Council of the European Union

Brussels, 19 June 2024
(OR. en)

11089/24
ADD 1

ECOFIN 699
UEM 169
SOC 466
EMPL 281
COMPET 665
ENV 642
EDUC 228
ENER 303
JAI 1022
GENDER 139
JEUN 150
SAN 361

COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	19 June 2024
To:	Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2024) 622 final
Subject:	COMMISSION STAFF WORKING DOCUMENT 2024 Country Report - Portugal Accompanying the document Recommendation for a COUNCIL RECOMMENDATION on the economic, social, employment, structural and budgetary policies of Portugal

Delegations will find attached document SWD(2024) 622 final.

Encl.: SWD(2024) 622 final

EUROPEAN
COMMISSION

Brussels, 19.6.2024
SWD(2024) 622 final

COMMISSION STAFF WORKING DOCUMENT

2024 Country Report - Portugal

Accompanying the document

Recommendation for a COUNCIL RECOMMENDATION

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

{COM(2024) 622 final} - {SWD(2024) 600 final}

European Commission

Portugal

2024 Country Report

#EURO at 25

ECONOMIC AND EMPLOYMENT SNAPSHOT

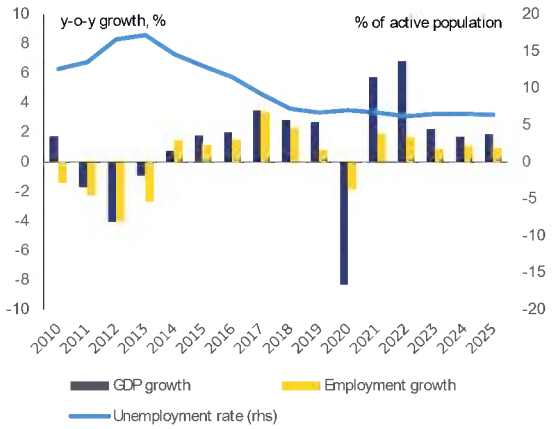
Growth is slowing down while the labour market remains strong

The Portuguese economy continues to grow, although at a slower pace (1). Portugal's GDP growth slowed down from 6.8% in 2022 to 2.3% in 2023 (Graph 1.1). This reflects weaker external demand caused by the economic slowdown in other European countries and the moderation following the positive effect of the tourism sector's recovery. Taking into account the recent surge in households' income and the stabilisation in interest rates, economic growth is projected to move towards a more domestic driven model over the forecast horizon. In full-year terms, growth is forecast to moderate to 1.7% in 2024 and to rebound to 1.9% in 2025. Private consumption and investment are set to be the main growth drivers.

There are still substantial regional disparities. The metropolitan area of Lisbon is the only region in Portugal with GDP per capita above the EU average, while in 4 of the 7 regions GDP per capita is less than 75% of the EU average (see Annex 17).

Unemployment increased but labour indicators remained strong. Unemployment rose from 6.2% in 2022 to 6.5% in 2023. However, both labour supply and employment continued to rise at a rapid rate, supported by net migration. The employment rate for the 20-64 age group reached a historic high of 75.3% in 2023 (compared to the EU average of 75.4%), following record high rates in the previous 2 years. The size of the labour force increased by 2.4% in 2023 on the account of increased migration inflows as evidenced the labour force survey.

Graph 1.1: **Real GDP growth and selected labour market indicators**



(1) Estimates for 2024 and 2025 are from the European Commission's Spring 2024 forecast.
Source: European Commission

Youth unemployment remains high. Youth unemployment edged up to 20.3% in 2023 compared to 19.1% a year earlier. The rate remained above the EU average of 14.5%. In addition, a significant share of young people are employed on temporary contracts (41.9% vs 34.8% in the EU). Against this backdrop, young people are still facing persistent obstacles to entering the labour market and finding permanent jobs.

Portugal's vulnerabilities related to high private, government and external debt continued to decrease. An in-depth review undertaken earlier this year as part of the macroeconomic imbalance procedure found that the foreign trade balance improved substantially in 2023, contributing to a reduction of the associated vulnerabilities in

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

Box 1:

Portugal's competitiveness in brief

Portugal's competitiveness is still impaired by low productivity levels and heavy business regulation, despite recent improvements. In the context of the EU's long-term competitiveness strategy, Portugal performs well in several areas, including the share of energy from renewable sources (over 60%), electricity prices and the employment rate (78.2%). In parallel, the Portuguese recovery and resilience plan (RRP) and cohesion policy programmes address several challenges in areas such as access to venture capital, R&D intensity, education and skills, and digitalisation.

However, competitiveness challenges remain:

- **skills mismatches and labour shortages** in several sectors reduce productivity, compounded by an ageing workforce and a growing difficulty in retaining staff;
- **excessive and complex administrative and regulatory burdens** on companies, including those resulting from the corporate tax system, hamper investment and the creation of new economic activities, preventing the shift towards a more competitive business environment;
- **R&D intensity** in Portugal remains below the EU average. Additional investments in research, as well as policies to boost the innovation capacity of companies, especially beyond the timeframe of the RRP, would improve the country's productivity.

the external sector ([2]). The public debt-to-GDP ratio has been decreasing at a rapid pace, after an increase during the COVID-19 pandemic. Corporate and household debt ratios have also been declining substantially in recent years. Risks related to the corporate debt structure appear relatively low, in part reflecting a substantial reduction in non-performing loans. The increase in interest rates on mortgage loans puts pressure on households, while house prices continue to increase, but mortgage arrears remain low.

Public finances are improving amid high but falling inflation

Portugal's public finances improved markedly in 2023. The budget balance recorded a surplus of 1.2% of GDP in 2023. This is explained by growing government revenue, particularly from direct taxation, alongside limited expenditure growth, thanks to the complete phase-out of temporary COVID-19 emergency measures. The budget balance is projected to decrease somewhat but remaining at a slight surplus. The public debt-to-GDP ratio continued to decline markedly in 2023, reaching 99.1%, well-below pre-pandemic levels, and is expected to maintain this trend (see Annex 19). Nonetheless, fiscal sustainability risks are expected to remain high in the medium-term (see Annex 21), with the projected rise in spending on pensions being a key factor. Fiscal sustainability could be enhanced by improving the efficiency and effectiveness of the tax system (see section 3).

Inflation is receding from high levels. Inflation fell from 8.1% in 2022 to 5.3% in 2023, reflecting a significant downward correction in energy prices as well as a slowdown in the increase in prices of food and non-energy industrial goods. In the last quarter of 2023, inflation dropped substantially to 2.4% (y-o-y) and is forecast to subside further to 2.3% in 2024 and 1.9% in 2025. Nevertheless, considering the projected continuous increase in household incomes, core inflation is projected to remain somewhat above headline inflation, and broadly in line with the euro area. Nominal wages are projected to grow somewhat faster than inflation, resulting in a slight increase in real wages amid relatively stable unit labour costs.

([2]) SWD(2024)105 final.

Box 2:

UN Sustainable Development Goals (SDGs)

Portugal is making progress in all the SDGs related to competitiveness and productivity (SDGs 4, 8, 9). However, it needs to step up efforts to close the gap with the EU average on some of them. Progress on SDG 9, on innovation, sustainable industry and infrastructure, is further behind the EU average, mostly due to low R&D expenditure, the low number of patent applications, low share of sustainable freight transport infrastructure and the high levels of air pollution from industry. The sustainable economic growth and employment indicator (SDG 8) is still slightly below the EU average, with a lower investment share of GDP than the EU average, however the employment rate is above the EU average (see Annex 1).

Out of the 17 indicators, progress on 7 SDGs is below the EU average. Besides the ones just mentioned, this concerns environmental stability (SDGs 11, 12, 13, 14), fairness (SDGs 3 and 8) and macroeconomic stability (SDG 16).

Low labour productivity and insufficient R&D intensity could hinder competitiveness

Labour productivity is still below the EU average. Despite a strong increase in real labour productivity between 2021 and 2023 (+10.4%), Portugal remains well below the EU average, with significant labour productivity gaps at regional level (see Annex 12 and Annex 17). Part of the productivity shortfall appears to be driven by Portugal's relatively strong reliance on labour-intensive sectors. Moreover, the low levels of research and innovation in recent years, coupled with skills mismatches and low levels of investment and digitalisation, are likely obstacles to productivity growth in Portugal. The recent progress made by Portugal on these issues, which was fostered, among other things, by the implementation of the RRP and cohesion policy programmes, are expected to improve productivity and competitiveness in the medium term.

R&D intensity is increasing but remains below the EU average. Portugal has recorded an increase in R&D intensity over the past decade, up from 1.2% of GDP in 2015 to 1.7% of GDP in 2022, but this is still below the EU average. The increase was driven mainly by the private sector, as over the same period public expenditure on R&D decreased slightly to 0.6% of GDP (see Annex 11). R&D is also rather concentrated in the capital and Norte regions (see Annex 17). Venture capital investments in net-zero technologies also show a positive trend over the last few years (see Annex 7).

Despite real improvements and performance above the EU average on gender and disability employment gaps, there are still some social and environmental concerns

Portugal has made real improvements in the implementation of the European Pillar of Social Rights, even if there are still some challenges. Portugal performs better than the EU average on gender and disability employment gaps, and on the proportion of young people leaving l education and training early. While the poverty rate has been declining, the efficacy of social transfers on reducing poverty is still limited. Poverty and social inclusion disproportionately impacts the outermost regions, with Madeira and the Azores reporting poverty rates above 30%, compared to the national average of 20.1%. In Azores, for instance, the proportion of the population receiving minimum income is almost three times the national average. The region also faces a significant challenge with early leaving from education and training rates, revealing regional disparities in opportunities for young people. The lack of

affordable housing continues to be a problem, aggravated by increased purchase and rental prices. As Portugal's population is ageing rapidly, with an estimated 26.5% of people aged 65 years or older by 2030, long-term care facilities are severely underfunded, at less than a quarter of the EU average. The ageing of the population also has an impact on long-term accessibility to healthcare services and education. The declining level of educational outcomes, although broad-based across EU countries, as shown in the latest results of the Programme for International Student Assessment (PISA), may further hamper competitiveness.

Portugal is particularly vulnerable to climate change. Climate change threatens biodiversity and the availability of water. The green transition in the country is hindered by weaknesses in the electricity grid.

IMPLEMENTATION OF KEY REFORMS AND INVESTMENTS USING EU INSTRUMENTS

Funding from the Recovery and Resilience Facility (RRF) and cohesion policy is mutually reinforcing Portugal's efforts to boost its competitiveness and foster sustainable growth. In addition to the EUR 22.2 billion of RRF funding described in Annex 3, cohesion policy provides Portugal with EUR 22.6 billion between 2021 and 2027. Support from these two instruments combined represents around 16.88% 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), Portugal has launched important policy measures that are expected to improve the country's competitiveness. In particular, the RRP envisages major reforms in the areas of the business environment, public procurement and capitalisation of non-financial companies. Portugal has also made substantial investments in research and innovation, education, skills, energy renovation of buildings, and the digital transition of businesses and public services.

The implementation of Portugal's recovery and resilience plan is underway, however timely completion requires increased efforts. Portugal has submitted three payment requests, corresponding to 102 milestones and targets in the plan and resulting in an overall disbursement of EUR 7.8 billion on 28 December 2023 (see Annex 3). The size and complexity of the plan, and challenges linked to absorption capacity, call for accelerating investments and addressing emerging delays while strengthening administrative capacities to ensure that reforms and investments can be completed on time. Investments, in particular, are highly concentrated towards the end of the RRP implementation and merit special attention. While Portugal is taking some measures to address the lack of administrative capacity, challenges remain in particular in terms of finishing the largest infrastructural investments, within the lifetime of the RRF.

Cohesion policy funding helps tackle Portugal's growth and competitiveness challenges and reduce the country's territorial and social disparities. Under the 2014-2020 cohesion programming period, support focused on the areas of research and innovation, water supply, skills, social cohesion and workers' adaptation to change. For the 2021-2027 programming period, support is aimed at fostering SMEs' competitiveness and ability to innovate, the green transition and social cohesion, and improving living and working conditions (see Annex 4). Around 15% of the 2021-2027 cohesion policy financial package will support territorial development strategies. The Technical Support Instrument also funds projects in Portugal to design and implement public administration and growth-enhancing reforms. The support provided in 2023 included, for instance, assistance to implement the smart cities/territory strategy and to boost capacities for climate adaptation, in full alignment with the objectives of the RRP.

Improving the business environment to foster innovation and competitiveness

Under the RRP, Portugal continues its significant efforts through reforms and investments to improve the business environment. Portugal is implementing the reform on self-regulated professions, which helps to reduce restrictions to access and exercise the profession in highly regulated professions, such as lawyers, doctors, nurses,

engineers and architects. These professionals play a pivotal role in improving the business environment by providing essential services to both businesses and people. These professions will now operate in a more competitive and open environment. Portugal also carried out two key reforms to increase the efficiency of the administrative and tax courts. A more efficient judicial system provides a more predictable environment for businesses.

The access to finance for businesses is being improved. Portugal has made progress in allocating RRF-funded financial instruments through its national development bank, which was recapitalised by EUR 250 million under the RRP to become an InvestEU implementing partner. Moreover, it adopted six investment programmes for its capitalisation funds, totalling EUR 1.43 billion. From these programmes, over EUR 700 million of equity and quasi-equity support is being allocated to companies or financial intermediaries. These instruments aim to address the under-capitalisation of companies in Portugal, as well as to improve access to finance, in particular for SMEs and new firms. These programmes include over EUR 400 million of investments in new ventures and young firms. Portugal also revised its Securities Code and the legal framework for collective investment undertakings**,** introducing several simplifications and aligning the national frameworks more closely to EU law. The changes aim to make the Portuguese capital market more competitive by improving access to equity finance. Portugal is also expected to facilitate direct financing for companies in both capital and debt markets, reducing dependence on bank loans. Under the 2021-2027 cohesion policy programmes, around EUR 417 million has also been allocated for financial instruments to improve SMEs' competitiveness and energy efficiency.

Several measures are in place to promote research and development. In 2023, 38 innovation and green agendas (i.e., large research consortia between enterprises and research/academic institutions) had been contracted under the RRP, with the remaining ones expected to follow by the end of 2024. These agendas will develop over 800 new innovative products, processes or services in areas of strategic importance and which contribute to the green transition. In addition, over 60 contracts have been concluded with technological centres to develop and provide innovative services to businesses, and to further expand public-private partnerships in research. Other ambitious R&D investments (e.g. in marine science, agriculture and digital science) are in progress. The cohesion policy funds complement these investments, contributing to innovation and the digitalisation of businesses by supporting over 16 000 companies until 2027 (see Annex 4).

Portugal has taken appropriate steps to improve the quality and sustainability of its public finances. Measures in the RRP will provide the country with a stronger budgetary framework, by ensuring the full and effective implementation of the 2015 Budgetary Framework Law, and will improve the country's fiscal sustainability over the medium-term. In 2023, new procurement models for the national central public procurement system entered into force, a new conceptual model to monitor the budgetary and financial activities of general government was approved, and a reporting model was introduced for the disclosure of information on the finances and performance of state-owned enterprises. The modified RRP also includes a new reform to simplify the tax system, with a focus on reducing the number of tax benefits. The tax legal framework was modified in May 2023.

Unlocking investments for the green and digital transitions

Measures to adapt to climate change have been implemented. The RRP supported the delivery of at least 179 new firefighting and fire-prevention vehicles and other pieces of equipment. Several measures also aim to increase the resilience of land vulnerable to wildfires and biodiversity loss, such as through landscape redevelopment and

management programmes, and fuel management bands to isolate outbreaks of wildfires. To promote sustainable land management, Portugal has also improved its land registry and monitoring systems. Adaptation measures in the field of water efficiency and landscape management are also included in the RRP, to help Portugal better deal with the current and future impacts of climate change. More efficient irrigation technologies and the optimisation of the use of existing water resources will help reduce water losses in the urban and agricultural sectors in Algarve.

Renewable energy production and energy efficiency are increasing. Portugal has adopted a national hydrogen strategy and has been developing a regulatory framework for renewable hydrogen production. Portugal also launched two calls for supporting private projects to produce hydrogen and other renewable gases. The autonomous regions of Azores and Madeira will invest in renewables and storage solutions. The REPowerEU chapter scales up the existing renewables and energy efficiency measures and includes the creation of a national observatory for energy poverty to monitor and develop policies related to energy poverty. To strengthen the capacity of the national administration to handle renewable energy and energy efficiency projects, the REPowerEU chapter also includes the training of 500 public officials. These measures are further complemented by the 2021-2027 cohesion policy programmes, with a total of EUR 1.2 billion in funding to upgrade the energy performance of Portugal's building stock, increase the deployment of renewables and support the integration of energy storage systems into the transmission network (see Annex 4).

RRP measures aimed at decarbonising transport are in their first stages. A contract was signed for the construction of a Bus Rapid Transit line in Porto, which will operate zero-emission buses as were the contracts for the expansion of Lisbon and Porto metro networks. Portugal has also signed contracts to purchase 145 new electric or hydrogen buses for Lisbon and Porto and will sign additional contracts for 300 zero-emission buses to be used across the country. More than 8 000 charging points for electric vehicles are already available at national level. The cohesion policy fund finances complementary actions, including regional programmes investing in railway infrastructure and rail rolling stock, further contributing to decarbonisation of transport.

While waste management continues to be a challenge, the RRP and cohesion policy funding will strengthen industry decarbonisation and the circular economy. As part of the RRP, a revised national strategy for green public procurement, including mandatory ecological criteria, has been adopted. Projects to improve the circular economy and bioeconomy aspects of textiles, shoes and resin production have been selected for support. A new reform has also been included in the revised RRP that will introduce new recovery schemes for plastic bottles and metal. Calls for tender have also been launched to support projects for the decarbonisation of industrial processes have been launched. Moreover, the first calls under the 2021-2027 cohesion policy programmes in the areas of the circular economy and waste management (total budget of EUR 564 million) are expected to be published this year.

The digitalisation of public services and businesses is underway. Supported by the RRP, five additional public services are now available through the single digital services online portal. People can access them by using their online electronic identity. The modified RRP includes the financing of over 90 research projects for advanced digital services in the public administration. Investment in the development of a network of digital innovation hubs is promoting the uptake of disruptive technologies by businesses and fostering entrepreneurship in innovative sectors. Portugal has also established a national network of test beds, which aims to help businesses develop innovative products by providing access to equipment and infrastructure. Cohesion policy funds are also being used to digitalise over 300 public institutions.

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

To boost economic growth and maximise the impact of EU funding, the Portuguese RRP includes reforms that support investments under other EU instruments, creating important synergies and complementarities between the various funds. For example, to improve workers' basic and digital skills and adapt the skills offer to current and future labour market needs, the Portuguese RRP is supporting a comprehensive reform of the vocational education and training system. The reform is supplemented by investments in training infrastructures. The ESF+ demography, qualifications and inclusion programme complements the RRP by providing for the necessary services, such as support to set up and deliver courses.

Important measures are contributing to the digital transition in education and the development of digital skills. A total of 600 000 laptops were distributed to pupils and teachers in public schools, and four massive open online courses on digital skills have been created with the help of the RRF. In addition, more than 9 200 digital kits (a tablet or laptop with the relevant software and digital school manuals) were distributed in Madeira. Portugal also introduced legislative amendments to reinforce vocational training in digital skills. This reform is complemented by the Portugal Digital Academy platform, which is already operational to users and offers training in digital skills. The revised RRP also strengthened the support for the digital transition in education in Azores and Madeira.

Investing in people for economic growth and resilience

The RRP provides innovative answers to socio-economic challenges. It includes broad reforms and investments to provide more targeted social services. Dedicated technical units have been set up to respond to the needs of disadvantaged communities in Lisbon and Porto. Pilot actions to support homeless people are being carried out through individualised integration plans. Measures to create and renovate care facilities in the social sector, and to introduce innovative home and community care solutions, have also started with the award of financing contracts. The revised RRP also includes a key reform to simplify the social benefits system to ensure that potential beneficiaries receive the support they are entitled to. The Technical Support Instrument is also helping with the design of this reform.

The RRP also aims to make the health and long-term care systems more resilient and digital. Portugal revised the organisation and functioning of primary care services to strengthen their role in the national health system (NHS); established new integrated responsibility centres in public hospitals; and adopted a new mental health law regulating, amongst others, the rights of people with mental illness. To promote the digital transition of the NHS, Portugal upgraded local information technology networks in the NHS and implemented new functionalities for telehealth and telemonitoring.

Significant efforts have been made to increase social housing. The revised RRP includes EUR 3.2 billion of investment to increase the supply of permanent and temporary housing. Agreements have been signed with municipalities to support the construction and renovation of social housing and temporary accommodation. Construction and renovation works have started for affordable public housing and student housing.

EU funds enhance investments in education and skills. RRP measures aim to foster the development of the innovation system, support researchers, reform study programmes, strengthen digital skills, and ensure equal access to quality public schools. Portugal is upgrading facilities for vocational education and training, providing digital

training for teachers and purchasing digital education equipment in Azores. The European Social Fund will also support the reskilling of adults, and invest in actions such as modular training, technology specialisation courses and qualification centres. By the end of 2022, the social inclusion and employment operational programme had already reached 130 000 adult and young participants.

EU funds support job creation and quality jobs. The RRP provides financial support for employers to offer open-ended contracts, with 33 000 people already hired, of which over 60% are women. The European Social Fund is supporting professional training to promote quality employment, particularly for young people. The Just Transition Fund also promotes greater economic diversification and fosters job creation in three areas affected by the energy transition. It will also help to create jobs and support training for reskilling upskilling (see Annex 4).

FURTHER PRIORITIES AHEAD

Portugal faces additional challenges related to demographic ageing, the tax system, affordable housing, the business environment, climate adaptation and the electricity grid. Tackling these challenges will help increase Portugal's long-term competitiveness and ensure the resilience of its economy. It will also help Portugal to make further progress in achieving the UN Sustainable Development Goals (SDGs).

Policy progress has been made, according to the policy assessment under the macroeconomic imbalance procedure. The Government adopted in the end of 2022 and during 2023 a set of measures aimed at mitigating the risks from increased interest rates on mortgage loans. The ongoing implementation of reforms and investments in the context of the RRP and cohesion policy programmes is expected to continue to have a favourable impact on Portugal's growth potential. These reforms, investments and programmes are also contributing to the country's sustainability with respect to other countries, particularly through progress in the areas of energy efficiency, renewables and competitiveness. The implementation of fiscal-structural reforms, inside and beyond the RRP, can help strengthen Portugal's medium-term fiscal sustainability.

It is important to address the identified challenges both at the national and regional level to reduce regional disparities and improve administrative capacities and the ability to spend in a balanced way across the country.

The ageing population raises concerns for public finances and access to services

Portugal's population is ageing rapidly. In recent years Portugal has recorded an increase in population, driven by the positive net migration. Nonetheless, demographic projections are not favourable for the country. The projected shrinking working-age population, exacerbated by the projected fall in net migration and rising life expectancy, present a structural challenge for Portugal. This situation is clearly demonstrated by the old-age dependency ratio ([3]) (see Graph 3.1). This ratio is expected to peak at 70% in 2051, meaning that, while in 2022 there were close to 3 workers for each pensioner, by 2051 there will be fewer than 1.5.

Ageing will have a negative impact on public finances in Portugal. An increase in the number of older people implies higher age-related expenditure on health, long-term care and, in particular, on pensions. By 2046, pensions are projected to reach an all-time high of 15.2% of GDP, 3 percentage points more than in 2022, before gradually going down until 2070 ([4]). Previous estimates ([5]) had forecast a more limited increase. A shrinking working-age population, who are

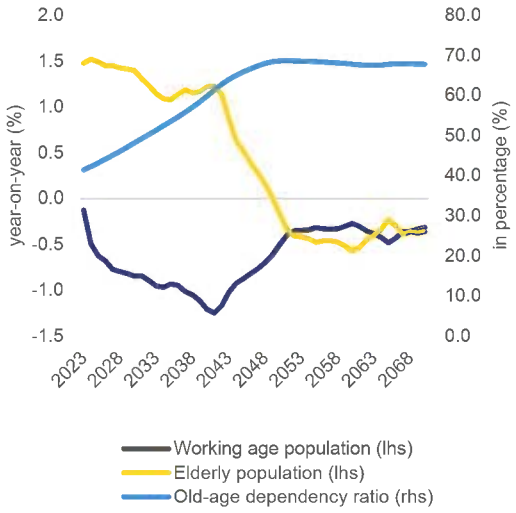
([3]) The proportion of the elderly population (aged 65 years or more) in the pension system to contributors, i.e. the working-age population aged between 20-64.

([4]) European Commission-EPC (2024), '2024 Ageing Report - Economic and budgetary projections for the EU Member States (2022-2070)'.

([5]) According to the 2021 Ageing Report (European Commission, Institutional Paper 142, November 2020) pension expenditure was expected to peak at 14.6% of GDP at 2035, 2 pps of GDP more than in 2019.

also taxpayers, would lead to lower revenues from taxes on labour income, such as the personal income tax ([6]). With a still high level of public debt of 99.1% of GDP in 2023, these developments contribute to the consistently high fiscal sustainability risks faced by Portugal in the medium-term (see Annex 21).

Graph 3.1: **Old-age dependency ratio (2023-2070)**



(1) Working-age population are individuals aged between 20-64. The older population is aged 65 or more.
Source: European Commission, 2024 Ageing Report

Ageing and skills shortages raise concerns about the adequacy of health and long-term care services, as well as education. Long-term care services are severely underfunded, resulting in insufficient supply, also due to skills and staff shortages, with a ratio of 0.8 workers per 100 people in need ([7]). In healthcare, 40% of doctors are over 55 years old (see Annex 16). The ageing of doctors comes on top of the difficulties in retaining and hiring doctors and nurses. In fact, difficulties with staff retention and hiring remain a concern in strategic sectors, such as the public administration, healthcare and education, mainly due to a lack of training opportunities, career promotion paths and low pay. Regional disparities and divergent costs of living also affect the attractiveness of public sector jobs in certain areas of the country. Portugal's civil service is also negatively affected by ageing, exacerbated by the relatively low attractiveness of public sector employment. Over the last decade, there was a strong increase in educational attainment, even though the overall share of the population with higher education remains below the EU average. The lack of much-needed skills in digital and clean technologies also hinders Portugal's competitiveness (see Annex 13 and Annex 10). The shrinking and ageing of the working-age population are particularly challenging for the development of certain regions further from the main metropolitan areas (See Annex 17).

Further simplification would improve the efficiency and effectiveness of the tax system. Portugal introduced a new RRP reform that will address the complexity and transparency of its tax system, focusing on tax benefits ([8]) (see Section 2). However, the structure of corporate income tax remains complex, with both state and municipal surcharges. This limits the effectiveness of tax collection. Direct tax withholdings are high, structurally above 2% of GDP on average in the recent past ([9]), which represents an extra burden for taxpayers and the tax administration. Outstanding tax arrears and the recurrent cost of tax collection remain high and above the EU average. In addition, the effectiveness of the tax system is further hindered by an ageing tax administration staff. There are too few new recruits, with more than half of the staff expected to retire in the next decade (see Annex 19).

([6]) Portuguese Fiscal Council, 'Budgetary Risks and Sustainability of Public Finances 2023', December 2023.

([7]) European Commission, 'Long-Term Care Report', 2021.

([8]) See '2023 Country Report – Portugal' (European Commission, SWD(2023) 622 final, May 2023) for a review of the challenges faced by Portugal's tax benefit system.

([9]) A new model for direct tax withholdings was applied as of 1 July 2023 to ensure that by year-end there are no major differences between the tax already submitted to the state and the amount that is finally calculated.

Climate change has an impact on biodiversity and the availability of water

Climate change brings challenges for water management and the protection of biodiversity in Portugal. With a moderate climate protection gap ([10]), the country, particularly the southern regions, is heavily affected by droughts, impacting large areas of the country, (6.4% on average over 2000-2020 and even 34.8% in 2022). Reduced annual rainfall and an increase in its variability affect river flows, aquifer recharge and flood risk, impacting many economic sectors from agriculture to energy, and putting hydropower generation at risk. Climate change also exacerbates the risks to biodiversity, including through forest fires. Portugal stands out globally as the country with the highest percentage of its forests lost to wildfires between 2001 and 2021, about 13% of the area of forested land ([11]). In Portugal, while the size of the area protected under Natura 2000 is on a par with the EU average, some species and habitats, particularly in the marine environment, are still not sufficiently protected (see Annex 6).

Challenges remain in the areas of governance of the water supply, rehabilitating bodies of water, and water efficiency. Portugal has increased its capacity to adapt to climate change by strengthening the relevant legal framework, and it is finalising a national roadmap for adaptation to climate change until 2100 ([12]). However, an integrated water management strategy would help to strike the balance between water use and ecological requirements, while ensuring adaptation to long-term climate risks (see Annex 6). Streamlining the governance structure would help to achieve effective coordination at the sub-national level and economies of scale, and would also improve efficiency (see Annex 17). It would also be beneficial to increase water retention in the landscape and manage the possible changes in economic practices in the long-term. Improving the management of wastewater, reducing leaks in water pipelines, better monitoring, restoring the natural sponge function of the landscape, reducing the extraction of ground water, restoring wetlands and rivers (including flood plains), and rolling out other nature-based solutions show potential to address the above-mentioned challenges.

There is a shortage of affordable housing

Despite measures in the RRP and the possibilities of support offered by other EU funds, there is a shortage of affordable housing due to increased house and rental prices. The housing price index has more than doubled since 2015, and is one of the highest in the EU. Housing demand remains strong but access to housing at affordable conditions has deteriorated in recent years, particularly in Lisbon and Porto. This situation also makes it difficult for workers to be mobile. The situation is mainly due to insufficient housing supply, increases in the mortgage interest rate, and rising house purchase and rental prices. It is also the result of greater demand for short-term rentals due to the strong growth in tourism. Portugal's home ownership ratio is high, implying that the challenge primarily affects disadvantaged groups. Homelessness has worsened in recent years, most notably for migrants and their families, which was not seen before at such a scale. Energy poverty also remains high for people at risk of poverty. Despite improvements through the energy efficiency measures for residential buildings within the RRP and the cohesion policy programmes, a significant proportion of the population (17.5%) still

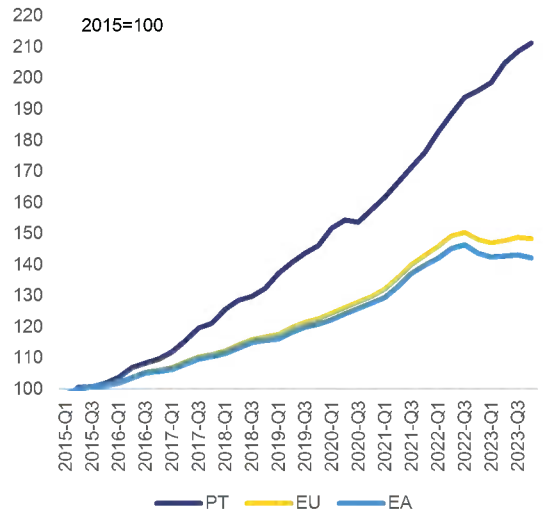
([10]) Share of non-insured economic losses in total losses after a climate-related catastrophe event. See 'Closing the climate protection gap - Scoping policy and data gaps' (European Commission, SWD(2021) 123 final, May 2021).

([11]) Bousfield et. al 2023.

([12]) National Roadmap for Adaptation 2100 | Portuguese Environment Agency (apambiente.pt)

struggle to adequately heat their homes ([13]). Support through dedicated financial instruments for renovations are still not easily accessible in Portugal, which could also support households that have limited access to private financing.

Graph 3.2: **House price index - quarterly data**



Source: Eurostat

Fostering competitiveness

Long-standing heavy regulatory and administrative requirements reduce the attractiveness of Portugal's business environment. Portugal has the highest share of companies in the EU that cite business regulation as a long-term barrier to investment, and a large proportion of firms cite licensing regimes and inefficiencies in the judicial system as long-term barriers. Similarly, most firms consider administrative delays and red tape as obstacles to their daily operations. Stronger regulatory impact assessments and improved stakeholder engagement in lawmaking would help identify potential burdens. Additional regulatory costs are imposed on firms by the complex and fragmented corporate tax framework.

Despite an increase in private research and development (R&D) in recent years, public spending on research has been low and has stagnated over the last decade. R&D activities in Portugal increased markedly in recent years, supported also by large RRP investments in research projects. However, it will be important for Portugal to continue investing in R&D, including on net-zero technologies, and fostering cooperation between businesses and research institutes, also beyond the timeframe of the Recovery and Resilience Facility. Additional efforts will be needed to meet the target of public and private R&D expenditure to 3% of GDP by 2030. Such investments will be pivotal to increasing the country's technological development as well as its labour productivity.

A further increase in labour productivity is key to improving competitiveness. Shortages of skilled staff and mismatches of skills are reported as some of the major barriers to investment in Portugal. Furthermore, expanding the digitalisation of businesses and services and fostering a more agile and innovative business environment would improve productivity (see Annex 12). 70% of SMEs in Portugal had at least the basic level of digital intensity.

Shortcomings in the electricity grid and fossil fuel subsidies risks delaying the green transition

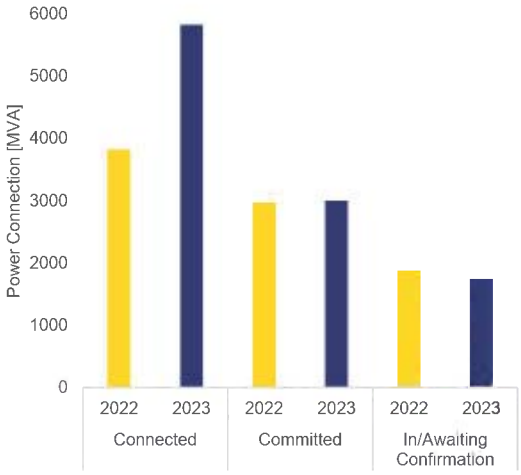
Portugal is experiencing delays in renewable energy projects and limitations in grid and storage capacity. Last year's historic increase in solar power production and the higher level of installed capacity are positive indicators. However, the growth of renewables needs to be increased to meet the ambitious target ([14]) of the national energy and climate plan (NECP), including by repowering existing wind energy. Renewable projects are hindered by logistical problems, a shortage of

([13]) Inability to keep one's home adequately warm, EU-SILC survey, Eurostat, 2022.

([14]) Draft NECP 2023: 20.46GW target for solar energy.

components and raw materials, inflation, labour shortages and slow and complicated licensing procedures. The new extension of the deadline for finalising solar energy projects ([15]) is also causing delays and blocking access to the electricity grid for other projects. The pipeline of renewable energy projects lacks clear visibility as there is no long-term planning for auctions. The power networks will need to serve the growing demand linked to: (i) clean mobility; (ii) the increased electrification of heating, cooling and industry; and (iii) renewable hydrogen production, but short-term grid and storage capacity are already lacking (see Annex 7). The electricity grid also lacks efficiency, and transparency on the capacities available. Furthermore, it is still insufficient to adapt to a more decentralised, digitalised and flexible electricity system ([16]). Portugal would benefit from further investment in the electricity grids, including by upgrading existing power lines and by promoting flexibility in the system

Graph 3.3: **Available hosting capacity for power generation in the national distribution grid**



(1) The 'committed connection Power" concerns commitments with a production license that are not yet connected, with an assigned grid connection point and with the power requested yet to be committed.
Source: E-redes

through solutions such as storage, the use of smart meters and incentives to consume at off-peak hours, as well as demand response mechanisms.

Deteriorating education outcomes threaten competitiveness

The declining level of educational outcomes poses a risk to future competitiveness. Portugal's Programme for International Student Assessment (PISA) results have deteriorated, in line with the EU average. They show an increase in underachievement, coupled with low proportions of top performers in mathematics and science, which may pose a risk to productivity growth and competitiveness in the future. The underachievement of students from disadvantaged groups is worsening, and the underachievement gap between students born within Portugal and outside of the country is still very wide, despite a reduction compared to the previous PISA cycle. As the share of foreign-born students enrolled in mandatory schooling increased from 7.2% to 12.3% in the last 3 years, it will be important to adapt the educational system to facilitate

([15]) Ministerial Order 1/SEAMB/SEENC with a further 10-month extension of the deadline for the projects from the 2019/2020 auction (77 months in total to conclude a solar project).

([16]) A power generation facility that uses multiple renewable energy sources.

the integration of migrant students into Portuguese society from an early age.

Regional differences play a role in educational success. Despite the low overall rate of early school leavers and training, significant regional disparities persist. Rural areas experience higher drop-out rates than urban areas. Particularly troubling is the situation in Azores, where the rate reaches a concerning 26.5%.

As the teaching force ages, there is an increasing shortage of teachers. In 2021, approximately half of the schoolteachers in mainland Portugal were above the age of 50 and only 2% were below the age of 30. At the same time, the number of higher education graduates in teacher training fell considerably, suggesting a lack of attractiveness in the profession. Ensuring an adequate number of well-trained teachers is essential for delivering quality education to both the current and future generations (see Annex 15).

Box 4:

The mid-term review of cohesion policy funds for Portugal

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 the Member State for the definitive allocation of 15% of the EU funding included in each programme.

Portugal has made progress in implementing 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, disparities remain between the mainland's coastal and inland areas on the one hand, and between the mainland and the outermost regions on the other, as well as between metropolitan areas and small cities and towns. Against this background, it remains important to continue implementing the planned priorities, paying particular attention to: (i) applied research (in the areas identified in smart specialisation strategies), knowledge transfer and valorisation of R&D results, the innovation capacity of SMEs, the green transition and competitiveness; (ii) wastewater collection and treatment, water reuse and access (particularly in remote areas and the outermost regions), reducing leaks in the networks, the circular economy, energy efficiency and renewable energy in line with the national energy and climate plan; (iii) administrative capacity to meet the conditions for more effective and efficient public investments; (iv) education and training, the development of qualifications and skills demanded by the labour market, and targeted active labour market policies, especially for young people; (v) ensuring equal access to education, health and social services, in particular for people from disadvantaged groups.

The needs in the area of preventing and preparing for risks related to climate change merit specific consideration in preparing the mid-term review. Portugal could also benefit from the opportunities provided by the Strategic Technologies for Europe Platform (STEP) initiative ([17]) to support the transformation of industry, particular with a particular focus on advanced and resource-efficient manufacturing, sustainable transport, biomedicine and biotechnology, and net zero technologies, whilst also investing in the skills and qualifications required to meet the demand for workers in these sectors.

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

KEY FINDINGS

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

- **Contributing to the green transition** with investments in renewable energy, energy efficiency in buildings, the circular economy, and the decarbonisation of transport and industry;
- **Digitalising businesses and public services**, as well as contributing to the digital transition in education and improving people's digital skills;
- **Enhancing its business environment** by reducing restrictions in highly regulated professions, improving access to finance for businesses, promoting research and innovation, and improving the efficiency of the justice system;
- **Combatting precarious contracts and fostering education and research** through programmes and training courses to reskill and upskill the adult population;
- **Supporting disadvantaged communities**, increasing the efficiency of the national health system and boosting investment in social and affordable housing;
- **Promoting the fiscal sustainability** over the medium term, including a reform to simplify the tax system.

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

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

- **Ensuring medium-term fiscal sustainability**, including by mitigating the impact of ageing on Portugal's pension system, streamlining the corporate income tax structure and improving the efficiency of the tax administration;
- **Enhancing competitiveness** by supporting private investment, reducing the regulatory and administrative burden, further strengthening regulatory impact assessments, investing more in R&D&I, and promoting digitalisation;
- **Improving the performance of the public sector** to also address challenges posed by the ageing population;
- **Tackling teacher shortages and educational underachievement**, particularly within the migrant population and in rural areas and the outermost regions;
- **Increasing the capacity of the grid infrastructure and electricity storage,** improving connection procedures, increasing their transparency to attract investors and accelerate the implementation of renewable energy projects;
- **Improving water management and environmental protection** to adapt to the impacts of climate change and ensure long-term economic and environmental resilience.

ANNEXES

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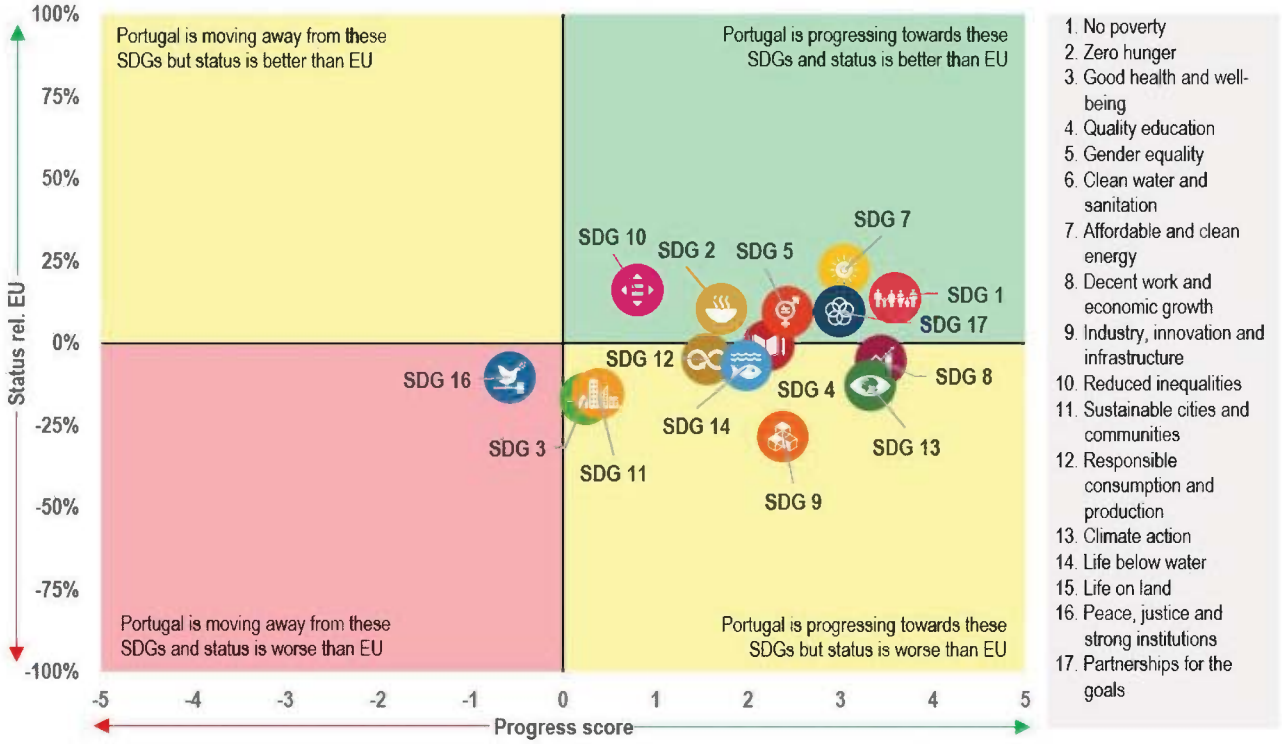
This Annex assesses Portugal's progress on the Sustainable Development Goals (SDGs) along the four dimensions of competitive sustainability. The 17 SDGs and their related indicators provide a policy framework under the UN's 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty, 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.

Portugal is improving overall on the SDG indicators related to environmental sustainability (SDGs 2, 6, 7, 9, 11, 12, 13, 14, 15). It performs well on SDG 7 (Affordable and clean energy) but needs to catch up with the EU average on sustainable industry and infrastructure (SDG 9) and sustainable cities (SDG 11). In 2021, 19.3% of the utilised agricultural area in Portugal was under organic farming (EU: 9.9% in 2021). The share of renewable energy in gross final energy consumption increased from 30.6% in 2017 to 34.7% in 2022, well above the EU average (23% in 2022). The environmental impact of agriculture is lower than the EU average, but the level of nitrate in ground water is increasing (from 19.3 mg NO_3 per litre in 2016 to 22.6 mg in 2021), higher than the EU average (20.5 in 2021). Portugal protects less than 5% of its maritime areas (EU: 12.1%). Circular economy indicators are also well below EU averages, with a low rate of recycling of municipal waste (30.4% in 2021, against 48.6% for the EU in 2022) and a circular material use rate that, even if slightly improved since 2017, is only around one fifth of the EU average. The share of public transport (buses and trains) in total passenger transport and the use of rail and inland waterways in freight transport are well below the EU average. Various measures in Portugal's recovery and resilience plan (RRP) aim to

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



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.

further contribute to emission savings. These include investments in energy storage and renewables, renewable hydrogen, energy efficiency renovations, the extension of metro lines, increased use of bioproducts in industry, and the decarbonisation of industry.

Portugal is improving on SDG indicators assessing the *fairness* of society and the economy (SDGs 1, 3, 4, 5, 7, 8, 10) but still needs to catch up with the EU average on health and well-being (SDG 3). The poverty rate (persons at risk of poverty or social exclusion) was slightly below the EU average in 2022 (20.1%, vs 21.6% for the EU), also after social transfers (16.4%, against 16.5% for the EU). Portugal performs well for people living in households with very low work intensity (5.6% of the population aged less than 65 in 2022, vs 8.3% at EU level) and on the housing cost overburden rate (5% of population in 2022, against 8.7% at EU level). On the in-work-at-risk-of-poverty rate, Portugal is above the EU average (10.3%, vs 8.5%). The urban-rural gap has increased significantly and remains far above the EU average. The same trend applies to energy poverty, with 17.5% of the population unable to keep their homes adequately warm in 2022 (EU: 9.3%). The citizenship gap (difference between EU and non-EU nationals) narrowed for the poverty rate but increased for employment and training. Despite some improvements, most of the health and well-being indicators are still far from the EU average. These include those on road deaths, the obesity rate and healthy life expectancy (58.3 years in 2021, against 63.6 years for the EU). Education and training indicators are better than the EU average, with the tertiary education attainment rate (population aged 25-34) increasing from 35.1% in 2018 to 40.9% in 2023 (vs an increase of the EU average from 38.7% to 43.1%). The same is true for the participation of adults in learning, which stood at 13.4% in 2023 (EU: 12.7%). Portugal also performs better than the EU average on gender equality, with a low gender employment gap, and a gender pay gap slightly below the EU average (but still above 10%). The share of women in senior management and in government has progressed in the last few years, surpassing the EU average. The RRP includes measures intended to achieve progress towards a more equal and healthy society. These include reforms of primary care services and simplification of the social benefit system, and investments in community-based social services, social housing, and student accommodation. Another measure under the RRP is household support for energy efficiency renovation.

Portugal is improving on SDG indicators related to *productivity* (SDGs 4, 8, 9) but still needs to catch up with the EU average on innovation and industry (SDG 9). Basic digital skills among the adult population are progressing (56% in 2023) and are above the EU average (55.6%). The Portuguese labour market is performing relatively well compared to the EU average, with a high employment rate (78.2%, vs an EU average of 75.3%, in terms of population aged 20 to 64 in 2023) and a sharp decrease in long-term unemployment, which fell to 2.5% in 2023 (in terms of active population, EU: 2.1%). Despite slow improvement, R&D and innovation remains a key concern. Only 1.7% of GDP was allocated to R&D in 2022 (EU: 2.24%), while the number of patent applications submitted to the European Patent Office per million inhabitants remains very low: 31 in 2023 (EU: 153). The ambitious RRP measures have the potential to transform the Portuguese business sector and the R&I system. These measures aim to improve the business-academia link, increase R&D, and reform vocational education and training.

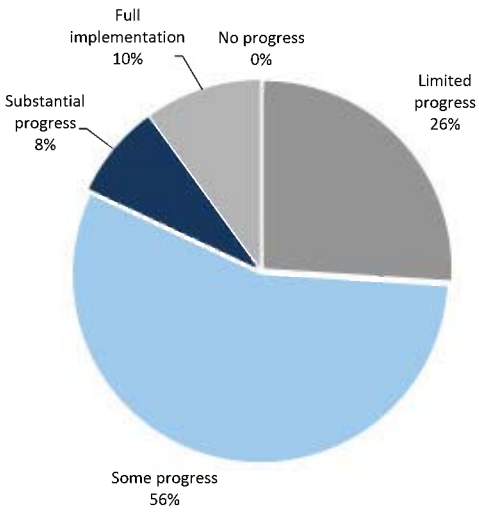
While Portugal is improving on some SDG indicators related to *macroeconomic stability* (SDGs 8, 17), it is moving away from the target linked to peace, justice, and strong institutions (SDG 16). It is closing its gap with the EU average in terms of the investment share of GDP, with 19.4% in 2023 (EU: 22.7%). However, central government expenditure on the law courts, a key indicator of the quality of the justice system, remains below the EU average (in 2022, EUR 71.9 per capita in Portugal vs EUR 113.7 per capita at EU level). The share of the population reporting crime, violence or vandalism dropped from 10.5% in 2015 to 6.6% in 2020 (EU: 10.7%) but the death rate due to homicide and the victims of trafficking in human beings are progressing. The RRP includes measures to improve the efficiency of administrative and tax courts and to improve public financial management, through the introduction of, for example, IT solutions.

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) ([18]) addressed to Portugal 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 Portugal to date ([19]) and the commitments in its recovery and resilience plan (RRP) ([20]). At this stage of RRP implementation, 74% of the CSRs focusing on structural issues from 2019-2023 have recorded at least 'some progress', while 26% recorded 'limited 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: **Portugal's progress on the 2019-2023 CSRs (2024 European Semester)**



Source: European Commission.

([18]) 2023 CSRs: EUR-Lex - 32023H0901(22) - EN - EUR-Lex (europa.eu)

2022 CSRs: EUR-Lex - 32022H0901(22) - EN - EUR-Lex (europa.eu)

2021 CSRs: EUR-Lex - 32021H0729(22) - EN - EUR-Lex (europa.eu)

2020 CSRs: EUR-Lex - 32020H0826(22) - EN - EUR-Lex (europa.eu)

2019 CSRs: EUR-Lex - 32019H0905(22) - EN - EUR-Lex (europa.eu)

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

([20]) 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**

Portugal	Assessment in May 2024*	RRP coverage of CSRs until 2026**	Revelant SDGs
2019 CSR 1	**Some Progress**		
Achieve the medium-term budgetary objective in 2020, taking into account the allowance linked to unusual events for which a temporary deviation is granted. Use windfall gains to accelerate the reduction of the general government debt ratio.	Not relevant anymore	Not applicable	SDG 8, 16
Improve the quality of public finances by prioritising growth-enhancing spending while strengthening overall expenditure control, cost efficiency and adequate budgeting, with a focus in particular on a durable reduction of arrears in hospitals.	Some Progress	Relevant RRP measures implemented as of 2022 and being planned as of 2022, 2023 and 2025	SDG 3, 8, 16
Improve the financial sustainability of State-owned enterprises, while ensuring more timely, transparent and comprehensive monitoring.	Some Progress	Relevant RRP measures being implemented as of 2021 and 2022	SDG 9
2019 CSR 2	**Some Progress**		
Adopt measures to address labour market segmentation.	Some Progress	Relevant RRP measures being implemented as of 2023	SDG 8
Improve the skills level of the population, in particular their digital literacy, including by making adult learning more relevant to the needs of the labour market.	Some Progress	Relevant RRP measures being implemented as of 2021 and 2022, and planned as of 2022,2023 and 2025	SDG 4
Increase the number of higher education graduates, particularly in science and information technology.	Some Progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2025	SDG 4
Improve the effectiveness and adequacy of the social safety net.	Some Progress	Relevant RRP measures being implemented as of 2021and 2022 and planned for 2022, 2023 and 2024	SDG 1, 2, 10
2019 CSR 3	**Some Progress**		
Focus investment-related economic policy on research and innovation,	Some Progress	Relevant RRP measures being implemented as of 2021 and 2022 and planned for 2022	SDG 9, 10, 11
railway transport and port infrastructure,	Limited Progress	Relevant RRP measures being planned as of 2022 and 2025	SDG 10, 11
low carbon and energy transition and extending energy interconnections, taking into account regional disparities.	Some Progress	Relevant RRP measures being implemented as of 2021 and planned as of 2022, 2023 and 2024	SDG 7, 9, 10, 11, 13
2019 CSR 4	**Some Progress**		
Allow for a swifter recovery of the collateral tied to non-performing loans by increasing the efficiency of insolvency and recovery proceedings.	Some Progress	Relevant RRP measures being planned as of 2023	SDG 8
Reduce the administrative and regulatory burden on businesses, mainly by reducing sector-specific barriers to licensing.	Limited Progress	Relevant RRP measures being implemented as of 2021 and planned as of 2023	SDG 8, 9
Develop a roadmap to reduce restrictions in highly regulated professions.	Substantial Progress	Relevant RRP measures being planned as of 2022	SDG 9
Increase the efficiency of administrative and tax courts, in particular by decreasing the length of proceedings.	Some Progress	Relevant RRP measures being planned as of 2023	SDG 8, 16
2020 CSR 1	**Some Progress**		
In line with the general escape clause, take all necessary measures to effectively address the pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.	Not relevant anymore	Not applicable	SDG 8, 16
Strengthen the resilience of the health system	Some Progress	Relevant RRP measures being implemented as of 2021, 2022 and planned as of 2023 and 2025	SDG 3
and ensure equal access to quality health and long-term care.	Limited Progress	Relevant RRP measures being implemented as of 2021, 2022 and planned as of 2023 and 2025	SDG 3, 8, 10
2020 CSR 2	**Some Progress**		
Support employment and prioritise measures to preserve jobs.	Some Progress	Relevant RRP measures being planned as of 2023	SDG 8
Guarantee sufficient and effective social protection and income support.	Some Progress	Relevant RRP measures being implemented as of 2021 and 2022 and planned for 2023 and 2024	SDG 1, 2, 10
Support the use of digital technologies to ensure equal access to quality education and training	Some Progress	Relevant RRP measures being implemented as of 2021 and 2022, and planned as of 2023 and 2024 and 2025	SDG 4, 8, 10
and to boost firms' competitiveness	Some Progress	Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2023 and 2025	SDG 8, 9

(Continued on the next page)

Table (continued)

2020 CSR 3	**Some Progress**		
Implement the temporary measures aimed at securing access to liquidity for firms, in particular small and medium-sized enterprises.	Substantial Progress	Relevant RRP measures being implemented as of 2021	SDG 8, 9
Front-load mature public investment projects and	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 8, 16
promote private investment to foster the economic recovery.	Substantial Progress	Relevant RRP measures being implemented as of 2021 and planned as of 2023	SDG 8, 9
Focus investment on the green and digital transition, in particular on clean and and efficient production and use of energy,	Some Progress	Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2023 and 2024	SDG 7, 9, 13
rail infrastructure	Limited Progress	Relevant RRP measures being implemented as of 2021	SDG 11
and innovation.	Some Progress	Relevant RRP measures being implemented as of 2021 and 2022	SDG 9
2020 CSR 4	**Some Progress**		
Increase the efficiency of administrative and tax courts	Some Progress	Relevant RRP measures being planned as of 2023	SDG 8, 16
2021 CSR 1	**Not relevant anymore**		
In 2022, use the Recovery and Resilience Facility to finance additional investment in support of the recovery while pursuing a prudent fiscal policy. Preserve nationally financed investment. Limit the growth of nationally financed current expenditure.	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, both on the revenue and expenditure sides of the budget, and to the quality of budgetary measures, to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, notably 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 by strengthening the coverage, adequacy, and sustainability of health and social protection systems for all.	Not relevant anymore	Not applicable	SDG 8, 16
2022 CSR 1	**Substantial Progress**		
In 2023, ensure prudent fiscal policy, in particular by limiting the growth of nationally financed primary current expenditure below medium-term potential output growth, taking into account continued temporary and targeted support to households and firms most vulnerable to energy price hikes and to people fleeing Ukraine. Stand ready to adjust current spending to the evolving situation.	Substantial Progress	Not applicable	SDG 8, 16
Expand public investment for the green and digital transitions, and for energy security taking into account the REPowerEU initiative, including by making use of the Recovery and Resilience Facility and other Union funds.	Full Implementation	Not applicable	SDG 8, 16
For the period beyond 2023, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring credible and gradual debt reduction and fiscal sustainability in the medium term through gradual consolidation, investment and reforms.	Full Implementation	Not applicable	SDG 8, 16
Improve the effectiveness of the tax and social protection systems, in particular by simplifying both frameworks, strengthening the efficiency of their respective administrations, and reducing the associated administrative burden.	Limited Progress	Relevant RRP measures being implemented as of 2022 and 2023; and being planned as of 2025	SDG 1, 2, 8, 10, 12, 16
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 13 July 2021.	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.		
Swiftly finalise the negotiations with the Commission on the 2021-2027 cohesion policy programming documents with a view to starting their implementation.	Progress on the cohesion policy programming documents is monitored under the EU cohesion policy.		
2022 CSR 3	**Limited Progress**		
Enhance the conditions for a transition towards a circular economy, in particular by increasing waste prevention, recycling and reuse to divert waste away from landfills and incinerators.	Limited Progress	Relevant RRP measures being implemented as of 2021 and 2023	SDG 6, 12, 15

(Continued on the next page)

Table (continued)

2022 CSR 4	**Some Progress**		
Reduce overall reliance on fossil fuels,	Some Progress	Relevant RRP measures being implemented as of 2021, 2022 and are being planned for 2023	SDG 7, 9, 13
including in the transport sector.	Some Progress	Relevant RRP measures being implemented as of 2022 and are being planned for 2023	SDG 11
Accelerate the deployment of renewables by upgrading electricity transmission and distribution grids, enabling investments in electricity storage	Limited Progress	Relevant RRP measures are being planned for 2023	SDG 7, 9, 13
and streamlining permitting procedures to allow for further development of wind, particularly offshore, and solar electricity production, as well as renewable hydrogen production.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 8, 9, 13
Strengthen the incentives framework for energy efficiency investments in buildings.	Some Progress	Relevant RRP measures are being planned for 2024 and 2025	SDG 7
Increase energy interconnections.	Limited Progress		SDG 7, 9, 13
2023 CSR 1	**Substantial 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.	Limited 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 1.8%1, unless a higher reference rate in net nationally financed primary expenditure growth is estimated to be compatible with Portugal reaching its MTO of -0.5% of GDP, inter alia if interest expenditure is lower than currently projected by the Commission.	Full Implementation	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.	Full Implementation	Not applicable	SDG 8, 16
Improve the effectiveness of the tax and social protection systems, in particular by prioritising the simplification of both frameworks, strengthening the efficiency of their respective administrations, and reducing the associated administrative burden.	Limited Progress	Relevant RRP measures being implemented as of 2022 and 2023; and being planned as of 2025	SDG 1, 2, 8, 10, 12, 16
2023 CSR 2			
Accelerate the implementation of its recovery and resilience plan, also by ensuring an adequate administrative capacity and, following the recent submission of the addendum, including the REPowerEU chapter and the additional loan request, rapidly start the implementation of the related measures. Proceed with the speedy implementation of cohesion policy programmes, in close complementarity and synergy with the recovery and resilience plan.	RRP implementation is monitored through the assessment of RRP payment requests and analysis of the bi-annual reporting on the achievement of the milestones and targets, to be reflected in the country reports. Progress with the cohesion policy is monitored in the context of the Cohesion Policy of the European Union		
2023 CSR 3	**Limited Progress**		
Improve the conditions for the transition towards a circular economy, in particular by increasing waste prevention, recycling and reuse, to divert waste away from landfills and incinerators.	Limited Progress	Relevant RRP measures being implemented as of 2021 and 2023	SDG 6, 12, 15
2023 CSR 4	**Some Progress**		
Reduce overall reliance on fossil fuels.	Some Progress	Relevant RRP measures being implemented as of 2021 and 2022 and are being planned as of 2023	SDG 7, 9, 13
Further accelerate the deployment of renewables by further simplifying and digitalising permitting to allow for additional wind particularly offshore and solar electricity production, as well as promoting self-consumption and renewable energy communities.	Some Progress	Relevant RRP measures being planned as of 2023 and 2024	SDG 7, 9, 13
Increase electricity interconnection capacity	Limited Progress		SDG 7, 9, 13
and upgrade the electricity transmission and distribution grids, enabling investment in electricity storage	Limited Progress	Relevant RRP measures being planned as of 2024	SDG 7, 9, 13
and digitalisation of the grid, including the faster roll-out of smart meters.	Some Progress		SDG 7, 9, 13
Accelerate investment in energy efficiency by promoting financial schemes to attract private investment and supporting households in need.	Some Progress	Relevant RRP measures being planned as of 2023	SDG 1, 2, 7, 10
Step up policy efforts aimed at the provision and acquisition of skills and competences needed for the green transition.	Some Progress	Relevant RRP measures being planned as of 2024	SDG 4

Note:

* See footnote ([20])

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

The RRP paves the way for disbursing up to EUR 16.3 billion in grants and EUR 5.9 billion in loans under the RRF over the 2021-2026 period, representing 8.4% of Portugal's GDP ([21]). As of mid-May 2024, EUR 7.8 billion has been disbursed to Portugal under the RRF, comprising EUR 6.1 billion in grants and EUR 1.65 billion in loans.

Portugal still has EUR 14.4 billion available in grants and loans from the RRF. This will be disbursed after the assessment of the future fulfilment of the remaining 361 milestones and targets ([22]) included in the Council Implementing Decision ([23]) (CID), ahead of the 2026 deadline established for the Facility.

Portugal's progress in implementing its plan is published in the Recovery and Resilience Scoreboard ([24]). The scoreboard gives an overview of the progress made in implementing the RRF as a whole. Graphs A3.1 and A3.2 show the current state of play as reflected in the scoreboard.

Portugal'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 171.1 million was disbursed as pre-financing on 21 December 2023. This helped the launch relevant reforms like setting up the Energy Poverty Observatory.

The plan has a strong focus on the green transition, dedicating 41.2% of the available funds to measures that support climate objectives and 21.1% of its total allocation to support the digital transition. It also retains a strong social dimension with social protection measures, especially related to social housing.

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

Initial plan CID adoption date	13 July 2021
Scope	Revised plan with REPowerEU chapter
Last major revision	17 October 2023
Total allocation	EUR 16.3 billion in grants and EUR 5.9 billion in loans (8.4% of 2023 GDP)
Investments and reforms	117 investments and 44 reforms
Total number of milestones and targets	463
Fulfilled milestones and targets	102 (22% of total)

Source: RRF Scoreboard

With three payment requests completed, Portugal's implementation of its RRP is underway. However, timely completion requires increased efforts. The Commission gave a positive assessment of Portugal's first and second payment requests, taking into account the opinion of the Economic and Financial Committee. This led to EUR 1.2 billion being disbursed in financial support on 9 May 2022 and EUR 1.8 billion on 8 February 2023 ([25]). The related 58 milestones and targets covered reforms and investments such as the National Strategy to Combat Poverty digital transformation of the public administration, and the Banco Português de Fomento. There were also reforms and investments in the areas of health, taxation, investment and innovation,

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

([22]) 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.

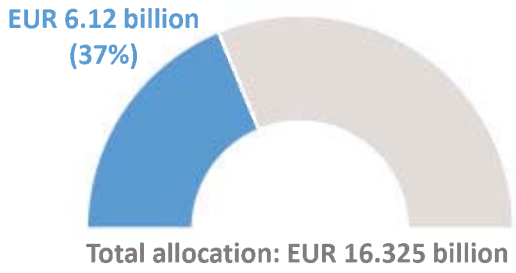
([23]) https://data.consilium.europa.eu/doc/document/ST-10149-2021-ADD-1-REV-1/en/pdf

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

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

qualifications and digital skills, forestry, the blue economy, renewable gases and bio-economy and waste management.

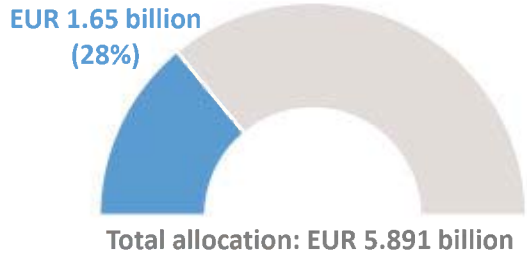
Graph A3.1: **Total grants disbursed under the RRF**



Note: This graph displays the amount of grants 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

The most recent payment request, which the Commission assessed positively on 13 December 2023, led to the disbursement of EUR 2.5 billion on 28 December 2023. The disbursement, combining the third and fourth instalments, reflected the positive assessment of 44 out of 47 milestones and targets covering among others the digitalisation of healthcare, affordable housing, the business environment, decarbonisation of transport, rural fire prevention and the justice system. The remaining target and two milestones on health sector reforms and the reform of regulated professions had not been satisfactorily fulfilled. The Commission has therefore activated the 'payment suspension' procedure, as envisaged in Article 24(6) of the RRF Regulation. Upon provision of evidence within the period stipulated in the provisions of the RRF Regulation, the Commission will assess the satisfactory fulfilment of the milestones and target and, if appropriate, lift the suspension of the payment.

Graph A3.2: **Total loans disbursed under the RRF**



Source: RRF Scoreboard

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

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

Reforms and Investments Implemented
• National Hydrogen Strategy • Mental health reform • National Urgent and Temporary Housing Plan
Upcoming Reforms and Investments
• Alliances for Business Innovation • Simplification of the tax system • Energy efficiency one-stop-shops for citizens

Source: FENIX

EU funding instruments provide considerable resources for recovery and growth to the EU Member States. In addition to the EUR 22.2 billion of Recovery and Resilience Facility (RRF) funding described in Annex 3, EU cohesion policy funds ([26]) provide EUR 22.6 billion to Portugal for the 2021-2027 period ([27]). Support from these two instruments combined represents around 16.88% of the country's 2023 GDP, compared to the EU average of 5.38% of GDP ([28]). 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 Portugal's competitiveness, with tangible achievements notably in research and innovation, water supply, skills, social cohesion and workers' adaptation to change. By the end of the eligibility period in December 2023, 2014-2020 cohesion policy funds ([29]) had made EUR 23.5 billion available to Portugal ([30]), of which EUR 13.3 billion has been disbursed since March 2020, when the COVID-19 pandemic began ([31]). The achievements of cohesion policy funds include support to over 47 000 businesses in terms of R&D, innovation and digitalisation, and improved water supply for more than 1.2 million people so far. Annex 17 analyses the economic and social dynamics, highlighting recent positive trends in the country's performance in regional innovation. During the same period, around EUR 580 million of funding from the European Social Fund financed professional traineeships, promoting quality employment for (re)qualified unemployed people and job seekers, particularly young people, through practical work experience. With an initial 2023 target of 120 960 participants, the social inclusion and employment operational programme had already reached 129 969 adult and young participants, of which 65 620 of them were young people not in education, employment or training by the end of 2022.

In the current programming period (2021-2027), cohesion policy will provide a further boost to Portugal's competitiveness, to the green transition and to social cohesion, improving the living and working conditions of Portugal's people. In 2021-2027, the European Regional Development Fund and the Cohesion Fund will boost innovation and digitalisation by supporting over 16 000 companies and digitalising more than 300 public institutions. Significant investments are planned in energy efficiency, which are expected to reduce energy use in public buildings, businesses and homes by 13.8 million MWh/year. The Just Transition Fund (JTF): i) provides further economic diversification; ii) fosters job creation in three territories affected by the energy transition, following the closure of coal-fired power plants in Sines (Alentejo Litoral) and Pego (Médio Tejo) and a refinery in Matosinhos (Metropolitan Area of Porto); and iii) promotes the upskilling and reskilling of workers. The JTF will help create 490 jobs and help provide training courses to reskill and upskill workers with the aim of finding new quality jobs for 590 workers affected by the decarbonisation of the economy. These measures will help people better overcome the challenges of the green and digital transition. With this work, cohesion policy substantially contributes to achieving the UN Sustainable Development Goals (SDGs) in Portugal, in particular SDG 9 (Industry, innovation, infrastructure), SDG 8 (Decent work and economic growth) and SDG 1 (No poverty).

Through combined action, cohesion policy and the recovery and resilience plan (RRP) have a mutually reinforcing impact in Portugal. For instance, while the RRP has been key in providing financial support for energy efficiency measures in residential, private and

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

([27]) European territorial cooperation (ETC) programmes are excluded from the figure. In 2021-2027, the total investment, including national financing, amounts to EUR 30.9 billion.

([28]) 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.

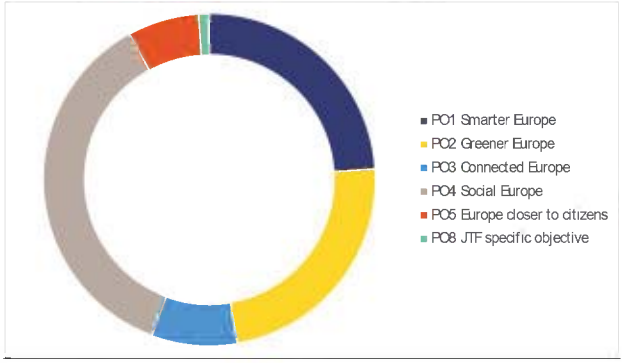
([29]) In 2014-2020, cohesion policy funds included the Cohesion Fund, the European Regional Development Fund, the European Social Fund and the Youth Employment Initiative. REACT-EU allocations are included but ETC programmes are excluded.

([30]) In 2014-2020, the total investment, including national financing, amounted to EUR 29.8 billion.

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

central government buildings, the 2021-2027 regional programmes have focused on investments into energy efficiency in regional and local administration buildings. On digitalisation of the public administration, the combination of reforms and investments into administrative modernisation and the digital transition of the central administration, was combined with support from cohesion policy, particularly the 2021-2027 regional programmes that financed the modernisation of local and regional administrations, which focused on new or significantly upgraded public services reaping the benefits of digitalisation. The RRP reforms that aim to modernise the VET system are expected to provide successful educational alternatives for young people, while improving the low educational and qualification attainment levels and tackling the high incidence of workers lacking basic and digital skills. Investments in infrastructure for building specialised technology centres and the modernisation of the public employment service's network of vocational training centres is brought together with the support from the European Social Fund Plus, which helps establish and provide the training courses. The demography, qualifications and inclusion thematic programme is the main instrument to help deliver these services during the 2021-2027 programming period. The contribution of cohesion policy and the RRP across different policy objectives is illustrated by Graphs A4.1 and A4.2.

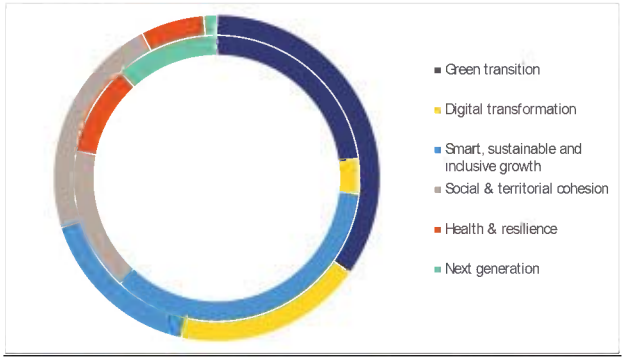
Graph A4.1: **Distribution of cohesion policy funding across policy objectives in Portugal**



Source: European Commission

The Technical Support Instrument (TSI) helps Portugal invest in its public administration and create a better enabling environment for EU and national investment. The TSI has funded projects in Portugal to design and implement growth-enhancing reforms since 2017. The support provided in 2023 included, for instance, help to implement the European Child Guarantee and national smart cities/smart territory strategy, and to boost capacities for climate adaptation, particularly for preventing and managing wildfires. The TSI is also helping Portugal implement specific reforms and investments included in its RRP, e.g. support to adopt legislative and regulatory changes linked to achieving the SDGs.

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



Each RRP measure helps achieve the aims of two of the six policy pillars of the RRF. The primary contribution is shown in the outer circle while the secondary contribution is shown in the inner circle. Each contribution represents 100% of the RRF funds. Therefore, the total contribution to all pillars displayed on this chart amounts to 200% of the RRF funds allocated to Portugal.
Source: European Commission

Portugal also receives funding from several other EU instruments including those listed in Table A4.1. For a more complete view of loans, see Table 4.2 on EU funded loans along with complementary bilateral Member States-funded loans given to Portugal in the context of its past financial assistance programme and their outstanding amounts.

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

EU grants			
	Amount 2014-2020 (EUR million)		Amount 2021-2027 (EUR million)
Cohesion policy	23 547.5		22 602.4
RRF grants (1)	-		16 325.1
Public sector loan facility (grant component) (2)	-		17.0
Common agricultural policy (3)	11 800.0		6 127.0
EMFF/EMFAF (4)	392.5		378.6
Connecting Europe Facility (5)	714.3		78.4
Horizon 2020 / Horizon Europe (6)	1 156.1		720.8
LIFE programme (7)	69		47.2
EU guarantees			
	EU Guarantee (EUR million)		Volume of operations (EUR million)
European Fund for Strategic Investment 2015-2020 (8)	877.5		2 824.8
InvestEU 2021-2027 (9)	126.4		377.3
EU loans			
	Period	Total amount available (EUR million)	Disbursed amount (EUR million)
SURE (10)	2020-2022	6 234.5	6 234.5
RRF	2021-2026	5 891	1 650.0

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

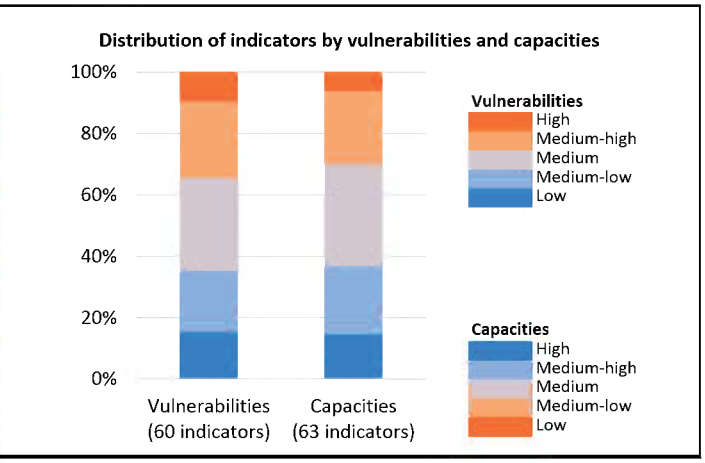
Table A4.2: **EU / euro area loans under the 2010-2018 financial assistance programmes**

	Period	Total amount disbursed (EUR billion)	Outstanding amount (EUR billion)
European Financial Stability Facility	2011-2014	27.3	25.3
European Financial Stabilisation Mechanism	2011-2014	24.3	22.3

Data include upfront retained amounts (prepaid margin, service fee). The cut-off date is 15 May 2024.
Source: European Commission

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

Dimension		PT 2023 RDB	PT 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) ([32]) to show Portugal's relative resilience capacities and vulnerabilities ([33]) that may be of relevance for societal, economic, digital and green transformations, and dealing with future shocks and geopolitical challenges. ([34])

According to the RDB's set of resilience indicators, Portugal has overall medium vulnerabilities, on a par with the EU average, and overall medium capacities, below the EU average. For capacities, the trend is stable with respect to last year, but there have been some improvements in vulnerabilities, and some deteriorations. This is reflected in the distribution of indicators across different resilience categories. Around 35% of all vulnerability indicators fall into the low or medium-low category, around 30% fall into the medium category, and less than 35% into the medium-high or high category. The distribution is similar for the capacity indicators.

Portugal has maintained its medium capacities and vulnerabilities in the social and economic dimension with respect to 2023. Despite some improvements in terms of social and economic vulnerabilities, thanks to a decrease in the long-term unemployment rate and the non-financial corporation debt to GDP ratio, the country remains at medium vulnerability level with one of the highest projected old-age dependency ratios. In terms of social and economic capacities, Portugal's household saving rate has decreased, but its employment rate has increased, putting its overall capacities at the same level as in the 2023 RDB.

With respect to the 2023 RDB, Portugal has maintained its medium capacities and vulnerabilities in the green dimension. Although overall green vulnerabilities are comparable to the EU average, Portugal has a relatively low GHG emissions per capita rate and the lowest waste generation rate in the EU. At the same time, it has high vulnerabilities related to its renewable freshwater resources and high consumption footprint per capita. Among its capacities, Portugal has the EU's lowest e-waste recycling rate, one of its highest soil carbon contents, and relatively low environmental protection expenditures.

([32]) 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).

([33]) 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.

([34]) 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.

In the digital dimension, Portugal has medium vulnerabilities and medium capacities which decreased compared to the 2023 RDB. Regarding its digital vulnerabilities, access to broadband internet for rural areas and access to digital public services remain low. On the digital capacities side, the number of information and communication (ICT) Master's graduates is among the lowest in the EU, alongside rather low cybersecurity awareness.

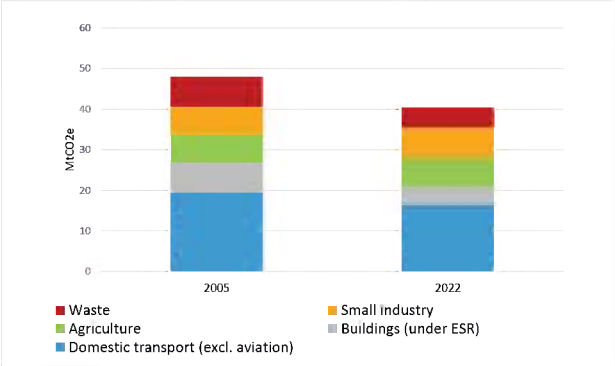
Portugal's geopolitical vulnerabilities have increased and its geopolitical capacities remained stable. Its geopolitical vulnerabilities have increased, in line with the general EU deterioration, the main reason being military expenditures, a long way away from the goal of 2% of GDP. Portugal's geopolitical capacities have remained stable, with some improvements in intra-EU trade in energy and the proportion of non-EU citizens employed in Portugal.

Portugal has made progress in the green transition, with more action needed to address potential losses from climate hazards, on sustainable water management, biodiversity and ecosystem protection, and other areas. This Annex provides a snapshot of climate, energy, and environmental aspects of the transition in Portugal ([35]).

Portugal's draft updated national energy and climate plan (NECP) provides information on the investment needed to achieve its 2030 climate and energy targets for some policies and measures only. Portugal expects high investment needs for retrofitting buildings, electrification, alternative fuels in industry, electrifying the transport sector and power generation from renewable energy sources. The plan outlines the main sources of public, incl. EU, funding for key policies and measures. While private capital is not specifically mentioned, the plan refers to initiatives to stimulate private financial flows. Since a budgetary overview is lacking, potential funding gaps cannot be pinpointed ([36]).

Portugal is projected to reach its 2030 effort sharing target with the policies and measures currently in place ([37]). In 2022, Portugal's greenhouse gas emissions from its effort sharing sectors are expected to be 16.8% below 2005 levels. Current policies are projected to reduce these emissions by 38.5% from 2005 levels, which is 9.8 percentage points over Portugal's target to achieve a 28.7% reduction. Portugal is therefore expected to exceed its effort sharing target with existing measures. Additional policies considered by Portugal are projected to add a further 3.5 percentage points, resulting in a 42% reduction in effort sharing emissions compared to 2005 ([38]). In its draft updated NECP, Portugal confirms its commitment to achieve climate neutrality by 2050.

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



Source: European Environment Agency

There is scope for increasing Portugal's renewable energy ambition in its final updated NECP ([39]). Currently set at 49% by 2030 in its draft updated NECP, Portugal's renewable energy target is slightly below the required contribution of 51%. Its energy efficiency contributions of 16.71 Mtoe in primary energy consumption and 14.37 Mtoe in final energy consumption for 2030 set in the draft updated NECP match those required by the Energy Efficiency Directive.

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

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

([37]) 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).

([38]) The effort sharing emissions for 2022 are based on approximated inventory data. The final data will be established in 2027 after a comprehensive review. Portugal's draft updated NECP does not provide emission projections for the effort sharing sectors. The information on projections of effort sharing emissions 'with existing measures' (WEM) and 'with additional measures' (WAM) 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).

([39]) 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 Portugal at 15.164 Mtoe for primary energy consumption and 13.41 Mtoe for final energy consumption. See the Commission Recommendation of 18.12.2023 to Portugal.

The transition to sustainable transport is slowly gaining ground in Portugal ([40]). Both passengers and land freight are predominantly transported by road. Passenger cars account for 91% of distances travelled, and 88% of freight is transported by road. At 1.2% of the passenger vehicle fleet in 2022, the uptake of electric cars is close to the EU average. The country's 7 200 publicly accessible charging points provide a charging point for every 18 e-vehicles, far below the EU average of 1:10. 71% of Portugal's rail network is electrified.

Without further efforts, Portugal will not meet its 2030 target for carbon removals through and use, land use change and forestry (LULUCF). Its forests are responsible for a major share of net carbon removals and seem to have recovered from the decreased natural carbon sink over 2009-2017 caused by severe forest fires, among other phenomena. To reach the 2030 LULUCF target, additional carbon removals of 968 kt CO2eq are needed ([41]). However, according to the latest projections, Portugal is expected to fall short of this figure ([42]).

Portugal faces water management challenges due to climate change and has a wide climate protection gap against wildfires ([43]). Portugal remains vulnerable to climate change-related extreme events such as floods, coastal erosion, droughts and heatwaves, with a moderate climate protection gap overall. Water management continues to be a major challenge, as Portugal is among the most drought-affected EU countries. Agriculture, forestry, biodiversity, the energy sector, buildings, tourism and health are all affected. Lower annual rainfall and its increased variability reduce river flows, affect the recharge of aquifers and increase the risk of flooding. New weather patterns are expected to cause more, longer and more intense heat waves, major fires in rural areas, and unpredictable extreme local weather events. Portugal has increased its adaptive capacity by strengthening its legal framework and implementation of adaptation policy measures. It is finalising a national roadmap for adaptation until 2100, that assesses the impacts of global warming and outlines the corresponding adaptation needs. This roadmap will focus on hydrological balance, forest fires, agroforestry, sea level rise, coastal erosion, and storm surges ([44]).

Despite recent progress, Portugal's water sector continues to face major challenges, especially in the areas of water governance, water body rehabilitation and water efficiency. Further infrastructure investment would help improve water management, such as in wastewater collection and treatment, reduction of leaks in the networks and general water supply, improving monitoring (quality and quantity), as well as in nature-based solutions and river restoration. Portugal also has untapped potential in water reuse. Portugal has not yet adopted its third River Basin Management Plans (RBMPs) under the Water Framework Directive or its second Flood Risks Management Plans under the Floods Directive, which were due in March 2022. The water exploitation index plus (WEI+) stood at 11.4% in 2019 ([45]). On average, 6.4% of Portugal's area was impacted by droughts in 2000-2020. This proportion rose to 34.8% in 2022 - a very dry year. In terms of water quality, 52% of all surface water bodies reached good ecological status, and only 25% reached good chemical status, although slightly better than the EU average ([46]). Portugal's marine waters are not yet in a good environmental status, as tracked by the descriptors used in the Marine Strategy Framework Directive according to the latest data reported for its marine strategy ([47]).

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

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

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

([43]) On the climate protection gap, see the annotations to Table A6.1.

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

([45]) WEI+ values above 20% are generally an index of water scarcity and values above 40% indicate that stress is severe and freshwater use unsuitable.

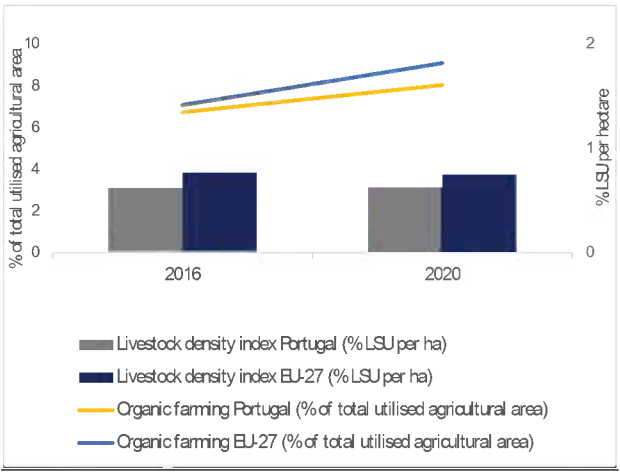
([46]) Data from the third RBMPs are not yet available.

([47]) The next reporting on the state of the marine environment is due in October 2024. See also Portugal - Marine (europa.eu).

There is clear room for improvement on biodiversity and nature protection and restoration. Portugal boasts a rich biodiversity, and 20.6% of its territory belongs to the EU Natura 2000 network (EU average: 18.5%). However, some species and habitats, particularly in the marine environment, are not sufficiently protected. Therefore, Portugal would benefit from extending its Natura 2000 network with additional designations, particularly for marine sites. Overall, the status of natural habitats and species covered by the Habitats Directive has improved in Portugal, although many are still in a poor or unfavourable condition. According to the latest available data, only 24% of habitats and 27% of species are in a good conservation status. Portugal's common farmland bird index decreased from 104 in 2011 to 94 in 2020.

On air pollution, Portugal presents a mixed picture. While emissions of several air pollutants have fallen in recent decades, air quality continues to be a cause for concern, mainly as regards nitrogen dioxide. In particular, personal transport exacerbates problems with air quality and traffic congestion in the Portugal's major metropolitan areas, affecting health and the economy. A comprehensive approach is needed to tackle the problem of air pollution, which is related to environmental but also climate, energy and transport issues. These measures would also improve the country's compliance with the Noise Directive.

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

Portugal has the opportunity to accelerate the transition of its agri-food system to an environmentally sustainable model. The value of the agricultural sector's annual output increased, with some fluctuations, from EUR 7.3 billion in 2015 to 8.3 billion ([48]) in 2023. Portugal has recently stepped up its organic farming, which reached 19.3% of utilised agricultural area (UAA) in 2021 (EU average: 9.1%) ([49]). While most EU Member States lowered their livestock densities between 2010 and 2020, Portugal's livestock density index rose from 0.59% to 0.63%, though this is still below the EU average of 0.70%. However, regional differences remain and the most consistent increase in the number of livestock units was reported in the Centro and Alentejo regions where extensive livestock farming still prevails. Overall, the agricultural sector was responsible for 84.9% of total ammonia emissions in 2021 (EU average: 90.7%). In Portugal, 13% of UAA is composed of irrigated land, and the water abstracted for agricultural purposes accounted for 72.9% of total abstraction in 2019, making agriculture the biggest user of water resources.

Agriculture remains a major source of water pollution despite the improvement of last years. The latest figures for the gross nitrogen balance on agricultural land in Portugal show a consistent nitrogen surplus, with an average of 45.2 kg of nitrogen per hectare per year in 2019 – a decrease compared to 2018 levels. The content of nitrate in groundwater exceeds the EU average (22.6 mg nitrate/l vs 20.5), and 17.5% of groundwater monitoring stations had levels above the maximum of 50 mg nitrate/l. The country also shows a phosphorous surplus, with an average of 5.8 kg/ha. Some waterbodies are also affected by pesticide contamination, although the level is below the EU average. According to the impact assessment for the Soil Monitoring Law ([50]), 18% of Portuguese soil could be considered as unhealthy ([51]). Soil

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

([49]) In 2020. 2021 data are not available.

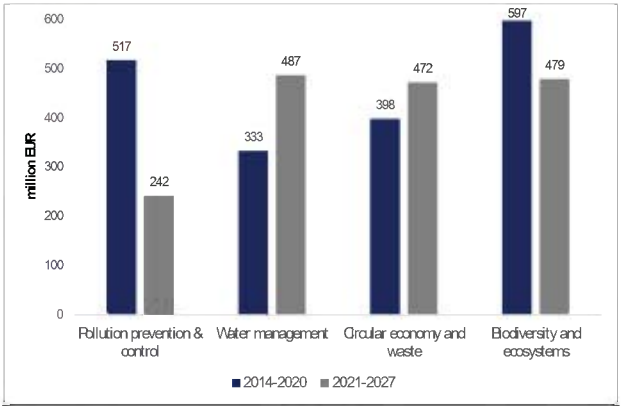
([50]) SWD 417 final of 05.07.2023 - impact assessment for the Directive of the European Parliament and of the Council on Soil Monitoring and Resilience (Soil Monitoring Law), (cfr. pg. 10, pg. 189-190, pg. 835-845).

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

erosion affects 60% of cropland area, while topsoil compaction affects 4% of the national territory. However, conservation tillage practices, which increase soil organic carbon, covered 51% of Portugal's tillable area in 2016, the second highest share in the EU.

Portugal would benefit from investing more in addressing environmental challenges. According to the latest estimates, the overall environmental investment needs for 2021-2027 are at least EUR 6.0 billion per year, while the financing baseline stands at EUR 4.3 billion. This is a smaller gap than in the previous financing period, equivalent to EUR 1.7 billion. The annual investment gaps for sustainable water management and circular economy and waste rose to EUR 487 million and EUR 472 million respectively, while the investment gaps for biodiversity and ecosystems and pollution prevention and control decreased to EUR 479 million EUR 242 million respectively.

Graph A6.3: **Environmental investment gap, annual average**



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

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

							Target	Distance	
		2005	2019	2020	2021	2022	2030	WEM	WAM
Progress to climate and energy policy targets									
Greenhouse gas emission reductions in effort sharing sectors [1]	Mt CO_{2eq}, % pp	48,635.8	-15%	-21%	-17%	-17%	-29%	10	13
Net greenhouse gas removals from LULUCF [2]	Kt CO2eq	3 489	-4 499	-4 707	-6 021	-5 925	-1 358	n/a	n/a
Share of energy from renewable sources (1) [3]	%	20%	31%	34%	34%	35%	51%	-	-
Energy efficiency: primary energy consumption [3]	Mtoe	24.9	22.1	19.5	19.5	20.8	15.2		
Energy efficiency: final energy consumption [3]	Mtoe	19.0	17.1	15.0	15.7	16.7	14.4		

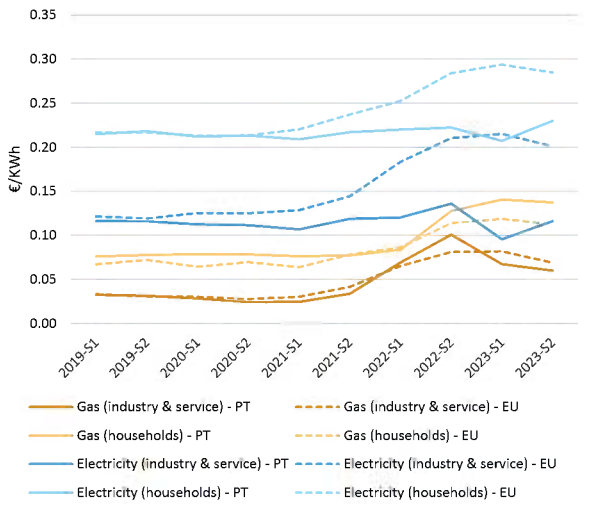
							EU-27		Projected
		2018	2019	2020	2021	2022	2021	2022	2030
Green transition: mobility									
Greenhouse gas emissions: road transport	Mt CO2e	-	-	-	15.6	16.5	769.0	786.6	10.4
Share of zero-emission vehicles in new registrations [4]	%	2.0	3.1	5.4	9	11.4	9	12.1	n/a
Number of publicly accessible AC/DC charging points		-	-	2515	3676	6509	299178	446956	n/a
Share of electrified railways	%	64.4%	67.1%	67.1%	70.9%	-	56.1%	-	n/a
Green transition: buildings									
Greenhouse gas emissions: buildings	Mt CO2e	-	-	-	4.5	4.1	537.0	486.7	4.3
Final energy consumption in buildings	2015=100	102.9%	102.8%	101.3%	102.1%	104.9%	104.0%	97.2%	
Climate adaptation									
Climate protection gap [5]	score 1-4	-	-	2.0	2.0	1.8	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	21.3	11.4	-	-	-	3.6	-	-
Circular economy | Material footprint [7]	tonnes per person	16.7	17.2	15.6	17.0	16.9	14.2	14.8	14.9
Pollution | Years of life lost due to air pollution by PM2.5 [8]	per 100 000 inhabitants	280	270	265	211	-	545	584	-
Biodiversity | Habitats in good conservation status [9]	%	23.7					14.7		
Common farmland bird index [10]	2000=100	93	95	94	-	-	78	-	-
Green transition: agri-food sector									
Organic farming	% of total utilised agricultural area	5.68	7.39	8.05	19.31	-	9.1	-	-
Nitrates in groundwater	mg NO_3/litre	-	-	-	-	-	20.42	-	-
Food waste per capita	Kg per capita			176	181	-	130	131	-
Share of soil in poor health [11]	%					18			41
Soil organic matter in agricultural land [12]	Mt per ha	67	-	-	-	-	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 ([52]) sets out Portugal's progress and challenges in accelerating the net-zero energy transition while bolstering the EU's competitiveness in the clean energy sector ([53]). It considers measures and targets put forward in the draft updated National Energy and Climate Plans (NECPs) for 2030 ([54]).

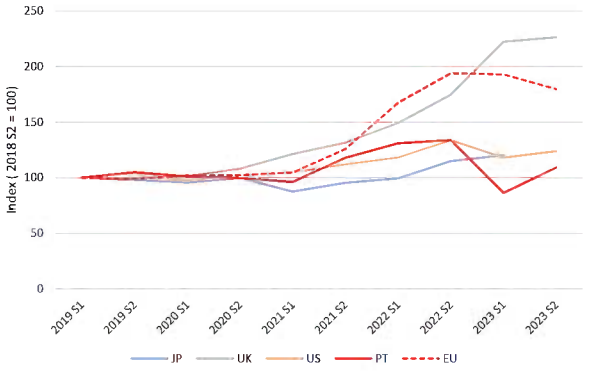
Graph A7.1: **Portugal´s energy retail prices for households and industry & service**



(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

Average retail energy prices have dropped significantly in Portugal in the first half of 2023, dipping below the levels recorded in December 2022, but alike the EU trend average electricity prices increased in the second half of 2023. As of the second halves of 2023, average household gas prices in Portugal started declining more slowly than the EU average, with prices still exceeding pre-crisis levels. By contrast, average household electricity prices fell more sharply than the EU average, stabilising at pre-crisis levels ([55]). Following a peak in the second halve of 2022, industrial consumers saw a gradual decline in both average gas and electricity prices, each dipping by 40% and 14% in the second half of 2023, while the electricity price gap moved further away from the EU average. In relative terms, electricity prices for non-household consumers did not increase significantly compared to the US and Japan. This suggests that the international competitiveness of energy-intensive industries in Portugal should not be adversely affected.

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



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

Some measures giving final consumers direct energy support implemented since the outset of the energy crisis do not focus the support on the most vulnerable households or companies. Since 2016, all households that meet certain socio-economic requirements can benefit from the social tariff. The scope of entities that will finance the social tariff was recently expanded, and their number increased, to cover not only producers but also suppliers and consumers who purchase electricity directly on

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

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

([54]) Portugal submitted its draft updated NECP in June 2023, and 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 Portugal - European Commission (europa.eu).

([55]) As a consequence of increased renewable energy in the electricity mix and lower price of gas.

the wholesale market, without suppliers intervening.

Consumer empowerment in the electricity and gas markets is significant, but the deployment of smart meters is still below the EU average, and energy communities still face some implementation challenges. In 2022, almost all household consumers' electricity and gas contracts were fixed-price contracts ([56]). Switching rates in electricity were stable, at around 15%, while in gas they increased, from less than 15% in 2021 to almost 23% in 2022, and switching procedures are quick. In 2022, 73% of final household consumers had smart meters (EU average 80%). The existence of administrative and security-related requirements obstructs the implementation of renewable energy communities, as does the bureaucratic complexity of the creation process. Energy communities are beneficiaries from investment measures under Portugal's national recovery and resilience plan (RRP).

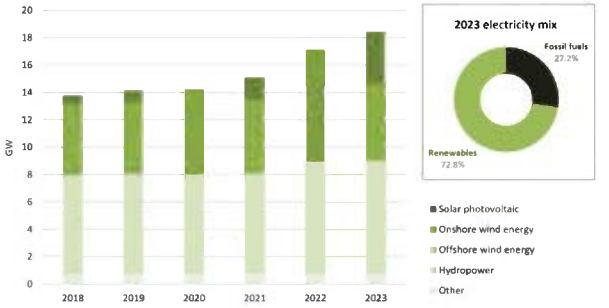
Portugal has strengthened the security of its gas supply while increased renewables in the energy mix has limited its energy imports dependency. Portugal has reduced its energy dependency on non-EU countries, from 70% in 2013 to 59% in 2021. Fossil fuels represented over 69% of the national energy mix in 2022 and their share in the electricity mix reduced from 40% in 2022 to 27% in 2023 ([57]). With the commissioning of the Sines LNG terminal and the increase in the underground storage capacity of Carriço, Portugal has accelerated the diversification of its portfolio of suppliers. It also cut its gas demand between August 2022 and August 2023 by 20% compared with the average of the previous 5 years. Portugal has 3.57 TWh of underground gas storage at the Carriço facility, with a total capacity of around 0.32 bcm, representing almost 6% of its annual gas consumption in 2022. Portugal fulfilled its gas storage obligations last winter, reaching 107% by 1 November 2023, and ended the winter season with a storage filled at 86.91% by 1 April 2024.

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

([57]) Ember data on electricity mix.

With over 30% renewables in the energy mix and 73% in the electricity mix in 2023 ([58]), renewable installed capacity increased by 1.3 GW in 2023, driven by the significant increase in solar power, in particular photovoltaics ([59]), but further progress is needed ([60]). Portugal has ambitious development plans to cover at least 85% of gross electricity consumption with renewable energy sources by 2030. In 2022, total solar and wind installed capacity in Portugal increased respectively by 54% and by 0.5% compared to 2021 ([61]) ([62]). Portugal intends to develop 2 GW of offshore wind by 2030 (and allocate 10 GW of installed capacity to be developed after 2030) ([63]), and 0.2 GW of wave energy. This target is below the one set out in the non-binding EU Sea Basins Agreement of January 2023, to which Portugal is a party.

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



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

Portugal has made significant progress in implementing reforms to accelerate the

([58]) The energy mix is based on gross inland consumption.

([59]) In 2023, solar power accounted for 10% of the electricity mix and wind 29%, while Portugal imported 22% of its electricity from Spain.

([60]) See Annex 6 and the assessment of the draft of the PT NECP update.

([61]) IRENA report Renewable Energy Statistics 2023, whose data might differ from Eurostat data because of using a different methodology for calculating AC and DC capacity.

([62]) Portugal's total solar installed capacity in 2022 was 2536 MW, of which almost 90% was photovoltaic panels. Total wind capacity in 2022 was 5455 MW of which 5430 MW came from onshore wind and 25 MW from offshore wind.

([63]) SWD on the assessment of the draft of the PT NECP update

deployment of renewables. It has introduced legislation qualifying all renewable energies for the most favourable permitting procedures and has created a single application process for the entire administrative permit application and granting process ([64]). However, the pipeline of renewable energy projects is not clear, as it has not published its long-term schedule for auctions for the next 3 or 5 years, and the details concerning timing, the frequency of auction procedures, expected capacity and budget, and eligible technologies are not clear.

Portugal's relatively high proportion of renewables in heating and cooling (42.7% in 2021) is mainly the result of biomass use, with heat pumps covering a bit more than one fourth of this. The targets in its draft updated NECP appear rather unambitious, with very limited growth in heat pumps ([65]), but also solar thermal deployment and continued reliance on biomass as the main source of renewable heat.

Portugal may face short-term grid capacity challenges accommodating an increasing proportion of renewables. Portugal's installed capacity is expected to increase by over 50% between 2025 and 2030 (from 30 to 47 GW) ([66]), but risks being partially curtailed if grid development does not speed up, including by reconductoring. The national transmission system operator points out to the lack of short-term grid capacity to accommodate the generation increase and aims to maximise the capacity the grid can absorb by maximising its interconnection capacity with Spain. In terms of interconnectivity, measured as a country's import capacity over its installed generation capacity, Portugal reached 10.9% in 2022 and 13.2% in 2023. This 2.3% increase was achieved while solar generation capacity increased and the availability of interconnection capacity decreased. Portugal is one of the EU Member States that most needs storage flexibility solutions by 2040 ([67]) ([68]).

Energy efficiency gains have slowed down in Portugal, although there is still untapped potential for increasing energy efficiency and increasing funding sources. In 2022, Portugal increased its primary energy consumption by 6.3% compared to 2021. Its final energy consumption increased by 6.6% compared to 2021 (a 4.2% increase compared to 2012). In 2023, the best results have come from the residential sector, which decreased its final energy consumption by 3.3%, and the worst from the transport sector, which increased its final energy consumption by 17.1%.

Portugal has implemented a series of energy efficiency measures with support from several EU funds. The majority of measures are directed towards buildings, while measures for industries are rather limited. Its RRP support has been scaled up in terms of energy efficiency to reach EUR 7 billion. Cohesion policy funding in 2021-2027, amounting to EUR 1.5 billion (European Regional Development Fund) covers energy efficiency investments, targeting at least medium renovations in companies, existing housing stock and public infrastructure.

Most of Portugal's energy efficiency schemes are still grant-based and the use of financial instruments is still very limited. In terms of existing funding schemes to mobilise energy efficiency investments, Portugal mainly uses grants-based funding schemes implemented through the Environmental Fund but also deploys some financial instruments supporting urban renewal projects.

Portuguese building stock's energy performance is poor, with most public energy efficiency schemes being one-off measures, not always taking a building's overall energy performance into account. Portugal needs to do a lot more to make a meaningful contribution to reaching its long-term renovation strategy target of an 11% reduction in primary energy

([64]) Portugal has also identified priority land or sea areas for renewable energy projects, introduced single contact points, and identified and introduced simplified permit procedures for renewables self-consumers.

([65]) In 2022, heat pump sales increased by 22% compared to 2021.

([66]) Portugal's draft National Energy and Climate Plan update, page 43, table 1100.

([67]) NTSO-E 2022 TYNDP needs study.

([68]) Portugal expects to reach 3.6 GW of pumped storage capacity in 2025 and 3.9 GW in 2030, with an addition of 1 GW of battery storage capacity.

savings by 2030 compared to the baseline year of 2018. Residential buildings' final energy consumption rose by 8% between 2021 and 2022 ([69]). Only 17% of Portugal's national building stock is considered very energy-efficient (energy performance certificate A and A+), with around 63% of buildings having an energy performance certificate of class C or lower ([70]). Portugal has approved a special energy savings plan for 2022-2023, with a set of complementary measures and behavioural recommendations to reduce energy consumption.

Regarding market surveillance activities, Portugal does very few checks on products covered by eco-design and energy labelling. A low number of market surveillance activities gives cause for concern about compliance levels.

Portugal expects in total to have a capacity of electrolysers of 5.5 GW ([71]) in 2030. It is planning significant hydrogen infrastructure developments for this decade, namely through the already identified hydrogen infrastructure assets part of the European Green Hydrogen Transport Corridor, the national hydrogen strategy, and the European List of Projects of Common and Mutual Interest ([72]), and to build up hydrogen production capacity by developing large-scale electrolysers on the coast.

Portugal projects an acceleration from its current levels of biogas production, amounting to 0.1 BCM (2021). Portugal has specific measures in place for the development of biogas and bio-methane, for example by establishing a biomethane action plan and linking its production to the use of agricultural waste, organic waste, and landfills. ([73]) Portugal registers low ambition of production and use of biomethane but it is estimated that the country has the ability to replace about 11% of current natural gas consumption (imports) with biomethane ([74]).

Portugal remains highly dependent on non-EU countries for clean energy technologies, particularly components of solar modules. There have been positive developments in electrolyser manufacturing and Portugal has a growing foothold in the wind supply chain. It also has a lot of battery manufacturing potential. It imports most of its solar photovoltaic modules from China and has limited manufacturing capabilities throughout the photovoltaic supply chain. For wind, Portugal has manufacturing facilities for blades, generators, nacelles, and onshore/offshore towers ([75]). In 2023, the application for classifying the 15GWh lithium battery factory construction project in Sines as a Project of National Interest was submitted to the AICEP ([76]). Two lithium mining projects and at least one unit for lithium conversion are currently in progress. In 2022, Portugal's first proton exchange membrane electrolyser manufacturing factory came online. The facility aims to reach 500 MW of annual productive output by the end of 2025.

Despite positive signs in the innovation ecosystem, Portugal still lags behind other EU countries. The latest research and innovation (R&I) trends are positive. However, private research and development spending on Energy Union priorities (0.022% as a proportion of GDP), most of it (71%) related to investments in renewables, was significantly below the EU average in 2019. Venture capital investments have also shown positive trends over the past few years, with EUR 11.7 million of investments in clean energy technology start-ups and scale-ups. However, there was a decrease in 2023, with investments totalling only EUR 2.91 million.

([69]) Final energy consumption in households from Eurostat (data tables of December 2023), climate corrected by the Joint Research Centre with reference period 2005-2022 (FEC climate corrected = FEC/ (HDD/HDD reference period).

([70]) National long-term strategy to combat energy poverty.

([71]) Draft PT NECP update

([72]) Building/repurposing two sections of the internal hydrogen transport axes; construction of the CelZa interconnection project (part of the H2Med).

([73]) Draft PT NECP update and the PT Biomethane Action Plan 2024-2040 adopted on 15 March 2024.

([74]) Biomethane PT fiche https://energy.ec.europa.eu/system/files/2023-09/Biomethane_fiche_PT_web.pdf

([75]) Since 2018, it has been manufacturing offshore wind towers and foundations in Aveiro Port.

([76]) Agency for Investment and Foreign Trade of Portugal.

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

		Portugal				EU			
		2019	2020	2021	2022	2019	2020	2021	2022
ENERGY DEPENDNCE	**Import Dependency [%]**	**73.9%**	**65.3%**	**66.9%**	**71.3%**	**60.5%**	**57.5%**	**55.5%**	**62.5%**
	of Solid fossil fuels	122.1%	-6.5%	4.5%	107.4%	43.3%	35.8%	37.3%	45.8%
	of Oil and petroleum products	98.1%	97.6%	97.9%	98.7%	96.7%	96.8%	91.7%	97.7%
	of Natural Gas	99.9%	99.3%	100.0%	104.0%	89.7%	83.6%	83.6%	97.6%
	Dependency from Russian Fossil Fuels [%]								
	of Natural Gas	1.6%	11.3%	13.6%	5.1%	39.7%	41.3%	41.1%	21.0%
	of Crude Oil	13.5%	4.9%	7.4%	2.6%	28.8%	26.7%	26.4%	19.5%
	of Hard Coal	6.4%	0.0%	0.0%	0.0%	43.5%	49.1%	47.4%	21.5%

		2016	2017	2018	2019	2020	2021	2022
DIVERSIFICATION OF GAS SUPPLIES	**Gas Consumption (in bcm)**	**5.0**	**6.3**	**5.7**	**6.1**	**6.0**	**5.8**	**5.6**
	Gas Consumption year-on-year change [%]	6.6%	24.4%	-8.8%	5.8%	-1.4%	-3.7%	-3.5%
	Gas Imports - by type (in bcm)	**4.9**	**6.3**	**5.8**	**6.1**	**5.9**	**5.7**	**5.8**
	Gas imports - pipeline	3.3	2.6	2.0	0.5	0.5	0.1	0.1
	Gas imports - LNG	1.6	3.7	3.8	5.6	5.5	5.6	5.7
	Gas Imports - by main source supplier (in bcm) (1)							
	Nigeria	0.9	2.1	2.4	3.2	3.1	2.9	2.9
	United States	0.1	0.5	0.5	1.3	1.1	1.9	2.0
	Russia	-	-	-	0.1	0.7	0.8	0.3
	Trinidad and Tobago	-	-	-	0.1	0.1	-	0.4

		2019	2020	2021	2022	2023
	LNG Terminals - storage capacity m3 LNG					
	Number of LNG Terminals	1	1	1	1	1
	LNG Storage capacity (m3 LNG)	390,000	390,000	390,000	390,000	390,000
	Underground Storage					
	Number of storage facilities	1	1	1	1	1
	Technical Capacity (bcm)	0.3	0.3	0.3	0.3	0.3

		2016	2017	2018	2019	2020	2021	2022	2023
ELECTRICITY/ENERGY	**Gross Electricity Production (GWh) (2)**	**60,329**	**59,432**	**59,636**	**53,154**	**53,078**	**50,980**	**48,808**	-
	Combustible Fuels	29,903	38,344	32,155	27,687	25,214	21,894	23,011	-
	Nuclear	-	-	-	-	-	-	-	-
	Hydro	16,909	7,632	13,628	10,243	13,633	13,455	8,839	-
	Wind	12,474	12,248	12,617	13,667	12,299	13,216	13,244	-
	Solar	871	992	1,006	1,342	1,716	2,237	3,519	
	Geothermal	172	217	230	215	217	179	195	-
	Other Sources	0	0	- 0	- 0	- 0	0	0	-
	Gross Electricity Production [%]								
	Combustible Fuels	49.6%	64.5%	53.9%	52.1%	47.5%	42.9%	47.1%	-
	Nuclear	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-
	Hydro	28.0%	12.8%	22.9%	19.3%	25.7%	26.4%	18.1%	-
	Wind	20.7%	20.6%	21.2%	25.7%	23.2%	25.9%	27.1%	-
	Solar	1.4%	1.7%	1.7%	2.5%	3.2%	4.4%	7.2%	-
	Geothermal	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	-
	Other Sources	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-
	Net Imports of Electricity (GWh)	- **5,085**	- **2,684**	- **2,657**	**3,399**	**1,456**	**4,753**	**9,253**	-
	As a % of electricity available for final consumption	-10.7%	-5.6%	-5.4%	7.0%	3.1%	9.9%	18.7%	-
	Electricity Interconnection [%]		**8.7%**	**8.3%**	**9.2%**	**8.0%**	**13.7%**	**10.9%**	**13.2%**
	Share of renewable energy consumption - by sector [%]								-
	Electricity	54.0%	54.2%	52.2%	53.8%	58.0%	58.4%	61.0%	-
	Heating/cooling	41.6%	41.0%	40.9%	41.7%	41.5%	42.7%	45.5%	-
	Transport	7.6%	7.9%	9.0%	9.1%	9.7%	8.6%	8.7%	-
	Overall	30.9%	30.6%	30.2%	30.6%	34.0%	34.0%	34.7%	-

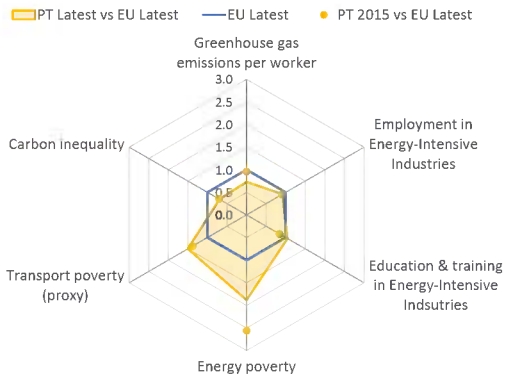
		2019	2020	2021	2022	2023
CLEAN ENERGY	**VC investments in climate tech start-ups and scale-ups (EUR Mln)**	**2.90**	**7.29**	**5.49**	**11.68**	**2.91**
	as a % of total VC investment (3) in Portugal start-ups and scale-ups	0.8%	8.4%	0.1%	1.2%	1.7%
	Research & Innovation spending in Energy Union R&i priorites					
	Public R&I (EUR mln)	52.5	62.3	72.3	-	-
	Public R&I (% GDP)	0.024%	0.031%	0.034%	-	-
	Private R&I (EUR mln)	51.9	5.0	-	-	-
	Private R&I (% GDP)	0.024%	0.002%	-	-	-

(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 Portugal's progress in ensuring a fair transition towards climate neutrality and environmental sustainability, particularly for workers and households in vulnerable situations. Portugal's green economy is expanding. Between 2015 and 2021, total jobs in the environmental goods and services sector grew by 38.9% (to around 130 000 jobs) (EU: 18.2%), reaching 2.7% of total employment (EU: 2.7%). Also between 2015 and 2022, the greenhouse gas emission intensity of Portugal's workforce (see Graph A8.1 and Table A8.1) declined from 13.7 to 10.4 tonnes per worker (EU: 14.3 tonnes per worker in 2022) ([77]), indicating a positive trend in the green transition. Upskilling and reskilling of workers in declining and transforming sectors has increased, which helps implement the Council Recommendation of 2022 on ensuring a fair transition towards climate neutrality ([78]). However, further development of green skills remains key to a fair transition and to implementing the REPowerEU plan. Portugal's recovery and resilience plan (RRP) outlines crucial reforms and investments for the country ([79]), complementing the territorial just transition plans and actions supported by the European Social Fund Plus (ESF+) and the European Regional Development Fund.

Employment in Portugal's sectors that are most affected by the green transition is decreasing. In 2023, employment in Portugal's energy-intensive industries represented 3.2% of total employment (EU: 3.5%). Employment in mining and quarrying has fallen by 25.2% since 2015 (to around 15 400 workers in 2023). The job vacancy rate in construction (see Graph A8.2), a key sector for the green transition, is lower than the EU average (1.4% vs 3.6% in EU in 2023). However, 47% of the small and medium-sized enterprises (SMEs) in the sector agreed that skills shortages could hold them back in general business activities ([80]). According to the European Labour Authority (ELA) ([81]), labour shortages were reported in 2023 for a number of occupations that required specific skills or knowledge for the green transition ([82]), including electrical mechanics and fitters, civil engineers, and plumbers and pipe fitters. Out of a total of EUR 5.7 billion, the thematic ESF+ programme Demography, Qualifications and Inclusion will allocate approximately EUR 610 million to increasing green skills and jobs and boosting the green economy.

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



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

Upskilling and reskilling in declining and transforming sectors increased. Skills are key for smooth labour market transitions and preserving jobs in transforming sectors. In energy-intensive industries, workers' participation in education and training increased from 9.3% in 2015 to 11.4% in 2023 (EU: 10.9%). In Portugal, 64% of SMEs think that the skills required for greening business activities are becoming more important (EU: 42%) ([80]). If Portugal matches its projected contribution to the EU's 2030 renewable energy target, between 2 800 and 3 500 additional skilled workers will be needed to deploy wind and solar energy,

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

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

([79]) See also the 2022 country report (Annex 6) and Annex 3 for an overview.

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

([81]) 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

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

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

Indicator	Description	PT 2015	PT	EU
GHG per worker	Greenhouse gas emissions per worker – CO_2 equivalent tonnes	13.7	10.5 (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)	3.2%	3.2% (2023)	3.5% (2023)
Education & training EII	Adult participation in education and training (last 4 weeks) in energy-intensive industries	9.2%	11.4% (2023)	10.9% (2023)
Energy poverty	Share of the total population living in a household unable to keep its home adequately warm	23.8%	17.5% (2022)	9.3% (2022)
Transport poverty (proxy)	Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport	51.4%	55.7% (2023)	37.1% (2023)
Carbon inequality	Ratio between the consumption footprint of the top 20% vs bottom 20% of the income distribution	1.9	1.9 (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.

which may require skills investments of EUR 11.9-14.8 million ([83]). Specific investments under the Recovery and Resilience Facility and the Just Transition Mechanism provide training to reskill workers in regions affected by the transition, together with a broader training offer at national level and flexibility mechanisms to encourage in-company training. Under the Just Transition Fund, EUR 223.8 million will be provided to support measures and actions aimed at workers and areas affected by the closure of coal power plants in Sines and Pego and of the refinery in Matosinhos. The Regional Development Coordination Committee of Northern Portugal (CCDR-NORTE) launched a call for proposals in 2023 co-designed with former workers, that focuses on training, requalification and upskilling to meet regional market needs. The Institute for Employment and Vocational Training (IEFP) began its first operations in late 2023, targeting the workers of the closed refinery in Matosinhos.

Energy poverty indicators have improved in Portugal over recent years, but remain high, especially for those at risk of poverty. The share of the population unable to keep their homes adequately warm decreased from 23.8% in 2015 to 17.5% in 2022 (EU average: 9.3%) ([84]). However, the indicator increased by 1.1 percentage points between 2021 and 2022 on the back of energy price increases due to supply constraints caused by the COVID-19 pandemic and Russia's war of aggression against Ukraine, despite the emergency measures implemented in Portugal. In particular, 35.8% of the population at risk of poverty (AROP) (EU: 20.1%) and 19.1% of lower middle-income households (in deciles 4-5) in 2022 (EU: 11.6%) were affected in 2022. Despite of the adoption in 2023 of the National Strategy on energy poverty, more comprehensive and targeted measures to address this problematic are still missing. Portugal in its RRP REPowerEU Chapter plans to set up a national observatory on energy poverty to monitor and support through targeted policies households in need, including by setting up a financing scheme. Meanwhile, in January 2023, 55.7% of population at risk of poverty spent a considerable proportion of their budget (more than 6%) on private transport fuels (EU: 37.1%) ([85]).

Consumption footprint inequality remains a critical issue leading to environmental inequalities in Portugal. In 2021, the consumption footprint for 20% of the population with the highest income was 1.9 times higher than the footprint of the poorest 20% (EU: 1.8) ([86]). For the richest 20% of households, the consumption footprint is highest for food and housing while for poorest households it is food and mobility. Average air pollution levels in 2021 stood below the EU average (7.4 vs 11.4 µg/m3 PM2.5), and all regions were below critical air pollution levels ([87]). However, there are an estimated 2 100 premature deaths yearly due to exposure to air pollution ([88]).

([83]) EMPL-JRC AMEDI project.

([84]) 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.

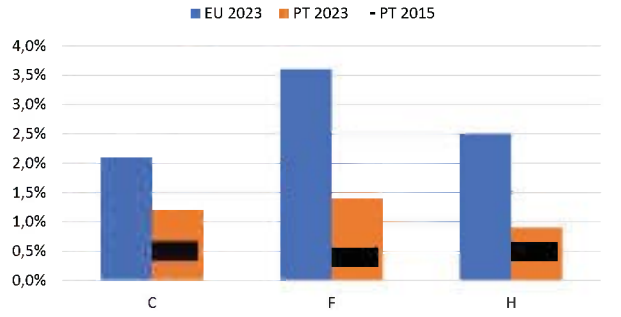
([85]) Developed in the context of the EMPL-JRC GD-AMEDI/AMEDI+ projects. Methodology explained in Economic and distributional effects of higher energy prices on households in the EU.

([86]) 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)

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

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

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



C - Manufacturing
F - Construction
H - Transportation and storage
Source: Eurostat jvs_a_rate_r2.

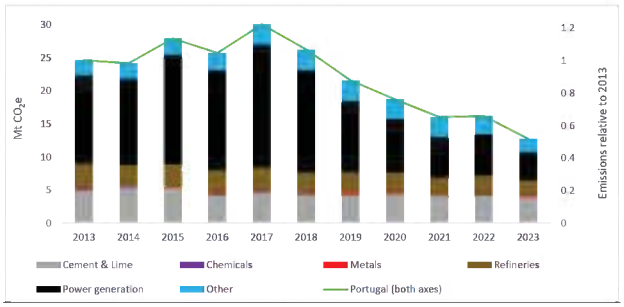
Portugal is developing policies, legislative reforms and programmes for a fair transition towards climate neutrality, which are at early stages of implementation. Under the REPowerEU component in the RRP, measures are underway to tackle labour shortages and skills mismatches, also in the context of the green transition. Specific taxation measures are needed to incentivise job-to-job transitions from energy-intensive industries into green jobs and align businesses with the green objectives. Efforts are also needed to provide public employment services and ensure occupational health and safety inspections are carried out to address new emerging challenges related to the transition. Furthermore, action is needed to ensure social dialogue is included in fair green policymaking and implementation ([89]).

([89]) 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 Portugal's competitiveness ([90]). In this regard, priorities for Portugal are waste management and the use of circular materials in industry and construction.

Portugal would benefit from accelerating its circular economy transition to achieve the EU Circular Economy Action Plan goals. The material footprint increased from 15 to 17.2 tonnes per capita between 2016 and 2019. After a drop in 2020, it increased and reached 16.9 tonnes per capita in 2022. Total waste production per capita increased from 1.3 to 1.6 tonnes per capita between 2010 and 2020, well below the EU average. In the Portuguese National Energy and Climate Plan, the role of circular economy beyond waste management is mentioned, also in relation to the economy's decarbonisation. A significant part of the research, innovation and development section is dedicated to circular economy, which is also identified as an important field towards which investments must be directed.

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



Source: European Commission

Greenhouse gas emissions covered by the EU Emissions Trading System (ETS) in Portugal ([91]) have declined steadily since 2017. In 2023, power generation was responsible for 32% of Portugal's ETS emissions, a much lower share than in the EU overall (57%). Of the total emissions from all industry sectors, cement and lime production emitted 43%, refineries 27%, and 'other' industries 27% ([92]). In 2023, ETS emissions in Portugal were almost half as high as in 2013. The reduction of ETS emissions has largely been driven by the power sector, where greenhouse gas emissions have declined by 69% since 2013. Industrial emissions from cement, lime or refineries had only modest emission reductions over the previous decade.

Despite steady progress in waste management in the past decade, action remains warranted. The municipal waste recycling rate increased from 29.1% to 30.4% between 2017 and 2021 but remained too low to meet the EU target of recycling 50% by 2020. Portugal is among the countries that are not on track to meet the EU packaging and municipal waste recycling targets for 2025 ([93]). The recycling rate of plastic packaging was 38.1% in 2021. Furthermore, Portugal's e-waste recycling has dramatically decreased in the last few years, going from 80.9% in 2017 to 51.7% in 2021. The country has moved away from heavy reliance on landfills but is still at risk of missing the 2035 landfilling target. Innovation in waste treatment technologies is growing, as illustrated by the fact that 5 new patents were registered in 2021.

Portugal has adopted policies to address circular economy challenges, but results are yet to materialise. Portugal adopted a national Circular Economy Action Plan in 2017 and a new one is still under preparation. A new national legislation on waste management was approved in 2020. The new national waste management plan (PNGR 2030) and the Strategic Plan for Municipal Waste (PERSU 2030) were adopted in March 2023. The Strategic Plan for non-urban Waste (PERNU 2030) was adopted in October 2023. The new regional waste management plans for Madeira and Azores were already adopted too, in 2021 and 2023, respectively. However, overall, progress in this field has been limited, although the situation varies by region. Therefore, it is now essential to implement these

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

([91]) 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.

([92]) Other than cement and lime production, chemicals, metals, refineries, and power generation.

([93]) Waste early warning report, European Commission, published on 8 June 2023.

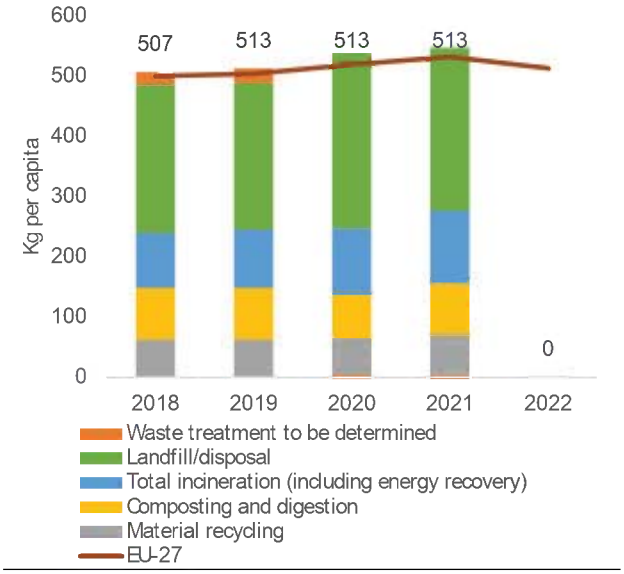
Table A9.1: **Circularity indicators**

	2018	2019	2020	2021	2022	2023	EU-27	Latest year
Industry								
Resource productivity (purchasing power standard (PPS) per kilogram)	1.4	1.5	1.5	1.5	1.7	-	2.5	2022
Circular material use rate (%)	2.2	2.3	2.5	2.6	2.6	-	11.5	2022
Eco-innovation index (2013=100)	97.3	98.4	98.3	104.6	105.7	-	121.5	2022
Recycling of plastic packaging (%)	33.9	35.6	33.9	38.1	-	-	40.7	2021
Cost of air emissions from industry (EUR bn)	6.4	5.4	5.0	4.7	-	-	352.7	2021
Built environment								
Recovery rate from construction and demolition waste (%)	93.0	-	95.0	88.5	-	-	89.0	2020
Soil sealing index (base year = 2006)	103.2	-	-	-	-	-	103.4	2018
Non-residential floor area (m^2 per capita)	20.1	20.4	20.6	-	-	-	18.0	2020
Waste backfilled (%)	60.7	-	63.4	-	31.9	-	9.9	2020

Source: Eurostat, European Environment Agency

new plans, as well as to adopt the pending measures, including additional initiatives and further investments.

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



Source: Eurostat

There is still room for improving the efficiency of Portugal's industry. The secondary material use rate is rather low and stood at 2.6% in 2022, well below the EU average of 11.5%. Between 2017 and 2022, resource productivity increased, but the gap with the EU average is still wide. 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. Portugal was dependent on imports for 30.8% of materials used in 2022, compared with an EU average of 22.4%, making the country comparatively more vulnerable to supply chain disruptions. Furthermore, water abstraction for manufacturing purposes accounted for 3.1% of total water abstracted in 2018. Still, the country is progressing in taking up circular economy approaches. The 2022 Eco-Innovation Scoreboard placed the country in the 'eco-innovation average performers group', with a score of 105.7. As of 2023, Portugal totalled 33 awarded EU Ecolabel licences and 6 065 products with the EU Ecolabel, showing an increasing and good take-up of products and licences.

Portugal could use its built environment more efficiently and reduce associated waste. In 2023, Portugal's building permits index – based on useful floor area – stood at 231.6, showing a large increase in construction activities since 2015 ([94]). The residential floor area per capita stood well above the EU average in 2020 – at 44.29 versus 36.48 m2 per capita – and increased at a higher pace than the EU average. A similar trend was reported for non-residential floor area per capita, which still stood below the EU average in 2020 – at 13.01 versus 15.31 m^2 per capita. In 2020, Portugal submitted a long-term renovation strategy to decarbonise the building stock, which recognises circular economy principles as fundamental. However, the amount of waste generated from construction and demolition activities per capita doubled between 2012 and 2020 and remained well below the EU average. The proportion of backfilling has increased since 2014 and stood at 63.4% in 2020, well above the EU average of 9.9%.

([94]) 2015=100.

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 Portugal's performance on digital skills, digital infrastructure/connectivity and the digitalisation of businesses and public services. Where relevant, it refers to progress on implementing the Recovery and Resilience Plan (RRP). Portugal allocates 21% of its total RRP budget to digital (EUR 4.5 billion) ([95]). Under Cohesion Policy, an additional EUR 2.4 billion (11% of the country's total Cohesion Policy funding) is allocated to the country's digital transformation ([96]).

The Digital Decade Policy Programme sets out a pathway for Europe's successful digital transformation by 2030. Portugal'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 ([97]). 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 ([98]). Digital technologies, infrastructure and tools all play a role in addressing the current structural challenges, including strategic dependencies, cybersecurity and climate change.

Portugal performs averagely on digital skills. It performs at the EU average on the share of the population (aged 16-74) having at least basic digital skills. However, the share of ICT specialists in total employment is still below but close to the EU average (4.5% versus 4.8%). By contrast, the proportion of ICT graduates is one of the lowest in the EU and still much below the EU average (2.5% versus 4.5%). Portugal has significant room to accelerate the implementation of its measures, amplify them and catch up with the EU's top performers. Improving digital skills is a national priority reflected in Portugal's RRP with initiatives targeting various population groups, for example investment in computers for pupils and teachers.

On digital infrastructure/connectivity, Portugal shows mixed results. It performs well in fast broadband, reaching 94% in fixed very high capacity network (VHCN) and 92% in fibre to the premises (FTTP) coverage, significantly exceeding the EU average. At 98%, its overall 5G coverage is above the EU average of 89%. A large part of it is rolled out in the 3.4-3.8 GHz spectrum band, which is important for enabling advanced applications requiring large spectrum bandwidth.

There is room for improvement in the digitalisation of Portuguese businesses. The proportion of businesses with at least basic digital intensity (54%) is below the EU average (58%). The combined uptake of cloud, big data or artificial intelligence (54%) is just below the EU average of 55%. The RRP envisages significant investments, for example in the National Test Beds Network. Implementing the remaining RRP measures efficiently could help SMEs to understand and apply digital solutions. This, in turn, could improve SMEs' ability to integrate these solutions into their business processes. In 2022, 2.5% of enterprises in Portugal reported ICT service outage due to cyberattacks (e.g. ransomware attacks, denial of service attacks). However, 33.7% of enterprises developed or reviewed their ICT security policy within the previous 12 months.

Portugal is a good performer in providing digital public services. It is almost on par with the EU average in providing digital public

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

([96]) 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.

([97]) 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).

([98]) 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.

services to businesses, and exceeds the EU average in providing digital services to the public. Portugal has two electronic identification (eID) schemes that have been notified under the eIDAS Regulation, with a high level of assurance: the digital mobile key (*Chave Móvel Digital*) and the national identity card (eID card, *Cartão de Cidadão*). The country is also involved in two pilot projects funded by the Digital Europe Programme to test the European Digital Identity Wallet in everyday use. Portugal places great emphasis on implementing 'digital by default' across its public sector services and IT systems. It has allocated a substantial part of the digital transformation investments envisaged in its RRP to the digitalisation of the state's finances and the business environment, and improving public administration's efficiency.

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

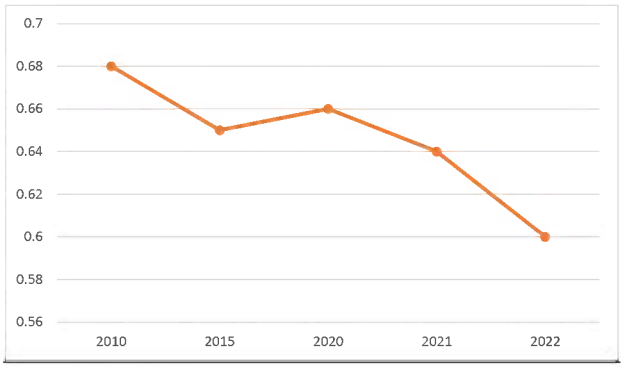
	Portugal			EU	Digital Decade target by 2030 (EU)
	2022	2023	2024	2024	
Digital skills					
At least basic digital skills	55%	55%	56%	56%	80%
% individuals	2021	2021	2023	2023	2030
ICT specialists ([1])	4.5%	4.3%	4.5%	4.8%	20 million
% individuals in employment aged 15-74	2021	2022	2023	2023	2030
Digital infrastructure/connectivity					
Fixed very high capacity network (VHCN) coverage	91%	93%	94%	79%	100%
% households	2021	2022	2023	2023	2030
Fibre to the premises (FTTP) coverage ([2])	88%	91%	92%	64%	-
% households	2021	2022	2023	2023	
Overall 5G coverage	0%	70%	98%	89%	100%
% populated areas	2021	2022	2023	2023	2030
Digitalisation of businesses					
SMEs with at least a basic level of digital intensity	52%	NA	54%	58%	90%
% SMEs	2021		2023	2023	2030
Data analytics	NA	NA	39%	33%	-
% enterprises			2023	2023	
Cloud	28%	28%	32%	39%	-
% enterprises	2021	2021	2023	2023	
Artificial intelligence	7%	7%	8%	8%	-
% enterprises	2021	2021	2023	2023	
AI or cloud or data analytics ([3])	NA	NA	54%	55%	75%
% enterprises			2023	2023	2030
Digitalisation of public services					
Digital public services for citizens	79	78	82	79	100
Score (0 to 100)	2021	2022	2023	2023	2030
Digital public services for businesses	82	82	82	85	100
Score (0 to 100)	2021	2022	2023	2023	2030
Access to e-health records	NA	63	86	79	100
Score (0 to 100)		2022	2023	2023	2030

(1) This 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

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

Portugal is a 'moderate innovator' but the gap between its performance and the EU average is becoming larger. According to the 2023 edition of the European Innovation Scoreboard ([99]), Portugal's innovation performance increased by 7.7 percentage points since 2016, but at a lower rate than the EU's (8.5pp). Its overall performance remains below the EU average (85.6% of the EU performance).

Graph A11.1: **Public expenditure on R&D as % of GDP**



Source: Eurostat

The country's research and innovation performance is impacted by insufficient (and declining) levels of public R&D investment. While total R&D intensity is progressively increasing (and reached 1.70% in 2022, against an EU average of 2.24%), fully driven by increasing investment efforts from the private sector, public expenditure on R&D has been on a declining trend over the last decade and fell to 0.60% in 2022 (compared to 0.64% in 2021 and 0.68% in 2010). This is a setback as Portugal wants public spending on R&D to hit 1% of GDP by 2030. In addition, the significant discrepancies in R&D investment ([100]) among the seven Portuguese regions also weigh on the country's overall performance (see Annex 17).

The stagnant level of public investment is also impacting the excellence of the Portuguese public research system. The share of scientific publications of the country within the top 10% most cited scientific publications worldwide is on a declining trend and international co-publications as % of total number of publications are also modest ([101]). Nonetheless, the country has one of the highest numbers of new graduates in science and engineering per thousand population aged 24-35 (20.6 in 2021 compared to the EU-27 average of 16.9) and a capacity to attract foreign doctoral students (58% of all doctorate students in 2023 ([102])). Despite the modest attractiveness of research careers ([103]), the number of researchers employed by the public sector is also quite high (6.2 per thousand population in 2022 against an EU average of 4.1). Portuguese authorities are trying to fight research precarity through the Scientific Employment Stimulus, launched in 2017 and slowly reinforced, which provides incentives for the hiring of researchers and the development of scientific employment plans by public or private institutions.

Business enterprise expenditure on R&D is steadily increasing but further efforts will be needed to reach the target of 2% of private investment in R&D by 2030. While it remains below the EU average (1.06% of GDP in 2022 against an EU average of 1.48%), business R&D intensity increased by 50% between 2010 and 2022. The country has one of the highest levels of public support for business R&D in Europe, but the availability of venture capital is still very low and has remained stagnant in the last decade (0.022% in 2022 compared to an EU average of 0.085%), which may hinder the growth of young innovative enterprises. Business innovation

([99]) 2023 European Innovation Scoreboard (EIS), country profile: Portugal https://ec.europa.eu/assets/rtd/eis/2023/ec_rtd_eis-country-profile-pt.pdf The EIS provides a comparative analysis of innovation performance in EU countries, including the relative strengths and weaknesses of their national innovation systems (also compared to the EU average).

([100]) 2023 Regional Innovation Scoreboard, Country Profile: Portugal https://ec.europa.eu/assets/rtd/ris/2023/ec_rtd_ris-regional-profiles-portugal.pdf.

([101]) 53.7% in 2022 against an EU average of 55.5%, according to Science-Metrix data.

([102]) European Innovation Scoreboard.

([103]) OECD Review of Higher Education, Research and Innovation: Portugal (2019): https://www.oecd-ilibrary.org/docserver/9789264308138-en.pdf?expires=1669907865&id=id&accname=oid031827&checksum=D62C22DB51A43DD26752612666522CBF.

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

Portugal	2010	2015	2020	2021	2022	EU average (1)
Key indicators						
R&D intensity (GERD as % of GDP)	1.54	1.24	1.61	1.67	1.70	2,24
Public expenditure on R&D as % of GDP	0.68	0.65	0.66	0.64	0.6	0,73
Business enterprise expenditure on R&D (BERD) as % of GDP	0.71	0.58	0.92	1	1.06	1.48
Quality of the R&I system						
Scientific publications of the country within the top 10% most cited publications worldwide as % of total publications of the country	9.9	9	8.54	:	:	9.6
Patent Cooperation Treaty (PCT) patent applications per billion GDP (in PPS)	0.6	1	1.02	:	:	3.4
Academia-business cooperation						
Public-private scientific co-publications as % of total publications	4.8	5	5.7	6	6.3	7.6
Public expenditure on R&D financed by business enterprise (national) as % of GDP	0.008	0.012	0.016	0.014	0.013	0.054
Human capital and skills availability						
New graduates in science & engineering per thousand pop. aged 25-34	13	16.2	19.5	20.6	:	16.9
Public support for business enterprise expenditure on R&D (BERD)						
Total public sector support for BERD as % of GDP	0.128	0.155	0.436	0.35	:	0.204
R&D tax incentives: foregone revenues as % of GDP	0.09	0.11	0.355	0.25	:	0.104
Green innovation						
Share of environment-related patents in total patent applications filed under PCT (%)	22	15.2	14.7	:	:	14.7
Finance for innovation and economic renewal						
Venture capital (market statistics) as % of GDP	0.028	0.029	0.02	0.021	0.022	0.085
Employment share of high growth enterprises measured in employment (%)	:	19.7	:	:	:	12.51

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

capacity remains limited with modest patenting activity compared to the EU average, especially in the energy sector ([104]). The recovery and resilience plan (RRP) investment 'Mobilising Agendas for Business Innovation' could be a powerful tool to enhance business innovation capacity as the goal is the development of new products, processes or services in relevant strategic areas. In addition, cohesion funds – mainly through the Innovation and Digital Transition Programme (COMPETE 2030) - support investments in applied R&I, including industrial and experimental research in areas aligned with the smart specialisation strategies.

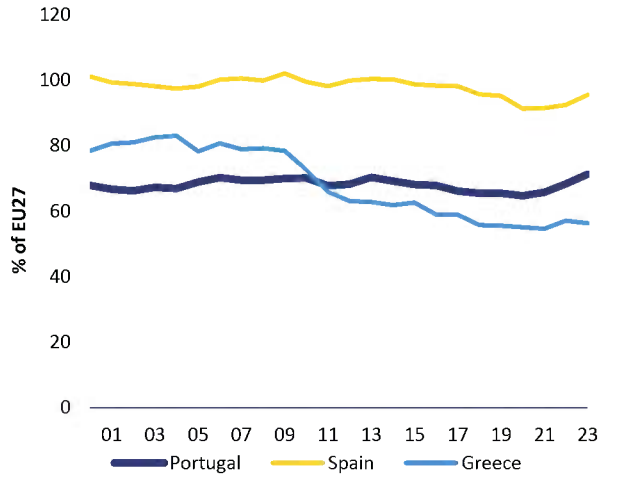
While remaining a major challenge, Portugal's efforts to enhance public-private cooperation are giving their first results. As an example, while the share of public-private scientific co-publications is still below the EU average, it has been steadily increasing over recent years and reached 6.3% of total publications in 2022. On the other hand, the share of public expenditure on R&D financed by businesses has remained stagnant over the past few years, at a very low level (0.013% in 2022 compared to an EU average of 0.054%). Moreover, although on an increasing path, the number of researchers employed by businesses is also modest ([105]), which may suggest limited mobility opportunities between the public and the private sector. The country has dedicated significant resources to this challenge. For the first time, in 2023 Portugal financed grants for PhD studentships in a non-academic environment, with the aim of encouraging companies to host PhD students during their doctoral degree, thereby favouring employment of PhD holders in the private sector. Moreover, the recovery and resilience plan (RRP) includes different investments aimed at fostering knowledge valorisation, such as the 'collaborative laboratories' (COLABs) which bring together relevant partners from the public and the private sector, and the 'Mobilising Agenda for Business Innovation' which are consortia between companies, scientific and technological institutions.

([104]) According to OECD patent data.

([105]) According to OECD data, researchers (FTE) employed by business per thousand active population is 5.2 in 2022, compared to the EU average of 5.6.

Productivity in Portugal has remained sluggish over the past two decades. Labour productivity (GDP per hour worked) has stagnated over the past 20 years. In 2000, it stood at 67.9% of the EU average compared to 71.3% in 2023 (see Graph A12.1). Despite its initial low levels in 2000, productivity has not been able to converge on the EU average. Gains were made in productivity per worker (reaching 80.1% in 2013), but labour productivity slumped back down, beforing reverting upwards to a peak of 80.7% of the EU average in 2023. On a sectoral level, productivity has varied over the past 20 years with growth driven by manufacturing while the construction sector weighed down overall productivity growth. The contribution of total factor productivity (TFP) to productivity growth was mixed.

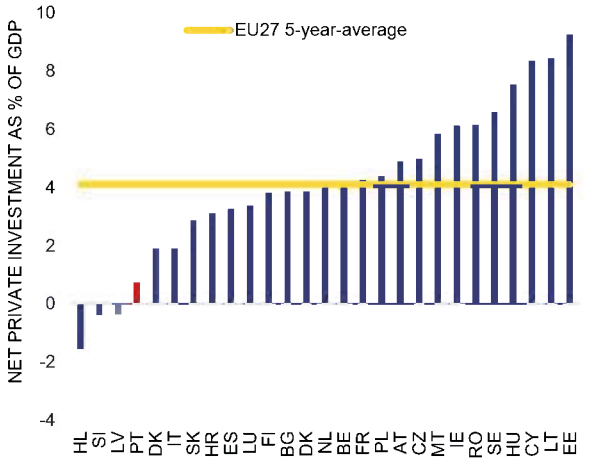
Graph A12.1: **Labour productivity in PPS (% of EU-27)**



(1) GDP in current purchasing power standards per hour worked and as a percentage of the EU average
Source: AMECO

Investment is recovering but remains low. Overall, Portugal has one of the lower levels of investment in the EU (19.4% compared to 22.2% in the EU for 2023 ([106])), but this has improved in recent years. Public investment will be boosted by the implementation of the Recovery and Resilience Plan (RRP), but private investment is recovering from the great financial crisis and has been resilient, particularly in the wake of the COVID-19 pandemic and global uncertainty. However, private investment levels remain lower than pre-2010 levels. In 2023, net private investment stood at 0.64% of GDP (compared to an EU average of 3.76%); and, over the past 5 years, annual net private investment has remained below 1%, below the EU average of 4.1% (see Graph A12.2). However, FDI in Portugal has been one of the highest in the EU and inward FDI stock reached 70% of GDP in 2022.

Graph A12.2: **Net fixed capital formation (5-year average)**



Source: AMECO

Access to finance has improved (particularly for SMEs), but challenges remain. Portugal has improved its ranking in the SME EIF Access to Finance Index (17th) but remains below the EU average and below its highest ranking of 14th in 2020. The percentage of businesses whose loan applications are rejected or refused has been on an upward trend over the past 3 years. In 2023, 14.3% of businesses did not secure bank financing (the third highest percentage in the EU and more than double the percentage of firms rejected or refused in 2021 (6%) ([107])). Almost two thirds (61%) of Portuguese firms prefer bank loans as their source of external financing, but 56% of businesses cite high interest rates as the most important obstacle to obtaining financing. In addition, access to finance is a key barrier to firm investment. More than half of businesses say that the non-availability of finance is a barrier to long-term investment, versus an EU average of 44% ([108]). Portugal performs poorly in other avenues of finance such as venture capital and payment times.

([106]) Eurostat, Gross fixed capital formation (investments).

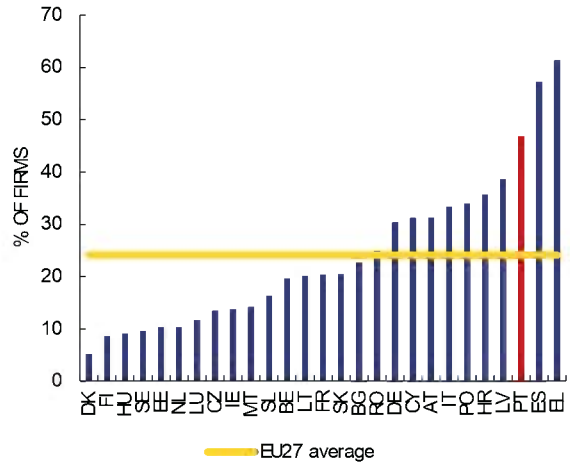
([107]) SAFE.

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

Companies highlight the fact that the prevalence of late payments and difficulties in collecting them is a significant issue for Portugal's business environment ([109]). According to InformaDB, 85% of Portuguese companies do not respect payment deadlines ([110]). Moreover, the payment gaps in business-to-business transactions and from the public sector remain above 2 weeks (15 and 17 days respectively).

Persistent regulatory challenges are hampering the business environment. Portugal implemented a series of well-received reforms under SIMPLEX+, but survey data consistently suggest that regulatory obstacles are a significant hindrance to private investment. According to the EIB investment survey, 83% of firms cite business regulation as a long-term barrier to investment, the highest in the EU. Over the past 5 years, the perception of regulatory obstacles to investment has been almost double the EU average (see Graph A12.3). An OECD survey of investors also found that 77% of respondents considered administrative delays and other red tape issues as a very important or moderately important obstacle to their operations in Portugal ([111]). In addition, Portuguese businesses perceive tax compliance procedures and licensing as cumbersome and time-consuming ([112]). Recent changes in licensing laws should support industry by introducing tacit approvals for building permits ([113]). At the same time, Portugal's RRP includes steps to improve the business environment. In particular, the reform of regulated professions will promote competition in professional services by reducing regulatory barriers to ownership and management of professional firms. Moreover, under component 18 of the RRP, the measure on the removal of barriers to licensing should also help improve Portugal's business environment.

Graph A12.3: **Business Regulations as a major obstacle to investment (5-year average)**



Source: EIBIS

Portugal's lack of adequately skilled human capital is an acute challenge for SMEs (see Annex 14). A 20-year record low in unemployment and peak vacancy rates suggests that Portugal's labour market may be suffering from a skills mismatch (see Annex 14). Portugal's economy is notable for its low-qualified workers, whose share of the labour market is more than twice the EU average ([114]). Portugal also has one of the highest percentages of under-qualified workers in managerial positions ([115]). 52% of SMEs cited difficulties in finding employees with the right skills as their most serious problem ([116]). Vacancy rates in manufacturing and construction are in line with the Portuguese average, but sectors such as information and communication struggle the most in filling vacancies, with rates double those of other sectors (4% in 2023 Q3) ([117]). This is supported by the fact that the percentage of ICT graduates is half the EU average. However, Portugal ranks above the EU average when it comes to individuals with above-basic digital skills ([118]). Roughly half (51%) of the total job openings that

([109]) OECD, The Impact of Regulation on International Investment in Portugal.

([110]) InformaDB, Payment Study 2023.

([111]) OECD, The Impact of Regulation on International Investment in Portugal.

([112]) OECD, The Impact of Regulation on International Investment in Portugal.

([113]) Decree Law No 10/2024.

([114]) CEDEFOP, *Country Report 2023*, p. 11, https://www.cedefop.europa.eu/files/skills_forecast_2023_portugal.pdf.

([115]) OECD Economic Surveys: Portugal 2023.

([116]) Eurobarometer, 2023, SMEs and skills shortages.

([117])Eurostat: https://ec.europa.eu/eurostat/databrowser/view/jvs_q_isco_r2__custom_8878566/bookmark/table?lang=en&bookmarkId=fb9e1ab3-4acd-4ce6-bc26-7b121e010c78.

([118]) DESI 2023.

are expected to be created in Portugal up to 2035 will require high-level qualifications ([119]). Amendments to the Foreigners Act should help Portuguese businesses attract talent from abroad.

Portugal is well integrated into the single market and performs well in relation to single market rules, but there are still gains to be made. Portugal's trade integration within the single market for the past 5 years has been below the EU average (30% vs 42%). However, the single market is essential for trade in goods with 75% of total trade destined for or arriving from the single market. There is less integration for trade in services. Intra-EU trade in services as a percentage of GDP were only 8% in 2022. Portugal scores in line with the EU average on the OECD Trade Restrictiveness Index and performs reasonably well when it comes to single market rules. Portugal performs well on the transposition and conformity deficits of single market directives, scoring below the EU average. Portugal solved 86.9% of the SOLVIT cases (180) it handled (slightly below the EU average of 88.3%). However, pending infringements over the past 5 years have been above the EU average. Portugal performs reasonably well on public procurement. Its percentage of single bids is below the EU average (21% compared to 28%), but direct awards are slightly above the EU average (11% compared to 8.1%).

Portugal's net-zero industry has great potential (see Annex 7). Renewable energy accounts for over two thirds of Portugal's electricity generation. Portugal's industrial electricity prices are some of the cheapest in the EU, so Portugal's industry has a comparative advantage in developing a clean tech ecosystem (particularly electrolyser manufacturing for green hydrogen). Portugal's RRP and REPowerEU chapter revises its hydrogen strategy and contains measures to develop clean technologies (e.g. grants to support investment in the production of strategic technologies for the climate transition and the development of green skills with the goal of training 25 000 people over the next 2 years). Portugal also has deposits of raw materials such as lithium and tungsten which are essential for net-zero technologies. Portugal is below the the EU average on the import concrentation index of crticial raw materials (0.19 vs 0.22).

Portugal is in the preliminary stage of implementing the components needed to connect to the Once-Only Technical System (OOTS) ([120]). As part of the Single Digital Gateway Regulation ([121]), the system will enable the automated cross-border exchange of evidence between competent authorities, improving online access to information, administrative procedures and assistance within the EU. The onboarding of Portuguese competent authorities is crucial for the system to function smoothly and to reduce administrative burden.

Portugal performs well on innovation and research and development, but there is still room for improvement (see Annexes 11 and 17). Portugal is classified as a moderate innovator by the European Innovation Scoreboard, performing at 85.6% of the EU average but progressing more slowly than the rest of the EU. R&D intensity is below the EU average of 2.23%, but gross R&D expenditure (as a percentage of GDP) is converging on the EU average (it rose from 1.28% in 2016 to 1.71% in 2022 ([122])). The share of innovative enterprises is just below the EU average, with 51.1% of firms engaging in innovative activities in 2018-2020. The export share of high and medium-high R&D intensive activities as a percentage of total exports is roughly 15 pps below the EU average (55.5%). Moreover, export of high-tech products is 4.7% of all trade (the lowest rate in the EU). However, the business sector in Portugal is quite dynamic. The rate at which businesses are created and destroyed is quite high compared to the EU aggregate and this should in principle make it easier to bring innovations to the market while allowing on-performing firms to exit (productivity-enhancing resource reallocation).

([119]) CEDEFOP Country Report 2023, https://www.cedefop.europa.eu/files/skills_forecast_2023_portugal.pdf.

([120]) SDG Regulation: Regulation (EU) 2018/1724.

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

([122]) https://ec.europa.eu/eurostat/statistics-explained/index.php?title=R%26D_expenditure

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

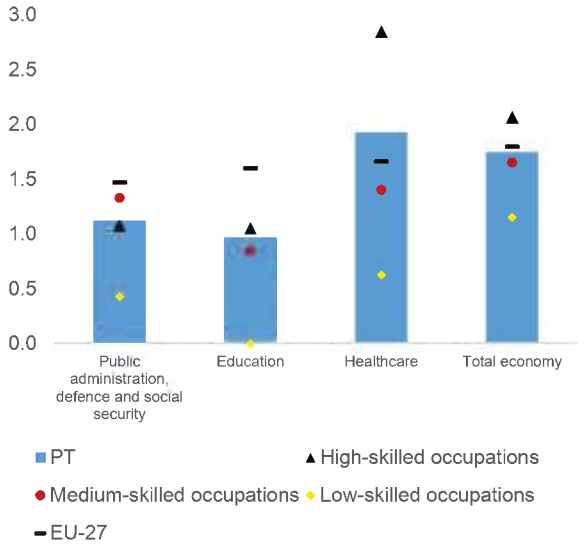
Portugal							
POLICY AREA	**INDICATOR NAME**	**2019**	**2020**	**2021**	**2022**	**2023**	**EU27 average***
HEADLINE INDICATORS							
Economic Structure	Net Private investment, level of private capital stock, net of depreciation, % GDP[1]	1.2	0	0.8	1	0.6	**3.8**
	Net Public investment, level of public capital stock, net of depreciation, % GDP[1]	-0.7	-0.5	-0.2	-0.4	-0.2	**1.2**
Cost competitiveness	Real labour productivity per person in industry (% yoy)[2]	1	-4.9	5.5	1.3	-2.4	**-1.24**
	Nominal unit labour cost in industry (% yoy)[2]	3.3	6.2	0.3	4.6	10.1	**9.83**
SINGLE MARKET							
Single Market integration	EU Trade integration, % (Average intra-EU imports + average intra EU exports)/GDP[2]	29.5	27	30.1	34.1	32.3	**42.9**
Compliance	Transposition deficit, % of all directives not transposed[3]	0.5	0.1	1.4	1.3	0.4	**0.7**
	Conformity deficit, % of all directives transposed incorrectly[3]	1.3	1.3	1.1	1.3	0.8	**1.1**
	SOLVIT, % resolution rate per country[3]	100.0	98.7	94.0	93.2	87.0	**84.8**
	Number of pending infringement proceedings[3]	26	32	37	28	25	**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]	38	24	20	24	21	**28.6**
	Direct Awards, %[3]	3	7	7	5	11	**8.1**
ECONOMIC STRUCTURE							
Shortages	Material Shortage (industry), firms facing constraints, %[5]	6.4	4.8	7.9	15.8	9.2	**17.2**
	Labour Shortage using survey data (industry), firms facing constraints, %[5]	7.9	6.6	8.5	11.5	10.9	**23.3**
	Vacancy rate, % of vacant posts to all available ones (vacant + occupied)[2]	1.3	0.9	1.3	2.0	1.9	**2.5**
Strategic dependencies	Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials[6]	0.18	0.18	0.18	0.21	0.19	**0.22**
	Installed renewables electricity capacity, % of total electricity produced[2]	0.7	0.6	0.7	0.8	-	**50**
BUSINESS ENVIRONMENT - SMEs							
Investment obstacles	Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle[7]	45.3	48.1	45.8	46.0	49.0	**22.2**
Business demography	Bankruptcies, Index (2015=100)[2]	50.2	51.6	45.0	37.0	44.6	**105.6**
	Business registrations, Index (2015=100)[2]	136.7	104.8	118.0	135.4	143.7	**120.2**
Late payments	Payment gap - corporates B2B, difference in days between offered and actual payment[8]	-	20	12	14	15	**15**
	Payment gap - public sector, difference in days between offered and actual payment[8]	-	25	12	10	17	**16**
	Share of SMEs experiencing late payments in past 6 months, %[9]	40.3	41.6	38.1	41.8	37.3	**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]	0.55	0.65	0.46	0.66	-	**0.49**
	EIF Access to finance index - Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values between 0 and 1[10]	0.07	0.07	0.09	0.07	-	**0.17**

Source: (1) AMECO, (2) Eurostat, (3) Single Market Scoreboard, (4) OECD, (5) ECFIN BCS, (6) COMEXT and Commission calculations, (7) EIB Investment Survey, (8) Intrum Payment Report, (9) SAFE survey, (10) EIF SME Access to Finance Index.
* Own Commission calculations for the EU27 average

Portugal's public administration is essential for the economy's competitiveness by, in particular, shaping the conditions for the twin transitions and creating a favourable business environment. Overall, Portugal scores slightly above the EU average on perceived government effectiveness ([123]), but it is still below the score in pre-pandemic years. Ambitious reforms across various sectors under the country's recovery and resilience plan are ongoing although progress varies, highlighting the complexities and challenges of its implementation.

Portugal faces challenges in the ageing of the civil service and the attractiveness of public employment. To tackle them, the country has brought in changes to speed up and centralise the recruitment of certain categories of staff. The ratio of 25-49 year-old to 50-64 year-old in the public administration is still relatively low (Chart A13.1). If unaddressed, this could threaten service delivery. The share of employees in the public administration with higher education also remains below the EU average (Chart A13.2).

Graph A13.1: **Ratio of 25-49 to 50-64 year olds by sector and occupation**

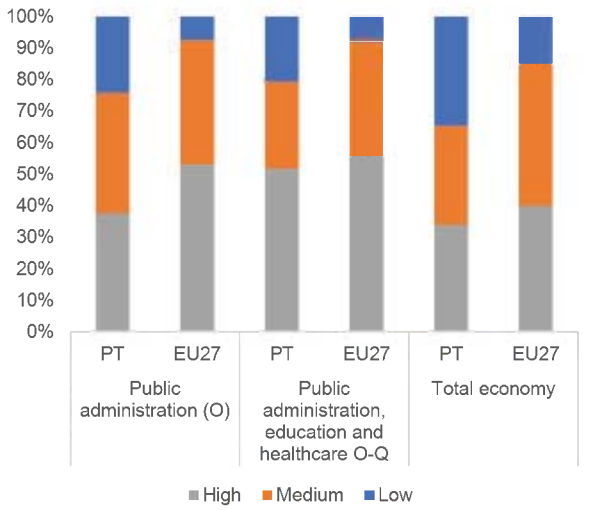


(1) 2023 data.
Source: European Commission, based on the Labour Force Survey.

Portugal has taken steps to improve its regulatory governance. PlanAPP, the competence centre for planning, policy and foresight, supports the definition and implementation of public policies and prospective analysis, including impact assessments of draft legislation and technical evaluations of public policies. RePLAN, an inter-ministerial network coordinated by PlanAPP, aims to ensure cooperation and the sharing of knowledge and resources in the areas of strategic planning, public policies and foresight. It is expected to promote collaborative work and cross-cutting strategies.

The overall maturity of e-government and the share of e-government users are relatively high. However, Portugal ranked substantially below the EU average in the public's perception of the provision of public services ([124]). To achieve the public administration's digital transformation between 2022 and 2026, a series of supporting documents have been approved ([125]), focusing on areas such as enterprise architecture, digital identity, cloud strategies, ethical AI, data governance and cybersecurity.

Graph A13.2: **Share of employees by education attainment level and by sector**



(1) 2023 data, 25-64 age bracket High: Education levels 5-8; medium (3-4): low (1-2).
Source: Labour Force Survey (Eurostat).

The quality of the justice system is good overall, and its efficiency shows some improvement although challenges

([123]) Worldwide Governance Indicators, 2022.

([124]) Standard Eurobarometer, 2022.

([125]) tic.gov.pt

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

PT	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	80.8	80.6	75.0
2	E-government benchmark overall score ([3])	n/a	82.3	78.4	79.1	80.9	75.8
3	Open data and portal maturity index	0.4	0.5	0.7	0.8	0.9	0.8
Educational attainment level, adult learning, gender parity and ageing							
4	Share of public administration employees with higher education (levels 5-8, %)	32.8	34.8	37.4 (b)	36.4	37.5	52.9
5	Participation rate of public administration employees in adult learning (%)	13.1	13.3	16.6 (b)	17.4	17.4	17.9
6	Gender parity in senior civil service positions ([4])	7.8	1.0	1.6	6.6	2.6	9.2
7	Ratio of 25-49 to 50-64 year olds in NACE sector O	1.3	1.4	1.3 (b)	1.3	1.1	1.5
Public financial management							
8	Medium-term budgetary framework index	0.6	0.6	0.7	0.7	n/a	0.7
9	Strength of fiscal rules index	1.9	1.9	1.9	1.9	n/a	1.4
Evidence-based policy making							
10	Regulatory governance	n/a	n/a	1.27	n/a	n/a	1.7

(1) High values denote a good performance, except for indicator # 6. (2) 2023 value. If not available, 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).

remain ([126]). In administrative cases, the disposition time has been consistently decreasing in first instance. but has further increased at second instance (it remains above 1 000 days). Although the number of pending administrative cases at first instance is still high, there has been a significant improvement in the resolution rate, which is above 110%. The level of digitalisation is advanced, with widespread use of digital technologies by the courts and prosecution. However, gaps remain in the public's online access to judgments. Despite new recruitment procedures, there are still challenges in allocating sufficient human resources to the justice system, in particular legal clerks. On judicial independence, no systemic deficiencies have been reported.

The planning of public investment has recently improved, but good practices are still limited to a few sectors ([127]). The national investment programme provides guidance for public investment allocation over a 10-year period covering all financing sources (EU, national and others). Ongoing efforts to integrate this 10-year investment plan into the medium-term budgetary framework are critical for its effectiveness. On project assessment, a common methodology is currently only used for a limited number of sectors (e.g. public order and safety, agriculture). These sectors also avail of a central support for training on development and implementation of assessment methodologies, which could be shared with other sectors. Only a few sectors (e.g. tertiary education) benefit from an independent review of the quality and objectivity of assessments.

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

([127]) Belu Manescu, C. (2022), 'New evidence on the quality of public investment Management in the EU', European Economy Discussion Paper No 177, European Commission.

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

The Portuguese labour market continued to improve steadily in the aftermath of COVID-19, but young people still face challenges. Economic growth has been slowing down in 2023, while the labour market has remained robust. The employment rate has been on the rise since 2021 and stood at 78.2% in 2023 (EU: 75.3%). The unemployment rate remained broadly stable in 2023, reaching 6.5% (EU: 6.1%). The youth unemployment rate (age 15-24), which is steadily worsening in the long-term, stood at 20.3% in 2023, well above the EU average (14.5%). The long-term unemployment share stood at 2.5% in 2023 (above the EU average of 2.1%) and is significant in the overall pool of registered unemployed. The Portuguese active labour market policies show a lack of capacity to provide individual and targeted support to young job seekers, and there is insufficient cooperation with key stakeholders such as social services and training providers. Young people are disproportionately represented in temporary jobs (42.9% vs 34.3% in the EU in 2023), and earnings of people under 30 are significantly below those of older generations. As part of its recovery and resilience plan (RRP), Portugal passed a comprehensive reform in April 2023 known as the Decent Work Agenda, as well as programmes targeted at young people (*ATIVAR.PT* and *AVANÇAR*).

Labour and skills shortages are increasing in some sectors and professional groups. Employers are finding it increasingly difficult to fill vacancies because of labour and skills shortages, especially notably in the ICT, healthcare, construction and renewable energy sectors. The combination of demographic challenges, skills and labour shortages, and structural challenges to achieving basic skills and educational outcomes also undermines Portugal's potential to increase its economic competitiveness. In 2023, 74% of SMEs faced skills shortages, highlighting the need for better collaboration between employers and public employment services, and for tools to assess the skills required by companies and those of jobseekers. Portugal's labour force is becoming more highly qualified as older less-qualified people retire and younger highly educated workers enter the labour market. By 2025, the share of people in the labour force with high-level qualifications should rise to 33.1%, compared to 23.9% in 2013. Over the same period, the share of workers with a low-level of qualifications or none at all is forecast to fall from 55% in 2013 to 40.2% in 2025. Operations under the European Social Fund Plus (ESF+) such as professional traineeships, local support structures to get people into work and systems to anticipate needs and match them with skills will help Portugal achieve the 2030 national employment target of 80%.

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

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)	33,4
	Early leavers from education and training (% of the population aged 18-24, 2023)	8
	Share of individuals who have basic or above basic overall digital skills (% of the population aged 16-74, 2023)	56,0
	Young people not in employment, education or training (% of the population aged 15-29, 2023)	8,9
	Gender employment gap (percentage points, population aged 20-64, 2023)	5,6
	Income quintile ratio (S80/S20, 2022)	5,1
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)	6,5
	Long term unemployment (% of the active population aged 15-74, 2023)	2,5
	Gross disposable household income (GDHI) per capita growth (index, 2008=100, 2022)	109,8
Social protection and inclusion	At risk of poverty or social exclusion (AROPE) rate (% of the total population, 2022)	20,1
	At risk of poverty or social exclusion (AROPE) rate for children (% of the population aged 0-17, 2022)	20,7
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2022)	23,72
	Disability employment gap (percentage points, population aged 20-64, 2022)	13,1
	Housing cost overburden (% of the total population, 2022)	5
	Children aged less than 3 years in formal childcare (% of the under 3-years-old population, 2022)	47,2
	Self-reported unmet need for medical care (% of the population aged 16+, 2022)	2,9

To watch | Weak but improving | Good but to monitor | On average | Better than average

(1) 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 level of education and training of people in Portugal has improved in recent years, but the share of low-skilled adults is still high. The RRP and the ESF+ programme for 2021-

2027 include investments in skills, vocational education and training and adult learning. This is helping Portugal to achieve positive results: vocational education and training courses play an important role in fulfilling the requirements of compulsory schooling, improving young people's qualifications and helping them make a smoother transition to their working life. The rate of early leavers from education and training increased to 8.0% in 2023 (vs 6.5% in 2022 and EU: 9.5% in 2023) and the rate of those not in employment, education or training (NEETs) rate remains consistently below the EU average (8.9% vs 11.2% in 2023). More than a third of the population had completed only the lower secondary level of education in 2022 (EU: 24.9%) (see Annex 15). The continued roll-out of education and training programmes is important for the reskilling and upskilling of young people and adults, particularly for the skills required for the digital and green transitions. The share of individuals who have basic or above basic general digital skills has been growing and stood at 56.0% in 2023 (EU: 55.6%) (see Annex 10). Adult participation in learning in the previous 12 months stood at 33.4% in 2022 (EU: 39.5%), 4.6 percentage points lower than in 2016. Fostering continuous investment in adult education and training is essential to achieve the national target of at least 60% by 2030.

Housing affordability is a growing concern, while access to social housing remains limited and homelessness is on the rise. House prices reached new highs in 2023, driven by inflation and market dynamics, including a lack of supply. The housing price index (211.27 in Q4 2023) ([128]) is more than twice the 2015 baseline value and one of the highest in the EU. The rise in mortgage interest rates and rental prices has impacted household budgets, with 29.4% of tenants in 2022 experiencing housing cost overburden (vs 26.9% in 2021). The provision of affordable social housing remains insufficient as investments in housing under the RRP are expected to provide only 26 000 dwellings up to 2026. According to the current demand, 90 000 families are considered to be living in undignified conditions and entitled to affordable housing (Programa 1.º Direito). Homelessness increased by 78% in 4 years. According to the Portuguese government, there were 10 773 homeless people in December 2022 (vs 6 044 in 2018). NGOs on the ground report a change in the demographics of people who are homeless, with an increase in homeless migrants and families.

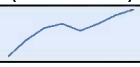
There are not enough long-term care services for a rapidly ageing population. The share of the population aged 65 and over is forecast to reach 26.5% in 2030, and the share aged 80 and over is to reach 8.0%, raising the demand for long-term care (LTC) services, which are already in short supply. LTC in Portugal is severely underfunded, with public spending at less than a quarter of the EU average (0.4% vs 1.7%), resulting in limited access to formal services. In 2019, as regards publicly provided or funded home care services, only 15.9% of people aged 65 and over in need of LTC used homecare services (EU: 28.6%). RRP investments of EUR 637 million support a new generation of equipment, social services and the national networks providing integrated continuous care and palliative care. The number of formal LTC workers is very low, with a ratio of 0.8 workers per 100 people aged 65 and over, which is one of the lowest in the EU. This workforce lacks proper skills and receives wages that are 73% of the national average.

Social transfers have little impact on reducing poverty, with the outermost regions showing higher rates of poverty and social exclusion. The share of people at risk of poverty and social exclusion (AROPE) in Portugal fell from 22.4% in 2021 to 20.1% in 2022, however it remains very high in the Azores and Madeira (30.3% and 30.2% respectively). In the Azores, these disparities are accentuated by a high number of beneficiaries of minimum income schemes (7.0% of people in working age vs a national average of 2.9% in 2022) and a significant early leaving from education and training rate (21.7% vs a national average of 8.0% in 2023). Income inequalities are still high, with the income of the top 20% of the population with the highest income reaching 5.13 times more than the income of the bottom 20% in 2022 (EU: 4.74). The impact of social transfers (excluding pensions) in reducing poverty in 2022 remains low (23.7% vs an EU average of 35.0%). Access to social protection is a challenge: many workers have insufficient formal coverage or have inadequate coverage and insufficient benefits. A low percentage of

([128]) EU housing price index – Eurostat.

temporary and self-employed workers receive benefits (respectively 24.8% vs EU 44.9% and 2.9% vs EU 16.5%) and suffer from higher poverty and social deprivation rates. A deterioration of social indicators in 2023 shows scope for greater social policy action to achieve the 2030 national target of 765 000 fewer people at risk of poverty or social exclusion. The Portuguese RRP includes a measure to reform and simplify the country's social protection system, and thus improve its effectiveness in the fight against poverty and social exclusion.

Table A14.2: **Social Scoreboard for Portugal**

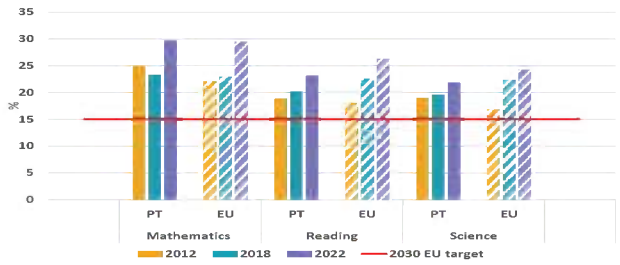
Indicators	Latest data	Trend (2016-2023)	2030 target
Employment (%)	78,2 (2023)		80
Adult learning[1] (%)	33,4 (2022)		60
Poverty reduction[2] (thousands)	-89 (2022)		-765

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

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

The high share of underachievers in mathematics and the low share of top performers pose a risk for the future productivity and competitiveness. PISA 2022 ([129]) showed that the proportion of 15-year-olds underachieving in mathematics, reading and science increased in Portugal between 2018 and 2022, in line with the EU. The underachievement rate is high in mathematics, at 29.7% (EU 29.5%), 6.4 pps more than in 2018. Portuguese students perform better in reading and science with underachievement rates below the EU average (Table A15.1; Graph A15.1). At the same time, the share of top performers dropped below 5% in reading and science and is now among the lowest levels in the EU, especially in mathematics.

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



Source: OECD (2023).

While the socio-economic gap is smaller than other EU countries, it is widening. The underachievement rates of disadvantaged groups at 46.9% is slightly below the EU average (48.0%). Nevertheless, the socio-economic gap widened by 4.9 pps since 2018, like EU trends. The underachievement rate is also 19 pps higher among foreign-born students (46.5%) than for students without a migrant background (27.4%). The gap is much smaller for native-born students with foreign-born parents (who have an underachievement rate of 34.5%).

The *Plano 21|23 Escola+*, which aimed to compensate for the loss of learning during the pandemic, has been extended until end-2024. The new 23|24 School+ plan, approved in July 2023 ([130]), supports schools to set up and implement their own learning recovery plans in a variety of areas (reading and writing, curricular autonomy, educational resources, assessment and diagnosis, inclusion and well-being, and supporting educational communities). It will apply to all education and training levels.

Students' living area still influence the proportion of people leaving education without completing upper secondary education. In 2023, the rate of early leavers from education and training (ELET) rose compared with 2022 (8.0% vs 6.5%), although still below the EU average (9.5%) and the EU-level target (<9%). Regional disparities in ELET persist and even increased, ranging from over 21.7% ([131]) in the Azores to 6.2% in the North region. ELET rates in rural areas are higher than in cities (9% vs 8%) ([132]), a lower gap than the EU average (0.9 pps vs 1.3 pps).

The teaching force is ageing, and the shortage of teachers is worsening as few young people enter the profession. In 2021, in mainland Portugal, about half of schoolteachers were older than 50 (EU 39.4), while only 2% were under 30 years (EU 7.5%). In addition, the number of higher education graduates in teacher training has declined significantly (from around 5 000 in 2014-2015 to 3 500 in 2020-2021). In 2022, the government authorised higher education institutions to increase the number of teacher training places in courses with a high demand and those corresponding to scarce teaching profiles. There are currently shortages in various teaching subjects, and they are particularly severe in the Lisbon Metropolitan Area and the Algarve.

Measures have been adopted to remedy imbalances in the career progression of teachers. The freezing of public administration careers between 2005-2007 and 2011-2017 due to the economic crisis may have reduced the attractiveness of the teaching profession. During these periods, teachers with permanent

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

([130]) Resolution of the Council of Ministers No. 80-B/2023, 18 July 2023).

([131]) Eurostat: edat_lfse_16.

([132]) Eurostat: edat_lfse_30.

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

				2012		2018		2023	
Indicator			Target	Portugal	EU-27	Portugal	EU-27	Portugal	EU-27
[1]Participation in early childhood education (age 3+)			96%	88.7% [2013]	91.8% [2013]	91.0%	92.2%	90.5% [2021, d]	92.5% [2021,d]
[2]Low-achieving 15-year-olds in:		Reading	< 15%	18.8%	18.0%	20.2%	22.5%	23.1% [2022]	26.2% [2022]
		Mathematics	< 15%	24.9%	22.1%	23.3%	22.9%	29.7% [2022]	29.5% [2022]
		Science	< 15%	19.0%	16.8%	19.6%	22.3%	21.8% [2022]	24.2% [2022]
Early leavers from education and training (age 18-24)	[3]Total		< 9 %	20.5%	12.6%	11.8%	10.5%	8.0%	9.5%
	[3] By gender	Men		26.9%	14.5%	14.7%	12.1%	9.8%	11.3%
		Women		14.0%	10.6%	8.7%	8.7%	6.1%	7.7%
	[4] By degree of urbanisation	Cities		18.9% [b]	11.2%	11.5%	9.4%	8.1%	8.6%
		Rural areas		21.3% [b]	14.0%	14.6%	11.0%	9.0%	9.9%
	[5] By country of birth	Native		20.5%	11.3%	11.7%	9.2%	7.3%	8.2%
		EU-born		: [u]	26.2%	: [u]	22.4%	: [u]	21.0%
		Non EU-born		19.0%	30.1%	13.2%	23.0%	15.4%	21.6%
[6]Socio-economic gap (percentage points)				35.8	:	32.4	29.5	37.2 [2022]	37.2 [2022]
[7]Exposure of VET graduates to work-based learning			≥ 60% (2025)	:	:	:	:	74.1%	64.5%
Tertiary educational attainment (age 25-34)	[8]Total		45%	29.0%	34.1%	35.1%	38.7%	40.9%	43.1%
	[8] By gender	Men		23.5%	29.1%	25.7%	33.3%	34.4%	37.6%
		Women		34.2%	39.2%	44.3%	44.2%	47.4%	48.8%
	[9] By degree of urbanisation	Cities		34.3% [b]	43.5%	39.3%	49.0%	46.2%	53.3%
		Rural areas		21.2% [b]	24.8%	26.0%	27.7%	31.5%	31.7%
	[10] By country of birth	Native		29.6%	35.4%	35.3%	39.7%	41.8%	44.2%
		EU-born		28.0%	29.3%	41.1%	36.7%	48.0%	40.2%
		Non EU-born		22.0%	24.2%	30.2%	31.0%	34.7%	37.1%
[11]Participation in adult learning (age 25-64)			≥ 47% (2025)	:	:	38.0% [2016]	37.4% [2016]	33.4% [2022]	39.5% [2022]
[12]Share of school teachers (ISCED 1-3) who are 55 years or over				15.2% [2013]	22.7% [2013]	25.5%	23.8%	32.0% [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.

contracts (civil servants) worked for several years without their seniority in the service being counted for career progression and pension rights. The Portuguese government tried to remedy this situation with a partial recovery of lost career progression. In 2023, the government approved a decree ([133]) that establishes a special system for remedying imbalances in career progression. The measure is expected to affect approximately 70 000 teachers (around 36% of total teachers in mainland Portugal).

Portugal is rolling out free access to early childhood education and care (ECEC) and the public offer is set to expand. In 2021, 90.5% of children aged 3 and over attended ECEC; this was 2.4 pps less than in 2020 and below the EU average. In 2022, the government set out specific conditions for rolling out free childcare and family day care centres for all children born on or after 1 September 2021 . The scheme aims to cover 100 000 children by 2024 ([134]). Portugal aims to create up to 15 000 new ECEC places by 2026 through the PARES programme ([135]).

The number of tertiary education graduates decreased in 2023 ([136]). In 2023, the tertiary education attainment rate for people aged 25-34 was 40.9% (1.6 pps below 2022), lower than the EU average (43.1%) and drifted away from the EU-level target (45%). There are still significant regional differences in these rates (from 20.2% in the Azores to 46.5% in the Lisbon Metropolitan Area). There are also differences by country of birth (from 36.1% of foreign-born people to 41.8% of native-born people). Nevertheless, more young people are enrolled in

([133]) https://files.diariodarepublica.pt/1s/2023/08/16500/0000200004.pdf

([134]) https://files.dre.pt/1s/2022/07/14400/0001000014.pdf

([135]) https://www.seg-social.pt/programa-de-alargamento-da-rede-de-equipamentos-sociais-pares

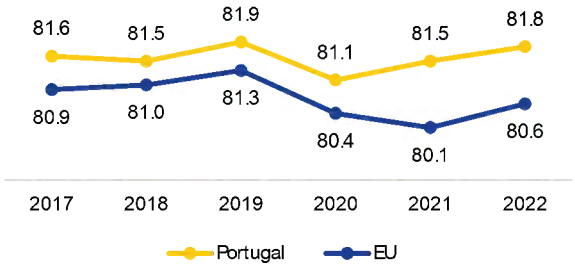
([136]) https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_indicadores&indOcorrCod=0011327&contexto=bd&selTab=tab2

higher education studies. In 2022-2023, students enrolled in higher education institutions reached a total of 446 028.

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 Portugal.

Life expectancy at birth in Portugal has been slightly higher than in the EU overall, and remained so both before and during the COVID-19 pandemic. The onset of the pandemic in 2020 saw a fall in life expectancy in Portugal. It rebounded in 2021 and in 2022 it approached its pre-pandemic level as mortality from COVID-19 declined ([137]). Portugal fares comparatively well in avoiding deaths from treatable causes. In 2021, diseases of the circulatory system ('cardiovascular diseases') and cancer were the leading causes of death, followed by COVID-19.

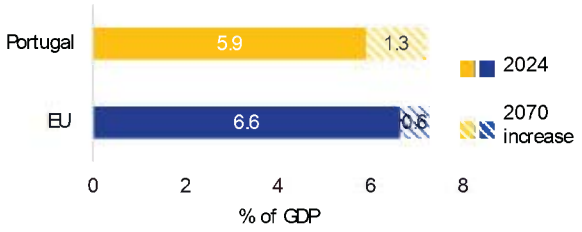
Graph A16.1: **Life expectancy at birth, years**



Source: Eurostat

Health spending relative to GDP in Portugal was slightly above the average across the EU in 2021. Spending per capita on outpatient care is above the EU average, whereas spending on inpatient care, disease prevention, pharmaceuticals and medical devices is below the EU average. In 2021, total healthcare spending increased to 11.1% of GDP. This increase is attributed to higher public spending for COVID-19-related care and also to higher private health expenditure for non-COVID-19-related care. Public spending as a proportion of total health expenditure is comparatively low in Portugal (63.2% in 2021, well below the EU average of 81.1%). This translates into one of the highest proportions of out-of-pocket payments for healthcare in the EU (29%), twice the EU average. Provisional data suggest that in 2022 total healthcare spending fell back to 10.5% of GDP. Based on the age profile of the Portuguese population, public expenditure on health is projected to increase by 1.3 percentage points (pps) of GDP by 2070, compared to 0.6 pps for the EU overall (see Graph 16.2 and Annex 21).

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



Baseline scenario
Source: European Commission / EPC (2024)

In 2021, spending on prevention in Portugal amounted to 3.2% of total spending on healthcare, compared to 6.0% for the EU overall. Between 2019 and 2021, spending on prevention in Portugal increased by around 79%, compared to a 106% increase for the EU overall. Proportionally, budget shares for prevention across the EU increased most for emergency response, disease detection and immunisation programmes.

Portugal faces shortages and an uneven distribution of health professionals, impacting access to health services. Despite the rise in recent years, the number of practising nurses per 1 000 population (7.5 in 2021) remains below the level across the EU. This is partly due to a comparatively low inflow of nursing graduates and to difficulties retaining nurses in the National Health Service (NHS). There are also shortages in other medical specialties (such as gynaecology, obstetrics, mental health, general surgery and general practitioners) and in certain regions, especially in the south. A significant proportion of active doctors (40%) is aged over 55, raising concerns about the long-term accessibility of health services. Portugal has wide income-related disparities regarding unmet needs for medical care. Furthermore, comparatively high unmet needs for medical care are reported in rural areas. This may be linked to the average travelling distance to healthcare facilities in

([137]) 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)	82,9	79,1	79,1	74,5	NA	93.3 (2021)
Cancer mortality per 100 000 population	243,4	244,9	240,5	226,1	NA	235.4 (2021)
Current expenditure on health, % GDP	9,4	9,5	10,6	11,1	10,5	10.9 (2021)
Public share of health expenditure, % of current health expenditure	61,2	60,9	64,3	63,2	NA	81.1 (2021)
Spending on prevention, % of current health expenditure	1,8	1,8	1,9	3,2	NA	6.0 (2021)
Available hospital beds per 100 000 population	344	351	350	351	NA	525 (2021)
Doctors per 1 000 population	5,2	5,3	5,5	5,6	NA	4.1 (2021)*
Nurses per 1 000 population	6,9	7,1	7,3	7,5	NA	7.9 (2021)
Total consumption of antibacterials for systemic use, daily defined dose per 1 000 inhabitants per day ***	19,1	19,3	15,2	15,3	18,8	19.4 (2022)

(1) 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.

these areas, exceeding the average distance reported for the EU. On several occasions in 2023, emergency departments in NHS hospitals struggled to provide a normal service or even had to close down due to lack of staff. Moreover, a shortfall of general practitioners has resulted in decreased coverage of primary care. Between January 2020 and January 2023 the proportion of NHS users not registered with a general practitioner doubled to 15%, corresponding to more than 1.5 million individuals. Specialist services for mental health are also affected by staff shortages, leading to long waiting lists, which are reported as the most frequent barrier to accessing mental health services ([138]). Working conditions for health professionals are a significant issue, with low pay acting as a deterrent and reducing the attractiveness of working in the NHS, in particular for nurses. A significant number of nurses choose to emigrate to countries that offer better pay and conditions. In an attempt to address geographical disparities in the availability of doctors, Portugal announced the launch of 'More Doctors in 2024', a training programme offering salary and housing incentives to medical professionals who choose to practise in hospitals in the less densely populated areas of inland Portugal.

Through its recovery and resilience plan (RRP), Portugal plans to invest EUR 1.719 billion (7.7% of the RRP's total value) in healthcare. The RRP includes a set of mutually supporting reforms and investments aimed at strengthening the NHS's capacity in the fields of primary, mental and long-term healthcare, combined with efficiency-oriented measures to improve the governance, cost-effectiveness, accessibility and quality of public hospital services. Investment is also geared towards digitalising the NHS as a whole, with specific measures targeting the outermost regions of Madeira and the Azores. On mental health, the government has already adopted legislation setting out the principles for organising, managing and evaluating mental health services. A new performance-based management contract template has been introduced for managers in state-owned enterprises in the NHS. Furthermore, a referral mechanism has been set up to direct inappropriate or avoidable cases from emergency services in NHS hospitals to primary healthcare services. Work on digitalising the health system is progressing too, for example in terms of upgrading local information technology networks and implementing telehealth and telemonitoring. Complementary investments are planned under the cohesion policy funds in 2021-2027. Portugal will invest around EUR 316 million, mainly in medical equipment, development and renovation of NHS healthcare facilities, family and community-based care services, and the accessibility of health services in less developed regions ([139]).

([138]) https://europa.eu/eurobarometer/surveys/detail/3032

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

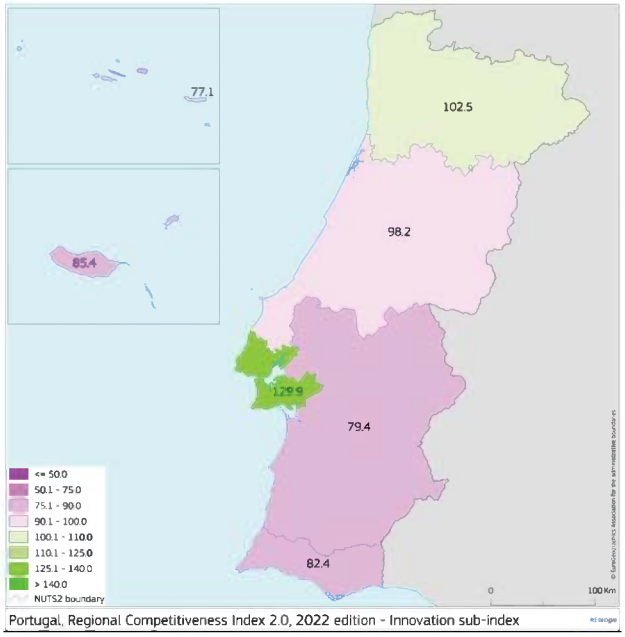
Annex 17 showcases the economic and social regional dynamics in Portugal. It provides an analysis of economic, social and territorial cohesion in the Portuguese regions and assesses emerging investment and subnational reform needs to foster economic growth, social development and competitiveness in the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

Overview of economic and social performance at regional level

Portugal continues to converge with the EU in terms of GDP per capita, but regional disparities remain significant. In 2022, GDP in all regions exceeded the pre-pandemic levels registered in 2019 and the metropolitan area of Lisbon was the only region in Portugal with GDP per capita above the EU average. In 4 out of 7 regions (including Norte, Centro, Azores and Alentejo) GDP per capita was less than 75% of the EU average. As a result of long periods of low growth, productivity and employment between 2001 and 2019, the capital region, Algarve, and Alentejo are in a development trap ([140]).

Disparities in GDP per capita continue to mirror important labour productivity gaps. In 2022, labour productivity in Portugal was 74% of the EU average. It varied between the capital region which had a productivity (gross value added per worker) of 89% of the EU average and other regions. For example, the Azores with 66.5% and Norte with 64.5%, the lowest levels of labour productivity in Portugal. In 2000-2022, regional inequalities in labour productivity decreased and particularly in the second half of the last decade.

Map A17.1: **Portugal, Regional Competitiveness Innovation Sub-Index, 2022 edition**



Source: DG REGIO, JRC

Regional disparities in competitiveness persist, but positive trends in innovation performance show a potential for unlocking new sources of growth in all regions. The capital region remains the most competitive among the Portuguese regions and the only with a score on Regional Competitiveness Index above the EU average ([141]). From 2016 to 2022, all Portuguese regions improved their performance on the Regional Competitiveness Innovation Sub-Index, with the most dynamic changes observed in Norte and Centro. The capital and Norte regions have a score higher than the EU average (respectively 130% and 102.5%) while Centro is close to the average (98%) (Table A17.1). However, the capital and Norte regions are the only Portuguese regions with business R&D expenditure above 1% of GDP. Regional disparities in competitiveness are also related to differences in skilled labour force and labour market efficiency.

Almost all Portuguese regions experienced demographic decline and depopulation. Between 2013 and 2021, the population decreased in almost all Portuguese regions with the sharpest decline in Alentejo, with 8%. The opposite trend was observed in the capital region, where the population grew by 1.7%. The

([140]) European Commission, 2021, Cohesion in Europe towards 2050, 8th report on economic, social and territorial cohesion.

([141]) The Regional Competitiveness Index – 2022.

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

Region name	GDP per head (PPS)	Productivity (GVA (PPS) per person employed)	Real productivity growth	GDP per head growth	Population growth	Natural population change	R&D expenditure in the business enterprise sector (BERD)	Greenhouse Gas Emissions	Greenhouse Gas Emissions	EU Regional Competitiveness Index 2.0 - 2022 edition
	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 annual change per 1000 residents, 2013-2021	Average annual change per 1000 residents, 2013-2021	% of GDP, 2021	tCO2 equivalent per head, 2022	Percent change per head (%), 1990-2022	Index, EU27 = 100, 2022
European Union	100	100.0	0.7	1.44	1.9	-1.0	1.5	8.0		100
Portugal	79	73.9	0.7	1.74	-2.2	-2.7	1.0	5.7	-3	94
Norte	67	64.5	1.3	2.30	-3.2	-2.2	1.2	3.9	12	92.1
Algarve	90	77.6	-0.3	1.79	-2.3	-2.3	0.2	5.2	-2	81.9
Centro (PT)	67	68.0	1.4	1.86	-3.9	-5.6	0.9	8.4	36	89.0
Área Metropolitana de Lisboa	102	89.3	-0.2	1.11	1.7	0.0	1.1	3.4	-16	110.0
Alentejo	73	70.4	0.5	1.36	-8.0	-7.3	0.6	16.8	-28	79.1
Região Autónoma dos Açores	71	66.5	0.3	1.99	-2.5	-0.6	0.1	4.7	8	66.2
Região Autónoma da Madeira	79	73.3	0.5	2.24	-4.0	-3.1	0.2	1.8	44	77.9

Source: Eurostat, EDGAR database

decline and ageing of population have shrunk the working age population, making Alentejo fall into a talent development trap ([142]).

The autonomous and outermost regions of Azores and Madeira continue to face significant challenges due to their specific territorial characteristics. The Azores and Madeira record the lowest values in the country for Regional Competitiveness Index. The population at-risk-of-poverty or social exclusion (AROPE) in these regions were the highest in Portugal, exceeding in both cases 30% in 2022. Similarly, the rate of early leavers from education and training stood at 21.7% in the Azores in 2023 against an average rate in mainland Portugal of 7.6%. Between 2013 and 2021, the decline in population in Madeira was 4% and 2.5% in the Azores. Part of the decline is caused by natural population change, in particular in Madeira (-3.1%), but also by net out-migration in the Azores (-2.2%). In addition, the share of the 25-64 aged population with a tertiary education degree was significantly lower in the Azores (17.2%) and Madeira (23.7%) than in the metropolitan area of Lisbon (39.8%) and the Portuguese average (29.9%) in 2023. The combination of these factors put these regions at risk of falling into a talent development trap.

Portugal is performing relatively well in terms of greenhouse gas emissions, but there are significant regional differences. In 2022, the two regions with CO_2 emissions/person above the EU average were Alentejo (17 tonnes) and Centro (8 tonnes). In 1990-2022, Alentejo reduced CO_2 emissions/person by 28% which was induced by the closure of the coal-fired thermoelectric plant in Sines in January 2021. Despite a closure of coal-fired power plant in Pego in November 2021, which was one of the most emitting facilities in the country, Centro registered a growth in CO_2 emissions/person by 36%.

In the two most densely populated areas, namely Norte and the capital region there are diverging trends. In Norte, the increase in CO_2 emissions is driven partly by the growth of industrial activities, in comparison to the decrease in the capital region, due to the growing importance of the service industries. Both regions are facing a challenge of reducing the level of nitrogen dioxide concentration, as they accounted for the highest level in the country as well as above the EU average.

Investment and subnational reform needs ahead

Boosting knowledge transfer and valorisation of R&D results remains a key investment priority in Portugal. Providing support for applied research and innovation, in the defined areas of smart specialisation, based on tailored mechanisms and policy instruments is particularly relevant. Encouraging collaboration of between all actors of the innovation ecosystem and diffusion of innovation, particularly in SMEs, remains necessary (Annex 11).

At the same time, Portugal could benefit from operationalising the innovation governance structure, in order to ensure synergies between the national and the regional strategies but also the coordination with other public policy instruments. However, the governance model as defined in the national strategy for smart specialisation is not fully

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

operational, yet. There is also a need for further strengthening the capacity of the managing authorities of the 2021-2027 regional programmes responsible for planning, coordinating, implementing and monitoring regional smart specialisation strategies, especially in regions with emergent or less mature innovation ecosystems. Ensuring a sound multi-level governance of innovation policy will allow fully exploiting opportunities for the future economy and increasing the competitiveness the regions.

Along with reindustrialisation and regional competitiveness efforts, energy-efficiency investments remain important to build up resilience to changes in energy prices. There are major investments needs to upgrade the energy performance of the Portuguese building stock, namely through renovation of public buildings, affordable social housing, and the incorporation of carbon-free technologies and productive processes at the level of private beneficiaries. Portugal could benefit from wider use of financial instruments to leverage private investment on energy efficiency, in addition to grant-schemes to tackle energy poverty and social housing renovations. Renewable energy investments should complement these measures. Portugal could also benefit from the opportunities of the Strategic Technologies for Europe Platform (STEP) initiative to boost investments in critical technologies.

In parallel to these investments, boosting the technical and administrative capacity, especially at regional and local level, to develop and implement energy efficiency measures remains key. The local and regional authorities should assume a pivotal role in the design, execution, and evaluation of such interventions. Improving the capacity is required, especially in regions which faced significant challenges in the implementation of energy efficiency measures during the 2014-2020 programming period. This will allow to tailor solutions to the unique characteristics of the respective territories and maximise the benefits of energy efficiency investments.

Despite progress in recent years in water management and climate change adaptation, further investments in relevant infrastructure are needed. Portugal ranks near the EU average in terms of population connected to water supply and sanitation, but there are significant regional differences. Alentejo, Algarve and Madeira face common challenges in water supply due to irregular rainfall patterns and frequent droughts. Investments are needed in wastewater collection and treatment, water reuse, reduction of leaks in the networks, general water supply and improving monitoring.

Further mechanisms should be considered to encourage consolidation of water and sanitation service providers and streamlining the governance structure. This would help to achieve effective coordination at the subnational level between a vast number of water and sanitation entities, economies of scale and would improve efficiency.

Reinforcing investments would promote the transition towards a circular economy. Portugal shows slow progress in improving the circular material use and continued to perform significantly below the EU average. In 2012-2022, it recorded only marginal increase of the 'circularity rate' from 2% to 2.6%; however, this rate continued to be well below the EU average of 11.5%.

Improving technical capacity and expertise would enable to improve the impact of the circular economy investments. Developing the capacity of local and regional actors responsible for the design and implementation of circular economy related investments, especially in urban and industrial areas is important for effective investment.

Decarbonising urban mobility and transport plays a key role in fighting climate change. The transport sector was responsible for 28% of all emissions and 34% of the total energy consumption in Portugal in 2021 ([143]). Making railway transport more attractive and supporting sustainable urban mobility, in particular in the metropolitan areas, including by increasing the costs of less environmentally friendly modes, will maximise transport decarbonisation benefits, ensuring that investments have the highest return.

Delivering on the railway network investments remains a priority. Portugal has throughout several multiannual financial frameworks highlighted its intention to invest in

([143]) 2023 national energy and climate plan.

railways, mostly through the electrification and renewal of lines. Most of these investments have encountered varied problems to be completed by their expected dates. There is a need to improve the overall context in which these projects are carried out, from conception to delivery. This requires a thorough assessment to determine constraints and the reforms needed to speed up the delivery rates of railway projects. Some of the aspects that need to be improved include transport planning capacity, with further integration with policy-wide objectives (such as climate, environment, energy, time-losses, safety, land-use, etc.), opening up and increasing effective public participation in investment decisions, ensuring financial autonomy of all public transport enterprises, and making public procurement procedures more flexible.

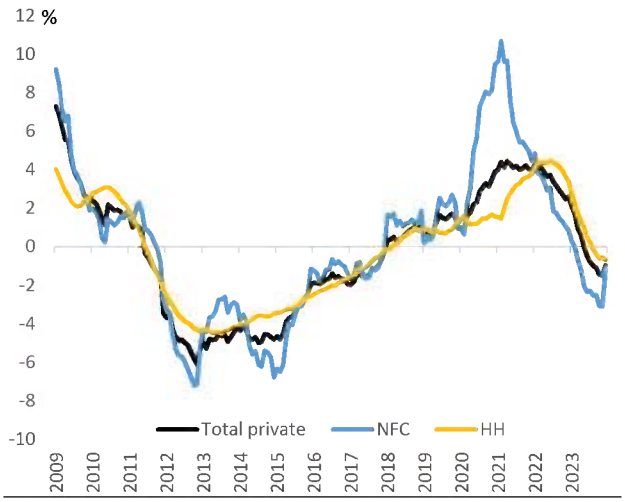
The investments should be coupled with support for upskilling labour reserves. This will allow to increase employment rates and foster social inclusion, thus also supporting fair green and digital transitions. Strengthening education and training and active labour market policies will help address skills' deficits and labour shortages, while raising productivity levels against a rapidly ageing workforce (Annex 15).

The new and reinforced multi-level governance model needs to become a catalysis of cross-sector and strategic approach to regional development. In the context of the ongoing process of State reform towards decentralisation that was initiated in 2008, Portugal took a decision in December 2022 to devolve some of the services of the Central Public Administration to the Commissions for Coordination and Regional Development (CCDRs), which will be implemented through a change to their organisational structures, redefinition of missions and tasks. The CCDRs will, at least, double their size both in terms of the number of civil servants and internal units. The new set of competences include, notably, the reinforcement of planning and coordination function, which is expanded for planning and implementation of new policy areas such as agriculture, biodiversity culture, education, health, education, and territorial planning. The challenges that need to be addressed are related to the capacity-building of the CCDRs and their bodies, considering the new institutional set-up as well as the new competences. Moreover, it will be of utmost importance to ensure regulatory coherence from a multi-level perspective, covering regulatory frameworks of central, regional, and local bodies, to overcome constraints that undermine the development of economic activities and attracting investment.

Portuguese banks continue to strengthen their resilience. Geopolitical concerns continue to heighten uncertainty, while monetary policy normalisation is gradually affecting the economy. This in turn is creating a set of risks to financial stability and vulnerabilities in the financial sector. Despite the more adverse macro-financial background, Portuguese banks continue to strengthen their capital levels (capital adequacy stood at 19% in Q3 2023) and de-risk their balance sheets. The composition of Portugal's banking sector has not noticeably changed since 2017 as there has not been any major M&A activity. The lending market is already highly consolidated overall, with the five largest banks accounting for about three quarters of banking-sector assets. Key foreign investors include major players from Spain, and local lenders themselves have a significant international presence, mainly across several jurisdictions in Africa. The Portuguese banking sector is smaller than the EU average, with assets equivalent to around 1.6 times the country's economic output. The state has a substantial presence in the banking industry as it owns the country's largest credit institution.

Higher interest rates continue to lift banks' profitability. Local banks have returned to healthy recurring profitability levels. The major efforts the entire sector undertook a decade ago to start improving operational efficiency are now paying off. Banks are leaner (in terms of branches and staff numbers) and more efficient than most of their European peers. The cost-to-income ratio remains below 50% margin since 2022 with a relevant drop in 2023 (from 48,8% in 2022 to 36,5% in 2023).. Like in the rest of the European banking system, the rise in short-term interest rates, which began in 2022, has substantially boosted banks' net interest margins (NIM) and net interest income (NII). Given the prevalence of variable-interest-rate loans throughout economy (and in particular within the mortgages segment, with 85% of all housing loans contracted at variable rates), the tightening of monetary policy had a positive and rapid impact on NII. This was mainly due to the faster pass-through of market interest rates to borrowers than to deposit interest rates, but also because of the limited relevance of market funding for local lenders. In 2023, NII was the main driver behind the double-digit returns generated by the banking system (Q3-2023 return on equity reached 13.3% against a European average of 10.2%). With most loans already repriced at higher interest rates, the NIM expansion process has reached its high point but kept stable still. However, given the higher-interest-rate environment and the abundant retail deposits that comfortably cover lenders' funding needs, the operating performance of local banks should remain relatively strong into the future. This will also allow banks to continue strengthening their capital ratios (at 19% CAR in mid-2023) and enable them to swiftly deal with non-performing loans (NPLs).

Graph A18.1: **Credit growth**



Source: ECB

The issuance of new credit has continued to slow. The loan-to-deposit ratio stood at 72.3% in mid-2023, indicating that lenders have further deleveraged their balance sheets. The rising interest rates have reduced demand for credit in both the corporate and household segments. The flow of new lending to the non-financial private sector has been negative on a year-on-year basis since mid-2023. Local firms cite high interest rates and reduced investment needs as the primary factors behind lower loan demand (according to the Portuguese Central Bank's lending survey). In an environment characterised by heightened uncertainty and lower consumer confidence, households have also become more cautious about taking on new borrowing commitments. In particular, demand for new mortgages declined significantly (by over 20%) over the first three quarters of 2023.

Concerns persist over soaring real-estate prices. Strong demand by foreign investors,

continued housing shortages, and a decade of low interest rates have propelled local real-estate prices to unprecedented levels. Portuguese residential real estate has never been as expensive as it is today, in particular in some of the major cities. In parallel, loans for house purchases that are backed by real estate constitute a significant portion of banks' loan portfolios – 75% of the loan book to private individuals and 26% of total banks' assets (as of December 2023) ([144]). The potential risks of housing-price corrections ([145]) are therefore an important consideration for local lenders. Similarly, a possible uptick in mortgagor defaults due to rising unemployment could expose banks to substantial losses. These risks related to real estate were recognised by the central bank in a recent decision to activate a new 4% sectoral systemic risk buffer (sSyRB) for banks using the internal ratings-based approach. This measure targets retail loans secured by residential properties in Portugal and aims to increase banks' resilience against potential economic downturns or unexpected declines in residential real-estate prices. The measure complements the already-existing borrower-based measures ([146]) introduced in 2018. These borrower-based measures include limits on the loan-to-value ratio, on the debt-service-to-income ratio, and on loan maturities. Furthermore, mortgage credit saw a year-on-year decline of 1.2% in November 2023, and this declining trend is likely to continue in the coming months exerting some downward pressure on housing prices.

In spite of headwinds, asset-quality erosion has been manageable so far. The rapid increase in interest rates has not led to asset-quality issues on the banks' balance sheets. Overall, both households and firms have managed well the rise in their credit repayments. The NPL ratio rose to 3.1% in mid-2023, just 10 bps higher than the level at the end of 2022, and Stage 2 loans (i.e. loans which featured a significant increase in credit risk) have been quite stable throughout the past year, with a small increase in the household segment. The key factors behind the steady quality of the balance sheet are: (i) relatively dynamic economic activity; and (ii) the robust job market. Additionally, government measures, and bank solutions that align loan repayments/instalments with borrowers' payment capacity have also helped to keep credit risk under control. Nevertheless, credit-quality trends need to be monitored closely, particularly for: (i) more vulnerable borrowers with variable interest rates; and (ii) non-financial corporations in sectors that were more structurally impacted by the COVID-19 pandemic.

Banks are continuing on their journey towards climate transition and increased digitalisation. Understanding the challenges and opportunities arising from the growing digitalisation of financial activities and the ongoing climate transition is of paramount importance. As emphasised by the Portuguese Central Bank, Portuguese banks need to tackle the implications of relying increasingly on digital platforms and artificial intelligence tools and therefore bolster their operational resilience and management of cyber incidents. Furthermore, the Portuguese Central Bank's first annual report on the banking sector's exposure to climate risk ([147]) has analysed the impact of climate-related risks on the Portuguese banking system. The report highlights that banks are especially exposed to areas at medium to severe risk for droughts, extreme heat and wildfires, with over 90% of total bank credit directed to such regions. Additionally, firms in flood-prone areas account for 38% of total credit, while exposure to risks related to sea-level rise or hurricanes is low.

Despite facing profitability challenges in 2023, insurance companies maintain robust solvency levels. The local insurance market is less developed in terms of insurance density and insurance penetration than some larger and more mature European markets. Nevertheless, the product offering is quite comprehensive. In the life sector, there was a notable decline in gross written premiums from Q2-2022 to Q2-2023, likely influenced by a reduction in consumers' real purchasing power due to inflation. Conversely, claims incurred from life-insurance products also increased significantly as inflation persisted in Portugal. Overall, insurance companies in Portugal still exhibit a solid solvency profile, showing a slight

([144]) Banco de Portugal.

([145]) Banco de Portugal macroprudential measures.

([146]) Banco de Portugal Behavioral Supervision Recommendation

([147]) Banco de Portugal, 2023, *Annual Report on the Banking Sector's Exposure to Climate Risk* (bportugal.pt).

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

	2017	2018	2019	2020	2021	2022	2023	EU	Median
Total assets of the banking sector (% of GDP)	200.8	190.8	181.2	206.3	203.0	178.0	161.0	257.0	184.6
Share (total assets) of the five largest banks (%)	73.1	73.0	73.3	73.6	73.9	72.2	-	-	69.6
Share (total assets) of domestic credit institutions (%)[1]	69.7	68.3	68.4	68.5	69.3	68.5	68.6	-	62.9
NFC credit growth (year-on-year % change)	-0.3	1.8	0.9	9.5	4.5	0.8	-1.2	-	2.4
HH credit growth (year-on-year % change)	-0.2	0.9	1.2	1.6	3.8	3.4	-0.7	-	1.4
Financial soundness indicators:[1]									
- non-performing loans (% of total loans)	13.3	9.4	6.1	4.9	3.6	3.0	2.9	1.8	1.8
- capital adequacy ratio (%)	15.2	15.2	16.7	18.1	18.0	18.1	18.9	19.6	20.1
- return on equity (%)[2]	-0.8	2.7	4.3	0.0	4.9	8.7	14.1	9.9	13.2
Cost-to-income ratio (%)[1]	52.9	60.2	59.2	56.0	51.6	48.8	36.5	52.8	44.9
Loan-to-deposit ratio (%)[1]	78.9	76.2	76.4	72.1	68.9	71.8	73.2	93.3	80.2
Central bank liquidity as % of liabilities	6.9	5.8	5.3	9.2	11.0	4.3	0.9	-	0.7
Private sector debt (% of GDP)	163.0	155.1	149.5	163.7	156.6	141.1	-	133.0	118.4
Long-term interest rate spread versus Bund (basis points)	273.5	144.2	100.9	92.5	66.9	102.8	80.4	107.7	104.2
Market funding ratio (%)	42.8	43.7	45.2	45.8	45.9	46.4	-	50.8	39.8
Green bonds outstanding to all bonds (%)[3]	-	-	-	1.1	1.9	2.2	2.5	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 are annualised
(3) Data available for EA countries only, EU average refers to EA area
Source: ECB, Eurostat

improvement in recent quarters, although it remains below the solvency levels reached 2 years ago. Moreover, it is worth noting that, as indicated by the EIOPA, Portugal has a considerable insurance-protection gap against natural catastrophes based on EU standards ([148]). This can be attributed to elevated hazard levels, particularly for wildfires, and a remarkably underdeveloped insurance sector.

([148]) EIOPA, Dashboard on insurance protection gap for natural catastrophes

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

The tax burden in Portugal remains below the EU average, despite recent increases. In 2022, tax revenues in Portugal increased by 0.8 pps and reached 36.0% of GDP, following an upward trend since 2019 that could have been halted in 2023 (35.8% of GDP, Table A19.1). The gap with the EU aggregate reached 4.2 pps in 2022. The increase in tax revenues in 2022 was largely due to an increase in receipts from capital taxes (from 6.5% of GDP to 7.4%) and, within them, from corporate income taxes (from 2.4% to 3.3% of GDP), helped by the increase in businesses' profits on the back of the economic recovery and high inflation. The effective average tax rate of corporate income tax in Portugal remained comparatively high in 2022 (28.4%, 9.4 pps above the EU average). In terms of tax mix (Graph A19.1), the share of revenues from labour taxes is relatively low in Portugal (44.2% of the total, against 50.6% in the EU) due to a comparatively low level of wages. By contrast, at 35.2%, revenue share from consumption taxes is well above the EU aggregate (27.3%).

Extraordinary measures adopted to contain inflation pushed down revenues from environmental taxes in 2022. The decrease from 2.3% to 1.9% of GDP was roughly in line with the EU aggregate. In particular, the reductions in the fuel tax and the carbon rate under the fuel tax introduced in 2021 are still in force. The limited size of pollution and resources taxes (less than 2% of revenues from environmental taxes) suggests potential to strengthen the application of the 'polluter pays' principle and scope to implement some types of taxes such as on NOx emissions, waste loadings to water, fertilisers and pesticides.

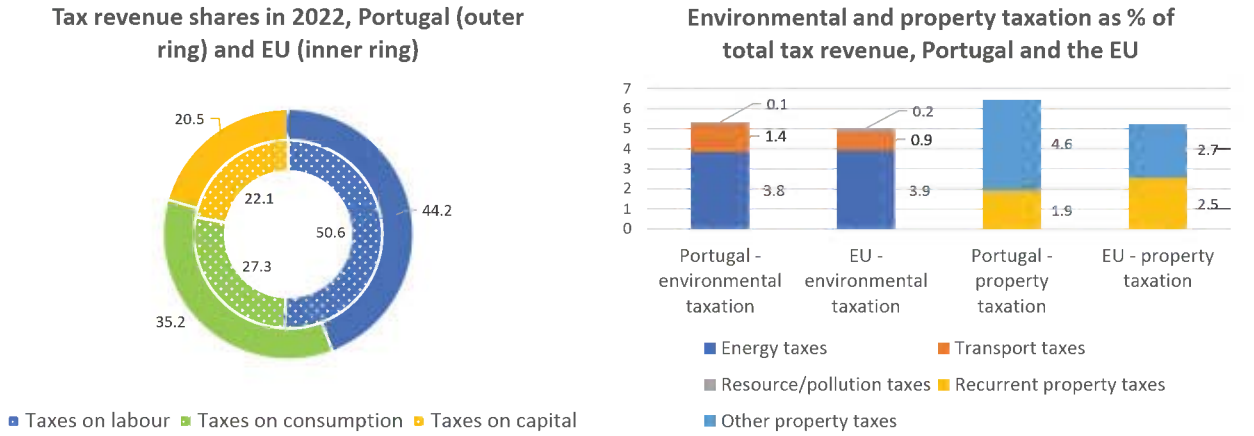
The planned reform to reduce the number of tax benefits could help to bring the tax burden in Portugal closer to the EU average. As part of the Addendum to the RRP, Portugal is expected to revise the legal framework of a substantial set of tax benefits by 2026. The simplification of the system and the reduction in the number of tax benefits shall be done on the grounds of a technical assessment carried out by the newly created 'U-TAX' tax policy unit. This reform is expected to curtail the associated forgoing of revenue and to strengthen the cost-efficiency of the remaining tax benefits. In 2021, the VAT policy gap in Portugal continued to be well above the EU average (52.2% of notional ideal revenue), a reflection of the many existing

Table A19.1: **Taxation indicators**

		Portugal					EU-27				
		2010	2020	2021	2022	2023	2010	2020	2021	2022	2023
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	30.4	35.2	35.2	36.0	35.8	37.9	40.0	40.4	40.2	
	Labour taxes (as % of GDP)	12.6	16.3	16.1	15.9		20.0	21.3	20.7	20.3	
	Consumption taxes (as % of GDP)	11.4	12.1	12.6	12.7		10.8	10.7	11.2	11.0	
	Capital taxes (as % of GDP)	6.4	6.7	6.5	7.4		7.1	8.0	8.6	8.9	
	Of which, on income of corporations (as % of GDP)	2.7	2.8	2.4	3.3		2.4	2.5	3.0	3.4	
	Total property taxes (as % of GDP)	1.7	2.3	2.4	2.3		1.9	2.3	2.2	2.1	
	Recurrent taxes on immovable property (as % of GDP)	0.6	0.8	0.7	0.7		1.1	1.2	1.1	1.0	
	Environmental taxes as % of GDP	2.4	2.4	2.3	1.9		2.4	2.2	2.3	2.0	
Progressivity & fairness	Tax wedge at 50% of average wage (Single person) (*)	28.1	28.1	35.2	35.4	35.9	33.9	31.7	32.1	31.8	31.7
	Tax wedge at 100% of average wage (Single person) (*)	37.1	41.5	42.0	42.1	42.3	41.0	40.1	39.9	40.0	40.2
	Corporate income tax - effective average tax rates (1) (*)		28.4	28.4	28.4			19.5	19.0	19.0	
	Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*)	8.4	8.5	8.4	8.3		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 %) (*)		45.9	45.6				40.9	35.5		
	VAT Gap (% of VAT total tax liability, VTTL)(**)	12.9	7.0	3.6				9.7	5.4		

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

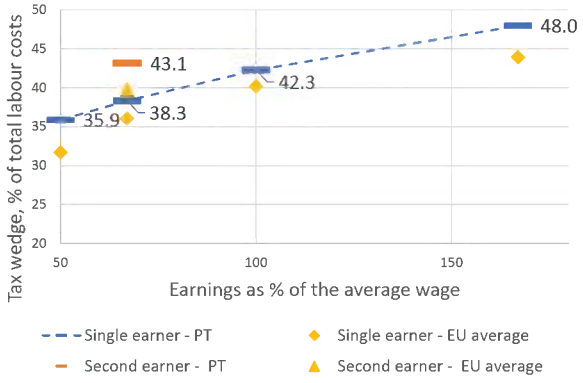
Graph A19.1: **Tax revenues from different tax types as % of total taxation**



Values for EU are GDP-weighted EU averages (EU aggregates).
Source: European Commission

VAT tax benefits (i.e. reduced rates and exemptions).

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

Portugal's labour tax wedge reflects a progressivity that is in line with the EU average. Graph A19.2 shows that the labour tax wedge for Portugal in 2023 was considerably higher than the EU average not only for single people at the average wage, but also for low-income earners at 50% and 67% of the average wage and high-income earners at 167% of the average wage. Second earners at a wage level of 67% of the average wage, whose spouses earn the average wage, were subject to a tax wedge that was significantly higher than the EU average, too. In addition, the tax wedge for second earners in Portugal was clearly higher than the one for single persons at the same wage level. Portugal's system of tax benefits under personal income tax helped reduce inequality (as measured by the difference in GINI coefficients before and after taxes and benefits, see Table A19.1) by more than the EU average in 2022.

Effectiveness of tax collection showed mixed results in 2021. Outstanding tax arrears remained very high at the end of 2021 (45.6% of total revenues), so did not reflect the gradual return to pre-COVID-19 values observed in many other Member States. The VAT compliance gap improved further in 2021 (Table A19.1), in line with a majority of EU countries that also saw a reduction of the compliance gap which was at least partly due to the COVID-19-induced economic crisis. As regards corporate income tax, its complex structure, with state and municipal surcharges, limits tax collection effectiveness.

The relatively old age of the tax administration's staff remains a challenge. Portugal's tax administration has one of the most aged profiles in the world (53.2% of its staff are older than 54 and only 0.8% have fewer than 5 years of service). The lack of replacement of the staff and the retirement of half of them over the coming decade are problematic for the effectiveness of the tax administration. In order to partly address this challenge, Portugal has developed a strategy for digital transformation of the tax administration, but further action is pending in order to adapt the governance structures, skills management and the digital culture among staff to the challenges of digitalising the tax administration. The ongoing implementation of different measures within the

context of the RRP (such as digitalisation of all processes related to rural property taxation, digitalisation of social security services and creation of specialised chambers in the tax superior courts) is expected to improve the performance of Portugal's tax administration.

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)	1.7	-1.4	0.7	5.7	6.8	2.3	1.7	1.9
Potential growth (y-o-y)	.	-0.4	1.1	2.1	1.9	2.1	2.2	2.2
Private consumption (y-o-y)	2.0	-1.6	1.1	4.7	5.6	1.7	1.8	1.9
Public consumption (y-o-y)	1.4	-1.1	0.6	4.5	1.4	1.0	2.1	1.2
Gross fixed capital formation (y-o-y)	0.6	-7.7	4.4	8.1	3.0	2.5	3.9	3.7
Exports of goods and services (y-o-y)	5.6	1.5	1.5	12.3	17.4	4.1	2.8	2.5
Imports of goods and services (y-o-y)	5.7	-2.6	3.7	12.2	11.1	2.2	4.1	3.2
Contribution to GDP growth:								
Domestic demand (y-o-y)	1.8	-2.8	1.5	5.4	4.4	1.8	2.2	2.1
Inventories (y-o-y)	0.3	-0.1	0.0	0.6	0.1	-0.3	0.0	0.0
Net exports (y-o-y)	-0.4	1.5	-0.8	-0.2	2.3	0.9	-0.6	-0.3
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	.	-1.1	0.4	0.5	0.3	0.7	0.8	0.7
Capital accumulation (y-o-y)	.	0.3	-0.1	0.1	0.1	0.1	0.2	0.2
Total factor productivity (y-o-y)	.	0.4	0.7	1.5	1.6	1.4	1.3	1.2
Output gap	-0.9	-1.6	-1.0	-3.4	1.3	1.4	0.9	0.6
Unemployment rate	8.9	12.6	9.9	6.7	6.2	6.5	6.5	6.4
GDP deflator (y-o-y)	3.0	0.6	1.6	1.9	5.0	7.1	2.6	2.1
Harmonised index of consumer prices (HICP, y-o-y)	2.5	1.9	0.6	0.9	8.1	5.3	2.3	1.9
HICP excluding energy and unprocessed food (y-o-y)	2.2	1.4	0.6	0.3	6.2	6.3	2.5	2.1
Nominal compensation per employee (y-o-y)	3.3	0.4	1.7	5.1	5.7	8.1	3.3	2.8
Labour productivity (real, hours worked, y-o-y)	1.7	1.1	0.2	3.0	3.1	1.1	0.2	0.1
Unit labour costs (ULC, whole economy, y-o-y)	1.4	-0.2	2.3	1.3	0.5	6.6	2.6	1.8
Real unit labour costs (y-o-y)	-1.5	-0.8	0.7	-0.6	-4.3	-0.5	0.0	-0.3
Real effective exchange rate (ULC, y-o-y)	-0.2	-1.9	0.7	1.0	-2.7	0.1	-1.6	-0.5
Real effective exchange rate (HICP, y-o-y)	0.6	-0.5	-0.2	-1.6	-1.4	0.9	.	.
Net savings rate of households (net saving as percentage of net disposable income)	1.8	1.5	-1.2	0.4	-4.9	-5.0	.	.
Private credit flow, consolidated (% of GDP)	13.8	4.4	0.1	4.5	3.5	0.9	.	.
Private sector debt, consolidated (% of GDP)	173.6	203.4	167.1	156.6	141.8	130.3	.	.
of which household debt, consolidated (% of GDP)	81.5	90.6	71.3	66.3	60.9	55.2	.	.
of which non-financial corporate debt, consolidated (% of GDP)	92.1	112.8	95.8	90.3	80.9	75.1	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (1)	1.2	4.1	10.0	3.0	2.5	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	-4.5	-1.7	1.8	-0.4	-0.7	0.5	0.5	0.4
Corporations, gross operating surplus (% of GDP)	19.8	20.9	21.6	19.4	20.9	21.9	22.3	22.4
Households, net lending (+) or net borrowing (-) (% of GDP)	1.3	3.0	2.5	3.9	0.6	1.0	1.2	0.9
Deflated house price index (y-o-y)	-1.6	-2.9	6.5	7.3	4.8	3.0	.	.
Residential investment (% of GDP)	5.7	3.7	2.9	3.9	3.9	3.7	.	.
Current account balance (% of GDP), balance of payments	-9.4	-8.0	0.4	-0.8	-1.1	1.4	1.0	0.8
Trade balance (% of GDP), balance of payments	-7.8	-5.4	0.7	-2.6	-1.9	1.2	.	.
Terms of trade of goods and services (y-o-y)	-0.1	0.0	0.9	-1.0	-3.6	4.8	0.3	0.3
Capital account balance (% of GDP)	1.4	1.5	1.0	1.7	0.9	1.4	.	.
Net international investment position (% of GDP)	-77.1	-107.8	-110.6	-94.4	-83.6	-72.5	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2)	-44.3	-71.3	-60.2	-36.3	-29.6	-20.2	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (2)	175.7	213.4	186.3	169.4	147.8	133.6	.	.
Export performance vs. advanced countries (% change over 5 years)	.	.	3.8	-2.1	1.4	5.7	.	.
Export market share, goods and services (y-o-y)	-2.4	-3.7	-0.2	-0.4	7.3	3.0	-0.6	-1.1
Net FDI flows (% of GDP)	0.6	-2.4	-2.8	-3.4	-2.3	-1.3	.	.
General government balance (% of GDP)	-4.8	-7.8	-3.2	-2.9	-0.3	1.2	0.4	0.5
Structural budget balance (% of GDP)	.	.	-1.5	-1.4	-0.9	0.9	0.0	0.2
General government gross debt (% of GDP)	71.4	101.4	127.8	124.5	112.4	99.1	95.6	91.5

(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 Portugal 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) ([149]). Government gross financing needs are expected to decrease and stabilise at around to 5% of GDP on average over 2024-2025 (Table A21.1, Table 1). Financial markets' perceptions of sovereign risk are investment grade, as confirmed by main rating agencies.

2 – Medium-term fiscal sustainability risks appear high.

The DSA baseline shows that the government debt ratio is expected to decline but remain at a high level in the medium term (at 77% of GDP in 2034) (Graph 1, Table 1) ([150]).Debt reduction is supported by the assumed structural primary surplus (excluding changes in cost of ageing) of 2.2% of GDP as of 2024. This appears fairly ambitious compared to past fiscal performance (Table A21.2) ([151]). The debt decline also benefits from a still favourable but declining snowball effect, notably thanks to is supported by the impact of Next Generation EU. Finally, government gross financing needs are expected to slightly increase by the end of the projection period in 2034 around 7% of GDP, above the average over 2024-2025.

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). For Portugal, all the stress tests scenarios would lead to higher debt ratios in 2034 compared to the baseline, with particularly adverse developments under the *historical structural primary balance (SPB) scenario* (i.e. the SPB returns to its historical 15-year average of 0.5% of GDP). Under this stress scenario, the debt ratio would be higher than under the baseline by about 13 pps. of GDP in 2034. Under the *adverse interest-growth rate differential scenario* (i.e. the *interest-growth rate* deteriorates by 1 pp. compared with the baseline), the debt ratio would be higher than under the baseline by around 7 pps. of GDP in 2034. A similar adverse impact on the debt ratio (about 5 pps) is projected for 2034 under the *lower structural primary balance scenario* (i.e. the projected cumulative improvement in the SPB over 2023-2024 is halved). The smaller adverse impact is projected under the *financial stress scenario* (i.e. interest rates temporarily increase by 1.1 pps. compared with the baseline) with debt ratio that would be higher by only around 1 pp. in 2034.

The stochastic projections indicate medium risk, pointing to the moderate sensitivity of these projections to plausible unforeseen events ([152]). These stochastic simulations indicate a 20% probability that the debt ratio will be higher in 2028 than in 2023, implying medium risks given the current high debt level. In addition, the uncertainty surrounding the baseline debt projections is high (as measured

([149]) The So 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.

([150]) The assumptions underlying the Commission's 'no-fiscal policy change' baseline include in particular: (i) a structural primary surplus, before changes in ageing costs, of 2.2% of GDP from 2024 onwards; (ii) inflation converging linearly towards the 10-year forward inflation-linked swap rate 10 years ahead (which refers to the 10-year inflation expectations 10 years ahead); (iii) the nominal short- and long-term interest rates on new and rolled over debt converging linearly from current values to market-based forward nominal rates by T+10; (iv) real GDP growth rates from the Commission 2024 spring forecast, followed by the EPC/OGWG 'T+10 methodology projections between T+3 and T+10 (average of 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).

([151]) 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 2022.

([152]) 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.

by the difference between the 10th and 90th debt distribution percentiles, reaching around 46 pps of GDP in five years' time) (Graph 2).

3 – Long-term fiscal sustainability risks appear overall low. This assessment is based on the combination of two fiscal gap indicators, capturing the required fiscal effort to stabilise debt (S2 indicator) and bring to 60% of GDP (S1 indicator) over the long term ([153]). This assessment is mainly driven by the favourable initial budgetary position, partly offsetting the projected increase in ageing costs.. Hence, these results are conditional on the country maintaining a sizeable SPB over the long term, and duly implementing legislated pension reforms.

The S2 indicator points to low fiscal sustainability risks. The indicator shows that, relative to the baseline, the SPB could relax its fiscal position by 1.5 pps. of GDP and still ensure debt stabilisation over the long term. This result is underpinned by the favourable initial budgetary position (contribution of -1.7 pps. of GDP), partly offset the increase in the projected ageing-related public spending (0.2 pp.). Ageing costs' developments are primarily driven by a projected increase in health-care and long-term care spending (+1.6 pps. of GDP), which is partly offset by a projected decrease in public pension expenditure (-1.5 pps.) (Table A21.1, Table 2).

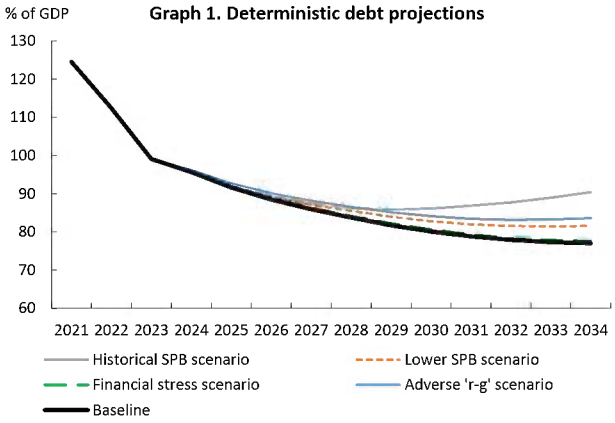
The S1 indicator points to low fiscal sustainability risks. The indicator shows that the country only need to improve its fiscal position by 0.4 pp. of GDP in 2025 and still ensure that the debt ratio will not exceed 60% of GDP in 2070. This result is mainly driven by the favourable initial budgetary position (contribution of -2.2 pps.), which is partially offset by the projected increase in age-related public spending (1.9 pps.) and the debt requirement (0.7 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 country-specific factors as the ongoing requests for a financial rebalancing of PPPs and vulnerabilities in some public corporations, and Portugal's negative net international investment position. On the other hand, risk-mitigating factors include Portugal's comfortable cash buffer, the maturity structure of its debt , most of which with fixed rates, relatively stable financing sources (with a diversified and large investor base) and the large share of debt denominated in euro. Portugal's debt management strategy targeting the smoothening of the debt redemption profile also contributes to mitigate risks.

([153]) The S2 fiscal sustainability indicator measures the permanent SPB adjustment in 2025 that would be required to stabilise public debt in the long term. It is complemented by the S1 indicator, which measures the permanent SPB adjustment in 2025 to bring the debt ratio to 60% by 2070. 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 - Portugal**

Table 1. Baseline debt projections	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Gross debt ratio (% of GDP)	**124.5**	**112.4**	**99.1**	**95.6**	**91.6**	**88.5**	**86.0**	**83.7**	**81.7**	**80.1**	**78.8**	**77.9**	**77.3**	**77.0**
Changes in the ratio	-10.3	-12.1	-13.3	-3.5	-4.0	-3.2	-2.5	-2.2	-2.0	-1.6	-1.3	-0.9	-0.6	-0.3
of which														
Primary deficit	0.5	-1.6	-3.4	-2.6	-2.4	-2.2	-1.9	-1.6	-1.4	-1.2	-0.9	-0.6	-0.4	-0.2
Snowball effect	-7.3	-11.6	-7.6	-2.0	-1.7	-1.0	-0.7	-0.6	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1
Stock-flow adjustments	-3.5	1.1	-2.3	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross financing needs (% of GDP)	12.1	10.7	4.0	5.4	5.1	5.5	5.7	5.7	5.6	5.2	7.5	7.5	7.3	6.6



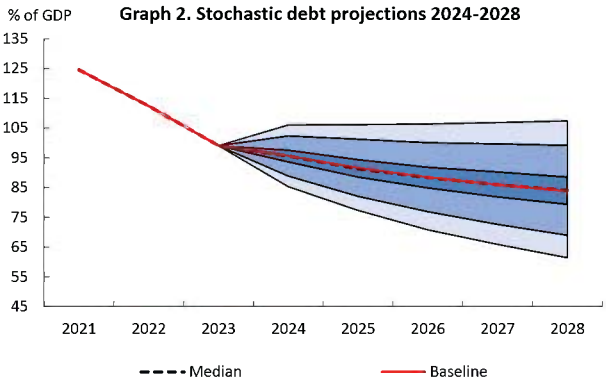


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

		S1	**S2**
Overall index (pps. of GDP)		**0.4**	**-1.5**
of which			
Initial budgetary position		-2.2	-1.7
Debt requirement		0.7	
Ageing costs		1.9	0.2
of which	*Pensions*	0.6	-1.5
	Health care	1.0	1.2
	Long-term care	0.3	0.4
	Education	0.0	0.1

Source: European Commission services.

Table A21.2: **Heatmap of fiscal sustainability - Portugal**

Short term	Medium term - Debt sustainability analysis (DSA)							Long term		
Overall (S0)	Overall		Deterministic scenarios				Stochastic projections			Overall (S1 + S2)
			Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress			
LOW	HIGH	Overall	MEDIUM		MEDIUM	MEDIUM	MEDIUM	MEDIUM			
		Debt level (2034), % GDP	77.0		81.6	83.6	77.6			
		Debt peak year	2024	2024	2024	2024	2024			
		Fiscal consolidation space	19%	45%	27%	19%	19%			
		Probability of debt ratio exceeding in 2028 its 2023 level						20%		
		Difference between 90th and 10th percentiles (pps. GDP)								

(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 Sustainability Monitor)
Source: European Commission services.