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Recommendation for a COUNCIL RECOMMENDATION

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

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European Commission

Finland

2024 Country Report

#EURO at 25

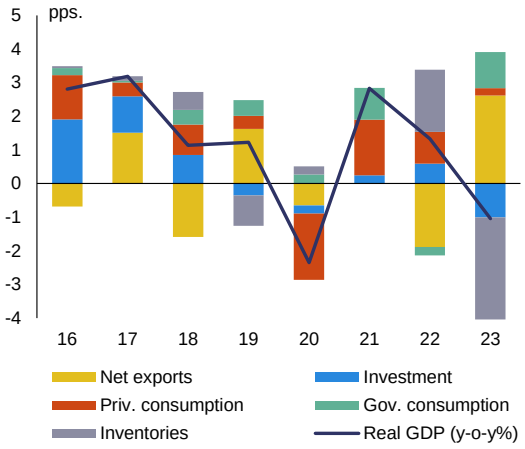
ECONOMIC AND EMPLOYMENT SNAPSHOT

The Finnish economy is facing multiple headwinds

Finland slipped into a recession, with real GDP contracting by 1% in 2023 ([1]). This was in particular due to higher borrowing costs and the impact of high inflation on domestic demand. Weak consumer sentiment weighed on private consumption, while higher interest rates and a more uncertain demand outlook stymied investment, mostly in residential construction (see Graph 1.1). Export growth also entered negative territory as foreign demand for Finnish goods and services decreased. The start of 2024 has been marked by weak business and consumer sentiment, which does not point to a rapid recovery. However, private consumption is set to benefit from several tailwinds in 2024, including receding inflation, tax cuts supporting real disposable incomes, and an anticipated improvement in financing conditions. An acceleration in export growth and increased investment are expected to support a return to growth for the Finnish economy in 2025 (see Annex 20).

Inflationary pressures are abating on the back of falling energy prices. In 2023, HICP inflation dropped to 4.3%, after averaging 7.2% in 2022. Declining energy prices were the main driver of disinflation, which was further helped by a greater reliance on renewables and nuclear power and contained wage growth. In 2024, modest economic growth and falling energy prices are set to pull the HICP rate below 2%. However, an increase in the standard VAT rate scheduled for September 2024, is set to put some upward pressure on prices mostly in 2025.

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



Source: European Commission

The fiscal situation has worsened, resulting in a wider budget deficit and higher debt. The budget deficit increased from 0.4% of GDP in 2022 to 2.7% in 2023. The slowing economy led to a fall in tax revenues, while wage and overall price increases led to a significant growth in government spending. Moreover, wellbeing services counties ([2]), established with a view to generating efficiency gains, have so far exceeded their spending targets. In addition, higher interest rates increased the cost of government financing. The cut in labour taxation, in force since 2024, is set to add additional pressure on fiscal revenues this year. Given that growth in

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

([2]) In the beginning of 2023, an administrative reform transferred responsibility for the organisation of social, health and rescue services from municipalities to 21 newly established 'wellbeing services counties' and the City of Helsinki.

current expenditure is expected to remain strong, the general government deficit is projected to exceed 3% of GDP in 2024. However, in April 2024, the government presented a consolidation package consisting of tax increases and spending cuts amounting to almost 1% of GDP. It is planned to be implemented mostly in 2025 and expected to keep the deficit ratio below 3%. Consequently, due to larger deficit, the general government debt level is forecast to increase more rapidly in 2024 and stand slightly above 82% of GDP in 2025.

Employment has proven resilient but labour-market challenges remain

Employment has proven resilient against a backdrop of weakening economic activity in 2023. The employment rate reached 78.2% in 2023. However, the unemployment rate increased to 7.2% that year, compared with an EU average of 6%. A large part of the unemployment figure is estimated to be structural, reflecting in part a persistent mismatch between the current skills of workers and the skills required by employers. Matching the supply of workers available for work and the skills demanded by employers therefore poses considerable challenges ([3]). In 2024, Finland discontinued the adult education allowance, the impact of which on reskilling and upskilling workers for the changing job market remains to be seen. Finland has adopted labour-market measures that aim to overcome the 'welfare trap' ([4]) by increasing the flexibility of the jobs market and encouraging full-time employment, with the aim of increasing employment by 100 000 people by 2027.

Women continue to face a persistent earnings disadvantage. Finland continues to perform well across most dimensions of the Social Scoreboard accompanying the European Pillar of Social Rights (Annex 14), including on the gender employment gap. However, a large share of women in Finland work in sectors with low earnings potential, such as education, healthcare and social work (38% vs an EU average of 30% ([5])). This may partly explain the persistent gender pay gap, which in Finland remains well above the EU average (15.5% vs 12.7% in 2022) ([6]).

Population ageing is already a heavy burden for the economy

The demographic transition is weighing on the Finnish economy. In 2013-2023, the share of the population aged 65+ rose by 4.5 percentage points to 23.3%, the fifth fastest increase in the EU ([7]). Without net migration, the population would have been decreasing since 2015 ([8]). By 2022, Finland's old-age dependency ratio (the number of people aged 65+ as a share of people aged 20-64) reached 41.2%, the highest in the EU ([9]). These demographic trends vary markedly across regions, with the capital region benefiting from population growth, while some regions face depopulation risks (Annex 17). In the past decade, reforms and a strong jobs market have supported continued growth in the employment rate of the 55-64 age

(3) TEM-analyysi: Työvoiman saatavuus ja kohtaanto 1/2024.

(4) A welfare trap occurs when switching from welfare to paid work is not rational for an individual if the withdrawal of transfer payments implies a very high marginal tax rate, sometimes of up to 100%.

(5) Source: Eurostat (online data code: lfsa_egan2)

(6) Source: Eurostat (online data code: sdg_05_20)

(7) Source: Eurostat (online data code: demo_pjanind)

(8) Economic Policy Council, Economic Policy Council Report 2023, Helsinki, January 2024.

(9) European Commission, Ageing Report 2024.

Box 1:

Finland's competitiveness in brief

Finland's competitiveness relies on a good business environment, access to private capital, and the supply of energy from renewables (see also Annex 12). Furthermore, the Finnish RRP comprehensively tackles several challenges related to energy, including the issuing of permits.

However, competitiveness challenges remain:

- **To increase productivity, Finland should seek greater trade integration**, particularly in the single market, as Finnish exports account for a smaller share of GDP than in other small, open economies.
- **More investment is needed in research and innovation**, as spending on R&D is now lower than a decade ago and is not translating into major productivity gains.
- **Shortages of skilled labour, in part due to lower attainment of tertiary education**, hamper productivity growth.

group ([10]). Considering the shrinking working-age population, securing a skilled labour force will be a key priority ([11]).

Higher productivity is key to sustaining competitiveness

Productivity-aligned wage policies support cost competitiveness. The coordinated two-tier wage-bargaining system tends to contain wage growth, and therefore growth in nominal unit labour costs. There were also notable efforts to align wage and productivity growth in the previous decade under the Competitiveness Pact of 2016. The HICP-based real effective exchange rate has depreciated in recent years, pointing to sustained trade competitiveness ([12]). Moreover, Finland's long-term competitiveness benefits from a good overall business environment, including low regulatory barriers, good access to finance and efforts to speed up the green transition (see also Box 1).

Weak productivity growth reduces the growth potential of the economy. Structural shifts within the economy do not favour strong productivity growth. In recent decades, the Finnish economy has been hit by two simultaneous demand-side shocks: the crisis in the electronics sector and a collapse in trade due to the great financial crisis ([13]). These shocks have been amplified through domestic and international value chains, resulting in a loss of competitiveness. Labour productivity has been on a declining trend following a shift in the economy towards the services sector and a reduction in the size of the manufacturing sector (in particular a reduction in those sub-sectors of manufacturing with higher productivity growth (see Annex 12)). The ICT sector supports growth in labour productivity, although it continues to struggle with shortages of highly skilled labour.

The growth in total factor productivity (TFP) is below the EU average. Spending on R&D, one of the key drivers of TFP, has

([10]) By 2022, the rate had reached 71.5%, which is well above the EU average (62.3%), but below Finland's Nordic peers (Source: European Commission, Ageing Report 2024).

([11]) A third of staff in the wellbeing services counties are expected to retire in the next 10 years, including 33% of practical nurses and 25% of nurses, which are professions in high demand in an ageing society and marked by shortages. (Source: Keva pension forecast 2023).

([12]) European Commission. Alert Mechanism Report 2024.

([13]) OECD, The slowdown in Finnish productivity growth, OECD Science, Technology and Industry Policy Papers, No. 139, February 2023.

not yet recovered to the levels seen before the 2008-2009 financial crisis. However, R&D spending has been on an upward trend since 2017, as the government aims to increase spending on R&D to 4% of GDP by increasing public spending on R&D (up to 1.2% of GDP by 2030) thereby crowding in private funds. A coordination of joint efforts and the supply of skilled labour are essential to achieve this objective ([14]) ([15]). Furthermore, although Finland is acknowledged to be one of Europe's innovation leaders (see Annex 11), the number of patent applications filed from the country seem to be in decline and does not translate into a competitive advantage ([16]) ([17]).

Risks related to private debt and financial stability are contained

The Finnish banking sector is well capitalised and profitable, and households are expected to cope well with higher financing costs. Despite the indebtedness of households and the prevalence of loans at variable interest rates, local households managed to meet their financial obligations in recent years. At the same time, the issuance of new mortgage loans declined, and house prices started falling. This drop is expected to be moderate, as the decline in residential construction is set to limit supply in the near term, while market expectations point to a potential easing in financing conditions later in 2024. By contrast, commercial real estate is facing challenges, in part due to structurally lower demand for office space after the COVID-19 pandemic (see also Annex 18).

Finland is progressing with its ambitious green agenda

Finland's target for carbon-neutrality by 2035 is the most ambitious climate target in the EU. Finland has legislated for both the 2035 carbon-neutrality target and the phase-out of coal by 2029. Efforts are ongoing in each of the main sectors contributing to overall emissions, including energy, industry, transport, and buildings. These efforts all seek to reduce the country's emissions in order to meet Finland's 2030, 2035 and longer-term climate targets. However, increased economic uncertainty and higher interest rates have led many projects to be postponed, in particular in the energy and industry sectors, calling into question Finland's prospects of making further progress on decarbonisation. Finland remains one of the most energy-intensive economies in the EU, due in part to cold weather conditions and the long distances between its population centres.

Finland has the second-highest share of renewables in its energy mix in the EU. Additional renewables capacity is expected to be added in the coming years, mainly in offshore wind power and other renewable energy sources, including solar (see Annex 7). Finland has embarked on an ambitious and far-reaching reform of permitting procedures to facilitate investment in renewables.

([14]) Finnish Productivity Board (2023). Skilled people create productivity: Skills shortage threatens to slow down the effectiveness of R&D investments and productivity growth.

([15]) Business Finland. Foreign Direct Investment (FDI) Barometer 2023.

([16]) The World Bank. The patent applications.

([17]) Finnish Productivity Board (2022). Wages and Competitiveness Depend on Productivity. How Can We Foster Productivity Growth?

Box 2:

UN Sustainable Development Goals (SDGs)

Finland is performing well on most SDGs related to environmental sustainability and on all indicators related to fairness. It is, however, moving away from the targets associated with SDG 1 (No poverty), SDG 4 (Quality education), SDG 11 (Sustainable cities and communities) and SDG 15 (Life on land), despite still being above EU average for all of these SDGs.

Regarding the SDGs related to productivity and macroeconomic stability, Finland's score is above the EU average, albeit showing weakening trends, and Finland faces challenges compared with its Nordic peers.

Overall, Finland performs better than the EU average in 13 out of 17 SDGs. The best performing indicator is SDG 6 (Clean water and sanitation), with substantial and noteworthy progress in the last five years made on SDG 5 (gender equality). By contrast, the gap with the EU average on SDG 12 (Responsible consumption and production) and SDG 14 (Life below water) remains sizeable.

IMPLEMENTATION OF KEY REFORMS AND INVESTMENTS USING EU INSTRUMENTS

Funding from the Recovery and Resilience Facility (RRF) and cohesion-policy funding is mutually reinforcing Finland's efforts to boost its competitiveness and foster sustainable growth. In addition to the EUR 1.9 billion of RRF funding described in Annex 3, cohesion policy provides Finland with EUR 1.9 billion for the 2021-2027 period. Support from these two instruments combined represents around 1.40% of the country's 2023 GDP, compared to the EU average of 5.38% of GDP (see Annex 4).

Under its recovery and resilience plan (RRP), Finland has launched important policy measures that are expected to improve the country's competitiveness. In particular, the RRP contains major reforms for active labour market policies, increasing services for continuous learning and developing skills and making permitting procedures for renewable energy more agile to accelerate the de-carbonisation of the economy. These reforms are supported by substantial investments in Finland's green and digital transition, in increasing the number of places in higher education and increasing expenditure on research, development and innovation (RDI).

The implementation of Finland's Recovery and Resilience Plan is delayed. Finland has submitted one payment request, corresponding to 20 milestones in the plan and resulting in an overall disbursement of EUR 202 million on 1 March 2024 (see Annex 3). However, the first payment request only concerned milestones achieved until 2021, highlighting the need to catch up with the agreed payment schedule.

Cohesion-policy funding helps tackle Finland's growth and competitiveness challenges and support the country's territorial and social cohesion. Under the 2014-2020 cohesion programming period, support focused on research, innovation, employment, social inclusion and education. The funds supported, for example, the creation of 12 610 new jobs and the setting up of 584 new companies in Finland. For the current 2021-2027 programming period, cohesion policy will further support Finland's competitiveness, sustainable growth and social cohesion, improving living and working conditions through programmes in the areas of RDI, digitalisation and SMEs' growth, accelerating the green transition, as well as training, upskilling and reskilling of the labour force.

The RRP helps Finland's green transition

Finland's RRP is helping the country towards achieving its ambitious target to be carbon neutral by 2035. Including REPowerEU, more than half of the plan's funding contributes to investments in the green transition. Measures included in the plan aim to reduce carbon emissions in energy, industrial production, transport and buildings, all while supporting RDI for the green transition. Measures also include boosting the generation of renewable energy, decarbonising industry, reducing emissions from buildings, and promoting low- and zero-emission vehicles in the transport sector.

The REPowerEU chapter includes a major new reform to overhaul Finland's

environmental permitting system, streamlining existing processes and centralising them under a single national authority. Moreover, the chapter includes additional investments in clean energy, in R&D for the green transition, and for wind power in Åland.

Other EU funds add significant support for the green transition in Finland. For example, the European Regional Development Fund (ERDF) focuses on innovation and accelerating the green transition in Finland, while the Just Transition Fund provides support to regional economies that need to phase out fossil fuel-based economic activities. Synergies between the RRP and cohesion-policy funding have been identified with similar objectives but without overlap in individual recipients of funds.

Increasing competitiveness through investments in research and innovation

Promoting the digital transition is a cross-cutting theme across Finland's RRP. Since 2021, Business Finland and the Research Council of Finland have launched calls to allocate RRF funding to companies and research infrastructures. The calls will support projects that promote investments in RDI infrastructure and the green transition for sustainable growth and digitalisation. Specific measures in the RRP focus on digital infrastructure, accelerating the digital and data economy, and digital security (see Annex 13). The objective of Finland's Digirail project is the digitalisation of the railway system, making it compatible with the Pan-European Rail Traffic Management System (ERTMS). Furthermore, by the end of 2023, Finland's RRP had supported the construction of fibre optic networks in 11 regions and 32 municipalities, contributing to the EU objective of providing high speed internet connections for everyone by 2030. This investment complements the funding for the village networks from the European Agricultural Fund for Rural Development (EAFRD) in 2023-2027. Finland's real-time economy (RTE) programme is building a national digital environment for businesses, allowing real-time and secure transmission of orders, e-invoices, digital receipts and business data between parties. The e-invoicing function is now operational.

Investing in skills, education and social services

The labour-market measures in Finland's RRP build on European Social Fund (ESF) support to increase labour-market participation between 2014-2020. The ESF support focused on young people, the unemployed and older people, as well as on marginalised groups such as migrants and people with disabilities.

The RRP helps to address major challenges in Finland's jobs market. The measures in the Finnish RRP aim to address skills and labour shortages in key sectors and encourage those who are currently out of work to find jobs. The plan supports so-called one-stop-shop youth centres across Finland, which support people under the age of 30 in matters related to work, education and everyday life. Finland overhauled its employment assistance rules in May 2022, with the launch of its so-called Nordic model of employment services. One part of the model includes a new digital information system for public-employment services while another part involves the recruitment of additional staff to provide greater assistance to jobseekers. At the same time the model requires people who are unemployed to be more active in job searches. The plan also contains the work ability programme, which aims to eliminate obstacles to the employment of people with partial work ability and develop services to support the work ability of people with partial work ability. To help

Box 3:

Combined action for more impactful EU funds

To boost economic growth and maximise the impact of EU funding, Finland's RRP includes measures that support investments under other EU instruments, creating important synergies and complementarities between the various funds. For example, the Just Transition Fund and the RRP work together in supporting Finland's phase-out of fossil fuel-powered energy generation. The Just Transition Fund is contributing to the reduction of Finland's reliance on peat in favour of clean energy sources, with investments to diversify and revitalise the local economies of the most affected regions. The RRP, in turn, helps accelerate the phase-out of coal in energy generation by financing green alternatives, while at the same time stimulating economic activity. Both instruments contribute to the green transition of the energy sector by focusing on different fuel sources (peat and coal) and supporting investments that benefit those impacted by the transition.

attract foreign talent and address skills and labour shortages in certain sectors, the Aliens Act was amended in February 2023 by streamlining the permit processes for work- and education-based immigration. Furthermore, the law phasing out the 'unemployment tunnel' (the right to additional days of unemployment security for those close to the retirement age) came into force in the beginning of 2023 and is expected to decrease pre-retirement unemployment. The RRP also strengthens mental health and work ability by disseminating effective means and methods that promote mental health for the use of workplaces and occupational health care services.

EU funds are supporting education and skills in the labour force. The European Social Fund Plus (ESF+) will continue to support reskilling, upskilling and adult learning initiatives in 2021-2027. The RRP complements this support by reforms and investments in continuous learning. Under the RRP, Finland has set up a new Service Centre for Continuous Learning and Employment, which aims to address the skills mismatch by providing new opportunities for reskilling and upskilling. A set of RRP investments further supports the digitalisation of continuous learning, making it more accessible online.

The comprehensive overhaul of the social welfare, healthcare and rescue services constitutes a key reform under Finland's RRP. The reform aims to improve resilience and equal access to care, while improving the cost effectiveness of the system. The responsibility for organising social welfare, healthcare and rescue services was transferred from municipalities to 22 ([18]) newly established wellbeing services counties in the beginning of 2023. The related investments to support this transfer improve the knowledge base for health and social services by: (i) developing monitoring and analysis methods; and (ii) expanding digital social and health services. As a result, delays in service delivery, further accumulated during the pandemic, are expected to decrease.

([18]) 21 wellbeing services counties and the city of Helsinki are responsible for organising health, social and rescue services within their own areas.

FURTHER PRIORITIES AHEAD

Finland faces challenges related to public finances, healthcare, long-term care and the jobs market. Fiscal policy needs to ensure that public finances are on a sustainable path, which would be helped by increasing the overall productivity and efficiency of social services. Addressing skills mismatches and labour shortages is key to increase potential output. Easier and more equal access to care services would strengthen social resilience. Tackling these challenges, both at the national and regional level, will help increase Finland's long-term competitiveness and ensure the resilience of its economy.

Public finances require further consolidation

Finland needs to consolidate to ensure public finances are on a sustainable fiscal path ([19]). Such adjustments might be helped by improving tax revenues. Low economic growth and the limited scope for wage increases in Finland in the past decade have reduced growth in tax revenues. The tax-to-GDP ratio has decreased from 43.5% in 2013 to 43.0% in 2022 (see also Annex 19), in part due to cuts in social security contributions. In Finland, revenues from labour taxes have been close to the EU level (21.0% in Finland versus 20.3% in the EU in 2022), despite the need to finance a rather wide and generous social security system. However, alternative tax revenue sources that tend to be less distortionary and less detrimental to growth (including pollution and property taxes) account for a relatively smaller share of total tax revenues, including when compared with the EU aggregated level. Increases in capital taxation and reductions in tax expenditures could also provide additional revenues.

Recent cuts in income tax and social security contributions are set to be compensated with a delay. Those cuts have the positive impact to reduce the tax wedge. However, no comparable compensating measures to raise revenue were included in the budgetary plan for 2024. The revenue losses stemming from the cuts in income tax and social security contributions are estimated at EUR 1.5 billion or 0.5% of GDP in 2024. The indexation of income tax brackets is also set to reduce income tax revenues by approximately EUR 0.6 billion each year. Given the deterioration in the public finances, the government announced tax increases in April 2024, most notably a hike in the standard VAT rate from 24% to 25.5%, which is set to yield around EUR 1 billion in extra revenues. Furthermore, the government proposed an additional package of permanent spending cuts amounting to approximately EUR 1.4 billion or 0.4% of GDP, which are mostly set to come into force in 2025. In addition, the government expects its planned reduction in unemployment benefits to encourage around 100 000 people who are currently not working to find a job, thus reducing social spending and increasing revenues from income tax. These second-round effects are projected by Finland to yield about EUR 2 billion by 2027. Furthermore, the government has frozen the rates for several benefits paid out by Kela (the

([19]) Ministry of Finance outlook review: 'An innovative and sustainable Finland', 2022.

Finnish social security institution) at their 2023 level until 2027 ([20]).

The reform of social and healthcare services does not yet fulfil expectations to contain spending thanks to efficiency gains. Due to higher-than-projected spending on wages and general increases in the price of goods and services, almost all the newly established wellbeing services counties slipped into deficit in 2023. The total deficit has been EUR 1.6 billion or EUR 1.0 billion higher than initially projected ([21]) ([22]). To cover additional spending in 2023, the wellbeing services counties are set to receive an additional EUR 0.55 billion in 2024. For 2024, the funding from the central government for the wellbeing services counties is set to be approximately EUR 1.5 billion higher than initially budgeted, with the total deficit projected at EUR 1.6 billion. While the government expects that changes to the tasks of the wellbeing services counties would allow to achieve up to EUR 0.9 billion in savings by 2027, according to the fiscal plan for 2025-2028, the wellbeing services counties will remain in deficit during the period covered by the plan. In summary, there is a risk that current efforts to contain spending might be insufficient to reduce the pressure on public finances in the near term. At the same time, additional revenues are needed to finance other priorities, such as R&D expenditure and educational outcomes.

Population ageing is set to keep Finland's public finances under strain. The total cost of ageing, including pension, health care, long-term care and education expenditure, is set to increase from 26.4% of GDP in 2022 to 27.1% of GDP in 2035. The projected cost increases relate to three main categories of spending: healthcare, long-term care and pensions. In the assessment of the European Commission, sustainability risks from population ageing are classified as high in the medium term, which is a deterioration of the risk assessment compared with 2023 (see also Annex 21). To accommodate increasing costs of the pensions, the government plans to amend the Finnish earnings-related pension scheme to ensure the fiscal sustainability of the system.

Tackling labour and skills shortages is an urgent priority

Labour and skills shortages are prevalent, and they are particularly pronounced in sectors such as health and education. Ageing and underemployment are weighing on the size of the active population. The Finnish economy requires a highly skilled workforce to drive innovation and the digital and green transition (Annex 8). Furthermore, Finland's efforts to secure quality education and healthcare require a workforce with advanced qualifications ([23]). According to the recent national Labour Force Barometer ([24]), nurses, occupational nurses, general practitioners, early childhood education teachers and special education teachers are among the top 10 occupations with the most pressing staff shortages. In line with the national employment targets set under the European Pillar of Social Rights, Finland aims to achieve an employment rate of

([20]) Unemployment benefits, childcare allowances, study grants, and the minimum amounts for daily allowances payable under the national health-insurance system will not be index-adjusted in 2024-2027. If this freeze reduces the real value of the benefits by more than 10.2% over the following years, normal index adjustments will again be made.

([21]) Ministry of Finance. General government fiscal plan for 2023–2026, 2022:29.

([22]) Ministry of Finance. General Government Fiscal Plan for 2025-2028, 2024:34.

([23]) The present shortage of kindergarten teachers needs to be addressed at the same time as the law on early childhood education will place higher qualification requirements for kindergarten staff from 2030.

([24]) Työvoimabarometri - Etusivu (tyovoimabarometri.fi).

80% by 2031. The measures planned by the Finnish government to reach this target partly concentrate on reforming social-security benefits to improve incentives for people to take up full-time work. In addition, the sectoral nature of labour shortages and the level of unemployment suggest employment measures that focus on how workers can be equipped with the skills needed by employers. For example, the Finnish programme for ensuring the sufficiency and availability of healthcare, social welfare, and rescue personnel 2024-2027 ([25]) aims to ensure a sufficient intake of students in education programmes for the professions and skills most in demand in the jobs market.

Finland competes for international talent but could do better on integrating migrants. Initiatives such as the 'Talent Boost' programme aim to attract foreign talent to Finland. At the same time, Finland would benefit from further efforts to better integrate migrants into the jobs market. The difference between the employment rate of people born outside the EU and workers born in Finland stood at 12.9 percentage points in 2023. From 1 January 2025, the reform of Finland's public employment services aims to improve the effectiveness of services by transferring them to municipalities and the Integration Act will give the municipalities a greater role in assisting migrants to find work.

Strengthening incentives to work could help those who are currently not working to find work. In addition to reforming the social-security system ([26]) and individual social benefits, Finland is planning to activate people to find employment by allowing more flexibility for those with partial work ability, and by better combining different benefits, services and work income.

([25]) Ministry of Social Affairs and Health: Hyvän työn ohjelma.

([26]) A parliamentary committee with a 7-year mandate (2020-2027) is tasked with preparing a comprehensive social-security reform.

Finland does not yet meet the EU target of a NEET rate below 9%. The proportion of 15–29-year-olds not in employment, education or training (NEETs) was 9.2% in 2023. This is below the EU average of 11.2% but slightly above the EU-wide goal of keeping the NEET rate below 9% by 2030. Finland's youth unemployment of 16.2% in 2023 was also above the EU average of 14.5%.

Addressing poor performance in education is key for competitiveness

Negative trends in students' performance in basic skills remain persistent. The share of underachieving students in basic skills continues to grow, while the share of top performers is shrinking ([27]). In a context of generalised negative results in other EU Member States, and still performing above the average, Finland registered one of the largest increases in underachievement in the fields of mathematics, reading and science. This negative trend is present across the entire socioeconomic distribution, with a higher incidence for disadvantaged students and those with a migrant background. Finland plans to introduce more compulsory hours for basic skills in primary education from August 2025 onward. Those measures for higher quality in education are likely to be more effective if accompanied by supportive actions for disadvantaged students.

Teacher shortages affect several areas. The number of applicants to become schoolteachers has been decreasing since 2015. As a result, the number of enrolments in teacher education in Finland now stands below the EU average. Regional differences deserve close attention, in particular regarding observed shortages for special needs teachers,

([27]) OECD, Programme for International Student Assessment (PISA), 2022.

Finnish and Swedish as a second language, and Sami-speaking teachers.

Efforts are underway to expand participation in early childhood education and care (ECEC), especially among low-income households. Participation rates in ECEC remain below EU targets. This has prompted the government to reduce fees and increase the number of free entitlements for around 30 000 families, to increase participation and accessibility (see Annex 15). ECEC is also an area experiencing teacher shortages, for which Finland is planning to expand the available student places during 2024-2025.

Participation in adult learning and higher attainment levels in tertiary education are key to addressing skills shortages in Finland. Reskilling and upskilling policies help Finland progress towards its national 2030 target to have 60% of adults participating in adult learning ([28]). The rate of tertiary educational attainment among people aged 25-34 is lower than in other advanced OECD economies, including Finland's Nordic peers (see Annex 15). By contrast, the number of international higher education students moving to Finland increased significantly, with more than 7 000 new students from outside the EU granted a residence permit by October 2022, a 45% increase from the previous year.

The social and healthcare sector needs to reign in its increasing costs while strengthening service delivery

The share of people in Finland reporting unmet needs for medical care is high. In 2023, 7.9% of the Finnish population reported unmet needs for medical care (EU average: 2.2% in 2022), which is higher than in 2022 (6.5%). The main reason reported is waiting times ([29]). Increased waiting that increased during the pandemic have not been cleared yet.

The ongoing reform to improve the delivery of public health and social services aims to ensure more equal access to services while curbing the rising costs of service delivery. While the administrative reform has been completed, the different counties are in varying stages of preparedness in terms of reorganising and reforming their service delivery. Although the initial cost of the reform has been much higher than anticipated, there is increasing pressure to both ensure more cost-efficient service delivery and balance the finances of the wellbeing services counties.

The poverty rate remains low albeit showing an upward trend. The rate of people at risk of poverty or social exclusion increased from 14.2% in 2021 to 16.3% in 2022, still well below the EU average of 21.6%. A parliamentary committee with a 7-year mandate (2020-2027) is tasked with preparing a comprehensive social-security reform. The committee is expected to produce its final report in 2027.

Insufficient information is an obstacle preventing the efficient governance of the social and healthcare sector. The RRP provides support to strengthen the knowledge base for Finland's social welfare and healthcare services. Nevertheless, information about the health and wellbeing of different population groups, information on their needs for – and use of – services, as well as on the availability and reach of services, remains scattered between different authorities. The comparability of different datasets leaves room for improvement. This calls for better management of reporting requirements and harmonisation of information systems to strengthen the

([28]) In 2022, the adult learning participation rate stood at 51.8% (up 0.4 pps from 2016), 12.3 pps above the EU average.

([29]) See Annex 14 – Social Scoreboard for Finland.

knowledge base for evidence-based decision making.

Staff shortages in the social and healthcare sector, including in long-term care, persist. The changes to the law covering both access to non-urgent care (the care guarantee) and the number of nurses needed per patient in long-term care facilities for older people have increased the demand for skilled professionals in these sectors ([30]). The original targets were reduced for both laws, partly due to the lack of suitably qualified workers. To meet the requirements for service delivery set out in the legislation, the wellbeing services counties have resorted to hiring temporary staff from the private sector at high cost.

The number of study places in the social and healthcare sector have been increased in recent years, but there is also scope for increasing international recruitment, and addressing issues related to language barriers and bureaucratic obstacles. The Ministry of Social Affairs and Health estimates that the share of international workers in Finland's social and healthcare sector is currently only a few per cent. The wellbeing-services counties estimate that international workers recruited from outside Finland will need to account for 20% of the total additional workers recruited in the next 2 years. To attract and retain workers in the sector, Finland has raised wages for nurses ([31]) and is also considering digital solutions, investments in wellbeing at work, and the more efficient allocation of work in workplaces.

Green ambitions call for sustained investments

Finland's green objectives have suffered from the investment environment, which has deteriorated in recent years. Supply-chain bottlenecks, higher prices for raw materials and energy and rising interest rates have all contributed to delay projects in both the energy sector and decarbonising industry. Even though Finland has made progress reducing its reliance on fossil fuels in recent years, further measures may be necessary to ensure the country reaches its 2035 carbon-neutrality target. The announced reform of environmental permitting is expected to support energy investments and reduce the administrative burden that holds back investments in wind and solar installations.

Implementing Finland's national roadmap for fossil-free transport is key for achieving the country's climate targets. Timely implementation of the measures linked to the roadmap is necessary for Finland to achieve its objective of reducing emissions from transport by 50% by 2030 compared to 2005. Although zero-emission vehicles accounted for 18% of new vehicle registrations in 2022, the further roll-out of electric vehicles beyond the most densely populated areas of the country requires a robust and accessible electric-vehicle-charging network across the country. Given the long distances between population centres, the availability of land, and sparsely populated areas in some regions, it is possible that the necessary investments may not be made solely by private investors on market terms. Some public investment in this area may therefore be needed. Further investment needs in transport include the public transport system and electrifying the rail network.

The carbon sink from land use has deteriorated over recent years. Although Finland's forests are responsible for most

([30]) The Ministry of Social Affairs and Health estimates that in 2023 there were more than 5 000 and 6 000 open vacancies for registered and practical nurses respectively, and almost 900 vacancies for doctors.

([31]) https://www.jhl.fi/uutiset/tallainen-on-kolmevuotinen-sote-sopimus-ja-sen-palkkaohjelma/.

Box 4:

The mid-term review of cohesion policy funds for Finland

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

Finland has made some progress in the implementation of cohesion policy programmes and the European Pillar of Social Rights, but challenges remain as outlined in this report, including Annexes 14 and 17. In particular, there remain disparities between the capital region and the rest of Finland in GDP per capita and labour productivity. Against this background, it remains important to continue to implement the planned priorities, especially in Finland's eastern and sparsely populated northern regions, with particular attention to: (i) improving R&D, innovation, digitalisation, and SME competitiveness; (ii) accelerating the green and just transition; (iii) addressing labour and skills shortages as well as strengthening social inclusion and active labour market participation, particularly for vulnerable groups; and (iv) contributing to social innovation actions and improving child-protection services.

Finland could benefit from the opportunities provided by the Strategic Technologies for Europe Platform (STEP) ([33]) initiative to support the transformation of industry, for instance in the areas of artificial intelligence, cybersecurity and robotics; energy and resource efficiency; and medical technologies vital for health security.

of the net carbon removals in the country, net removals of CO_2 from land use, land use change and forestry (LULUCF) have decreased since 2013, turning into net emissions in the years 2018, 2021 and 2022. Slower growth rates in reforestation and intensification of early harvesting of forests have contributed to this development. Felling of trees peaked in 2018, after which a drop has been reported and it has remained below the calculated maximum sustained yield of 80 million m³ per year. Before 2022, Finland imported 9 million m³ of timber from Russia a year, which has since been reduced to zero. About 2 million m³ of these imports have been compensated for by increased timber imports from other countries. A definite pathway towards the LULUCF target is needed. The conversion of peatlands into arable land acts to reduce Finland's carbon sink. Finland needs to reduce the burning of peat as a fuel for heating and energy if it is to ensure a green and just transition. The economic and employment impact of reducing the use of peat is significant because peat extraction is geographically concentrated in small, economically disadvantaged areas. Therefore, targeted investment, such as through the Just Transition Fund, is very welcome to ensure a smooth transition (Annex 8).

Progress in promoting the circular economy has been limited. Both the circular material use rate and resource productivity are among the lowest in the EU ([32]). Finland underperforms in recycling municipal waste and relies heavily on waste incineration (see Annex 9). There is not enough investment in biodiversity or ecosystems. Finland is experiencing continued biodiversity loss and uses a high share of biomass for energy generation (see Annex 6).

([32]) Eurostat datasets env_ac_cur and env_ac_mfa.

([33]) Regulation (EU) 2024/795.

KEY FINDINGS

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

- **Promoting the green transition** by reducing greenhouse gas emissions in the most relevant sectors;
- **Accelerating the digital transition** by supporting high-speed broadband connectivity, reforming the continuous learning framework, and promoting digital skills;
- **Strengthening competitiveness by investing in research, development and innovation (RDI)** and promoting its innovation and research infrastructure;
- **Making the social and healthcare system more resilient and better performing** by supporting the reform of the healthcare and social services for more equal and cost-effective service delivery;
- **Improving the functioning of the jobs market** by tackling structural unemployment, reforming public employment services, reforming the system for continuous learning, and streamlining the immigration process for foreign employees and students.

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

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

- **Taking steps to strengthen the public finances** by enhancing the efficiency of public spending, including through a reform of the social security system, and by broadening the tax base.
- **Addressing negative trends in basic education** by ensuring a quality and supportive system, and promoting greater participation in tertiary education to meet current and future demand for skills;
- **Addressing labour and skills shortages**, in particular to ensure the delivery and quality of accessible services in the healthcare, education and social care sectors, as well as in other sectors essential for Finland's productivity and competitiveness;
- **Continuing the reform of the social-security system** to increase its efficiency and increase incentives to work;
- **Ensuring that the reform of healthcare and social services strengthens governance and improves data collection** to help improve service delivery and tackle inefficiencies;
- **Promoting further investments to meet the 2035 target for carbon neutrality**, including by speeding up the circular-economy transition and strengthening the capacity of the land-use sector for carbon removals.

ANNEXES

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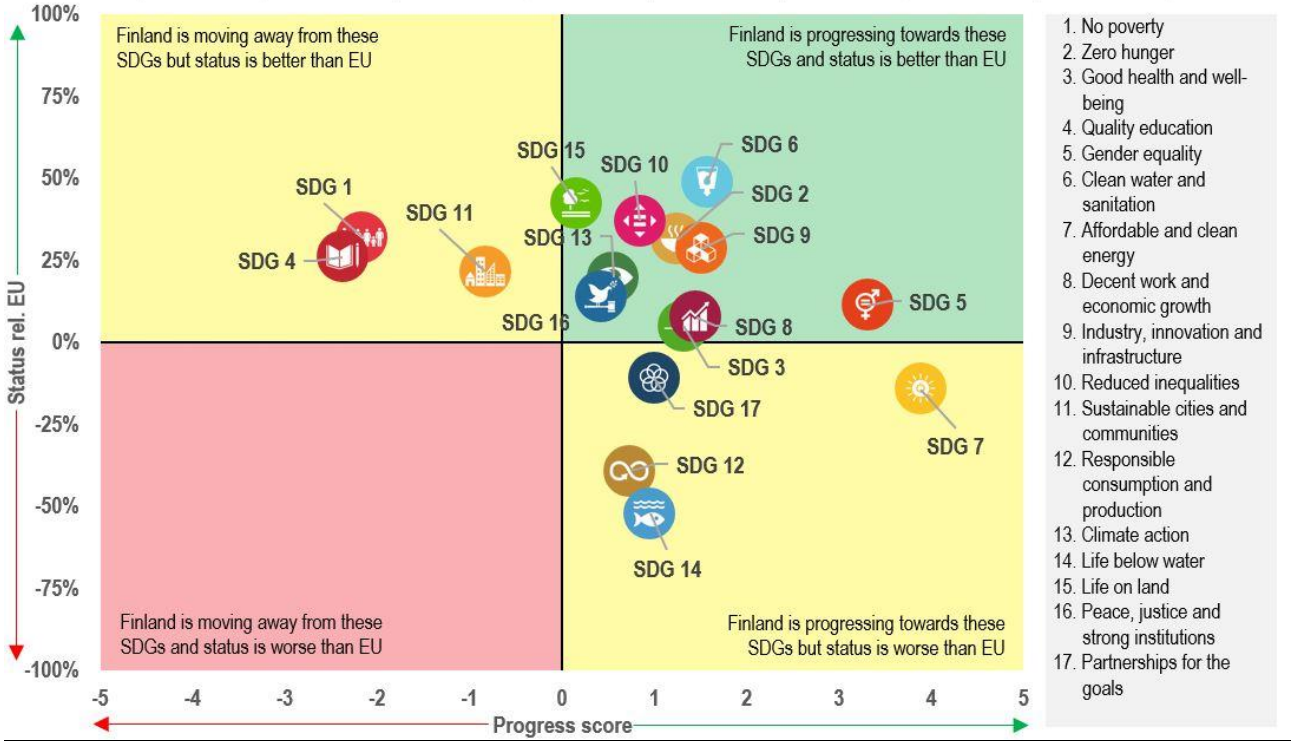
This Annex assesses Finland's progress on the Sustainable Development Goals (SDGs) along the four dimensions of competitive sustainability. The 17 SDGs and their related indicators provide a policy framework under the UN's 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty, fight inequalities and tackle climate change and the environmental crisis, while ensuring that no one is left behind. The EU and its Member States are committed to this historic global framework agreement and to playing an active role in maximising progress on the SDGs. The graph below is based on the EU SDG indicator set developed to monitor progress on the SDGs in an EU context.

Finland is improving on some SDG indicators related to *environmental sustainability* (2, 6, 7, 9, 12, 13), but is moving away from SDG 11 (Sustainable cities and communities), SDG 15 (Life on land) and SDG 14 (Life below water). While Finland performs above the EU average on most SDGs in this area, there are some negative trends that deserve attention. For instance, recycling rates in municipal waste fell from 42.1% in 2016 to 39% in 2021 (SDG 11) and the share of forested area in Finland compared to total land area decreased from 71.3% in 2015 to 69.9% in 2018 (SDG 15). The need for improvement is most pronounced for SDG 12 (Responsible production and consumption) and SDG 14 (Life below water), which are both below the EU average. At the same time, the share of renewable energy in gross final energy consumption (SDG 7) has continued to increase, from 40.9% in 2017 to 47.9% in 2022, more than double the EU average, while energy import dependency decreased from 43.9% in 2017 to 40.9% in 2022. Despite the progress, Finland appears below the EU average with regard to SDG 7, largely due to its relatively high energy consumption per capita. The first pillar of the recovery and

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



For detailed datasets on the various SDGs, see the annual Eurostat report 'Sustainable development in the European Union'; for details on extensive country-specific data on the short-term progress of Member States: Key findings – Sustainable development indicators - Eurostat (europa.eu). A high status does not mean that a country is close to reaching a specific SDG, but signals that it is doing better than the EU on average. The progress score is an absolute measure based on the indicator trends over the past 5 years. The calculation does not take into account any target values as most EU policy targets are only valid for the aggregate EU level. Depending on data availability for each goal, not all 17 SDGs are shown for each country.
Source: Eurostat, latest update of 25 April 2024. Data refer mainly to the period 2017-2022 or 2018-2023. Data on SDGs may vary across the report and its annexes due to different cut-off dates.

resilience plan (RRP) includes investments in clean energy (SDG 7), decarbonisation of industry (SDG 9) and biodiversity (SDGs 14 and 15). On the reform side, the new Climate Act entered into force in 2022 (SDG 13) and the updated Nature Conservation Act in June 2023.

Finland performs well on SDG indicators related to *fairness* (SDGs 1, 3, 4, 5, 7, 8, 10). The country is above the EU average for several fairness-related indicators, such as people at risk of poverty or social exclusion (SDG 1; 16.3% of population in 2022, vs 21.6% in the EU) or the share of population unable to keep their home adequately warm (SDG 7: 1.4% in 2022; EU: 9.3%). On gender equality, the gender employment gap has narrowed to almost 0 (SDG 5; 0.2% in 2023, vs 3.8% in 2018 and an EU average of 10.3% in 2023) and gender representation in leadership positions has improved. In addition, Finland has made progress on several indicators related to good health and well-being (SDG 3), such as reducing smoking prevalence from 19% in 2014 to 15% in 2020. However, there is still room for improvement in other indicators, such as healthy life years at birth, which despite recent progress (from 58.1 years in 2016 to 61.7 years in 2021) is below the EU average (63.6 years). The RRP includes measures to support the ongoing reform of health and long-term care, aiming to improve the health and well-being status, in component P4C1 (Social welfare and health care services).

While Finland is making progress on SDGs related to *productivity* (SDGs 8 and 9) and on productivity-related indicators in SDG 4, it still has challenges ahead. For instance, Finland's employment rate (SDG 8) increased from 75.3% in 2018 to 78.2% in 2023. However, this positive trend has weakened in recent years, accompanied by an increase in unemployment, now slightly above the EU average. In terms of digital skills (SDG 4), Finland stands out, with 82% of adults having at least basic digital skills as of 2023 (EU average: 55.6%). While Finland's spending on R&D increased from 2.72% of GDP in 2016 to 2.95% in 2022, it is still below the 2009 peak of 3.73% and the national target of 4% (SDG 9). The RRP includes measures to further improve Finland's productivity by boosting spending on R&D through funding packages to promote the green and digital transitions, notably in components P3C3 (Research infrastructure) and P3C4 (Strengthening competitiveness) of the plan.

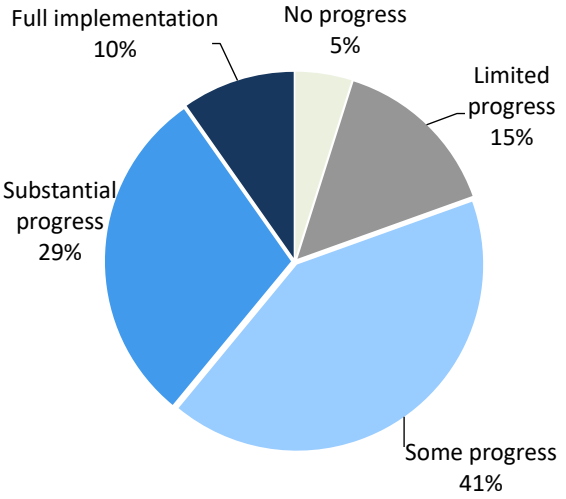
Overall, Finland performs well and is improving on SDG indicators related to *macroeconomic stability* (SDGs 8 and 16) and is catching up with the EU average on SDG 17. Finland's GDP per capita remains well above the EU average but increased only marginally between 2018 and 2023, from EUR 36 740 to EUR 36 980 (SDG 8). Finland performs well on the independence of the justice system and the Corruption Perceptions Index (SDG 16). It is catching up regarding the official development assistance goal (SDG 17), with official development assistance standing at 0.57% of gross national income (GNI) in 2022 compared with 0.42% in 2017, just below the EU average of 0.58%.

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

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

The Commission has assessed the 2019-2023 country-specific recommendations (CSRs) ([34]) addressed to Finland as part of the European Semester. These recommendations concern a wide range of policy areas that are related to 14 of the 17 Sustainable Development Goals (SDGs) (see Annexes 1 and 3). The assessment considers the policy action taken by Finland to date ([35]) and the commitments in its recovery and resilience plan (RRP) ([36]). At this stage of RRP implementation, 80% of the CSRs focusing on structural issues from 2019-2023 have recorded at least 'some progress', while 20% recorded 'limited progress' or 'no progress' (see Graph A2.1). As the RRP is implemented further, considerable progress in addressing structural CSRs is expected in the coming years.

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



Source: European Commission.

([34]) 2023 CSRs: EUR-Lex - 32023H0901(26) - EN - EUR-Lex (europa.eu)

2022 CSRs: EUR-Lex - 32022H0901(26) - EN - EUR-Lex (europa.eu)

2021 CSRs: EUR-Lex - 32021H0729(27) - EN - EUR-Lex (europa.eu)

2020 CSRs: EUR-Lex - 32020H0826(26) - EN - EUR-Lex (europa.eu)

2019 CSRs: EUR-Lex - 32019H0905(26) - EN - EUR-Lex (europa.eu)

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

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

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

Finland	Assessment in May 2024*	RRP coverage of CSRs until 2026**	Relevant SDGs
2019 CSR 1	**Some progress**		
Ensure that the nominal growth rate of net primary government expenditure does not exceed 1.9 % in 2020, corresponding to an annual structural adjustment of 0.5 % of GDP.	Not relevant anymore	Not applicable	SDG 8, 16
Improve the cost-effectiveness of and equal access to social and healthcare services.	Some progress	Relevant RRP measures being implemented/planned as of 2021, 2023, 2024, and 2025	SDG 3, 8, 16
2019 CSR 2	**Some progress**		
Improve incentives to work	Some progress	Relevant RRP measures being implemented/planned as of 2022, 2023, 2024, and 2025	SDG 8
and enhance skills	Some progress	Relevant RRP measures being implemented/planned as of 2021, 2022, 2023, 2024, and 2025	SDG 4
and enhance active inclusion, notably through well-integrated services for the unemployed and the inactive.	Substantial progress	Relevant RRP measures being implemented/planned as of 2022, 2023, 2024, and 2025	SDG 8
2019 CSR 3	**Some progress**		
Focus investment-related economic policy on research and innovation, taking into account regional disparities,	Substantial progress	Relevant RRP measures being implemented/planned as of 2021, 2022, 2023, 2025 and 2026	SDG 9, 10, 11
focus investment-related economic policy on low carbon and energy transition, taking into account regional disparities,	Substantial Progress	Relevant RRP measures being implemented/planned as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 7, 9, 10, 11, 13
and focus investment-related economic policy on sustainable transport, taking into account regional disparities	Some Progress	Relevant RRP measure being implemented/planned as of 2022, 2024, and 2026	SDG 10, 11
2019 CSR 4	**Substantial Progress**		
Strengthen the monitoring of household debt	Substantial Progress	Relevant RRP measure being implemented/planned as of 2023, 2025, and 2026	SDG 8
and establish the credit registry system	Substantial Progress	Relevant RRP measure being implemented/planned as of 2023, 2025, and 2026	SDG 8
2020 CSR 1	**Some progress**		
Take all necessary measures, in line with the general escape clause of the Stability and Growth Pact, to effectively address the COVID-19 pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.	Not relevant anymore	Not applicable	SDG 8, 16
Address shortages of health workers to strengthen the resilience of the health system	Some progress	Relevant RRP measure being implemented/planned as of 2021, 2022 and 2023	SDG 3
and improve access to social and health services.	Some progress	Relevant RRP measure being implemented/planned as of 2021, 2023, 2024 and 2025	SDG 3
2020 CSR 2	**Some progress**		
Strengthen measures to support employment and	Some progress	Relevant RRP measure being implemented/planned as of 2021, 2022, 2023, 2024 and 2025	SDG 8
bolster active labour market policies.	Some progress	Relevant RRP measure being implemented/planned as of 2022, 2023, 2024 and 2025	SDG 4
2020 CSR 3	**Some progress**		
Take measures to provide liquidity to the real economy, in particular to small and medium-sized enterprises.	Full Implementation	Relevant RRP measure being implemented/planned as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 8, 9
Front-load mature public investment projects and	Full implementation		SDG 8, 16
promote private investment to foster the economic recovery.	Full implementation		SDG 8, 9
Focus investment on the green and digital transition, in particular on clean and efficient production and use of energy,	Some progress	Relevant RRP measure being implemented/planned as of 2021, 2022, 2023, 2025 and 2026	SDG 7, 9, 13
sustainable and efficient infrastructure	Limited progress	Relevant RRP measure being implemented/planned as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 7, 9, 11, 13
as well as research and innovation.	Some progress	Relevant RRP measure being implemented/planned as of 2021, 2022, 2023, 2025 and 2026	SDG 9
2020 CSR 4	**Some Progress**		
Ensure effective supervision and enforcement of the anti-money laundering framework.	Some Progress	Relevant RRP measure planned as of 2025 and 2026	SDG 8, 16

(Continued on the next page)

Table (continued)

2021 CSR 1	**Substantial Progress**		
In 2022, maintain a supportive fiscal stance, including the impulse provided by the Recovery and Resilience Facility, and preserve nationally financed investment.	Not relevant anymore	Not applicable	SDG 8, 16
When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.	Not relevant anymore	Not applicable	SDG 8, 16
At the same time, enhance investment to boost growth potential. Pay particular attention to the composition of public finances, on both the revenue and expenditure sides of the budget, and to the quality of budgetary measures in order to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, in particular investment supporting the green and digital transition.	Not relevant anymore	Not applicable	SDG 8, 16
Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including, where relevant, by strengthening the coverage, adequacy and sustainability of health and social protection systems for all.	Not relevant anymore	Not applicable	SDG 8, 16
2022 CSR 1	**Limited Progress**		
In 2023, ensure that the growth of nationally financed primary current expenditure is in line with an overall neutral policy stance, taking into account continued temporary and targeted support to households and firms most vulnerable to energy price hikes and to people fleeing Ukraine. Stand ready to adjust current spending to the evolving situation.	No Progress	Not applicable	SDG 8, 16
Expand public investment for the green and digital transitions, and for energy security taking into account the REPowerEU initiative, including by making use of the Recovery and Resilience Facility and other Union funds.	Limited Progress	Not applicable	SDG 8, 16
For the period beyond 2023, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions.	Substantial Progress	Not applicable	SDG 8, 16
Present policy proposals for the social security reform, aiming to increase the efficiency of the system of social benefits, improving incentives to work, and also supporting long-term sustainability of public finances.	Limited Progress		SDG 1, 2, 10
2022 CSR 2			
Proceed with the implementation of its recovery and resilience plan, in line with the milestones and targets included in the Council Implementing Decision of 29 October 2021.	RRP implementation is monitored by assessing RRP payment requests and analysing reports published twice a year on the achievement of the milestones and targets. These are to be reflected in the country reports.		
Proceed with the implementation of the agreed 2021-2027 cohesion policy programme for Finland, and swiftly finalise the negotiations with the Commission of the 2021-2027 cohesion policy programming documents for the Åland Islands and the Just Transition Fund with a view to starting their implementation.	Progress on the cohesion policy programming documents is monitored under the EU cohesion policy.		
2022 CSR 3	**Substantial Progress**		
Reduce overall reliance on fossil fuels and diversify imports of fossil fuels.	Substantial Progress	Relevant measures being implemented/planned as of 2021,2022, 2023, 2024, 2025 and 2026	SDG 7, 9, 13
Accelerate the deployment of renewables, including by further streamlining permitting procedures,	Substantial Progress	Relevant measures being implemented/planned as of 2021,2022, 2023 and 2026	SDG 7, 8, 9, 13
and boost investment in the decarbonisation of industry	Some Progress	Relevant measures being implemented/planned as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 7, 9, 13
and transport, including electrification of the transport sector.	Substantial Progress	Relevant measures being implemented/planned as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 11
Develop energy infrastructure to increase security of supply.	Some Progress	Relevant measures being implemented/planned as of 2021, 2022, 2023, 2025 and 2026	SDG 7, 9, 13

(Continued on the next page)

Table (continued)

2023 CSR 1	**Some Progress**		
Wind down the emergency energy support measures in force, using the related savings to reduce the government deficit, as soon as possible in 2023 and 2024. Should renewed energy price increases necessitate new or continued support measures, ensure that these are targeted at protecting vulnerable households and firms, fiscally affordable, and preserve incentives for energy savings.	Substantial Progress	Not applicable	SDG 8, 16
Ensure prudent fiscal policy, in particular by limiting the nominal increase in nationally financed net primary expenditure in 2024 to not more than 2.2%.	No Progress	Not applicable	SDG 8, 16
Preserve nationally financed public investment and ensure the effective absorption of RRF grants and other EU funds, in particular to foster the green and digital transitions.	Full Implementation	Not applicable	SDG 8, 16
For the period beyond 2024, continue to pursue a medium-term fiscal strategy of gradual and sustainable consolidation, combined with investments and reforms conducive to higher sustainable growth, to achieve a prudent medium-term fiscal position.	Substantial Progress	Not applicable	SDG 8, 16
Pursue the reform of the social security system to increase the efficiency of the social benefits system, which would improve incentives to work and also support the long-term sustainability of public finances.	Limited Progress		SDG 1, 2, 10
2023 CSR 2			
Proceed with the steady implementation of its revised recovery and resilience plan and swiftly finalise the REPowerEU chapter with a view to rapidly starting its implementation. Proceed with the swift implementation of cohesion policy programmes, in close complementarity and synergy with the recovery and resilience plan.	RRP implementation is monitored through the assessment of RRP payment requests and analysis of the bi-annual reporting on the achievement of the milestones and targets, to be reflected in the country reports. Progress with the cohesion policy is monitored in the context of the Cohesion Policy of the European Union.		
2023 CSR 3	**Limited Progress**		
Address labour and skills shortages by reskilling and upskilling the workforce and widening the higher education offer, in particular for the study fields most in demand in the labour market.	Limited Progress	Relevant RRP measures being implemented/planned as of 2021, 2022, 2023, 2024, and 2025	SDG 4
2023 CSR 4	**Some Progress**		
Reduce overall reliance on fossil fuels by	Substantial Progress	Relevant measures being implemented/planned as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 7, 9, 13
accelerating the deployment of renewables, including by further speeding up permitting procedures, and	Substantial Progress	Relevant measures being implemented/planned as of 2021, 2022, 2023 and 2026	SDG 7, 8, 9, 13
and boost investment in the decarbonisation of industry	Some Progress	Relevant measures being implemented/planned as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 7, 9, 13
transport, including through electrification.	Some Progress	Relevant measures being implemented/planned as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 11
Develop energy infrastructure to increase security of supply by strengthening the transmission of electricity.	Some Progress	Relevant measures being implemented/planned as of 2021, 2022, 2023, 2025 and 2026	SDG 7, 9, 13
Step up policy efforts aimed at the provision and acquisition of skills and competences needed for the green transition.	Limited Progress	Relevant measures being implemented/planned as of 2021, 2022, 2023 and 2026	SDG 4, 13

Note:

* See footnote ([36]).

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

Source: European Commission.

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

The RRP paves the way for disbursing up to EUR 1.9 billion in grants under the RRF over the 2021-2026 period, representing 0.7% of Finland's GDP ([37]). As of mid-May 2024, EUR 498 million has been disbursed to Finland under the RRF.

Finland still has EUR 1.45 billion available in grants from the RRF. This will be disbursed after the assessment of the future fulfilment of the remaining 124 milestones and targets ([38]) included in the Council Implementing Decision ([39]) (CID), ahead of the 2026 deadline established for the RRF.

Finland's progress in implementing its plan is recorded in the Recovery and Resilience Scoreboard ([40]). The scoreboard gives an overview of the progress made in implementing the RRF as a whole. Graph A3.1 shows the current state of play as reflected in the scoreboard.

Finland's RRP includes a REPowerEU chapter to phase out its dependency on Russian fossil fuels, diversify its energy supplies and produce more clean energy in the coming years. To kick-start the REPowerEU chapter's implementation, EUR 25.4 million was disbursed as pre-financing on 25 January 2024. This helped to launch relevant reforms like establishing a single review procedure and a new single national authority for processing environmental permit applications, and investments, such as in new clean technologies for energy production and use, as well as research and development activities to promote renewable energy solutions.

The plan has a strong focus on the green transition, dedicating 52.3% of the available funds to measures that support climate objectives and 28.9% of its total allocation to support the digital transition. It also retains a strong social dimension with social protection measures, especially related to improving access to health care and social services across the country.

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

Initial plan CID adoption date	29 October 2021
Scope	Revised plan with REPowerEU chapter
Last major revision	8 December 2023
Total allocation	EUR 1.9 billion in grants (0.7% of 2023 GDP)
Investments and reforms	40 investments and 19 reforms
Total number of milestones and targets	144
Fulfilled milestones and targets	20 (14% of total)

Source: RRF Scoreboard

With one complete payment request completed, Finland's implementation of its RRP is underway. However, timely completion requires increased efforts. The Commission gave a positive assessment of Finland's payment request on 25 January 2024, taking into account the opinion of the Economic and Financial Committee. This led to EUR 202 million being disbursed in financial support on 1 March 2024 ([41]). The related 20 milestones

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

([38]) A milestone or target is satisfactorily fulfilled once a Member State has provided evidence to the Commission that it has reached the milestone or target and the Commission has assessed it positively in an implementing decision.

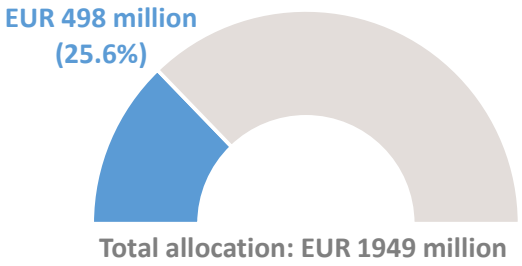
([39]) https://data.consilium.europa.eu/doc/document/ST-12524-2021-ADD-1/en/pdf

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

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

and targets covered reforms and investments such as tax reforms to promote the electrification of industry and encourage investment in low-carbon technologies, tax incentives to promote sustainable transport and the use of electric vehicles, improvements to employment opportunities through matching continuous learning opportunities with labour market needs and key legislation in the context of the social, healthcare and rescue services reform. The milestones also included key investments in support of the green and digital transition, such as the transformation of energy infrastructure and new energy technologies and the production and use of low-emission hydrogen. Other key investments targeted the reduction of climate and environmental impacts of buildings and support precision forestry to promote climate resilient measures and environmental sustainability.

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



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

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

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

Reforms and investments implemented
• Reform of energy taxation • Preparation of the social welfare and health care reform • Improvements to employment opportunities
Upcoming reforms and investments
• Digital innovations for social welfare and health care services • Investments in the largest solar power installation in the Nordics • Create a model for teaching cybersecurity skills to citizens

Source: FENIX

EU funding instruments provide considerable resources for recovery and growth to the EU Member States. In addition to the EUR 1.95 billion of Recovery and Resilience Facility (RRF) funding described in Annex 3, EU cohesion policy funds ([42]) provide EUR 1.9 billion to Finland for the 2021-2027 period ([43]). Support from these two instruments combined represents around 1.40% of the country's GDP, compared to the EU average of 5.38% of GDP ([44]). Cohesion policy supports regional development, economic, social and territorial convergence and competitiveness through long-term investment in line with EU priorities and with national and regional strategies.

During the 2014-2020 programming period, cohesion policy funds boosted Finland's competitiveness, with tangible achievements notably in research and innovation and social inclusion. By the end of the eligibility period in December 2023, 2014-2020 cohesion policy funds ([45]) had made EUR 1.5 billion available to Finland ([46]), of which EUR 780 million has been disbursed since March 2020, when the COVID-19 pandemic began ([47]). The achievements of cohesion policy funds over the entire programming period included support to help create 12 760 new jobs and 584 new companies. A total of 1 434 SMEs received support, 24 876 companies participated in projects led by research and development institutions. A total of 436 000 people participated in European Social Fund (ESF) projects. During the same period, ESF funding was allocated to increase labour market participation through improved employment, social inclusion and education policies. ESF measures were especially focused on young people, unemployed people and older people as well as on marginalised groups such as migrants and people with disabilities. By the end of 2022, more than 433 000 participants, including around 249 000 unemployed people, had received support under ESF projects.

In the current programming period (2021-2027), cohesion policy will provide a further boost to Finland's competitiveness, to the green transition and to social cohesion, improving the living and working conditions of Finland's people. In 2021-2027, the European Regional Development Fund (ERDF) will increase R&D and innovation in line with regional smart specialisation strategies, harness digitalisation and SME growth, and accelerate the green transition. A total of 9 575 companies are expected to be supported, 15 047 new jobs are expected to be created, and energy savings in companies are expected to amount to 94.8 MWh/a. The Just Transition Fund (JTF) will invest in the diversification of regional economies and in the reskilling and upskilling of the workforce in regions most affected by the transition from peat to cleaner energy sources. The JTF is expected to support 1 933 companies, help create 3 709 new jobs, and help rehabilitate 13 596 ha of land. The Innovation and Skills Finland programme has seven priorities of which three are funded from the European Social Fund Plus (ESF+) with a budget of approximately EUR 602 million. The JTF's priority also includes funding ESF-type activities, such as training, upskilling and reskilling the labour force. The ESF+ will help increase employment and skills and provide support to enhance inclusivity in Finland, social innovation actions help to the most deprived. In this regard, cohesion policy substantially contributes to achieving the UN Sustainable Development Goals (SDGs) in Finland, in particular SDG 9 (Industry, innovation, infrastructure), SDG 8 (Decent work and economic growth) and SDG 1 (No poverty).

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

([43]) European territorial cooperation (ETC) programmes are excluded from the figure. In 2021-2027, the total investment, including national financing, amounts to EUR 3.2 billion.

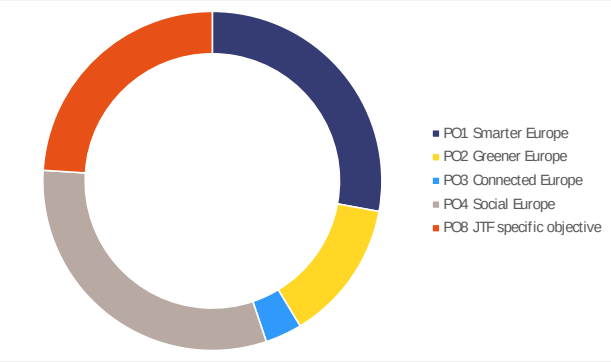
([44]) RRF funding includes both grants and loans, where applicable. The EU average is calculated for cohesion policy funds excluding ETC programmes. GDP figures are based on Eurostat data for 2022.

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

([46]) In 2014-2020, the total investment, including national financing, amounted to EUR 2.9 billion.

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

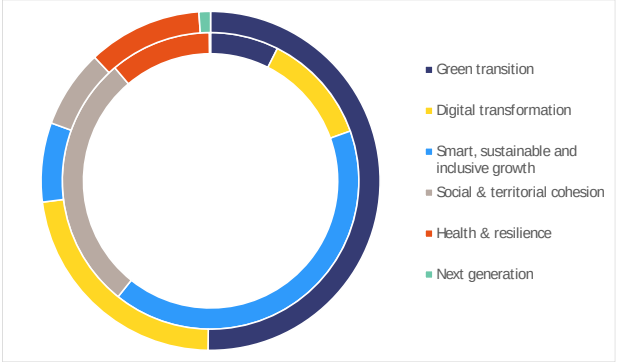
Graph A4.1: **Distribution of cohesion policy funding across policy objectives in Finland**



Source: European Commission

Through combined action, of cohesion policy and the recovery and resilience plan (RRP) have a mutually reinforcing impact in Finland. For instance, they both support the digital transition, with RRP investments improving the national coverage of the broadband network, particularly in terms of faster connectivity, while the ERDF supports the effective use of the improved connectivity for industry and public services users. Together, cohesion policy and the RRF also support the green transition. The Just Transition Fund (JTF) focuses on the areas most affected by the transition from peat to cleaner energy sources, by supporting the diversification of livelihoods, revitalising economic structures, and boosting employment by reskilling and upskilling the workforce working in peat extraction and related sectors. The RRP helps Finland step up efforts to reduce the use of coal by encouraging the country to eliminate its use within a shorter timeframe than envisaged in the Act on the Prohibition of the Use of Energy of Coal (406/2019). It also supports Finland in the transition of its industries as regards reducing their use of peat, directly complementing the JTF measures. Furthermore, the ESF+ supports foreign workers through efficient labour and business services and ensures labour demand and supply are better matched, while the RRP contains a reform to attract international talent by streamlining the administrative procedures which should help international degree students find employment in Finland. The contribution of cohesion policy and RRP funding by policy objectives is illustrated by Graphs A4.1 and A4.2.

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



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

Source: European Commission

The Technical Support Instrument (TSI) helps Finland invest in its public administration and create a better enabling environment for EU and national investment. The TSI has funded projects in Finland to design and implement growth-enhancing reforms since 2019. The support provided in 2023 included action to: i) accelerate permitting procedures for renewable energy; ii) design a structured and regular spending review process; and iii) promote quality and inclusion in the educational system. The TSI also helps Finland to increase its overall capacity to implement specific reforms and investments included in its RRP, such as boosting the regional mining sector in Lapland.

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

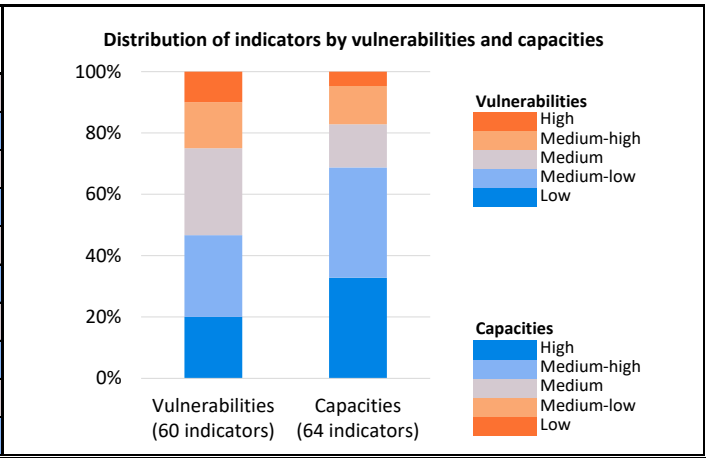
Table A4.1: **Support from EU instruments in Finland**

EU grants		
	Amount 2014-2020 (EUR million)	Amount 2021-2027 (EUR million)
Cohesion policy	1 481.4	1 940.5
RRF grants (1)	-	1 949.1
Public sector loan facility (grant component) (2)	-	35.3
Common agricultural policy (3)	8 000.0	4 410.0
EMFF/EMFAF (4)	74.4	71.8
Connecting Europe Facility (5)	340.1	260.1
Horizon 2020 / Horizon Europe (6)	1 537.0	902.4
LIFE programme (7)	84.4	104.9
EU guarantees		
	EU Guarantee (EUR million)	Volume of operations (EUR million)
European Fund for Strategic Investment 2015-2020 (8)	645.4	1 684.0
InvestEU 2021-2027 (9)	77.4	236.5

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

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

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



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

This Annex uses the Commission's resilience dashboards (RDB) ([48]) to show Finland's relative resilience capacities and vulnerabilities ([49]) that may be of relevance for societal, economic, digital and green transformations, and for dealing with future shocks and geopolitical challenges. ([50])

According to the RDB's set of resilience indicators, Finland has medium-low overall vulnerabilities and high overall capacities. With respect to the 2023 RDB, its vulnerabilities have improved a bit, going from medium to medium-low, and its capacities have remained stable at a high level. This is reflected in the distribution of indicators across different resilience categories: under 25% of Finland's vulnerability indicators fall into the high or medium-high category, while over 60% of its capacity indicators fall into the high or medium-high category.

With respect to the 2023 RDB, Finland has maintained its strong position in the social and economic dimension. Overall vulnerabilities in this dimension are low and capacities are high. Vulnerabilities are low mainly thanks to Finland's high employment rate and low inequalities and poverty, with its gender employment gap among the lowest in the EU and decreasing. High capacities are thanks to spending on education, health and social protection, which reduce the risk of poverty and social exclusion. That said, some of Finland's healthcare indicators remain worrying. The proportion of Finns reporting unmet medical needs is the third highest in the EU, having increased over the last few years. In terms of capacity, healthy life years are increasing, but Finland still scores below the EU average.

In the green dimension, Finland's vulnerabilities have remained stable with respect to last year but its capacities have decreased. Despite ambitious climate targets, its vulnerabilities related to climate change mitigation have not improved. In terms of the sustainable use of resources and biodiversity, Finnish agriculture continues to use a lot of chemical pesticides, while its economy is the EU's most raw material-intensive. Green

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

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

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

capacities have decreased to a medium overall level. While the country continues to have a high number of environmental patents, considerable renewable energy penetration, a high share of organic farming and low soil carbon content, strengthening the circular economy and biodiversity would go a long way towards improving its resilience capacities. Finland is one of the EU's poorest performers in terms of its circular material use rate, energy and resource productivity and Natura 2000 protected areas. Its forests' CO_2 absorption has also deteriorated with respect to the 2023 RDB.

Finland has improved its strong position in the digital dimension, with vulnerabilities further decreasing and capacities remaining high compared to last year's dashboard. The reasons for the decrease in vulnerabilities are better broadband access for companies and the availability of online public services for businesses. Overall, Finland's digital vulnerabilities are among the lowest in the EU, especially in terms of personal and public space. The only area with medium-high vulnerabilities is Finland's trade deficit in both information and communication technology (ICT) goods and services. Finland has high digital capacities overall, and ranks highest or second highest in terms of adults' and young people's digital competencies, in the use of online courses, in young people participating in online learning activity, and in e-healthcare. Its collaborative economy, the only area with medium-low capacity in the 2023 RDB, has improved.

Finland's geopolitical vulnerabilities and capacities have remained medium. Diversifying its trade partners could make it even more resilient, as the country has a high concentration of base metal and energy carrier suppliers and inward foreign direct investment partners. Finland has managed to narrow the employment gap between EU and non-EU nationals with respect to last year's dashboard. In terms of capacities, it has improved its energy trade with EU countries and increased its trade openness towards non-EU countries. That said, it would do well to improve intra-EU trade in recyclable raw materials and its trade openness towards EU countries, to help mitigate supply risks and reduce dependencies.

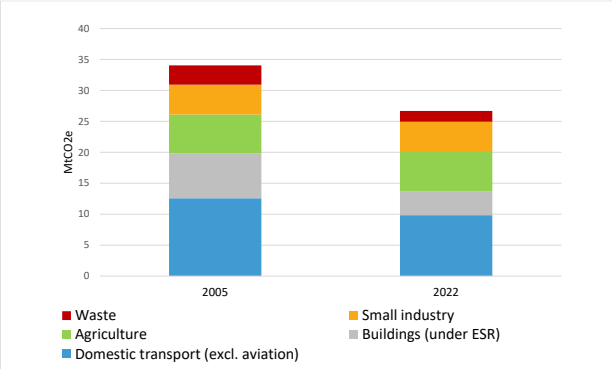
ANNEX 6: EUROPEAN GREEN DEAL

Finland has made progress in the green transition, with more action needed on specifying the funding framework for the climate and energy transition, strengthening the carbon sinks in the land use sector, protecting biodiversity and the ecosystem, and other areas. This Annex provides a snapshot of climate, energy, and environmental aspects of the transition in Finland ([51]).

Finland's draft updated national energy and climate plan (NECP) appears to only map out the private investment needed to achieve its 2030 climate and energy targets. Although the NECP provides an overview of private investment in the clean energy transition per sector (e.g. onshore and offshore wind, nuclear power generation, low-carbon steel production, etc.), the lack of consolidated information on public and private investment and on investment needs for the entire economy, makes it difficult to assess any gaps. The plan only partly outlines the main funding sources, including those for the fair transition. It mentions national and EU funding, including the Connecting Europe Facility, the recovery and resilience plan, and the European Agricultural Fund for Rural Development ([52]).

With planned measures that are yet to be adopted, Finland still has a gap to close to reach its 2030 effort sharing target ([53]). In 2022, Finland's greenhouse gas emissions from its effort sharing sectors are expected to be 22.5% below 2005 levels. Current policies are projected to reduce Finland's effort sharing emissions by 44.2% from 2005 levels by 2030. The additional policies set out by Finland are projected to reduce these emissions by an additional 2.2 percentage points, achieving a 46.4% reduction compared to 2005 ([54]), only 3.6 percentage points short of Finland's target to reduce emissions by 50%.

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



Source: European Environment Agency

There is scope for increasing Finland's target for renewable energy and energy efficiency in its final updated NECP ([55]). Although Finland's renewable energy contribution of 51% by 2030 set out in its draft updated NECP is significantly below the required contribution of 62%, it projects that the overall share of renewable energy in gross final energy consumption will reach 60% by 2030. Finland's draft updated NECP did not set a clear 2030 national energy efficiency contribution for

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

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

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

([54]) The effort sharing emissions for 2022 are based on approximated inventory data. The final data will be compiled in 2027 after a comprehensive review. Finland's draft updated NECP does not provide emission projections for the effort sharing sectors. Information on such projections is based on the latest data that had to be reported by 15 March 2023 under Article 18 of Regulation 2018/1999 (the Governance Regulation).

([55]) The EU target set out in the revised Renewable Energy Directive is to have 42.5% of gross final energy consumption coming from renewable energy sources by 2030, with the aspiration to reach 45%. The formula in Annex I to Directive (EU) 2023/1791 sets the indicative national contribution for Finland at 29.8 Mtoe for primary energy consumption and 20.8 Mtoe for final energy consumption. See the Commission Recommendation of 18.12.2023 to Finland.

primary energy consumption. However, the energy efficiency contribution of 20.60 Mtoe in final energy consumption matches the required contribution under the Energy Efficiency Directive.

Finland's shift to sustainable transport is taking off but has not yet gained full momentum ([56]). In 2022, battery electric vehicles accounted for 1.3% of Finland's passenger vehicle fleet. Its 9 000 publicly accessible charging points provided one charging point for every 16 e-vehicles, below the EU average of 1:10. Passenger cars accounted for 87% of the distances travelled by passengers (above the EU average of 85%). Freight is predominantly transported by road, with roads accounting for 73% of tonnes transported (close to the EU average of 75%). At 27%, rail is used more for transporting freight than the EU average (17%). 57% of the rail network is electrified (EU average: 56%).

Finland is projected to fall short of its 2030 target for net carbon removals from the atmosphere through land use, land use change and forestry (LULUCF). Its net removals have decreased since 2015, resulting in large net emissions in 2021. Finland's forests are responsible for the major share of net carbon removals. To reach the 2030 LULUCF target, additional carbon removals of 2 889 kt are needed ([57]). By the latest projections, Finland shows insufficient ambition and is at present estimated not to reach the target ([58]). A concrete pathway towards reaching the national LULUCF target with the specification of additional measures, their timing and scope, and a quantification of their expected impacts is yet missing, that would ensure that greenhouse gas removals are effectively aligned with the contribution to the 2030 EU net removal target of -310 MtCO2eq and with the country specific removal target.

With its 2022 climate act and its national adaptation plan for 2030, Finland has strengthened its approach to adaptation at both national and regional level. The new assessment of risks and vulnerabilities is comprehensive and covers all major sources of climate risk, including floods, drought, heatwaves and forest fires. Finland is taking a multitiered approach to climate adaptation, involving a broad range of policymakers and stakeholders, and harnessing scientific and technological advances. The national strategy for climate adaptation spans sectors such as flood and drought risk management, healthcare, social welfare and transportation. Water management requires particular attention, as floods, heat and drought can disrupt energy production. There is no notable climate protection gap in Finland ([59]).

Air quality in Finland is generally good with exceptions. Both the indicators on the years of life lost due to exposure to PM2.5 and NO2 stood well below the EU average in 2021. The indicator for smog-precursor emission intensity to GDP decreased by 48% between 2008 and 2021, equalling 0.72 tonne-EUR'10 – below the EU average.

Finland has room for improvement in nature protection and management, given the country's continued biodiversity loss. At the end of 2021, 15% of the land and 11% of marine areas were under protection and only 32% of habitats and 45% of species were in a good conservation status ([60]). Furthermore, the common farmland bird index increased to 84 in 2020. However, Finland's agricultural management measures aimed at protecting species and habitats are not enough to offset the agricultural intensification and resulting eutrophication. The intensive rearing of poultry and pigs places the highest burden on the environment of all agricultural practices in terms of ammonia and particulate matter ($PM_{2.5}$) emissions into the air. The marine waters of Finland are not yet in a good environmental status for all the descriptors of

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

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

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

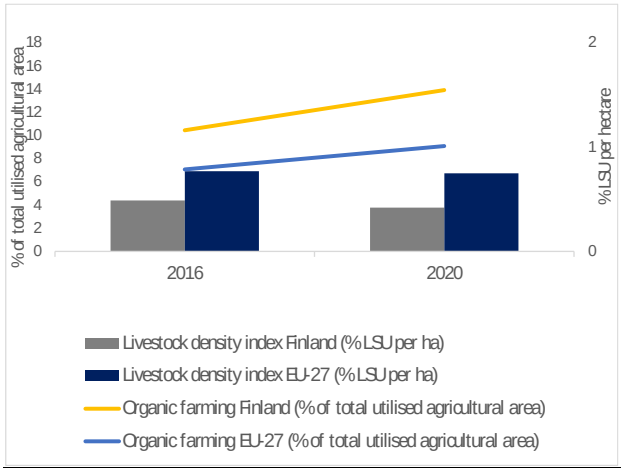
([59]) See the Commission's 2023 assessment and recommendation Finland's progress on climate adaptation.

([60]) Versus, respectively, 15% and 28% in the EU.

the Marine Strategy Framework Directive (MSFD) based on the last data reported for its marine strategy. Currently, the Ministry of the Environment is drafting the National biodiversity strategy and action plan 2035 ([61]).

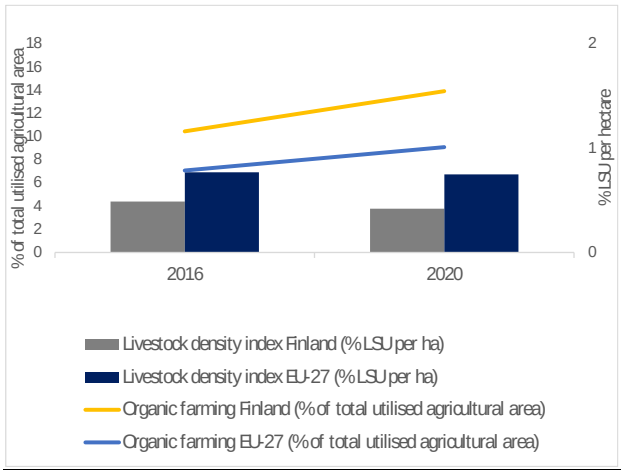
Although intensive agriculture places less pressure on Finland's nature and water resources, improvements are still needed. In 2010-2020 Finland reduced its livestock density to 0.42% (below the EU average of 0.75%). The total number of livestock units decreased in all regions during this period. The share of total utilised agricultural area (UAA) under extensive animal farming[12] also fell, from 30% in 2013 to 23% in 2016 (EU average: 23.8%). However, the agricultural sector was responsible for 87.4% of total ammonia emissions (EU average: 90.7%). The latest figures on the gross nitrogen balance on Finland's agricultural land show an average surplus of 43.7 kg of nitrogen per hectare per year in 2010, lower than the previous year. The content of nitrate in groundwater is among the lowest in the EU with 0.2 mg nitrate/l, and only 1.6% of groundwater monitoring stations have levels above the maximum of 50 mg nitrate/l. By contrast, Finland's gross phosphorous balance is among the highest in the EU, standing at 3.3 kg/ha in 2019. The chemical status of waterbodies is influenced by pesticide contamination. In 2020, 10% of monitoring sites were reported to have pesticide levels exceeding the thresholds set out in the Water Framework Directive. In 2021, the pesticide level was reported to be zero.

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



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

Graph A6.3: **Changes in livestock density and organic farming**



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

Food waste remains relatively high, while composting and anaerobic digestion could be increased. Finland produced 125 kg of food waste per person in 2021, just below the EU average of 131 kg. Food waste was mainly due to household activities. Composting and anaerobic digestion of municipal waste decreased to 77 kg per person in 2021, accounting for 12.2% of total municipal waste.

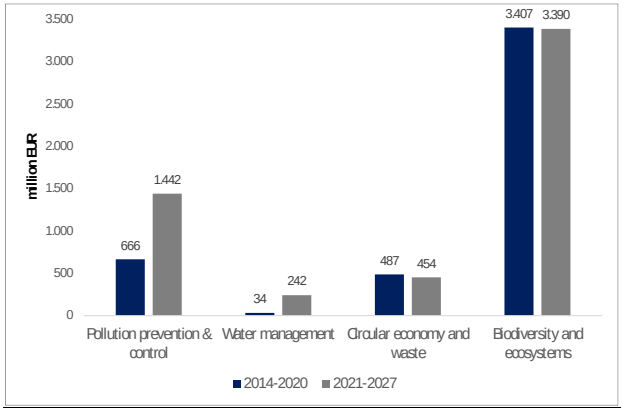
Finland could further limit the impact of agriculture on soil health. According to the

([61]) National biodiversity strategy and action plan 2035 - Ministry of the Environment (ym.fi).

impact assessment for the Soil Monitoring Law ([62]), 13% of Finnish soil could be considered as unhealthy ([63]), among the lowest levels of all Member States. Of this proportion, 7% of peatland is in an agricultural hotspot and 6% is highly susceptible to soil compaction. The combined effects of soil degradation and water scarcity can also be measured by the health status of peatlands. The net stock change of organic soils in Finland's cropland and grassland areas increased over time and at 3 806 kt in 2021 ([64]), remained among the highest in the EU. Furthermore, conservation tillage practices, which increase soil organic carbon, covered 29% of Finland's tillable area in 2016.

Finland would benefit from investing more in sustainable water management and pollution prevention and control. Over the 2014-2020 period, the environmental investment gap was estimated at EUR 6 billion per year, or 2.1% of GDP. The gap is estimated to be increasing over the 2021-2027 period at EUR 7.1 billion per year. There remains an opportunity to increase funding, for sustainable water management (EUR 116 million) and pollution prevention and control (EUR 1.6 billion per year) as the investment gap has widened.

Graph A6.4: **Environmental investment gap, annual average**



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

([62]) SWD 417 final of 05.07.2023 - Impact Assessment for the Directive of the European Parliament and of the Council on Soil Monitoring and Resilience (Soil Monitoring Law), (cfr. pg. 10, pg. 189-190, pg. 835-845).

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

([64]) FAOSTAT.

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

							Target	Distance	
		2005	2019	2020	2021	2022	2030	WEM	WAM
Progress to climate and energy policy targets									
Greenhouse gas emission reductions in effort sharing sectors [1]	Mt CO_{2eq} % pp	34.439,9	-13%	-17%	-20%	-23%	-50%	-6	-4
Net greenhouse gas removals from LULUCF [2]	Kt CO2eq	-24 850	-3 233	-5 354	3 474	4 443	-17.754	n/a	n/a
Share of energy from renewable sources (1) [3]	%	29%	43%	44%	43%	48%	62%	-	-
Energy efficiency: primary energy consumption [3]	Mtoe	33,6	32,1	29,9	31,5	30,2	29,8		
Energy efficiency: final energy consumption [3]	Mtoe	25,2	25,5	23,4	24,9	23,3	20,6		

							EU-27		Projected
		2018	2019	2020	2021	2022	2021	2022	2030
Green transition: mobility									
Greenhouse gas emissions: road transport	Mt CO2e	-	-	-	9,9	9,8	769,0	786,6	6,1
Share of zero-emission vehicles in new registrations [4]	%	0,7	1,7	4,4	10,3	17,8	9	12,1	n/a
Number of publicly accessible AC/DC charging points		-	-	3651	4570	5514	299178	446956	n/a
Share of electrified railways	%	56,2%	56,2%	56,6%	56,8%	-	56,1%	-	n/a
Green transition: buildings									
Greenhouse gas emissions: buildings	Mt CO2e	-	-	-	4,5	3,9	537,0	486,7	2,2
Final energy consumption in buildings	2015=100	114,1%	112,5%	104,8%	117,6%	112,0%	104,0%	97,2%	
Climate adaptation									
Climate protection gap [5]	score 1-4	-	-	0,7	0,8	1,0	1,5	1,5	n/a

		2018	2019	2020	2021	2022	2020	2021	2022
State of the environment									
Water | Water exploitation index (WEI+) (1) [6]	% of renewable freshwater	1,4	1,4	-	-	-	3,6	-	-
Circular economy | Material footprint [7]	tonnes per person	49,9	47,7	48,8	48,0	48,2	14,2	14,8	14,9
Pollution | Years of life lost due to air pollution by PM2.5 [8]	per 100.000 inhabitants	88	34	12	31	-	545	584	-
Biodiversity | Habitats in good conservation status [9]	%	32,0					14,7		
Common farmland bird index [10]	2000=100	77	77	84	-	-	78	-	-
Green transition: agri-food sector									
Organic farming	% of total utilised agricultural area	13,09	13,48	13,93	14,45	-	9,1	-	-
Nitrates in groundwater	mg NO_3/litre	18,25	16,19	18,58	-	-	20,42	-	-
Food waste per capita	Kg per capita			116	125	-	130	131	-
Share of soil in poor health [11]	%					13			41
Soil organic matter in agricultural land [12]	Mt per ha	123	-	-	-	-	7.904	-	-

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

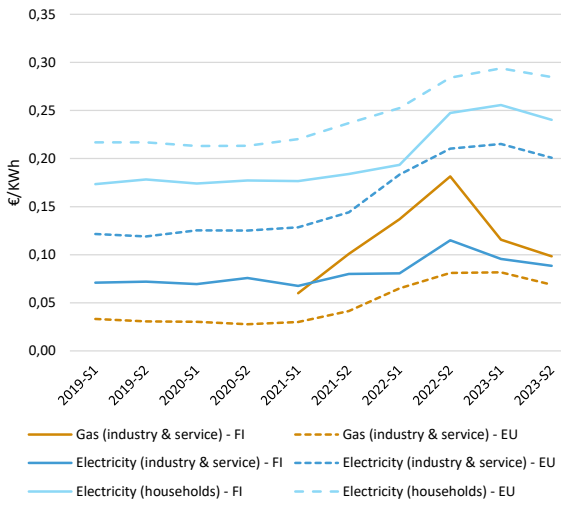
This annex ([65]) sets out Finland's progress and challenges in accelerating the net-zero energy transition while bolstering the EU's competitiveness in the clean energy sector ([66]). It considers measures and targets put forward in the draft updated National Energy and Climate Plans for 2030 ([67]).

Finland's substantially reduced energy dependence, largely due to the Olkiluoto 3 nuclear power plant entering operation as well as a considerable increase in renewable installed capacity. Finland remains a leading Member State in energy technology innovation. Topics requiring further attention include investments into grid infrastructure and network capacity, tapping into the full potential of energy efficiency and increasing market surveillance on products with ecodesign and energy labelling.

In line with overall EU trends, energy retail prices in Finland declined in 2023 but have not yet reached pre-crisis levels. Average gas retail prices for the industry decreased by 36% in the first semester 2023 and by 15% in the second semester while remaining 43% higher than the EU average. This made Finland the second most expensive Member State for industry to purchase gas. In 2023, average retail electricity prices for industrial consumers stood at a 28% premium compared to the 2019-2020 average, despite experiencing a downward trend following a peak in the second half of 2022. Meanwhile, Finnish average electricity prices for households, which had been on an upward trend in the first half of the year, dipped by 6% in the second semester of 2023. Average electricity prices for both non-household and household consumers remained considerably below the EU average throughout the year, by 56% and 16% in the second half of the year, respectively. By the second semester, average electricity prices for Finnish industrial consumers were the lowest in the EU.

Finland took several support measures in early 2023 to limit the impact of high electricity and heating costs, especially for low-income families with children. Increased electricity prices can now be taken into consideration when granting social assistance. The government is preparing a fixed-term income tax credit for electricity costs that will be in force for 4 months (reducing tax revenue by an estimated EUR 265 million). The government will also prepare a separate financial support scheme for electricity for households unable to fully use the fixed-term income tax credit. This scheme is expected to increase spending by EUR 85 million. In addition, the government lowered VAT on electricity from 24% to 10% between December 2022 and April 2023.

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



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

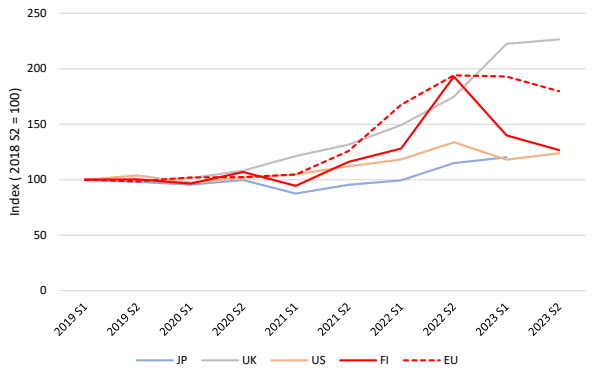
([65]) This annex is complemented by Annex 6 (because the European Green Deal focuses on the clean energy transition) and by Annex 8 on action to protect the most vulnerable groups complementing ongoing efforts under the European Green Deal, REPowerEU and European Green Deal Industrial Plan.

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

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

In relative terms, electricity prices for non-household consumers have increased significantly compared to the US and Japan up until the second half of 2022. However, they have since registered a sharp decline, nearly reaching the levels seen in the US and Japan by the first half of 2023. This shift indicates a potential rebound in the international competitiveness of energy-intensive industries in Finland.

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



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

Consumer empowerment in the electricity market is significant, but the enabling framework for energy communities still needs to be further developed. No information is available on the number of household consumers with a fixed-price electricity or gas contract in Finland ([68]). Switching rates in electricity increased marginally to just over 15%. The legal maximum switching period is 10 days. 99.9% of final household consumers had smart meters in 2022 (the EU average was 80%).

Finland has substantially reduced its energy dependence on non-EU countries. Around a third of Finland's energy supply (including 75% of its gas in 2021) used to come from Russia before Russia's full-scale invasion of Ukraine, but energy imports from Russia have been phased out since summer 2022 (except for some small amounts of nuclear fuel to the Loviisa nuclear power plant and some LNG). However, Finland declared an early warning under the Gas Security of Supply Regulation on 6 May 2022 and activated the alert level on 27 October 2023, following the disruption of the Balticconnector pipeline, which restarted operations in April 2024.

Finland does not produce any natural gas domestically. Gas accounted for around 3% of gross available energy in 2022 (6% in 2021) and 1.3% of gross electricity production (a decrease of 4% since 2021). Most of the gas demand comes from the industrial sector (55% in 2022) and the electricity and heat generation sector (27% in 2022). The resilience of Finland's gas system has been considerably improved in recent years by the commissioning of the Balticconnector; the creation of a regional gas market for the Baltic states; the construction of a small-scale LNG terminal connected to the national grid in Hamina; and the joint rental with Estonia of a floating storage regasification unit (FSRU) in Inkoo ([69]). Finland does not have any underground gas storage facility. Finland managed to reduce its gas demand between August 2022 and December 2023 by 40% (compared with the average for the previous 5 years) – the second highest reduction rate in the EU after Denmark. Annual consumption amounted to 1.3 bcm in 2022 (2.6 bcm in 2021).

No adequacy issues were recorded for the security of the electricity supply during the first half of 2023 according to ENTSO-E analysis ([70]). Since 2023, the Olkiluoto 3 nuclear power plant (1 600 MW) has entered into operation and installed wind capacity has increased significantly. Finland aims to achieve carbon neutrality by 2035 by maintaining high shares of nuclear energy;

([68]) All data on consumer empowerment are from the ACER Market Monitoring report 2023 (i.e. based on data for 2022); https://www.acer.europa.eu/Publications/2023_MMR_Energy_Retail_Consumer_Protection.pdf.

([69]) The Balticconnector was damaged on 7-8 October 2023 and was consequently out of service during the winter of 2023-24. According to the ENTSOG winter supply outlook, this disruption did not pose a significant risk to the security of gas supplies in the region. The Commission is nevertheless closely monitoring ongoing developments.

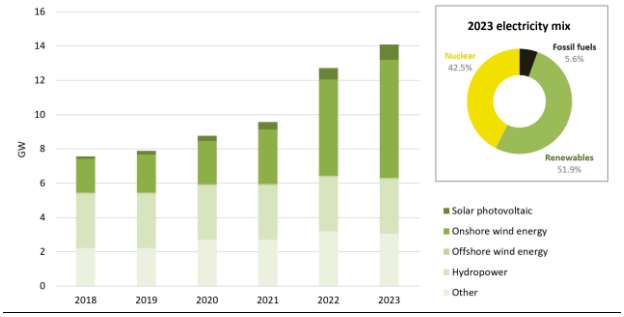
([70]) ERAA 2023 | ENTSO-E – ERAA 2023 (entsoe.eu).

increasing renewable energy sources (RES); electrifying most energy demand across the economy; improving energy efficiency; and increasing current interconnection capacity up to the 20% target for 2030.

Finland's draft updated national energy and climate plan (NECP) on its earlier commitment to phase out coal and peat is not entirely clear. The NECP includes a decision to ban the use of coal in energy production by May 2029, but coal may still be used as a backup fuel in exceptional situations. The draft updated NECP does not mention the commitment that was made in the territorial just transition plans to reduce the use of peat by half for energy production by 2030, but it does seem to be consistent with those plans overall. However, important information is missing ([71]).

Renewable installed capacity rose considerably by 26.5% in 2022 (compared to 2021), thanks to the significant increase in onshore wind energy. Finland's total renewable energy capacity was 14 093 MW in 2023 ([72]). Its total wind capacity in 2023 was 6 957 MW (an increase of 23% y/y), made up of 6 884 MW from onshore wind and 73 MW from offshore wind ([73]). Renewable electricity generation is projected to reach 57% of all electricity generated in Finland in 2030 (48% in 2022). Finland will reach 7.2 GW of wind power by 2030. Wind power will become the main (41.8%) source of renewable electricity ([74]), ahead of current main sources such as hydropower (27.2%) and bioenergy (25.5%). As regards the acceleration of solar deployment, the total installed capacity in 2023 was 900 MW ([75]). Solar power is expected be 4.4% in 2030 (2.8 GW of installed capacity).

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



(1) "Other" includes solid biofuels, renewable municipal waste and biogas
Source: IRENA, Ember

Finland has made significant progress in implementing reforms to accelerate the deployment of renewables. Finland has introduced legislation which has created a single unified application process to facilitate the administrative permit application and granting process. Further measures to streamline administrative procedures include limiting the duration of the licensing process for priority investments to a maximum of 12 months and allocating more resources to licensing authorities.

Finland's high share of renewables in heating and cooling (60% in 2022 and expected to reach 71% by 2030) is mainly related to biomass use (93 TWh in 2030). Consumption of electricity from heat pumps is expected to increase by 60% by 2030 (13 TWh).

Beside renewables, Finland plans to achieve carbon neutrality by maintaining a high share of nuclear energy. In 2022, 35% of domestic electricity generation (20% of the total energy supply) came from nuclear power. In February 2023 the Finnish government approved the request for extending the operational licence for Units 1 and 2 of Loviisa nuclear power plant. This will therefore be the main nuclear investment project in the coming period, with an estimated budget of EUR 1 billion to extend the lifetime until 2050. Following Russia's full-scale aggression against Ukraine, Finland has terminated the contract with Rusatom Overseas to supply a VVER-1200 reactor at Hanhikivi.

Finland's grid development continues to be driven by the need to further strengthen the weak connections with the rest of the Nordic

([71]) See the Commission's assessment of the draft updated NECP.

([72]) IRENA report, *Renewable Energy Statistics 2024*. The data might differ from the Eurostat data because different methodologies have been used to calculate AC and DC capacity.

([73]) IRENA 2024 report.

([74]) https://commission.europa.eu/system/files/2023-12/SWD_Assessment_draft_updated_NECP_Finland_2023.pdf

([75]) IRENA 2024 report.

synchronous system and connect the production of renewables in the region. The first EU list of projects of common interest (PCIs) and projects of mutual interest (PMIs), which the Commission adopted on 28 November 2023, lists three projects promoted by the national transmission system operator (TSO): two interconnectors between Finland and Sweden ('Aurora Line' and 'Aurora Line 2') and one subsea cable with Estonia ('Estlink 3'). The two 400 kV transmission lines with Sweden will together increase Finland's capacity by 1 600 MW by 2025 and 2032 respectively, thus reducing the price differentials between the Nordic and Baltic regions and making the Nordic synchronous system more robust. In January 2023, Finland concluded a non-binding agreement under the revised TEN-E Regulation with the objective of having 1 GW installed offshore renewable capacity by 2030, 5 GW capacity by 2040 and 12 GW by 2050.

Finland has made significant progress towards the 2030 EU targets for energy efficiency. In 2022, Finland had a primary energy consumption of 30.2 Mtoe (a 4.2% decrease on 2021 and an 8.5% decrease on 2012). It had final energy consumption of 23.3 Mtoe (a 6.4% decrease on 2021 and a 7.3% decrease on 2012). In the last year, the best results came from the industry sector, whose final energy consumption decreased by 10.2%; and the worst results came from the transport sector, whose final energy consumption increased by 2.0%.

Finland has good-quality building stock overall (with less than 10% of residential heating energy consumption linked to on-site fossil fuels according to its 2020 LTRS) but should enhance its efforts to limit energy demand in the building sector, where final energy demand reduction does not seem sufficient to achieve 2030 targets ([76]). The residential sector's final energy consumption declined by 1.4% between 2020 and 2022 ([77]). Finland expects most of the energy savings in the building sector by 2030 to come from the decarbonisation of heating at building level (e.g. removal of oil-fired heating boilers) and of centralised energy production (district heating and electricity). Heating and cooling accounted for almost 82% of Finland's final residential energy consumption in 2022 (an increase of 52% on 2021). The total stock of installed heat pumps in buildings reached around 1.4 million and is projected to increase from 10% (2020) to 20% (2030).

Finland carries out very few checks on products covered by eco-design and energy labelling. This has prompted concerns with respect to the level playing field for economic operators; and uncertainty regarding the compliance levels of the concerned products (and therefore possible missed energy and CO_2 savings).

Finland plans significant cross-border hydrogen infrastructure development in the next 10 years, tapping into its great potential to export surplus renewable hydrogen to neighbouring countries. Together with Sweden and the Baltic states, Finland is promoting the three onshore and offshore hydrogen transmission projects identified in the Commission's first PCIs and PMIs list. The aim is that the Nordic Hydrogen Route (Bothnian Bay), the Baltic Sea Hydrogen Collector and the Nordic-Baltic Hydrogen Corridor will transport the renewable hydrogen produced onshore and offshore in the Finnish and Swedish waters of the Baltic Sea to off-takers among the Baltic states and ultimately Poland and Germany. This should support the decarbonisation of industrial centres.

Finland remains highly dependent on non-EU countries for clean energy technologies but does have a few small-scale operations for PV and battery production. Finland is home to two solar module manufacturing plants in Juva and Salo. Finland also has a lithium-ion battery manufacturing unit in Varkaus with an output of 100 MWh. It is a key Member State in the transition from an EU economic security perspective: it has the largest deposit of nickel in the EU (3.8 Mt) and the only two cobalt-producing mines in the EU (see Annex 12).

([76]) Finland has set a target to reduce gross heating demand in the residential sector by 22% by 2030 (compared to 2020).

([77]) Final energy consumption in households from Eurostat (climate-corrected by the Joint Research Centre), with 2005-2022 as a reference period.

Finland is one of the leading Member States in terms of energy technology innovation. In 2020, Finland ranked 4th among IEA countries for government budget allocations on R&I as a share of GDP. Finland's has strong expertise in smart grids, bioenergy (advanced liquid biofuels), batteries and nuclear. Finland hosts several world-class research facilities and its public and private sector research entities are highly active in international co-operation on energy innovation.

In 2021, Finland set a goal of increasing total (public and private) spending on R&D to 4% of GDP by 2030 (vs 3% of GDP in 2021). Finland supports a target for EU-wide spending on R&D of 3% of EU-wide GDP by 2030 (vs 2.2% in 2018). The R&D Funding Act, which entered into force at the start of 2023, set increasing levels of annual government R&D funding to ensure that government R&D funding reaches 1.2% of GDP by 2030. This is intended to encourage private-sector R&D funding to reach the 4% goal. Finland spends relatively high amounts on public R&I investment in energy technologies (e.g. on energy efficiency in industry; and on renewable fuels & bioenergy – both 6% of total EU spending). Finland's VTT is a state-owned non-profit research centre supervised by the Ministry of Economic Affairs and Employment and one of its three main business areas is R&I for carbon-neutral solutions. However, between 2010 to 2021, Finland's public budget for energy R&I declined significantly from 0.17% to 0.06% of GDP, mainly due to lower spending on R&I for energy efficiency.

Table A7.1: Key Energy Indicators

		Finland				EU			
		2019	2020	2021	2022	2019	2020	2021	2022
ENERGY DEPENDNCE	**Import Dependency [%]**	**43,0%**	**43,2%**	**38,0%**	**40,9%**	**60,5%**	**57,5%**	**55,5%**	**62,5%**
	of Solid fossil fuels	98,9%	92,2%	72,4%	126,3%	43,3%	35,8%	37,3%	45,8%
	of Oil and petroleum products	95,1%	102,4%	95,5%	101,7%	96,7%	96,8%	91,7%	97,7%
	of Natural Gas	100,6%	100,3%	99,6%	103,1%	89,7%	83,6%	83,6%	97,6%
	Dependency from Russian Fossil Fuels [%]								
	of Natural Gas	97,0%	67,4%	75,1%	49,5%	39,7%	41,3%	41,1%	21,0%
	of Crude Oil	88,3%	80,9%	81,3%	16,9%	28,8%	26,7%	26,4%	19,5%
	of Hard Coal	63,8%	54,8%	47,2%	15,1%	43,5%	49,1%	47,4%	21,5%

		2016	2017	2018	2019	2020	2021	2022
DIVERSIFICATION OF GAS SUPPLIES	**Gas Consumption (in bcm)**	**2,5**	**2,4**	**2,6**	**2,6**	**2,6**	**2,6**	**1,3**
	Gas Consumption year-on-year change [%]	-8,6%	-4,7%	10,5%	-1,3%	-0,4%	0,5%	-48,4%
	Gas Imports - by type (in bcm)	**2,5**	**2,3**	**2,6**	**2,6**	**2,6**	**2,6**	**1,4**
	Gas imports - pipeline	2,5	2,3	2,6	2,4	2,4	2,3	1,1
	Gas imports - LNG	0,0	0,0	0,1	0,2	0,2	0,2	0,3
	Gas Imports - by main source supplier (in bcm) (1)							
	Russia	2,5	2,3	2,6	2,5	1,7	1,9	0,7
	Estonia	-	-	-	-	0,8	0,6	0,6

		2019	2020	2021	2022	2023
	LNG Terminals - storage capacity m3 LNG					
	Number of LNG Terminals	0	0	0	1	1
	LNG Storage capacity (m3 LNG)	0	0	0	68.000	151.000
	Underground Storage					
	Number of storage facilities	0	0	0	0	0
	Technical Capacity (bcm)	0,0	0,0	0,0	0,0	0,0

		2016	2017	2018	2019	2020	2021	2022	2023
ELECTRICITY/ENERGY	**Gross Electricity Production (GWh) (2)**	**68.757**	**67.523**	**70.263**	**68.650**	**69.267**	**72.122**	**72.219**	-
	Combustible Fuels	26.399	25.030	27.959	25.923	21.391	23.672	20.693	-
	Nuclear	23.203	22.477	22.793	23.870	23.291	23.598	25.336	-
	Hydro	15.799	14.772	13.301	12.421	15.883	15.792	13.491	-
	Wind	3.068	4.795	5.839	6.025	8.256	8.507	12.022	-
	Solar	22	48	90	147	219	298	392	
	Geothermal	-	-	-	-	-	-	-	-
	Other Sources	266	401	281	264	227	255	285	-
	Gross Electricity Production [%]								
	Combustible Fuels	38,4%	37,1%	39,8%	37,8%	30,9%	32,8%	28,7%	-
	Nuclear	33,7%	33,3%	32,4%	34,8%	33,6%	32,7%	35,1%	-
	Hydro	23,0%	21,9%	18,9%	18,1%	22,9%	21,9%	18,7%	-
	Wind	4,5%	7,1%	8,3%	8,8%	11,9%	11,8%	16,6%	-
	Solar	0,0%	0,1%	0,1%	0,2%	0,3%	0,4%	0,5%	-
	Geothermal	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	-
	Other Sources	0,4%	0,6%	0,4%	0,4%	0,3%	0,4%	0,4%	-
	Net Imports of Electricity (GWh)	**18.951**	**20.425**	**19.936**	**20.042**	**15.104**	**17.768**	**12.517**	-
	As a % of electricity available for final consumption	23,1%	24,8%	23,7%	24,3%	19,3%	21,3%	16,0%	-
	Electricity Interconnection [%]		**28,8%**	**28,2%**	**29,1%**	**29,0%**	**24,2%**	**24,0%**	**20,1%**
	Share of renewable energy consumption - by sector [%]								-
	Electricity	32,7%	35,0%	36,5%	38,0%	39,6%	39,6%	47,9%	-
	Heating/cooling	53,7%	54,6%	54,9%	56,9%	57,6%	52,1%	58,5%	-
	Transport	8,8%	18,7%	14,8%	14,8%	14,3%	20,7%	18,8%	-
	Overall	38,9%	40,9%	41,2%	42,8%	43,9%	42,9%	47,9%	-

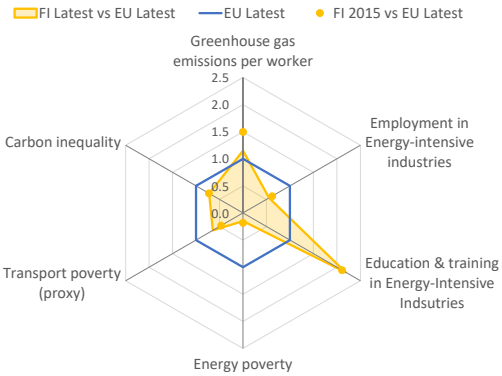
		2019	2020	2021	2022	2023
CLEAN ENERGY	**VC investments in climate tech start-ups and scale-ups (EUR Mln)**	**47,00**	**52,42**	**104,52**	**87,39**	**108,57**
	as a % of total VC investment (3) in Finland start-ups and scale-ups	5,3%	3,9%	4,7%	3,9%	11,7%
	Research & Innovation spending in Energy Union R&i priorites					
	Public R&I (EUR mln)	158,5	146,6	141,2	-	-
	Public R&I (% GDP)	0,066%	0,062%	0,056%	-	-
	Private R&I (EUR mln)	508,8	405,0	-	-	-
	Private R&I (% GDP)	0,212%	0,170%	-	-	-

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

This Annex monitors Finland's progress in ensuring a fair transition towards climate neutrality and environmental sustainability, particularly for workers and households in vulnerable situations. Employment in the environmental goods and services sector decreased slightly between 2015 and 2021 and now comprises 5.5% of total employment (EU: 2.7%). The green transition will create more than 11 500 jobs in processing and 3 100 in primary production by 2030, while 19 000 jobs are expected to be lost in services ([78]). Between 2015 and 2022, the greenhouse gas emission intensity of Finland's workforce (see Graph A8.1 and Table A8.1) declined from 21.4 to 16.4 tonnes per worker, indicating a positive trend in the green transition, even though it is above the EU average of 14.3 tonnes ([79]). Investment in skills, as part of the implementation of the Council Recommendation of 2022 on ensuring a fair transition towards climate neutrality ([80]) and the REPowerEU plan, supports the fair transition towards climate neutrality. It is also present in Finland's recovery and resilience plan (RRP), particularly in the broad reform of the lifelong learning services that focuses on training and skills development, and in the European Social Fund Plus (ESF+), which supports reskilling and upskilling in, among other things, green skills.

The green economy demands new skills as well as support for workers in declining activities. In 2023, employment in Finland's energy-intensive industries comprised 2.0% of total employment (EU: 3.5%). Employment in mining and quarrying has risen by 4.6% since 2015 (to around 6 800 workers in 2023) but Finland's target of halving the use of peat for energy by 2030 is expected to lead to a reduction in employment in peat extraction and related sectors by 2 500 to 4 200 full-time equivalents. The economic impact is significant because peat extraction is geographically concentrated in small, economically disadvantaged areas. The job vacancy rate in construction, a key sector for the green transition, is lower than the EU average (1.6% vs 3.6% in 2023) (see Graph A8.2). Nevertheless, 63% of small and medium-sized enterprises (SMEs) in the sector reported that skills shortages are holding them back in general business activities ([81]). According to the European Labour Authority (ELA) ([82]), labour shortages were reported in 2023 for several occupations that required specific skills or knowledge for the green transition ([83]), including electrical engineers and construction supervisors.

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



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

Skills are key for ensuring smooth labour market transitions and preserving jobs in transforming sectors. In energy-intensive industries, workers' participation in education and training was 23.8.0% in 2023, well above the EU average (10.9%). In Finland, 42% of SMEs indicate that the skills required for greening business activities are becoming

([78]) Medium-term Climate Change Policy Plan

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

([80]) Council Recommendation of 16 June 2022 on ensuring a fair transition towards climate neutrality (2022/C 243/04) covers employment, skills, tax-benefit and social protection systems, as well as essential services and housing.

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

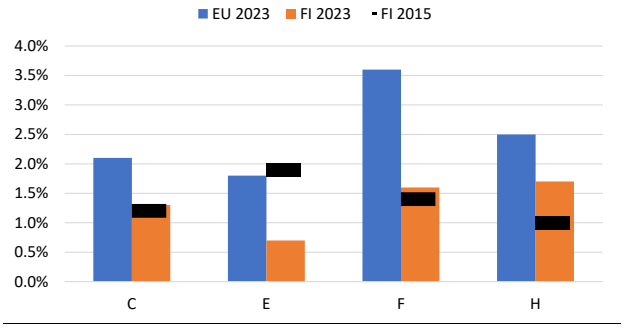
([82]) Based on the European Labour Authority 2024 EURES Report on labour shortages and surpluses 2023, i.e., data submitted by the EURES National Coordination Offices.

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

more important (EU: 42%) ([81]). If Finland matches its projected contribution to the EU's renewable energy target, between 2000 and 3 600 additional skilled workers will be needed for the deployment of wind and solar energy, which may require an investment in skills of EUR 2.3-2.9 million ([84]). The continuous learning reform included in the RRP addresses the impacts of the transition on employment by including measures to strengthen green and digital skills. The territorial just transition plans will facilitate the phasing out of peat production in Finland with the support of the Just Transition Fund, while addressing the social, employment and skills impacts by investing a total of EUR 465 million. In Finland, approximately 11% of the total ESF+ funding (EUR 604.7 million) is earmarked to green skills and jobs.

Energy poverty indicators are well below the EU average and improved slightly in recent years. The share of the population unable to keep their homes adequately warm decreased from 1.7% in 2015 to 1.4% in 2022 and is well below the EU average (9.3%) ([85]). A relatively small proportion of households are energy poor, which has continued to decrease despite the spike in energy prices between 2021 and 2022 due to supply constraints caused by the COVID-19 pandemic and Russia's war of aggression against Ukraine. This improvement was attributed to emergency measures implemented in Finland (see Annex 7). Furthermore, 3.9% of the population at risk of poverty (AROP) (EU: 20.1%) were unable to keep their home adequately warm in 2022. However, in January 2023, 23.8% of the population at risk of poverty spent a considerable proportion of their budget (more than 6%) on private transport fuels (EU: 37.1%) ([86]).

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



C - Manufacturing
E - Water supply; sewerage, waste management and remediation activities
F - Construction
H - Transportation and storage
Source: Eurostat jvs_a_rate_r2.

Consumption footprint inequality remains a critical issue leading to environmental inequalities in Finland. In 2021, the consumption footprint for the richest 20% of the population in 2021 was 2.0 times higher than the footprint of the poorest 20%, compared to an EU average of 1.8 ([87]). For both groups the consumption footprint is highest for food and housing. In Finland, the average levels of air pollution in 2021 stood below the EU average (5.0 vs 11.4 µg/m3 PM2.5), and all regions were below critical levels of air pollution ([88]). According to estimates, around 160 premature deaths annually have been due to exposure to air pollution ([89]).

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

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

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

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

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

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

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

Indicator	Description	FI 2015	FI	EU
GHG per worker	Greenhouse gas emissions per worker – CO_2 equivalent tonnes	21.4	16.4 (2022)	14.3 (2022)
Employment EII	Employment share in energy-intensive industries, including mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24) and automotive (C29)	2.2%	2.0% (2023)	3.5% (2023)
Education & training EII	Adult participation in education and training (last 4 weeks) in energy-intensive industries	22.9%	23.8% (2023)	10.9% (2023)
Energy poverty	Share of the total population living in a household unable to keep its home adequately warm	1.7%	1.4% (2022)	9.3% (2022)
Transport poverty (proxy)	Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport	17.2%	23.8% (2023)	37.1% (2023)
Carbon inequality	Ratio between the consumption footprint of the top 20% vs bottom 20% of the income distribution	2.0	2.0 (2021)	2.7 (2021)

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

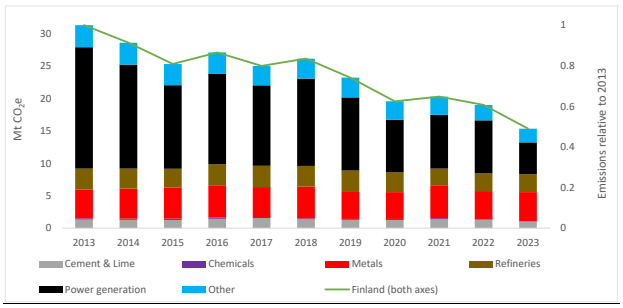
Finland is taking important steps towards achieving a fair transition to climate neutrality. Russia's war of aggression against Ukraine, changes in consumer behaviour, rising interest rates and prices have made the situation particularly difficult for construction and industry. Several plant closures are ongoing, as well as mass redundancies. At the same time, large-scale wind energy projects are underway, as are investments in solar energy and green hydrogen production. The National Foresight System is expected to contribute to the analysis of the green transition's impact. Training programmes related to the green transition and environmental issues have already been implemented. However, in other areas Finland provides support to different groups without specifically targeting the challenges emerging from the green transition. This is the case in the public employment services, the support to entrepreneurship and the social protection system. In addition, the involvement of workers and their representatives in the green transition process should be strengthened ([90]).

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

The green transition of industry and the built environment, in particular decarbonisation, resource efficiency and circularity, is essential to boost Finland's competitiveness ([91]). In this regard, priorities for Finland are reducing its reliance on incineration and increasing its use of circular materials and circular business models in industry and construction.

Finland is an 'eco-innovation' leader; however it is not faring well in other Circular Economy aspects with an economy still highly impacting the environment. Finland reported the highest material footprint in the EU in 2022, amounting to 46 tonnes per capita, slightly lower than in the previous year. Similarly, in 2020, the country produced more waste per capita than any other Member State: almost 21 tonnes per capita. In 2020, the monetary waste intensity was above the EU average, with 0.58 kg of waste per capita per EUR'10 ([92]) generated by the economy – versus an EU average of 0.18 kg per capita.

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

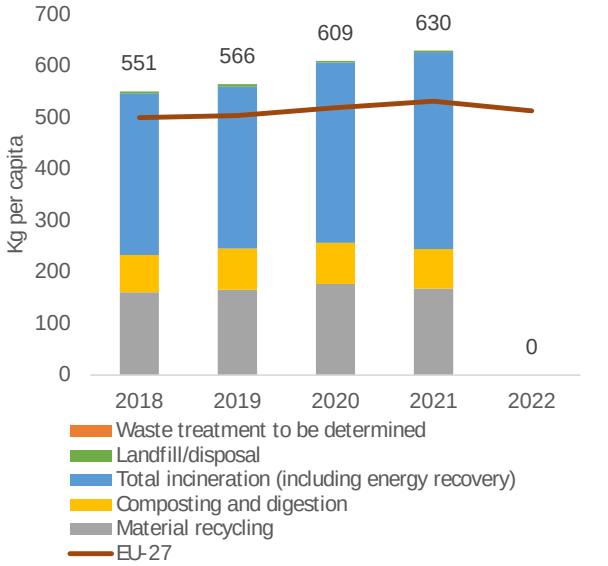


Source: European Commission

In 2023, the sectors covered by the EU emissions trading system (ETS) in Finland ([93]) emitted 34% less greenhouse gases than in 2019, with the largest decreases in 2020 and 2023 respectively. In 2023, 32% of greenhouse gases emitted by Finland's ETS installations came from power generation, less than the EU average (57%). Of the total emissions from all industry sectors, the metals industry emitted 43%, refineries 26%, and cement and lime production 10%. 20% of emissions came from other industries. Between 2019 and 2023, the power generation sector reduced emissions by 57%, while the industry sectors decreased emissions by 13%. Since 2013, greenhouse gas emissions have declined by 74% in power generation and by 17% in the industry sectors. This has resulted in an overall reduction of 51% since 2013.

Finland underperforms in recycling municipal waste and relies heavily on waste incineration. Finland is on track to meet the 2025 recycling target for all packaging waste, and the 2035 landfill target. However, Finland is at risk of missing the 2025 target (55%) for the recycling of municipal waste, which reached 39% in 2021. Furthermore, the country is still highly reliant on incineration. By contrast, Finland is performing well in e-waste recycling: 88.1% of electrical and electronic equipment was recycled in 2021. Furthermore, 15 new patents on waste recycling were registered in 2020, slightly in decline after the peak of 19 in 2016.

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



Source: Eurostat

Finland would benefit from improving construction and demolition waste treatment to meet the EU targets. Finland's recovery rate was lower than the EU average and only

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

([92]) In 2010 prices.

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

accounted for 63% of total construction and demolition waste generated in 2020. Finland missed the Waste Framework Directive's target of recovering 70% by 2020.

The Finnish national energy and climate plan recognises the importance of circular economy beyond waste management. Like the 2019 plan, the 2023 plan addresses circular economy connections with climate mitigation and the bioeconomy. The 2023 plan also mentions the importance of early product stages and training. However, it includes few references to circular economy in relation to decarbonisation.

There is still room to make better use of the potential of the circular economy transition to improve the efficiency of the Finnish industry. Both the circular material use rate and resource productivity are among the lowest in the EU. The circular material use rate dropped to 0.6% in 2022, and resource productivity stood at 0.89 purchasing power standards per kilogram in 2022. Resource productivity expresses how efficiently the economy uses material resources to produce wealth. Improving resource productivity can help minimise negative impacts on the environment and reduce dependence on volatile raw material markets. Finland was dependent on imports for 18.4% of materials used in 2022, compared with an EU average of 22.4%, making the country comparatively less vulnerable to supply chain disruptions. Water abstraction for manufacturing purposes accounted for 63.4% of total water abstracted in 2019, making manufacturing the sector with the highest impact on water resources.

The impact of particulate matter emissions from Finnish industries on air quality is in line with the EU average. The grams of PM10 emitted per economic output (EUR'10) decreased from 0.13 in 2018 to 0.10 in 2021, versus an EU average of 0.09 g/EUR'10. Moreover, in 2010-2021, the Finnish industrial sector decreased its emissions of main pollutants into the air and water. Specifically, nitrogen released into water decreased by 13%. In 2020, the country produced 592 kg of hazardous waste per capita, well above the EU average of 214 kg per capita, and treated 92.9% of it.

The built environment system is on track to reduce its impact on nature and climate and improve its resilience. Finland has developed simplified life cycle approach methodologies and whole-life carbon databases, intending to facilitate whole-life carbon accounting and regulation in the future. Finland plans to introduce CO_2 limits for new buildings by 2025. In 2018, the soil sealing index stood at 107.7 below the EU average. Finland's sealed area per capita is below the EU average, and soil sealing affects 0.47% of the total area, versus an EU average of 1.86%. In 2012-2018, net land take stood below the EU average and dramatically decreased by 78% compared with 2006-2012. Finland is on track to reach no net land take by 2050. According to the European Environment Agency, Finland reported the highest levels of land recycling and densification in the EU in 2006-2012, more than 46% of total land consumption, versus an EU average of 13.5%. For example, in Helsinki, land recycling and densification accounted for 60% of total land consumption. The Finnish biodiversity strategy and action plan for 2020

Table A9.1: **Circularity indicators**

	2018	2019	2020	2021	2022	2023	EU-27	Latest year
Industry								
Resource productivity (purchasing power standard (PPS) per kilogram)	0,7	0,8	0,8	0,8	0,9	-	2,5	2022
Circular material use rate (%)	4,4	4,5	4,4	1,6	0,6	-	11,5	2022
Eco-innovation index (2013=100)	169,9	169,4	170,6	170,9	178,0	-	121,5	2022
Recycling of plastic packaging (%)	31,1	42,0	39,4	42,9	-	-	40,7	2021
Cost of air emissions from industry (EURbn)	7,1	6,8	5,7	5,9	-	-	352,7	2021
Built environment								
Recovery rate from construction and demolition waste (%)	74,0	-	63,0	56,6	-	-	89,0	2020
Soil sealing index (base year = 2006)	102,6	-	-	-	-	-	103,4	2018
Non-residential floor area (m^2 per capita)	43,4	43,9	44,5	-	-	-	18,0	2020
Waste backfilled (%)	1,1	-	2,7	-	2,5	-	9,9	2020

Source: Eurostat, European Environment Agency

provides the basis for the green infrastructure policy. European Environment Agency data for 9 main cities show that the average tree coverage reached 58% in 2018, almost double the EU average share – 30.3%.

Digital transformation is key to ensuring a resilient and competitive economy. In line with the Digital Decade Policy Programme, and in particular with the targets in that Programme for digital transformation by 2030, this Annex describes Finland's performance on digital skills, digital infrastructure/connectivity and the digitalisation of businesses and public services. Where relevant, it makes reference to progress on implementing the Recovery and Resilience Plan (RRP). Finland allocates 28.9% of its total Recovery and Resilience Facility budget to digital (EUR 0.5 billion) ([94]). Under Cohesion Policy, an additional EUR 0.4 billion (20% of the country's total Cohesion Policy funding) is allocated to the country's digital transformation ([95]).

The Digital Decade Policy Programme sets out a pathway for the EU's successful digital transformation by 2030. Finland's national roadmap outlines the actions it intends to take to reach the objectives and targets at national level. The first Report on the State of the Digital Decade highlighted the need to accelerate and deepen the collective efforts to reach the EU-wide targets and objectives ([96]). Among others, a digitally skilled population increases the development and adoption of digital technologies and leads to productivity gains and new business models. It also leads to higher inclusion and participation in an environment increasingly shaped by the digital transformation ([97]). Digital technologies, infrastructure and tools all play a role in addressing the current structural challenges, including strategic dependencies, cybersecurity and climate change.

In the 2024 Digital Economy and Society Index, Finland was among the best-performing countries in digital skills on most indicators, including the share of the population having at least basic digital skills, the proportion of ICT specialists and the share of ICT graduates, which remained the same or slightly increased compared to 2023 data. Given the size and relevance of ICT in the economy, the demand for ICT-skilled workers is high and companies report difficulties in hiring ([98]). Finland is implementing several measures to address this, including activities to increase the intake of students to ICT studies but there is still room for additional action.

Finland's score is broadly in line with the EU average on the indicators for digital infrastructure/connectivity. However, due to the features of its socio-geography (large but sparsely populated territory), Finland scores below the EU average on very high capacity network (VHCN) and fibre to the premises (FTTP) coverage. By contrast, for overall 5G coverage, it scores well above the EU average (98% versus 89%). 5G coverage on the 3.4-3.8 GHz spectrum band, which is essential for enabling advanced applications requiring large spectrum bandwidth, is 90%, which is also much higher than the EU average of51%.

Finland excels in the digitalisation of businesses, with indicators significantly above the EU average for SMEs with at least a basic level of digital intensity, for enterprises using big data solutions and, especially, for the use of cloud services and artificial intelligence. In 2022, 4.9% of enterprises in Finland reported ICT service outage due to cyberattacks (e.g. ransomware attacks, denial of service attacks). Over the same year, 43% of enterprises developed or reviewed their ICT security policy within the previous 12 months.

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

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

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

([97]) See for example OECD (2019): OECD Economic Outlook, Digitalisation and productivity: A story of complementarities, OECD Economic Outlook, Volume 2019 Issue 1 | OECD iLibrary (oecd-ilibrary.org) and OECD (2019): Going Digital: Shaping Policies, Improving Lives – Summary, https://www.oecd.org/digital/going-digital-synthesis-summary.pdf.

([98]) Source: Eurostat – European Union Survey on ICT Usage and e-Commerce in Enterprises.

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

	Finland			EU	Digital Decade target by 2030 (EU)
	2022	2023	2024	2024	
Digital skills					
At least basic digital skills	**79%**	**79%**	**82%**	**56%**	**80%**
% individuals	2021	2021	2023	2023	2030
ICT specialists ([1])	**7.4%**	**7.6%**	**7.6%**	**4.8%**	**20 million**
% individuals in employment aged 15-74	2021	2022	2023	2023	2030
Digital infrastructure/connectivity					
Fixed very high capacity network (VHCN) coverage	**68%**	**71%**	**78%**	**79%**	**100%**
% households	2021	2022	2023	2023	2030
Fibre to the premises (FTTP) coverage ([2])	**40%**	**50%**	**61%**	**64%**	-
% households	2021	2022	2023	2023	
Overall 5G coverage	**72%**	**95%**	**98%**	**89%**	**100%**
% populated areas	2021	2022	2023	2023	2030
Digitalisation of businesses					
SMEs with at least a basic level of digital intensity	**82%**	**NA**	**86%**	**58%**	**90%**
% SMEs	2021		2023	2023	2030
Data analytics	**NA**	**NA**	**41%**	**33%**	-
% enterprises			2023	2023	
Cloud	**66%**	**66%**	**73%**	**39%**	-
% enterprises	2021	2021	2023	2023	
Artificial intelligence	**16%**	**16%**	**15%**	**8%**	-
% enterprises	2021	2021	2023	2023	
AI or cloud or data analytics ([3])	**NA**	**NA**	**80%**	**55%**	**75%**
% enterprises			2023	2023	2030
Digitalisation of public services					
Digital public services for citizens	**90**	**92**	**91**	**79**	**100**
Score (0 to 100)	2021	2022	2023	2023	2030
Digital public services for businesses	**93**	**100**	**100**	**85**	**100**
Score (0 to 100)	2021	2022	2023	2023	2030
Access to e-health records	**NA**	**90**	**83**	**79**	**100**
Score (0 to 100)		2022	2023	2023	2030

(1) The 20 million target represents about 10% of total employment.
(2) The fibre to the premises coverage indicator is included separately as its evolution will also be monitored separately and taken into consideration when interpreting VHCN coverage data in the Digital Decade.

(3) At least 75% of EU enterprises have taken up one or more of the following, in line with their business operations: (i) cloud computing services; (ii) big data; (iii) artificial intelligence.

Source: Digital Economy and Society Index

Finland performs very well on the digitalisation of public services. The possibilities for online interaction between government authorities and the public – citizens as well as businesses – are approaching saturation and for businesses, the Digital Decade target has already been reached. For access to electronic health records, Finland scores higher than the EU average. By far the largest number of digital transformation measures in the Finnish RRP are focused on public services including measures to support the digital transformation of healthcare and of public services, with a particular focus on data-driven innovation, the exchange of digital information and the use of public sector data.

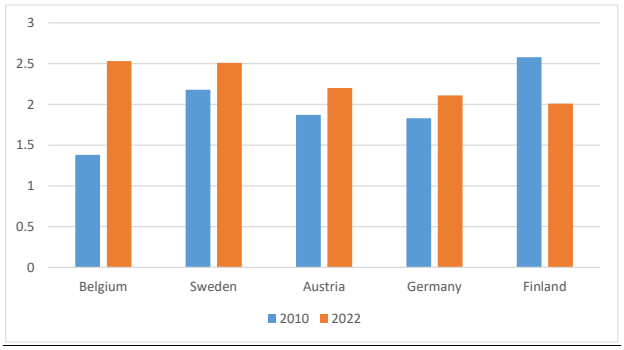
This Annex provides a general overview of the performance of Finland's research and innovation system, which is essential for delivering the twin transition and ensuring long-term competitiveness.

Finland is an 'innovation leader'. According to the 2023 edition of the European Innovation Scoreboard ([99]), its innovation performance has been among the top three in the EU, behind Denmark and Sweden. The indicators on which there was most progress according to the 2023 Scoreboard were Business process innovators and Sales of innovative products, while indicators showing significant decline were Lifelong learning, Public-private co-publications, and Design applications. In regional comparison, the national high innovation performance is driven by the Helsinki-Uusimaa region. Three regions are a strong innovator and Åland is a moderate innovator.

Finland's R&D intensity stood at 2.95% in 2022, down from 2.99% in 2021 and still far from the country's ambitious target of 4% of GDP to be invested in R&D by 2030. After dropping to 2.72% of GDP in 2016, owing to a strong decline in business R&D investment, Finland's R&D spending started recovering as of 2017. At the end of 2022, the Parliament adopted a law aiming at an increase in public R&D spending with a view to reaching 1.2% of GDP by 2030. It is to be matched with business investments of 2.8% of GDP. To achieve the 4% target, the government-appointed Parliamentary Working Group on Research, Development and Innovation set up a long-term plan for R&D funding. As a result, the Act on Research and Development Funding was adopted at the end of 2022, foreseeing growth of the state R&D budget from € 2.4 billion in 2023 to € 4.3 billion in 2030. The steady annual increase of relevant budget allocations allows for an additional EUR 280 million to be invested in R&D each year between 2024 and 2030. Indeed, in the 2024 budget, the EUR 280 million increase was followed through by the government.

Reaching the 4% target will require boosting business R&D investment. Finland is still behind some EU countries in business R&D expenditure (graph A11.1). While it has been on an increasing trend in the last few years, business R&D intensity is above the EU average (1.48% in 2022), but still not back to its 2010 level (2.01% in 2022 compared to 2.58% in 2010).

Graph A11.1: **Business enterprise expenditure on R&D as % of GDP, 2010-2022**



Source: Eurostat

R&I investments planned under the recovery and resilience plan (RRP) and the cohesion policy programme 'innovation and skills in Finland 2021-2027' are expected to help foster business R&D. Business Finland, the main public-sector operator in supporting enterprises, supervised by the innovation department of the Ministry of Employment and Economy, provides among other EU-cofunded measures EUR 100 million funding from the RRF to some leading companies that take on important economic and societal challenges. Those 'locomotives' are developing wide ecosystems by involving large number of SMEs. For example, the Wärtsilä-led collaboration ecosystem to develop balancing solutions for the renewable energy transition involves more than 200 companies. The partners committed to together investing EUR 200 million in the research by 2028. As highlighted in the OECD Economic Survey 2022, business R&D spending is concentrated among large firms (albeit to a lesser extent than in other high-performing countries such as Sweden) and the weight of SMEs is particularly small in applied research. Further efforts to diversify Finland's innovators base could thus help the country unleash its full innovation potential.

([99]) Available at https://ec.europa.eu/assets/rtd/eis/2023/ec_rtd_eis-country-profile-fi.pdf.

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

Finland	2010	2015	2020	2021	2022	EU average (1)
Key indicators						
R&D intensity (GERD as % of GDP)	3.71	2.87	2.91	2.99	2.95	2.24
Public expenditure on R&D as % of GDP	1.1	0.94	0.94	0.91	0.93	0.73
Business enterprise expenditure on R&D (BERD) as % of GDP	2.58	1.91	1.95	2.05	2.01	1.48
Quality of the R&I system						
Scientific publications within the top 10% most cited publications worldwide as % of publications of the country	11.5	11.5	11.65			9.6
Patent Cooperation Treaty (PCT) patent applications per billion GDP (in PPS)	9.9	7.8	7.5			3.4
Academia-business cooperation						
Public-private scientific co-publications as % of total publications	13.1	12.7	12.1	12.5	11.9	7.6
Public expenditure on R&D financed by business enterprise as % of GDP	0.076	0.046	0.036	0.035		0.054
Human capital and skills availability						
New graduates in science & engineering per 1000 pop. aged 25-34	23.8	17.8	18.4	17.5		16.9
Public support for business enterprise expenditure on R&D (BERD)						
Total public sector support for BERD as % of GDP	0.07	0.08	0.089			0.204
R&D tax incentives: foregone revenues as % of GDP	0	0	0			0.104
Green innovation						
Share of environment-related patents in applications filed under PCT (%)	14.8	14.5	13.6			14.7
Finance for innovation and economic renewal						
Venture capital (market statistics) as % of GDP	0.062	0.058	0.0134	0.208	0.206	0.085
Employment share of high growth enterprises measured in employment (%)		14.31	15.63			12.51

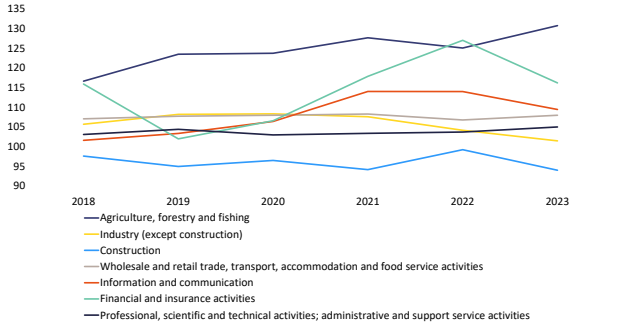
(1) EU average for the last available year or the year with the largest number of country data.
Source: Eurostat, OECD, JRC, Science-Metrix (Scopus database and EPO's Patent Statistical Database), Invest Europe

Finland is traditionally a good environment for doing business and came 11th in the 2023 International Institute for Management Development (IMD) world competitiveness rankings ([100]). This was a drop of three places compared with the previous year and was due to falls in both the government and business efficiency categories (down two and four places respectively). Despite some deterioration because of the general economic climate, Finnish SMEs continued to benefit from favourable financing conditions (according to the 2023 Access to Finance of Enterprises Survey (SAFE) ([101])).

Productivity has stagnated in the face of an ageing and falling working-age population. For more than a decade real labour productivity has been consistently below both the EU average and the averages of regional neighbours. Real labour productivity in terms of GDP per person employed fell by 1.3% in 2022, which was significantly worse than the EU average (+1.4%). For industry, real labour productivity per person decreased by 2.5% in 2023, again worse than the EU performance (-1.2%). Total factor productivity growth has been fluctuating around zero in recent years (below both the EU-27 average and the euro area average). Explanations for this poor recent performance include sectoral differences (professional activities and manufacturing have performed well but the construction sector, and to a lesser degree industry and agriculture, have performed badly (see Graph A12.1). Low investment in areas that support productivity growth (machinery and equipment, including information and communication technology equipment and intellectual property products) is restraining growth.

Access to commodities or raw materials and access to other components, semi-finished products, services or equipment were two key obstacles to Finnish business activity according to the 2023 EIB Investment Survey ([102]). The same survey found that the availability of skilled labour is the most significant barrier to long-term investment for Finnish companies (82% cite this as an obstacle to investment).

Graph A12.1: **Productivity by sector**



Source: Commission calculations

Finland remains an Innovation Leader ([103]). However, R&D intensity decreased to 2.95% in 2022 (2.99% in 2021) fell far short of Finland's ambitious target of 4% of GDP being invested in R&D by 2030. Reaching the 4% target will require increased business R&D investment, but Finland is behind some other EU Member States in this area and business R&D spending tends to come from large firms. SMEs play a particularly small role in applied research.

PISA 2022 results (particularly the increasing share of 15-year-olds with insufficient basic skills) point to weaknesses in the education system. Underachievement in basic skills has been growing in the past decade and the share of top performers has been shrinking. Underperformance is especially high among students with disadvantaged and migrant backgrounds (see Annex 15). In light of the demographic situation, the quality of Finland's future human capital seems particularly important for competitiveness.

Finland's export intensity is low for a small open economy and levels of EU trade integration are amongst the lowest in the EU. Finland's trade integration is well below the EU average, expressed as a percentage ratio of imports and exports to national GDP (23.4% compared with an EU average of 42.9%). According to the 2022 Digital Society and Economy Index (DESI), Finland ranks first

([100]) World Competitiveness Rankings - IMD

([101]) Data and surveys - SAFE (europa.eu)

([102]) EIB Investment Survey: European Union overview

([103]) See Annex 11 on Innovation for more detail.

among the EU Member States for the integration of digital technology by business. In the 2023 edition of DESI, nearly 90% of Finnish SMEs had at least a basic level of digital intensity (considerably above the EU average of 69%). SMEs' use of digital tools and services (e.g. e-commerce) has doubled over the last couple of years. However, a relatively low share of Finnish SMEs sell online cross-border (8% versus the 9% average in the EU) according to the same Index, despite Finland being among the leaders in business digitalisation. Compared to Nordic peers, and to the EU, a low proportion of SMEs are concentrated in high-knowledge intensive industries (28% vs 47% in Sweden and 31.7% in Denmark in 2021) ([104]). Labour shortages risk becoming an obstacle to the further development of the ICT sector. The most intense shortages are found in several knowledge areas, such as computers, electronics and mathematical knowledge (see Annex 14 for more detail).

Finnish industrial strategy centres on the ambitious objectives for a green transition to climate neutrality and Finland is a leader in climate technology innovation. The national strategy ([105]) focuses on developing modern technologies and services with potential for global deployment to maximise climate benefits and promote Finland's economic competitiveness. Thanks to nuclear reactors and large domestic production of renewable energy (forestry solid biomass, hydro and wind), Finland has a low level of reliance on fossil fuels. However, the economy's energy intensity remains high due to the large heavy industry sector. Notable challenges remain for an industrial sector that still relies on imported fossil fuels for energy supply (e.g. for transport).

Finland's REPowerEU chapter includes one reform and three investments to support the clean transition of the Finnish energy system. Particularly important is a reform of the environmental permitting system to include a one-stop-shop and a single national authority to process environmental permits from submission to eventual decision. This is expected to significantly streamline the permitting process and reduce the time it takes to process permit applications.

The Single Market Scoreboard indicates that Finland performs well in transposing and applying EU law. The transposition deficit fell in 2023 to 0.4% at the end of year (the EU average was 0.7%). In 2023 there were 11 ongoing infringement procedures (the EU average was 26) ([106]). Finland solved 80% of SOLVIT cases (5) it handled as lead centre (slightly below the EU average of 88.3%).

In Finland, implementation of the core components needed to connect to the 'once-only' technical system (OOTS) is well advanced. The system will enable the automated exchange of evidence between cross-border authorities. It is part of the Single Digital Gateway Regulation, which improves online access to information, administrative procedures and assistance within the EU. This makes it easier for citizens and businesses to navigate the single market. Working on the completion of a national eIDAS-notified eID scheme is key to Finnish citizens fully benefiting from the system when moving abroad (as obtaining an eIDAS-notified eID scheme would be for legal persons). Finland should address obstacles such as the creation of a legal basis for cross-border exchange. The onboarding of competent authorities onto the OOTS is crucial for the system to function smoothly and to reduce administrative burden.

([104]) 2021/2022 Annual Report on European SMEs - June 2022 - LE Europe (le-europe.eu)

([105]) EK PowerPoint Title, IBM Plex Sans Light 48pt (climate2035.fi)

([106]) Single Market Scoreboard 2023.

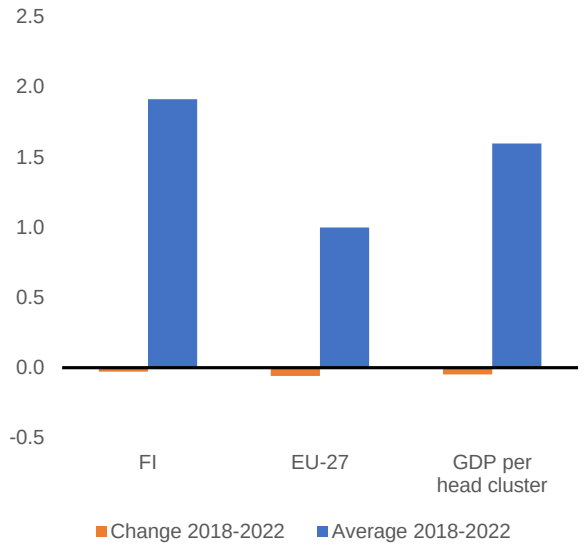
Table A12.1: **Industry and the Single Market**

Finland							
POLICY AREA	**INDICATOR NAME**	**2019**	**2020**	**2021**	**2022**	**2023**	**EU27 average***
HEADLINE INDICATORS							
Economic Structure	Net Private investment, level of private capital stock, net of depreciation, % GDP[1]	4	3.4	3.9	4.3	3.5	**3.8**
	Net Public investment, level of public capital stock, net of depreciation, % GDP[1]	0.8	1.2	0.6	0.6	0.4	**1.2**
	Real labour productivity per person in industry (% yoy)[2]	2.2	-0.1	1.8	-3.1	-2.5	**-1.24**
Cost competitiveness	Nominal unit labour cost in industry (% yoy)[2]	-1	-0.4	5.1	7.2	4.1	**9.83**
SINGLE MARKET							
Single Market integration	EU Trade integration, % (Average intra-EU imports + average intra EU exports)/GDP[2]	22.2	20.0	22.2	26.0	23.4	**42.9**
Compliance	Transposition deficit, % of all directives not transposed[3]	0.1	0.6	0.8	0.9	0.4	**0.7**
	Conformity deficit, % of all directives transposed incorrectly[3]	1.1	1.2	1.1	1.3	1	**1.1**
	SOLVIT, % resolution rate per country[3]	50.0	81.8	90.9	83.3	80.0	**88.3**
	Number of pending infringement proceedings[3]	8	12	15	11	11	**25.9**
Restrictions	EEA Services Trade Restrictiveness Index[4]	0.05	0.05	0.05	0.05	0.05	**0.05**
Public procurement	Single bids, % of total contractors[3]	15	14	14	14	15	**28.6**
	Direct Awards, %[3]	2	3	3	3	3	**8.1**
ECONOMIC STRUCTURE							
Shortages	Material Shortage (industry), firms facing constraints, %[5]	9.5	5.3	29.5	41.5	14.0	**17.2**
	Labour Shortage using survey data (industry), firms facing constraints, %[5]	16.9	9.0	16.1	24.4	16.8	**23.3**
	Vacancy rate, % of vacant posts to all available ones (vacant + occupied)[2]	2.475	2.0	2.9	3.2	2.3	**2.5**
Strategic dependencies	Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials[6]	0.21	0.2	0.19	0.2	0.24	**0.22**
	Installed renewables electricity capacity, % of total electricity produced[2]	0.4	0.4	0.4	0.5		**50**
BUSINESS ENVIRONMENT - SMEs							
Investment obstacles	Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle[7]	11.5	7.5	9.9	9.0	5.0	**22.2**
Business demography	Bankruptcies, Index (2015=100)[2]	-	-	-	-	-	**105.6**
	Business registrations, Index (2015=100)[2]	-	-	-	-	-	**120.2**
Late payments	Payment gap - corporates B2B, difference in days between offered and actual payment[8]	-	17	13	10	14	**15**
	Payment gap - public sector, difference in days between offered and actual payment[8]	-	16	8	12	16	**16**
	Share of SMEs experiencing late payments in past 6 months, %[9]	48.2	45.2	43.5	42.1	45.6	**48.7**
Access to finance	EIF Access to finance index - Loan, Composite: SME external financing over last 6 months, index values between 0 and 1[10]	0.34	0.44	0.40	0.40	-	**0.49**
	EIF Access to finance index - Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values between 0 and 1[10]	0.31	0.32	0.37	0.34	-	**0.17**

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

Finland's public administration is essential for the economy's competitiveness by, in particular, shaping the conditions for the twin transition and creating a favourable business environment. Over the past decade, the Finnish public administration has consistently ranked among the most effective in the EU, with a slight decrease in recent years (Graph A13.1). The government programme for 2023-2027 ([107]) aims to improve governance by updating the strategy for public governance and strengthening the sustainability of public finances. This will complement the Finnish recovery and resilience plan (RRP), which includes reforms and investments for the digitalisation of the public administration and public services. The RRP measure to build a mechanism to share data more systematically between the public administration and public companies is in progress.

Graph A13.1: **Government effectiveness**



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

Finland has a skilled civil service. The share of civil servants with higher education remains well above the EU average as does the share of those in adult learning. In 2023, Finland published the end report of the human resource management programme ([108]) which focuses on improving the attractiveness of the public administration as an employer. The programme paid special attention to developing the skills of human resource professionals and Finland will incorporate the outcomes in their HRM policies. Moreover, the Procurement Finland programme promotes public procurement skills for public sector employees. Finland is among the top EU countries for gender parity in senior civil service management positions. In addition, Finland has the highest proportion of female ministers.

Finland's e-government maturity ranks above the EU average (Graph A13.2). The country is proficient in overall e-government maturity, digital skills and online interaction between government authorities and the public. 97% of Finnish internet users use e-government services. In addition, these services continue to improve their focus on cybersecurity and risk management. Finland has a highly skilled workforce in its public services. According to the Finnish strategy for digitalisation and information management in healthcare and social welfare ([109]) Finland intends to improve the effectiveness and governance of digital services in these areas. The country will streamline transactions related to different life events and develop seamless service paths (Digital Compass).

The justice system is efficient overall ([110]). It has an average performance when it comes to the estimated time to resolve litigious civil and commercial cases, which keeps increasing (327 days at first instance in 2022 vs 305 days in 2021). The clearance rate of resolving administrative cases at first instance has

([107]) Finnish Government (2023), 'A strong and committed Finland: Programme of Prime Minister Petteri Orpo's Government', https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/165044/Programme-of-Prime-Minister-Petteri-Orpos-Government-20062023.pdf?sequence=4.

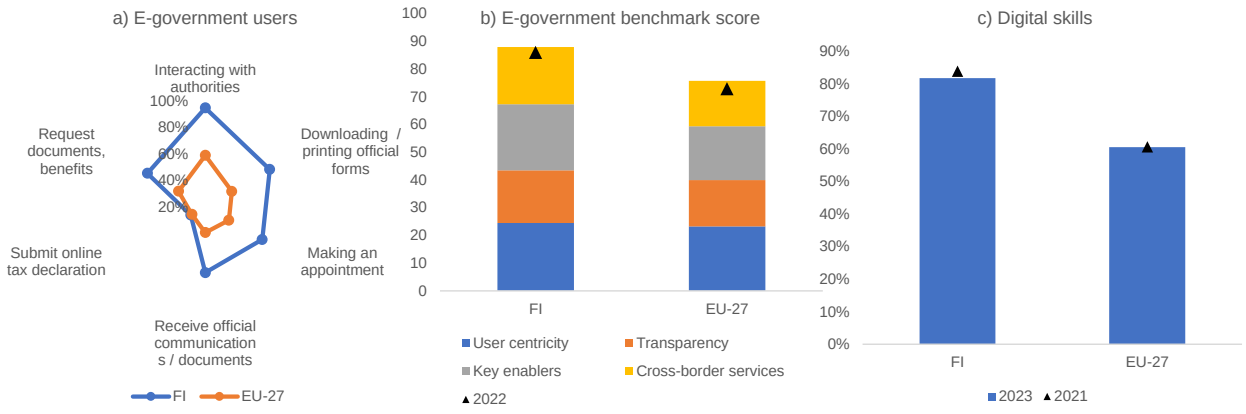
([108]) Henkilöstöjohtamisen uudistusohjelma (vm.fi).

([109]) Strategy for digitalisation and information management in healthcare and social welfare - Valto (valtioneuvosto.fi)

([110]) For a more details, see the 2024 EU Justice Scoreboard and the 2024 Rule of Law Report (forthcoming).

increased from 102 to 104%. The quality of the justice system is good overall, and the level of digitalisation is advanced. Procedural rules enabling digital tools are largely in place. These tools are widely used in courts and include an electronic case management system, technology for distance communication and a secure remote work environment for judges and staff. There are still specific challenges in initiating and following proceedings in civil and commercial cases online and in allocating electronic cases. On judicial independence, no systemic deficiencies have been reported.

Graph A13.2: **a) Use of public authorities' websites or apps (left side); b) e-government maturity (centre); c) share of individuals with basic or above basic overall digital skills (right side)**



(1) 2023 data. Indicators a and c: % of people who used the internet in the last year.
Source: Eurostat and e-government benchmark report.

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

FI	Indicator ([1])	2019	2020	2021	2022	2023	EU-27([2])
E-government and open government data							
1	Share of internet users within the last year that used a public authority website or app	n/a	n/a	n/a	97.0	97.6	75.0
2	E-government benchmark overall score ([3])	n/a	84.7	84.5	86.0	88.0	75.8
3	Open data and portal maturity index	0.8	0.9	0.9	0.8	0.8	0.8
Educational attainment level, adult learning, gender parity and ageing							
4	Share of public administration employees with higher education (levels 5-8, %)	72.3	75.0	71.1 (b)	68.8	70.4	52.9
5	Participation rate of public administration employees in adult learning (%)	41.7	40.2	44.8 (b)	33.6	32.0	17.9
6	Gender parity in senior civil service positions ([4])	2.4	11.0	12.6	4.6	8.4	9.2
7	Ratio of 25-49 to 50-64 year olds in NACE sector O	1.4	1.5	1.6 (b)	1.7	1.6	1.5
Public financial management							
8	Medium-term budgetary framework index	0.8	0.8	0.8	0.8	n/a	0.7
9	Strength of fiscal rules index	1.1	1.2	1.2	1.2	n/a	1.4
Evidence-based policy making							
10	Regulatory governance	n/a	n/a	1.50	n/a	n/a	1.7

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

ANNEX 14: EMPLOYMENT, SKILLS AND SOCIAL POLICY CHALLENGES IN LIGHT OF THE EUROPEAN PILLAR OF SOCIAL RIGHTS

The European Pillar of Social Rights is the compass for upward convergence towards better working and living conditions in the EU. This Annex provides an overview of Finland's progress in implementing the Pillar's 20 principles and EU headline and national targets for 2030 on employment, skills and poverty reduction.

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

Policy area	Headline indicator	
Equal opportunities and access to the labour market	Adult participation in learning (during the last 12 months, excl. guided on the job training, % of the population aged 25-64, 2022)	51.8
	Early leavers from education and training (% of the population aged 18-24, 2023)	9.6
	Share of individuals who have basic or above basic overall digital skills (% of the population aged 16-74, 2023)	82.0
	Young people not in employment, education or training (% of the population aged 15-29, 2023)	9.2
	Gender employment gap (percentage points, population aged 20-64, 2023)	0.2
	Income quintile ratio (S80/S20, 2022)	3.8
Dynamic labour markets and fair working conditions	Employment rate (% of the population aged 20-64, 2023)	78.2
	Unemployment rate (% of the active population aged 15-74, 2023)	7.2
	Long term unemployment (% of the active population aged 15-74, 2023)	1.6
	Gross disposable household income (GDHI) per capita growth (index, 2008=100, 2022)	108.0
Social protection and inclusion	At risk of poverty or social exclusion (AROPE) rate (% of the total population, 2022)	16.3
	At risk of poverty or social exclusion (AROPE) rate for children (% of the population aged 0-17, 2022)	14.9
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2022)	49.8
	Disability employment gap (percentage points, population aged 20-64, 2022)	19
	Housing cost overburden (% of the total population, 2022)	5.4
	Children aged less than 3 years in formal childcare (% of the under 3-years-old population, 2022)	40
	Self-reported unmet need for medical care (% of the population aged 16+, 2022)	6.5

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

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

The labour market performance slowed down in the first half of 2023, mainly due to the decline in construction. Even with weakening economic conditions, the employment rate in Finland is still high, reaching 78.2% in 2023. The unemployment rate is, however, 7.2% (EU: 6.1%). The rate of young people not in employment, education or training (NEETs) was 9.2% in 2023, below the EU average of 11.2%. While the rate of early leavers is close to the EU average (9.6% vs 9.5%), figures vary considerably depending on geographic location and gender (see Annex 15). The gender pay gap remains well above the EU average (15.5% vs 12.7% in 2022) and has not changed significantly in recent years. The main underlying reasons range from segregation of the labour market to family policies ([111]). The distribution of care work within the household, which is still unequal compared to other Nordic countries, is also a contributing factor ([112]).

Labour shortages and skills mismatches remain acute in the social and healthcare sectors. Overall, the number of vacancies fell in all sectors in the past year, with the job vacancy rate at 1.8% (EU: 2.5%) in Q4-2023. Middle-income occupations (hourly wage less than EUR 16) particularly lack staff in Finland ([113]), including a shortage of about 6 000 kindergarten teachers and 2 480 special education teachers, mainly in the Helsinki area ([114]). Labour shortages remain most pronounced for staff in social welfare and healthcare. There are significant regional differences: the vacancy rates vary from 1.9% in Etelä-Karjala to 6.7% in the Pohjanmaa region ([115]). Finland has fewer professionally active doctors per capita than the EU average, and staff shortages in nursing have grown dramatically in recent years (see Annex 16). Also, the labour force is reduced by the ageing population and outward labour migration. Together with demographic challenges, labour and skills shortages also undermine Finland's potential to increase its economic competitiveness.

([111]) STM 2023. Assessment of Equal Pay Programme and Government's equal pay measures 2020–2023. Reports and Memorandums of the Ministry of Social Affairs and Health.

([112]) Including in Nordic comparison, cf. SAAGE Country report – Finland 2023.

([113]) Työvoiman saatavuus, työvoimapula ja kohtaanto-ongelmat vuonna 2022 -raportti summaa Työvoimatiekartta-hankkeen tulokset (valtioneuvosto.fi)

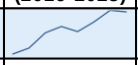
([114]) https://www.keva.fi/uutiset-ja-artikkelit/kuntien-tyovoimaennuste-hoitajapula-kaksinkertaistui-kahdessa-vuodessa/; 2023 Education and Training monitor.

([115]) Availability of workforce (Data base of the Ministry of Economic affairs and Employment)

Activating under-represented groups and attracting skilled workers from outside the EU would be beneficial for Finland's labour market performance. The difference in the employment rates of workers aged 20-64 born outside the EU and those born in Finland was 12.9 percentage points (pps) in 2023. The Finnish recovery and resilience plan (RRP) promotes the employment of non-EU nationals and people from vulnerable groups. The reform on streamlining the work and education-based immigration process (2024) is expected to improve opportunities for students from outside the EU to find employment, and to increase the immigration of skilled workers. At the same time, the public employment services are undergoing a major reform to improve the effectiveness of service delivery: from 1 January 2025, the employment and economic development services will be transferred to municipalities. The European Social Fund Plus (ESF+) will help unemployed and inactive people, for example, by improving the efficiency of unemployment services and stimulating cooperation with businesses. These measures are expected to support progress towards the national employment rate target of 80% by 2030.

Finland performs well on adult learning. Adult participation in learning in the previous 12 months stood at 51.8% in 2022 (up 0.4 pps from 2016), 12.3 pps above the EU average. The rate of tertiary educational attainment among people aged 25-34 years decreased from 40.7% in 2022 to 39.2% in 2023 and is below the EU average (43.1%) (see Annex 15). The government has earmarked approximately EUR 10 million more per year until 2028 for vocational education and general upper secondary education. The adult education allowance will be abolished, however, which may have an adverse effect on adults' participation in learning ([116]). The ESF+ will support upskilling, reskilling and adult learning in Finland with approximately EUR 182 million in funding in 2021-2027. The RRP will contribute to these objectives with reforms and investments for continuous learning, and by introducing measures to increase the number of places in higher education, all of which will contribute to achieving the national target of at least 60% of all adults participating in training every year by 2030.

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

Indicators	Latest data	Trend (2016-2023)	2030 target	EU target
Employment (%)	78.2 (2023)		80	78
Adult learning[1] (%)	51.8 (2022)		60	60
Poverty reduction[2] (thousands)	78 (2023)		-100	-15,000

(1) Adult Education Survey, adults in learning in the past 12 months, special extraction excl. guided on-the-job training.
(2) Change in the number of persons at risk of poverty or social exclusion (AROPE), reference year 2019.
Source: Eurostat, DG EMPL.

The poverty rate remains low albeit showing an upward trend, which the planned cuts to social benefits may further exacerbate. The rate of people at risk of poverty or social exclusion (AROPE) increased from 14.2% in 2021 to 16.3% in 2022, still well below the EU average of 21.6%. Likewise, the AROPE rate for children increased from 13.2% to 14.9% in the same period (EU: 24.7%). Planned reductions in social benefits ([117]) may potentially have a negative impact on low-income households and it is estimated that they will increase poverty, primarily among young adults, single parents and working-age adults living alone, with 3% of the population losing more than 10% of their income ([118]). ESF+ investments support the reduction of child poverty, the reform of child protection services and active inclusion measures. This will help Finland achieve its national target of 100 000 fewer people at risk of poverty or social exclusion by 2030, of which at least one third should be children, but additional efforts are still needed. Implementation of the European Child

([116]) Vahva ja välittävä Suomi : Pääministeri Petteri Orpon hallituksen ohjelma 20.6.2023 (valtioneuvosto.fi)

([117]) Changes are planned to the housing allowance and earnings-related unemployment benefits, among others. (Vahva ja välittävä Suomi : Pääministeri Petteri Orpon hallituksen ohjelma 20.6.2023 (valtioneuvosto.fi)

([118]) Vuoden 2024 sosiaaliturvamuutosten yhteisvaikutusten arviointi - Sosiaali- ja terveysministeriö Helsinki 2023.

Guarantee is ongoing, as described in the Finnish progress report.

Access to healthcare services remains a critical challenge. The provision of primary and specialised care services for older people remains a particular issue. Self-reported unmet medical needs remain high, affecting 6.5% of the population in 2022, well above the EU average of 2.2%. Waiting times for primary and specialised care are long, in particular due to the shortages of care and medical staff ([119]) (see Annex 16). Finland is implementing a comprehensive reform of health and social services, which aims to improve the availability and quality of basic public healthcare services. The reform is supported under the RRP. The new Regional Wellbeing Services Counties are yet to meet all of their reform objectives.

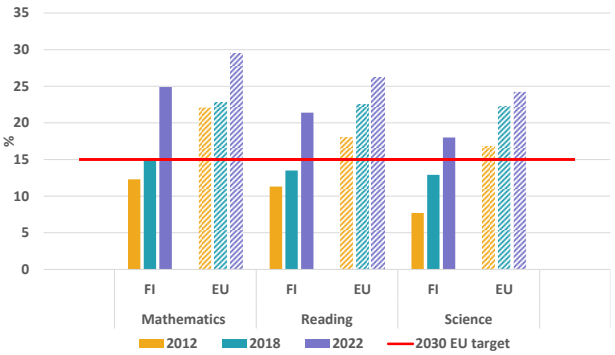
([119]) Organising of healthcare and social welfare in Finland: National Expert Assessment, autumn 2023 (julkari.fi)

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

Underachievement in basic skills has substantially grown in the past decade, while the share of top performers is shrinking. PISA 2022 ([120]) showed that the proportion of 15-year-old underachieving students increased significantly since 2012 (by 12.6 pps in mathematics (EU 7.3 pps), 10.1 pps in reading (EU 8.2 pps), and 10.6 pps in science (EU 7.4 pps)). This represents one of the most notable changes at EU level. In 2018, the shares of 15-year-olds underachieving in PISA were still below the EU target of 15% in all three fields, but now all of them have exceeded it. Nevertheless, the rates remain below the EU average. Similarly, the proportion of top performers has also decreased in all three domains since 2012 but remains above the EU average. Further research is needed to identify the key drivers behind the performance decline. Studies show that the pandemic affected the wellbeing, support needs, social competences and learning motivation. At the same time, online education was especially challenging for speakers of minority languages and students who lacked sufficient parental learning support. The government is planning to boost the acquisition of basic skills, especially in primary level. For that goal, the minimum number of compulsory lesson hours for reading, writing and numeracy in primary education will be increased in 2025. The curriculum will not expand with this reform, for which the government will invest EUR 200 million.

Underachievement has been growing across the entire socio-economic distribution, but the increase has been more pronounced for disadvantaged students. In 2022, 38.7% of disadvantaged students underachieved in mathematics, compared with 24.5% in 2018 and 19.9% in 2012. While this is a significant increase, the Finnish socio-economic gap remains one of the smallest in the EU (28.1 pps vs 37.2 pps at EU level). At the same time, underachievement has also become more frequent among the most socio-economically advantaged students with a rate of 10.7% in 2022 (EU 10.9%) in mathematics, which represents an increase of 6.1 pps compared with PISA 2012.

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



Source: OECD (2023).

Foreign-born students are also much more likely to underachieve in basic skills. In Finland, as in most other EU countries, foreign-born students perform worse than native-born. Their underachievement rate reached 57.2% in 2022, leading to a gap of 35.2 pps when compared with native-born students without a migration background. This is one of the largest gaps in the EU, which also remains significant, at 21.2 pps, for native-born students with parents born abroad. The impact of migrant background is among the strongest in the EU with a gap of 29 score points after accounting for socio-economic background and language spoken at home. In addition, more foreign-born young people (16.3% in 2021 vs 13.4% in 2022) leave education early, while the rate of early leaving from education and training remained stable for native young people (7.6% vs 7.7%) ([121]).

Teaching continues to be an attractive profession in Finland, but shortages affect several areas. Within the EU, Finnish teachers are those who feel most valued by society; they are very satisfied with their work and

([120]) OECD (2023), PISA 2022 Results (Volume I): The State of Learning and Equity in Education.

([121])Eurostat: edat_lfse_02.

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

				2012		2018		2023	
Indicator			Target	Finland	EU-27	Finland	EU-27	Finland	EU-27
[1]Participation in early childhood education (age 3+)			96%	80.0% [2013]	91.8% [2013]	86.4%	92.2%	90.6% [2021]	92.5% [2021,d]
[2]Low-achieving 15-year-olds in:		Reading	< 15%	11.3%	18.0%	13.5%	22.5%	21.4% [2022]	26.2% [2022]
		Mathematics	< 15%	12.3%	22.1%	15.0%	22.9%	24.9% [2022]	29.5% [2022]
		Science	< 15%	7.7%	16.8%	12.9%	22.3%	18.0% [2022]	24.2% [2022]
Early leavers from education and training (age 18-24)	[3]Total		< 9 %	8.9%	12.6%	8.3%	10.5%	9.6%	9.5%
	[3] By gender	Men		9.8%	14.5%	9.2%	12.1%	11.9%	11.3%
		Women		8.1%	10.6%	7.4%	8.7%	7.3%	7.7%
	[4] By degree of urbanisation	Cities		7.3% [b]	11.2%	6.7%	9.4%	6.2%	8.6%
		Rural areas		10.1% [b]	14.0%	10.4%	11.0%	15.1%	9.9%
	[5] By country of birth	Native		8.7%	11.3%	8.1%	9.2%	9.3%	8.2%
		EU-born		: [u]	26.2%	: [u]	22.4%	: [u]	21.0%
		Non EU-born		: [u]	30.1%	13.4% [u]	23.0%	: [u]	21.6%
[6]Socio-economic gap (percentage points)				15.4	:	18.5	29.5	28.1 [2022]	37.2 [2022]
[7]Exposure of VET graduates to work-based learning			≥ 60% (2025)	:	:	:	:	76.7%	64.5%
Tertiary educational attainment (age 25-34)	[8]Total		45%	39.7%	34.1%	40.3%	38.7%	39.2%	43.1%
	[8] By gender	Men		30.8%	29.1%	32.6%	33.3%	32.7%	37.6%
		Women		49.2%	39.2%	48.5%	44.2%	46.1%	48.8%
	[9] By degree of urbanisation	Cities		48.3% [b]	43.5%	49.3%	49.0%	46.0%	53.3%
		Rural areas		29.2% [b]	24.8%	27.0%	27.7%	28.4%	31.7%
	[10] By country of birth	Native		40.6%	35.4%	42.2%	39.7%	41.6%	44.2%
		EU-born		34.1%	29.3%	23.5%	36.7%	25.7% [u]	40.2%
		Non EU-born		27.3%	24.2%	22.7%	31.0%	26.3%	37.1%
[11]Participation in adult learning (age 25-64)			≥ 47% (2025)	:	:	51.4% [2016]	37.4% [2016]	51.8% [2022]	39.5% [2022]
[12]Share of school teachers (ISCED 1-3) who are 55 years or over				20.6% [2013]	22.7% [2013]	21.4%	23.8%	23.6% [2021]	24.5% [2021]

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

only a few of them consider leaving the teaching profession. Yet the number of students applying as a priority to become schoolteachers decreased between 2015 and 2022 (from 4 675 to 3 280). In 2021, the proportion of students enrolled in tertiary studies in the field of education was around 5.4% of the total, below the EU average of 7.4%. There are also regional differences in the availability of special needs teachers. Shortages have also been observed in the teaching of Finnish and Swedish as second languages, and in Sámi-speaking teachers at all levels of education.

Finland aims to expand participation in early childhood education and care (ECEC), among low-income households. ECEC participation has been increasing to reach 90.6% for children aged 3 to compulsory schooling age (2021) and 40% for children below the age of 3 (2022). These rates remain below the EU-level target of 96% ([122]) and the Barcelona target of 45% respectively. To foster ECEC participation, notably from low-income households, the government lowered the fees for ECEC. Approximately 30 000 families will be entitled to free ECEC. While ECEC services are generally of high quality, there is a lack of ECEC teachers, especially in the Helsinki area ([123]). To address the shortage, the available student places in ECEC teacher education will be increased in 2024-2025.

Tertiary educational attainment (TEA) has been stagnating for years. In 2023, TEA rates were 39.2% (1.5 pps less than in 2022), below the EU average of 43.1% ([124]) and the EU-level target of (45%). The rate has been relatively stable over the last 10 years at around 40%. Regional differences in TEA rates remain significant (from 34.6% to 44.7%) ([125]). The gap by country of birth is significant too (26.1% of

([122]) Eurostat: educ_uoe_enra21.

([123]) https://julkaisut.valtioneuvosto.fi/handle/10024/165044

([124]) Eurostat: edat_lfse_03.

([125]) Eurostat: edat_lfse_04.

foreign-born students vs 41.6% of native-born) ([126]). The TEA rates gender gap in 2023 persists in favour of women (46.1%) vs men (32.7%), higher gap than the EU average (11.2 pps).

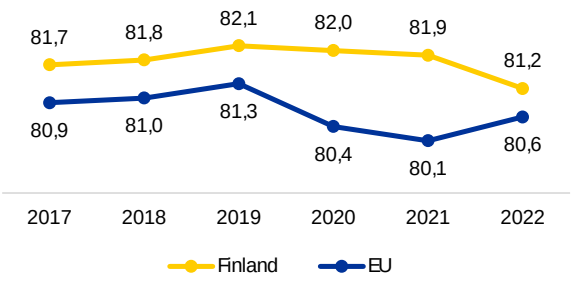
The number of international higher education students moving to Finland increased significantly in 2022. More than 7 000 new students from outside the EU had been granted to a residence permit by the end of October 2022. The number of study-based residence permits increased by 45% compared with 2021.

([126]) Eurostat: edat_lfs_9912.

A healthy population and an effective, accessible and resilient health system are prerequisites for a sustainable economy and society. This Annex provides a snapshot of population health and the health system in Finland.

Life expectancy in Finland is higher than the EU average. Its upward trend was disrupted in 2020 due to COVID-19. In the first 2 years of the pandemic it fell only slightly, followed by a significant drop in 2022 (0.7 years lower than in 2021), as mortality from COVID-19 increased markedly ([127]). In 2021, the leading causes of death were diseases of the circulatory system ('cardiovascular diseases') followed by cancer and Alzheimer's disease and other forms of dementia. Treatable mortality in Finland is low, pointing to an overall effective health system.

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

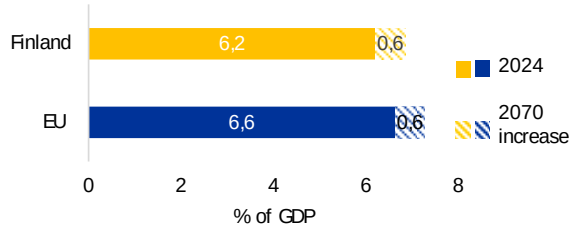


Source: Eurostat

Health expenditure in Finland is slightly lower than the EU average and 79.3% of it was publicly funded in 2021. The biggest part of current health spending goes towards outpatient care. The other big spending categories are inpatient care, followed by long-term care and pharmaceuticals and medical devices. In 2021, total healthcare spending increased to 10.1% of GDP, up from 9.6% in 2020. Provisional data (from the OECD) suggest that in 2022 total healthcare spending fell back to 10.0% of GDP. Based on the age profile of the Finnish population, public expenditure on health is projected to increase by 0.6 percentage points of GDP by 2070, the same as for the EU overall (see Graph 16.2 and Annex 21).

In 2021, spending on prevention in Finland amounted to 8.3% of total spending on healthcare, compared to 6.0% for the EU overall. Between 2019 and 2021, spending on preventive care in Finland more than doubled, following the trend across the EU. Proportionally, budget shares for prevention across the EU increased most for emergency response, disease detection and immunisation programmes. In Finland, the main factor explaining the big increase in the spending on preventive care in 2021 is the massive rise in spending for disease detection programmes.

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



Baseline scenario
Source: European Commission / EPC (2024)

Finland faces shortages and an uneven distribution of health sector workers. Employment in healthcare fell by 5% between the first quarter of 2020 and the second quarter of 2023 (while it increased in the EU on average by 9%). The average number of doctors is lower than the EU average (3.6 vs 4.1 per 1 000 population in 2021). While the number of nurses per 1 000 population is much higher than the EU average (18.9 vs 7.9 in 2021), rising demand for nursing has led to an increasing shortage of nurses in recent years. Meanwhile, the role of nurses has expanded to include: (i) patient consultations for acute and chronic health conditions; (ii) prescribing and care coordination in primary care; (iii) outpatient consultations; and (iv) advanced roles in operating theatres. According to the Ministry of Social Affairs and Health, in 2023 there were more than 5 000 and 6 000 open vacancies for registered and practical nurses respectively and almost 900 vacancies for doctors. The care guarantee

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

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

	2018	2019	2020	2021	2022	EU average (latest year)
Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare)	71,1	69,1	71,3	69,8	NA	93.3 (2021)
Cancer mortality per 100 000 population	212,8	214,5	211,4	209,9	NA	235.4 (2021)
Current expenditure on health, % GDP	9,0	9,2	9,6	10,1	NA	10.9 (2021)
Public share of health expenditure, % of current health expenditure	77,0	77,9	79,1	79,3	NA	81.1 (2021)
Spending on prevention, % of current health expenditure	4,1	4,0	5,6	8,3	NA	6.0 (2021)
Available hospital beds per 100 000 population	361	335	283	NA	NA	525 (2021)
Doctors per 1 000 population	3,5	3.6*	3.6*	3.6*	NA	4.1 (2021)*
Nurses per 1 000 population	18.7**	18.5**	18.9**	18.9**	NA	7.9 (2021)
Total consumption of antibacterials for systemic use, daily defined dose per 1 000 inhabitants per day ***	15,4	14,7	11,9	11,3	12,5	19.4 (2022)

Note: The EU average is weighted for all indicators except for doctors and nurses per 1 000 population, for which the EU simple average is used. Doctors' density data refer to practising doctors in all countries except Greece, Portugal (licensed to practise) and Slovakia (professionally active). Nurses' density data refer to practising nurses in all countries except Ireland, France, Portugal, Slovakia (professionally active) and Greece (hospital only).
Source: Eurostat Database; except: * OECD, ** Joint Questionnaire on non-monetary healthcare statistics, *** ECDC, **** Council Recommendation on stepping up EU actions to combat antimicrobial resistance in a One Health approach.

and requirements for a higher nurse-to-patient ratio in long-term facilities put extra pressure on staffing levels. A significant proportion of doctors (24.4%) and nurses (20.2%) are aged 55 or above, raising concerns about the long-term accessibility of health services. Nurses' pay is less than the average national wage. The difference between the two is among the biggest in the EU. Importantly, in October 2022, a long-term agreement was reached on substantial raises in nurses' pay. The uneven geographic distribution of healthcare resources increases disparities in access to care in Finland. The density of doctors is greater in the capital region of Helsinki and in other major cities than in remote and sparsely populated regions. In general, Finland has been working to address its workforce shortages for many years. Measures taken include, for example, expanding enrolment for training in medical schools, making a stronger commitment to recruit foreign workers, introducing novel skill-mix solutions to increase employment in nursing, and improving the use of technology to boost workforce productivity and overcome geographical barriers.

Through its recovery and resilience plan (RRP), Finland is investing EUR 371.8 million (19% of the RRP's total budget) in healthcare. These investments aim to help clear the backlog of social care and healthcare cases due to COVID-19 and to foster equal access, strengthen primary healthcare, overhaul service delivery models and increase digitalisation of the health system. Work is underway to implement the health and social services reform. Investment in digital health will be complemented by further support under the EU cohesion policy funds in 2021-2027. Finland plans to invest around EUR 15 million from the European Regional Development Fund in the development of e-health services and applications ([128]).

The proportion of people in Finland reporting unmet needs for medical care is higher than the EU average. In 2022, 6.5% of the Finnish population reported unmet medical care needs, which is higher than in 2021 (4.4%) (see Annex 14). By far the main reason reported is waiting times. The proportion of people reporting unmet needs for medical care in the lowest income quintile is almost twice that in the highest income quintile. Occupational healthcare creates a parallel system: it provides quicker and free-of-charge access to services for the employed population, while municipal healthcare users encounter co-payments and waiting times. After many years of development, in June 2021 Parliament adopted a major administrative reform for improving access to healthcare, reducing inequalities, improving the quality of health services, and addressing geographical imbalances. In 2021, 21 wellbeing service counties were set up with responsibility for organising health and social services from 2023. In parallel, in January 2023 a new law entered into force on tightening the care guarantee on non-urgent primary care with

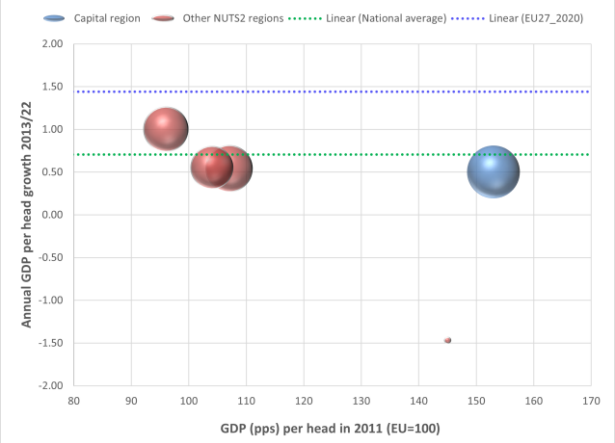
([128]) The EU cohesion policy data reflect the status as of 13 May 2024.

reduced waiting times, which was however withdrawn in April 2024. The reasons were partly economical and partly linked to the shortages of health workforce.

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

Overview of economic and social performance at regional level

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

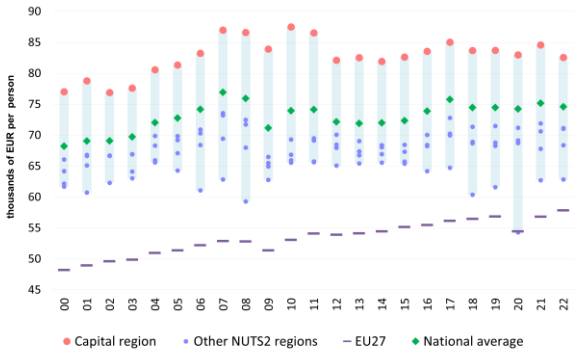


Source: DG REGIO calculations based on JRC (ARDECO) and Eurostat data

Finland's average GDP per capita growth was lower than the EU average in 2012-2022. Internal disparities between the capital region and the rest of the country remain but have decreased. In 2022, Helsinki-Uusimaa's GDP per capita was 140% of the EU-27 average at 27-44 percentage points (pps) higher than in the other regions. Pohjois -ja Itä-Suomi had the lowest value at 95% of the EU-27 average. Graph A17.1 shows how regional disparities and convergence trends have changed over time.

All regions have declined compared to the EU-27 average, but in Pohjois- ja Itä-Suomi the relative loss was less than in the other regions. The decline was particularly evident in Åland, which had an average annual growth in real GDP per capita of -0.82% in 2013-2022, and in Helsinki-Uusimaa, Länsi-Suomi and Etelä-Suomi regions, with +0.5%, +0.54% and +0.56% respectively (while the EU average grew by an annual average of 1.44%). Therefore, the reduction in the country´s internal dispersion of GDP per capita was partly due to a lack of or negative growth in the richest regions, rather than a stronger catching-up process in the poorest regions. Helsinki-Uusimaa and Åland have been in a development trap in 2003-2021, meaning they have experienced persistent weak growth.

Graph A17.2: **Finland, Labour productivity 2000-2022**



Source: ARDECO, DG REGIO elaboration

The gap in GDP per capita between the capital region and the rest of the country was linked to disparities in labour productivity. In 2022, national labour productivity measured by gross value added per worker (in Purchasing Power Standard (PPS)) was 102.6% of the EU-27 average and two points lower than in the previous year. However, it was much lower than in the mid-2000s (before the 2008-2009 recession and the Nokia crisis).

Regional data reveal clear disparities. In 2021, labour productivity ranged from 115.5% of the EU-27 average in Helsinki-Uusimaa to around 100% in Etelä-Suomi, 98% in Länsi-Suomi, 96% in Pohjois -ja Itä-Suomi, down to 87% in Åland, which is a special case, given its insular nature and small size. Except for Åland Pohjois -ja Itä-Suomi, all regions showed a decrease compared with the previous year. The productivity gap between the capital region and the rest of the country (Graph A17.2) widened during the 2008-2010 recession and then narrowed to pre-crisis levels, mainly due to a deterioration in productivity in the capital region, especially after 2011, coinciding with the peak of the Nokia crisis. The gap widened again 2016-2021, mainly due to improving performance in the capital region and declining performance in Åland but narrowed a little in 2022.

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

NUTS region name	GDP per head (PPS)	Productivity (GVA (PPS) per person employed)	Real productivity growth	GDP growth	GDP per head growth	Population growth	At-risk-of-poverty or social exclusion	Employment rate, ages 20-64	Population aged 30-34 with high educational attainment	Innovation performance
	Index, EU27 = 100 (2022)	Index, EU27 = 100 (2022)	Average % change on the preceding year (2013-2022)	Average % change on the preceding year (2013-2022)	Average % change on the preceding year (2013-2022)	Average annual change per 1000 residents (2013-2021)	% of population (2022)	% of population aged 20-64 (2023)	% of population aged 30-34 (2023)	RIS regional performance group 2023
European Union (27 MS)	100	100	0.7	1.6	1.44	1.9	21.6	75.3	43.9	
Suomi/Finland	110	102.6	0.2	0.97	0.7	2.5	16.3	78.2	43.1	Innovation leader
Länsi-Suomi	98	95.7	0.4	0.65	0.54	1	17.6	78.2	42.3	Strong innovator+
Helsinki-Uusimaa	140	114.3	0	1.53	0.5	10	13.7	79.70	48.5	Innovation leader+
Etelä-Suomi	97	97.2	0.3	0.43	0.55	-1.4	17.4	77.7	37.4	Strong innovator+
Pohjois- ja Itä-Suomi	95	96	0.4	0.79	1	-2.5	17.30	76.2	39.5	Strong innovator+
Åland	113	87	-1.2	-0.82	-1.47	7	17.6	84.3		Moderate innovator-

Source: Eurostat, EDGAR database

Several factors (e.g. human capital and specialisation in high technology sectors) explain the gap between the regions. At the national level, the share of population aged 30-34 with a tertiary degree was slightly lower than the EU-27 average in 2023. However, it was on average more than 6 pps higher in the capital region than in the other regions (48.5% compared to 42.3%, a higher difference than in the previous year). None of the Finnish regions are in a talent development trap ([129]). However, Pohjois- ja Itä-Suomi is at risk of falling into such trap, sharply affected by the departure of their population aged 15-39 (a reduction of -6.7 per 1 000 inhabitants on average per year in 2015-2019. The share of employment in high technology sectors and R&D expenditure by the private sector were both above the EU-27 average at the national level, but again showed a highly polarised pattern, being at least twice as high in Helsinki-Uusimaa as in the rest of the country. All those factors consistently point to a comparatively reduced capacity of the non-capital regions to capture growth trends in dynamic and advanced sectors.

Finland's regions all perform relatively well in innovation. The capital region was classed as an innovation leader+ (2022 regional innovation scoreboard). Helsinki-Uusimaa is considered the second most innovative region in Europe. For the other three mainland regions the categorisation is strong innovator+. The 2022 regional competitiveness index ranks all Finnish regions above the EU average. Helsinki-Uusimaa stood out from the rest. Pohjois- ja Itä-Suomi and Åland, which have weaker infrastructure and less business sophistication, remain much closer to the EU average. An overview of Finland´s innovation system is presented in the Innovation Annex.

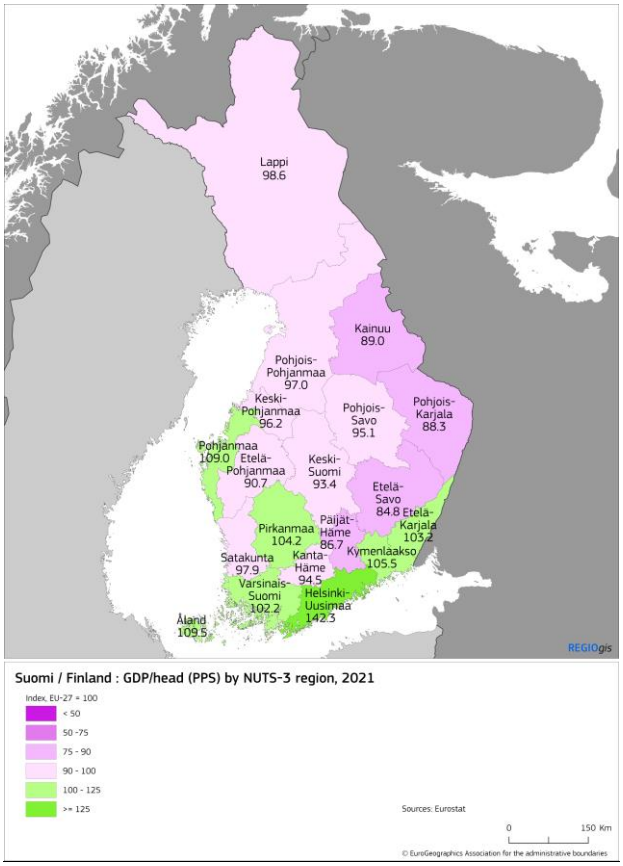
The greater Helsinki region benefits from a higher employment rate and lower at-risk-of-poverty rates than the non-capital regions. Finland´s employment rate of 78.2% was higher than the EU average (75.3%) in 2023. The employment rates in the more developed regions were the highest (84.3% in Åland and 79.7% in the capital region). Finland's at-risk-of-poverty rate (AROPE, 16.3%) was better in 2022 than the EU average (21.6%). In the capital region the rate at 13.7% was 3.6-3.9 pps lower than in the other regions.

The capital region's demographic dynamics differ markedly from those in the rest of the country. Average annual population growth at the national level in 2013-2021 (2.5 people per 1 000 inhabitants) was well above the EU-27 average (1.9). However, population growth was concentrated in Helsinki-Uusimaa (+10 people per 1 000 inhabitants on average) while Länsi-Suomi grew at a rate of only 1.0 and Etelä-Suomi and Pohjois- ja Itä-Suomi experienced depopulation (-1.4 and -2.5 respectively). The small island region of Åland experienced significant growth. Net migration followed a similar territorial pattern. In the short term, depopulation could lead to a shortage of resources in certain sectors in relatively less developed regions. In the medium to long term, it could also affect their ability to take advantage of growth opportunities and to address wider socio-economic challenges.

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

GDP per capita by NUTS3 region in Finland in 2021 showed a more nuanced picture of disparitities. Map A17.1 shows e.g. that all seven regions of Pohjois- ja Itä-Suomi had a GDP per capita rate below EU average, whereas Länsi-Suomi had three and Etelä-Suomi two such regions. GDP per capita was less than 90% of EU average in three Pohjois- ja Itä-Suomi's regions (Etelä-Savo, Kainuu, Pohjois-Karjala) and in one region (Päijät-Häme) of Etelä-Suomi.

Map A17.1: **Finland: GDP/head (PPS) by NUTS3 region. 2021**



Source: Eurostat, DG REGIO elaboration

The Russian war of aggression against Ukraine has the potential to affect the Finnish regions, particularly the NUTS3 regions bordering Russia. The possible impact of the war in the regions concerned was not visible in the main regional indicators used in the context of European semester yet. There is some data showing that wood imports from Russia have stopped and that border crossings, freight traffic and travel have decreased. The data suggests that the consequences of the changed geopolitical situation are the most severely felt in the two south-eastern NUTS3 regions of Etelä-Karjala and Kymenlaakso.

Investment and subnational reform needs ahead

Finland has two cohesion policy programmes. The programme 'Innovation and skills in Finland 2021-2027' co-financed by the European Regional Development Fund (ERDF), the European Social Fund Plus (ESF+) and the Just Transition Fund; and Åland´s structural funds programme with the ERDF and ESF+. The division of Finland´s national allocation between the programmes is based on a stable allocation key. In the mid-term review the flexibility amounts of EUR 253 633 899 (mainland) and EUR 836 397 (Åland), representing 15% of the overall allocation for each programme will be definitively allocated to the programmes. The flexibility amounts have already been provisionally allocated to programmes (with milestones defined).

Implementation of the priorities agreed in 2022 has essentially begun in autumn 2023. The programmes are long-term investment strategies. Stability for recently agreed priorities is important. In addition, the variety in the types of actions under the specific objectives of the priorities enable the managing authorities to adjust implementation to address potential changes in the operational environment without programme amendment. The managing authorities did not raise emerging investment needs in the annual performance review meetings of November 2023.

The managing authority on the mainland plans to launch three studies in view of the mid-term review. The first on the changes in the operating environment of the programme, the second on the impact of the programme on the implementation of national energy and climate plan, and the third on the visibility of communication.

The Commission's preliminary view confirms the investment priorities agreed in 2022 ([130]).

([130])In the case of JTF/MFF flexibility amount of EUR 30 585 636 (there is no flexibility amount for JTF/NGEU),

This will provide a basis for discussion on the managing authorities' assessments on the outcomes of the mid-term review and the proposals for the allocation of the flexibility amounts. If new investment needs emerge by then, the Commission remains open to discussing focused proposals that are properly justified, where relevant and sufficiently important. Finland could, for instance, benefit from the opportunities of the Strategic Technologies for Europe Platform (STEP) to support the transformation of industry i.e. in the areas of artificial intelligence, cybersecurity and robotics; energy and resource efficiency; and medical technologies vital for health security.

The Finnish government will launch a reform of regional state administration. It plans to bring environmental permitting procedures under the competence of a new cross-administrative agency; replace the Centres for Economic Development, Transport and the Environment with new Economic Development Centres, and in this context consider the already decided transfer of employment and economic development services to municipalities in 2025. For the managing authority, the reform should only effect administrative arrangements.

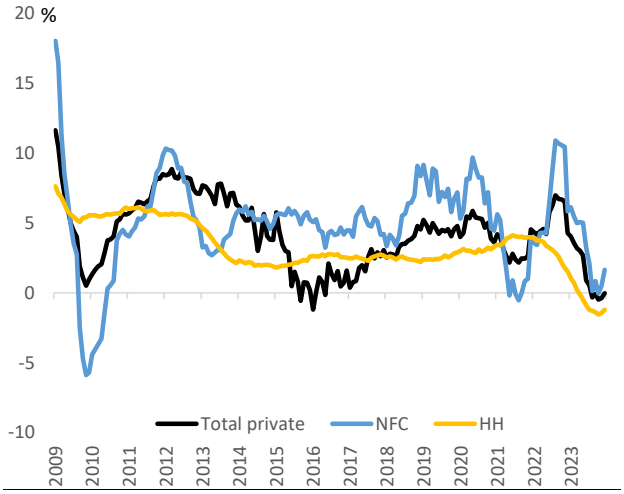
confirming the initial allocation to the JTF priority is the only feasible option.

ANNEX 18: KEY FINANCIAL SECTOR DEVELOPMENTS

Finland's financial sector is dominated by large banks and remains highly concentrated. The ratio of total banking-sector assets to GDP stood at close to 300% at the end of 2023, slightly higher than the European average, while the top five lenders hold over 80% of aggregate sectoral assets. The Finnish banking sector's international exposure remains confined to the Nordic and Baltic regions, with a deliberate absence of direct engagement with Russia, Ukraine, or Belarus. Overall, domestic lenders are adequately capitalised and well-equipped to endure potential macroeconomic shocks. The capital adequacy ratio increased on an annual basis by 50 bps to 21.1% (Q3-2023), some 150 bps higher than the EU average. The banking system provides a solid foundation for financing the economy and remains digitally advanced. Despite its high level of concentration, the Finnish banking sector is also highly competitive.

Strong resilience is underpinned by robust financial-soundness metrics, but higher interest rates pose risks. Despite the volatility in global financial markets in the spring of 2023, higher inflation, the economic slowdown and persistent geopolitical tensions, the Finnish financial system has held steady over the past 18 months. The resilience and stability of the banking system stem from high solvency levels, good-quality balance sheets, and appropriate levels of profitability. The overall financial performance of the banking sector in 2023 was very good. The aggregate return on equity of 14.5% (Q3-2023) stands more than 4 pps above the European average. However, the risks in the operating environment for the banking sector have clearly risen. At this juncture, the main threats to Finland's financial stability come from the quick and sharp increase in interest rates. Higher interest rates have on the one hand helped to lift banks' profitability metrics by markedly increasing net interest margins. On the other hand, given the prevalence of variable interest rates in lending books and the high level of private-sector indebtedness, both households and local enterprises are feeling the pinch from rising loan-servicing expenses. Nevertheless, non-performing loans remain at low levels (just 1% in Q3-2023, the same level as back in 2022) and are among the lowest in the EU. Banks have the capacity to withstand the economic slowdown and possible loan losses through income and large capital buffers.

Graph A18.1: **Credit growth**



Source: ECB.

Along with cyclical challenges, the sector's structural weaknesses have not changed. The high indebtedness of local households, the above-average reliance on wholesale funding, and interconnectedness with neighbouring Nordic markets remain the key weaknesses of the Finnish banking system. Household debt as a percentage of disposable income remains very high at over 130% (as of mid-2023). 9 out of 10 home loans have variable rates, which leaves debtors susceptible to changes in interest rates. The Finnish banking system's interconnectedness with neighbouring countries and its reliance on wholesale funding continue to be causes for concern, as these could magnify economic shocks, particularly if investor confidence declines. The local funding model survived through the pandemic and previously also through the global financial crisis. It has therefore proved its robustness even during major crises. Nevertheless, past experiences cannot be taken as a guarantee that this model will not fail in the future. Consequently, Finnish banks have an interest in further reducing their reliance on the short-term part of their wholesale funding.

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

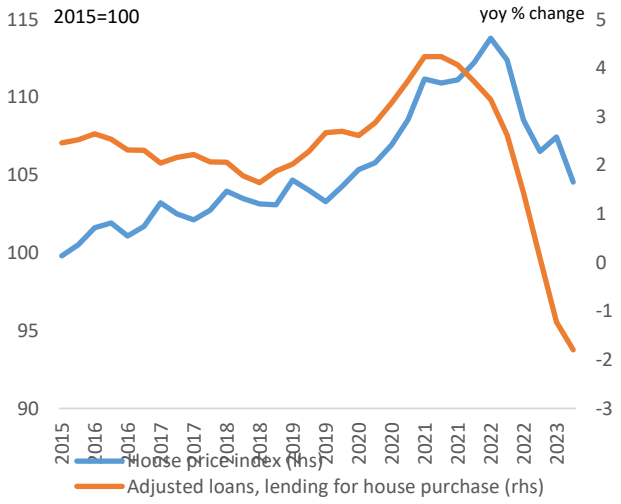
	2017	2018	2019	2020	2021	2022	2023	EU	Median
Total assets of the banking sector (% of GDP)	199.7	269.2	271.9	293.5	285.4	288.8	255.3	257.0	184.6
Share (total assets) of the five largest banks (%)	73.5	81.6	80.4	80.1	80.0	82.0	-	-	69.6
Share (total assets) of domestic credit institutions (%)[1]	46.0	89.2	88.0	86.5	87.2	87.5	84.6	-	62.9
NFC credit growth (year-on-year % change)	4.2	8.4	7.2	4.5	3.9	5.8	1.6	-	2.4
HH credit growth (year-on-year % change)	2.7	2.2	2.9	3.3	4.0	1.5	-1.2	-	1.4
Financial soundness indicators:[1]									
- non-performing loans (% of total loans)	1.2	1.5	1.4	1.5	1.2	1.0	1.1	1.8	1.8
- capital adequacy ratio (%)	23.4	20.9	21.3	21.2	21.4	20.6	21.1	19.6	20.1
- return on equity (%)[2]	8.8	8.1	4.9	5.8	9.2	9.6	14.4	9.9	13.2
Cost-to-income ratio (%)[1]	55.7	55.4	60.7	55.6	50.6	50.5	41.8	52.8	44.9
Loan-to-deposit ratio (%)[1]	94.8	133.2	136.7	127.7	121.4	120.2	123.5	93.3	80.2
Central bank liquidity as % of liabilities	2.5	1.7	0.9	3.9	6.0	4.6	0.6	-	0.7
Private sector debt (% of GDP)	147.7	143.9	146.1	152.7	150.5	144.7	-	133.0	118.4
Long-term interest rate spread versus Bund (basis points)	23.1	26.6	32.0	29.1	28.0	54.5	60.3	107.7	104.2
Market funding ratio (%)	64.4	63.8	62.7	62.5	61.8	61.1	-	50.8	39.8
Green bonds outstanding to all bonds (%)[3]	-	-	-	2.2	3.1	4.1	5.9	4.0	2.7

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

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

Credit growth has slowed for corporates and come to a halt for households amid high interest rates and uncertainty. Since 2022, borrowers have been put to the test by the rapid rise in interest rates. As bankruptcies and restructuring proceedings among local firms continued to soar over 2023, the demand for new loans from non-financial corporations also dropped to levels last seen during the global financial crisis and was barely positive in Q4-2023. The stock of corporate loans contracted by some 3% (year-on-year) in October 2023 (Graph A18.1). Finnish households also remained reluctant to borrow, as the rise in both consumer prices and interest rates continued to put a strain on local families' finances. The average interest rate on new mortgages for households rose to about 4.73% by October 2023, making mortgages more expensive than at any time in the past decade. Not surprisingly, the stock of mortgage loans dropped by almost 3% (year-on-year) in October 2023.

Graph A18.2: **House price index and mortgages**



Source: ECB.

There is an obvious slowdown in the Finnish real-estate market. The property market entered a correction phase in 2022, primarily driven by higher financing costs. Generally, 2023 was a challenging year for Finnish real-estate investors. Value-wise, transactions dropped to a about a third of those recorded in 2022. The residential real estate market remained active, although demand for housing loans has also dropped (Graph A18.2). The commercial real estate (CRE) sector has had a very uneven growth path since the pandemic and is more affected by geopolitical uncertainty, more difficult financing conditions, and changing work patterns that are reflected in lower demand for office space by firms.

Investors in the CRE market have become more selective and more focused on environmental, social and governance investments. The market has been characterised by an emphasis on environmentally certified assets and prime locations amidst the recessionary environment and uncertainty. On a positive note, Finland's property market remains one with strong fundamentals, and foreign investors, predominantly from other Nordic countries, account for a large share of transactions. Additionally, Finland's real estate market is less prone to large price volatility. This can be attributed to Finland's policies in the sector and the overall stable economic environment.

This Annex provides an indicator-based overview of Finland's tax system. It includes information on the tax structure (the types of tax that Finland derives most of its revenue from), the tax burden on workers, and the progressivity and redistributive effects of the tax system. It also provides information on tax collection and compliance.

Finland's tax revenues as a share of GDP in 2022 are among the highest in the EU. As indicated in Table A19.1, Finland's tax revenues from most sources are higher than those of the EU-27. Taxes on labour together with social security contributions were the largest revenue source (49% of total tax revenues). 32% of the tax burden falls on consumption and 20% of the tax burden falls on capital (Graph A19.1). Overall tax revenues as a share of GDP have declined by 0.2 pps, which is entirely due to the reduction in revenues from consumption. A number of recent reforms to the personal income tax, which entered into force in January 2024, have reduced the tax burden on labour. Specifically, the basic allowance and the earned income tax credit have been increased. In addition, the earned income tax-scale has been adapted to account for inflation.

Finland is expected to increase tax revenues following a rise in the VAT rate. Finland increases the standard VAT rate from 24% to 25.5% from later in 2024, resulting in the second highest standard rate after Hungary. In addition to the standard rate increase, several reduced rates have been abandoned or increased. Further revenue potential could possibly lie in currently relatively underused tax types, such as recurrent property taxes or some further tax exemptions. The reduction of the preferential treatment of dividends from unlisted companies (75% of the first EUR 150 000 is tax exempt) could realise additional revenue. Further use of some forms of environmental taxation could also be explored.

Some forms of environmental taxes could play a more prominent role in Finland. Overall revenues from environmental taxes are higher in Finland (5.7% of total revenues) than for the EU as a whole (5% of the total, see Graph A19.1). This mostly results from comparatively high revenues from taxes on transport. Pollution and resources taxes only account for 0.8% of environmental taxes (and for 0.04% of total revenues), so there could be potential to strengthen the application of the 'polluter pays' principle. Finland has only implemented two of the six main types of pollution and resources taxes (i.e. taxes on waste landfilling and plastic products). There remains scope to expand waste disposal taxes, (including

Table A19.1: **Taxation indicators**

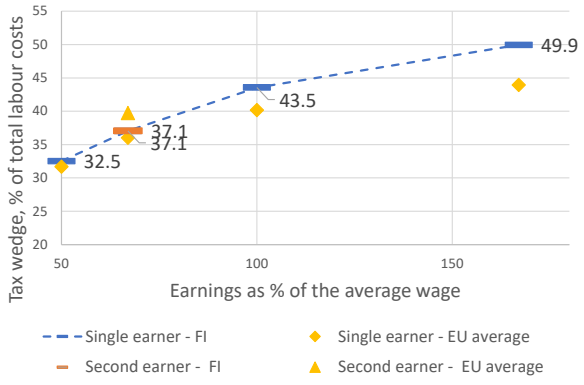
		Finland					EU-27				
		2010	2020	2021	2022	2023	2010	2020	2021	2022	2023
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	40.6	41.8	43.2	43.0		37.9	40.0	40.4	40.2	
	Labour taxes (as % of GDP)	21.1	20.6	21.0	21.0		20.0	21.3	20.7	20.3	
	Consumption taxes (as % of GDP)	12.9	13.9	13.8	13.6		10.8	10.7	11.2	11.0	
	Capital taxes (as % of GDP)	6.5	7.3	8.5	8.5		7.1	8.0	8.6	8.9	
	Of which, on income of corporations (as % of GDP)	2.4	2.1	2.7	3.0		2.4	2.5	3.0	3.4	
	Total property taxes (as % of GDP)	1.1	1.6	1.6	1.6		1.9	2.3	2.2	2.1	
	Recurrent taxes on immovable property (as % of GDP)	0.6	0.8	0.8	0.8		1.1	1.2	1.1	1.0	
	Environmental taxes as % of GDP	2.7	2.7	2.5	2.4		2.4	2.2	2.3	2.0	
Progressivity & fairness	Tax wedge at 50% of average wage (Single person) (*)	33.5	31.0	32.5	32.5	32.5	33.9	31.7	32.1	31.8	31.7
	Tax wedge at 100% of average wage (Single person) (*)	42.3	41.8	43.1	43.1	43.5	41.0	40.1	39.9	40.0	40.2
	Corporate income tax - effective average tax rates (1) (*)		19.6	19.6	19.8			19.5	19.0	19.0	
	Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*)	11.7	11.5	12.2	13.2		8.6	8.1	8.2	7.9	
Tax administration & compliance	Outstanding tax arrears: total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*)		6.2	4.5				40.9	35.5		
	VAT Gap (% of VAT total tax liability, VTTL)(**)	8.9	2.3	0.4	2.0			9.7	5.4		

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

incineration) and implement the four other types (i.e. taxes on NOx emissions, waste loadings to water, fertilisers and pesticides). Finland had previously implemented a tax on fertilisers, but this was subsequently ended. A new mining tax has been introduced in 2024.

Labour taxation in Finland is more progressive than in the EU on average. Graph A19.2 shows the labour tax wedge for Finland in 2023. Labour taxation in Finland is more progressive than in the EU, since the ratio of the tax wedge of high- and low-income earners (a measure of progressivity of labour taxation) is higher. Overall, the tax-benefit system contributes significantly to the low level of income inequality in Finland. It reduced the Gini coefficient (a measure of income inequality) by 13.2 pps in 2022, more than the average reduction in the EU of 7.9 pps (see Table A19.1). Challenges remain as regards the complexity of the social benefit system, which results in disincentives to work.

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

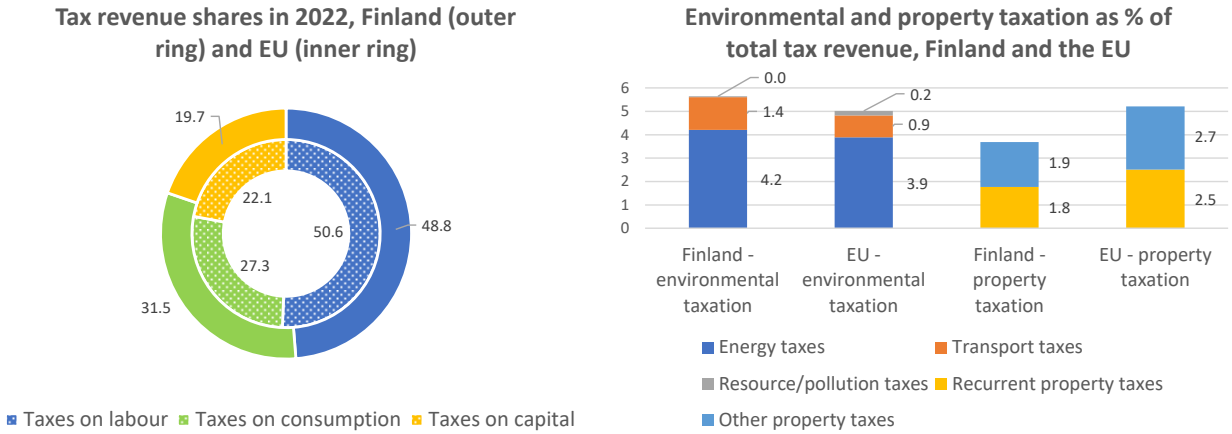


The second earner tax wedge assumes a first earner at 100% of the average wage and no children. For the methodology of the tax wedge for second earners, see OECD, 2016, *Taxing Wages 2014-2015*.
Source: European Commission

Finland's Recovery and Resilience Plan (RRP) includes several tax reforms to support the green transition. The reform of energy taxation in support of the electrification of industrial processes has been implemented and the respective milestone has been assessed as satisfactorily fulfilled. A reform of transport taxation to incentivise the use of electric vehicles, public transport and bicycles for employees has been implemented.

Finland has implemented a number of tax reforms. In 2023, interest payments for home loans ceased to be deductible for the purpose of income taxation. The deduction had been phased out over 10 years. 2023 also saw a number of temporary VAT rate reductions for passenger transport and electricity, and a temporary tax credit in case of high electricity costs. In the field of corporate taxation, Finland has introduced a deduction of 45% on additional R&D costs. In addition, a temporary accelerated depreciation of fixed assets for 2024-2025 has been introduced.

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



Source: European Commission

Finland performs well in terms of tax compliance and tax administration. Finland's digitalisation of tax administration is well underway. The VAT compliance gap was expected to be 2.0% in 2022 (it was 0.4% in 2021), well below the EU-wide gap of 5.4%. Finland has initiated a 'happy taxpayer' campaign which encourages a positive attitude towards paying taxes and increasing compliance. In addition, Finland has a national incomes register, which contains comprehensive data on earned income, pensions and benefits, implementing the principle of one-time reporting. Overall levels of tax compliance in Finland are considered to be high.

ANNEX 20: TABLE WITH ECONOMIC AND FINANCIAL INDICATORS

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

	2004-07	2008-12	2013-20	2021	2022	2023	forecast 2024	forecast 2025
Real GDP (y-o-y)	4.0	-0.7	0.9	2.8	1.3	-1.0	0.0	1.4
Potential growth (y-o-y)	.	0.6	0.8	0.7	1.2	1.1	0.6	0.6
Private consumption (y-o-y)	3.6	1.0	0.6	3.2	1.8	0.4	0.5	1.4
Public consumption (y-o-y)	1.5	0.7	1.0	3.9	-1.0	4.5	0.0	-0.7
Gross fixed capital formation (y-o-y)	4.8	-1.3	1.9	1.0	2.5	-4.2	0.2	4.0
Exports of goods and services (y-o-y)	8.6	-1.6	1.5	6.2	3.6	-1.7	0.9	2.1
Imports of goods and services (y-o-y)	8.3	0.5	1.8	6.1	8.4	-7.1	1.2	2.5
Contribution to GDP growth:								
Domestic demand (y-o-y)	3.2	0.4	1.0	2.8	1.3	0.3	0.3	1.5
Inventories (y-o-y)	0.3	-0.2	0.0	0.0	1.8	-3.4	-0.1	0.0
Net exports (y-o-y)	0.6	-0.8	-0.1	0.0	-1.9	2.6	-0.1	-0.2
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	.	-0.1	0.2	0.2	0.8	0.7	0.3	0.1
Capital accumulation (y-o-y)	.	0.5	0.5	0.5	0.5	0.4	0.4	0.5
Total factor productivity (y-o-y)	.	0.1	0.1	0.0	-0.1	-0.1	0.0	0.0
Output gap	1.5	-1.0	-1.1	-0.3	-0.1	-2.2	-2.8	-2.1
Unemployment rate	8.1	7.9	8.2	7.7	6.8	7.2	7.4	7.2
GDP deflator (y-o-y)	1.3	2.1	1.3	2.4	5.4	4.8	1.8	2.1
Harmonised index of consumer prices (HICP, y-o-y)	0.9	2.7	0.7	2.1	7.2	4.3	1.4	2.1
HICP excluding energy and unprocessed food (y-o-y)	0.6	2.4	0.9	1.4	4.4	5.0	1.9	2.2
Nominal compensation per employee (y-o-y)	3.3	2.9	0.8	4.2	2.5	3.4	2.6	3.5
Labour productivity (real, hours worked, y-o-y)	2.7	-0.5	0.7	0.8	-1.2	-0.6	-0.1	0.9
Unit labour costs (ULC, whole economy, y-o-y)	0.9	3.9	0.4	3.6	4.6	5.0	2.5	2.2
Real unit labour costs (y-o-y)	-0.4	1.7	-1.0	1.2	-0.7	0.2	0.7	0.1
Real effective exchange rate (ULC, y-o-y)	-0.5	1.6	-1.1	3.4	1.1	-1.4	-2.1	-0.1
Real effective exchange rate (HICP, y-o-y)	-0.4	-0.2	0.0	-0.6	-2.4	0.9	.	.
Net savings rate of households (net saving as percentage of net disposable income)	0.3	1.5	0.2	2.6	-1.6	-0.8	.	.
Private credit flow, consolidated (% of GDP)	10.1	7.5	5.1	6.1	2.3	.	.	.
Private sector debt, consolidated (% of GDP)	114.9	141.9	148.5	150.6	145.2	.	.	.
of which household debt, consolidated (% of GDP)	45.8	57.5	64.9	68.0	65.6	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	69.1	84.5	83.6	82.7	79.6	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (1)	0.6	0.9	1.3	1.1	0.9	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	4.1	3.6	3.8	4.3	1.5	3.7	4.4	4.7
Corporations, gross operating surplus (% of GDP)	27.7	24.4	24.2	24.7	25.0	25.4	24.9	25.4
Households, net lending (+) or net borrowing (-) (% of GDP)	-3.2	-2.2	-2.5	-1.1	-3.4	-2.7	-2.8	-2.9
Deflated house price index (y-o-y)	6.0	0.2	-0.1	2.3	-4.7	-9.5	.	.
Residential investment (% of GDP)	6.4	6.2	6.7	6.9	7.3	6.6	.	.
Current account balance (% of GDP), balance of payments	4.2	0.5	-1.0	0.4	-2.4	-1.4	-1.6	-0.8
Trade balance (% of GDP), balance of payments	4.8	0.9	-0.6	0.0	-2.4	-0.4	.	.
Terms of trade of goods and services (y-o-y)	-2.2	-1.1	0.7	-0.2	-0.7	-1.5	-0.3	0.2
Capital account balance (% of GDP)	0.1	0.1	0.1	0.1	0.1	-0.1	.	.
Net international investment position (% of GDP)	-24.2	7.5	0.4	1.0	-2.2	5.2	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2)	19.5	4.1	6.0	18.3	5.9	3.3	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (2)	178.4	225.6	228.7	214.3	227.8	224.7	.	.
Export performance vs. advanced countries (% change over 5 years)	.	.	-9.1	8.1	1.3	-5.0	.	.
Export market share, goods and services (y-o-y)	-1.1	-7.5	-0.1	-3.9	-1.9	-2.8	-2.5	-1.5
Net FDI flows (% of GDP)	-1.4	1.8	-0.6	-1.4	2.7	1.0	.	.
General government balance (% of GDP)	3.5	-0.8	-2.2	-2.8	-0.4	-2.7	-3.4	-2.8
Structural budget balance (% of GDP)	.	.	-1.5	-2.7	-0.3	-1.4	-1.8	-1.6
General government gross debt (% of GDP)	40.8	47.7	67.3	72.6	73.5	75.8	80.5	82.4

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

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

1 – Short-term risks to fiscal sustainability are low. The Commission's early-detection indicator (S0) does not point to any major short-term fiscal risks (Table A21.2) ([131]). Government gross financing needs are expected to increase to around 15% of GDP on average over 2024-2025 (Table A21.1, Table 1). Financial markets' perceptions of sovereign risk have remained stable, as confirmed by the rating agencies.

2 – Medium-term fiscal sustainability risks appear high.

The DSA baseline shows that the government debt ratio is expected to increase significantly to relatively high levels of 96% of GDP in 2034 (Graph 1, Table 1) ([132]). This debt increase is due to the assumed structural primary deficit of 0.7% of GDP (excluding changes in cost of ageing) as of 2025. Compared to historical data, this assumption appears plausible, as 100% of past fiscal positions were more stringent than the one assumed in the baseline (Table A21.2) ([133]). The debt increase can also be explained by a positive stock-flow adjustment (1.5 pps. of GDP on average over the same period) due to a build-up of reserves for a pension reserve fund. On the other hand, the debt increase is mitigated by a still favourable but declining snowball effect (around -0.9 pp. of GDP annually on average over 2025--2034), which is also supported by the impact of Next Generation EU.

The baseline projections are stress-tested against four alternative deterministic scenarios to assess the impact of changes in key assumptions relative to the baseline (Graph 1). Under the *historical structural primary balance (SPB) scenario* (i.e. the SPB returns to its historical 15-year average of 0.1% of GDP) the debt ratio would be lower than under the baseline by about 4 pps. in 2034. However, under the *adverse interest-growth rate differential scenario* (i.e. the interest-growth rate differential deteriorates by 1 pp. compared with the baseline), the debt ratio would be higher than under the baseline by around 7 pps. in 2034. Under the *financial stress scenario* (i.e. interest rates temporarily increase by 1 pp. compared with the baseline) the government debt ratio would be higher by around 1 pp. in 2034. Finally, under the *lower structural primary balance scenario* (i.e. the projected cumulative improvement in the SPB over 2023-2024 is halved) the debt ratio would be higher than under the baseline by about 2 pps. in 2034.

The stochastic projections indicate high risks, pointing to the high sensitivity of these projections to plausible unforeseen events ([134]). These stochastic simulations

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

([132]) The assumptions underlying the Commission's 'no-fiscal policy change' baseline include in particular: (i) a structural primary defict, before ageing costs, of 0.5% of GDP from 2024 onwards; (ii) inflation converging linearly towards the 10-year forward inflation-linked swap rate 10 years ahead (which refers to the 10-year inflation expectations 10 years ahead); (iii) the nominal short- and long-term interest rates on new and rolled over debt converging linearly from current values to market-based forward nominal rates by T+10; (iv) real GDP growth rates from the Commission 2024 spring forecast until 2025, followed by the EPC/OGWG 'T+10 methodology projections between T+3 and T+10 (average of 0.9%); (v) ageing costs in line with the 2024 Ageing Report (European Commission, Institutional Paper 279, April 2024). For information on the methodology, see the 2023 Debt Sustainability Monitor (European Commission, Institutional Paper 271, March 2024).

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

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

indicate a 87% probability that the debt ratio will be higher in 2028 than in 2023, implying high risks given the current high debt level. At the same time, the uncertainty surrounding the baseline debt projections (as measured by the difference between the 10th and 90th debt distribution percentiles, reaching around 24% of GDP in five years' time) is low (Graph 2).

3 – Long-term fiscal sustainability risks appear overall medium. This assessment is based on the combination of two fiscal gap indicators, capturing the required fiscal effort to stabilise debt over the long term (S2 indicator) and to bring debt to 60% of GDP by 2070 (S1 indicator) ([135]). This assessment is mainly driven by the projected rise in ageing costs, but also by the unfavourable initial budgetary position These results are conditional on the country maintaining a sizeable SPB over the long term.

The S2 indicator points to medium fiscal sustainability risks. The indicator shows that, relative to the baseline, the SPB would need to improve by 2.7 pps. of GDP in 2025 to ensure debt stabilisation over the long term. This result is underpinned by the projected increase in ageing-related costs (contribution of 2.2 pps.) and the unfavourable initial budgetary position (0.5 pp.). Ageing costs' developments are primarily driven by a projected increase in long-term care (+1.8 pps.), pensions (0.7 pp.) and health care (0.6 pp.), which is only partly offset by a projected decrease in education spending (-1.0 pp.) (Table A21.1, Table 2). A number of investments and reforms (in particular the ongoing SOTE reform) in the RRP contribute to supporting the efficiency of the Finnish long-term care system, so it will be important to carefully monitor their implementation.

The S1 indicator points to low fiscal sustainability risks. The indicator shows that the country does need to improve its fiscal position by 1.5 pps. of GDP in 2025 to reduce its debt to 60% of GDP by 2070. This result is driven by the current unfavourable initial budgetary position (contribution of 0.6 pp.), the projected increase in age-related public spending (0.5 pp.) and the debt requirement (0.4 pp.) (Table A21.1, Table 2).

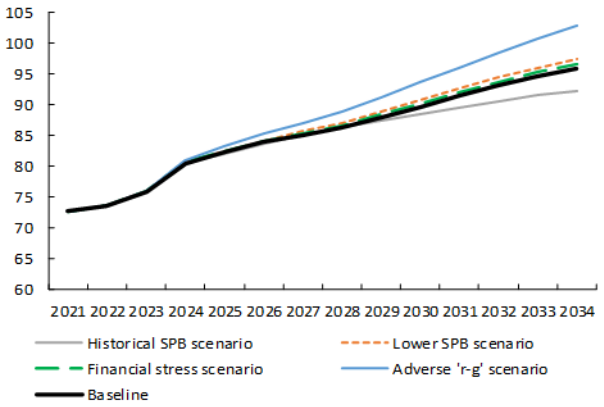
4 – Finally, several additional risk factors need to be considered in the assessment. On the one hand, risk-increasing factors are related to the recent increase in interest rates, and risks from the real estate and the housing markets. On the other hand, risk-mitigating factors include the lengthening of debt maturity in recent years, relatively stable financing sources (with a diversified and large investor base) and the currency denomination of debt.

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

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

Table 1. Baseline debt projections	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Gross debt ratio (% of GDP)	**72.6**	**73.5**	**75.8**	**80.5**	**82.2**	**83.9**	**85.0**	**86.2**	**87.9**	**89.7**	**91.4**	**93.1**	**94.6**	**95.8**
Changes in the ratio	-2.2	0.9	2.3	4.7	1.7	1.7	1.1	1.2	1.7	1.7	1.7	1.7	1.5	1.2
of which														
Primary deficit	2.3	-0.2	1.6	2.2	1.5	1.2	0.7	0.6	0.7	0.8	0.8	0.8	0.8	0.8
Snowball effect	-3.2	-4.0	-1.5	-0.1	-1.5	-1.2	-1.3	-1.0	-0.6	-0.6	-0.6	-0.7	-0.7	-0.8
Stock-flow adjustments	-1.2	5.2	2.3	2.6	1.7	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.2
Gross financing needs (% of GDP)	11.7	14.2	14.2	15.3	14.4	14.5	14.4	14.6	15.0	15.4	15.8	16.2	16.4	16.6

Graph 1. Deterministic debt projections



Graph 2. Stochastic debt projections 2024-2028

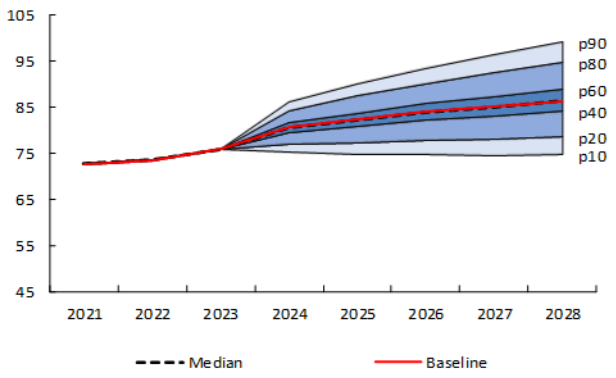


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

		S1	S2
Overall index (pps. of GDP)		**1.5**	**2.7**
of which			
Initial budgetary position		0.6	0.5
Debt requirement		0.4	
Ageing costs		0.5	2.2
of which	*Pensions*	-0.2	0.7
	Health care	0.4	0.6
	Long-term car	1.0	1.8
	Education	-0.7	-1.0

Source: Commission services.

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

Short term	Medium term - Debt sustainability analysis (DSA)							Long term		
Overall (S0)	Overall		Deterministic scenarios					Stochastic projections	S2	S1	Overall (S1+S2)
			Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress				
LOW	HIGH	Overall	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	MEDIUM	LOW	MEDIUM
		Debt level (2034), % GDP	95.8	92.2	97.4	102.7	96.5				
		Debt peak year	2034	2034	2034	2034	2034				
		Fiscal consolidation space	100%	94%	100%	100%	100%				
		Probability of debt ratio exceeding in 2028 its 2023 level						87%			
		Difference between 90th and 10th percentiles (pps. GDP)						24.3			

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

Source: Commission services.