission Reduction Commitments Directive (NECD) in 2024, Estonia has met its emission reduction commitments for 2020-2029 for the following air pollutants: nitrogen oxides (NOx), non-methane volatile organic compounds (NMVOC), sulfur dioxide ($SO_2$), ammonia ($NH_3$) and PM2.5. According to the latest projections submitted under Article 10(2) of the NECD in 2023, Estonia is projected to meet its emission reduction commitments for 2030 onwards for NOx, NMVOC, $SO_2$, $NH_3$ and PM2.5. Estonia submitted its updated national air pollution control programme to the Commission on 30 March 2023.In 2023, no exceedances above the limit values set by the Ambient Air Quality Directive were registered in Estonia. Emissions of key air pollutants have decreased significantly over the last few years, but it would be beneficial for Estonia to continue to address emissions to air from fossil fuels and other emission sources by replacing them with cleaner solutions.

**As regards industrial emissions to water, Estonia has the fifth lowest emissions of heavy metals to water and is the eighth lowest for emission intensity** (below the EU average intensity of 0.864 kg/EUR 1 billion GVA). The main industrial contributors to emissions to water in Estonia are the energy sector and the pulp, paper and wood sector for heavy metals. Water pollution by industry imposes direct and indirect costs of around EUR 1 million a year for the country ([170]).

([166]) Joint Research Centre, Developments of Economic Growth and Employment in Bioeconomy Sectors across the EU, Link.

([167]) Ibid.

([168]) Joint Research Centre, Business expenditure in Research and Development (R&D) in the EU bioeconomy, Link,.

([169]). EEA, Harm to human health from air pollution in Europe: burden of disease status, 2024, Link.

([170]) European Commission: Directorate-General for Environment, IEEP, Green taxation and other economic instruments – Internalising environmental costs to make the polluter pay, 2021, Link.

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

| Climate mitigation | Estonia | | | | | | | Trend | EU | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Industry decarbonisation** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | | **2018** | **2023** |
| GHG emissions intensity of manufacturing production, g/€ (1) | 329 | 331 | 176 | 114 | 148 | 154 | 189 | ↗ | 330 | - |
| Share of energy-related emissions in industrial GHG emissions (2) | 49.5 | 50.9 | 58.8 | 51.2 | 49.2 | 46.2 | - | ↘ | 55.5 | 57.9 |
| Energy-related GHG emissions intensity of manufacturing and construction, g/€ (3) | 175.4 | 172.9 | 119.3 | 83.7 | 79.1 | 73.6 | - | ↘ | 203.9 | 163.0 |
| Share of electricity and renewables in final energy consumption in manufacturing, % (4) | 48.9 | 43.5 | 49.7 | 54.4 | 56.1 | 58.9 | 61.1 | ↗ | 42.8 | 43.9 |
| Energy intensity of manufacturing, GWh/€ (4) | 1.40 | 1.25 | 1.16 | 1.07 | 1.09 | 1.12 | 1.79 | ↗ | 1.27 | 1.05 |
| Share of energy-intensive industries in manufacturing production, % in GVA (5) | 12.15 | 11.13 | 10.44 | 10.94 | 10.01 | 8.82 | 9.46 | ↘ | - | - |
| GHG emissions intensity of production in sector [..], g/€ (6) | | | | | | | | | | |
| - paper and paper products (NACE C17) | 622 | 720 | 940 | 955 | 1 035 | 953 | 838 | ↘ | 722 | 619 |
| - chemicals and chemical products (NACE C20) | 173 | 175 | 128 | 193 | 348 | 274 | 248 | ↗ | - | - |
| - other non-metallic mineral products (NACE C23) | 3 604 | 3 906 | 667 | 310 | 499 | 733 | 790 | ↗ | 2 495 | 2 352 |
| - basic metals (NACE C24) | 199 | 169 | 176 | 103 | 118 | 116 | 86 | ↘ | 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, % | | | | -7.8 | -7.4 | -9.7 | -4.3 | | | |
| - domestic road transport | 18.2 | 16.8 | 9.8 | 13.2 | 18.1 | 18.2 | 26.5 | ↗ | -1.4 | -5.6 |
| - buildings | -11.5 | -19.1 | -23.2 | -26.7 | -41.9 | -44.1 | -29.3 | ↘ | -20.3 | -33.5 |
| | **2005** | | | **2021** | **2022** | **2023** | **2024** | **Target** | **WEM** | **WAM** |
| Effort sharing: GHG emissions, Mt; target, gap, % | 6.2 | | | 5.7 | 5.7 | 5.6 | 5.9 | -24.0% | -18.1% | -18.1% |
| **Sustainable road transport** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | **2025** | | **2018** | **2021** |
| New zero-emission vehicles, electricity motor, % (7) | 0.32 | 0.28 | 1.78 | 2.15 | 3.37 | 6.30 | 5.14 | | ↗ | 1.03 | 8.96 |
| Number of publicly accessible AC/DC charging points (8) | - | - | 56 | 74 | 147 | 594 | 1051 | 1976 | ↗ | 446956 | n/a |
| Share of electrified railways, % of total (9) | 11.37 | 11.83 | 11.83 | 19.28 | 11.91 | 11.96 | 11.96 | | ↗ | 55.47 | 56.49 |

| Sustainable industry | Estonia | | | | | | | Trend | EU-27 | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Circular economy transition** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | | **2018** | **latest data** |
| Material footprint, tonnes per person | 31.4 | 28.6 | 27.9 | 27.1 | 25.0 | 23.3 | 24.9 | ↘ | 14.8 | 13.7 |
| Circular material use rate, % | 13.8 | 15.2 | 16.3 | 19.9 | 21.8 | 20.5 | 20.5 | ↘ | 11.6 | 12.2 |
| Resource productivity, €/kg | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | ↗ | 2.1 | 3.0 |
| Employees in circular economy | 3.8 | 3.8 | 3.7 | 4.2 | 7.3 | 7.9 | - | | 2.1 | 2.0 |
| Patents in circular economy | 0 | - | - | 1.0 | | | | | 12.3 | 12.0 |
| Recycling rate | 28.0 | 30.8 | 28.9 | 30.3 | 33.4 | 37.9 | 36.4 | | 46.40 | 48.1 |
| Plastic recyling | 38% | 41% | 41% | 42% | 44% | 42% | - | | 41% | 42% |
| Construction and demolition waste (CDW) recovery | 95 | - | 93 | | | | | | 88 | 89 |
| **Bioeconomy industry** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | | **CAGR 2018-2023** | **2018** | **2023** |
| Value added, million EUR | 1 766 | 1 881 | 1 923 | 2 294 | 2 654 | 2 192 | - | | 3.7% | 642 438 | 863 436 |
| Employment, total number of people employed | 62 738 | 61 700 | 60 777 | 60 832 | 59 476 | 58 958 | - | | -1.0% | 17 649 040 | 17 085 642 |
| Productivity | | | | | | | | | | | |
| Valued added per worker, thousand EUR | 28.1 | 30.5 | 31.6 | 37.7 | 44.6 | 37.2 | - | | 4.7% | 36.4 | 50.5 |
| Valued added per worker, % of national average | 79.5 | 79.7 | 83.5 | 88.8 | 92.7 | 75.0 | - | | - | 62.2 | 70.7 |
| R&D business expenditure | | | | | | | | | | | |
| Total bioeconomy (biomass producing and converting sectors) | 7 | 9 | 12 | 15 | 20 | 20 | | | 18.5% | 15 672 | 23 335 |
| Total R&D business expenditure | 155 | 242 | 264 | 308 | 361 | 406 | - | | 17.4% | 196 587 | 259 525 |
| **Zero pollution industry** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | | | **2018** | **2021** |
| Damage cost for industrial pollution | 3.6 | 1.7 | 1.0 | 1.2 | - | - | - | | | 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) | | | |
| | 232 | 8% | 450 100 | -42% | 24 839 400 | 23% | 18 700 | -64% | | | |
| Water chemical status | | Good | 72 | Good (%) | 0.1 | | Poor | 57.0 | Poor (%) | | 8% |

***Sources and notes:*** **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).

**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.

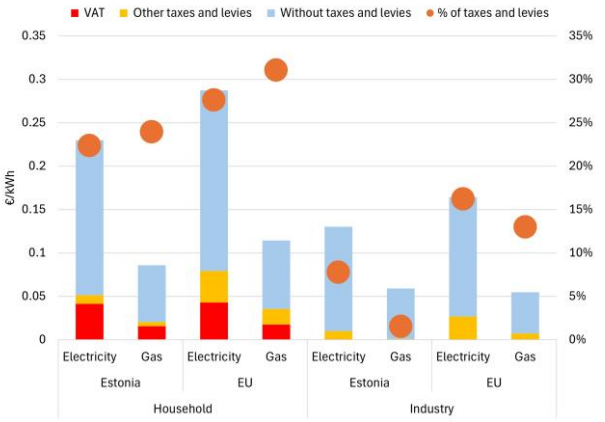
**Estonia's core challenges are to manage the phase-out of oil shale-fuelled electricity generation (leaving only a tightly governed strategic reserve for exceptional situations) by 2035, and to continue rapidly scaling up new generation and controllable capacity to help bring down energy prices and further secure the country's energy independence.** Other crucial challenges include fully synchronising the market with the Continental Europe Synchronous Area to strengthen cross-border trade, and tackling the major issue of heat loss from the ageing multi-apartment housing stock which is a key driver of winter energy demand.

## Energy prices and costs

**Retail gas prices for household and industrial consumers in Estonia have been increasing since 2024, whereas retail electricity prices have remained stable and below the EU average**. During the first half of 2025, household gas and electricity prices in Estonia remained below the EU average, at EUR 0.0856 /kWh and EUR 0.2298/kWh respectively.

**Electricity prices for industrial consumers have followed a similar trend, i.e. remaining significantly below the EU average, while gas prices for industrial consumers have remained slightly above the EU average and on an upward trend since 2024.** Imbalances continue to be observed in final energy prices in Estonia. For industry, electricity was 2.2 times more expensive than gas during the first half of 2025, and for non-household consumers, taxes and levies accounted on average for 8% of electricity bills but only 2% of gas bills. Excluding taxes and levies, the electricity-to-gas price ratio would have fallen to 2.1, meaning that Estonia's fiscal measures have no balancing effect ([171]) For household consumers, the effect of taxes and levies on the electricity-to-gas price ratio is non-existent ([172]).

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

Due to the growing share of clean energy in Estonia's electricity mix, wholesale electricity prices in Estonia averaged 83 EUR/MWh in 2025, below the EU average of 85 EUR/MWh.

**Fossil fuels accounted for over 32.1% of Estonia's electricity generation in 2025, the eighth highest share in the EU, while natural gas maintained its structural role as the marginal price-setting technology, keeping costs elevated.** Short run marginal costs of gas in the EU increased from EUR 96/MWh to nearly EUR 103/MWh in 2025. Nevertheless, average day-ahead electricity prices decreased by 7% in 2025 amid rising natural gas procurement costs. The effect of the latter on electricity prices was

([171])A 'balancing effect' would occur if the fiscal system narrowed the electricity-to-gas price ratio, thereby supporting electrification.

([172])Analysis based on S1 2025 Eurostat data.

largely offset thanks to the growing penetration of renewables in Estonia's energy mix. Although daytime prices have fallen in recent years owing to the growing penetration of solar power, Estonia's remains vulnerable to severe price spikes during peak-demand hours. This is notably due to falling solar output in the evening and early morning, combined with limited non-fossil flexibility which requires gas-fuelled plants to significantly ramp-up generation to cover the supply–demand gap, especially during the winter months. As a result, price spreads in Estonia averaged EUR 159/MWh in 2025, up 3% from 2024 while significantly above 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

**In February 2025, Estonia, alongside Latvia and Lithuania, disconnected from the Russian-operated IPS/UPS electricity system and successfully synchronised with the Continental European Synchronous Area (CESA) via Poland.** The synchronisation with CESA allows the three Baltic countries to manage their electricity systems, ensuring stable and reliable frequency regulation, thereby increasing energy independence and energy security throughout the region.

**Estonia is part of the Baltic capacity calculation region (CCR) ([173]).** It is connected to Finland and Latvia and indirectly to Sweden via the Estlink interconnectors and the Baltic transmission network. In 2024, regional electricity trading continued to be influenced by dependence on imports from Nordic countries, in particular Finland. Congestion on the Estlink interconnectors prevented full price convergence with Finland. Moreover, cross-border capacity with Latvia was limited at times, affecting market integration with the rest of the Baltic region. Member States must ensure that a minimum of 70% of technical cross-border capacity is available for trading. The small size of Estonia's wholesale electricity market and its reliance on oil shale generation, which is often the main driver of prices (especially when renewable generation is low), continue to pose challenges, stressing the need for new dispatchable capacities.

**The EU has set a target for Member States to reach an electricity interconnection level of at least 15% by 2030, however Estonia has already reached 89.04% and is therefore well above the EU target.** This served as an important basis when Estonia's electricity grid was successfully synchronised with the EU grid in February 2025. Investments related to this synchronisation project have been progressing well, however it is crucial for the upgrades to Estlink 1 and Estlink 2, which have suffered delays, to be accelerated. Further attention should also be paid to advancing ELWIND, the joint Estonian-Latvian offshore wind project. Other important projects which Estonia is currently involved in to improve cross-border interconnections and thus ensure its energy market operates efficiently include EstLink 3 between Estonia and Finland and the 'fourth interconnection' between Estonia and Latvia (both of which could be completed by 2035). Price differentials between Finland and Estonia and recent incidents affecting undersea cables underscore the importance of these projects. Estonia is an active participant in the Baltic Energy Market Interconnection Plan (BEMIP) High-Level Group which is aimed at boosting cooperation with neighbouring countries in the Baltic region.

([173])Estonia, Latvia, Lithuania, Poland, Finland and Sweden are part of the Baltic capacity calculation region (CCR). A CCR is a group of countries that calculate cross-border electricity trade flows together.

**Estonia is actively increasing its energy flexibility by means of energy storage, demand response solutions and market integration.** Eesti Energia has developed Estonia's first large-scale battery energy storage system, with a capacity of 26.5MW, which it brought into operation in early 2025. Moreover, it is preparing other larger projects. Other renewable energy operators have also started constructing battery energy storage systems in Estonia (as stand-alone systems or coupled with additional generation capacity), some of which were brought into operation at the end of 2025, while others are expected to enter operation in 2026.

**Estonia has rolled out a smart metering system (99% penetration) that gives all consumers access to granular information about their energy usage.** Dynamic price contracts are offered to household consumers, facilitated by the availability of smart meters. Unlike in 2021-2023, the Estonian government did not implement direct compensation measures for household energy bills in 2025. It instead shifted its focus to long-term strategies to enhance energy security and stabilise prices, offering support for vulnerable and energy-poor households. Energy poverty primarily affects the most vulnerable groups in Estonia (see Annex 12).

**In relation to energy communities, Estonian legislation defines the concepts of energy communities (ECs) and renewable energy communities (RECs) and lays down certain rights and obligations in this regard.** According to the final version of Estonia's updated 2021-2030 national energy and climate plan, Estonia is planning to promote individual and collective self-consumption of renewable energy and RECs by issuing an REC handbook. The national energy and climate plan does not set quantitative targets for self-consumption or for ECs. Overall, the legal framework for energy communities would benefit from further improvements.

**In 2024, electricity accounted for 19.4% of Estonia's final energy consumption (FEC) (slightly below the EU average of 23.4%), a share which has increased slightly over the last decade ([174]), partly due to an unfavourable electricity-to-gas price ratio that disincentivises electrification and cost-effective decarbonisation.** Electricity accounts for 20.6% and 31.3% of household and industrial FEC respectively (see Annex 8). In the transport sector, the share of FEC accounted for by electricity is negligible at 0.6%. Further progress in electrification across sectors would help to cost-effectively decarbonise the economy and bring the benefits of affordable renewable generation to consumers.

## Renewables and long-term contracts

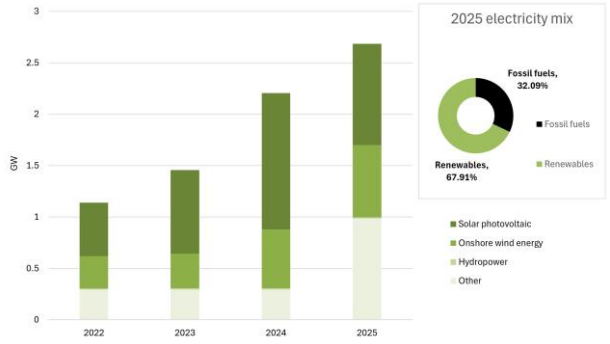
**In 2025, Estonia's share of renewables in its net electricity generation was one of the highest in the EU (67.9%) ([175]) an increase of 5.3 percentage points compared to the previous year (62.7% in 2024).** Installed capacity for renewables represented 2 684 MW in 2025. The installed capacity for wind energy stalled to 0.7 GW in 2025 (compared to 0.69 GW in 2024) whilst installed capacity for solar grew (+12.2% compared to 2024), reaching 1 GW.([176])

([174])The CAGR (compound annual growth rate) was -1.07% between 2015 and 2024. The minimum/maximum shares were 19.4% and 24.3% respectively. (Source: Eurostat)

([175])Eurostat (nrg_cb_pem)

([176])International Renewable Energy Agency (IRENA) - Renewable Capacity Statistics 2026

Graph A9.3: **Estonia'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

Estonia's share of renewable electricity is legally mandated to cover 100% of the gross final electricity consumption by 2030([177]). Wind power will become the primary source of renewable electricity, with 2.8 GW of onshore wind capacity expected to come online by 2030, with offshore not coming online until after 2030. Solar capacity is projected to reach approximately 1.5 GW by 2030 ([178]). However, according to the Estonian Ministry of Climate, existing renewable energy units under development are not sufficient to meet the 100% target.

**Estonia is reforming its energy infrastructure permitting processes to boost the development of renewables**. Estonia amended its national legislation in 2024 and early 2026 in order to streamline the planning, permitting and environmental impact assessment processes for wind energy projects on state-owned land, and to establish the concept of priority development areas for wind power (1 000 MW total capacity). These efforts were part of Estonia's recovery and resilience plan. Estonia has since implemented a comprehensive audit of its permitting processes and has now aligned them more closely with the Commission's recommendation on permit-granting procedures for renewable energy projects. A single contact point has been set up to mediate discussions between project developers and the relevant authorities, and regular public hearings are organised in a timely manner.

All permit procedures have been digitalised which has improved efficiency and transparency. Environmental legislation lays down clear deadlines, including a maximum duration for the entire permitting process. Additionally, Estonia has taken significant steps towards promoting training and knowledge sharing, with a particular focus on wind energy. More could be done, e.g. allowing sandboxing, since barriers to permit-granting may be delaying the development of more innovative research projects. Estonia has committed to reaching 400 MW of installed onshore wind capacity by 2026 as part of the 'wind pledges' under the European wind power action plan. However, in 2025 only one auction was successful while another failed to result in an award. Estonia announced in March 2026 onshore wind energy reverse auctions with an annual volume of 1 TWh and the option to increase the procurement to 2 TWh. Production must start no later than December 31, 2030, though it may begin earlier. The power purchase agreement (PPA) market in Estonia has not yet matured and remains underdeveloped. In total, only four PPA deals were concluded between 2021-2024 and no PPAs were signed in 2025. Estonia's national energy and climate plan includes measures to boost the PPA market, such as allowing the network operator to cover up to 50% of network losses through renewable PPAs.

## Energy efficiency

**In 2024, Estonia's final energy consumption (FEC) increased to 2.93 Mtoe, mainly due to statistical adjustments.** The overall increase in FEC in 2024, relative to 2023, concerned the following three sectors: industry (+46.5%), transport (+17.5%) and services (+21.2%). While for medium-term services FEC has decreased substantially (-5.3% since 2019), notable increases have been seen in industry (7.6%) and transport (15.6%).

**Between 2019 and 2024, final energy consumption in Estonia's residential sector remained largely unchanged.** Very little improvement was achieved through technical

([177])Energy Sector Organisation Act

([178])Estonian updated NECP.

energy savings by households. Moreover, the limited energy savings achieved as a result of the weather conditions and increased size of dwellings was offset by the expansion of the housing stock. In addition, Estonia did not set an energy savings objective in its long-term renovation strategy.

**Given that buildings are responsible for 46.1% of energy use in Estonia, they play an important role in improving energy efficiency.** Estonia is therefore encouraged to submit its draft national building renovation plan pursuant to the recast of the Energy Performance of Buildings Directive to ensure a clear and predictable pathway towards an energy efficient and decarbonised building stock. Heating and cooling account for 82% of Estonia's residential final energy consumption, with renewables supplying 61% of total energy used for heating and cooling across all sectors. Approximately 11 000 heat pumps were sold in 2024, a decrease of 43% compared to the previous year, taking Estonia's total stock of heat pumps nearly 260 000.

**Estonia reported four energy labelling checks in 2025 and no ecodesign checks.** This is considered insufficient relative to the size of the country and overall levels of non-compliance in the EU and is possibly a breach of Estonia's legal obligations.

## Security of supply and diversification

**As early as 2022, Estonia banned imports and purchases of Russian natural gas.** Demand for natural gas in Estonia dropped by 28% between August 2022 and July 2024, which was well beyond the EU's 15% target. Estonia accesses natural gas via Lithuania's floating storage regasification unit (FSRU) in Klaipeda (called 'Independence'), Finland's Inkoo FSRU via the Balticconnector and Latvia's Inčukalns underground storage facility.

**Estonia's energy mix has seen a notable shift towards renewables between 2023 and 2024, from 35% to 40%.** Domestically sourced oil shale remains an important source of energy but it share of the energy mix has decreased importantly, from 30% in 2023 to 25% in 2024. Oil and petroleum products still represents 27% of the mix as it did in 2023, and the share of natural gas increased slightly from 6% to 7% ([179]).

Estonia is establishing a national framework for nuclear energy, but requires a clearer deployment path through finalized site selection and closer cooperation between technology suppliers and off-takers. Key technical hurdles remain in planning the nuclear fuel cycle and waste management. Furthermore, Estonia faces financing challenges due to its newcomer status and small domestic market, alongside significant workforce gaps that necessitate participation in EU-level training initiatives. Given the technology's profile, sustained stakeholder engagement is essential to maintain public acceptance.

**In response to rising energy prices following the regional crisis in the Middle East, Estonia has cancelled a planned rise in excise duties for energy carriers and is processing a proposal to reduce the renewable energy fee by 85% for high-consumption firms.** Estonia contributed approximately 0.3 million barrels to the IEA collective action to release 400 million barrels of emergency oil reserves.

([179])Source: EUROSTAT, Gross Inland Consumption.

*Note for readers: Estonia's raw GIC figures show a negative value for oil and petroleum products (-54 ktoe in 2024), which creates an analytical distortion. This occurs because GIC records oil shale extraction and petroleum product exports on separate lines without linking them. Estonia processes a significant share of its oil shale into shale oil through coal liquefaction plants, which is then entirely exported (Source: IEA 2023 Estonia Energy Policy Review). The GIC methodology captures the full oil shale extraction as a positive input and the resulting petroleum exports as a negative outflow on a separate line, effectively double-counting the same energy in opposite directions. The result is an overstated oil shale figure and a meaningless negative petroleum value, obscuring over 1100 ktoe of genuine domestic petroleum consumption.*

*To correct this, DG ENER subtracted the transformation output of Estonia's coal liquefaction plants (Eurostat nrg_bal_s: 1167 ktoe in 2024, 1171 ktoe in 2023) from the oil shale GIC line and added it back to the petroleum line, restoring the genuine domestic petroleum consumption that the export outflow had masked. Corrected figures: oil shale +1025 ktoe, petroleum +1113 ktoe. Total GIC share of fossil fuels remains unchanged at 4316 ktoe and 59% respectively. Estonia is the only EU Member States where this distinct methodology correction was applied within the European Semester 2026 cycle.*

## Fossil fuel subsidies

In 2024, environmentally harmful ([180]) fossil fuel subsidies without a planned phase-out before 2030 represented 0.11% ([181]) of Estonia's GDP ([182]). Additionally, Estonia's 2023 Effective Carbon Rate ([183]) averaged EUR 96.85 per tonne of $CO_2$, above the EU weighted mean of EUR 84.80 ([184]).

([180]) 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.

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

([182]) 2024 Gross Domestic Product at market prices, Eurostat.

([183]) 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.

([184]) OECD (2024), Pricing Greenhouse Gas Emissions 2024

**Estonia faces significant economic risks from climate impacts that will require substantial investment to address and call for cross-sectoral adaptation measures.** Estonia also faces challenges related to water productivity and degradation of surface waterbodies as well as issues regarding drained peatlands. It has set up a new 2030 environmental development plan with general targets for biodiversity conservation and nature restoration. Peatland restoration remains critical for climate mitigation, adaptation and biodiversity protection, as drained peatlands are a major source of greenhouse gas emissions in Estonia. Pesticide contamination remains an issue, especially regarding the soil.

### Climate adaptation and preparedness

**Estonia is vulnerable to climate change.** Northern Europe experiences greater warming that is above the global average (mainly in the winter). The main impacts in Estonia are decreased snow and ice cover, more frequent winter storms and increased precipitation. Temperature, flooding and extreme precipitation trends are increasing, and this is projected to impact infrastructure, health and ecosystems ([185]). Coastal regions are at risk of more frequent flooding and erosion due to rising sea levels and increased precipitation. The heat-related mortality rate in Estonia between 2022-2024 was in the lower ranges of estimates for EU Member States ([186]). However, heatwaves are expected to become more frequent and intense, thus posing a public health threat. An increase in the frequency of extreme weather events will increase the likelihood and extent of catastrophes, resulting in significant economic damage, health issues and deaths ([187]). A recent study commissioned by DG CLIMA estimates ([188]) that Estonia will need to invest about EUR 650 million per year up to 2050 – one of the highest levels in the EU relative to GDP (1.3%). Investment would be most beneficial in ecosystem restorations (around 48% of the total), followed by infrastructure retrofitting and reinforcement (around 40%) and health (around 8%). Investments in the resilience of agriculture plays a smaller role than in other Member States ([189]).

**The national adaptation policy framework is being further developed.** Estonia has had a national adaptation strategy and plan on climate change adaptation in place since 2017 and is now seeking to build further on its adaptation governance structures. However, the adoption of Estonia's Climate-Resilient Economy Act that is expected to provide the legal basis for further sectoral integration of adaptation has been delayed. In parallel, a national climate change adaptation roadmap is currently under development that should implement that future legal requirement. The roadmap's aim is to strengthen preparedness and adaptive capacity at both the national and local levels by setting clear adaptation objectives for all sectors that are vulnerable to climate change. It should ensure close cooperation with sectoral ministries to integrate adaptation goals, indicators and measures into their development plans and programmes. This should support a more systematic and measurable approach to building climate resilience across all relevant sectors. At the sub-national level, the share of Estonia's population covered by the EU Covenant of Mayors signatories has remained relatively stable and was 32% in 2024 (EU-27 average: 34%). The fact that none of the signatories has submitted a sustainable energy and action plan or a monitoring report points to a lack of implementation ([190]). As of February 2025, local energy and climate plans existed in 61 of the 79 local governments ([191]).

([185])EEA, 2024, *European Climate Risk Assessment*, Link.

([186])Janoš, et al., 2025, *Heat-related mortality in Europe during 2024 and health emergency forecasting to reduce preventable deaths*, Link.

([187])National reporting under Article 17 of Regulation on the Governance of the Energy Union and Climate Action, March 2025, Link

([188])European Commission, 2026, *Assessment of adaptation investment needs*, Table 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.

([189])Typical investments in ecosystems include soil and peatland restoration, adaptive forest management, biodiversity protection and coastal ecosystems restorations. Typical investments in infrastructure include flood protection, coastal protection, improved energy assets and land use planning. Typical investments in health are linked to occupational health and safety and wastewater treatment facilities upgrading and prevention of infectious diseases.

([190])European Commission, Link.

([191])National reporting under Article 17 of Regulation on the Governance of the Energy Union and Climate Action, March 2025, Link.

Five of the main local authorities are participating in the EU mission on adaptation to climate change in order to enhance their work on climate adaptation.

**Climate risks have a direct effect on Estonia's economy.** Between 1980 and 2024, Estonia recorded EUR 352 million in economic losses caused by weather and climate-related extreme events. The insurance coverage over this period only covered 15% of the economic losses (EU-27: 19%), with the highest protection gap for windstorms ([192]). Estonia has made the development of a climate damages model a priority for the next two years. This model would summarise past climate change costs and forecast potential future costs under different climate scenarios. It would also cover economic losses from floods, storms, heatwaves, cold spells, droughts, wildfires and landslides, as well as associated human impacts such as fatalities and injuries. The aim is to support a more systematic integration of climate risks into macroeconomic strategy and long-term financial planning.

**Climate-proofing has not been systematically applied across sectors and key infrastructure so far.** The Estonian Energy Sector Development Plan until 2035 was adopted in January 2026 and identifies the climate risks associated with the electricity distribution grid. Higher humidity and higher summer temperatures are resulting in a marginal increase in electricity losses on overhead lines. More frequent storms during winter are causing more power outages. Ensuring climate resilience of the energy sector includes climate-proofing of electricity grids and increasing security of supply by diversifying external connections and developing the maritime interconnector towards Latvia and Germany ([193]). Estonia's RRP includes investment to strengthen the electricity grid and protect it against storms. The transport vulnerability index of the TEN-T network in Estonia to climate change has been assessed as among the highest in the EU. This is mainly driven by lower general adaptation preparedness, a lack of mainstreaming of the transport sector into the national adaptation strategy and limited interoperability on the TEN-T network ([194]). In the future, extreme temperatures and more frequent extreme weather events are likely to play an important role. An estimated total of almost EUR 1 billion will need to be invested until mid-century in the TEN-T network, mostly in maritime ports (EUR 745 million) ([195]). The fact that Estonia plans to invest only around EUR 15 million from 2024 until 2035 ([196]) indicates that key parts of the infrastructure are likely to remain exposed to climate-related risks.

**Nature-based solutions (NbS) have not been deployed at large scale or widely across sectors.** The main challenges for the roll-out of NbS include policy and legal framework challenges (i.e. lack of clear legal definitions and regulations for many NbS types), financial and resource limitations (i.e. insufficient funding for NbS projects from national budgets and private investments) and capacity barriers (i.e. limited local expertise in NbS planning, design, maintenance etc.). NbS provide broad-spectrum risk management. Tapping into the potential of NbS better could not only contribute to disaster management by buffering hazards such as floods and droughts, but also protect the ecosystem services provided by biodiversity – and thereby bolster food security while mitigating the risk of high food prices due to crop losses and improving the health of fish stocks. The LIFE-SIP AdaptEst project ([197]) aims to increase the resilience of terrestrial and aquatic ecosystems to a changing climate and will draw on several EU funds. NbS are equally relevant for urban areas, helping to make regions more resilient to extreme weather events in the future (as demonstrated by the LIFE LATESTadapt project ([198])). The key challenge moving forward is to scale up these projects towards a more systematic level of implementation.

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

([193]) ENMAK 2035 (Energy Sector Development Plan until 2035) Annex 1, 2026.

([194]) European Commission, 2024, *Support study on the climate adaptation and cross-border investment needs to realise the TEN-T network, Publications Office of the European Union*, Link, p. 70.

([195])Ibid, p. 230.

([196])Ibid, p. 116.

([197])LIFE 3.0 – LIFE21-IPC-EE-LIFE-SIP-AdaptEst/101069566.

([198]) Home – LIFE LATESTadapt.

**Water resilience**

**Water productivity in Estonia** ([199]) **stood at EUR 26 per m³ of abstracted water in 2023 (below the EU-27 average of EUR 153 per m³).** Estonia's water productivity has been on an increasing trend since 2020. The Water Exploitation Index Plus (WEI+) was 1.14 in 2022. The WEI+ value ([200]) is generally very low and ranged between 1.1 and 1.14 between 2016 and 2022. The main consumers of water (besides public water supply) are energy cooling followed by mining and quarrying ([201]). Between 2018 and 2023, water abstraction in energy cooling more than halved but increased by 80% in mining and quarrying ([202]).

**Estonia's three river basin districts contain 746 surface waterbodies (mainly river tributaries and 31 groundwater bodies).** Most surface waterbodies are natural. Only around 7.1% are heavily modified and 5.7% artificial. Heavily modified water and artificial waterbodies must reach good ecological potential rather than good ecological status, so measures must be taken to mitigate the adverse impact of unsustainable human development activities that cause a waterbody to be heavily modified/artificial, while not significantly affecting these activities. The EC's assessment of Estonia's third river basins management plans (RBMPs) is that the ecological status/potential of surface waterbodies has deteriorated since the second RBMPs. Only 53% currently have good ecological status/potential. The chemical status situation has not improved since the second RBMPs, with only 9.7% of surface waterbodies classified as having good chemical status. Only 53% of the surface waterbodies have good or better ecological status/potential ([203]). The most significant pressure identified is diffuse pollution – more precisely, nutrient pollution, which affects 93% of the waterbodies. Nutrient pollution significantly impairs the quality of coastal waters (where most of the spawning grounds of valuable fish species are located). Water abstraction is seen as one of the key pressures on groundwater in Estonia. Just 1 of Estonia's 56 agglomerations is not compliant with the Waste Treatment Directive (WWTD) ([204]).

**Nature restoration**

**Estonia's new environmental development plan for 2030 (KEVAD) combines all environmental development plans and sets general targets for biodiversity conservation and nature restoration.** Estonia will ensure a network of protected areas that is ecologically well-functioning and effectively protected. It will also enhance biodiversity mainstreaming in the planning process in order to preserve biodiversity elsewhere than in protected landscapes and to implement new ways of incentivising landowners to recognise and protect natural values. Estonia will also promote the performance of its green network, which will support the ecological coherence of habitats and the adequacy of species corridors. A national action plan for all forest habitats will be prepared under the financial instrument for the environment (LIFE) integrated project (to be finalised by 2029).

**Peatland restoration and sustainable management is highly important, both in combating climate change and in preserving biodiversity.** Living peatlands not only sequester carbon dioxide ($CO_2$) but also provide a healthy habitat for valuable species and remove nitrates from polluted agricultural run-off through denitrification. Peatland loss also means biodiversity loss, more floods and droughts, degraded drinking water for local communities and eutrophication of open waters. It is particularly important to avoid eutrophication (especially around the Baltic Sea, which has a 97% eutrophication rate ([205])). Damage is caused when peatlands are drained for agriculture and tree planting, with peat being extracted for fuel or horticulture. Peat extraction has directly destroyed

([199])Water productivity is a metric that is calculated by dividing GDP (in chain-linked volume) by total water abstraction. It indicates the average economic value (GDP) a Member State creates for each unit of water it takes from nature.

([200])Eurostat, Water Exploitation Index, plus, Link.

([201])EEA, 2025, *Water abstraction by source and economic sector in Europe*, Link.

([202])EEA, 2025, *Water abstraction by source and economic sector in Europe*, Link.

([203])*WISE, Surface water Bodies: ecological status or potential*. Link. Note that the deterioration can be due to more accurate monitoring rather than a genuine decline of parameters.

([204])Internal documents, implementation of Directive 91/271/EEC (UWWTD), 2022.

([205])Helcom, Eutrophication Thematic Assessment 2016-2021, Link.

about 30 000 ha of raised bogs in Estonia, of which around 20 000 ha are still used.

**In Estonia, drained peatlands are one of the important emitters of greenhouse gases (GHG).** As a result of bog drainage, total GHG emissions (carbon dioxide ($CO_2$), methane ($CH_4$) and nitrous oxide ($N_2O$)) in Estonia are, when converted into $CO_2$ equivalent, estimated to be 2.3–2.7 times higher than they would have been if those wetlands were still in their natural state. Restoring the natural state of degraded areas from drainage is therefore important not only for biodiversity conservation but also for climate change mitigation. According to its nature conservation and development plan for 2012–2020, Estonia intends to restore the water regime of 10 000 ha of mire habitats and of 1 000 ha of former peat-mining areas. Estonia has established an action plan for the restoration of mires (2015–2023), which sets out a priority list of mires in need of restoration.

**Sustainable agriculture and land use**

**Estonia has scope for reinforcing its natural carbon sink.** In 2014, net carbon removals turned into net emissions and have remained above zero since then. To meet its 2030 LULUCF target, Estonia is required to increase carbon removals or reduce emissions by an additional 0.4 million tonnes of $CO_2$ equivalent ($MtCO_2eq$) compared to the average level of the 2016-2018 period ([206]). The reported projections show a surplus over the target of around 1.07 $MtCO_2eq$ for 2030 ([207]). Despite this positive projection for meeting the 2030 target, Estonia could further increase carbon removals by improving forest management and restoring wetlands, helping to firmly increase the carbon removals in the coming years ([208]). Future climate warming could turn peatlands from crucial carbon sinks into emission sources. However, further pursuing peatland-rewetting projects and limiting the expansion of new peat extraction areas could produce a double climate dividend. In addition to increasing LULUCF net removals, further investments in healthy forests and soils as natural carbon stores are key and can (when ecosystem capacity is taken into account) help build resilient biobased product value chains and enable a growing, competitive EU bioeconomy.

**Continued improvements to the monitoring system of net removal data and projections will be crucial in supporting timely and effective action in the LULUCF sector.** A network of Baltic LULUCF experts is cooperating in research projects to improve GHG inventories and projections. For example, Estonia intends to apply the emission factors for drained organic soils developed under the LIFE project 'Demonstration of climate change mitigation potential of nutrient-rich organic soils in the Baltic states and Finland' ([209]). Estonia is also developing a governance system for the sustainable use of land and soil, protection of biodiversity and climate change mitigation. This research programme ([210]) aims to create an efficient national land and soil use monitoring and management system based on coherent science-based digital data, that will guide spatial decisions on land management. Estonia aims to have a new national soil map with more functionality, by end-2026.

**Estonia's functional urban area (FUA) has considerably expanded in the last few years.** Net land taken between 2018 and 2021 accounts for 1 223 parts per million per year of Estonia's total urban surface. Most land has been taken from pastures (57%), forests (27%) and arable land (14%). This ongoing 'land take' and the associated soil-sealing results makes ecosystems less resilient, decreases carbon sequestration and impairs flood protection ([211]).

**Pesticide contamination remains an issue.** 78% of soil samples analysed were contaminated above 0.05 mg kg-1 ([212]). Water contamination is at a lower level but still exceeds regulatory thresholds in 19% of rivers and 22% of lakes ([213]).

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

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

([208])This would also ensure that over the whole 2026-2029 period Estonia would be compliant with the LULUCF trajectory.

([209])Updated NECP 2030, p. 84.

([210])Maa- ja mullakasutuse teadus-arendusprojekt | Keskkonnaportaal

([211])EEA, 2022, Land take and land degradation in functional urban areas, Link.

([212])Vieira et al. (JRC), 2023, *Pesticides residues in European agricultural soils – Results from LUCAS 2018 soil module*, Publications Office of the European Union, Link.

([213])EEA, 2024, *Pesticides in rivers, lakes, and groundwater in Europe*, Link.

Pesticides not only threaten aquatic ecosystems but also pose long-term risks to human health through contaminated drinking water and food chains.

## 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]* | 7.84 | 0 | 9.07 | 4.73 | 15.55 | - | 2.76 |
| **Forest fires burned area** [1] *[burned area in ha. per year]* | - | - | - | - | 173 | - | 354 510 |
| **Economic losses from extreme events** *[EUR million at constant 2022 prices]* | - | - | - | - | 4 | - | 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]* | 33 | 33 | 34 | 34 | 33 | 32 | 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]* | 1.09 | 0.99 | 1.71 | 2.15 | 1.14 | - | 4.53 |
| **Water productivity** *[EUR per $m^3$]* | 21 | 24 | 22 | 18 | 26 | - | 151 |
| **Water abstraction** | | | | | | | |
| *Water abstraction by source (% from surface water)* | 77.19% | 73.87% | 76.53% | 80.28% | 71.96% | | - |
| *Water abstraction by sector* | Agriculture | Electricity cooling | Manufactu-ring | Public water supply | Mining and Quarrying | Constru-ction | |
| | 0.65% | 62.29% | 8.67% | 8.15% | 20.24% | 0.01% | |
| **Status of water bodies** [4] *[% of water bodies in a good status]* | | | | | | | |
| Surface water bodies (ecological) | - | - | - | - | - | 53% | 38% |
| Groundwater bodies (quantitative) | - | - | - | - | - | 94% | 93% |

| Nature restoration: | | | | | | | EU-27 |
|---|---|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | latest data |
| **Ecosystem dependency** *[% of direct dependency]* | - | - | - | 40% | - | - | 44% |
| **Protected area** *[% of terrestrial protected areas]* | 20.7 | 20.8 | 20.9 | 20.9 | 21.3 | | 26.4 |
| **Invasive alien species (IAS)** *[number of IAS of Union concern]* | - | - | - | - | - | 17 | 29.2 |
| **Damage cost of IAS** *[EUR billion]* | - | - | - | - | 0.08 | | 1.69 |
| **Eutrophication** *[AAE of area at risk of euthrophication]* | | | | 37 | 37 | | 295 |

| Sustainable agriculture and land use: | | | | | | | EU-27 |
|---|---|---|---|---|---|---|---|
| | | | 2012-2018 | | 2018-2021 | | latest data |
| **Yearly net land taken by Member State** *[ppm of total urban surface per Member State]* | | | 438 | | 1 223 | | 670 |
| **Land conversion in functional urban area** *[% of total land taken from 2018-2021]* | | | | | | | |
| Arable land | | | | | 14% | | |
| Complex and mixed cultivation | | | | | 0% | | |
| Forests | | | | | 27% | | |
| Herbaceous vegetation associations | | | | | 4% | | |
| Open spaces with little or no vegetation | | | | | 0% | | |
| Pastures | | | | | 54% | | |
| Permanent crops | | | | | 0% | | |
| Water | | | | | 1% | | |
| Wetlands | | | | | 1% | | |
| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | latest data |
| **Nitrates in groundwater** [5] *[$mgNO_3/l$]* | 6.8 | 6.8 | 6.8 | 6.9 | 7.0 | | |
| **Livestock density** *(number of livestock units per hectare of utilised agricultural area)* | | 0.3 | | | 0.3 | | 0.75 |
| **Ammonia emissions** *[% of total utilised agrictultural area]* | 93% | 93% | 93% | 93% | 93% | - | 94% |
| **Pesticide contamination on rivers and lakes water bodies** | | | | rivers | 19% | | 27% |
| *[% of monitoring sites with pesticides exceeding thresholds, 2018-2023]* | | | | lakes | 22% | | 18% |
| **Pesticide contamination in soil** *[% of samples with a concentration over 0.5 $mg/Kg^{-1}$]* | | | | | 78% | | 57% |
| **Net greenhouse gas removals from LULUCF** [6] *[$ktCO_2$-eq]* | 3122.3 | 1140.8 | 848.5 | 198.2 | 2130.8 | - | -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 and windstorms, and on the insurance penetration rate. Scale: 0 (no protection gap) – 4 (very high gap). EIOPA, 2025, Dashboard on insurance protection gap for natural catastrophes.

(3) This 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 to or greater than 40% indicate severe water scarcity.

(4) European Commission, 2024, *Seventh 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).*

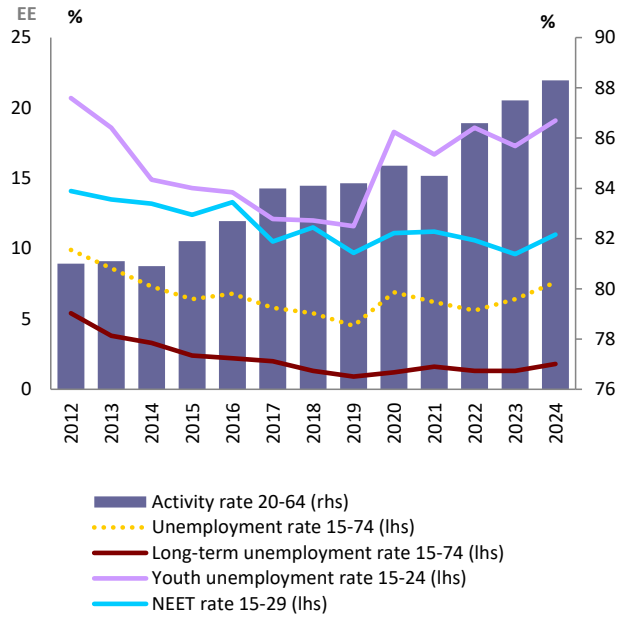
(5) Indicator refers to concentrations of nitrate ($NO_3$) in groundwater, measured as milligrams per litre ($mgNO_3/L$). Nitrate can persist in groundwater for a long time and accumulate at a high level through inputs from anthropogenic sources (mainly agriculture). The EU drinking water standard is limited to 50 $mgNO_3/L$ to avoid threats to human health.

(6) Net removals are expressed in negative figures and net emissions are expressed in positive figures. Reported data are from the 2025 greenhouse gas inventory submission. The 2030 value of net greenhouse gas removals is taken from Regulation (EU) 2023/839 – Annex IIa.

***Sources:*** Eurostat, EEA and JRC.

**As the Estonian economy returned to moderate growth in 2025, the labour market stabilised.** Despite efforts to tackle labour market challenges, skills shortages and regional and social disparities persist. Weaker labour demand has disproportionately affected vulnerable groups, in particular young people. Real wage growth slowed in 2025, and labour productivity stagnated. Collective bargaining coverage remains one of the lowest in the EU, limiting progress in improving wage-setting mechanisms and working conditions.

Graph A11.1: **Key labour market indicators**




***Source:*** Eurostat, LFS [lfsi_emp_a, une_rt_a, lfsi_neet_a, une_ltu_a]

**Although the employment rate is still high, the number of people employed declined, reflecting adverse demographic trends and reduced hiring intensity.** In 2025, the employment rate reached 81,7% (vs 76.1% in the EU), and above the 2030 national target of 81.3%. In 2025, the inflow of non-EU nationals decreased substantially and was insufficient to offset declining labour market participation and employment among Estonian nationals. The share of workers in jobs for less than three months dropped from 4.8% in 2024 to 4.2% in Q3-2025, pointing to weaker hiring dynamics.

**High overall unemployment continues to weigh on the labour market outlook.** The unemployment rate stabilised at around 7.5% in 2025 (vs 6% in the EU). It is only projected to decline to 7.2% in 2026 and 7.1% in 2027 despite the expected economic recovery. Long-term unemployment remained broadly unchanged at 1.7% in the first three quarters of 2025, close to the EU average of 1.9%. Labour market slack, a broader concept of unused labour potential, reached 12.9% in 2025, exceeding the EU average (11.7%). This increase has been mainly driven by a rise in people seeking work but who are not immediately available.

**Vulnerable groups, especially young people and persons with disabilities, face barriers to labour market integration.** Labour market entrants face significant and rising difficulties in securing a job, as youth unemployment increased further from 19,1% in 2024 to 20.7% in 2025 (vs 15,2% in the EU). The share of young people neither in employment nor in education and training (NEETs) remained broadly stable at 11,2% in 2025, in line with the EU average (11%). Young people with limited qualifications or work experience are particularly exposed to unemployment or precarious jobs ([214]). Limited job opportunities, especially in rural areas, and inadequate support for transitions from education to work also play a role in the increasing NEET rate. With the support of the European Social Fund Plus (ESF+), Estonia has strengthened its Youth Guarantee and introduced targeted support services to help young people obtain qualifications and re-engage with training or the labour market. Nevertheless, gaps persist in reaching and supporting the most marginalised young people. Outreach efforts aimed at those outside the labour market could be strengthened and cooperation improved between businesses, local municipalities and social programmes, youth and social institutions, schools and public employment services. Ongoing measures supporting transitions from education to work could be further reinforced, particularly through work-based learning and closer cooperation with employers. After rising sharply in 2022, the disability employment gap has decreased significantly from 26,2pp in 2022 to 16pp in 2025 below the EU average of 24,2 pps. The labour market integration of persons with disabilities could be further

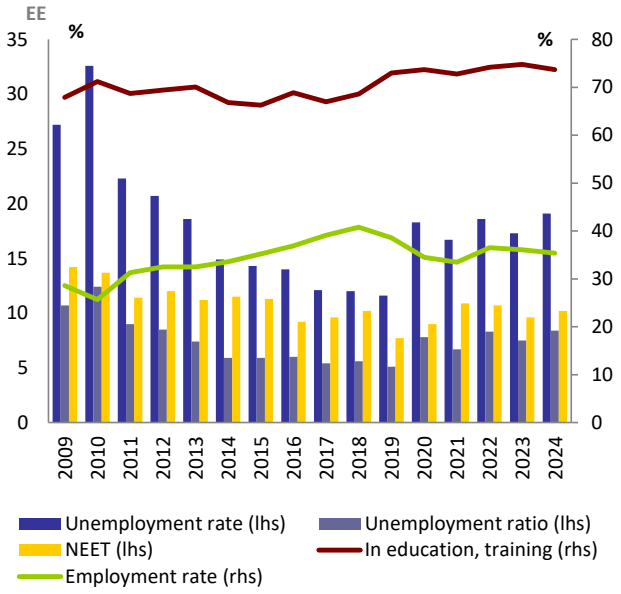
([214])Estonian National Action Plan to Strengthening Youth Guarantee 2022-2027: ENG_Noortegarantii tugevdamise riigisisene tegevuskava perioodiks.

promoted through: (i) continued investment in tailored recruitment and employment pathways; (ii) workplace adaptations and employer engagement; and (iii) stronger accessibility policies and reasonable accommodation policies. Greater support and involvement of social economy organisations in implementing labour market policies could also help improve employment outcomes for young people and persons with disabilities.

**Regional differences are considerable, with higher unemployment in rural areas.** The traditionally higher unemployment rate in North-East Estonia increased further to 12.7% in 2025, compared with rates between 6.2% and 7.4% in other regions. Employment in this region is heavily concentrated in the industrial sector (including oil shale companies), which has been particularly affected by the recession, while most jobs are to be found in the major cities ([215]). The north-east and south-east regions bordering Russia also recorded poverty rates above the national average, reflecting a lack of entrepreneurial activity. This has led to fewer well-paid jobs and lower incomes, as well as lower skills levels and limited access to services in rural areas (see Annex 13).

**The gender pay gap remains high although the situation is slowly improving.** After rising to 21.1% in 2022, the gender pay gap fell to 18.8% in 2024. While it is still among the highest in the EU (EU: 11.1%), it has decreased significantly over time. By contrast, Estonia is among the best performers as regards the gender employment gap (0.5pp vs 9.6pp in the EU in 2025). Under the Recovery and Resilience Facility, steps have been taken to reduce the gender pay gap, including the development of a digital prototype to help employers analyse the wage gap in their companies.

Graph A11.2: **Labour market outcomes of young people (15-24)**




Employment rate (% of population), total, ages 15-24
Youth in education and training (% of population), total, ages 15-24
Youth unemployment rate (% of labour force), total, ages 15-24
Youth unemployment-to-population ratio (% of population), total, ages 15-24
NEET: Young people neither in employment nor in education and training (% of population), total, ages 15-24

***Source:*** Eurostat, LFS [edat_lfse_18, lfsi_emp_a, une_rt_a, lfsi_neet_a]

**Estonia is putting in place policy measures to address labour market challenges.** Public employment services and active labour market policies (ALMPs) are being continuously updated based on labour demand monitoring, which informs upskilling and reskilling initiatives and career guidance services. Ongoing studies in 2025 and 2026 covering unemployment prevention, work-ability assessment and Youth Guarantee schemes are expected to help further refine policy design and future measures. Key ALMP changes in 2025 and 2026 include: (i) employer subsidies for green skills; (ii) job shadowing; (iii) a simplified pay subsidy extended to workers over 55; and (iv) better integration of measures to avoid overlaps. Actions financed by the ESF+ support activation and skills development for women, Roma, migrants, people over 55 and other vulnerable groups. The ESF+ also funds support for social enterprises. Government measures also target youth unemployment and inactivity through early identification of at-risk individuals and case management under the Youth Guarantee.

**Stagnant productivity growth hampers competitiveness and real wage dynamics.** Compensation per employee growth slowed from 7% in 2024 to 4.4% in 2025, which could reflect labour market slack. Real wage growth contracted

([215])Statistics Estonia: Unemployment rate | Statistikaamet.

by -0.5% as inflation edged up, due to tax and administered price increases. The minimum wage rose by 8% in 2025 (EUR 886), supporting low-income earners. At the same time, labour productivity increased by 1.1% and nominal unit labour costs grew by 3.3% in 2025. The strong link between labour productivity and wages across economic sectors suggests that the recovery in Estonia's more dynamic sectors could support both income growth and competitiveness gains in the future.

**Weak social dialogue continues to hinder progress in ensuring quality jobs and inclusive wage-setting.** The involvement of social partners in reforms and policymaking remains limited. Collective bargaining coverage (19.1% in 2021) is the third-lowest in the EU and trade union density (5.6% in 2023) is the lowest, limiting meaningful social dialogue. Collective bargaining is highly decentralised and predominantly conducted at company level, with only a few collective agreements at sectoral and national level. Cooperation between social partners and public authorities has not improved in recent years. No tripartite meetings at national level were held in 2025, and the 2023 tripartite agreement on the minimum wage framework, which aimed to raise the minimum wage to 50% of the average wage by 2027, has been postponed. Against this background, in-work poverty in Estonia has remained above the EU average, at around 10% since 2022, while it has declined in the EU overall to 8.2% in 2024. Similarly, the share of low-wage earners has been consistently above the EU average (21.2% in Estonia vs 14.7% in the EU for 2022). The prevalence of low-wage earners is more pronounced for women, in line with the relatively high gender pay gap. Weak institutional capacity among social partners further limits effective engagement in policymaking. Trade unions have also raised concerns about their insufficient involvement in shaping policies, including the proposed amendments to the Employment Contracts Act to introduce flexible working hours. In September 2025, following a consultation with the social partners, an action plan was adopted to promote collective bargaining. In particular, the plan announced a review of the regulation on collective bargaining agreements extension. EUROMOD simulations ([216]) suggest that increasing the minimum wage to 50% of the average wage would have a limited impact on lower-income deciles and the at-risk-of-poverty rate. This is because higher taxes and lower social benefits would partially offset the direct effects.

**Labour shortages have eased, but some sectors and occupations still face significant challenges, and skills mismatches persist.** The job vacancy rate remained stable at 1.6% in 2025, below the EU average and slightly below its pre-pandemic level (1.8% in 2019). However, this rate masks substantial differences across sectors ([217]). Labour shortages were high in public sector services, electricity, gas, steam and air-conditioning supply, and financial and insurance activities. Estonia faces an annual shortage of around 1 400 highly skilled workers. In April 2025, the share of employers expecting labour shortages to limit their production was still significantly lower than the EU average ([218]). ICT specialists make up 7.2% of the population, and the country leads in the EU with the highest amount of female ICT specialists in employment at 27.60%. On the skills side, although the macroeconomic skills mismatch and the overqualification rate increased slightly in 2024, they remain relatively stable. However, 12% of workers are underqualified according to the OECD, and 23% report that some of their skills are lower than what is required for their job (OECD average: 10%) ([219]). Skills shortages in the education system remain particularly acute (see Annex 13).

**The green transition is reshaping Estonia's labour market.** Employment in energy-intensive industries declined from 2.8% of total employment in 2020 to 1.7% in 2024. However, the share of workers in these industries participating in education and training is growing significantly, from 8.7% in 2015 to 21.3% in 2025 (EU: 12%). The percentage of the population with at least basic digital skills continues to stagnate at 62.52% despite ambitious investments and initiatives. Investments under the Recovery and Resilience Facility, the ESF+ and the Just Transition Fund include measures to mitigate the social and employment impact of the green transition. These

([216])The simulation was performed by the European Commission, Joint Research Centre, based on the EUROMOD model, J2.0+.

([217])See Eurostat for sectoral differences.

([218])Source: European Business and Consumer Surveys, data up to Q2-2026 (i.e. they refer to ~April 2025).

([219])Survey of Adults Skills 2023: Estonia | OECD.

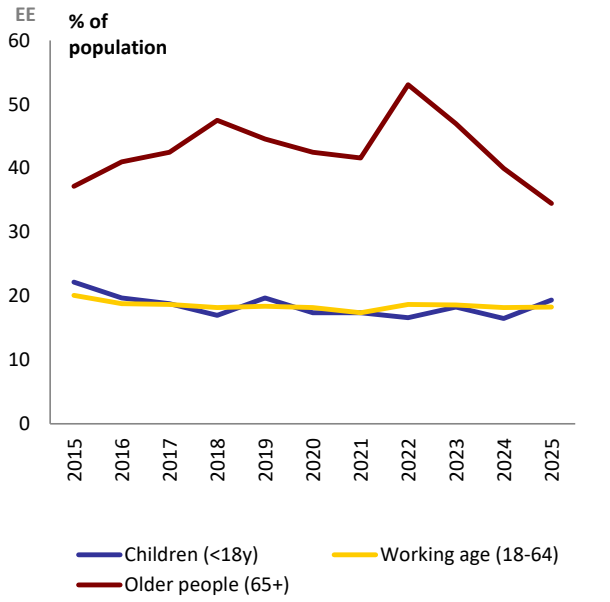
measures include retraining and upskilling programmes for workers in the oil shale industry and support for effective job transitions.

**Estonia is taking steps to attract and retain foreign talent in line with the 2025 country-specific recommendations** and reduce labour shortages to sustain its human capital. However, skills shortages are expected to increase, with annual labour demand projected to exceed new labour market entrants in the coming years. This suggests that involving foreign workers to a certain extent is inevitable ([220]). The country's immigration quota was not fully used in 2024, which has renewed debate on reforming the quota system. To address structural labour shortages, a more flexible model is proposed to enter into force in 2027 through amendments to the Aliens Act. Meanwhile, Estonia has made progress in attracting talent by simplifying procedures for qualified workers and innovation-driven sectors. In May 2024, the country transposed the revised EU Blue Card Directive, introducing more flexible eligibility requirements, shorter contract duration thresholds, recognition of professional experience and improved labour market mobility. Also, a pilot fast-track procedure was launched in October 2025 for top specialists as well as for start-up and scale-up employees. To boost competitiveness, Estonia could benefit from better skills anticipation, particularly through a broad use of the OSKA system, and accessible pathways for skilled foreign workers in sectors affected by shortages.

([220])OSKA(2025) Välistööjõud | OSKA uuringud.

**While many social outcomes in Estonia are relatively good, the country faces several significant social policy challenges.** Progress towards the 2030 poverty reduction target is slow, and the capacity of social benefits to reduce poverty and inequality is limited. This highlights the need to further strengthen the adequacy and efficiency of the social protection system. Access to long-term care (LTC) services remains insufficient amid rising demand and relatively low public spending. These issues are covered in the 2025 country-specific recommendations addressed to Estonia, particularly those on strengthening social protection and ensuring sustainable financing for healthcare and LTC, where further policy action is needed. Addressing these challenges would contribute to inclusive growth and competitiveness.

Graph A12.1: **At-risk-of-poverty or social exclusion rate by age group**




***Source:*** Eurostat, EU-SILC [ilc_peps01n].

**Despite some improvement, poverty and social exclusion risks remain high in Estonia.** In 2025, the at-risk-of-poverty or social exclusion (AROPE) rate decreased by 0.4 percentage points (pps) to 21.8% (EU average: 20,8%). Between 2019 and 2025, the number of people at risk of poverty or social exclusion fell by 15 000 to 296 000, still far from Estonia's 2030 target of reducing the number by 39 000 compared with 2019.

**People with disabilities are particularly exposed to poverty risks.** In 2024, 39.1% of people in this category were at risk of poverty or social exclusion (compared with the EU average of 28.7%).

**Among people with severe disabilities, the rate stood at 49%.** Relatively low disability benefits and the limited effectiveness of social benefits are key factors contributing to the high AROPE rate among persons with disabilities. Disability benefits per person, adjusted for purchasing power parity, are significantly below the EU average (485.8 PPS in Estonia vs 725 PPS in the EU in 2023). The AROPE rate for the working-age population with disabilities is 32.5%, compared with 15% for people without disabilities. The in-work at-risk-of-poverty rate among employed persons with disabilities is also considerably higher in Estonia than the EU average. This reflects a higher prevalence of part-time work due to disability and higher rates of early school leaving among students with disabilities. Among older persons with disabilities, the AROPE rate is 46.4%, compared with 33.6% among those without disabilities, reflecting the general inadequacy of pensions. To tackle these persistent challenges, Estonia has allocated EUR 161 million under the European Social Fund Plus (ESF+) for social inclusion measures, complemented by a further EUR 16.2 million address material deprivation. A comprehensive approach, as set out in the EU anti-poverty strategy, could help address the multiple dimensions of poverty and achieve the national anti-poverty target.

**Despite recent reforms, pension adequacy remains weak, contributing to higher poverty risks among older people**. Although the AROPE rate among people aged 65 and over have decreased from their 2022 peak, it remains significantly above the EU average (34.5% vs 19.2% for the EU). In 2025 the rate stood at 24.4% for men and 40% for women 65 and over, compared with 15,8% and 21,2% respectively for the EU. The situation is most severe for older people living alone: in 2024, 71.5% of people aged 65 and over and living alone were at risk of poverty or social exclusion. This was the highest rate in the EU, where the average was 30.0%. The aggregate replacement ratio of pensions decreased by 1 percentage points (pps) to 49% in 2025 but remains substantially below the EU average. Although Estonia has one of the lowest gender pension gaps in the EU, largely reflecting its predominantly flat-rate pension system,

women aged 65 and over face one of the highest AROPE rates in the EU, which is significantly higher than that of men. This is mainly driven by longer life expectancy, household composition and limited survivor benefits for women. Expenditure on survivor pensions and other survivor benefits is 0.05% of GDP in Estonia, compared with 1.48% of GDP in the EU. In response to the 2025 country-specific recommendations, Estonia is taking measures to tackle old-age poverty, including pension indexation, which increased the average pension from EUR 774 in 2024 to EUR 817 in 2025, and raising the tax-free income threshold for pensioners from EUR 654 to EUR 776. Other measures include pension literacy initiatives, the introduction of a pension calculator and increased flexibility in second-pillar contributions to allow employees to contribute 4% or 6% from 2025 onwards. In addition, the government has announced plans to reduce the waiting time for rejoining the mandatory second pillar after opting out from 10 to 5 years. As demographic pressures are projected to increase, further efforts to strengthen complementary pension savings, including through simplified employer participation in second-pillar contributions, could improve retirement adequacy.

**Household composition and parental educational attainment remain key determinants of child poverty risks.** In 2025, the AROPE rate among persons living in single-parent households reached 42%, up by 6.7 percentage points from 2024, while remaining below the EU average of 44.3%. In 2025, the overall AROPE rate among children in Estonia increased sharply to 19,4% in 2025, approaching pre-pandemic levels but remaining below the EU average of 24.3%. The educational background of parents remains a key determinant of child poverty risk, ranging from 13.1% among children of parents with higher education to 47.6% among those whose parents have lower secondary education or less. Single-parent households also face significantly higher cost burdens, with 26.8% of them (compared with 14% in the EU) spending more than 40% of disposable income on housing. To tackle these challenges, Estonia has increased single-parent benefits, alimony assistance and child allowances and has strengthened support for large families. The country is also implementing the Child Guarantee to support children in need, including by establishing an automatic exchange of data between state and local authorities on persons with disabilities to enable proactive outreach and additional support for families. Measures also include strengthening the family benefits system, promoting inclusive education and increasing funding for quality family-based alternative care. In total, EUR 33 million is dedicated to addressing child poverty in Estonia under ESF+.

**The eastern border regions continue to face significant challenges due to entrenched socio-economic disparities.** Relative poverty rates in eastern border counties such as Ida-Viru and Jõgeva (33% and 24% in 2024, respectively) are much higher than those in better-performing regions such as Harju and Rapla (both 17%), highlighting stark and persistent regional disparities.([221]) These differences are compounded by significant regional inequalities in access to social services, affecting people with disabilities, older people, families with children and other vulnerable groups. The availability and quality of social services varies widely across municipalities, with smaller and rural areas often lacking the administrative and financial capacity to provide adequate and timely support. Long-standing structural weaknesses, such as reliance on the oil shale industry, low economic diversification, high unemployment and lower disposable income, continue to weigh on these regions' socio-economic performance (see Annex 11). While Ida-Viru has been allocated substantial EU support, including 354 million EUR from the Just Transition Fund, continued efforts are needed to support small and medium-sized enterprises, green reskilling and community initiatives and strengthen the economic resilience and social outcomes of Estonia's eastern border regions.

**In-work poverty and economic inequality remain relatively high, despite some improvement.** In 2025, the in-work poverty rate fell slightly from 10.3% in 2024 to 10.1% but remained above the EU average (8.1% in 2024). In the 18-24 age group, in-work poverty is much higher (14.1% in 2024 and 15% in 2025; EU: 10.9% in 2024), reflecting higher unemployment among the young population and higher rates of young people neither in employment nor in education and training. Part-time workers in Estonia face a particularly high risk of falling below the poverty threshold (18.5%), well above

([221])Statistics Estonia (2025): Suhteline vaesus on Eestis vähenenud, absoluutne vaesus suurenenud | Statistikaamet.

both full-time workers in Estonia and the EU average (13.5% in 2025). Income inequality, as measured by the S80/S20 ratio, declined to 5.03 in 2024 but remained above the EU average (4.66). This is largely due to the low redistributive effect of the tax and benefits system (post-market inequality). In 2024, the inequality-reducing effect of taxes and social benefits (excluding pensions) stood at 40%, compared with the EU average of 48.3%. Estonia has taken steps to address these challenges by improving the adequacy of its statutory minimum wage in line with the Directive on adequate minimum wages. The minimum wage was increased by 13.1% (standing at 40% of the average wage) in 2024, by 8% in 2025, and by 6.8% in 2026, reaching EUR 946.([222]) However, the 2023 social partner agreement to gradually increase the minimum wage to 50% of the average wage by 2027 has been postponed, slowing progress in reducing in-work poverty and inequality (see Annex 11).

**Despite ongoing reforms, challenges persist in the adequacy and coverage of social protection.** These challenges are particularly pronounced among minimum income recipients and unemployed and self-employed people (including farmers),. Although a relatively high proportion of self-employed people receive cash benefits (29% compared with an average of 12% in the EU), this support is insufficient to protect against the risk of poverty. As a result, the at-risk-of-poverty (AROP) rate among the self-employed remained high at 25.9% in 2024, compared with 20.9% in the EU. Self-employed people are excluded from contributory unemployment insurance, although they are eligible for means-tested social assistance benefits. While a relatively high proportion of registered unemployed people receive benefits, the AROP rate for this group remains high (50.6% in 2024 compared with 48.8% in the EU). Moreover, the income of those in poverty falls significantly below the poverty threshold, with a gap of 44.2% in 2024 (compared with 32.4% in the EU). Estonia's minimum income benefit, the subsistence benefit, falls short of commonly used adequacy benchmarks. In 2024 (based on 2023 income), the net income of a minimum income recipient reached only 47% of the smoothed poverty threshold, compared with 56.3% in the EU.

**Social benefits expenditure remains low.** Although spending on social benefits increased by 0.9 pps to 17.8% of GDP in 2024, it remains far below the EU average of 27.3%. Estonia allocates a larger proportion of benefits than the EU average to disability benefits (10.7% of total benefits expenditure compared with 7.0% for the EU), while spending a smaller proportion on old-age and survivor benefits (43.3% vs 47.0% in 2024). Estonia allocates only 0.38% of total benefits expenditure to housing benefits, highlighting a potential gap in the social protection system. Despite substantial improvements since 2023, the impact of social benefits (excluding pensions) on poverty reduction remains below the EU average (31.5% vs 34.2%).

**Reforms to the unemployment insurance system and minimum income aim to improve the adequacy and coverage of the social protection system**. In 2026, Estonia will replace its current two-tier unemployment insurance system, consisting of unemployment allowances and unemployment insurance, with a single scheme. The new scheme will also be accessible to workers with limited employment history. In addition, it will also improve social protection, in line with the 2025 country-specific recommendation, as workers with disabilities will be able to combine work ability allowance with unemployment benefits. Preliminary analysis conducted in response to the 2025 country-specific recommendation indicates that extending unemployment benefits to non-standard forms of work would mainly affect a small uninsured segment of the self-employed population (6.1% of 207 000), as 76.5% are already covered through parallel employment and 17.4% have insufficient income to qualify.([223]) To improve the adequacy and efficiency of the minimum income benefits, Estonia is reforming its minimum income methodology (with analysis results expected in April 2026) and modernising the subsistence benefit system.

**Long-term care and healthcare face low investment and regional inequalities.** Unmet medical needs remain high at 7,7%, compared with 2.4% in the EU in 2025), with strong regional and income disparities (see Annex 15). While unmet long-term care (LTC) needs are considerably higher than the EU average (58.9% in

([222])Eurofound (2025): Minimum wages in 2025: Annual review.

([223])Ministry of Economic Affairs and Communications (2025).

Estonia, compared with 46.6% in EU in 2019), public expenditure on LTC is considerably lower (0.4% of GDP compared with the EU average of 1.7%). Public support for person's share of the payment for LTC is strictly means-tested, resulting in high out-of-pocket costs for all population groups except the most vulnerable. Public social protection for home and residential care recipients is limited across all levels of care needs, resulting in financial burdens that are well above the EU average.([224]) Public social protection does not significantly reduce poverty risks associated with LTC, as support for home care is almost non-existent for individuals with a median income([225]) Combined with the high costs of LTC, this results in out-of-pocket expenses for older people with a median income that are among the highest in the EU.([226]) As a result, the risk of being pushed into poverty by home care needs is among the highest in the EU, regardless of the level of need.([227]) The poverty risks for older people in need of LTC are substantially above the EU average, reaching nearly 100% for those with moderate or severe needs([228]). The LTC sector also faces staff shortages, driven in part by the absence of collective bargaining and much lower pay compared with other sectors (65.3% vs an EU average of 82.4%) ([229]). Despite quality guidelines, access to social services varies considerably between municipalities due to unequal provision and different pricing of services offered locally.([230]) User co-payments for social services are not adjusted to individual economic circumstances. Waiting lists for specialised care services nearly doubled between 2018 and 2024([231]). During the same period, funding levels failed to keep pace with actual costs, with regulated service prices covering on average only slightly over 60% of real expenses. This has reduced service availability([232]) and lengthened waiting times.

**Estonia is implementing long-term care reforms while strengthening the integration of health and social services.** The care reform entered into force on 1 July 2023 and aims to alleviate the financial burden on individuals requiring residential care and improve the accessibility of home care. While the reform has substantially reduced out-of-pocket costs for residential care, which fell from around 78% in 2022 to about 51% by 2024, it has also led to an increase in both supply and demand for nursing home places, further exacerbating staff shortages.([233]) At the same time, the reform has not sufficiently strengthened the provision of home-based care, despite it being more cost-effective and a stated policy priority([234]). In 2025, Estonia put forward a proposal to integrate social and healthcare services, although implementation is still pending (see also Annex 15). Estonia is continuing to improve the accessibility, availability and quality of long-term care, through ongoing measures under the ESF+. The ESF+ also supports the continued implementation of person-centred approaches, community-based care models and workforce training. A total of EUR 38.6 million has been allocated to long-term care and access to services under the ESF+.

**Energy and transport poverty primarily affect vulnerable groups.** In 2025, only 3.1% of all households and 5.7% of households below the poverty threshold were unable to keep their homes adequately warm (EU average: 8.8% and 19.7% respectively). 7.6% of all households and 15.7% of those below the poverty threshold reported arrears on mortgages, rents or utility bills (EU averages: 9.2% and 20.5% respectively). Among single-parent households, 16.8% report arrears, with the share rising to 27.7% for those below the poverty threshold. Due to low population density, Estonia's public transport network in many rural areas does not provide sufficient access to essential services within acceptable timeframes (see also Annex 19).

([224])OECD (2026): Adequacy of social protection for long-term care Estonia (Tallinn).

([225])OECD (2025).

([226])OECD (2025.

([227])Ibid.

([228])OECD (2026): Adequacy of social protection for long-term care – Estonia.

([229])DG EMPL calculations from the 2022 Structure of Earnings Survey.

([230])National Audit Office (2025).

([231])National Audit Office (2025) : Riigikontroll: Valitsus ja Riigikogu on olnud aastaid teadlik psüühikahäiretega inimeste abivajadusest, kuid vajadus aina kasvab ja abi viibib üha rohkem.

([232])National Audit Office (2025) : Riigikontroll: Valitsus ja Riigikogu on olnud aastaid teadlik psüühikahäiretega inimeste abivajadusest, kuid vajadus aina kasvab ja abi viibib üha rohkem.

([233])Ibid.

([234])Ibid.

A rising number of households cannot afford a personal car, with single-parent households being the most affected (17.5% compared with an EU average of 14.7% in 2025). This is offset by increased private car use. However, in 2025, challenges to car affordability were more pronounced in Estonia (7%) than in the EU on average (5.5%).

**Estonia provides high-quality education and training, but persistent teacher shortages risk undermining its sustainability, while early school leaving and broader skills shortages and mismatches, particularly in science, technology, engineering, and mathematics (STEM) fields, pose challenges to competitiveness.** Ongoing reforms aim to equip all young people with at least upper-secondary qualifications and better adapt vocational education and training (VET) and adult learning pathways to labour market needs. However, persistent shortages of teachers and special needs support staff risk undermining education quality. The 2025 country-specific recommendations (CSRs) for Estonia highlighted the need to improve labour productivity and skills supply by reducing early school leaving, improving the labour-market relevance of the education and training system and promoting reskilling and upskilling, particularly in green skills. The CSRs highlighted meeting the growing shortages of STEM specialists and better attracting and retaining talent as crucial to increasing skills supply.

**Estonia equips its young people with a high level of basic skills but is facing growing challenges in sustaining its teaching staff**. Estonia is one of the EU's top performers in basic skills (see 2025 Country Report). In upper-secondary education, the AI Leap was launched in September 2025 to equip students and teachers with the skills to use artificial intelligence effectively and responsibly and help the education system keep pace with rapid technological change. Nevertheless, educational inequalities have slightly increased over the last decade, and growing challenges in the teaching profession represent a serious risk to education quality. Estonia has one of the oldest teaching populations in the EU, with 27.8% of teachers aged 60 and over in 2023, more than double the EU average (10.9%). Ageing has intensified over the past decade, while the share of teachers under 35 has remained relatively stable (16.6%; EU average: 17.5%), and is insufficient to offset retirements. The situation is particularly acute in STEM subjects. For example, in some regions, over 40% of mathematics teachers are older than 60 (220). The gender imbalance in the profession is also pronounced, narrowing the pool of available professionals. The trend in pupil numbers, influenced by declining demographics, varies unevenly across the country, with small increases in two densely populated counties (Harju and Tartu) in 2024 and declines of varying depth in the rest of the country. These regional discrepancies sustain higher demand, typically concentrated in more populated regions ([235]) (see Annex 18). Teacher shortages are already evident in practice, as 26% of general education teachers do not meet formal qualification requirements in 2025 ([236]).

**Retaining novice teachers is difficult.** Estonia's 2021-2035 education strategy aims to retain at least 60% of initial teacher education graduates in teaching roles for five consecutive years after graduation by 2035. In 2023, the share stood at 56% ([237]). In 2023, almost half of teachers under 30 (49%) expressed uncertainty about continuing in the profession for more than four years (EU average: 15.2%). This highlights significant retention risks ([238]). Participation in induction programmes among new teachers has improved, rising from 31% in 2018 to 58% in 2024, yet working conditions remain demanding. The reported overall stress is rising (28.5% of teachers feel stressed 'a lot'; EU average: 16%), driven mainly by the responsibility for students' learning outcomes and social-emotional well-being, and the need to adapt teaching to students with special educational needs ([239]). Shortages of support staff further exacerbate workload pressures.

**Policies to attract and retain teachers focus on initial education, career structures, leadership development and working conditions.** Enrolment in teacher education programmes has increased in recent years, supported by government scholarships and efforts to promote the profession. In 2026, salaries were increased by around 10%. The 2022-2026 teacher action plan introduced measures such as leadership training for school heads and micro-

([235])Statistics Estonia.

([236])Education statistics portal HaridusSilm.

([237])Ministry of Education and Research. (2025). *Haridus- ja noorteprogramm 2025-2028* (Education and Youth Programme 2025-2028).

([238])OECD, 2024 TALIS.

([239])OECD, 2024 TALIS.

credentials for non-fully qualified teachers. Further policy responses are a new career model linking pay to experience (which took effect in March 2026), and additional support for schools during the transition towards introducing Estonian as the language of instruction in all public schools. Public reports on the implementation of the action plan and a follow-up plan beyond 2026 are not (yet) available ([240]).

**Estonia is strengthening compulsory education to reduce early school leaving and support labour market participation.** In 2025, 10.2% of young people left the education and training system with no or very low qualifications (EU average: 9.1%). Estonia aims to reduce early school leaving by implementing a reform initiated in 2025 that makes education compulsory until at least age 18 or until completion of upper-secondary or vocational education (see 2025 Country Report). This reform will be complemented by the introduction of a preparatory year for learners who have completed lower secondary school but do not have a place in upper-secondary or vocational education, offering small-group learning, individual curricula and targeted support, including for learners with skills gaps or limited Estonian proficiency. The regulation on preparatory education was adopted in January 2026. A unified digital admissions platform connects upper-secondary, vocational and preparatory programmes and helps municipalities guide transitions. Monitoring through national education and youth systems enables early identification and support of young people who are not in employment, education or training. The reform aims to raise upper-secondary completion to 90%, reduce the share of low-qualified 18-24-year-olds outside education or training to below 5% by 2035, and add around 1 300 qualified young people to the labour market each year.

**Reducing early school leaving also depends on the capacity of the education system to effectively respond to pupils with special educational needs (SEN).** Pupils with some disabilities are more than twice as likely to leave school early compared to their peers, with a rate of 20.5% in 2024, above the EU average of 17.1%. While schools are required by law ([241]) to help pupils with SEN by adjusting learning goals and providing specialist support, this is hindered by acute shortages of support specialists such as speech therapists or psychologists ([242]), especially in VET, where 90% of schools were found not to adequately support learners with SEN ([243]). In 2023, 57.1% of teachers worked in schools with over 10% of pupils with SEN (EU average: 50.2%), up from only 29.8% in 2018 (EU average: 34%) ([244]). This greater student diversity requires teachers to adapt their teaching; 2024, 23% of teachers expressed a high need for professional learning in teaching learners with SEN (EU average: 24.2%). Yet, only around half of teachers (51.2%) had attended professional training in the previous year that they found impactful (EU average: 56%) ([245]).

**Alongside the reforms of mandatory schooling and VET, in February 2026, the authorities amended the Employment Contracts Act to expand work opportunities for minors.** The amendments allow 7-17-year-olds to work in family businesses in any sector, to work more during school holidays, and to work more hours during school days. The amendments also raise the maximum working time for minors aged 15-17 to the level applicable prior to the education reform. Given the objectives of the compulsory schooling reform, continued monitoring will be important to assess the interaction between increased work opportunities for minors and educational outcomes.

**Ongoing system-wide VET reforms aim to improve VET attractiveness as well as VET graduates' employability, and to strengthen skills supply and labour- market relevance.** In 2024, only 74.7% of people who had recently completed VET were employed, below the EU average of 80.0%. Nevertheless, of all people who had recently completed VET, a high share had experienced work-based learning (79.8%; EU average: 65.2%). At the same time, participation of Estonian VET students in STEM fields is above the EU average. In 2024, 49.9% of VET pupils at

([240])OSKA. (2022). *OSKA general forecast 2022-2031 - Key findings.*

([241])Basic Schools and Upper Secondary Schools Act, §6.

([242])OSKA. (2022). *OSKA general forecast 2022-2031 - Key findings.*

([243])Riigikontroll, 2025, Haridusliku erivajadusega noorte kutseõpingute ja töölesiirdumise toetamine.

([244])OECD, 2024 TALIS.

([245])OECD, 2024 TALIS.

medium level were enrolled in STEM fields (EU average: 36.6%), and 24.0% of them were female (EU average: 15.9%). From the 2025/2026 academic year, four-year applied upper-secondary VET programmes are being introduced, with the volume of general education subjects more than doubled to support smoother progression from VET to higher education. In 2025, 13 programmes were launched, notably in information and communications technology (ICT), engineering, construction, biotechnology and healthcare. In total, 32 new applied VET programmes will be launched from next academic year. Quality assurance and optimisation of the VET provider network are ongoing, including mergers and reorganisation into regional education centres.

**The professional qualifications system reform, financed by the European Social Fund Plus (ESF+), aims to improve flexibility and responsiveness to labour market needs.** It will introduce competence-based profiles, and improved assessment and recognition of competencies, with implementation expected from autumn 2026. Estonia is also developing a national skills register as part of the OsKuS initiative, supported by the ESF+. The OSKA skills forecasts help align qualifications with the labour market. To effectively tackle persistent skills shortages, education policy should be closely aligned with OSKA's labour market forecasts, while education programmes could better reflect these skills projections to support a more targeted response to changing workforce demands.

**Adult participation in learning remains above the EU average, although access varies across population groups.** In 2022, 41.8% of adults aged 25-64 had participated in education and training during the previous 12 months (EU average: 39.5%) ([246]). However, access to adult learning remains uneven. It is higher among younger adults (49.5% among those aged 25-34, compared with 31.2% among those aged 55-64) and substantially lower among adults with low levels of education (18.9%, in line with the EU average). Regional disparities persist and are linked to differences in educational attainment. For example, in Harju county, 46% of the population has tertiary education, compared with 34% in Ida-Viru county ([247]).

**Recent adult learning policies focus on quality assurance, flexible learning pathways and targeted financial support.** Amendments to the Adult Education Act adopted in January 2025 introduced a national framework for micro-qualifications, covering their scope, structure and study volume, and clarified requirements for training providers to ensure quality. The amendments introduced professional and pedagogical competence requirements for adult educators that entered into force from January 2026. Amendments to the Employment Programme 2024-2029 approved in October 2025 improve access to skills development services from 2026 and reorganise Estonian language learning. In addition, large-scale programmes (supported by the ESF+ and the Recovery and Resilience Facility) promote the development of professional and general skills.

**Adult skills outcomes are strong on average, but gaps persist by age, socio-economic background and skills domain.** Results from the 2023 PIAAC survey show that adult skills in Estonia exceed the OECD average across literacy, numeracy and problem-solving ([248]). However, the survey highlights substantial disparities across population groups. Skills levels are highest among adults aged 25-29 and lowest among those aged 60-65, with a marked decline already observable in the 35-39 age group. PIAAC 2023 also identifies persistent skills differences linked to socio-economic characteristics and indicates a widening skills gap compared with the previous PIAAC cycle. In addition, in every region, the average results of Russian-speakers are lower than those of Estonian-speakers. In digital competences, 12% of employees report lacking sufficient computer and software skills, compared with an OECD average of 4%. At population level, 62.5% of adults had at least a basic level of digital skills in 2025, slightly above the EU average of 60.4%, but internal disparities, particularly among older adults, risk undermining overall competitiveness. Furthermore, in light of changes in job profiles due to the uptake of artificial intelligence (AI), more focus on AI skills

([246])Adult education survey.

([247])Statistics Estonia (2024).

([248])OECD (2024): Survey of Adults Skills 2023.

is needed. To help narrow skills gaps, boost productivity and ease labour shortages, Estonia could take measures such as: (i) providing targeted outreach via employers and employment services; (ii) expanding modular and workplace-based training; (iii) providing financial support and guidance for low-skilled and older adults; (iv) strengthening digital and AI skills provision; and (v) improving rural access to online learning infrastructure.

**The green transition requires skills that are still in relatively short supply.** The Green Skills programme, financed by ESF+, strengthens the supply of green skills by offering free up- and reskilling training to companies and individuals. Aligning VET programmes with green transition needs could help mitigate skills gaps in emerging sectors. Since the pandemic, the energy sector has been experiencing rising labour shortages (2.5% in 2024 vs 1.3% in 2019; EU average: 1.7% in 2024). At occupational level, persistent shortages have been reported for industrial and production engineers, building and related electricians, and electrical mechanics and fitters, which are relevant both to the clean energy transition and climate adaptation. At the same time, in energy-intensive industries, workers' participation in education and training was 8.6% in 2024, slightly below the EU average (9.4%).

**Access to higher education remains uneven.** Whereas overall tertiary attainment is high (44.3% in 2025; EU average: 44.8%), some groups remain under-represented (men, Russian-speaking students, first-generation students). Financial support has been increased (through needs-based grants and a study loan reform), but non-financial aid addressing the concerns of under-represented groups, such as mentoring or peer networks, is not yet common. The ongoing VET reform (see above) presents opportunities for stronger collaboration between VET and applied higher education, especially outside urban centres, which can help reach under-represented groups, and alleviate labour market demands.

**Demand for tertiary educated STEM specialists still significantly exceeds supply.** Three reasons for this can be identified: (i) overall tertiary student numbers have been falling in the last decade, reducing the number of STEM graduates entering the labour market (see Graph A13.1); (ii) the average dropout rate from the first undergraduate year in STEM courses is higher than in other fields; and (iii) the green and digital transitions alone require more STEM specialists than are currently anticipated to graduate from higher education ([249]). While Estonia remains among the leading EU countries in gender diversity among ICT specialists - with women accounting for around 22.5% of employed ICT specialists in 2025 (19.5% for the EU) ([250]) – critical labour shortages persist across key sectors. ICT, industry and construction are among the sectors with the most severe shortages of skilled workers, and rising demand for engineers, electricians and technicians ([251]). In 2023, Estonia ranked last among EU countries for the availability of engineers ([252]). While the proportion of students studying ICT has grown, this increase has come at the expense of engineering students. To counter this trend, the government established an Engineering Academy (with EUR 39 million of ESF+ funding) alongside the well-established IT Academy programme. First results of the Engineering Academy point towards an improvement in drop-out rates of engineering programmes. A comprehensive STE(A)M strategy is under development and expected in June 2026. However, according to the National Audit Office, the Engineering Academy programme alone will not solve the shortage of engineers if the foundation in mathematics and science education remains weak in basic schools. Basic schools continue to struggle with uneven STEM teaching quality, teacher shortages, and limited opportunities for technology-related extracurricular learning ([253]).

([249])OSKA. (2020). Eesti tööturg täna ja homme 2019-2027.

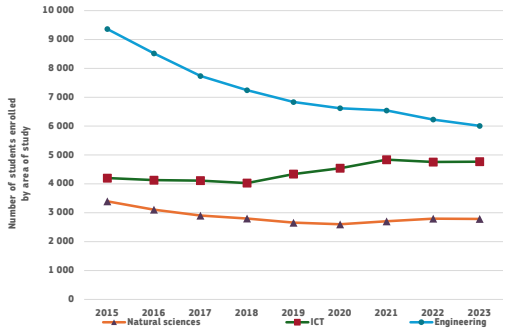
([250])Eurostat, [isoc_sks_itsps] Employed information and communications technology (ICT) specialists by sex.

([251])OSKA. (2022). OSKA general forecast 2022-2031 - Key findings.

([252])Competitevness Report Estonia (2024): Konkurentsivõime raport 2024

([253])Riigi tegevus inseneride järelkasvu tagamisel | Riigikontroll.

Graph A13.1: **Development of STEM enrolments in Estonia, 2015-2023**




***Source:*** Eurostat, educ_uoe_enrt03

**Attracting and retaining talent from abroad remains critical for strengthening Estonia's research and innovation capacity.** Recent growth in PhD student numbers has been primarily driven by international candidates, particularly in engineering and ICT, where around 50% of PhD students come from abroad. This inflow is essential to offset demographic decline, meet the national target for PhD graduates (300 per year) and address persistent skills shortages in priority sectors. However, graduate retention varies by field, and constraints related to residence permits and post-study pathways continue to limit Estonia's ability to capitalise fully on this talent pool. To improve retention and better link domestic and international graduates to the labour market, Estonia is promoting applied research and industry-oriented doctoral pathways, supported by stronger science-business cooperation. However, the uptake of industry-oriented doctoral studies has remained below expectations (see Annex 4). A new 2026-2029 talent strategy, set to be presented in September 2026, aims to better attract and retain talent from abroad, by aligning with the 'Work in Estonia' and 'Study in Estonia' initiatives.

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

| | | |
|---|---|---|
| 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) | 41.8 |
| | Early leavers from education and training (% of the population aged 18-24, 2025) | 10.2 |
| | Share of individuals who have basic or above basic overall digital skills (% of the population aged 16-74, 2025) | 62.5 |
| | Young people not in employment, education or training (% of the population aged 15-29, 2025) | 11.2 |
| | Gender employment gap (percentage points, population aged 20-64, 2025) | 0.5 |
| | Income quintile ratio (S80/S20, 2025) | 5.07 |
| Dynamic labour markets and fair working conditions | Employment rate (% of the population aged 20-64, 2025) | 81.7 |
| | Unemployment rate (% of the active population aged 15-74, 2025) | 7.5 |
| | Long term unemployment (% of the active population aged 15-74, 2025) | 1.8 |
| | Gross disposable household income (GDHI) per capita growth (index, 2008=100, 2024) | 131.0 |
| Social protection and inclusion | At risk of poverty or social exclusion (AROPE) rate (% of the total population, 2025) | 21.8 |
| | At risk of poverty or social exclusion (AROPE) rate for children (% of the population aged 0-17, 2025) | 19.4 |
| | Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2025) | 29.6 |
| | Disability employment gap (percentage points, population aged 20-64, 2025) | 16.0 |
| | Housing cost overburden (% of the total population, 2025) | 8.8 |
| | Children aged less than 3 years in formal childcare (% of the under 3-years-old population, 2025) | 34.8 |
| | Self-reported unmet need for medical care (% of the population aged 16+, 2025) | 7.7 |

| 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).

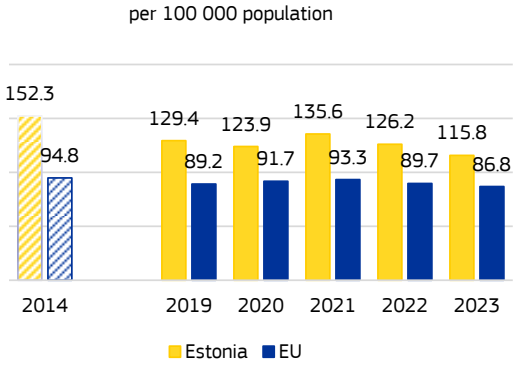
***Source:*** Eurostat

**Estonia's health system faces challenges that need to be addressed to improve the health of its population, social fairness, competitiveness and productivity.** These challenges include: (i) limited access to healthcare and low life expectancy, the latter linked to high treatable mortality; (ii) suboptimal funding and cost-effectiveness of the health system; (iii) shortages of healthcare workers; and (iv) an uneven geographical distribution of healthcare resources. *Sustainable funding of healthcare* and *the need to improve accessibility and affordability of healthcare* were raised in the 2025 country-specific recommendations (CSRs).

**Life expectancy at birth in Estonia remains lower than the EU average.** As in other EU countries, women can expect to live longer than men (8.3 years longer in 2024). However, they can only expect to live about 3.1 years longer than men in good health. The gender gap in healthy life years at age 65 is much lower – only a single year. As a result, Estonian women tend to live longer, but with greater limitations on their daily activities. Inequalities in life expectancy linked to socio-economic status also remain substantial. In 2023, educational inequalities translated into a life expectancy gap at age 30 of 10 years for men and 8.5 years for women ([254]). There are also large regional differences; for example, people in Hiiumaa live more than 10 years longer than in Võru County ([255]).

**Treatable mortality remains much higher than the EU average (see** Graph **A15.1)**. Although it has improved over the last 10 years, the high level of treatable mortality suggests shortcomings in the effectiveness of the health system. Diseases of the circulatory system (cardiovascular diseases (CVDs)) and cancer remain the leading causes of death, with mortality rates higher than the EU average. Mortality from CVDs is particularly high, led by ischaemic heart diseases and hypertension. Cancer prevalence in Estonia has increased substantially over the last decade, but remains slightly below the EU average. The 2021-2030 Estonian Cancer Control Plan seeks to lower it further by strengthening prevention, promoting early detection and ensuring timely access to treatment. Estonia participates in several joint actions funded by EU4Health, which address treatable mortality, particularly when caused by cancer. Estonia's suicide rate is one of the highest in the EU. To address it, Estonia launched its first Suicide Prevention Action Plan for 2025-2028. A mental health action plan for 2023-2026 is also being implemented.

Graph A15.1: **Treatable mortality**




Age-standardised death rate - mortality that could be avoided through optimal quality healthcare.
***Source:*** Eurostat (indicator: hlth_cd_apr)

**Preventable mortality in Estonia was also very high in 2022 despite a comparatively high level of investment in disease prevention.** Spending on prevention in 2023 accounted for 4.2% of Estonia's total health expenditure, above the EU average of 3.65%. It has increased slightly over the last 10 years. However, the rate of preventable mortality is among the highest in the EU, with only a 5% decrease over the last decade. The newly adopted Public Health Act (2025) establishes the legislative framework for organising and protecting public health, defining the roles and duties of state and local authorities, outlining requirements and restrictions to safeguard population health and setting out the basis for financing public health measures and oversight.

**Alcohol consumption is one of the leading drivers of preventable mortality in Estonia.** It accounts for approximately one quarter of all preventable deaths ([256]). A large proportion of deaths was also linked to dietary risk factors, including insufficient intake of fruit and vegetables and high consumption of sugar-sweetened

([254]) OECD/European Observatory on Health Systems and Policies (2025), Country Health Profile 2025: Estonia. State of Health in the EU.

([255]) Sustainability of healthcare. Scenarios until 2035 - Foresight Centre.

([256]) Country Health Profile 2025: Estonia - see earlier footnote.

Table A15.1:**Key health indicators**

| | 2020 | 2021 | 2022 | 2023 | 2024 | 10-year change** | EU average* (latest year) |
|---|---|---|---|---|---|---|---|
| Cancer mortality per 100 000 population | 265.0 | 265.8 | 246.7 | 238.0 | n.a. | 0.79 | 233.1 (2023) |
| Mortality due to circulatory diseases per 100 000 population | 560.2 | 599.4 | 575.0 | 521.6 | n.a. | 0.75 | 313.0 (2023) |
| Current expenditure on health, purchasing power standards, per capita | 1 901 | 2 038 | 1 989 | 2 145 | 2 338 | 1.64 | 3834.9 (2023) |
| Public share of health expenditure, % of current health expenditure | 77.1 | 76.1 | 74.8 | 75.8 | 76.6 | 1.03 | 80.6 (2023) |
| Spending on prevention, % of current health expenditure | 4.9 | 8.8 | 5.7 | 4.2 | n.a. | 1.44 | 3.7 (2023) |
| Available hospital beds per 100 000 population*** | 397 | 389 | 374 | 364 | n.a. | 0.84 | 440 (2023) |
| Doctors per 1 000 population* | 3.5 | 3.4 | 3.5 | 3.5 | n.a. | 1.04 | 4.3 (2023)* |
| Nurses per 1 000 population* | 6.4 | 6.5 | 6.6 | 6.6 | n.a. | 1.17 | 7.6 (2023)* |
| Mortality at working age (20-64 years), % of total mortality | 19.0 | 17.6 | 17.8 | 18.3 | 17.7 | 0.84 | 14.3 (2023) |
| Consumption of antibiotics in the community and hospital sectors, defined daily doses per 1 000 inhabitants | 10.5 | 10.1 | 12.4 | 12.7 | 13.0 | 1.07 | 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

beverages. Smoking rates have declined over recent years and are below the EU average. However, the proportion of young people who report smoking e-cigarettes/vaping is particularly high. Estonia has introduced several policies to address these challenges, including its national health plan for 2020-2030 and the Estonia 2035 strategy. Tobacco product excise taxes were increased in 2025, following greater marketing regulation introduced in 2019. When it comes to vaccinations, Estonia has experienced a steep decline in childhood immunisation rates (particularly for measles). As a result of the low vaccination uptake and misinformation impacting trust in vaccines, the Ministry of Social Affairs introduced tools to improve vaccine management.

**These poor health outcomes negatively affect Estonia's workforce, productivity and competitiveness.** In Estonia, mortality at working age as a proportion of total mortality is among the highest in the EU, exacerbating the effects of population ageing on a shrinking labour force (see Annex 11). Gains in health status from further prevention investments could alleviate this impact. For example, preventing all deaths from non-communicable diseases in Estonia would result in a 1.1% gain in working-life years from 2022 to 2040 (vs 0.9% for the EU). The gain in working-life years would save about 136 397 life years in Estonia over 2022-2040. This increase would mitigate an otherwise expected 7% reduction of the workforce due to demographic ageing of the 2022 population (7% for the EU) ([257]).

**The functioning of the health system is hampered by low public spending.** Spending on public health has grown substantially in Estonia over the last decade (38% increase). The most recent increases were driven by higher wages for healthcare workers, with doctors' wages increasing by approximately 25% and nurses' salaries by 21% in 2023. Yet in 2024, health spending per inhabitant (adjusted for differences in purchasing power) was one of the lowest in the EU and just 77% of it was publicly funded. The allocation of spending by function in 2023 reveals that outpatient care represents the largest portion of current health expenditure. This is followed by inpatient care, pharmaceuticals and medical devices, long-term care and preventive care. Historically, investment levels have been low in Estonia and relied heavily on EU funds. At the same time, ageing infrastructure (with many facilities over 50 years old) and low availability of key diagnostic technology raise concerns. The government is also undertaking a broader review of healthcare financing to improve its long-term sustainability and financial protection. Also, the Estonian recovery and resilience plan (RRP) includes investments that can address the 2025 CSR: (i) improvement of health infrastructure (construction of a county hospital and health centre in Viljandi); (ii) implementation of

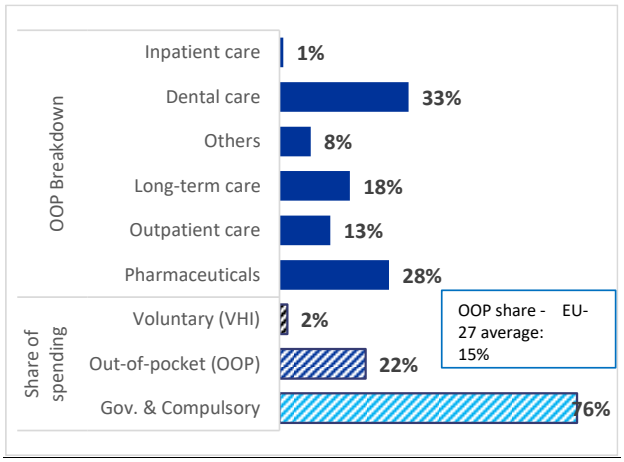
([257])EC/OECD, State of Health in the EU: 2025 Synthesis Report.

organisational reforms; and (iii) strengthening of primary healthcare.

**Linked to low public funding, the country has a high level of OOP payments for healthcare** (22% in 2023 vs an EU average of 15%). OOP payments went predominantly on outpatient medical goods, followed by dental care, long-term care and outpatient specialist care. Existing measures to mitigate OOP spending include exemptions and reduced user charges for vulnerable groups, annual caps on pharmaceutical co-payments and recent expansions in benefit coverage, notably in primary and dental care. The most recent legislative measure to be mentioned here is the Medicines and Medical Devices Reimbursement Act from 2025. These measures, together with the RRP and cohesion policy funding (see previous paragraph), can help address the 2025 CSRs on affordability and accessibility.

**Estonia continues its efforts to reduce hospitalisations and improve patients' outcomes.** Estonia has gradually downsized its hospital bed capacity in recent years. From 2018 to 2023, the number of beds per 1 000 inhabitants fell by more than 9% (see Table A15.1). Adopted in December 2024, the Hospital Network Development Plan aims to further consolidate the hospital sector, with the number of hospitals planned to decrease from 20 to 17 by 2040 (part of the RRP). Occupancy rates for curative care beds have remained below 70% since 2020, suggesting an inefficient allocation of resources. Estonia has successfully reduced hospitalisations for chronic conditions by effectively moving care into community settings ([258]). Despite modest improvements in secondary-care quality indicators, Estonia's 30-day mortality rates for acute myocardial infarction and stroke remain above the EU average. To address this, a nationwide ischemic stroke care pathway was implemented in January 2025. Apart from the RRP measures related to hospitals and primary care, cohesion policy funds also play a role: Estonia is improving its primary care by setting up multidisciplinary healthcare centres and offering complex services via multiprofessional teams and investing in integrated care. Estonia also participates in the joint action CIRCE-JA ([259]) funded by EU4Health aimed at transferring good practices in primary care between EU countries. The EU Technical Support Instrument (TSI) has supported Estonia in implementing major primary care reforms, including efforts to strengthen mental health management. All this is expected to help address the 2025 CSR.

Graph A15.2: **Out-of-pocket payments: share in healthcare spending and categories, 2023**




Household out-of-pocket payment: direct payment for healthcare goods and services from the household primary income or savings, where the payment is made by the user at the time of the purchase of goods or the use of the services (Eurostat). VHI: voluntary health insurance.
(1) Others: eyeglasses, hearing aids, lab tests...
***Source:*** Eurostat and Country Health Profiles - Dashboard

**Estonia faces challenges in access to healthcare, with high unmet needs and significant inequalities.** In 2025, the proportion of the Estonian population reporting unmet needs for medical care remained among the highest in the EU (7.7% vs an EU average of 2.4%). Long waiting times are the main reason for these unmet needs and they are more pronounced among people at risk of poverty, with a gap of around 13 % (see Annex 12). Comparatively high unmet needs for medical examination are reported in rural areas (74% in 2025). There are also significant regional differences in access; for example, just 49% of the population lived within a 10-minute drive of a hospital in 2023, one of the lowest percentages in the EU (see Annex 18). Estonia is taking steps to integrate health and social policies (see Annex 12) and to advance personalised medicine. Both can contribute to addressing the 2025 CSRs on access and affordability by improving coordination and continuity of care, strengthening prevention, and supporting more targeted, person-centred service delivery.

([258])Country Health Profile 2025: Estonia – see earlier footnote.

([259])Home | CIRCE-JA.

**Shortages of health workforce limit the availability of care, particularly in rural areas.** Estonia faces persistent shortages in its health workforce. In 2023, Estonia had fewer doctors and nurses than the EU average (see Table A15.1). The number of nurse graduates is increasing at a moderate rate and remains below the EU average. As for doctors' graduates, the rate is among the lowest in the EU and it dropped further in 2023. A high proportion of doctors and nurses are 55 years of age and over, raising concerns about the long-term accessibility of health services (particularly in rural areas ([260])). Shortages are particularly high in family medicine, psychiatry and nursing. Over the next decade, Estonia's health system faces a projected shortage of around 1 300 doctors and nearly 750 nurses, and significant gaps in psychologists and pharmacists ([261]). The situation is even more challenging outside the major cities of Tallinn and Tartu ([262]).

**Working conditions are a major deterrent to entering the profession.** The government has taken steps to address these challenges by increasing doctors' and nurses' wages. The Hospital Network Development Roadmap also includes measures to train the workforce on teamwork, task shifting between specialists and using digital solutions. The government has also approved a strategic framework for addressing health workforce shortages as part of the Estonian RRP. The RRP also includes measures to improve the reimbursement system for doctors, nurses and pharmacists and to incentivise health staff to work in remote areas. It is also addressing the low graduation levels of nurses by increasing admissions to nursing training by 5%. In addition, Estonia participates in the joint action HEROES ([263]) funded by EU4Health, aimed at sharing expertise among EU countries on health workforce planning. All these measures and funding could help address the 2025 CSR on access.

**Estonia's health system is among the most digitally mature in the EU, but interoperability challenges persist.** Estonia makes extensive use of digital tools to support the collection, management and sharing of health data across care providers. The shares of people accessing their personal health records online and using online health services (excluding phone) instead of in-person consultations are well above the EU average and doubled between 2022 and 2024. Notable progress has been achieved through the roll-out of the nationwide e-booking system and the introduction of the redesigned Health Portal which improves usability for patients and professionals. At the same time, persistent challenges remain in ensuring full standardisation, interoperability and the timely exchange of data within the e-health ecosystem. Measures to boost the digital transformation of Estonia's health sector set out in its RRP include updating the governance framework for e-health and coordinating the development of e-health services. Estonia also participates in joint actions and direct grants under EU4Health aimed at improving the interoperability of health data and facilitating the implementation of the European Health Data Space. All these measures and funding have the potential to partially address the 2025 CSR on access.

**Estonia's pharmaceutical sector holds a modest position in the EU**. It is characterised by one of the smallest economic contributions in the manufacturing of basic pharmaceutical products and preparations. Clinical trials in Estonia have seen a reduction over recent years to 14.5 per million population in 2024 (from 32.2 in 2022), lower than the EU average of 18.3 ([264]). Estonia's patent activity is limited, with just 0.7 patents granted per million population, while the EU average stands at 1.8 (2024) ([265]). The industry has a consistently low share of extra-EU exports (0.56% in 2025 vs 13.85% for the EU average).

([260])Tervishoiutöötajatega seotud trendid Eestis, Arenguseire keskus, 2025.

([261])OSKA_Tervishoid_ENG_Key-findings.pdf.

([262])Country Health Profile 2025: Estonia – see earlier footnote

([263])The project – JA HEROES | Health Workforce Planning Project.

([264])US National Library of Medicine, https://clinicaltrials.gov.

([265])European Patent Office: Statistics & Trends Centre | epo.org.

**House prices have been rising for a long time.** The increase in house and rental prices in Estonia since the mid-2010s is among the highest in the EU, with the strongest growth recorded in Tallinn and its commuter belt. Construction of new dwellings expanded in response but then halted due to a lack of demand caused by higher borrowing and construction costs.

**Housing affordability in Estonia has weakened over the past decade.** Strong house price and rent growth has contributed to a rising cost overburden, particularly for low-income households and single parents, with single parents at risk of poverty in Estonia allocating one of the highest shares of disposable household income to rent in the EU. Housing vulnerability remains strongly linked to tenure, and is close to the EU average, although substantially higher for owners without a mortgage. Housing availability also remains a concern, including due to labour shortages in construction, limited municipal social housing stock and increasing pressure in urban areas.

By contrast, **energy poverty remains relatively limited on average, affecting primarily vulnerable groups.** The proportion of households unable to keep their homes adequately warm and in arrears on utility bills is well below the EU average. The proportion of households unable to keep their homes adequately warm is however higher among low-income households and households with older adults than the general population.

**Estonia's decentralised and market-driven housing policy is impacted by territorial development gaps and low local administrative capacity.** Estonia's housing policy is focused on support to homeownership via tax relief and loan guarantees, with minimal provision of housing benefits. Estonia decentralised model for housing development and support faces challenges due to low local administrative capacity although increasing support through digitalisation is envisaged.

**Estonia is currently designing a housing policy for 2025–2035 which might touch upon several aspects relevant to housing affordability.** Confirmation of this and policy implementation will require monitoring to assess progress, the impact on housing affordability, and support to vulnerable groups.

## Housing market developments

**A long-standing trend of rising house prices continues.** House prices have maintained a pronounced uptrend from the mid-2010s, following their post-2008-09 crisis correction. Nominal house prices increased particularly sharply in 2020-2022, when very low mortgage interest rates, rising household incomes, the release of second-pillar pension funds and the sale of a few unicorn start-ups incentivised households with a willingness to pay a higher price to purchase real estate. Price increases were geographically concentrated, with the strongest growth recorded in Tallinn and its commuter belt, reflecting population concentration and labour market dynamics. By 2025, house prices were 64% higher than in 2020 in nominal terms, corresponding to an increase of about 15% in real terms (Graph A16.1). This price growth slowed in 2023, as tighter financing conditions quickly translated into a higher financial burden due to the prevalence of variable-rate mortgages in Estonia, and economic stagnation discouraged the purchase of real estate. The weaker demand was also reflected by far fewer transactions. Since 2023, however, mortgage interest rates have declined, and lending volumes have expanded. Together with more favourable income taxation as of 2026, this has led to a housing market revival ([266]). The price-to-income ratio has fluctuated and increased over the last 15 years by 24%, one of the highest increases in the EU (Graph A16.1).

([266])The Estonian Economy and Monetary Policy 4/2025.

Graph A16.1: **Housing affordability selected indicators**

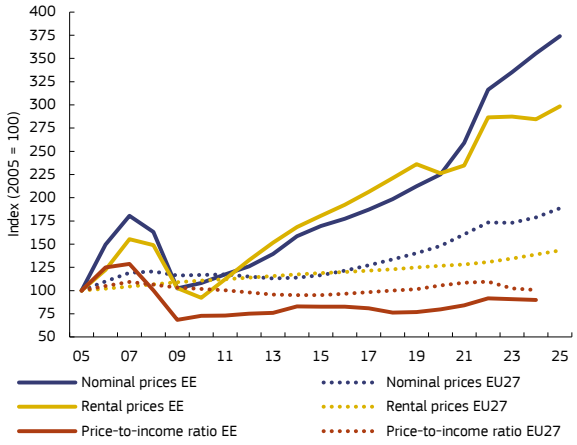
| | | EU27 | | | | EE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | unit | 2000-25 avg. | 2023 | 2024 | 2025 | 2000-25 avg. | 2023 | 2024 | 2025 | unit | 2023 | 2024 | 2025 |
| House price to income ratio | *2000-25 avg = 100* | 100.0 | 102.0 | 100.2 | | 100.0 | 104.4 | 103.4 | | YoY% | -1.0 | -1.0 | |
| Rent to income ratio | *2000-25 avg = 100* | 100.0 | 85.1 | 83.5 | 84.5 | 100.0 | 93.1 | 86.0 | 87.2 | YoY% | -6.2 | -7.5 | 1.3 |
| Overburden rate, total | % | 9.9 | 8.8 | 8.2 | | 6.0 | 7.6 | 8.6 | 8.8 | PPS/y | 2.7 | 1.0 | 0.2 |
| Overburden rate, tenant with market rent | % | 23.8 | 20.3 | 19.2 | | 28.4 | 35.8 | 30.8 | 37.0 | PPS/y | 9.9 | -5.0 | 6.2 |
| Overvaluation gap | % | | | | | 0.4 | 9.2 | 10.8 | 10.6 | | | | |
| Deflated construction production price | *2010 = 100* | 102.2 | 112.2 | 111.8 | 110.5 | 102.4 | 96.4 | 94.4 | 91.3 | YoY% | -3.5 | -2.0 | -3.1 |
| Building permits | *$m^2$ per ths persons* | 483.5 | 376.9 | 362.9 | 379.9 | 452.4 | 366.1 | 363.7 | 438.0 | YoY% | -18.7 | -0.6 | 20.4 |
| Residential construction investment | *% GDP* | 5.5 | 5.8 | 5.1 | 5.0 | 4.0 | 4.9 | 4.3 | 4.6 | YoY% | -2.0 | -12.2 | 7.0 |
| Share of ownership | % | 70.0 | 69.1 | 68.4 | | 82.9 | 80.7 | 79.3 | 79.7 | PPS/y | -1.6 | -1.7 | 0.5 |
| Share of people living in overcrowded homes | % | 17.7 | 16.8 | 16.9 | | 24.2 | 17.0 | 18.4 | 17.9 | PPS/y | 1.3 | 1.4 | -0.5 |

***Source:*** Eurostat and European Commission calculations.

**Rental prices increased more gradually during the 2010s but rose sharply in 2022.** Since 2020, rental prices (including existing and new rental contracts) have increased by 32%, but the steepest increase of more than 20% was recorded in 2022. That year Estonia witnessed a large inflow of Ukrainian refugees. The rental market in Estonia is small, with home ownership at 79.3% (EU average of 68.4% in 2024), while the share of renters is correspondingly lower (19.3%; EU: 30.2%). Although the rent to income ratio is on a decreasing trend after a peak in 2017, the 16% increase between 2010 and 2024 is one of the highest in the EU.

**Construction of new dwellings expanded in response to rising house prices but has dwindled over the last years.** Housing supply has expanded over the past decade, albeit falling short of satisfying demand in high-growth regions. Residential construction activity increased substantially in response to fast price growth in the early 2020s, as profitability rose. The number of residential building permits issued increased sharply in 2019-2021. However, completions have become constrained by labour shortages, sharply rising construction costs and more stringent financing conditions for developers. The number of building permits issued has therefore been falling during the last few years, suggesting that new housing supply has become weaker. Meanwhile population growth has become increasingly concentrated in certain areas, exacerbating regional disparities. Tallinn and Tartu keep experiencing high demand and insufficient supply, while rural Estonia faces excess supply and housing quality deterioration. The housing construction gap for the decade till 2035 (based on population and construction projections) is estimated at 15 300 dwellings, with the biggest investment needs concentrated in the capital city metropolitan region ([267]).

Graph A16.2: **House prices, rents and price-to-income evolution in EE and EU27 since 2005**



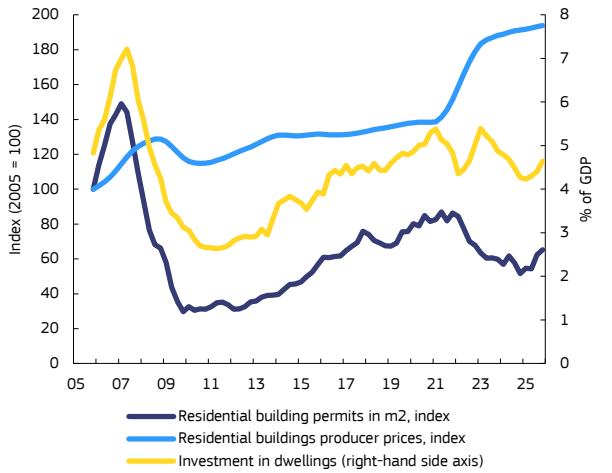

***Source:*** Eurostat

**Older buildings are in need of renovation.** Due to a large stock of Soviet-era buildings, Estonia has sizeable investment needs related to energy efficiency retrofitting, climate adaptation and urban infrastructure. Up to 14 000 apartment buildings, accounting for a total area of 18 million $m^2$ will need to be fully renovated (defined as an upgrade to at least energy class C by 2050, considering (i) the number of residential buildings currently in use; (ii) the volume of renovations completed to date (3 000 apartment buildings with a total area of 5 million $m^2$ in 2020); (iii) the estimated residential building abandonment rate). In addition, Estonia intends to use the Social Climate Fund in particular for housing renovation, allocating substantial funding to the renovation of apartment buildings to reduce

([267])Balouktsi et al. (2026) Housing investment needs in the EU. JRC Technical Report 144419.

energy costs and improve living conditions for vulnerable households. Public support schemes and EU-funded renovations therefore play an important role but remain limited in scale (see Annex 9).

Graph A16.3: **House supply indicators in EE since 2005**




(1) 4-quarters moving sums (averages for prices)
***Source:*** Eurostat

**Productivity in construction is weak.** The Estonian construction sector is characterised by 28% lower productivity (gross value added per hour worked) than the EU average, despite a gradual improvement over the previous decade. Costs have risen particularly sharply since 2021 due to rising prices of materials (many previously sourced from Russia), supply chain disruptions and increasing wages. As a result, in 2024, construction producer costs were 38% higher than in 2020 and nominal unit labour costs in the construction sector were 62% higher – one of the highest sectoral increases in the EU (see Annex 5). Because of these sharp increases in costs and prices, combined with higher borrowing costs, the main factor limiting construction activity in 2024-2025 was lack of demand.

## Structural policies

**Estonia is currently designing a comprehensive housing policy for 2025–2035.** It might touch upon several aspects (taxation, spatial planning, funding, development of affordable rental housing, measurement and monitoring) relevant to housing affordability and studied in this annex. Confirmation of this and policy implementation will require monitoring to assess progress, the impact on housing affordability, and support to vulnerable groups.

**Estonia's housing policy is focused on support to homeownership via tax relief and loan guarantees, with minimal provision of housing benefits.** Several tax relief schemes were recently reformed. Mortgage interest tax relief, which had encouraged households to take on more debt, driving demand and potentially increasing house prices, was abolished in 2024. Residential land taxation rates in Estonia are set by municipalities (0.1%–1% of the land's value), which can provide incentives to occupy the property (the homeownership tax incentive has not been set based on the surface area since 2026 but as an absolute figure – maximum EUR 1 000) ([268]). Estonia's tax system still raises very little revenue from property taxes, reflecting Estonia's approach of taxing land rather than property. While residential land taxation can provide a first incentive to activate the land, exploring a phased-in tax on unoccupied residential property could further discourage owners from leaving their properties vacant in areas under housing pressure (see Annex 3). Housing support is tied to the subsistence allowance; there is no separate housing allowance. Although social housing has increased in recent years, it only accounted for around 1.1% of the housing stock in 2017, compared with an OECD average of about 7%.

**Estonia decentralised model for housing development and support faces challenges due to low local administrative capacity although increasing support through digitalisation is envisaged.** The state provides public funding support (subsidies, guarantees, loans) while local authorities are responsible for housing support, spatial planning and land policy implementation. The OECD recently pointed out significant limitations ([269]), such as the lack of policy coherence between national and local levels and the low administrative capacity of local authorities. The creation of *Maa-ja Ruumiamet* (Land and Spatial Development Board) in 2025, harnessing digitalisation, aims to rationalise and

([268]) Land tax | Estonian Tax and Customs Board.

([269]) Adapting land use and spatial planning to shrinkage in Estonia: Shrinking Smartly in Estonia | OECD, 2022

foster best practice, facilitate access to expertise and improve implementation of planning decisions. This reform can build on Estonia's fully digitalised building permit system, which allows the same project to be evaluated simultaneously by all public authorities. Lastly, according to the World Bank, Estonia was among the most performant Member States as regards construction regulation ([270]).

**Estonia's housing policy is also characterised by the search to attenuate territorial development gaps**. These gaps pose a significant challenge for Estonia, reflected for housing in the proportion of vacant housing units in rural areas from 16% in 2010 to 25% in 2024 and an annual abandonment rate of 0.7%), representing a worrying trend (see Annex 18). Low incomes and low property values in rural areas also hinder investment in the renovation of the existing stock to prolong its duration. Several measures have been put in place, such as a specific co-loan scheme without collateral for households, or state financial support for municipal build-to-rent schemes in rural areas. Complementary support from EU funds was also directed to municipalities, with EUR 23.4 million supporting the construction of housing for people in need of assistance in 2023. In the previous programming period, an EU-co-financed programme (around EUR 9.4 million) also supported the adaptation of over 2 000 homes for persons with disabilities. Estonia is also working with the European Investment Bank on a major project (1 000-1 500 affordable new rental dwellings) outside the main cities to balance regional development.

## Vulnerable groups

**Housing affordability pressures are particularly pronounced for low-income and single-parent households.** In 2024, while 8.6% of the population had housing costs exceeding 40% of disposable household income (slightly above the EU average of 8.2% and 3.7 percentage points (pps) higher than in 2022), this rate rose to 26.8% among single parents, well above the EU average of 14% ([271]). Among people at risk of poverty, the housing cost overburden rate also increased sharply by 10.7 pps to 29.6%, reflecting limited access to affordable housing. Single parents at risk of poverty in Estonia allocate one of the highest shares of disposable household income to rent in the EU (46.7% vs 32.3% in 2024), up significantly from 29.3% in 2015. Rising housing costs have contributed to a deterioration in housing conditions, with the share of households living in overcrowded dwellings increasing to 18.4% in 2024, 5.7 pps higher than in 2020.

**Housing vulnerability in Estonia is closely linked to housing tenure and dependence on municipal support, with tenue status strongly correlated with the risks of poverty and social exclusion.** In 2024, the at-risk-of-poverty-or-social-exclusion (AROPE) rate was lowest among homeowners with a mortgage or loan (8.1%; EU: 9.6%), while it was substantially higher among owners without a mortgage (23.5%; EU 18.4%). Tenants renting at market price recorded an AROPE rate of 31.2% (EU: 30.8%), rising to 41.2% among those renting at a reduced price or free of charge (EU: 38.4%). The at-risk-of-poverty (AROP) rate among tenants stood at 29.3% (EU: 25.6%), compared with 19.1% among homeowners (EU: 12.7%).

**Housing affordability pressures are particularly pronounced in large urban areas**. A recent study led by the Ministry of Climate found that the availability of affordable housing was limited in the urban regions of Tallinn, Tartu and Pärnu ([272]). Housing prices and rents have increased significantly faster than incomes, exceeding the average financial capacity of households, with particularly adverse effects on young people and low-income households. For this sector of the population, this trend contributes to spatial inequalities, encourages outward migration from city centres and delays household formation and housing-related investment. In contrast, many households in rural areas are locked into housing with a very low residual value.

([270]) Housing in the European Union: Market Developments, Underlying Drivers, and Policies, 2025, p 62.

([271]) The overburden rate should be read together with the tenure structure (homeowner, tenants), that may differ across country and regions.

([272]) Affordable and accessible housing policy analysis: Taskukohane eluase_Eesti_11-10.pdf.

**For older persons in Estonia, housing challenges are closely linked to owning an ageing home and high poverty risks impeding capacity for investment in renovation**. Older people are more likely to remain in long-standing owner-occupied dwellings, many of which were built several decades ago and are not adapted to accessibility or energy-efficiency needs. Older-age poverty risks are particularly pronounced among single-older-person households, which can limit the ability to cover maintenance, renovation and energy costs (see Annex 6).

**Energy poverty remains relatively limited**. The proportion of households unable to keep their homes adequately warm stood at 3.6% in 2024, well below the EU average of 9.2%, while arrears on utility bills were also lower than the EU average (5.7% compared with 6.9%). However, the proportion of households unable to keep their homes adequately warm is higher among low-income households (6.7 %) and households with older adults (7.9 %).

Municipalities play a key role in housing support, but with limited capacity. Targeted support is provided through emergency shelters, temporary accommodation, day centres, which offer basic services such as meals, hygiene facilities and social work support, and general housing-related benefits. High housing development prices constrain municipal([273]) investment, which the current level of state financial support does not compensate. In 2023, 14 795 people used municipal dwelling services. The most recent partial homelessness count, conducted in 2021, identified just over 1 000 homeless persons. In 2023, 1 836 people stayed in emergency accommodation. Persons with disabilities have among the highest poverty rates (see Annex 12). Although they represented 12.9% of social housing residents in 2021, limited data on affordable and accessible housing restricts the assessment of how effectively municipal social services meet their housing needs across regions.

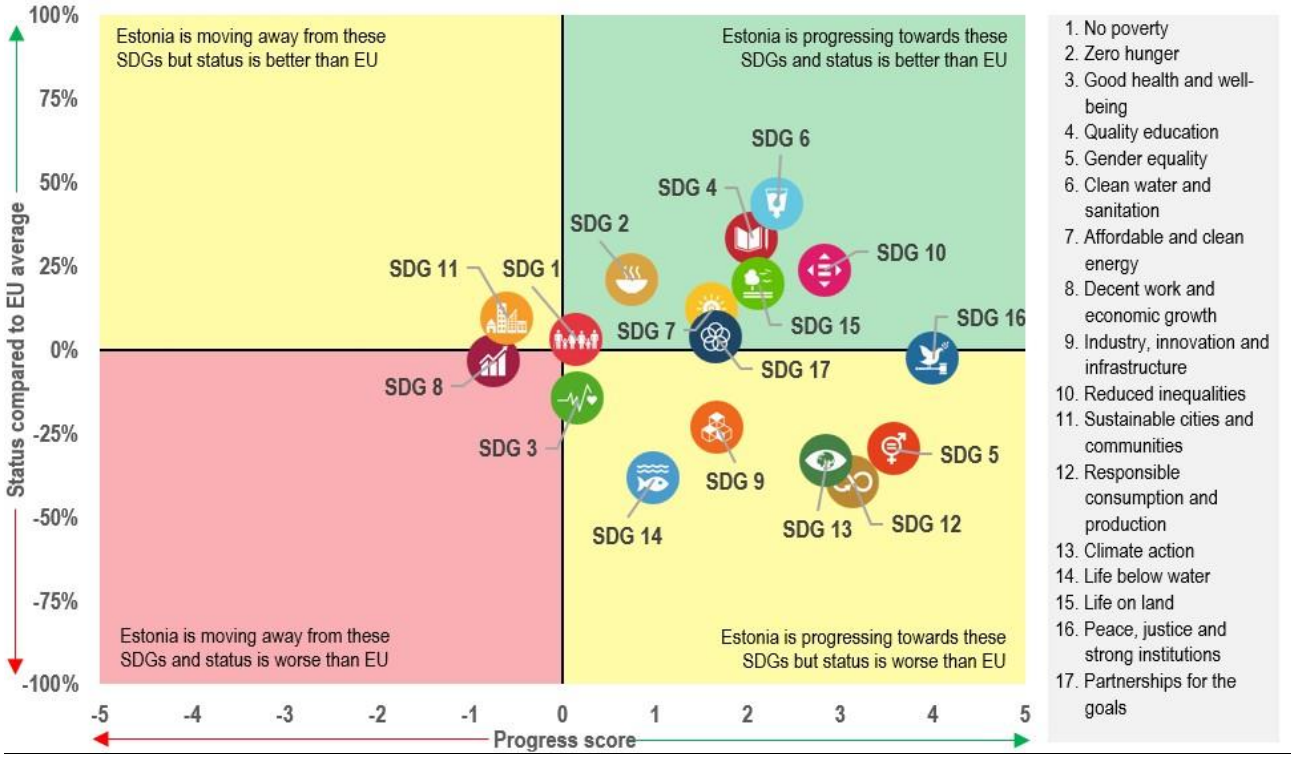
([273])Affordable and accessible housing policy analysis Taskukohane eluase_ Eesti_ 11-10.pdf

**This annex assesses Estonia'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.

**Estonia is performing well and improving on one SDG on *competitiveness* (Quality education, SDG 4).** The country is performing well and improving on adult learning (SDG 4). The participation in learning in the past four years up from 19.6% of the active population aged 25-64 in 2019 to 23.8% in 2025 (EU average: 13.7%).

**However, it still needs to catch up with the EU average on SDG 9 (Industry, innovation and infrastructure) and SDG 8 (Decent work and economic growth).** Estonia's in-work at-risk-of-poverty rate (SDG 8) increased from 10.0% of population aged 18 or over in 2019 to 10.3% in 2024 (EU average: 8.2%). Gross domestic expenditure on R&D (SDG 9) increased from 1.59% of GDP in 2019 to 1.99% in 2024, but is still below the EU average of 2.24%. Similarly, the percentage of households with high-speed internet connection (SDG 9) increased from 57.4% of households in 2019 to 76.3% in 2024, but remains below the EU average of 82.5%. The Estonian recovery and resilience plan (RRP) includes significant reforms and investments to increase access to high-speed internet in rural areas, and to boost innovation and digital

Graph A17.1: **Progress towards the SDGs in Estonia**




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.

transition in businesses. There is further room for improvement in addressing the remaining challenges.

**While Estonia performs well and is improving on several of the SDGs related to *sustainability* (SDGs 2, 6, 7, and 15), the country needs to catch up with the EU average on SDGs 12, 13 and 14.** The area under organic farming (SDG 2) increased from 22.3% of utilised agricultural area in 2019 to 22.6% in 2024 (the EU average: 10.9%). The country is also performing well and has made progress on most of the affordable and clean energy indicators (SDG 7), including on the percentage of renewable energy in gross final energy consumption, from 31.7% in 2019 to 42.2% in 2024 (EU average 25.2%). However, while Estonia's material footprint (SDG 12) decreased from 28.6 tonnes per inhabitant in 2019 to 24.9 in 2024, it is still above the EU average of 13.7 tonnes per inhabitant. Similarly, while the country's air emissions intensity of fine particulate matter from industry (SDG 9) has fallen from 0.24 grams per euro in 2018 to 0.16 in 2023, it is still above the EU average of 0.05 grams per euro.

**Conversely, it is performing well but is moving away from SDG 11 (Sustainable cities and communities).** The population living in households suffering from noise has increased from 8.6% in 2018 to 9.6% in 2023 (EU average 18.1%). Similarly, the percentage of the population suffering from the housing cost overburden rate in cities has increased from 5.1% in 2019 to 8.4% in 2019, but remains well below the EU average of 9.8%.

**Estonia is performing well and improving on four indicators related to *social fairness* (SDGs 1, 4, 7 and 10). It is also improving but still needs to catch up on two indicators for SDGs 3 and 5.** Estonia is performing well and improving on poverty reduction (SDGs 1 and 10), including the relative median at-risk-of-poverty gap (down from 22.0% distance to poverty threshold in 2019 to 18.8% in 2024; EU average: 22.7%). But it still needs to catch up on some gender equality indicators (SDG 5). The average gross hourly earnings of women went from being 21.6% lower than men in 2019 to 18.8% lower in 2024 but this is still above the EU average of 11.1%. On the other hand, tertiary educational attainment (SDG 4) increased from 40.6% of the population aged 25 to 34 in 2019 to 44.3% in 2025 (EU average: 44.8%). While there is an improvement on the self-reported unmet needs for medical care (SDG 3), falling from 15.5% of the population aged 16 or over in 2019 to 8.5% in 2024, this is still above the EU average of 2.5%. The Estonian RRP includes measures to address challenges in primary healthcare and long-term care.

**Estonia is moving away from SDGs and still needs to catch up on one indicator related to *macroeconomic stability* (SDG 8). But the country performs well and is improving on SDG 17 (Partnerships for the SDGs).** Real GDP per capita (SDG 8) declined (from EUR 21 650 in 2019 to EUR 21 250 in 2025) and remains below the EU average of EUR 34 110.([274]) The general government gross debt (SDG 17) grew from 9.0% of the GDP in 2019 to 24.1% of the GDP in 2025, but it remains one of the lowest in the EU, well below the EU average of 81.7%.

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

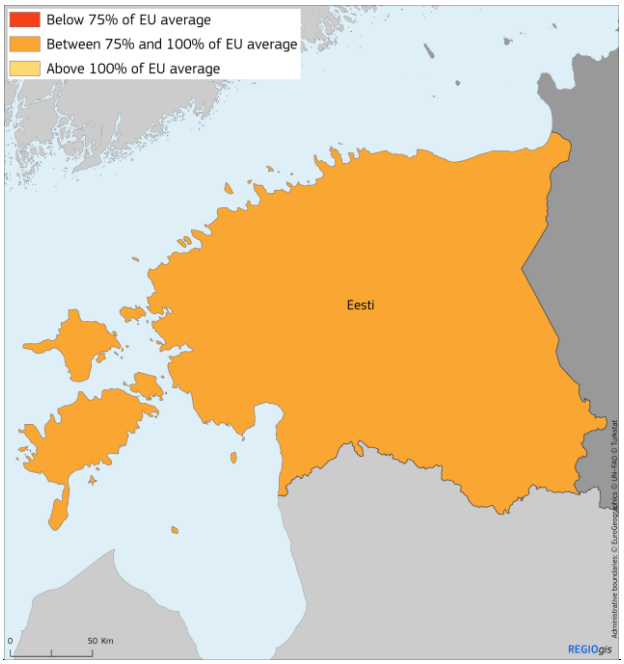
([274])Adjusted for inflation using a chain-linked methodology and with 2020 serving as the reference point.

## Regional development trends

**Estonia's convergence on the EU average GDP per head since its accession to the EU has been driven mainly by the stronger performance of the regions hosting its two largest cities, Tallinn and Tartu**. Over the past two decades, Estonia's GDP per head has grown significantly, rising from 55% of the EU average in 2004 to 79% in 2024 (in purchasing power standard, PPS), reflecting substantial long-term economic convergence (Map A18.1). There are persistent territorial disparities: all NUTS 3 regions, except the capital region (107%), are well below the EU average in GDP per head, with rates ranging from 51% in Kesk-Eesti to 63% in Lõuna-Eesti.

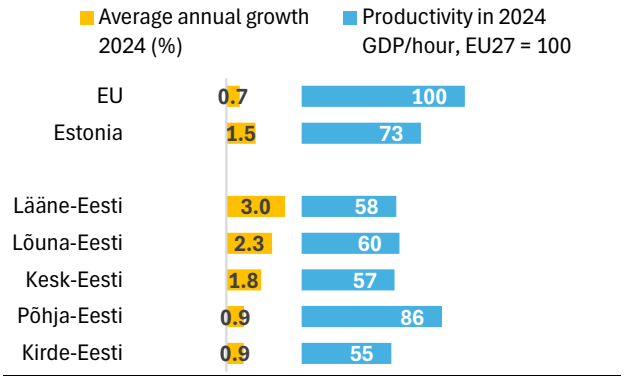
**Over the last decade there has been regional convergence in the country, but labour productivity has been sluggish.** This trend partly reflects a slowdown in the capital region. Along with Kirde-Eesti, these two areas were the only ones that registered real GDP per head growth far below the EU average (EU 1.5% vs 0.9% for both areas) between 2014 and 2024. Labour productivity in all regions remains significantly below the EU average (Graph A18.1, with differences in productivity across regions among the most pronounced in the OECD([275]). Strong wage growth has contributed to rising unit labour costs in recent years, weakening cost competitiveness.

Map A18.1: **GDP per head compared with the EU average (NUTS2).**




2021-2023 average GDP per head in purchasing power standard compared with the EU average.
***Source:*** Commission calculations based on Eurostat 16 July 2025 data

Graph A18.1: **Labour productivity growth (2014 – 2024) and labour productivity (2024) per hour worked; NUTS 3 level**




***Source:*** Commission calculations based on Joint Research Centre (JRC) data

([275])OECD (2025) Strengthening Place-Based Regional Development Policy in Estonia (EN)

Table A18.1:**Main development trends, challenges and the concentration of resources**

| | Main development trends |
|---|---|
| **Transition regions (population 1,37 million)** | Estonia is a single NUTS 2 region. Large disparities exist at NUTS 3 level, with only the capital region above the EU average in GDP per head (PPS). The key challenge, particularly outside the capital, is to boost labour productivity and sustain growth amid declining cost competitiveness. |
| **Specific territories** | Regions on the eastern border are faced with particular challenges. **Kirde-Eesti** is undergoing major economic and social transformation as oil shale-based energy production is phased out. The region, which has a large Russian-speaking populatoin, has seen a significant fall in its population. However, there are opportunities for diversifying into other industrial acitivities thanks to a strong industrial base, accumulated know-how, relatively good transport connectivity, regional university colleges, and a workforce transitioning out of fossil fuel industries. It is therefore crucial to continue and consolidate the economic transformation that began with support from the Just Transition Fund. Louna Eest includes Estonia's second-largest citiy, Tartu, as well as Kagu/Eesti, which cimprises some of the most peripheral parts of Estonia. These areas face challenges linked to low population density and demographic decline, including difficulties in accessing basic services as well as weaker transport and energy connectivity. The **islands and coastal areas** benefit from tourism, but their reliance on ferries and, on the two larger islands air services, can complicate access to services, including healthcare. Differences in settlement patterns, infrastructure and connectivity mean that these regions are more sensitive to disruptions, highlighting the importance of strengthening regional resilience and the continuity of essential services. **The capital region** and, to a lesser extent, other urban areas face increasing congestion driven by urban sprawl, alongside growing challenges in climate adaptation, urban resilience, crisis preparedness and population protection. |
| **Transport and energy challenges** | The flagship TEN-T project in the region is Rail Baltica, supported primarily from the Connecting Europe Facility, as well as SF, RRF, and considerable state budget support. More broadly, promoting a modal shift away from road transport, further decarbonising transport, and ensuring that the transport network is consistent with military mobility needs remain relevant objectives. Improving the take-up and effectiveness of rail services, other public transport and light mobility would help to resolve a number of regional development bottlenecks. |

***Source:*** European Commission based on Eurostat data; categories of regions based on Map A18.1

## Key challenges for regional competitiveness

**Estonia's research and innovation system is characterised by relatively low R&D intensity and a strong concentration of research capacity in the capital region and Tartu.** R&D expenditure in Estonia remains below the EU average (2.2%) at 2% of GDP in 2024. Regions outside main urban centres lack coherent innovation ecosystems, including adequate R&D supply, tailored business support services and skilled professionals, which limits firms' ability to innovate and diversify ([276]). However, several regional institutions and players have the potential to play a stronger role in place-based innovation ecosystems, particularly those in more remote regions. These include regional university colleges, which already play a significant role in regional development, particularly in Kirde-Eesti and Lääne-Eesti, located further from the innovation poles of Tallinn and Tartu. There is also room to better anchor these bodies into national innovation and regional development policies.

**Estonia's demographic trends are characterised by population growth in the main urban centres of Tallinn and Tartu and population decline in most other regions.** Between 2001 and 2021, the population increased by 14.9% in the capital region, one of the steepest increases in the OECD, but declined

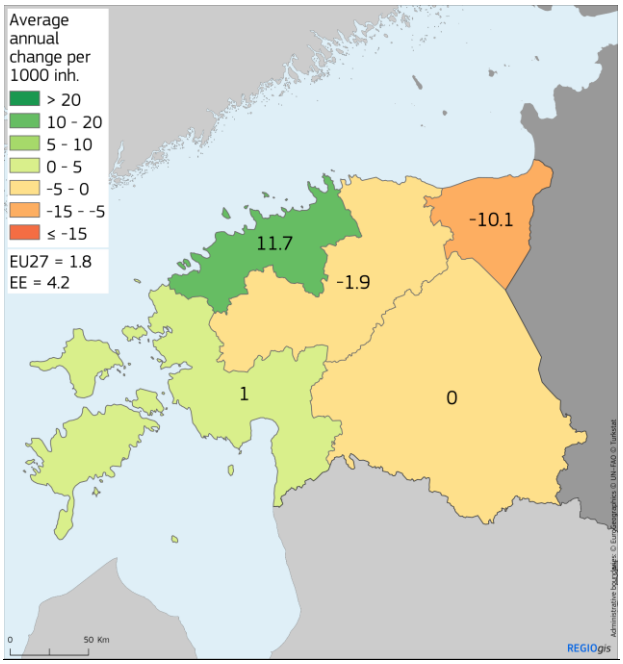
([276])Strengthening Place-Based Regional Development Policy in Estonia, OECD, 2025.

by 16.5% in the rest of the country ([277]). A continued pattern of population decline affects most regions: growth or relative stability is concentrated in the capital region and Lõuna-Eesti (Tartu), and the greatest population losses are observed in Kirde-Eesti (A18.2). The latest population projections from Statistics Estonia show that, over the next 25 years, the population will decline in all counties, except Harju (capital region) and Tartu County, suggesting a further concentration of the population in the two largest urban areas ([278]). Harju County alone makes up almost half of Estonia's population ([279]). Outmigration of the working-age population (15–39) has been particularly pronounced in Kirde-Eesti, while the capital region recorded strong net in-migration in this age group, exacerbating demographic and economic polarisation.

**Estonia's eastern border regions – particularly Kirde-Eesti (Ida-Viru) and parts of Lõuna-Eesti – face serious structural and demographic challenges** ([280]). Kirde-Eesti is undergoing economic restructuring linked to the phase-out of oil shale-based energy production and has experienced sustained population decline and high unemployment. Although Lõuna-Eesti includes Estonia's second-largest city, Tartu, it also comprises extensive low-density and rural areas, particularly in Kagu-Eesti, that are affected by ageing and outward migration. The just transition plan is being implemented in Kirde-Eesti to support economic diversification and reskilling as part of the energy transition. In Kagu-Eesti, the World Bank Catching-up Regions Initiative has supported local authorities in identifying long-term development priorities and strengthening project preparation and implementation capacity. These initiatives illustrate differentiated, place-based approaches to address long-term development needs in Estonia's eastern border regions.

**Diverging demographic trends create distinct development challenges across regions.** In regions with shrinking populations, there is more pressure on labour supply, the provision of public services and local administrative capacity. Additionally, existing infrastructure, which was often built to accommodate larger populations, requires costly changes in relation to the reduced demand ([281]), posing challenges to the 'right to stay'. By contrast, rapidly growing urban areas face challenges related to population growth, infrastructure demand and competing land-use needs.

Map A18.2: **Population growth, 2015-2024 (average annual change)**




***Source:*** Eurostat

**Tertiary educational attainment in Estonia presents strong regional disparities, with the two biggest urban areas having nearly twice the share of highly educated residents as other regions** ([282]). Higher education and vocational institutions are concentrated in Tallinn and Tartu. Limited post-secondary education options in other regions encourage outmigration of young people. This limits the creation of and access to quality jobs ([283]). Peripheral regions also face greater difficulties in attracting qualified staff, and the general shortage of teachers will

([277]) Regionaalarengu programm 2025-2028, Regionaal- ja põllumajandusministeerium, 2025.

([278]) Statistics Estonia, 2024.

([279]) Population, Statistics Estonia, 2026.

([280]) Communication on the EU's eastern regions bordering Russia, Belarus and Ukraine, European Commission, 2026.

([281]) Shrinking Smartly in Estonia: Preparing Regions for Demographic Change, OECD, 2022.

([282]) Education, Statistics Estonia, 2025.

([283]) Strengthening Place-Based Regional Development Policy in Estonia, OECD, 2025.

Table A18.2:**Key regional indicators (at NUTS 3 level) in Estonia**

| | GDP per head (PPS, index) | Population growth | Net migration of population aged 15-39 | Real GDP per head growth | Productivity: GDP (PPS) per hour worked (index) | Real productivity growth (per hour worked) | Population aged 20-64 | Access to healthcare - Rural areas | Access to primary schools - Rural areas |
|---|---|---|---|---|---|---|---|---|---|
| | EU27=100 | Average annual change per 1000 residents | Average annual change per 1000 residents aged 15-39 | Average annual % change | EU27=100 | Average annual % change | % of total population | Population within 10 minutes by car from nearest hospital (%) | Children under 15 within 15-minute walk to primary school (%) |
| | 2024 | 2015-2024 | 2014-2023 | 2014-2024 | 2024 | 2014-2024 | 2025 | 2023 | 2023 |
| EU | 100 | 1.8 | 7.1 | 1.4 | 100.0 | 0.7 | 58.3 | 30 | 34 |
| Estonia | 79 | 4.2 | 11.5 | 1.4 | 73.1 | 1.5 | 57.7 | 14 | 30 |
| Põhja-Eesti | 106 | 11.7 | 22.7 | 0.7 | 85.9 | 0.9 | 59.9 | 12 | 22 |
| Lääne-Eesti | 51 | 1.0 | 6.7 | 2.4 | 57.8 | 3.0 | 55.6 | 7.0 | 38 |
| Lõuna-Eesti | 62 | 0.0 | 1.5 | 2.7 | 60.2 | 2.3 | 56.9 | 32 | 22 |
| Kesk-Eesti | 49 | -1.9 | 2.2 | 1.2 | 56.5 | 1.8 | 55.0 | 11 | 33 |
| Kirde-Eesti | 49 | -10.1 | -6.7 | 0.7 | 54.7 | 0.9 | 53.9 | 13 | 31 |

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.
The 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 and JRC

make it harder to maintain good-quality education in these areas in the future (see Annex 13). Together, these trends risk undermining the ability of regions to build and retain human capital, exacerbating existing territorial disparities and intergenerational inequalities ([284]).

**Estonia faces a decline in public transport use and inadequate access to jobs and services, particularly outside urban areas** ([285]). Key challenges include rising car use in urban areas and the difficulty in providing cost-effective services in sparsely populated regions. These challenges are aggravated by weak integration between passenger rail, long distance coach, regional and local bus networks ([286]) (see Annex 7).

**Regional disparities persist in access to social and healthcare services and people's satisfaction with these services**. In rural areas, healthcare facilities are often less accessible than the EU average for rural regions ([287]). Estonia is one of the Member States where distance to healthcare services contributes to unmet healthcare needs (Table A18.2). This suggests there is scope to improve service provision in rural areas and islands, particularly in primary care ([288]) and transport connectivity. These challenges are compounded by acute shortages of healthcare workers, in particular general practitioners and mental health specialists. Over half of general practitioners are aged over 60, and the risk of shortages is greatest in rural areas ([289]) (see Annex 15).

**Large urban areas face housing affordability challenges, while in the rest of the country housing issues relate more to housing quality and availability.** Estonia's housing challenges reflect a widening territorial divide between dynamic large urban centres and other

([284]) Strengthening Place-Based Regional Development Policy in Estonia, OECD, 2025.

([285]) Ühistranspordireform. Kontseptsioon, Regionaal- ja põllumajandusministeerium, 2026.

([286]) Ibid.

([287]) 14% of the population in rural areas lives within a 10-minute drive from a hospital compared with the EU average of 30% in rural areas.

([288]) Primary Health Care Development Plan 2035.

([289]) Tervishoiutöötajatega seotud trendid Eestis, Arenguseire keskus, 2025.

regions of the country. In active housing markets, such as Tallinn, Tartu and Pärnu, housing prices, rents and running costs have risen faster than household income. This reduces affordability and increases inequality, particularly for lower-income households and young people. Continued population concentration in the capital region further intensifies these dynamics. By contrast, shrinking regions face an undersupply of quality housing alongside low attractiveness and dereliction, despite relatively favourable price-to-income ratios ([290]). Efforts to regenerate housing are hampered by high vacancy rates, weak and illiquid housing markets, limited access to finance, limited renovation incentives and an ageing, energy-inefficient housing stock. This reduces the ability of regional centres to attract and retain residents and skilled workers, ultimately weakening their growth potential ([291]).

**Regional disparities in access to finance remain a challenge.** Companies located outside major urban centres often face greater difficulties in obtaining loan capital for investment, partly due to the low market value and limited liquidity of collateral assets ([292]). Similar constraints apply to residential real estate collateral ([293]). Limited access to finance may also restrict businesses' ability to co-finance investments and participate in broader investment and development initiatives.

**Coastal areas face both challenges and opportunities linked to the sustainable blue economy**. Coastal tourism accounts for the largest share of both added value (34%) and employment (53%) in the blue economy. It is followed by port activities (as value added) and marine living resources (as employment) ([294]). On the western coast, tourism and fisheries are major employers but remain constrained by strong seasonality, environmental pressures and declining fish stocks, which limits productivity growth and income stability. Beyond connectivity challenges Estonian islands suffer from low economic diversification, and they are particularly exposed to the impact of climate change. Harju County, hosting the ports of Tallinn and Muuga, is a national logistics and energy gateway. It faces challenges related to port capacity, digital logistics, decarbonisation costs and geopolitical and security risks in the Baltic Sea.

**Rural areas struggle to integrate young people into the labour market.** Estonia's high youth unemployment rate (19.4%, EU: 15.2%, 2025) is not just a rural phenomenon. However, rural areas tend to record higher shares of young people neither in employment nor in education and training (NEET) and higher rates of early leavers from education and training (Table A18.3). These trends constrain future labour supply and weaken regional competitiveness. In regions undergoing economic restructuring, such as Kirde-Eesti, analyses highlight the importance of aligning education and skills development with emerging labour market needs to support job creation and economic diversification. Improving access to education and employment opportunities is therefore critical for the long-term economic viability of these regions ([295]).

([290]) Eesti taskukohase ja kättesaadava eluasmepoliitika võimaluste analüüs, Kliimaministeerium 2025.

([291]) Ibid.

([292]) Regionaalarengu programm 2025-2028 ja programmi rahastamiskava.

([293]) Ministry of Agriculture and Rural Affairs, 2025.

([294]) Estonia - EU Blue Economy Observatory - European Commission.

([295]) Analüüs. Investeeringud Ida-Virumaale eeldavad tarka hariduskorraldust | Arvamus | ERR

Table A18.3:**Main socio-demographic indicators by degree of urbanisation in Estonia, 2024**

| | Cities | Towns and suburbs | Rural areas |
|---|---|---|---|
| Population with high educational attainment<br>% of population aged 25-64 | 49.5<br>46.5 | 38.5<br>32.3 | 34.3<br>27.7 |
| Early leavers from education and training<br>% of population aged 18-24 | 9.9<br>8.0 | 11.8<br>10.1 | 10.6<br>9.6 |
| NEET 15-34: Neither in employment nor in education or training<br>% of population aged 15-34 | 9.8<br>11.2 | 12.6<br>12.3 | 12.0<br>13.2 |
| At-risk-of-poverty or social exclusion rate (AROPE)<br>% of population | 21.2<br>21.3 | 22.9<br>20.3 | 22.1<br>21.3 |
| Unemployment rate<br>% of labour force | 8.1<br>6.8 | 8.3<br>5.6 | 6.3<br>5.3 |
| Housing cost overburden<br>% of total population | 10.4<br>9.8 | 7.2<br>7.8 | 7.7<br>6.3 |
| Severe housing deprivation rate<br>% of population | 2.2<br>4.9 | 2.9<br>3.2 | 3.8<br>3.5 |

***Note**: The overburden rate should be read together with the tenure structure (homeowner, tenants), that may differ across country and regions.*
***Source:*** Eurostat

**Rural areas in Estonia have the potential for renewable energy generation as the country transitions away from oil shale-based production.** However, the reliability of the electricity network is a particular concern in rural areas, and while strengthening the electricity grid would improve well-being, network service prices need to remain affordable ([296]). Tapping into the country's large potential for solar and wind power – particularly in rural and sparsely populated areas – could support regional development and contribute to EU-wide economic cohesion and the green transition ([297]). Offshore wind development in the Gulf of Riga and around the islands could deliver significant gains in energy security, industrial investment and regional development.

**Municipalities face challenges ranging from limited service provision to financial sustainability.** Despite administrative reforms in 2017, many municipalities remain small in size and have limited administrative, financial and human capacity. Limited local fiscal autonomy further constrains the ability of many municipalities to deliver services efficiently and implement place-based development policies([298]). Highly fragmented water services, combined with population decline, reduces efficiency and results in large regional disparities in water prices. This leads to increasing difficulties in maintaining reliable, high-quality and environmentally compliant services([299]). Fragmented governance and weak coordination, inadequate stormwater management, and insufficient climate adaptation, lead to growing damage to public infrastructure and heightened risks in urban areas([300]). Limited cooperation between municipalities further contributes to fragmentation in the provision of basic services, such as water services.

**Estonia's regional competitiveness is affected by limited coordination of sectoral policies and low fiscal autonomy at local level.** National policies often fail to take into account regional differences ([301]): territorial considerations are not systematically embedded in sectoral policy design, budgeting and implementation due in part to the limited availability and use of regional data. As a result, central government regional spending and investment decisions are not consistently aligned with a shared vision for regional development, and ministries continue to pursue separate approaches. These coordination challenges are compounded by the low fiscal autonomy of

([296])ENMAK 2035, Kliimaministeerium, 2025.

([297])Ninth report on economic, social and territorial cohesion, JRC, 2024.

([298])Strengthening Place-Based Regional Development Policy in Estonia, OECD, 2022; Shrinking Smartly in Estonia, OECD, 2022.

([299])Veeteenuse reform, Kliimaministeerium, 2025.

([300])Floods, Governments Office, 2025, Estonian cities, farmers must adapt to increasingly heavy rainfall, ERR, 2025.

([301])Strengthening Place-Based Regional Development Policy in Estonia, OECD, 2025.

municipalities, which is one of the lowest in the OECD ([302]). This limits their ability to allocate resources in line with local needs and to effectively implement place-based regional policies. This fragmentation weakens policy effectiveness from a regional competitiveness perspective and contributes to the continued concentration of economic development in the capital region ([303]). There are emerging civil preparedness needs, such as for emergency shelters and strengthening the resilience of essential services, which could impact municipal capacity and budgets that are already strained.

([302]) Adapting intergovernmental fiscal transfers for the future: Emerging trends and innovative approaches, OECD, 2024.

([303]) National Spatial Plan 2050, 2025.

This Transport Annex presents the state of play and the challenges Estonia faces in the implementation of the trans-European transport network (TEN-T), the European railway traffic management system (ERTMS), and road safety.

**Two European transport corridors run through Estonia, the North Sea – Baltic corridor and the Baltic Sea – Black Sea – Adriatic Sea corridor.** Estonia's railway network is built on the Russian railway gauge (1 520 mm). The TEN-T in Estonia comprises 1 158 km of rail (404 of which are on the core network) and 1 344 km of road (369 of which on the core network). Estonia has no inland waterways on the TEN-T, five airports (including one core airport), eight ports (including one core port) and two urban nodes.

**Passenger rail traffic around Tallinn and the second biggest city Tartu is developing, and lines and rolling stock are gradually being modernised.** Although the rail network – except for Rail Baltica – is considered isolated and exempt from TEN-T requirements, the modernisation efforts will have to continue, for instance for electrification and the removal of level-crossings.

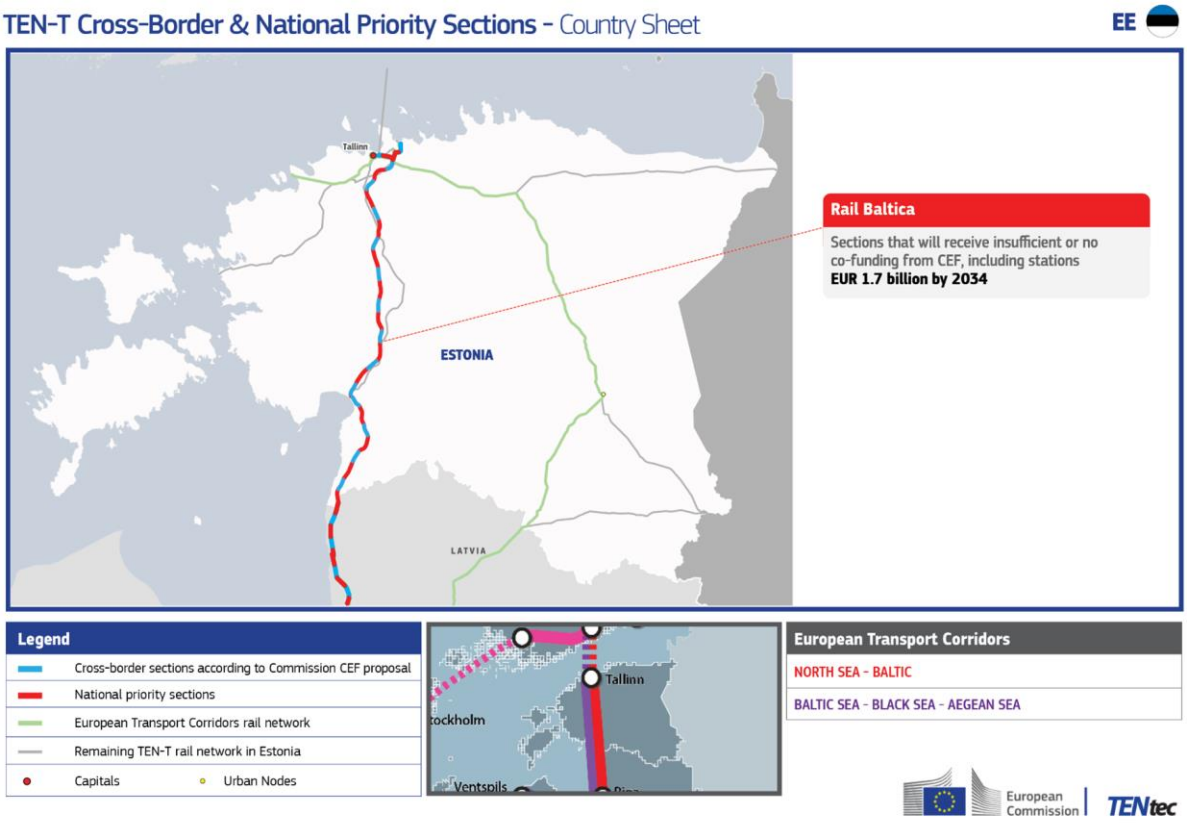
**The largest railway project by far in Estonia and the Baltic states in the next multiannual financial period is Rail Baltica.** Once completed, this railway line will connect the Baltic states to the European railway network at the European standard gauge (1 435 mm). Rail Baltica is also significant for military mobility. Given the significant investment needs of Rail Baltica, a combination of funding programmes should be used for covering the different elements of the project in Estonia.

**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. In this context, it is important to advance efforts towards a comprehensive multilateral agreement among the Baltic states, to strengthen coordination and support smooth cross-border railway operations. Finally, the ERTMS enhances network capacity and operational efficiency, increasing the competitiveness of the rail sector. Only Rail Baltica will have to be ERTMS-equipped, with the costs being included in the total project cost estimates.

**Continuing the implementation of the Rail Baltica mainline and constructing the Ulemiste terminal in Tallinn remains a priority as is the acceleration of the design and construction of the EU gauge railway connection to the Port of Muuga.**

**Estonia has little experience with operating trains on the existing railway network to Latvia and Lithuania.** In addition, a joint model between Estonia, Latvia and Lithuania, on how to operate railway traffic on the Rail Baltica line as a seamless cross-border infrastructure, including traffic management, maintenance and operations, in line with the rules of the single European railway area is still lacking. 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 that a new landmark rail infrastructure such as Rail Baltica does not inherit legacy operational rules.

Map A19.1: **TEN-T Cross-Border & National Priority Sections in Estonia.**




**Road crashes impose an enormous social, economic and health burden on the EU economy.** The external socio-economic costs of fatal, serious and minor injuries have remained persistently high despite the progress made in reducing crash frequency and severity. These resources could otherwise fuel innovation, education, healthcare and other crucial public investments ([304]).

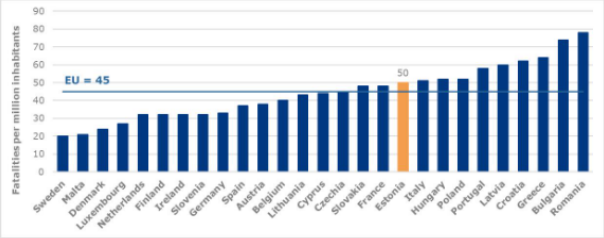
**In 2024, Estonia was above the EU average (45) with 50 road fatalities per million inhabitants.** Compared with the EU average, the distribution of fatalities in Estonia showed a relatively high proportion of fatalities on roads outside urban areas. Data for the period between 2019 and 2024 indicate an increase of 33% in road fatalities was recorded.

**This indicates that Estonia is unlikely to reach the 2030 target of halving the number of road fatalities although it is a small country where the number of fatalities is subject to annual fluctuations.** Possible ways to address this could be by exploring new financial resources for the implementation of delayed road safety measures, with a focus on road infrastructure works ([305]).

([304])Report on the implementation of the EU Road Safety Policy framework at the Mid-Point, COM(2026) 77 final.

([305])More details in Report on the Implementation of the EU Road Safety Policy framework at the Mid-Point – Estonia, SWD(2026) 40 final.

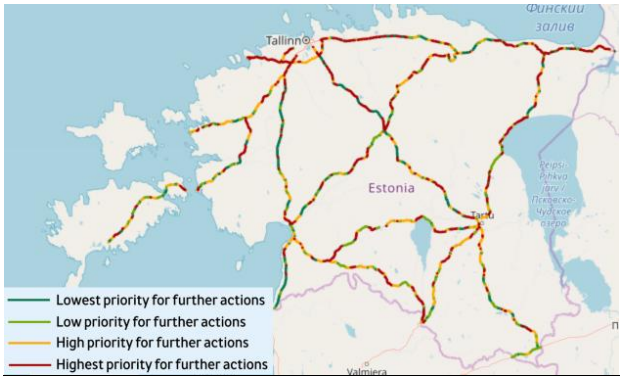
Graph A19.1: **Estonia's road fatalities per million, 2024**




***Source:*** Report at the Mid-Point - Estonia, SWD(2026) 40 final.

The map below presents the roads where the infrastructure safety is poor and where urgent action is therefore required.

Map A19.2: **Estonia's road safety map**




***Source:*** TENtec Information System and TEN-T map library - European Commission