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

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European Commission

Spain

2024 Country Report

#EURO at25

ECONOMIC AND EMPLOYMENT SNAPSHOT

Spain's economy remained resilient despite a more demanding environment

The economy weathered external headwinds relatively well in 2023 ([1]). Real GDP expanded by 2.5% overall last year against the uncertain geopolitical environment and the impact of tightened monetary policy. The strong growth outturn was underpinned by the positive labour market developments sustaining consumer spending, and by the positive contribution from net exports and government spending (see Graph 1.1. and Annex 20). In turn, overall investment growth remained relatively subdued despite support from EU funds and the negative gap in the country's ratio to GDP further widened compared to the EU (see Graph 1.2.). Against a background of higher interest rates and contraction in lending activity, the banking sector remained resilient and non-performing loans ratios continued to decline (see Annex 18).

The labour market extended its strong performance in 2023. Employment growth increased in the first half of the year, before moderating in the second half. In annual terms, employment expanded by 3.1%, and the unemployment rate fell to 12.2%. Despite positive developments in recent years, the employment rate remains below the EU average and the 2030 national target, and the unemployment rate is still double the EU average (see Annex 14), while high regional disparities persist (see Annex 17). The share of temporary employees in the private sector stabilised after declining by 10 percentage points following the 2021 labour market reform (to reach 14.0% on average in 2023), while the rate remained at very high levels for the public sector (30.6%).

Headline HICP consumer price inflation decreased to 3.4% in 2023 driven by the drop in energy prices, while real wages caught up with some of the earlier losses. Underlying price pressures remained high in services and processed food, easing only gradually throughout the year. In 2023, the nominal growth in the average hourly wage increased to 4.5% ([2]), slightly above the reference in the multi-year agreement signed by social partners, when also taking account of the 8% raise in the minimum wage. The gain in purchasing power for workers last year followed a 7% decline in real wages over 2021 and 2022. Total labour costs increased at a higher rate than wages due to the increase in social contributions related to the pension reform.

Higher net exports of services and the lower energy bill fuelled the increase in the trade surplus in 2023. Spain's net international investment position (NIIP) continued its long-standing trend of improving supported by strong nominal GDP growth, and by the higher surplus in the current account balance, which increased to 2.5% of GDP, back to pre-pandemic levels having stayed below 1% since 2020. Developments in the external sector remained positive in 2023 despite the weaker economic outlook for main trading partners and the significant increase of unit labour costs.

The fiscal deficit continued to decline in 2023, driven by direct tax revenues. Revenues from personal and corporate income

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

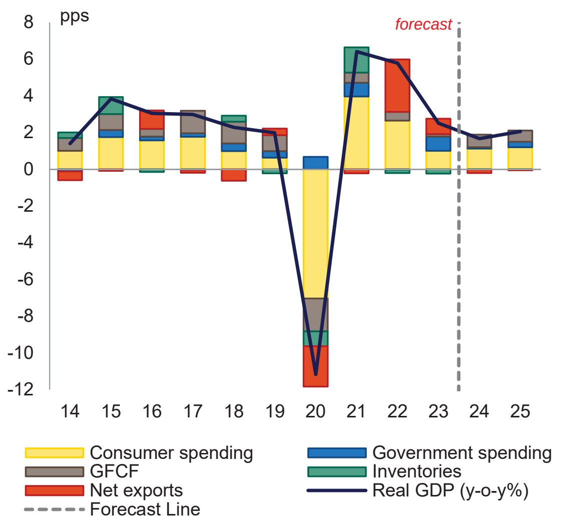
([2]) The Harmonised Labour Cost Index (ICLA) covers sections B to S of the NACE classification.

tax grew strongly, reflecting the continued positive developments in the labour market and increased firm profits (see Annex 19). At the same time, the size of government measures in place until the end of 2023 to mitigate the impact of the energy price shock following Russia's invasion of Ukraine remained substantial (0.9% of GDP), even though they declined from 2022, due to, for example, the extension of VAT cuts for basic food products and direct support to the road and maritime transport sectors. Overall, the general government deficit decreased to 3.6% in 2023, while the debt ratio declined to 107.7% mainly supported by strong nominal GDP growth.

Real GDP growth is forecast to moderate to 2.1% in 2024. According to the Commission's Spring Forecast, domestic demand is set to be the key driver upholding growth this year. This is thanks to the contribution from consumer spending and the gradual rebound of investment, driven respectively by supportive labour market developments and the continued implementation of the recovery and resilience plan (RRP) and other EU funds. Headline HICP consumer price inflation is forecast to decline moderately this year to 3.1%, assuming most government measures to mitigate the impact of high energy prices are phased out. Underlying inflation is expected to converge to headline figures given the trend of service inflation, particularly certain categories related to accommodation and holiday package prices, subject to a more gradual moderation.

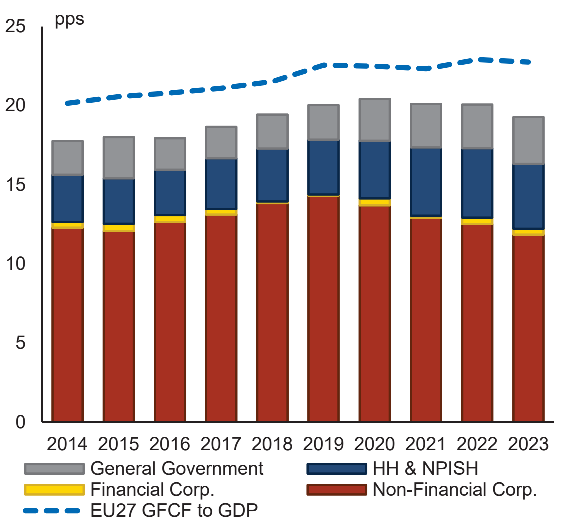
There continues to be a big reduction in the number of vulnerabilities associated with Spain's high private and external debt stocks, with government debt also having receded in recent years ([3]). Further reductions in the external debt ratio will be underpinned by continued current account surpluses, while the adjustment of domestic debt ratios is also expected to continue in the upcoming years, albeit more gradually than in the recent past, as nominal GDP growth is expected to be less supportive. However, the evolution of the public debt ratio is subject to risks in the longer-term, given its high starting level and the still high structural deficits posted in recent years.

Graph 1.1: **Real GDP growth, contributions by demand component in percentage points.**



Source: Ameco

Graph 1.2: **Gross fixed capital formation by institutional sector, in percentage of nominal GDP.**



(1) EU-27 2023 annual data are an aggregate of Q4-22 to Q3-23
Source: Eurostat

([3]) European Commission (2024), In-Depth Review for Spain, Commission staff working document (SWD(2024) 80 final).

Spain faces multi-faceted competitiveness challenges

Productivity continues to lag behind the EU average. Labour productivity per hour worked continues to be below pre-pandemic levels, and the gap relative to the EU average has widened significantly over the last decade (see Annex 12), while regional disparities are still substantial (see Annex 17). The main factors hampering productivity growth include: (i) low levels of business investment (see Graph 1.2.) including in research and innovation (see Annex 11); (ii) weak knowledge transfer from the scientific sector to business; (iii) fragmentation of the domestic market; (iv) skills shortages; (v) barriers to firm growth, including size-dependent regulation and obstacles for SMEs to access equity funding (see Annex 18); and (vi) shortcomings in judicial efficiency (see Annex 13).

There are substantial needs for reskilling ahead. Large investments to meet the targets for the Digital Decade (see Annex 10) and the national energy and climate plan (see Annex 6) will require skills needed for the twin transition to be continuously provided. RRP measures and cohesion policy will help address existing and anticipated skills gaps (see Annex 14). RRP measures to strengthen and improve the effectiveness of active labour market policies, i.e. policy measures to help vulnerable groups find or stay in work, are expected to play a key role in reskilling, and to a larger extent if combined with adequate private investment in improving workers' skills.

Further action is needed to consolidate progress made in the green transition. The modified RRP includes new measures to support increased use of renewable energies under the REPowerEU chapter, as well as to boost circularity to close the existing gaps in key sectors. This action will be complemented by investments planned under cohesion policy funds. However, the national targets for energy efficiency in the updated draft national energy and climate plan could show more ambition, while the transport sector continues to rely heavily on fossil fuels and receive environmentally harmful subsidies (see Annex 7). Spain also experiences water stress and scarcity due to climate change, which is also expected to increase the frequency and severity of droughts and floods, having a severe impact on people, nature, public finances, and business activity. The RRP includes reforms on the use of water in agriculture, but its sustainable management continues to be a major environmental issue (see Annex 6).

Upward social convergence and territorial cohesion are required to ensure sustainable competitiveness across the whole country. There continue to be significant socio-economic and regional gaps in educational and labour market outcomes (see Annex 17), while young people are disproportionately affected by unemployment and the proportion of early school leavers remains high compared to the EU average, as highlighted by the social scoreboard under the European Pillar of Social Rights (see Annex 14). Vulnerable groups and non-urban areas struggle with underserved public services, particularly for compulsory education and primary care (see Annex 16). A significant share of the country is further stressed by substantial demographic and climate challenges. Dealing with these will require a fair adaptation to new competitiveness conditions. In recent years, vulnerable households have been further challenged by lower housing affordability and increasing energy poverty (see Annex 8) against the background of the persistent limited impact of social transfers to reduce inequality and poverty, which remain high and particularly affect children (see Annex 14). Spain's significant policy efforts are expected to help address some of these challenges if they are fully implemented and well-coordinated between national and regional administrations. When it comes to EU funds, it will be key to ensure an effective and adequate absorption capacity in view of the significant increase in available funding and complementarities across funds (see Annex 4).

A credible fiscal path will need to provide both consolidation and growth support measures. Public finances continue to be mainly challenged by high risks for debt sustainability in the medium term (see Annex 21). Adoption and implementing an adequate consolidation strategy remains a priority to achieve a prudent fiscal position and a decline of debt levels, given the expected demography-led increase in expenditures related to healthcare, long-term care and pensions. Deficit reduction measures to lower government debt will now be framed by the new EU economic governance rules, which combine the adoption of a more gradual fiscal path with investments and reforms boosting growth and supporting the digital and green transition. The adoption of RRP measures that will have a fiscal impact is expected to contribute to this outcome. These include: (i) a reform of the taxation and benefit systems; (ii) steps to achieve more efficient public expenditure; (iii) measures to increase labour participation as part of the reform of the pension system; and (iv) measures to strengthen tax declaration and collection, and the effectiveness of the revenue administration.

Box 1: **Spain's competitiveness in brief**

Spain's overall competitiveness has remained relatively stable in recent years, exceling in exporting commercial services and robust infrastructure, and with energy from renewable sources accounting for a relatively high share of the energy mix. The RRP and other EU funds comprehensively support further competitiveness gains through the structural transformation of the economy, particularly in relation to: (i) the digital and green transition; (ii) the modernisation of the labour market; and (iii) the public administration, and investment in strategic sectors.

However, competitiveness challenges remain:

- **a declining trend in business investment** that could further hamper low productivity growth if proven to have a structural nature;
- **a business environment** that could be further improved to support firm growth and investment, helping increase productivity;
- **a low level of spending in research and innovation,** which remains far below the EU average and the national targets;
- **reskilling needs to address,** so workers have sufficient skills to support large investments for the digital and green transition.

Box 2: **UN Sustainable Development Goals (SDGs)**

Spain is making progress in all 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. SDG 9 related to innovation, industry and resilient infrastructure is further behind the EU average, mostly due to low levels of R&D expenditure, a low share of sustainable infrastructure for freight transport and a high level of air pollution from industry. Sustainable economic growth and employment indicators (SDG 8) are below the EU average even after quickly catching up over recent years, while the employment rate is below the EU average despite increased labour market tightness (see Annex 1).

Out of the 17 indicators, 10 SDGs remain below the EU average. Besides those highlighted above, these relate to environmental stability (SDGs 2, 6, 9, 13, 14, 15), fairness (SDGs 1, 8 and 10) and macroeconomic stability (SDG 16).

IMPLEMENTATION OF KEY REFORMS AND INVESTMENTS USING EU INSTRUMENTS

Funding from the Recovery and Resilience Facility (RRF) and cohesion policy is mutually reinforcing Spain's efforts to boost its competitiveness and foster sustainable growth. In addition to the EUR 163 billion of RRF funding described in Annex 3, cohesion policy funding provides Spain with EUR 35.6 billion for the 2021-2027 period. Combined support from these two instruments represents around 13.58% of the country's GDP in 2023, compared to the EU average of 5.38% of GDP (see Annex 4).

Under its recovery and resilience plan (RRP), Spain has launched important policy reforms that are expected to improve the country's competitiveness. In particular, the RRP envisages major reforms in the labour market, the pension and the tax systems, vocational and educational training (VET), telecommunications and science, technology and innovation, healthcare, and waste management. Spain also made substantial investments in renewable energy sources, and in providing support for R&D, digitalisation and SMEs.

The implementation of Spain's RRP is underway, however timely completion requires increased efforts. Spain has completed three payment requests, corresponding to 121 milestones and targets in the plan and resulting in an overall disbursement of EUR 28 billion on 31 March 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 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. There is scope to strengthen the coordination among different levels of the administration and to promote a more active participation of stakeholders in the implementation of measures while streamlined procedures would accelerate the reception of funds by final beneficiaries. These elements are particularly relevant to overcome challenges for the absorption of the sizeable amount of funds managed by the financial instruments set in the modified RRP. With the aim of improving data dissemination and providing adequate monitoring tools, the government launched in April 2024 the portal ELISA providing data on calls for tenders and grants, as well as their resolution, of the funds managed by all public administrations, including information on the type of final beneficiary and policy areas.

Cohesion policy funding helps Spain tackle its growth and competitiveness challenges and aims to reduce the country's territorial and social disparities. Under the 2014-2020 cohesion programming period, support was focused on areas such as (i) increasing the number of people working or seeking work, and their productivity; (ii) education, training and social inclusion; and (iii) competitiveness of SMEs. Support was also provided through financial instruments, business innovation and efficient use of natural resources. For the current 2021-2027 programming period, support is focused on accelerating Spain's green transition, financing innovation and digitisation, increasing the employment rate and improving local social services.

Supporting the green transition

Spain is deploying new frameworks to accelerate the roll-out of green energy. Together with the support of cohesion policy funds for renewables (mostly solar, geothermal and hydrogen), the RRP investments and reforms are paving the way for the energy transition in Spain. New national roadmaps aim to promote self-consumption in electricity (i.e., people producing and consuming their own electricity) and to support the development of offshore wind and other marine energy. Calls were launched to support the integration of renewable energy facilities into buildings and use of renewable energy in production processes. Spain also awarded support to energy communities, which aimed to boost the public's contribution to the energy transition. The REPowerEU measures newly included in the RRP will strengthen Spain's efforts to develop renewable energy sources through: (i) a reform to streamline permitting procedures; (ii) a scheme to support renewable hydrogen; and (iii) an investment to deploy new electricity transmission infrastructure.

Spain adopted a comprehensive mobility strategy under the RRP. This strategy provides solutions to problems people encounter with transport and by ensuring an efficient, resilient and sustainable transport and logistics system. Spain also adopted a strategy to promote the development, maintenance and renewal of the railway infrastructure to meet future transport needs, improve the sustainability of the railway system and help create a single European railway area. The shift towards sustainable transport has been stepped up by large investments in core European railway corridors, as well as in projects improving the efficiency of the transport system through digitisation and new technologies being introduced in the sector. Moreover, the revised plan contains a strategy to improve the energy efficiency of the national highways network. Lastly, Spain is working towards the approval of a Sustainable Mobility Law. The Law will provide the tools to continue the process of decarbonisation and digitalisation of the transportation system, contributing to reducing emissions and improving air quality.

The RRF and cohesion policy funds supported measures that aim to boost the energy efficiency of buildings. Spain extended the coverage of one-stop shops for renovation, put in place aid programmes for energy-efficiency renovations and adopted the regulatory framework to build at least 20 000 energy-efficient dwellings for social rental or at affordable prices. Spain also implemented a reform that facilitates decision-making and access to finance for energy-efficiency renovations by 'communities of owners'. The modified RRP scaled up the existing tax incentive for energy-efficiency renovations and established a social housing fund for renovating and constructing energy-efficiency social housing.

Spain has taken steps towards achieving a circular economy. On the reform side, Spain approved the Spanish Strategy on Circular Economy, a legislative circular economy package and the Law on Waste and Contaminated Soil. Cohesion policy funds in the 2014-2020 programming period have also been key to supporting waste recycling. The modified RRP introduced a second package of regulatory acts to coordinate management of municipal waste recycling throughout the regions and the implementation of extended producer responsibility schemes. It also includes investments to improve municipal separate collection waste, and the establishment of a working group within the waste coordination committee to monitor compliance with waste legislation. The Strategic Project for Economic Recovery and Transformation (*PERTE*) on Circular Economy will invest in improving the circular economy in industrial sectors and in three key sectors: plastics, textile and equipment for renewable energy.

Progress made in water management through RRF reforms was complemented by cohesion policy investments. Under the RRF, Spain passed a reform amending the Hydrological Planning Regulation restored at least 200 kilometres of riverbanks and protected 40 000 inhabitants against flood risk. This was complemented by cohesion policy funds in the 2014-2020 programming period that improved water supply for more than a million inhabitants. The revised plan increased the financing to water management resources through the following: (i) increasing the efforts to improve the energy and water efficiency in the urban water cycle; (ii) setting up a PERTE for the digitalisation of water uses; and (iii) recovering aquifers with alternative water resources. In addition, the revised RRP includes a new national strategy to combat desertification and a new investment to supply renewable (photovoltaic) energy to desalination plants.

Stimulating competitiveness

Spain approved reforms to improve the business environment. A new insolvency framework entered into force in 2022, intended to facilitate preventive debt restructuring and debt relief for legal persons. The substantial relative increase in the filings that followed its approval needs to be put into context due to the very low starting level and the fact that the number of filings already started to moderate over the course of last year. Other enacted reforms in the RRP that help improve resource allocation include the approval of the law on business creation and growth, which simplified procedures for setting up a business, promoted the diversification of financing sources for business growth, and provided measures to reduce late payments in commercial transactions. The law also created a new sectoral conference for regulatory improvement and the business climate in order to strengthen coordination of the various administrations to reduce domestic market fragmentation. The set of reforms in the RRP to improve the business environment also include the entry into force of the start-ups law, which provides a favourable framework for innovative firms and to attract foreign investors and entrepreneurs, while the revised plan added a new reform amending the Securities Markets and Investment Services Law to improve access to finance, in particular for SMEs. All these measures will be complemented by the planned investments under cohesion policy funds.

Spain adopted measures to support innovation. Amendments to the science, technology and innovation law aim to improve the performance and governance of the research and innovation system, as well as the coordination between different levels of government. It is expected to have a positive impact on the implementation of EU programmes in the field of research and innovation, in particular the European Regional Development Fund (ERDF) and Horizon Europe, by simplifying procedures for granting aid. R&D measures and innovation in strategic projects were strengthened in the modified RRP, including further support to the aerospace industry and the health sector.

Spain approved measures to improve digitalisation. The National Digital Competences Plan, adopted in 2021, aims to: (i) improve the digital skills of the overall population; (ii) facilitate the digital transformation of the education system; (iii) boost employability; and (iv) attract ICT specialists. SMEs and self-employed people are benefitting from investments under the Digital Toolkit Programme, which aims to accelerate the digitalisation of their businesses. Other measures supported by EU instruments help digitalise the Spanish economy, such as the strengthening of the capacity of the cybersecurity helpline, the adoption of the law on 5G cybersecurity included in the RRP, as well as the focus of ERDF funds throughout the 2021-2027 cycle on supporting ICT solutions and e-services in public administration.

Spain approved reforms to transform the public administration. A package of measures was adopted in late 2023 to modernise and digitalise the public administration. This package included measures to boost the State administration's ability to attract and retain talent, step up cooperation and coordination among different levels of government, and promote the digital deployment of local public services. It also contained important measures on the digital and procedural efficiency of the justice system, which aim to help reduce economic distortions and improve the business environment.

The modified RRP strengthens measures supporting the structural transformation of the Spanish economy. Financial instruments funded through RRF loans are expected to have a long-lasting impact by supporting financing and developing capital markets to stimulate private investments. They will manage sizeable resources to support the green and digital transition, and will provide more funding to strategic industrial projects. The PERTEs aim to transform and strengthen the competitiveness of firms in value chains, including by providing support to SMEs. Spain approved amongst others such strategic projects for: (i) the transformation of the value chain of the agri-food and health sectors; (ii) electric and connected vehicles; (iii) the naval and aeronautics industries; (iv) microelectronics and semiconductors; and (v) the decarbonisation of manufacturing activities.

Strengthening economic and social resilience

Spain adopted reforms to address structural challenges in the labour market. The labour market reform approved in December 2021 streamlined the range of contracts, including by setting stricter rules for fixed-term contracts and increasing the use of the open-ended contract for seasonal and other discontinuous work activities (*contrato fijo discontinuo*). Since the entry into force of the 2021 reform, the share of employees with temporary contracts has decreased by 10 percentage points in the private sector, reaching 14% on average in 2023 and bringing it closer to the EU average. This decrease has been particularly noticeable for economic activities where fixed-term contracts were more prevalent, including agriculture, construction, hospitality services and transportation. Other prominent measures in the RRP that are helping transform the labour market include the adoption in 2023 of the new Employment Law that aims to review the governance system to improve the cohesion and efficiency of employment policies, as well as reforms to active labour market policies to improve job-matching efficiency.

Spain approved reforms to provide the skills required for the labour market. The new VET system aims to increase the attractiveness of VET programmes, promote the dual nature of education and training, and better adapt VET programmes to the future needs of the economy. Accompanying investments in the RRP and the European Social Fund Plus (ESF+) are helping increase the number of new VET places with a focus on skills relevant to the labour market, which have been coupled with significant growth in demand for enrolment in recent years, far exceeding other educational levels for similar age groups. As part of the other measures addressing skills shortages, the modified RRP includes the adoption of an action plan to develop micro-credentials in the university system and a pilot project providing at least 60 000 units with support under a Technical Support Instrument to implement a higher education skills intelligence strategy.

Spain adopted measures to strengthen social and territorial cohesion. In 2020, a national minimum income scheme (*Ingreso Mínimo Vital*) was created to support vulnerable families and its coverage has progressively broadened in recent years. When operating at its full potential, it could significantly help Spain reduce poverty and make progress towards the 2030 national targets. This will be complemented by socio-economic integration pathways included in the RRP to increase the effectiveness of the scheme, as well as by cohesion policy funds supporting social inclusion. In the 2014-2020 programming period, the European Social Fund (ESF+) allowed almost 1.5 million people to benefit from social inclusion, anti-poverty and anti-discrimination measures, under the national programme of social inclusion and social economy. These measures targeted vulnerable groups, such as people with a disability, migrants, and people at risk of exclusion. The Just Transition Fund is also helping create jobs in the areas affected by the closure of coal mines and power plants, supporting reskilling and upskilling initiatives. This is being strengthened by the RRP, which includes investments in the reskilling and upskilling of workers in these areas and in supporting environmental, digital and social infrastructure projects. As part of the RRP, Spain passed the new housing law, which aims to increase the supply of affordable and social housing, including by providing higher tax incentives and increasing the minimum share of protected housing in new developments.

Spain approved measures to strengthen the healthcare system across the country. The government adopted an investment plan to renew obsolete hospital equipment with new high-tech medical devices, including redressing regional imbalances in infrastructure. This was complemented by investments under the REACT-EU programme in health equipment and infrastructure. The government also adopted an action plan for improving primary care and the public health strategy, requiring targeted investments in staff and infrastructure for its implementation.

Supporting fiscal sustainability

In 2023, Spain approved the final set of reforms for the pension system that were included in the RRP. The computation period for calculating the retirement pension was extended to improve the system's progressivity and adapt the regulation to discontinuous careers and other forms of atypical work. The sustainability factor that links pensions to life expectancy was replaced with a mechanism to guarantee intergenerational equity and budgetary sustainability by adjusting to demographic changes. The maximum contribution base of the pension system was increased and maximum pensions were adjusted to widen the contribution base, as well as increase the progressivity and overall revenue of the pension system.

Spain stepped up its fight against tax fraud and evasion. Under the RRP, Spain set stricter rules for cash payments, lowering the threshold for publishing the names of people with tax arrears, banning software that can be used to commit tax fraud (such as 'dual-use software'), and introducing a reference value for the tax base in property taxation. Also, Spain updated its list of non-cooperative jurisdictions for tax purposes. The Tax Administration Agency increased its staff and the number of tax investigations, and it improved IT systems that facilitate the submission of personal and corporate tax declarations. The agency also took measures to better use taxpayer data received from abroad and to increase transparency among large corporate taxpayers. Spain has carried out an interim assessment of the Law Against Tax Evasion and Fraud.

Preparations for tax reforms are underway. As part of the measures to improve the tax system, Spain established a Committee of Experts to examine the current tax system and to make recommendations on how to modernise and adapt it in a coherent manner. In March 2022, the Committee published its report and recommendations, which the government will use to implement the tax reforms.

Spain introduced measures to improve the efficiency of government spending following recommendations by the the Spanish fiscal council (AIReF). The latest monitoring report from the Ministry of Finance showed that Spain had implemented 203 of the 357 recommendations made by AIReF to increase the quality of government expenditure as well as budgetary savings to increase fiscal consolidation. As part of the RRP, Spain also approved the new public spending review cycle for 2022-2026, which gives continuity to the first exercise carried out by AIReF. Furthermore, Spain has set up a framework and developed a methodology to identify and monitor expenditure included in the central government budget that would help achieve environmental objectives.

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

To boost economic growth and maximise the impact of EU funding, Spain's RRP includes reforms that support investments under other EU instruments, creating significant synergies and complementarities between the various funds. For example, to develop renewable hydrogen in Spain, the Spanish RRP includes a roadmap for hydrogen, including a reform which provides the regulatory mechanism to verify the renewable origin of hydrogen. This measure is expected to facilitate investments in renewable hydrogen planned under both the RRP and the ERDF, which will complement each other by focusing on different stages of the hydrogen value chain.

FURTHER PRIORITIES AHEAD

Spain faces additional challenges related to the sustainability of government finances, water management and transport, lagging productivity and broad-based investment needs, and income equality and poverty. Tackling these challenges will help increase Spain's long-term competitiveness and ensure the resilience of its economy. It will also help the country make further progress in achieving the SDGs.

It is important that the identified challenges are addressed both at national and regional level. This will help reduce regional disparities and improve the administrative and investment capacity in a balanced way across the country.

Ensuring the sustainability of government finances

A credible consolidation path is critical to ensure fiscal sustainability and anchor expectations. Spain's fiscal situation remains challenging with high levels of public deficit and debt. The buoyant growth of tax revenues over recent years has proved to be temporary to a certain extent. Without measures that aim to ensure budgetary consolidation, the ongoing moderation of tax revenues will make it harder to reduce the deficit in the future. Moreover, in 2024, the government partially extended VAT cuts for basic food products and direct support to the road and maritime transport sectors that could deteriorate the country's fiscal position in the short term (see Annex 19). Within the EU's new economic governance rules, Spain will need to develop a medium-term fiscal structural plan for reducing the deficit and lowering government debt. This plan could combine the adoption of revenue and expenditure measures with investments and reforms to promote more robust and sustainable economic growth. In its national fiscal framework, the government sets targets for regions in terms of structural balance, the debt-to-GDP ratio as well as in relation to the maximum growth rate of nominal expenditure (expenditure rule). To ensure that the new EU economic governance rules are complied with, the national fiscal framework may need to be updated.

Fiscal sustainability measures have become more urgent given the country's ageing population. Demographic developments are expected to lead to a significant increase in public expenditure related to healthcare, long-term care and pensions. On pensions, fiscal sustainability gaps over the medium and long term can be addressed through the full implementation of the pension reforms (see Annex 21). The measures included in the recovery and resilience plan (RRP) need to be closely monitored to ensure that they help mitigate medium- and long-term risks. In this respect, special attention needs to be paid to implementing the 'closure clause' introduced by the 2023 reform, which entails potential measures to ensure the sustainability of the pension system as of 2025.

Tax reforms should be a central part of the fiscal consolidation strategy. In this regard, reforms included in the RRP, building on recommendations from experts provided in the meantime, aim to: (i) make the taxation system more effective and modern, and adapt it to new trends; (ii) support the green transition; and (iii) increase revenue and promote fairness. Possible further action could include the increase of consumption taxes, while protecting vulnerable individuals with targeted compensatory measures. Also, Spain would have scope to collect more environment-related tax revenues (1.5% of GDP in 2022 against 2.0% on EU aggregate) including by strengthening the application of the ‘polluter pays’ principle (see Annex 19).

The implementation of recommendations by the independent fiscal institution (AIReF) remains key to improve the quality and efficiency of government spending. This is particularly relevant for healthcare, to improve cost-effectiveness and address regional access and quality disparities, as well as the significant investment needs in primary care.

Promoting the green transition for sustainable competitiveness

Sustainable water management is needed to tackle the increasing challenges of water scarcity and usage. The country suffers severely from water scarcity and stress due to climate change, with severe impacts on people, biodiversity, public finances and competitiveness likely. Water reserves in Spain have followed a downward trend in the last decade, particularly for some regions. For example, in 2024, an active emergency status for drought has been activated in Catalonia, Andalusia and Murcia, as their water reserves fell below 20% of their total capacity (see Annex 6). Spain has adopted several measures related to irrigation under the RRP such as investments to improve the efficiency of water consumption and energy use in irrigation systems and the creation of a national irrigation board. However, there continue to be challenges beyond those tackled by the RRP and other EU funds, especially in the areas of water governance and management. Potential solutions include a strong(er) framework for: (i) better coordinating government and administration at all levels; and (ii) implementing and enforcing approved programmes and legislation in force. In addition, several existing measures have the potential to be scaled up. These include investments in collecting and treating wastewater, water reuse, reducing leaks in networks and the general water supply, improving monitoring, and promoting nature-based solutions, flood prevention and river restoration. Water abstraction in the agricultural sector poses particular challenges to water management and efficiency. In 2019, Spain had the fifth largest irrigated area in Europe, accounting for 13.2% of total utilised agricultural area, and water abstraction for agricultural purposes accounted for 68.4% of the total volume of water abstracted (see Annex 6). The high level of water abstraction leads to salinisation, which deteriorates drinking and irrigation water and adds to further salinisation of drylands. To address the challenge of water abstraction in the agricultural sector, Spain still has potential to further extend the use of climate resilient crops and promote infrastructure investments for a more efficient use of water.

There continue to be opportunities to build on RRP measures and cohesion policy investments that support the transition towards sustainable modes of transport and reduce emissions. The transport sector continues to rely heavily on fossil fuels and even increased its final energy consumption in 2022 by 12.3% (see Annex 7). The transport sector remains a key source of greenhouse gas emissions, air pollution and traffic congestion, especially in major metropolitan areas (see Annex 6). Battery electric vehicles made up only 0.4% of Spain’s car fleet in 2023, 93% of freight was transported by road, and passenger cars were used for 86% of distances travelled. Measures included in the revised RRP and in the adopted programmes under the European Regional Development Fund for 2021-2027 are helping develop and upgrade rail infrastructure for short- and long-distance travel, the development of urban public transport, the creation of low-emission zones in urban areas and the roll-out of electric charging infrastructure. Nevertheless, given the magnitude of the challenge, there is scope for further measures to support the shift towards sustainable modes of personal transport.

Continued efforts to improve energy efficiency are needed to reduce emissions and tackle energy poverty. The share of the population in Spain affected by energy poverty increased substantially, from 7.5% in 2019 to 17.1% in 2022, almost double the EU average

(9.3%), and increasing further to 20.8% in 2023 (Annex 8). While the modified RRP and ERDF programmes include measures to improve energy efficiency in housing, existing and new measures could be more specifically targeted towards energy-poor households while helping Spain achieve targets on reducing emissions from buildings.

Addressing structural challenges to improve competitiveness

Lagging investment and productivity means that continuous policy support is needed. Overall investment has steadily declined since 2020 and remains below the pre-pandemic level, further widening the negative gap of the ratio to GDP compared to the EU average. These developments have been concentrated in the non-financial corporate sector and could further hamper already low productivity growth, which continues to lag behind the EU average (see Annex 12). To build upon the measures in the RRP, continuous policy action is warranted to facilitate business investments and firm growth. Following the 2016 Council Recommendation, this year the government plans to establish a National Productivity Board, which would contribute to policies supporting productivity growth. Strengthening the enforcement of single market tools is also essential for achieving greater integration and boosting Spain's competitiveness within the EU single market.

There is scope for further improving the business environment. Business dynamics are characterised by low firm birth and death rates that reveal obstacles to reallocating resources, while the average size of firms remains well below the EU average, being detrimental for overall productivity. In line with past OECD and IMF recommendations, the review of size-dependent regulation (i.e. regulation requirements that are different for large firms than for small firms) in the fields of labour, auditing and taxation would improve efficiency in capital and labour allocation, supporting investment and contributing to increased productivity. Addressing existing shortfalls in legislation quality and judicial efficiency would also reduce economic distortions. The time to resolve civil and commercial cases remains long and the prolonged non-renewal of the Council of the Judiciary causes bottlenecks for nominating top judges (see Annex 13). As part of the RRP, the law on business creation and growth aims to reduce the fragmentation of the domestic market and provides for the setting up of 'a new sectoral conference for regulatory improvement and business climate' to strengthen coordination of administrations. Spain has also adopted measures to combat late payments in commercial transactions, which will take some time to deploy their full effects and whose enforcement could be further strengthened benefiting from the future obligations for electronic billing introduced by the law on business creation and growth.

Increasing R&D investment and stronger links with the scientific ecosystem can boost the productivity of firms. At 1.4% of GDP in 2022, Spain's R&D intensity has remained stagnant as compared to 2021 and remains well below the EU average of 2.2% (see Annex 11). This is mainly due to low private R&D expenditure (0.8% of GDP compared to 1.5% for the EU average). At the same time, the Spanish scientific system has shown encouraging signs when it comes to scientific skills and career paths resulting in increased scientific publications. The measures in the revised RRP and the adopted ERDF programmes aim to support private R&D spending and knowledge transfer between private and public research bodies. Nevertheless, further efforts seem warranted to exploit the full potential of business-science linkages, knowledge valorisation and the overall governance of R&I policies. This includes making public research organisations more performance-based and professional, and improving the coordination of the science, technology and innovation system in designing and implementing research and innovation (R&I) policies across different levels of government.

Reskilling policies and firm investment in human capital appear necessary to

further advance the reshaping of the labour market. Measures in the RRP and cohesion policy are expected to improve the effectiveness of active labour market policies (ALMPs), and address skills shortages, although significant challenges remain. The new Employment Law and the modernisation of public employment services aim to improve employability and reduce distortions for better job matching. Adequate resources and tools for targeted ALMPs have the potential to reduce the unemployment rate in a relatively short period of time. Comprehensive education and VET reforms in the RRP together with investments supported by other EU funds aim to provide a better link between education and skills in demand, to reduce mismatches (see Annex 14). These measures will need to be complemented by broad reskilling actions and higher investment in workers' skills in the private sector. Although it is still below the EU average, the share of companies reporting labour shortages as a factor limiting production is at a historical high in both industrial activities (8%) and services (23%). Challenges are particularly acute for SMEs, which struggle to attract and retain talent. There continue to be noticeable shortages of specialists in information and communications technology (ICT), as well as graduates in science, technological, engineering and mathematics (STEM) (see Annex 15).

Tackling social and regional cohesion challenges

Despite improvements, relevant labour market and educational challenges persist. While the enacted labour market reforms in the RRP are starting to show positive effects, unemployment rates remain relatively high compared to the EU, particularly for young people, migrants and older workers. The share of temporary employees in the public sector and involuntary part-time work also remain high, most prominently affecting young people, women and the education and health sectors (see Annex 14). The successful engagement of young people in the labour market remains challenged by the underachievement in basic skills, a low proportion of top-performing students and persistent socio-economic gaps in educational outcomes as shown by the latest Programme for International Student Assessment (PISA 2022) results and the high rate of early school leaving (the second highest in the EU) (see Annex 15). Beyond measures in the RRP increasing the labour market relevance of education and the support from cohesion policy, a reform of the teaching profession could further help boost the future employability of young people.

Income inequality and poverty rates remain relatively high. According to the scoreboard under the European Pillar of Social Rights (see Annex 14), the share of people in Spain at risk of poverty or social exclusion ranked among the highest in the EU. This has affected in particular non-EU nationals, persons with disabilities, single parents and low-skilled individuals, while income inequality and child poverty remain high. RRP measures, such as the minimum vital income and the reform of child benefits, are underway. But there remains the need for more effective social policy action to achieve Spain’s national poverty and social exclusion target by 2030 and to improve the limited impact of social transfers on poverty and inequality reduction. Access to affordable housing also remains a significant challenge, particularly for the most vulnerable, due to the low share of social-rental dwellings (a third compared to the EU average). Continued support to increase the availability of affordable and social housing seems warranted, building on measures in the RRP and cohesion policy.

Regional disparities continue to be wide in several areas. There are large differences at regional level in, for example, innovation, educational outcomes, unemployment rates and access and coverage of social services and benefits (see Annex 17). Non-urban areas and outermost regions particularly struggle to build up capacities in competitiveness, while a significant share of the country is further stressed by demographic and climate challenges. Measures under the RRP and cohesion policy are expected to further soften the strain in providing essential services like compulsory education and primary care (see Annex 16), which stems from staff ageing and

Box 4: **The mid-term review of cohesion policy funds for Spain**

The mid-term review of the cohesion policy funds is an opportunity to assess cohesion policy programmes and to 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 EU funding included in each programme.

Spain has made progress in implementing cohesion policy programmes and the European Pillar of Social Rights, but challenges remain as outlined in this report, including in Annexes 14 and 17. In particular, Spain continues to register slow GDP growth in several regions, including the Balearic Islands and Canary Islands and GDP per capita remains below 75% of EU average in eight regions, with only three regions ranking higher than the EU average. Against this background, it is still important to continue implementing planned priorities, paying particular attention to: (i) the capacity of businesses to innovate and invest in R&D, particularly in the industries identified by regional smart specialisation strategies; (ii) green investments, particularly in water management, the circular economy, and measures to help mitigate and adapt to climate change in those regions most affected by it (i.e. the Canary Islands and coastal areas in the east and south of Spain), in line with the national energy and climate plan; (iii) the attractiveness and competitiveness of areas facing demographic decline; (iv) stepping up the labour market (re-)integration of long-term unemployed people and older workers; (v) strengthening career guidance to address skills mismatches; (vi) implementing the European Child Guarantee; and (vii) administrative capacity all at levels to meet the conditions for more effective and efficient public investments.

Spain could also benefit from the opportunities provided by the Strategic Technologies for Europe Platform (STEP) [5] initiative to help transform industry, particularly by investing in the development and manufacturing of strategic technologies and their respective value chains, especially in the areas of deep tech innovation, clean energy and resource efficiency, and agriculture and health-related biotechnologies.

shortages, the high share of fixed-term public employees, and investment gaps that particularly affect underserved population groups and geographical areas.

Ensuring the absorption of all EU funds is critical to ensure progress on social and territorial cohesion. Due to the significant increase in available EU funding (see Annex 4), further efforts seem warranted to: (i) build up adequate administrative capacity at all government levels; (ii) improve the coordination of public administrations; (iii) streamline procedures to accelerate the reception of funds by final beneficiaries; (iv) increase stakeholder participation in implementing measures; and (v) provide appropriate tools for monitoring the impact of funds.

These findings are consistent with the second-stage analysis in line with the features of the Social Convergence Framework. The analysis points to challenges related to the transition from education to the labour market as well as to child and energy poverty and the impact of social transfers but does not point to major social convergence challenges for Spain overall, in light of the positive developments recorded, especially in the labour market [4].

(4) European Commission, SWD(2024)132. The analysis relies on all the available quantitative and qualitative evidence and analysing the policy response undertaken and planned.

(5) Regulation (EU) 2024/795.

KEY FINDINGS

With its wide policy scope and substantial financial envelope, Spain'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:

- **Fostering the green** and digital transition;
- **Supporting the structural transformation** of the Spanish economy;
- **Reducing temporary jobs** and structural unemployment;
- **Strengthening social** and territorial cohesion;
- **Supporting fiscal sustainability**; and
- **Improving educational outcomes** and overall skills.

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

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

- **Ensuring fiscal sustainability and anchoring expectations** due to the expected age-related increase of pension and healthcare costs, including by: (i) reviewing and simplifying the tax system to support economic growth and employment, cohesion and the green transition; and (ii) improving the quality, efficiency and equity of public spending;
- **Ensuring that the national fiscal framework is adapted** as needed to support the effective implementation of the EU fiscal governance framework;
- **Improving competitiveness** by: (i) further strengthening the business environment, e.g. by reviewing of size-dependent regulation and increasing judicial efficiency; (ii) boosting R&D investment, innovation and knowledge transfer; and (iii) providing adequate resources for reskilling in coordination with the business sector;
- **Further reducing the gap between regions** by building up competitiveness capacities across the country with the support of EU funds, to, for example, address demographic and climate challenges;
- **Ensuring the effective implementation of all EU-funded programmes** by: (i) building up adequate administrative capacity and coordination at all levels of government: (ii) streamlining procedures to accelerate the reception of funds by final beneficiaries; and (iii) ensuring a more active participation of stakeholders in these programmes;
- **To support upward social convergence, reducing income inequality and poverty** by (i) addressing persistent labour market and educational gaps; (ii) improving the capacity of social transfers for redistribution, in particular for reducing child poverty; and (iii) continuously supporting the availability of social and affordable housing as well as the adequacy of social assistance;
- **Improving the quality of jobs in the public sector** by reducing the high share of fixed-term contracts, particularly in the areas of health and education;

- **Addressing water scarcity and stress** by: (i) improving coordination among all levels of government and administration; (ii) scaling up existing solutions on sustainable water management, including in agriculture; and (iii) supporting the development of nature-based solutions; and

- **Accelerating the green transition** by: (i) supporting the shift towards sustainable modes of personal transport to further reduce emissions; and (ii) fighting energy poverty by better targeting measures to improve energy efficiency.

ANNEXES

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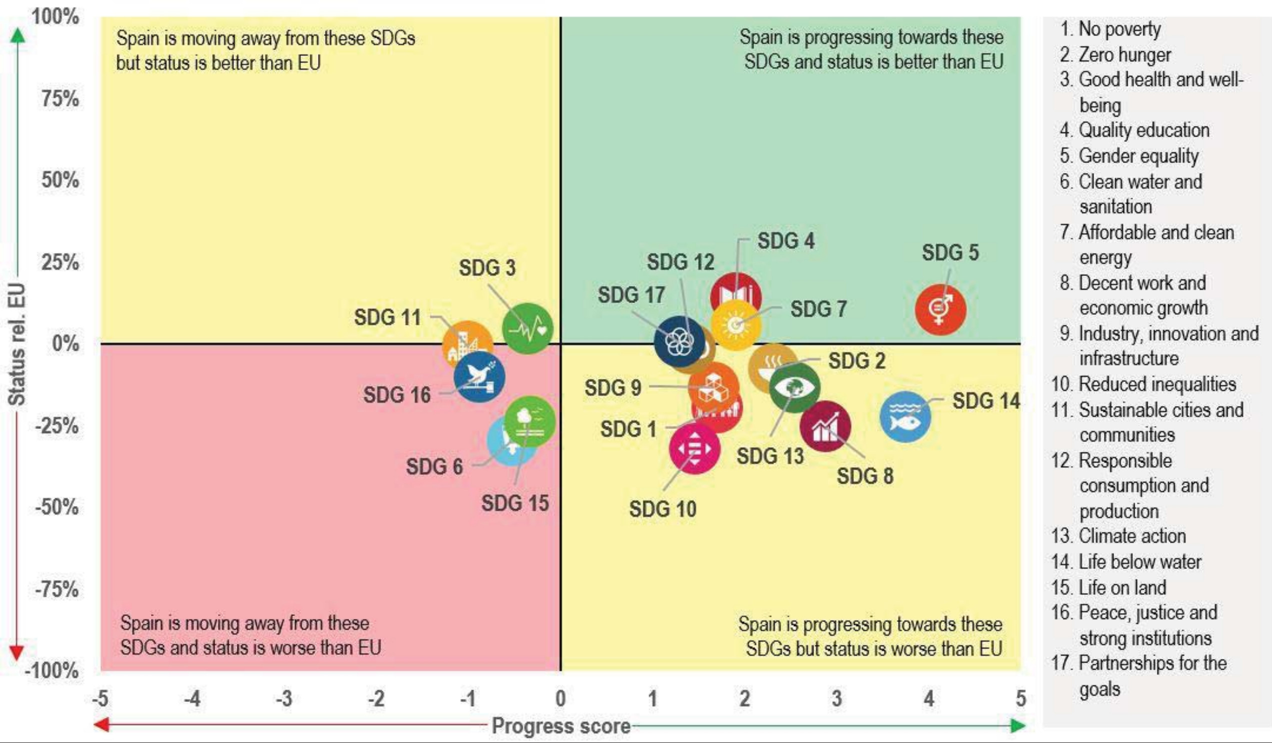
This Annex assesses Spain's progress on the Sustainable Development Goals (SDGs) along the four dimensions of competitive sustainability. The 17 SDGs and their related indicators provide a policy framework under the UN's 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty,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

Spain is making progress in most indicators related to *environmental sustainability* (SDGs 2, 7, 9, 12, 13, 14) but is also moving away from its targets on some of them (SDGs 6, 11, 15). It also needs to catch up with the EU average on many of these (SDGs 2, 6, 9, 13, 14, 15). Spain has made some progress on energy indicators, including the share of renewable energy in gross final energy consumption (SDG 7; from 17% in 2016 to 22.1% in 2022, close to the EU average of 23%). On SDG 6 (Clean water and sanitation), Spain is moving away from the goal and needs to catch up with the EU average, whose water exploitation index is half of Spain's. Water stress and scarcity also contribute to a deteriorating SDG 15 (Life on land) where Spain is moving away from the targets and needs to catch up with the EU average. The drought impact on ecosystems increased by 60% between 2017 and 2022 and the share of the area at risk of severe soil erosion by water is 70% larger than the EU average. Spain's recovery and resilience plan (RRP) includes measures to address some of the water related challenges, such as hydrological planning, complemented by Cohesion Funds improving water supply.

While Spain is improving on all SDG

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



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.

indicators related to *fairness* (SDGs 1, 4, 5, 7, 8, 10), it still needs to catch up with the EU average on some of them (SDGs 1, 8, 10). Spain has improved on several fairness-related indicators such as people at risk of poverty or social exclusion (SDG 1; 26% in 2022 vs 27.5% in 2017), the in-work at-risk-of-poverty rate (SDG 1; 11.7% in 2022 vs 13.1% in 2017), the long-term unemployment rate (SDG 8; 4.2% in 2023 vs 6.4% in 2018), and early leavers from education and training (SDG 4; 13.9% in 2022, vs 18.3% in 2017). However, it is still performing worse than the EU average on all these indicators, and challenges persist on poverty reduction, social exclusion, long-term unemployment and early school leaving. The Spanish RRP and Cohesion Funds include measures to address challenges in all these areas. On the negative side, the share of the Spanish population unable to keep their homes adequately warm increased from 8% in 2017 to 17.1% in 2022 and is twice as high as the EU average of 9.3%. The severe housing deprivation rate (SDG 1) increased, from 1.5% in 2015 to 3.4% in 2020, which indicates poorer living conditions. This adds to more acute housing affordability challenges for the most vulnerable, including young people, low-income households and families with children. The Spanish RRP contains investments and reforms to increase social and affordable energy-efficient housing; these are complemented by Cohesion Fund investments.

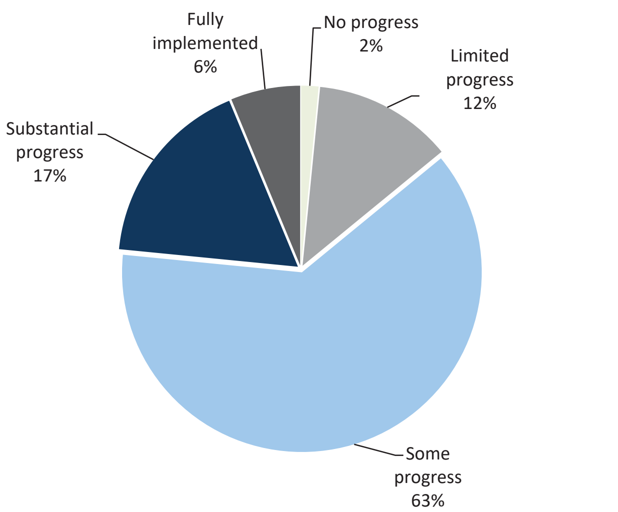
Spain is improving on all SDGs on *productivity* (SDGs 4, 8, 9) but still needs to catch up with the EU average in some of them (SDGs 8 and 9). It has a high share of households with a high-speed internet connection (SDG 9; 93.3% of households in 2022; EU average: 73.4%). In addition, the percentage of adults with at least basic digital skills (SDG 4; 66.2% in 2023) is above the EU average of 55.5%. Despite some improvements in the productivity indicators, Spain ranks below the EU average on most of them. On SDG 8 (Decent work and economic growth), the percentage of young people not in employment, education or training aged 15-29 remains high (12.2% in 2023) and is above the EU average (11.2% in 2023). In addition, the Spanish research and innovation system suffers from underinvestment, as shown by gross domestic expenditure on R&D (SDG 9; 1.44% of GDP in 2022 against an EU average of 2.23%) and R&D personnel (1.14% of the active population in 2022; EU average: 1.53%, see Annexes 8 and 11). The Spanish RRP includes significant reforms and investments to boost innovation and digital skills; these are complemented by Cohesion Fund investments.

Spain is improving on SDG indicator 8 (Decent work and economic growth) related to *macroeconomic stability*. However, it still needs to catch up with the EU and is moving away from its targets on SDG 16 (Peace, justice and strong institutions). Spain's real GDP per capita has been recovering after the pandemic (SDG 8; EUR 24 890 in 2018 vs EUR 25 210 in 2023) but remains below the EU average of EUR 28 940. Spain has a lower investment share of GDP (SDG 8) than the EU average (20.1% of GDP vs 22.9% for the EU in 2022). Spain faces challenges in particular on the sustainability of public finances. The Spanish RRP includes several measures on taxation and the effectiveness of public spending. These are expected to improve the sustainability of public finances and support substantial additional investments, which will increase the investment share of GDP. On SDG 16, in 2023 34% of the Spanish population perceived the independence of the justice system as 'very good' and 'fairly good', compared to 39% in 2018 and an EU average of 53% in 2023.

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

The Commission has assessed the 2019-2023 country-specific recommendations (CSRs) ([6]) addressed to Spain 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 Spain to date ([7]) and the commitments in its recovery and resilience plan (RRP) ([8]). At this stage of RRP implementation, 86% of the CSRs focusing on structural issues from 2019-2023 have recorded at least 'some progress', while 12% recorded 'limited progress' and 2% 'no progress' (see Graph A2.1). As the RRP is implemented further, considerable progress in addressing structural CSRs is expected in the coming years.

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



Source: European Commission.

([6]) 2023 CSRs: EUR-Lex - 32023H0901(09) - EN - EUR-Lex (europa.eu)

2022 CSRs: EUR-Lex - 32022H0901(09) - EN - EUR-Lex (europa.eu)

2021 CSRs: EUR-Lex - 32021H0729(09) - EN - EUR-Lex (europa.eu)

2020 CSRs: EUR-Lex - 32020H0826(09) - EN - EUR-Lex (europa.eu)
2019 CSRs: EUR-Lex - 32019H0905(09) - EN - EUR-Lex (europa.eu)

([7]) 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).

([8]) 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**

Spain	Assessment in May 2024*	RRP coverage of CSRs until 2026**	Revelant SDGs
2019 CSR 1	**Some progress**		
Ensure that the nominal growth rate of net primary government expenditure does not exceed 0.9 % in 2020, corresponding to an annual structural adjustment of 0.65 % of GDP.	Not relevant anymore	Not applicable	SDG 8, 16
Take measures to strengthen the fiscal [framework]	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 8, 16
and public procurement frameworks at all levels of government.	Limited Progress	Relevant RRP measures being implemented as of 2022	SDG 9
Preserve the sustainability of the pension system.	Substantial Progress	Relevant RRP measures being implemented as of 2022	SDG 8
Use windfall gains to accelerate the reduction of the general government debt ratio.	Not Assessed / No Input to Add	Not applicable	SDG 8, 16
2019 CSR 2	**Some progress**		
Ensure that employment services have the capacity to provide effective support	Some Progress	Relevant RRP measures being implemented as of 2022	SDG 8
and ensure that social services have the capacity to provide effective support.	Some Progress	Relevant RRP measures being implemented as of 2022	SDG 1, 2, 10
Foster transitions towards open-ended contracts,	Substantial Progress	Relevant RRP measures being implemented as of 2022	SDG 8
including by simplifying the system of hiring incentives.	Some Progress	Relevant RRP measures being implemented as of 2023	SDG 8
Improve support for families,	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 1, 2, 10
reduce fragmentation of national unemployment assistance	Substantial Progress	Relevant RRP measures being implemented as of 2024	SDG 1, 2, 10
and address coverage gaps in regional minimum income schemes.	Substantial Progress	Relevant RRP measures being implemented as of 2021	SDG 1, 2, 10
Reduce early school leaving	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 4
and improve educational outcomes, taking into account regional disparities.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 4, 10, 11
Increase cooperation between education and businesses with a view to improving the provision of labour market relevant skills and qualifications,	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 4, 8, 9
in particular for information and communication technologies.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 4, 9
2019 CSR 3	**Some progress**		
Focus investment-related economic policy on fostering innovation,	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 9, 10, 11
resource efficiency	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 6, 10, 11, 12, 15
and energy efficiency,	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 10, 11
upgrading rail freight infrastructure	Some Progress	Relevant RRP measures being implemented as of 2022	SDG 10, 11
and extending electricity interconnections with the rest of the Union, taking into account regional disparities.	Limited Progress	Not applicable	SDG 7, 9, 10, 11, 13
Enhance the effectiveness of policies supporting research and innovation.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 9
2019 CSR 4	**Some progress**		
Further the implementation of the Law on Market Unity by ensuring that, at all levels of government, rules governing access to and exercise of economic activities, in particular for services, are in line with the principles of that Law	Some Progress	Relevant RRP measures being implemented as of 2022	SDG 9
and by improving cooperation between administrations.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 9
2020 CSR 1	**Some progress**		
Take all necessary measures, in line with the general escape clause of the Stability and Growth Pact, to effectively address the COVID-19 pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.	Not relevant anymore	Not applicable	SDG 8, 16
Strengthen the health system's resilience and capacity, as regards health workers, critical medical products and infrastructure.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 3
2020 CSR 2	**Some progress**		
Support employment through arrangements to preserve jobs,	Substantial Progress	Relevant RRP measures being implemented as of 2021	SDG 8
effective hiring incentives and	Some Progress	Relevant RRP measures being implemented as of 2023	SDG 8
skills development.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 4
Reinforce unemployment protection, in particular for atypical workers.	Some Progress	Relevant RRP measures being implemented as of 2022	SDG 1, 2, 10
Improve coverage and adequacy of minimum income schemes and	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 1, 2, 10
family support, as well as	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 1, 2, 10
access to digital learning.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 4
2020 CSR 3	**Some progress**		
Ensure the effective implementation of measures to provide liquidity to SMEs and the selfemployed, including by avoiding late payments.	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.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 8, 9
Focus investment on the green and digital transition, in particular on fostering research and innovation,	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 9
clean and efficient production and use of energy, energy infrastructure,	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 13
water and waste management and	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 6, 12, 15
sustainable transport.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 11

(Continued on the next page)

Table (continued)

2020 CSR 4	**Limited progress**		
Improve coordination between different levels of government and	Limited Progress	Relevant RRP measures being implemented as of 2021	SDG 16
strengthen the public procurement framework to support recovery in an efficient manner.	Limited Progress	Relevant RRP measures being implemented as of 2022	SDG 9
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.	Not relevant anymore	Not applicable	SDG 8, 16
When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.	Not relevant anymore	Not applicable	SDG 8, 16
At the same time, enhance investment to boost growth potential. Pay particular attention to the composition of public finances, on both the revenue and expenditure sides of the budget, and to the quality of budgetary measures in order to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, in particular investment supporting the green and digital transition.	Not relevant anymore	Not applicable	SDG 8, 16
Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including, where relevant, by strengthening the coverage, adequacy and sustainability of health and social protection systems for all.	Not relevant anymore	Not applicable	SDG 8, 16
2022 CSR 1	**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
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 by assessing RRP payment requests and analysing reports published twice a year on the achievement of the milestones and targets. These are to be reflected in the country reports.		
Submit the 2021-2027 cohesion policy programming documents with a view to finalising the negotiations with the Commission and subsequently starting their implementation.	Progress on the cohesion policy programming documents is monitored under the EU cohesion policy.		
2022 CSR 3	**Some Progress**		
Increase recycling rates to meet Union targets and promote the circular economy by enhancing coordination among all levels of government and undertaking further investment to meet separate collection of waste and recycling obligations,	Some Progress	Relevant RRP measures being implemented as of 2022	SDG 6, 10, 11, 12, 15
as well as to enhance water reuse.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 6, 12, 15
2022 CSR 4	**Some Progress**		
Reduce overall reliance on fossil fuels.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 13
Accelerate the deployment of renewable energy, with a focus on decentralised installations and self-consumption, including by further streamlining permitting procedures and improving access to the grid.	Substantial Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 8, 9, 13
Support complementary investment in storage, network infrastructure,	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 13
electrification of buildings	Limited Progress	Relevant RRP measures planned as of 2023	SDG 7
and transport,	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 11
and renewable hydrogen.	Substantial Progress	Relevant RRP measures being implemented as of 2022	SDG 7, 9, 13
Expand energy interconnection capacity.	Limited Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 13
Increase the availability of energy-efficient social and affordable housing, including through renovation.	Some Progress	Relevant RRP measures being implemented as of 2023	SDG 1, 2, 7, 10
2023 CSR 1	**Some progress**		
Wind down the emergency energy support measures in force, using the related savings to reduce the government deficit, as soon as possible in 2023 and 2024. Should renewed energy price increases necessitate new or continued support measures, ensure that such support measures are targeted at protecting vulnerable households and firms, are fiscally affordable and preserve incentives for energy savings.	Substantial Progress	Not applicable	SDG 8, 16
Ensure prudent fiscal policy, in particular by limiting the nominal increase in nationally financed net primary expenditure in 2024 to not more than 2,6 %.	No Progress	Not applicable	SDG 8, 16
Preserve nationally financed public investment and ensure the effective absorption of grants under the Facility and of other Union 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, in order to achieve a prudent medium-term fiscal position.	Full Implementation	Not applicable	SDG 8, 16
2023 CSR 2			
Maintain the momentum in the steady implementation of its recovery and resilience plan 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. Ensure continued sufficient administrative capacity in view of the planned increase in the size of the recovery and resilience plan. 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	**Some progress**		
Reduce reliance on fossil fuels.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 13
Accelerate the deployment of renewable energy, with a focus on decentralised installations and self-consumption, including by further streamlining permitting procedures and improving access to the grid.	Substantial Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 8, 9, 13
investing in energy storage, electricity transmission and distribution, and	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 13
cross-border electricity interconnections.	Limited progress	Relevant RRP measures being implemented as of 2021	SDG 7, 9, 13
Increase the availability of social and affordable energy-efficient housing, including through renovation,	Some Progress	Relevant RRP measures being implemented as of 2023	SDG 1 ,2, 7, 10
accelerate the electrification of buildings and	Limited progress	Relevant RRP measures planned as of 2023	SDG 7
the penetration of electromobility.	Some Progress	Relevant RRP measures being implemented as of 2021	SDG 11
Step up policy efforts aimed at the provision and acquisition of the skills needed for the green transition.	Some Progress	Relevant RRP measures planned as of 2023	SDG 4

Note:

* See footnote (8)

** 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 Spain'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 79.85 billion in grants and EUR 83.2 billion in loans under the RRF over the 2021-2026 period, representing 11.2% of Spain's GDP ([9]). As of mid-May 2024, EUR 38.4 billion has been disbursed to Spain under the RRF, comprising EUR 38.1 billion in grants and EUR 340 million in loans.

Spain still has EUR 124.6 billion available in grants and loans from the RRF. This will be disbursed after the assessment of the future fulfilment of the remaining 474 milestones and targets ([10]) included in the Council Implementing Decision ([11]) (CID), ahead of the 2026 deadline established for the Facility.

Spain's progress in implementing its plan is recorded in the Recovery and Resilience Scoreboard ([12]). 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.

Spain'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 1 billion was disbursed as pre-financing on 1 February 2024. This helped launch relevant reforms like streamlining permitting procedures for renewable energy projects.

The plan has a strong focus on the green transition, dedicating 39.9% of the available funds to measures that support climate objectives and 25.9% of its total allocation to support the digital transition. It also retains a strong social dimension with social protection measures, especially related to upskill and reskill workers.

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

Initial plan CID adoption date	13 July 2021
Scope	Revised plan with REPowerEU chapter
Last major revision	17 October 2023
Total allocation	EUR 79.9 billion in grants and EUR 83.2 billion in loans (11.5% of 2023 GDP)
Investments and reforms	142 investments and 111 reforms
Total number of milestones and targets	595
Fulfilled milestones and targets	121 (20.3% of total)

Source: RRF Scoreboard

With three payment requests completed, Spain's implementation of its RRP is underway. However, timely completion requires increased efforts. The Commission gave a positive assessment of Spain's first and second payment requests, taking into account the opinion of the Economic and Financial Committee. This led to EUR 10 billion being disbursed in financial support on 27 December 2021 and EUR 12 billion on 29 July 2022 ([13]). The related 92 milestones and targets covered reforms and investments such as reforms of tax measures contributing to the ecological transition, and others

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

([10]) 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.

([11]) https://data.consilium.europa.eu/doc/document/ST-10150-2021-ADD-1-REV-2/en/pdf

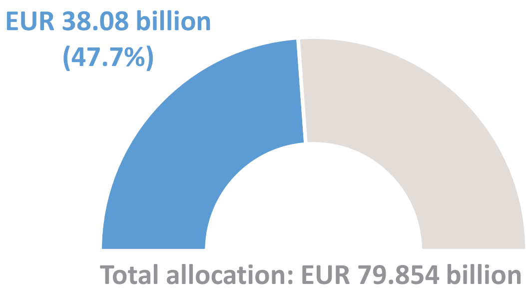
([12]) https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

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

in the areas of digitalisation, healthcare, education, taxation, labour market, and sustainability.

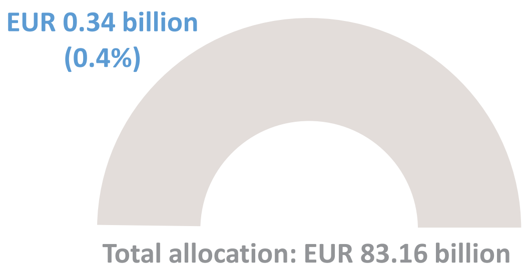
The most recent payment request, which the Commission assessed positively on 17 February 2023, has led to the disbursement of EUR 6 billion on 31 March 2023. The disbursement reflected the positive assessment of 29 milestones and targets covering the electric charging infrastructure, the vocational training system, renewable energy production, law against tax evasion and fraud, among others.

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



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

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



Source: RRF Scoreboard

As of 15 May 2024, the Commission is assessing Spain's fourth payment request. Table A3.2 highlights some relevant measures achieved so far, and some that will be implemented before 2026 to keep making Spain's economy greener, more digital, inclusive, and resilient.

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

Reforms and investments implemented
• New education law • Simplification of employment contracts and modernisation of active labour market policies • Roll-out plan for recharging and boosting electric vehicle infrastructure
Upcoming reforms and investments
• Improvement of water and wastewater treatment infrastructures • Short-distance railway station improvement • Restoration of degraded coastal areas and ecosystems

Source: FENIX

EU funding instruments provide considerable resources for recovery and growth to the EU Member States. In addition to the EUR 163.0 billion of Recovery and Resilience Facility (RRF) funding described in Annex 3, EU cohesion policy funds [14] provide EUR 35.6 billion to Spain for the 2021-2027 period [15]. Support from these two instruments combined represents around 13.58% of the country's 2023 GDP, compared to an EU average of 5.38% of GDP [16]. 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 Spain's competitiveness, with tangible achievements notably in research and innovation, circular economy, energy efficiency and social inclusion. By the end of the eligibility period in December 2023, 2014-2020 cohesion policy funds [17] had made EUR 44.9 billion available to Spain [18], of which EUR 25.3 billion has been disbursed since March 2020, when the COVID-19 pandemic began [19]. The achievements of cohesion policy funds over the programming period include support to about 90 0000 SMEs and mid-caps so far, investments in research and development, and action to promote big advances in the digitisation of both businesses and public bodies. Cohesion policy programmes have been key in supporting ambitious waste recycling objectives and in improving water supply already for more almost 600 000 inhabitants. The programmes have also helped reduce energy consumption in public and private buildings. Measures under REACT-EU have been key in supporting the country's recovery from the COVID-19 pandemic by investing (from 2020 onwards) in health equipment and infrastructure, vaccines, education infrastructure and equipment, digitalisation, green and energy projects, and SMEs. During the same period, almost 1.5 million people benefited from social inclusion, anti-poverty and anti-discrimination measures under the European Social Fund's national programme for social inclusion and social economy. These measures targeted vulnerable groups, such as people with disabilities, migrants, or people at risk of exclusion.

In the current programming period (2021-2027), cohesion policy will provide a further boost to Spain's competitiveness, to the green transition and to social cohesion, improving the living and working conditions of Spain's people. In 2021-2027, the European Regional Development Fund (ERDF) will boost the digitalisation of the economy, with a particular focus on public administration, by supporting ICT solutions and e-services with thriving innovative tools. Additionally, it will help almost 3 000 companies cooperate with research organisations, and about 55 000 companies will receive support to improve their competitiveness. A significant amount of funding (EUR 3.2 billion) is dedicated to deploying renewable energy sources and increasing their use, with a particular focus on renewable geothermal and solar energy. The aim is to increase their use by 3% by 2030. Around 260 000 pupils will have the chance to learn in new or renovated school buildings thanks to cohesion policy funding. The Just Transition Fund (JTF) will help foster further economic diversification and job creation in the territories affected by the closure of coal mines and power plants, with a direct impact on an estimated 4 000 jobs. The JTF will significantly support upskilling and reskilling initiatives and the social economy in these areas. The European Social Fund Plus will dedicate around EUR 1.1 billion to developing formal vocational education and training (VET), more specifically increasing participation in dual VET and provision of guidance in VET centres. An additional EUR 1.5 billion will be allocated to non-formal vocational training for employment. With this work, cohesion policy substantially contributes to achieving the UN Sustainable

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

(15) European territorial cooperation (ETC) programmes are excluded from the figure. In 2021-2027, the total investment, including national financing, amounts to EUR 52.6 billion.

(16) 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.

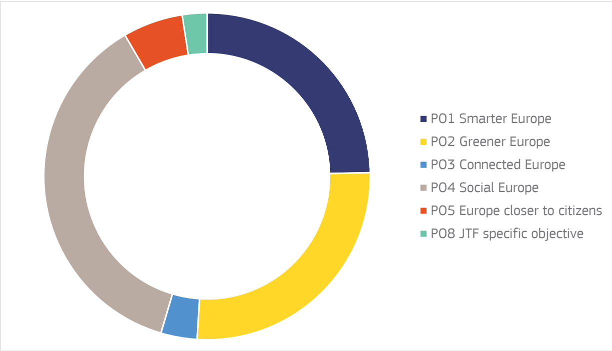
(17) In 2014-2020, cohesion policy funds included the European Regional Development Fund, the European Social Fund and the Youth Employment Initiative. REACT-EU allocations are included but ETC programmes are excluded.

(18) In 2014-2020, the total investment, including national financing, amounted to EUR 57.3 billion.

(19) Cut-off date: 14 May 2024.

Development Goals (SDGs) in Spain, in particular SDG 9 (Industry, innovation, infrastructure), SDG 8 (Decent work and economic growth) and SDG 7 (Affordable and clean energy).

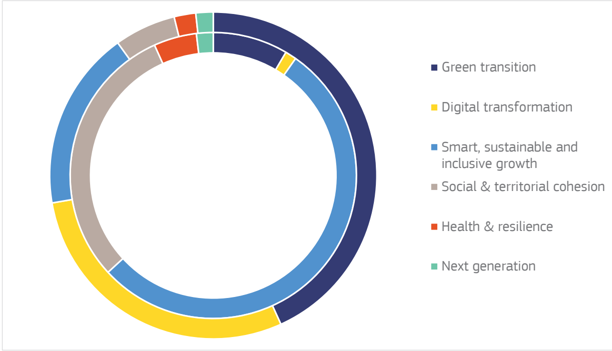
Graph A4.1: **Distribution of cohesion policy funding across policy objectives in Spain**



Source: European Commission

Through combined action, cohesion policy and the recovery and resilience plan (RRP) have a mutually reinforcing impact in Spain. For instance, the reform of the Science Law included in the RRP is expected to have a positive impact on the implementation of EU programmes supporting research and innovation, notably the ERDF and Horizon Europe ones, by simplifying procedures for granting aid. In terms of infrastructure, both the RRP and the ERDF envisage investments in the roll-out of ultra-fast broadband access. This will be done in a staggered and coordinated way: ERDF co-financed investments will follow RRP ones, to achieve maximum coverage. In the field of energy efficiency renovations, the reforms included in the RRP – such as the introduction of a system of renovation offices – will facilitate investments financed under both instruments, which have a different focus: residential housing for the RRP and infrastructure and public buildings for the ERDF. Investments in hydrogen through the ERDF focus on the experimentation phase and the development of pilot and demonstration projects. These will be complementary to investments carried out under the RRP, in line with the hydrogen roadmap included in the RRP. Finally, the green infrastructure, connectivity and restoration strategy included in the RRP sets the ground for green infrastructure investments supported by both the RRP and the ERDF. The contribution of cohesion policy and RRP funding by policy objective is illustrated by Graphs A4.1 and A4.2.

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



(1) 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 Spain.
Source: European Commission

The Technical Support Instrument (TSI) helps Spain invest in its public administration and create a better enabling environment for EU and national investment. The TSI has funded projects in Spain to design and implement growth-enhancing reforms since 2018. The support provided in 2023 included action to design and implement a higher education skills intelligence strategy, including support to design a microcredential course offering based on labour-market needs; develop a tailored strategy and centralised IT platform for the integration of non-EU nationals on the labour market; and develop a new country-wide catalogue of e-government services at local level. The TSI also helps Spain to fulfil its communication obligations in relation to the RRP, and to improve the coordination among RRP implementing authorities, as well as the guidance provided to them.

Spain 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 Spain in the context of its past financial assistance programme and their outstanding amounts.

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

EU grants			
	Amount 2014-2020 (EUR million)		Amount 2021-2027 (EUR million)
Cohesion policy	44 858.9		35 561.9
RRF grants (1)	-		79 854.2
Public sector loan facility (grant component) (2)	-		65.9
Common agricultural policy (3)	59 900.0		31 509.0
EMFF/EMFAF (4)	1 057.1		1 120.4
Connecting Europe Facility (5)	1 087.9		414.3
Horizon 2020 / Horizon Europe (6)	6 384.6		3 427.6
LIFE programme (7)	354.3		210.9
EU guarantees			
	EU Guarantee (EUR million)		Volume of operations (EUR million)
European Fund for Strategic Investment 2015-2020 (8)	3 964.4		10 944.1
InvestEU 2021-2027 (9)	656.5		2 561.1
EU loans			
	Period	Total amount available (EUR million)	Disbursed amount (EUR million)
SURE (10)	2020-2022	21 324.8	21 324.8
RRF	2021-2026	83 160	340.0

(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

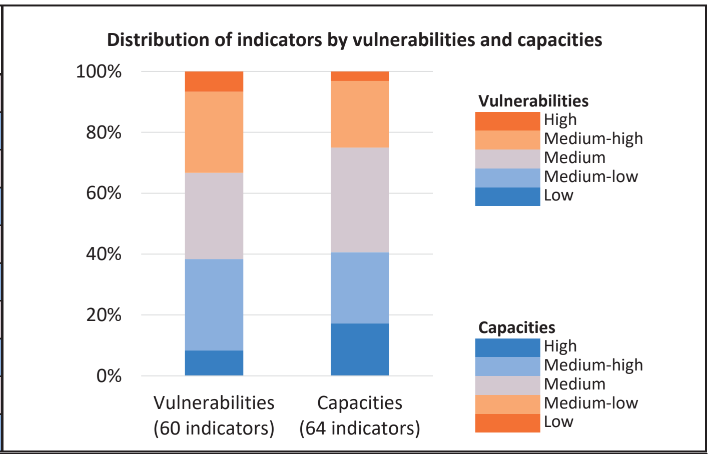
Table A4.2: **EU / euro area loans under the 2010-2018 financial assistance programmes**

	Period	Total amount disbursed (EUR billion)	Outstanding amount (EUR billion)
European Stability Mechanism	2012-2013	41.3	16.4

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 Spain and the EU-27**

Dimension		ES 2023 RDB	ES 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) ([20]) to show Spain's relative resilience capacities and vulnerabilities ([21]) that may be of relevance for societal, economic, digital and green transformations, and for dealing with future shocks and geopolitical challenges. ([22])

According to the set of resilience indicators, Spain has a medium overall vulnerability profile, with its overall resilience capacities also categorised as medium, slightly below the EU average. Analysis of the vulnerability indicators shows that 40% of them are medium-low or low. Conversely, approximately 40% of Spain's capacity indicators are medium-high.

The 2023 RDB shows that Spain's social and economic vulnerability and capacity metrics have remained stable, at medium-high and medium, respectively, both below the EU average. Areas that give cause for concern are Spain's widening gender employment gap, the slightly reduced but wide academic performance gap, explained by students' socio-economic status, and an old-age dependency ratio projected to be high. There have also been improvements though, such as the decrease in the non-financial corporation debt to GDP ratio. Among Spain's capacity indicators, the impact of social transfers on poverty reduction, the proportion of adults participating in learning over the last 12 months, and the proportion of innovative businesses, all remain low.

In the green dimension, Spain's vulnerabilities have increased and its capacities remained stable. The green vulnerability index has increased from medium-low to medium. The main reasons for this are higher CO_2 emissions in road transport, the increased consumption footprint per capita and the challenges related to water scarcity and sustainable water management that Spain continues to face, also attested by the high water exploitation index. Spain remains one of the countries with the highest number of fatalities from extreme climate events.

In the digital dimension, Spain vulnerabilities are medium-low and its capacities high. That said, Spain would do well to increase its relatively

([20]) 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).

([21]) 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.

([22]) 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.

low gross value added in information and communication technology (ICT), and to further increase its number of Master's ICT graduates.

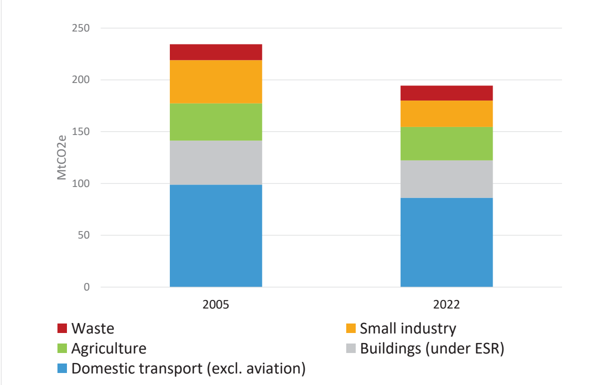
Improvements have taken place in the geopolitical dimension, with vulnerabilities going from medium to medium-low, and capacities, at medium level, remaining stable. The main reasons for this are a lower net international investment position and higher military expenditures. On the capacity front, there has been an increase extra-EU trade openness ratio.

Spain has made progress in the green transition, but more action is needed in several areas, for example to increase its target on energy efficiency for 2030 and to improve sustainable water management. This Annex provides a snapshot of climate, energy, and environmental aspects of the transition in Spain ([23]).

Spain's draft updated national energy and climate plan (NECP) provides a wealth of information on the investment needs and funding sources to achieve its 2030 climate and energy targets. It includes information on the investment needs for the planned policies and measures for the different dimensions of the Energy Union. From the total investment needed, around 85 % of the investments would come from the private sector, and about a tenth from EU funding, notably the Recovery and Resilience Facility. However, the plan lacks sufficient detail on how to mobilise the private funding needed, particularly for the measures to support citizens and small businesses ([24]).

Spain is projected to reach its 2030 effort sharing target if it adopts and implements the planned additional measures ([25]). Spain's 2022 greenhouse gas emissions from these sectors are expected to come in at 19.7% below 2005 levels. Additional policies planned in Spain's draft updated NECP are projected to reduce these emissions by 44.7% by 2030 from 2005 levels. This results in reductions of 7 percentage points beyond Spain's effort sharing target to reduce by 37.7%. Current policies are projected to reduce its emissions from the effort sharing sectors by 29% from 2005 levels by 2030 ([26]). This highlights the importance of implementing the full range of policies and measures in the draft updated NECP.

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



Source: European Environment Agency

The ambition of Spain's target for energy efficiency in its draft updated NECP is less ambitious than required under the Energy Efficiency Directive ([27]). Its energy efficiency contribution of 96.7 Mtoe in primary energy consumption and 70.2 Mtoe in final energy consumption for 2030 set in the draft updated NECP are significantly less ambitious than the contribution required under the Energy Efficiency Directive (EED), by 18.2% and 7.4% respectively. Spain's renewable energy contribution set in its

([23]) 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.

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

([25]) 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).

([26]) The effort sharing emissions for 2022 are based on approximated inventory data. The final data will be established in 2027 after a comprehensive review. Spain's draft updated NECP does not provide emissions projections for the effort sharing sectors with existing policies (WEM). That information 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). Projections on the impact of additional policies ('with additional measures', WAM) as planned in Spain's draft updated NECP.

([27]) 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 Spain at 81.8 Mtoe for primary energy consumption. The Commission communicated a corrected national contribution of 66.28 Mtoe in final energy consumption for 2030 in accordance with Article 4(5) of the Energy Efficiency Directive to increase the contribution towards the Union's binding energy efficiency target. See the Commission Recommendation of 18 December 2023 to Spain.

draft updated NECP is 47.9% by 2030, above the required contribution of 43%.

Sustainable transport has yet to take off in Spain ([28]). Passenger cars are used for 86% of distances travelled in Spain, and 93% of freight is transported by road. Rail provides only for 4% (EU: 16%). Only 0.4% of Spain's car fleet were battery electric vehicles in 2023, and Spain has about 29 200 publicly accessible charging points, or 1 for every 8 e-vehicles (above the EU average of 1:10). Spain's recovery and resilience plan aims to improve rail infrastructure, create low-emission zones in urban areas, fund green public buses, install electric charging stations and develop urban public transport. Personal transport exacerbates problems with air quality and traffic congestion in the major metropolitan areas in Spain, leading to health and economic costs.

Spain's efforts to increase carbon removals from the atmosphere fall short of the level of ambition needed to meet its 2030 target for land use, land-use change and forestry (LULUCF). Spain's land-use sector has provided constant net carbon removals in recent years, with forests playing a major role. To meet its 2030 LULUCF target, additional carbon removals of 5 309 kt CO_2eq are needed ([29]). According to the latest projections for 2030, the volume of carbon removals is likely to fall short of the target ([30]).

Spain is taking action to build resilience to climate impacts, with major challenges remaining on water management (see further below). Spain is one of the EU countries most affected by droughts, and it is also vulnerable to wildfires and heatwaves. Power generation will be increasingly affected by changes to rainfall patterns, lower flow rates, higher frequency and intensity of droughts and higher water temperatures.

The agricultural sector is not yet sufficiently prepared for the impacts of climate change. Unsustainable levels of groundwater abstraction have led to the salinification of groundwater in the south of Spain, for example in Almeria. Critical infrastructure in coastal areas is exposed to climate change-related coastal phenomena. Spain's natural carbon sinks are subject to many intensifying climate-related risks, including fast changes to ecosystem conditions that may have an impact on their capacity to remove and store carbon (see below). Spain has a relatively low level of exposure to uninsured economic losses caused by weather-related extreme events, with the public sector playing a role in national insurance and for addressing climate-related losses including through the *Conscorcio de Compensación de Seguros* initiative ([31]). It has made progress in improving its capacity for adaptation, both on the legal framework and implementation. In 2021, Spain published its climate adaptation plan for 2021-30 and incorporated adaptation elements in its draft updated NECP ([32]).

Despite the progress that Spain has made in recent years, sustainable water management remains a major environmental issue. Significant challenges remain in the water sector, especially in terms of water governance, water body rehabilitation and water efficiency. Further infrastructure investment would help improve water management, such as in wastewater collection and treatment, in reducing leaks in the networks and the general water supply, improving monitoring (quality and quantity), and investing in nature-based solutions, flood prevention and river restoration. Spain also has further potential in water reuse. These measures would also to better manage water scarcity and droughts.

Water efficiency and the environmental status of water bodies can be improved. Large areas of Spain are subject to water stress. The water exploitation index plus (WEI+) was 8.1% in 2019 (above the EU average, 3.6%) and the worst seasonal water scarcity conditions were recorded at 47.2% in Q3 of 2019 ([33]). On average, between 2000 and 2020, 4.7% of land in Spain was affected by drought, rising to 9.3% in 2022. In

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

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

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

([31]) On the Consorcio de Compensación de Seguros, see informe_cc_activ_aseguradora_tcm30-517392.pdf.

([32]) Also see the Commission's 2023 assessment and recommendation on Spain's progress on climate adaptation.

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

2023, droughts exacerbated again, especially in some regions such as Cataluña and Andalucía. Spain had the fifth largest irrigated area in Europe, accounting for 13.2% of total utilised agricultural area, and water abstraction for agricultural purposes accounted for 68.4% of the total volume of water abstracted in 2019. Increasing innovation in this domain, for example by crop resilient harvesting, would help increase water efficiency. In 2016, the efficient use of water resources can be measured by the water productivity rate ([34]). In 2020, Spain's economy generated EUR 45 per cubic meter of water abstracted, among the lowest water productivity rates in the EU. Based on the reporting in the second River Basin Management Plans (RBMPs) ([35]), 57% of all surface water bodies reached good ecological status and 88% achieved a good chemical status, among the top-performing countries. Spain's marine waters have not yet achieved a good environmental status as tracked by the descriptors used in the Marine Strategy Framework Directive.

There is scope to improve coordination and cooperation among the different authorities working in the water sector. It is also essential to ensure that the current water legislation is implemented and enforced properly.

Improving soil health would help ensure water resilience. Based on the best available information on soil health issues at Member State level used in the impact assessment for the Soil Monitoring Law ([36]), 36% of Spanish soil could be considered as unhealthy ([37]), mainly due to the loss of organic carbon, affecting 20% of land. Conservation tillage practices, which increase soil organic carbon, covered 18% of tillable area in 2016 in Spain. Healthier soils would help water retention and help Spain combat droughts.

There is scope to improve biodiversity and nature protection and restoration. Spain boasts a very rich biodiversity and contributes the largest land area to the EU's Natura 2000 network, covering 27.3% of its land (against the EU average of 18.5%). Some designations are still pending for marine areas. The main challenge is to put in place the measures needed to protect and manage the Natura 2000 network and to provide sufficient technical, human and financial resources. Only 9% of habitats and 19% of species are in a good conservation status ([38]). The common farmland bird index increased between 2014 and 2017 to reach 77, but this is a 23-point decrease since the reference year in 2000 (100). Biodiversity hubs in the south of Spain such as the wetlands in Doñana, Mar Menor and Las Tablas de Daimiel natural parks remained threatened.

Despite positive trends, Spain still has potential to accelerate the transition of the agri-food system to sustainable practices. The annual output of Spain's agricultural sector was EUR 45.2 billion ([39]) in 2023. The country has the second-largest area of agricultural land in the EU under organic farming, reaching 10.8% of utilised agricultural land (UAA) in 2021. Further action would help reach the goal of at least 25% of the EU's agricultural land under organic farming by 2030. The uptake of organic products is increasing but patterns of food consumption are not yet sustainable. Organic retail sales reached EUR 2.5 billion in 2021, a 35% increase in market share since 2016.

Food waste is less of an issue in Spain than elsewhere in the EU, with 90 kg/person wasted a year, less than the EU average of 131 kg/person in 2020. The composting and digestion rate of municipal waste was 83 kg/person in 2021, less than the EU-27 average of 95 kg/person but an increase from 72 kg/person in 2016.

([34]) Measured as GDP over total fresh surface water abstracted in cubic meters.

([35]) Data from the 3rd RBMP is not available.

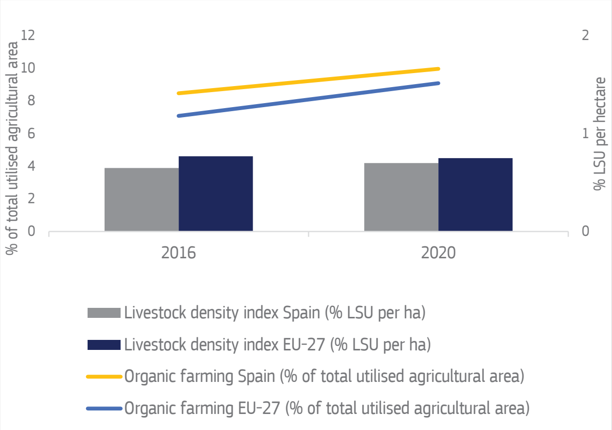
([36]) SWD 417 final of 5.7.2023 - impact assessment for the Directive of the European Parliament and of the Council on Soil Monitoring and Resilience (Soil Monitoring Law), (see p. 10, pp. 189-190, pp. 835-845).

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

([38]) Against the EU average of 15% and 28%.

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

Graph A6.2: **Livestock density and organic farming evolution**



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

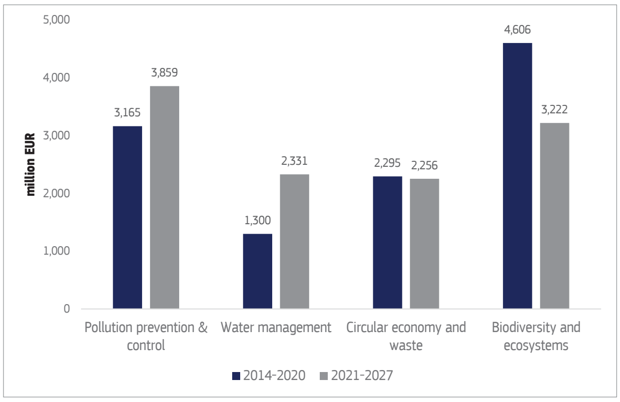
Spain's livestock farming sector is becoming more intensive. The livestock density index increased from 0.61% to 0.70% between 2010 and 2020. In 2022, Spain had the highest livestock population in the EU, having increased between 2010 and 2020. At the same time, the share of extensive animal farming ([40]) over the total utilised agricultural area fell from 36.2% in 2013 to 29.5% in 2016, above the EU average of 23.8%.

Intensive poultry and pig farming were the sectors that put the highest burden on the environment in terms of ammonia emissions into the air. The agricultural sector was responsible for generating 95.6% of all ammonia emissions, against the EU average of 90.7%.

Intensive agriculture is also increasing the risk of nitrate pollution. The gross nitrogen balance on agricultural land in Spain recorded an average surplus of 49.3 kg/ha per year in 2017 and has been increasing. The nitrate content in groundwater greatly exceeds the EU average at 40.7 against the average of 20.5 mg nitrates/l. Between 2016-2019, 23% of groundwater monitoring stations reported nitrate levels above the maximum of 50 mg/l. The gross phosphorus balance also increased to 8.3 kg/ha in 2017. The chemical status of waterbodies is highly affected by pesticide contamination. In 2021, 17.9% of surface water monitoring sites were reported to have pesticide levels exceeding the Water Framework Directive's thresholds.

Spain would benefit from investing more in addressing the main environmental challenges. Over the 2014-2020 period, the environmental investment gap was estimated at EUR 11.5 billion per year, or 1% of GDP. According to the latest estimates, the overall environmental investment needs for 2021-2027 reach, at least EUR 27.1 billion annually while the financing baseline stands at EUR 15.3 billion, leaving a wider gap compared to the previous financing period, equivalent to EUR 11.7 billion. The annual investment gap for pollution prevention and control increased to EUR 4.5 billion, while the one for sustainable water management now stands at EUR 2.2 billion. On the other hand, the annual gaps for biodiversity and ecosystems, and circular economy and waste decreased to, respectively, EUR 2.7 billion and EUR 2.2 billion.

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

([40]) Share of utilised agricultural area with livestock density below 1 livestock unit per hectare.

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	241,979.2	-14%	-22%	-19%	-20%	-38%	-8	7
Net greenhouse gas removals from LULUCF [2]	Kt CO2eq	-46 020	-46 988	-46 475	-47 516	-47 417	-43,635	n/a	n/a
Share of energy from renewable sources (1) [3]	%	8%	18%	21%	21%	22%	43%	-	-
Energy efficiency: primary energy consumption [3]	Mtoe	136.0	120.6	105.0	111.5	113.2	81.8		
Energy efficiency: final energy consumption [3]	Mtoe	98.1	86.5	73.8	80.3	81.2	66.3		
							EU-27		Projected
		2018	2019	2020	2021	2022	2021	2022	2030
Green transition: mobility									
Greenhouse gas emissions: road transport	Mt CO2e	-	-	-	83.3	86.2	769.0	786.6	54.4
Share of zero-emission vehicles in new registrations [4]	%	0.5	0.8	3.1	3.1	3.9	9	12.1	n/a
Number of publicly accessible AC/DC charging points		-	-	6030	8894	22472	299178	446956	n/a
Share of electrified railways	%	63.7%	64.0%	64.6%	64.1%	-	56.1%	-	n/a
Green transition: buildings									
Greenhouse gas emissions: buildings	Mt CO2e	-	-	-	38.8	36.1	537.0	486.7	25.1
Final energy consumption in buildings	2015=100	102.8%	100.0%	97.3%	100.2%	98.3%	104.0%	104.0%	
Climate adaptation									
Climate protection gap [5]	score 1-4	-	-	0.9	1.2	1.1	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	6.7	8.1	-	-	-	3.6	-	-
Circular economy | Material footprint [7]	tonnes per person	10.8	9.8	9.7	9.8	9.3	14.2	14.8	14.9
Pollution | Years of life lost due to air pollution by PM2.5 [8]	per 100.000 inhabitants	368	369	364	340	-	545	584	-
Biodiversity | Habitats in good conservation status [9]	%	8.9					14.7		
Common farmland bird index [10]	2000=100	-	-	-	-	-	78	-	-
Green transition: agri-food sector									
Organic farming	% of total utilised agricultural area	9.28	9.66	9.98	10.79	-	9.1	-	-
Nitrates in groundwater	mg NO_3/litre	-	-	-	-	-	20.42	-	-
Food waste per capita	Kg per capita			90	-	-	130	131	-
Share of soil in poor health [11]	%					36			41
Soil organic matter in agricultural land [12]	Mt per ha	757	-	-	-	-	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.

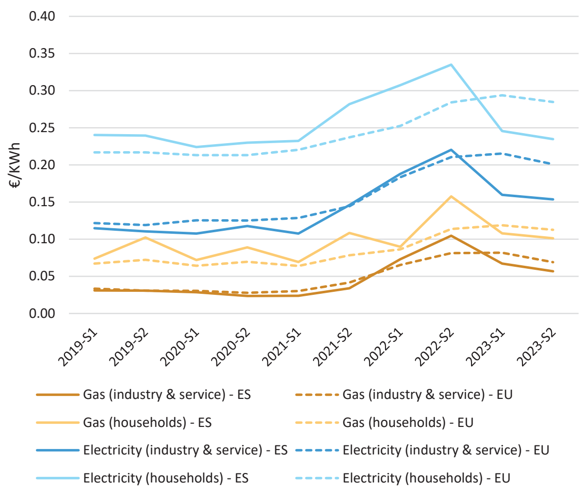
This Annex ([41]) sets out Spain's progress and challenges in accelerating the net-zero energy transition while bolstering the EU's competitiveness in the clean energy sector ([42]). It considers measures and targets put forward in the draft updated National Energy and Climate Plans for 2030 ([43]).

Spain has markedly accelerated the installation of renewable energy capacity, particularly solar PV. As a result, it is consistently setting low wholesale electricity prices, with the capacity to boost the competitiveness of its economy, if authorities manage to keep developing the transmission and distribution grids in parallel. With the support of recovery and resilience funds investments in energy efficiency have accelerated, but similar rates of deployment are yet to come.

Average household electricity and gas prices in Spain have closely tracked wholesale market prices, due to specific contractual arrangements. Households have experienced marked increases and falls in their average energy prices compared to the average EU, also with a different timing, due to the close relationship with wholesale market prices present in contractual arrangements. For instance, average household electricity price peak was 14% higher than the EU peak. This fell 18.0% below the EU in the second half of 2023. In turn, the average gas household price peak was 33% higher than the EU peak, but was 10% lower than the EU average in the second half of 2023. The strong response of retail to wholesale market prices motivated authorities to adopt a number of policies.

Spanish authorities have applied short and medium term measures to protect consumers from highly volatile household energy prices. Including the Iberian Mechanism, these resulted in a 40.5% year-on-year reduction in the energy bill of a typical consumer in 2023, compared to 2022. Also, some 8.5 million domestic consumers (approximately a third of the total) are subscribed to the Voluntary Price for the Small Consumer (PVPC) scheme. This has been reformed with a new formula to incorporate long-term price signals. Vulnerable customers were further targeted by additional retail price interventions.

Graph A7.1: **Spain´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

Consumers with a PVPC rate are able to benefit from a social bonus. In 2023, this offered discounts of up to 40% to low-income households, 65% to vulnerable consumers, 80% to severely vulnerable consumers, and reaching 100% to severely vulnerable consumers at risk of social exclusion. These discounts have been extended until 30 June 2024. Similarly, there is the thermal social bonus, in the form of an economic transfer aimed at covering heating costs.

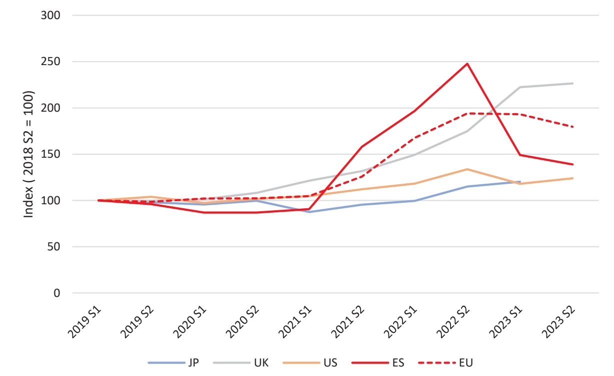
In relative terms, electricity prices for non-household consumers have increased significantly compared to the US and Japan up until the second half of 2022. However, they have since registered a sharp decline, nearly equaling the levels seen in the US and Japan by the first half of 2023. This shift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

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

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

([43]) Spain submitted its draft updated NECP in June 2023. The Commission issued an assessment and country-specific recommendations on 18 December 2023. Commission Recommendation, Assessment (SWD) and Factsheet of the draft updated National Energy and Climate Plan of Spain - European Commission (europa.eu) potential rebound in the international competitiveness of energy-intensive industries in Spain.

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



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

Fossil fuels continue to occupy a central role in Spain's energy system. Net imports represented 70.1% of Spain's gross available energy in 2021. Spain aims to reduce this dependence ratio to 51% in 2030, as expressed in its updated draft NECP, notably by increasing renewable production and reducing demand.

Spain has a diversified gas supply portfolio and gas is mostly used for electricity production and industry. Spain has the largest regasification capacity in Europe, amounting to 61.9 bcm/year. Also, its storage capacity (34.1 TWh) was filled to 87.2% in mid-January 2024. Regarding diversification, until 2021 Algeria was Spain's main gas supplier (43% share of total gas imports). Now it sends about 8bcm via LNG and Medgaz. Other LNG gas imports mostly originate from Nigeria, the US, Russia and Qatar. Spain operates four underground storage facilities with a total capacity of about 3.2 bcm, representing close to 10% of its total yearly demand. Spain fulfilled its gas storage obligations last winter, reaching 100.4% by 1 November 2023, and ended the winter season with a storage filled at 77.71% by 1 April 2024.

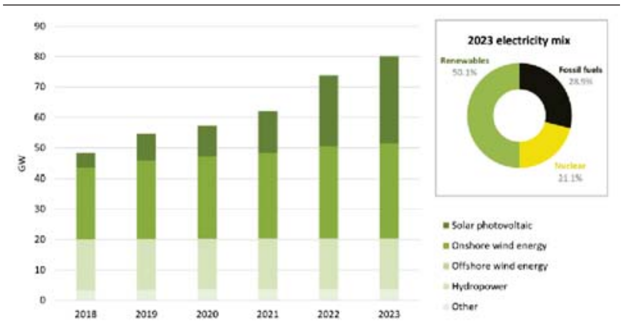
Spain has limited exposure to Russian gas shortages. Having a diversified infrastructure and low dependence on Russian gas meant Spain was not exposed to gas shortages due to disruptions in Russian flows. In addition, Spain managed to cut its gas demand between August 2022 and December 2023 by 12% compared to the average in the previous five years. The government also approved an Energy Security Plan.

Spain is in line to reach its high level of ambition for renewable electricity generation by 2030 (81% share). Generation for clean energy (i.e. renewables plus nuclear) already reached 75.1% of the total for 2023 (44) . The mix is expected to further change by fully phasing out coal, reducing nuclear generation, increasing wind and solar power generation, backing them up with gas during the transition and aiming at higher storage (22 GW) and self consumption (19 GW).

No adequacy issues were recorded in summer 2023, according to ENTSO-E. Demand decreased 5% in July 2023 and 2% in August 2023 (compared to the same months in 2022), due to consumption-reduction measures and increased self-consumption. No adequacy issues are expected either for winter 2023/24. Hydro reserves were 11% higher in October 2023 than in October 2022.

Installed renewable energy capacity in Spain surged by 8.5% in 2023, driven by a significant increase in solar photovoltaics. Total renewable energy capacity in Spain stood at 80.1 GW in 2023 (45).

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



(1) "Other" includes solid biofuels, renewable municipal waste, liquid biofuels, biogas marine energy and solar thermal energy
Source: IRENA, Ember

(44) IRENA report 2023.

(45) IRENA report 2023.

The total wind capacity in Spain in 2023 was 31.0 GW (an increase of 3%), virtually all onshore wind ([46]). As regards solar deployment, total installed capacity in 2023 was 31.0 GW, an increase of 21.1% ([47]). Finally, with regards to offshore and marine energy, Spain plans to develop 3 GW of offshore wind by 2030 ([48]) and 40-60 MW of marine energy. This is above its non-binding agreement pledged in the 2023 EU Sea Basins agreements.

Spain has made a number of reforms in the context of REPowerEU to accelerate the deployment of renewables. In 2022, Spain enacted reforms to support the deployment of self-consumption. In its draft updated NECP, Spain has committed to introducing single contact points to assist applicants in the whole process, increasing the qualifications of staff in charge of granting permits and developing a framework to identify areas for renewable energy projects. Spain made the pipeline for its renewable energy projects visible in 2020 by publishing a long-term schedule for auctions until 2025 (however, details concerning the timing, frequency, eligible technologies, expected capacity and budget are not clear).

Spain has doubled its biogas production ambition in its updated National Energy and Climate Plan to align it with the REPowerEU Plan (from 10.4 to 20 TWh/y). However, Spain has high additional potential and details regarding biomethane production are missing. Reaching 4.1 bcm/year of biomethane production by 2030 would allow Spain to replace approximately 13% of its current natural gas consumption.

Spain needs to invest in the modernisation and strengthening of its electricity grid, to further integrate renewable energy and contribute to security of supply. Spain has made strides to improve transmission grid access at the wholesale level. As a result, if approved, transmission grid permits would already allow Spain to reach its 2030 targets. However, access at distribution level (retail, energy communities and large self-consumers) faces challenges to evacuate production and further cooperation between the different levels of government could help. Spain's electricity interconnection ratio was 4.4% of installed generation capacity in 2023. Work on new interconnections with Portugal (ongoing, 3 GW) and France (both ongoing and planned, 8 GW) is expected to further increase interconnection capacity.

Consumer choice is actively exercised in the electricity and gas markets. Switching rates for electricity increased by approximately 3 pp from 2020 to 2022, to represent the highest in the EU in 2022 at above 20%. Regarding Spain's efforts to develop an enabling framework for renewable energy communities, ACER-CEER reports average progress. As regards comparison tools, electricity consumers have access to flexible and dynamic price contracts through smart meters.

There is a growing number of prosumers and energy communities. The favourable regulatory framework and high and volatile wholesale energy prices, helped bring total installed small-scale solar PV capacity to 5.7 GW in 2022 ([49]). According to Spain, as of 31 December 2019 more than 99.6% of all meters with power of up to 15 kW had been replaced by smart meters.

Spain has transposed EU provisions supporting prosumers, but the 2-km restriction limits wider energy sharing, especially in an energy community context. Significant delays and administrative complexity for grid access and connection permitting for installations above 15 kW are also reported.

A framework for citizen energy communities is still progressing. With the transposition of the EU provisions to support renewable energy communities, there is an increasing number of energy communities currently operational in Spain. An advanced and elaborate support programme is set out under its national recovery and resilience plan.

Energy efficiency gains slowed in Spain, although there is still untapped potential in energy efficiency. In 2022, Spain had a primary

([46]) IRENA report 2023.

([47]) IRENA report Renewable Energy Statistics 2023. The data might differ from the Eurostat data because a different methodology is used to calculate the capacity in AC and DC.

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

([49]) According to the Spanish Association of Photovoltaic Energy (UNEF).

energy consumption of 113.2 Mtoe, a 1.6% increase compared to 2021 and an 8.0% decrease compared to 2012. It had a final energy consumption of 81.2 Mtoe, a 1.1% increase compared to 2021 and a 2.8% decrease compared to 2012. By sectors, in 2022 the best results came from the industry sector which decreased its final energy consumption by 11.0% and the worst from the transport sector which increased its final energy consumption by 12.3%.

Spain has implemented energy efficiency measures with the support of several EU funds. Spain is gradually increasing its still-low share of renewables in heating and cooling (20% in 2022) to reach its 2030 target of 35%. However, schemes to reduce energy consumption addressed at buildings, industry and businesses, transport and agriculture are mostly grant-based, with high aid rates, and limited use of financial instruments and combined schemes. The decision to set up a financial instruments framework in Spain's recovery and resilience plan (RRP), with EUR 76 bn earmarked to support the climate, energy, digital and social transitions, is expected to contribute towards Spain's energy efficiency objectives, together with further support from ERDF funds.

Spain needs to step up its efforts to achieve meaningful contribution to its Long-Term Renovation Strategy. Spain expects 14% of savings in building energy consumption in 2030 compared to 2020. However, between 2020 and 2022 final energy consumption in residential buildings rose by 3.1% ([50]).

Spain is promoting the development of a Green Energy Corridor connecting Portugal, Spain and France with the EU's renewable energy network. The new list of Projects of Common Interest (PCI) and Projects of Mutual Interest adopted in November 2023 includes 10 PCIs in Spain or connecting to Spain in the hydrogen sector: three hydrogen network projects, five electrolysers and two hydrogen storage facility. The RRP may result in up to 1.4 GW of authorised electrolyser capacity.

Spain is allocating considerable RRP resources to support clean energy technology value chains. It is deploying EUR 1bn to support the net zero industry. It is also supporting – with more than EUR 3.5bn – the renewable hydrogen knowledge and value chain, including as part of EU value chains; its production and uptake; and its use to decarbonise industry. Cohesion policy will further build on RRP investment in R&I and large-scale investment, to scale up demonstration and pioneer projects and accelerate the introduction of renewable hydrogen. Support for more mature energy sources will focus on increasing the share of renewables in heating and cooling, promoting self- and shared consumption and increasing participation in energy communities.

Spain has a significant presence in the wind supply chain and is showing positive developments in the manufacturing of solar modules, batteries and electrolysers. Spain is one of the few net exporters of wind components in the EU, hosting manufacturing facilities across the entire value chain and spread across its territory with, for example, an estimated overall capacity of at least 500 offshore towers per year.

Regarding solar PV, Spain imports most of its panels. However, at least three module manufacturing units have an estimated manufacturing capacity of nearly 500 MW per year. Additionally, another 500 MW-module manufacturing plant is nearing completion, with several others underway. Spain is the leading producer of inverters in the EU, with several manufacturing plants, one boasting an annual output capacity of 30 GW. On battery manufacturing, Spain is currently engaged in several projects to establish large-scale production plants for lithium-ion batteries, with maximum capacities ranging from 10 to 40 GWh, all set to be fully operational between 2025 and 2030. In 2024, a 500 MW electrolyser assembly line also came online. This is scalable to more than 1 GW per year.

Spain has increased investment in research and innovation to support Energy Union priorities. It is a moderate innovator, according to the European Innovation Scoreboard 2023 ([51]). However, its overall performance gap to the EU

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

([51]) ec_rtd_eis-country-profile-es.pdf (europa.eu).

average has shrunk over the last 7 years (see Annex 11). Focusing on public R&I spending for Energy Union priorities [52], in 2021 this reached EUR 617m. Half of it went to renewable fuels and bioenergy. Other relevant areas were nuclear safety, integrated & flexible energy system and renewable energy technologies. Private R&I in energy spending was EUR 298m in 2020, covering a variety of areas. Venture capital investment in clean energy technology start-ups and scale-ups are showing a strong increase over recent years, soaring sixfold from 2019 to 2023, to reach EUR 567m. Most of this went to renewables. The number of patent families filed for clean technologies was 164 [53] in 2019, with 45% related to renewables, one fifth each to efficient systems and sustainable transport and 14% to smart systems. These represent 3.5 patent families per million inhabitants, showing a continuous drop over the past 10 years.

[52] Source: JRC SETIS (2023), https://setis.ec.europa.eu/publications/setis-research-and-innovation-data_en. The figures do not include EU funding

[53] Ibidem

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

ENERGY DEPENDNCE

	Spain				EU			
	2019	2020	2021	2022	2019	2020	2021	2022
Import Dependency [%]	**75.0%**	**67.9%**	**69.5%**	**74.3%**	**60.5%**	**57.5%**	**55.5%**	**62.5%**
of Solid fossil fuels	89.5%	54.8%	105.7%	144.8%	43.3%	35.8%	37.3%	45.8%
of Oil and petroleum products	101.8%	99.4%	95.6%	101.0%	96.7%	96.8%	91.7%	97.7%
of Natural Gas	101.5%	97.5%	100.1%	103.2%	89.7%	83.6%	83.6%	97.6%
Dependency from Russian Fossil Fuels [%]								
of Natural Gas	8.5%	10.4%	8.7%	12.6%	39.7%	41.3%	41.1%	21.0%
of Crude Oil	4.8%	5.9%	9.3%	2.0%	28.8%	26.7%	26.4%	19.5%
of Hard Coal	32.6%	55.0%	29.6%	16.1%	43.5%	49.1%	47.4%	21.5%

DIVERSIFICATION OF GAS SUPPLIES

	2016	2017	2018	2019	2020	2021	2022
Gas Consumption (in bcm)	**28.8**	**31.1**	**31.0**	**35.4**	**31.9**	**33.8**	**32.6**
Gas Consumption year-on-year change [%]	2.0%	8.2%	-0.6%	14.4%	-9.9%	5.8%	-3.4%
Gas Imports - by type (in bcm)	**32.4**	**34.6**	**34.8**	**37.2**	**32.5**	**37.0**	**39.7**
Gas imports - pipeline	18.8	18.3	20.0	15.8	12.1	16.8	11.3
Gas imports - LNG	13.6	16.4	14.9	21.4	20.4	20.2	28.4
Gas Imports - by main source supplier (in bcm) (1)							
United States	0.1	0.8	0.3	4.1	5.1	5.4	11.5
Nigeria	4.7	4.4	4.1	4.3	3.9	4.2	5.7
Algeria	18.4	16.7	17.9	12.3	9.4	15.8	9.4
Russia	-	-	0.9	3.2	3.4	3.2	5.0

	2019	2020	2021	2022	2023
LNG Terminals - storage capacity m3 LNG					
Number of LNG Terminals	6	6	6	7	7
LNG Storage capacity (m3 LNG)	3,308,670	3,308,670	3,316,500	3,316,500	3,177,000
Underground Storage					
Number of storage facilities	4	4	4	4	4
Technical Capacity (bcm)	2.9	3.0	3.1	3.1	3.2

ELECTRICITY/ENERGY

	2016	2017	2018	2019	2020	2021	2022	2023
Gross Electricity Production (GWh) (2)	**274,772**	**275,726**	**274,452**	**273,257**	**263,373**	**274,312**	**292,454**	-
Combustible Fuels	113,618	133,002	118,149	117,125	93,778	95,443	112,950	-
Nuclear	58,633	58,039	55,766	58,349	58,299	56,564	58,590	-
Hydro	39,865	21,070	36,803	26,874	33,998	32,847	22,102	-
Wind	48,905	49,127	50,896	55,647	56,444	62,061	62,784	-
Solar	13,643	14,397	12,744	15,103	20,667	27,098	35,723	
Geothermal	0	0	0	0	0	0	0	-
Other Sources	108	91	94	159	187	299	305	-
Gross Electricity Production [%]								
Combustible Fuels	41.3%	48.2%	43.0%	42.9%	35.6%	34.8%	38.6%	-
Nuclear	21.3%	21.0%	20.3%	21.4%	22.1%	20.6%	20.0%	-
Hydro	14.5%	7.6%	13.4%	9.8%	12.9%	12.0%	7.6%	-
Wind	17.8%	17.8%	18.5%	20.4%	21.4%	22.6%	21.5%	-
Solar	5.0%	5.2%	4.6%	5.5%	7.8%	9.9%	12.2%	-
Geothermal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-
Other Sources	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	-
Net Imports of Electricity (GWh)	**7,667**	**9,169**	**11,102**	**6,862**	**3,280**	**852** -	**19,802**	-
As a % of electricity available for final consumption	3.2%	3.7%	4.5%	2.8%	1.4%	0.4%	-8.5%	-
Electricity Interconnection [%]		**9.4%**	**7.9%**	**8.1%**	**8.5%**	**5.1%**	**5.6%**	**5.0%**
Share of renewable energy consumption - by sector [%]								
Electricity	36.7%	36.5%	35.2%	37.1%	42.9%	46.0%	50.9%	-
Heating/cooling	15.9%	16.2%	16.1%	17.2%	18.0%	17.4%	20.0%	-
Transport	5.2%	5.8%	6.9%	7.6%	9.5%	9.2%	9.7%	-
Overall	17.0%	17.1%	17.0%	17.9%	21.2%	20.7%	22.1%	-

CLEAN ENERGY

	2019	2020	2021	2022	2023
VC investments in climate tech start-ups and scale-ups (EUR Mln)	**92.52**	**163.70**	**183.73**	**354.84**	**566.81**
as a % of total VC investment (3) in Spain start-ups and scale-ups	6.3%	7.1%	4.3%	10.3%	21.6%
Research & Innovation spending in Energy Union R&i priorites					
Public R&I (EUR mln)	98.9	316.1	617.4	-	-
Public R&I (% GDP)	0.01%	0.03%	0.05%	-	-
Private R&I (EUR mln)	271.0	298.0	-	-	-
Private R&I (% GDP)	0.02%	0.03%	-	-	-

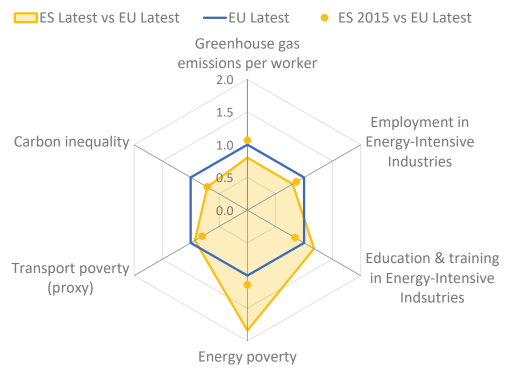
(1) The ranking of the main suppliers is based on the latest available figures (for 2022)
(2) Venture Capital investment includes Venture Capital deals (all stages), Small M&A deals and Private Equity (PE) growth deals (for companies that have previously been part of the portfolio of a VC investment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

ANNEX 8: FAIR TRANSITION TO CLIMATE NEUTRALITY

This Annex monitors Spain's progress in ensuring a fair transition towards climate neutrality and environmental sustainability, particularly for workers and households in vulnerable situations. Spain's green economy is expanding. Between 2015 and 2021, total jobs in the environmental goods and services sector grew by 40.9% (to around 505 000 jobs) (EU: 18.2%), reaching 2.5% of total employment (EU: 2.7%). Between 2015 and 2022, the greenhouse gas emission intensity of Spain's workforce (see Graph A8.1 and Table A8.1) declined from 15.3 to 11.5 tonnes per worker, below the EU average of 14.3 ([54]), indicating a positive trend in the green transition. Necessary upskilling and reskilling of workers in declining and transforming sectors has increased to some extent, contributing to a fair green transition in line with the Council Recommendation on ensuring a fair transition towards climate neutrality ([55]). Under Spain's modified recovery and resilience plan (RRP), 40% of funds (EUR 65 billion) are allocated to support a fair green transition, of which EUR 380 million is earmarked for measures related to the labour market and vocational education and training (VET). These measures complement the territorial just transition plans and actions supported by the European Social Fund Plus (ESF+) the European Regional Development Fund (ERDF), and the 2021-2027 Just Transition Fund programmes.

Employment in Spain's sectors that are most affected by the green transition remains stable overall. In 2023, employment in Spain's energy-intensive industries comprised 2.8% of total employment (EU: 3.5%). Employment in mining and quarrying has fallen by 7.1% since 2015 (to around 31 200 workers in 2023). This is happening while coal and lignite mining is declining, especially in the regions of Asturias, Aragón, Castilla y León and Andalucía. The job vacancy rate in construction (see Graph A8.2), a key sector for the green transition, is significantly lower than the EU average (0.7% vs 3.6% in 2023). Nevertheless, 83% of small and medium-sized enterprises (SMEs) in the sector reported that skills shortages are holding them back in general business activities ([56]). According to the European Labour Authority (ELA) ([57]), labour shortages were reported in 2023 for a number of occupations that required specific skills or knowledge for the green transition ([58]), including electrical line installers and repairers, and systems analysts. More than EUR 32 million of Spain's ESF+ funds is earmarked to promote social economy entrepreneurship projects (e.g. cooperatives and worker-owned companies), partly in the green economy.

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



Source: Eurostat, EMPL-JRC GD-AMEDI/AMEDI+ and DISCO(H) projects (see Table AX.1).

Upskilling and reskilling in declining and transforming sectors increased. In energy-intensive industries, workers' participation in education and training increased from 9.1% in 2015 to 12.8% in 2023 (EU: 10.9%). In Spain, 46% of the SMEs think that the skills required for greening business activities are becoming more important (EU: 42%) ([56]). If Spain matches its projected contribution to the EU's 2030 renewable energy target, between 7 200 and 12 900 additional skilled workers will be needed for the deployment of wind and solar energy, which may require an investment in skills of EUR 44.2-55.3 million ([59]). Under the RRP, by the end of 2025,

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

([55]) The Council Recommendation of June 2022 (2022/C 243/04) covers employment, skills, tax-benefit and social protection systems, essential services and housing.

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

([57]) 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.

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

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

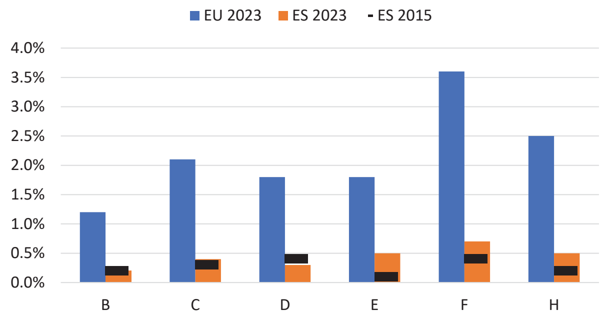
Table A8.1: **Key indicators for a fair transition in Spain**

Indicator	Description	ES 2015	ES	EU
GHG per worker	Greenhouse gas emissions per worker – CO_2 equivalent tonnes	15.3	11.5 (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)	3.0%	2.8% (2023)	3.5% (2023)
Education & training EII	Adult participation in education and training (last 4 weeks) in energy-intensive industries	9.1%	12.8% (2023)	10.9% (2023)
Energy poverty	Share of the total population living in a household unable to keep its home adequately warm	10.6%	17.1% (2022)	9.3% (2022)
Transport poverty (proxy)	Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport	29.6%	34.4% (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.

Spain will train more than 25 000 VET teachers to provide skills for the digital, green and productive transformation to 825 000 people. In addition, EUR 35 million of Spain's ESF+ resources will support targeted training for young people, prioritising the green and circular sectors.

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



B - Mining and quarrying
C - Manufacturing
D - Electricity, gas, steam and air conditioning supply
E - Water supply; sewerage, waste management and remediation activities
F - Construction
H - Transportation and storage
Source: Eurostat jvs_a_rate_r2.

Energy poverty indicators have worsened significantly in Spain in recent years. The share of the population unable to keep their homes adequately warm increased substantially recently, from 7.5% in 2019 to 17.1% in 2022, almost double the EU average (9.3%) and increasing further to 20.8% in 2023 ([60]). The indicator increased by 2.9 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 Spain. This affected 30.1% of the population at risk of poverty (AROP) and 19.3% of lower middle-income households in deciles 4-5 (vs EU averages of 20.1% and 11.6%, respectively). On the other hand, in January 2023, 34.4% (vs 37.1% in the EU) of the AROP population spent a considerable proportion of their budget (more than 6%) on private transport fuels ([61]). The RRP and ERDF include measures to promote the renovation of residential dwellings, achieve significant energy savings, generate employment, and support low-income households.

Consumption footprint inequality remains a critical issue leading to environmental inequalities in Spain. . 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% (vs 1.8 in the EU) ([62]). For both groups, the consumption footprint is highest for food and mobility. Although the 2021 average levels of air pollution in Spain were below the EU average (9.5 vs 11.4 µg/m3 PM2.5), 50% of the population were living in regions exposed to critical levels of air pollution ([63]). This has led to a significant impact on health, affecting vulnerable groups in particular, and around 14 100 premature deaths annually ([64]).

Spain has implemented a comprehensive approach towards ensuring a fair green

([60]) 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.

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

([62]) 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)

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

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

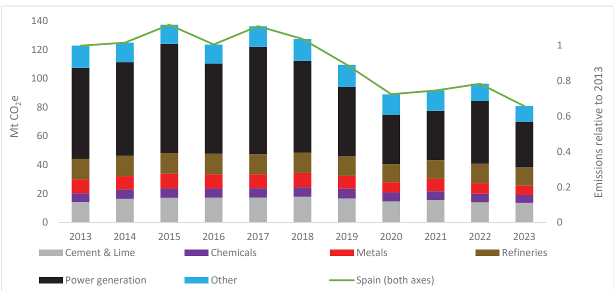
transition in certain sectors and regions in the context of the Council Recommendation of June 2022, but challenges remain. Spain is implementing a national Just Transition strategy, with a multilevel and participatory governance framework instrumented by regional Just Transition Agreements. The Organic Law 3/2022 on vocational training is a positive step in addressing skills shortages as there is a rising demand for qualified jobs for the green transition. There is further scope to complement this by means of active labour market policies, especially in those sectors most affected by climate change, such as tourism, agriculture and fisheries ([65]).

([65]) Based on the monitoring review of the Council Recommendation of June 2022, 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 Spain's competitiveness. In this regard, priorities for Spain are waste management and the use of circular materials in industry and construction (66).

The pace of Spain's circular economy transition is insufficient to achieve the Circular Economy Action Plan goals. Spain's material footprint decreased from 11 tonnes in 2018 to 9.8 tonnes per capita in 2022, which is below the EU average. However, total waste generation increased between 2014 and 2018 before dropping to 2.2 tonnes per capita in 2020. In 2020, Spain adopted a comprehensive circular economy strategy, *España Circular 2030*, which puts forward a long-term vision, and will be implemented through successive 3-year action plans for a complete transition by 2030. However, results have yet to materialise, and more measures might be necessary. Spanish regions have been active in pushing forward circular economy policies through regional plans, for which the Basque Country set a successful example. There is still room to make a better use of the circular economy transition's potential and drive the spanish economy's decarbonisation.

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



Source: European Commission

In 2023, the sectors covered by the EU Emissions Trading System (ETS) in Spain (67) emitted 26% less greenhouse gases than in 2019. In 2023, about 39% of greenhouse gases emitted by Spain's ETS installations came from power generation, less than the EU average (57%). Of the total emissions from all industry sectors, 28% came from cement and lime production, 26% from refineries, 13% from metals processing, 11% from the chemical industry, and 22% from other sectors (68). Since 2019, the power sector has registered a higher emissions reduction (34%) (69) than the industry sectors (20%). Since 2013, greenhouse gas emissions have declined by 50% in power generation and by 18% in the industry sectors. Nearly all this decline in the industry sectors has occurred since 2019.

The Spanish industry is progressing in making more efficient use of resources, even though it remains exposed to supply chain risks. Since 2016, household goods and appliances' footprint for minerals, metals and fossil resources' consumption decreased. The circular material use rate increased between 2016 and 2020, still below the EU average, but dropped in 2021. The material import dependence is stable since 2016. In 2022, 42.8% of materials used were imported (almost double the EU average of 22.4%). By contrast, resource productivity has increased, reaching 3.37 purchasing power standards per kilogram in 2022, versus 3.01 in 2016. On the 2021 Eco-Innovation Scoreboard, Spain ranked 8th among EU Member States. In 2023, the country totalled 364 EU Ecolabel licences and 13 729 EU Ecolabel products, which makes it the fourth and second Member State for EU Ecolabel licences and products, respectively. The number of Ecolabels has steadily grown, but there is a decreasing trend in labelled products. The impact of particulate matter emissions from industry on air quality is higher than the EU average. The PM10 grams emitted per economic output (EUR'10) (70) increased from 0.13 grams/EUR'10 in 2017 to 0.15 grams/EUR'10 in 2021 (EU average: 0.09 grams/EUR'10). The

(66) See also Annexes 6, 7 and 12.

(67) 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.

(68) Greenhouse gas emissions classified as coming from the 'other' group came from many smaller installations. In 2022, no single installation was responsible for more than 3% of this group's emissions. Most installations emitting more than 0.1 Mt CO_2eq in 2022 in this group belong to glass and ceramics, paper, or processed food manufacturing.

(69) This includes a steep decrease of 21% year-on-year in 2020, and a large rebound in 2022.

(70) In 2010 prices.

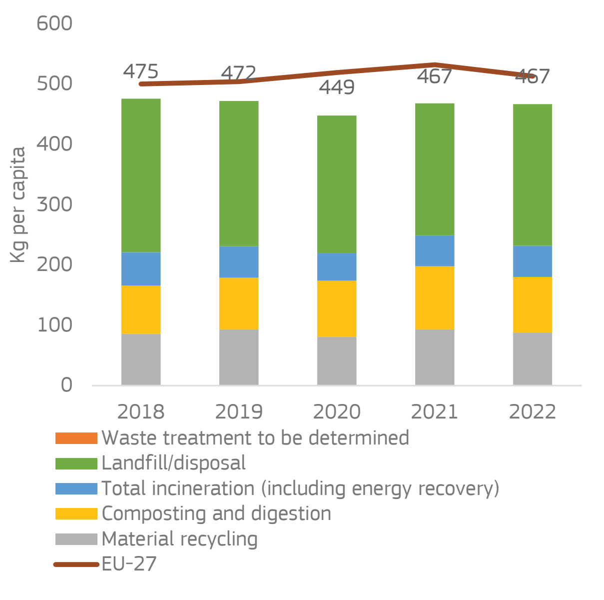
Table A9.1: **Circularity indicators**

	2018	2019	2020	2021	2022	2023	EU-27	Latest year
Industry								
Resource productivity (purchasing power standard (PPS) per kilogram)	2.9	3.1	2.7	2.9	3.4	-	2.5	2022
Circular material use rate (%)	8.9	9.0	9.2	6.9	7.1	-	11.5	2022
Eco-innovation index (2013=100)	107.7	106.6	108.6	112.9	116.4	-	121.5	2022
Recycling of plastic packaging (%)	50.7	51.5	51.4	56.4	-	-	40.7	2021
Cost of air emissions from industry (EUR bn)	36.4	26.0	23.4	21.3	-	-	352.7	2021
Built environment								
Recovery rate from construction and demolition waste (%)	75.0	-	73.0	72.1	-	-	89.0	2020
Soil sealing index (base year = 2006)	104.9	-	-	-	-	-	103.4	2018
Non-residential floor area (m^2 per capita)	14.2	14.2	14.3	-	-	-	18.0	2020
Waste backfilled (%)	3.1	-	1.0	-	1.7	-	9.9	2020

Source: Eurostat, European Environment Agency

Spanish National Energy and Climate Plan includes references to the circular economy.

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



Source: Eurostat

Spain's waste generation and management shows clear room for improvement. With a municipal waste recycling rate of 36.7% in 2021, Spain missed the 2020 EU recycling target of 50% and is at high risk of missing the 2025 EU municipal waste recycling target of 55%. Spain is still far from reaching the 2035 landfill reduction target. The recycling rate of plastic packaging is above the EU average, 51.4% versus 37.6%, but the overall packaging waste recycling rate decreased between 2016 and 2020, from 70.3% to 68.3%. Similarly, less electronic waste was recycled in 2020 than in 2016, with a decrease from 87.8% to 85.8%. After a peak in 2016, the number of patents on waste and recycling decreased from 30 to 17 in 2019. Spain would benefit from stepping up its action to meet the EU recycling targets. Spain has approved Law 7/2022 on waste and contaminated soils for a circular economy. However, the 2016-2022 national framework plan for waste management (PEMAR) and the national prevention programme have yet to be adopted, and many regional waste management plans have not been revised yet.

The built environment system continues to exacerbate the depletion of resources, despite recent improvements. In 2023, Spain's building permits index stood at 235.8, showing an increase in construction activities compared to 2015 ([71]). In Spain, the non-residential floor area is growing slower than the EU average. In 2020, it was half of the EU average, 7.7 m2 versus 15.3 m^2 per capita. Efficiency levels in public drinking water distribution systems raise concerns as Spain shows leakages accounting for 30% of total drinking water distributed. Spain is at risk of not achieving the 8th Environment Action Programme objective of reaching no net land take by 2050. Although the country's sealed area is smaller than the EU average, soil sealing progressed faster than the EU average between 2015 and 2018. There is also room for improving construction and demolition waste management. Waste generation per capita from construction and demolition activities was half the EU average in 2020, but the proportion of backfilling increased to 60% between 2018 and 2022.

([71]) 2015=100.

Digital transformation is key to ensuring a resilient and competitive economy. In line with the Digital Decade policy programme, particularly with its targets for digital transformation by 2030, this Annex describes Spain's performance on digital skills, digital infrastructure/connectivity and the digitalisation of businesses and public services. Where relevant, it refers to progress on implementing Spain's recovery and resilience plan (RRP). Spain allocates 26% of its total Recovery and Resilience Facility (RRF) budget to digital (EUR 40.4 billion) ([72]). Under the cohesion policy, an additional EUR 5.7 billion (16% of the country's total cohesion policy funding) is allocated to the country's digital transformation ([73]).

The Digital Decade policy programme sets out a pathway for the EU's successful digital transformation by 2030. Spain's national roadmap outlines the actions it intends to take to reach the objectives and targets at the 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 ([74]). Through this, a digitally skilled population increases the development and adoption of digital technologies leading to productivity gains and new business models. It also leads to higher inclusion and participation in an environment increasingly shaped by digital transformation ([75]). Digital technologies, infrastructure and tools play an important role in addressing the current structural challenges, including strategic dependence in various areas, such as cybersecurity and climate change.

Spain still has room for improvement in terms of fully developing ICT employment because, although progressing, the share of ICT specialists in total employment is still below the EU average (4.4% vs 4.8%), with the proportion of female ICT specialists (19.5%) slightly above the EU average (19.4%). However, Spain performs well in the share of population (aged 16-74) having at least basic digital skills (66% versus 56% at EU level). The same applies for advanced digital skills (39% vs 27%). The country has already implemented some RRP measures focusing on improving digital skills for citizens and SMEs and increasing the number of ICT specialists (e.g. the National Digital Competences Plan). Digital education is progressing with EU-supported (RRF and cohesion funds) programmes aimed at improving teachers' digital skills and equipping schools with digital devices and tools. However, these measures have to be in place for some time until they reflect the expected effects. In any case, there is still room for additional, complementary measures to increase the number of ICT specialists, in particular, designing incentive schemes to attract and retain them, and increasing the visibility and readability of training and reskilling options.

Spain is one of the EU's best performers in terms of digital connectivity. The country performs particularly well on fixed very high capacity network and fibre to the premises coverage. In 2023 as part of its RRP, Spain improved its cybersecurity capabilities by increasing the capacity of its cybersecurity helpline and equipping it with more capacity to assist SMEs and citizens with cybersecurity incidents. It also deployed several actions in the field of cybersecurity as part of the National Cybersecurity Industry Support programme and the Global Security Innovation programme.

The moderate level of advanced digitalisation of SMEs also poses a major challenge for Spain. The rate of SMEs with at least a basic level of digital intensity is slightly above the EU average (61% versus 58%). The percentage of enterprises using artificial intelligence, cloud or data analytics is slightly below the EU average (50% versus 55%). The investments included in the RRP are expected to increase the share of firms with a basic level of digital intensity and boost the adoption of advanced digital technologies. An example of RRP measures already implemented is the adoption of

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

([73]) 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.

([74]) 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)].

([75]) 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.

the National Artificial Intelligence Strategy. The Digitalisation of SMEs 2021-2025 plan provides voucher programmes (e.g. Digital Kit programme) to help digitalise SMEs and set up Digital Innovation Hubs. However, there is still a low level of R&D intensity in the ICT sector in Spain, with R&D expenditure by enterprises far below the EU average [76]. In 2022, 3.7% of enterprises in Spain reported ICT service outages due to cyberattacks (e.g. ransomware attacks, denial of service attacks). Over the same year, 18.7% of enterprises developed or reviewed their ICT security policy within the previous 12 months.

Spain performs satisfactorily on the digitalisation of public services. The country is at the forefront of digital public services in the EU and continues to update its services and infrastructure, including through the RRP, to respond to the rapid development of technology and individual needs. Spain has recently incorporated digital transformation and the civil service under the same Ministry, providing for unique synergies which will allow maintaining and improving the Spanish performance. The country continues with the implementation of the Spanish Public Administration Digitalisation Plan 2021-2025, including the 'My Citizen Folder' application, which allows citizens to easily access certain digital public services. Spain has one means of electronic identification (eID), the Spanish electronic ID card (DNI), notified at level of assurance 'high' under the eIDAS Regulation. Spain scores well above the EU average on access to electronic health records, with a score of 85 out of 100.

[76] 2022 PREDICT Dataset: The EU ICT sector and its R&D performance. JRC Digital Economy. July 2022

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

	Spain 2022	Spain 2023	Spain 2024	EU 2024	Digital Decade target by 2030 (EU)
Digital skills					
At least basic digital skills	**64%**	**64%**	**66%**	**56%**	**80%**
% individuals	2021	2021	2023	2023	2030
ICT specialists (1)	**4.1%**	**4.3%**	**4.4%**	**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	**94%**	**93%**	**96%**	**79%**	**100%**
% households	2021	2022	2023	2023	2030
Fibre to the premises (FTTP) coverage (2)	**89%**	**91%**	**95%**	**64%**	**-**
% households	2021	2022	2023	2023	
Overall 5G coverage	**59%**	**82%**	**92%**	**89%**	**100%**
% populated areas	2021	2022	2023	2023	2030
Digitalisation of businesses					
SMEs with at least a basic level of digital intensity	**60%**	**NA**	**61%**	**58%**	**90%**
% SMEs	2021		2023	2023	2030
Data analytics	**NA**	**NA**	**38%**	**33%**	**-**
% enterprises			2023	2023	
Cloud	**27%**	**27%**	**27%**	**39%**	**-**
% enterprises	2021	2021	2023	2023	
Artificial intelligence	**8%**	**8%**	**9%**	**8%**	**-**
% enterprises	2021	2021	2023	2023	
AI or cloud or data analytics (3)	**NA**	**NA**	**50%**	**55%**	**75%**
% enterprises			2023	2023	2030
Digitalisation of public services					
Digital public services for citizens	**87**	**86**	**84**	**79**	**100**
Score (0 to 100)	2021	2022	2023	2023	2030
Digital public services for businesses	**94**	**91**	**91**	**85**	**100**
Score (0 to 100)	2021	2022	2023	2023	2030
Access to e-health records	**NA**	**83**	**85**	**79**	**100**
Score (0 to 100)		2022	2023	2023	2030

(1) The 20 million target represents about 10% of total employment.
(2) The fibre to the premises coverage indicator is included separately as its evolution will also be monitored separately and taken into consideration when interpreting VHCN coverage data in the Digital Decade.
(3) At least 75% of EU enterprises have taken up one or more of the following, in line with their business operations: (i) cloud computing services; (ii) big data; (iii) artificial intelligence.

Source: Digital Economy and Society Index

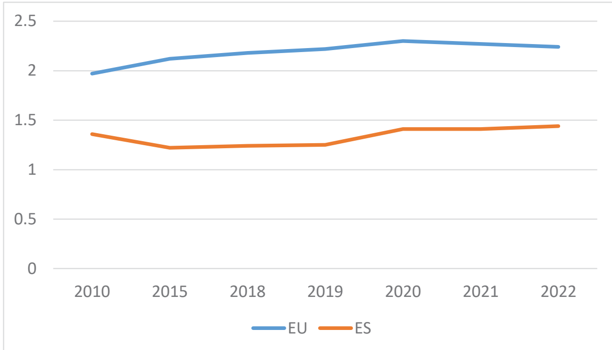
This Annex provides a general overview of the performance of Spain's research and innovation system, which is essential for delivering the twin transition and ensuring long-term competitiveness.

Spain is a 'moderate innovator', with an innovation performance below the EU average. According to the 2023 edition of the European Innovation Scoreboard (EIS) ([77]), Spain's overall performance has slightly improved thanks to progress on some key innovation dimensions. However, it still only reaches 89.2% of the EU average for 2023. In addition, significant differences in regional R&I performance persist ([78]).

R&D intensity ([79]) has not progressed significantly in recent years, reaching 1.44% in 2022, far below the European average (2.23%) and the national target of 2.12% for 2027 ([80]). Both public and private R&D investment have stagnated and remain well below the EU average (Graph A11.1). Public expenditure in R&D remains constant at 0.62% of GDP in 2022, lower than the EU average (0.73%) and far from its national target of 1.25% by 2030 ([81]). Similarly, private R&D expenditure reached a modest level of 0.81% of GDP in 2022 but was well under the EU average (Table A11.1).

These relatively low investment levels result in Spain remaining below the EU average in scientific and technological production. Notwithstanding these weaknesses, the system has shown some improvement in human capital and skills availability, as well as increased scientific publications and foreign doctoral students, resulting in a more attractive R&I system (EIS 2023; Table A11.1). The amendment of the Science, Technology and Innovation Law in 2022, which among its main objectives is the creation of an attractive and stable scientific career, has provided support through scholarships and grants and may start yielding some initial results.

Graph A11.1: **R&D Intensity (GERD as % of GDP)**



Source: Eurostat

The Spanish recovery and resilience plan (RRP), with investments of over EUR 11 billion in R&I, plus the additional funds in the addendum are positive steps to help address the underinvestment. Investment in boosting the system's R&I capacity and targeted measures in health, energy and industrial development will be an important step forward to increase the investments in the country, although bridging the current gap will require the mobilisation of more resources at national and regional levels and the preparation of a long-term investment strategy in the aftermath of the recovery period in 2026. Cohesion funds are also addressing R&I investment.

Business-science linkages are weak and knowledge valorisation is limited, so these still require a wide range of actions. An in-depth study by the OECD ([82]) provided recommendations on improving science-business linkages. The proposals included improving the governance of public research organisations to make them more performance-based and increasing the level of professionalisation of knowledge intermediation services, as well as actions to better support private R&D investment

([77]) 2023 European Innovation Scoreboard (EIS), country profile: Spain. The EIS provides a comparative analysis of innovation performance in EU countries, including the relative strengths and weaknesses of their national innovation systems.

([78]) 2023 Regional Innovation Scoreboard. Regional profiles of Spain as part of EIS shows in regional R&I performance.

([79]) Defined as (GERD) gross domestic expenditure on research and development (R&D) as a percentage of gross domestic product (GDP).

([80]) Spanish science, technology and innovation strategy (EECTI 2021-27).

([81]) Spain sets a target for R&D public expenditure in 2030 to reach 1.25% of GDP. (Law Science, Technology and Innovation (Reform Act 17/2022 sept 2022).

([82]) OECD STI Policy Papers. Improving knowledge Transfer and collaboration between science and business in Spain. (Dec. 2021) as part of the project *Roadmap to foster cooperation between universities, research and business in Spain* co-funded by the European Union via the Structural Reform Support Programme (REFORM/IM2020/004).

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

Spain	2010	2015	2020	2021	2022	EU average (1)
Key indicators						
R&D intensity (GERD as % of GDP)	1.36	1.22	1.41	1.41	1.44	2.24
Public expenditure on R&D as % of GDP	0.66	0.58	0.62	0.62	0.62	0.73
Business enterprise expenditure on R&D (BERD) as % of GDP	0.70	0.64	0.78	0.79	0.81	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	9.4	9.2	8.98	:	:	9.6
Patent applications filed under Patent Cooperation Treaty per billion GDP (in PPS)	1.7	1.5	1.6	:	:	3.4
Academia-business cooperation						
Public-private scientific co-publications as % of total number of publications	5.2	6	6.3	6.6	6.8	7.6
Public expenditure on R&D financed by business enterprise (national) as % of GDP	0.050	0.034	0.039	0.040	:	0.054
Human capital and skills availability						
New graduates in science & engineering per thousand pop. aged 25-34	11.1	15.9	15.6	17.0	:	16.9
Public support for business enterprise expenditure on R&D (BERD)						
Total public sector support for BERD as % of GDP	0.156	0.116	0.232	0.246	:	0.204
R&D tax incentives: foregone revenues as % of GDP	0.027	0.029	0.129	0.146	:	0.104
Green innovation						
Share of environment-related patents in total patent applications filed under the Patent Cooperation Treaty (%)	16.2	14.0	13.0	:	:	14.7
Finance for innovation and economic renewal						
Venture capital (market statistics) as % of GDP	0.021	0.028	0.053	0.076	0.091	0.085
Employment share of high growth enterprises measured in employment (%)		14.79	:	15.42	:	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 Database), Invest EU

overall. In 2022, the Spanish Government approved a follow-up plan, but some measures still need to be fully implemented ([83]). The results of these measures are yet to be seen despite the slight positive trend for international scientific public-private co-publications in the past year (Table A11.1). The reforms in the Spanish RRP aim to support private innovation and strengthen knowledge transfer and improve the framework conditions.

The governance of R&I policies continues to require more coordination and remains weak. Coordination of R&I policy design and implementation has not improved, while monitoring and evaluating R&I policies remains weak and deficient. The Spanish R&I system has historically been characterised by a dual governance, with policy responsibilities and roles for both the central government and the regions. However, the fragmentation and overlaps of R&I initiatives persist, resulting in heavy information and administrative burdens for R&I stakeholders ([84]). Coordination in this multilayer governance arrangement has been very limited and partial ([85]). While the complementary research and development plans in the RRP between the central and regional governments were included as reforms and investments to facilitate closer collaboration between administrations for R&I, the mid to long-term results of these changes remain to be seen.

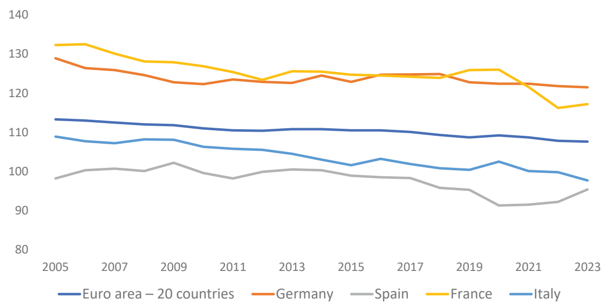
([83]) The knowledge transfer and collaboration plan includes measures that will be implemented between 2023 and 2025 (December 2022).

([84]) OECD STI Policy Papers. Improving knowledge transfer and collaboration between science and business in Spain (Dec. 2021) as part of the project *Roadmap to foster cooperation between universities, research and business in Spain* co-funded by the European Union via the Structural Reform Support Programme (REFORM/IM2020/004).

([85]) Europeanisation of Public Policies in Spain (2022) and Informe Fundación CYD (2022).

Labour productivity performance is an endemic weakness in the Spanish economy. There is a significant gap between Spain's labour productivity and that of its peers and the euro area. Since 2005, labour productivity per hour worked in PPS has not caught up with the EU average. While the gap has significantly widened after 2014, in the last couple of years it experienced a rebound, countering the underlying negative trend and reaching 95.4% 97% of EU average., ([86]). To improve productivity performance, Spain has begun preparations for establishing the National Productivity Board.

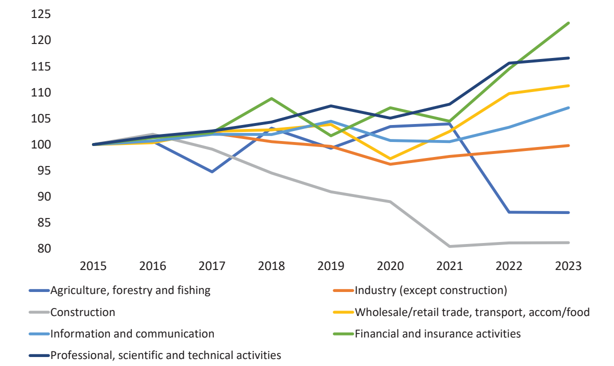
Graph A12.1: **Labour productivity per hour worked**



Source: Eurostat

Total factor productivity (TFP) ([87]) **has stagnated for decades, in line with other advanced European economies.** This is mainly explained by structural weaknesses in the labour market, lack of market unity inside Spain, low level of EU trade integration, obstacles in regulations, the small size of companies, weak business innovation, and low investment in R&D. Nonetheless, recent reforms in the Recovery and Resilience Plan (RRP), e.g., the Law on Business Creation and Growth, Law on Start-ups, Insolvency Law and Digital Toolkit, are expected to have a positive impact on total factor productivity. Low productivity performance in sectors such as agriculture, forestry, and fishing and construction may contribute to the limited performance of aggregate total factor productivity. Conversely, sectors such as wholesale trade and retail trade, as well as professional and scientific services, reflect strong performance (see Graph A12.2).

Graph A12.2: **Labour productivity and unit labour costs at industry level**



Source: Eurostat

Improving the functioning of the Spanish internal market remains a challenge. In 2013, the Law on Market Unity was adopted to support the principles of the internal market. Despite the measures taken, persistent fragmentation exists, mainly due to regulatory obstacles that hinder the free circulation of goods and services across the country. A more robust domestic internal market has the potential to improve the quality of products and services, lowering prices and increasing resilience. The Law on Market Unity has been amended by the Law on Business Creation and Growth as part of the RRP. It is expected that this law will contribute to a more efficient internal market in Spain. In addition, promoting better coordination among regions is identified as another crucial factor in overcoming the current challenges for a more integrated internal market.

Strengthening the enforcement of single market tools is essential for achieving greater integration within the single market. In 2023, Spain's overall performance in intra-EU imports and exports, as well as integration into EU value chains for goods and services, remained modest, lagging its peers and the EU average (20.8 % vs 42.9 %). In 2023, the percentage of non-transposed EU directives in Spain was higher than the EU average (1.3% vs 0.7%). Furthermore, Spain had the highest number of pending infringements in the EU in 2023, almost double the EU average (44 vs 25.9). Nevertheless, Spain solved 88% of the SOLVIT cases (190) it handled as lead centre in 2023 (similar as the EU average with 88.3%). Despite recent reforms, several professions (civil engineer and tourist guide) have

([86]) Eurostat: Labour productivity per person employed and hour worked (EU27_2020=100) [tesem160]

([87]) AMECO: Total Factor Productivity

been identified as facing higher regulatory restrictions than the EU average (88).

Despite the measures outlined in the RRP to improve the business environment, challenges persist. In 2023, a significant percentage of firms continued to highlight business regulations as a major obstacle to investment compared to the EU average (48% vs 22.2%) (Graph A12.2). Administrative burden and complex regulation prevent firms from making the long-term investments necessary for growth and development. Spain's public administration is essential for the economy's competitiveness by creating a favourable business environment. Overall government effectiveness remains below the EU average and has deteriorated over time (See Annex 13). Business regulation, with less size-dependent regulatory thresholds and less administrative burden, would help increase the size of small and medium-sized enterprises (SMEs) (89). Lack of ICT specialists is still a productivity-constraint factor that particulary affects small and medium enterprses (SMEs) and micro-enterprises (see Annex 9). Moreover, investors' confidence about their investments being protected by law and courts in Spain is again below EU average (41% vs. 54% EU average) with Unpredictable, non-transparent administrative conduct, and difficulty to challenge administrative decisions in court being stated as the one of the main reasons for investors' concern (90). On business demography, there has been a large increase in bankruptcies in the face of the new insolvency framework establishing a more agile insolvency process. Nevertheless, current levels of insolvencies are contained and have started to reduce in absolute terms since mid-2023 (91). They still mostly affect natural persons and SMEs. In addition, the number of SMEs facing late payments in 2023 was lower than the EU average (41.2% vs 48.7%) (92). Nevertheless, there is still room for improvement, particularly at local entity level.

(88) COM(2021)385 Communication on taking stock of and updating the reform recommendations for regulation in professional services of 2017

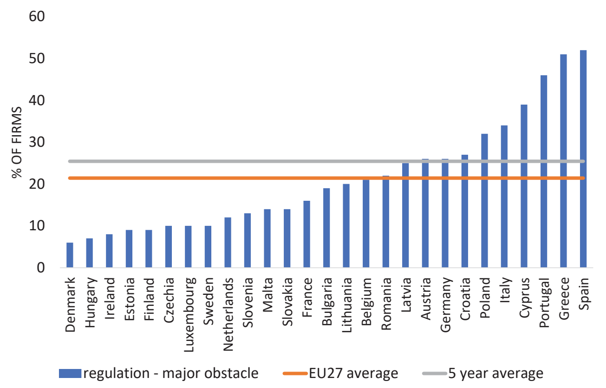
(89) Informe Crecimiento Empresarial 2023

(90) 2024 EU Justice Scoreboard

(91) Registrars' association. Report Q3/23

(92) SAFE survey: % of SMEs experiencing late payments in the past 6 months.

Graph A12.3: **Regulatory obstacles, 5-year average**



Source: EIBIS

The small size of Spanish firms might pose a barrier to productivity growth. The number of SMEs compared to the total number of companies in Spain is very high at 99.9% (93). The productivity level of large firms exceeds that of SMEs (94). They can easily innovate, use new digital technologies like big data and artificial intelligence (AI), hire people with the right skills, apply better managerial skills and profit from economies of scale. This productivity disparity significantly impacts Spain's overall productivity. Addressing the scalability of SMEs is crucial to promote a more competitive economic environment.

On numbers of patent applications, Spain's performance was below the EU average in 2023. This is in line with the assessment made in the European Innovation Scoreboard 2023 (95) that it is 'a moderate innovator with performance at 89.2% of the EU average' (see Annex 11). However, despite the country not participating in the unitary patent system, it appears that the uptake rate of the unitary patent system by Spanish patentees (i.e., to obtain unitary protection in the 17 participating Member States) is above average. Spain's participation in this system could help stimulate investment in domestic innovation.

In 2023, the national public procurement strategy came into force. It aims to improve the efficiency and sustainability of public procurement. It is too early to assess its effectiveness given the lack of concrete commitments, the absence of a map of identified

(93) SME Factsheet Spain 2022/2023

(94) CEPYME: Informe de Crecimiento Empresarial 2023

(95) Spain. European Innovation Scoreboard 2023

risks and that further action at regional level is required to produce the expected public procurement policy outcomes. However, some challenges persist, such as the rate of single bid procedures that has increased in recent years and remained relatively high in 2023 compared with the EU average (32% vs 28.6%) (see Annex 13). Spain also still needs to amend its public procurement legislation to make it fully compliant with Directives 2014/23/EU, 2014/24/EU and 2014/25/EU.

Spanish SMEs rely heavily on bank financing. According to the EIF SME Access to Finance Index, Spanish SMEs relied more on loans than the EU average in 2022 (0.81 vs 0.49) ([96]). However, there has been a slowdown in lending activity since 2019 due to the increase of interest rates and tightening of credit conditions. As regards the use of equity by SMEs, Spain remains below the EU average (0.13 vs 0.17) ([97]).

Spanish tourism continued its recovery in 2023 ([98]), reaching a total of 85,1 million of visitors during 2023, which represents an increase of 18,7% compared with the previous year, and the Spain's new inbound visitor record. The gross domestic product (GDP) associated with tourism accounted for 11.6% of GDP in 2022, an increase of 3.9 points over 2021. In addition, there are now 1.9 million jobs in tourism, representing 9.3% of total employment in the economy, five decimals higher than in 2021 ([99]). Effective implementation of tourism measures in the RRP will improve the performance of this sector.

Spain has demonstrated a strong commitment to the green and digital transformation of its industry. The RRP includes innovative tools, in particular the strategic projects for economic recovery and transformation (PERTEs), with RRP investment totalling EUR 41 billion ([100]). The objective is to support industrial ecosystems in their transition to become net zero and digitalised industries. The main PERTEs are on electric and connected vehicles, healthcare, renewable energy, renewable hydrogen and energy storage, agri-food, the circular economy, shipbuilding, aerospace, digitalisation of the water cycle, microelectronics and chips, and industrial decarbonisation. While it is too early to assess the projects given the complexity of their implementation, much is expected of them. Spain's REPowerEU chapter also focuses on diversifying away from fossil fuels, by accelerating the deployment of renewable energy, renewable hydrogen, decarbonising industry and investing in the value chain for the net zero industry. Skills shortages, mismatches, and the need of upskilling and reskilling workforce is a challenge for the green and digital transition (see Annexes 14 and 15).

The Spanish economy has shown resilience in terms of strategic autonomy; however, a cautious approach is warranted. In 2023, Spanish firms signalled lower material shortages than the EU average (13.6% vs 17.2%) ([101]) and lower labour shortages (6.6% vs 23.3%). Moreover, the vacancy rate ([102]) was the lowest in the EU in 2023 (0.7 vs 2.5). On energy, Spain produced just over half of its electricity from renewable sources in 2022, which is above the EU average (60% vs 50%) (see Annex 7). This helped reduce energy prices and pressure on energy-intensive industries.

Spain has reached the stage of technical readiness for the Once-Only Technical System (OOTS) ([103]) with the need to finalise the configuration of OOTS components and connect Evidence Providers and Evidence Requesters before initiating their first OOTS transactions. As part of the Single Digital Gateway Regulation , 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 Spanish competent authorities is crucial for the system to function smoothly and to reduce administrative burden.

([96]) EIF SME Access to Finance Index – Loans, Composite: SME external financing over last 6 months, index values between 0 and 10.

([97]) EIF Access to Finance Index – Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values between 0 and 10.

([98]) Instituto Comercio Exterior (ICEX). España January 2024.

([99]) Instituto Nacional Estadística (INE). Turismo

([100])Adendum Spanish RRP

([101])ECFIN Business and Consumer Survey.

([102])Vacancy rate: % of vacant posts to all available ones (vacant + occupied). Source: Eurostat.

([103])OOTS Commission Implementing Regulation (EU) 2022/1463

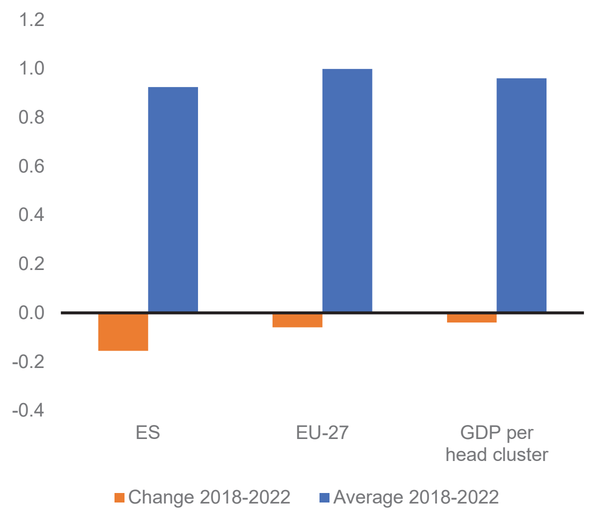
Table A12.1:**Industry and the Single Market**

Spain							
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]	5	3	3	2.9	2.4	**3.8**
	Net Public investment, level of public capital stock, net of depreciation, % GDP[1]	-0.2	0	0.2	0.4	0.7	**1.2**
	Real labour productivity per person in industry (% yoy)[2]	-1.3	-8	5.1	0.7	0.7	**-1.24**
Cost competitiveness	Nominal unit labour cost in industry (% yoy)[2]	1.5	9.5	-0.2	2.5	4.5	**9.83**
SINGLE MARKET							
Single Market integration	EU Trade integration, % (Average intra-EU imports + average intra EU exports)/GDP[2]	18.3	17.0	19.1	21.7	20.8	**42.9**
Compliance	Transposition deficit, % of all directives not transposed[3]	1.1	1.9	2.2	2.5	1.3	**0.7**
	Conformity deficit, % of all directives transposed incorrectly[3]	1.1	1.3	1	1.3	1.3	**1.1**
	SOLVIT, % resolution rate per country[3]	79.0	87.1	79.5	85.4	88.0	**88.3**
	Number of pending infringement proceedings[3]	52	57	58	49	44	**25.9**
Restrictions	EEA Services Trade Restrictiveness Index[4]	0.04	0.04	0.04	0.04	0.04	**0.05**
Public procurement	Single bids, % of total contractors[3]	27	28	27	28	32	**28.6**
	Direct Awards, %[3]	6	15	12	10	9	**8.1**
ECONOMIC STRUCTURE							
Shortages	Material Shortage (industry), firms facing constraints, %[5]	5.4	7.1	17.2	26.4	13.6	**17.2**
	Labour Shortage using survey data (industry), firms facing constraints, %[5]	3.1	4.4	4.5	7.7	6.6	**23.3**
	Vacancy rate, % of vacant posts to all available ones (vacant + occupied)[2]	0.5	0.4	0.6	0.7	0.7	**2.5**
Strategic dependencies	Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials[6]	0.15	0.14	0.16	0.17	0.21	**0.22**
	Installed renewables electricity capacity, % of total electricity produced[2]	0.5	0.5	0.5	0.6		**50**
BUSINESS ENVIRONMENT - SMEs							
Investment obstacles	Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle[7]	58.8	63.6	64.1	52.0	48.0	**22.2**
Business demography	Bankruptcies, Index (2015=100)[2]	91.4	85.7	164.9	226.1	208.3	**105.6**
	Business registrations, Index (2015=100)[2]	99.6	85.2	107.8	106.1	115.3	**120.2**
Late payments	Payment gap - corporates B2B, difference in days between offered and actual payment[8]	-	21	12	16	15	**15**
	Payment gap - public sector, difference in days between offered and actual payment[8]	-	24	11	22	17	**16**
	Share of SMEs experiencing late payments in past 6 months, %[9]	40.3	40.6	33.9	36.4	41.2	**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]	0.82	0.91	0.85	0.81	-	**0.49**
	EIF Access to finance index - Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values between 0 and 1[10]	0.11	0.11	0.18	0.13	-	**0.17**

Source: (1) AMECO, (2) Eurostat, (3) Single Market scoreboard, (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

Spain'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 government effectiveness remains below the EU average and has deteriorated over time (Chart A13.1). Spain is advancing with its public administration's digital reforms under the recovery and resilience plan (RRP) and European Regional Development Fund investments.

Graph A13.1: **Government effectiveness**



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

The ageing of Spain's civil service can pose a risk for the stability of public services. The country aims to address this challenge by speeding up the recruitment process, organising a wide range of employer-branding events, collaborating with universities to promote public administration employment, setting up new apprenticeship programmes and giving grants to public authorities hiring young, unemployed people as part of its RRP [104]. Results from legislative changes in recent years aiming to reduce the share of temporary staff in the public sector have not been published yet. Additional reforms [105] aim to improve selection and base it on skills, and strengthen senior managers' skills. The share of civil servants participating in adult learning is higher than the EU average (22.8% vs 17.9%) and has gone up. Gender parity among senior civil servants decreased in 2023 and was below the EU average (Table A13.1).

Spain has taken steps to improve its regulatory governance. A legislative reform under its RRP aims to strengthen policy evaluation by creating a specialised agency, setting out a framework to plan, supervise and coordinate policy evaluation, and publishing evaluation results for better transparency. The National Office for Foresight and Long-term Strategy provides guidance on policy development to the central administration. The National Research Centre aims to channel scientific evidence in policy design [106]. The use of emergency procedures to adopt laws in Parliament remains very high although it fell slightly in 2022 (60.8% in 2022 vs 72.3% in 2021).

Spain is relatively advanced in the digital transformation of its public administration. The share of individuals interacting with the public administration online is above the EU average as is the overall level of e-government maturity. Spain also stands out among most other Member States in making open government data available (Table A13.1).

Competition and transparency in public procurement continues to be weak. The relatively high percentage of single bids and negotiated procedures without publication are a case in point (see Annex 12). Moreover, Spain also lags behinds in most indicators that measure the performance of single market governance tools (see Annex 13 of the 2023 Country Report for Spain).

To help address fiscal challenges, the independent fiscal institution could be strengthened. AIReF has a broad mandate and has established itself as a trusted independent institution within a relatively short space of time.

[104] https://planderecuperacion.gob.es/noticias/conoce-Programa-primera-experiencia-profesional-administraciones-publicas-prtr

[105] Royal Decree-law 6/2023: https://www.boe.es/buscar/act.php?id=BOE-A-2023-25758.

[106] https://www.csic.es/es/actualidad-del-csic/el-csic-presenta-una-coleccion-de-informes-para-contribuir-al-desarrollo-de

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

ES	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	84.0	83.0	75.0
2	E-government benchmark overall score ([3])	n/a	77.8	78.8	79.5	79.5	75.8
3	Open data and portal maturity index	0.9	0.9	1.0	0.9	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, %)	57.2	57.8	58.2 (b)	60.3	62.2	52.9
5	Participation rate of public administration employees in adult learning (%)	15.0	14.1	20.3 (b)	22.5	22.8	17.9
6	Gender parity in senior civil service positions ([4])	17.6	14.2	13.8	3.8	17.6	9.2
7	Ratio of 25-49 to 50-64 year olds in NACE sector O	1.2	1.1	1.1 (bd)	1.1 (d)	1.1	1.5
Public financial management							
8	Medium-term budgetary framework index	0.8	0.9	0.9	0.9	n/a	0.7
9	Strength of fiscal rules index	1.8	1.8	1.9	1.9	n/a	1.4
Evidence-based policy making							
10	Regulatory governance	n/a	n/a	1.76	n/a	n/a	1.7

([1]) High values denote a good performance, except for indicator # 6. ([2]) 2023 value. If unavailable, the latest value available is shown. ([3]) Measures the user centricity 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).

However, the IFI's access to information and its dialogue with the government and parliament could still be improved. Ways to develop a more active outreach policy could also be considered.

The efficiency of the justice system continues to face challenges. The lack of renewal of the Council for the Judiciary is negatively affecting the work of the Supreme Court and the justice system. Due to the continued lack of renewal, there were more than 90 judicial posts pending appointment at the time of writing. The length of proceedings is also a major issue, in particular, the disposition time for civil and commercial cases in the Supreme Court (691 days in 2022) although it has decreased (from 826 days in 2021 and 888 days in 2020). The quality of the justice system is good overall. The level of digitalisation is very advanced, with procedural rules enabling digital tools in courts in place, courts and prosecution services equipped with digital technology, including an electronic case management system and remote work environments for the courts and prosecution service and secure distance communication. There is also the possibility for people to initiate and follow proceedings, particularly in civil, commercial and administrative cases. The perceived judicial independence among the public has improved compared with 2023 (34%), although it remains below that of 2020 (44%). However, the perceived judicial independence among companies has decreased in comparison with 2023 (34%), as well as with 2020 (42%) ([107]).

([107])For more detailed analysis of the performance of the justice system in Spain, see the 2024 EU Justice Scoreboard (forthcoming) and the country chapter for Spain of the Commission's 2024 Rule of Law Report (forthcoming).

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

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

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)	34.1
	Early leavers from education and training (% of the population aged 18-24, 2023)	13.7
	Share of individuals who have basic or above basic overall digital skills (% of the population aged 16-74, 2023)	66.2
	Young people not in employment, education or training (% of the population aged 15-29, 2023)	12.3
	Gender employment gap (percentage points, population aged 20-64, 2023)	10.3
	Income quintile ratio (S80/S20, 2022)	5.6
Dynamic labour markets and fair working conditions	Employment rate (% of the population aged 20-64, 2023)	70.5
	Unemployment rate (% of the active population aged 15-74, 2023)	12.2
	Long term unemployment (% of the active population aged 15-74, 2023)	4.3
	Gross disposable household income (GDHI) per capita growth (index, 2008=100, 2022)	95.9
Social protection and inclusion	At risk of poverty or social exclusion (AROPE) rate (% of the total population, 2022)	26
	At risk of poverty or social exclusion (AROPE) rate for children (% of the population aged 0-17, 2022)	32.2
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2022)	27.4
	Disability employment gap (percentage points, population aged 20-64, 2022)	14.6
	Housing cost overburden (% of the total population, 2022)	9.2
	Children aged less than 3 years in formal childcare (% of the under 3-years-old population, 2022)	48.6
	Self-reported unmet need for medical care (% of the population aged 16+, 2022)	1.2

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

(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 Spanish labour market continued to improve in 2023, but long-standing challenges persist. After a slight dip towards the end of 2022, the employment rate grew significantly to 70.5% in 2023, though it remains below the EU average of 75.3%. The unemployment and long-term unemployment rates were at 12.2% and 4.3% respectively, which, despite steady declines since 2021, are double the EU averages in 2023. Younger, older and foreign-born workers (both EU and non-EU) are most vulnerable in the labour market. The unemployment rate of young people (15-29) remains 9.9 percentage points (pps) higher than the EU average, at 21.3% in Q4-2023, and appears to have stopped declining. In a context where close to 20% of the workforce is over 55 years of age, the unemployment rate of older people (55-74) is almost triple the EU average (11.1% vs 4.3% in 2023), while the share of unemployed workers born outside Spain was 16.5% (vs 9.5% in the EU in 2023). These persisting imbalances point to structural challenges in the Spanish labour market, including the need to further improve the effectiveness of active labour market policies, which currently mostly benefit employed people. As part of Spain's recovery and resilience plan (RRP), the envisaged law on non-contributory unemployment support is supposed to link such benefits to personalised activation pathways, which could improve the employability of beneficiaries.

Despite sizable improvements, precarious jobs remain widespread, especially in the public sector and for young people. Following the 2021 labour market reform, the share of fixed-term employees in the private sector fell by almost half (from 23.9% in Q4-2021 to 13.2% in Q4-2023). However, the corresponding share in the public sector remains high (29.6% in Q4-2023). This especially affects women, and the health and education sectors. Overall, the share of fixed-term employees is among the highest in the EU, with increased regional disparities, although the share has fallen, especially in sectors that were more affected by temporary employment prior to the reform and for young people (down by 19.4 pps since 2021). Spanish young people also suffer from involuntary part-time work rates that are 2.3 times as high as the EU average (49.1% vs 21.3%) – a challenge that also applies to the working-age population as a whole. Three in five young people in work have been employed for less than one year – one of the highest figures in the EU ([108]). To support good quality jobs for young people, the European Social Fund Plus (ESF+) will fund targeted hiring incentives for permanent contracts (EUR 635 million). Addressing these challenges would support further progress towards the 2030 national employment rate target of 76%.

Labour and skills shortages and an ageing workforce are making it more difficult for

([108])Eurostat: lfsa_egad.

companies to find the right workers. Although it is still below the EU average, the share of firms reporting that labour is a factor limiting production is at an historical high in industry (8%) and services (23%), and close to a historical high in construction (10%) ([109]). Labour availability issues are reported across almost all skill levels and sectors, including the green and digital ones ([110]). A shrinking working-age population is contributing to this trend, especially in the north-western regions and in sectors with a higher average age such as healthcare, social services and public administration. The combination of increasing labour shortages and still high rates of unemployment points to challenges in matching the level and availability of skills with labour market needs. In a context of low enrolment rates in dual courses and upper secondary levels, RRP measures are expected to increase the relevance of vocational education and training (VET) courses to the job market. This should contribute to Spain achieving its ambitious national target of at least 60% of adults participating in training every year by 2030, although considerable efforts are still needed. The combination of demographic challenges, skills and labour shortages, and other (structural) issues in the labour market also undermines Spain's potential to increase its economic competitiveness.

Challenges in education and training contribute to skills mismatches. The share of adults that participate in lifelong learning has increased from 30.4% in 2016 to 34.1% in 2022 but remains below the EU average of 39.5%. Higher-skilled adults benefit from learning much more than lower-skilled ones, which contributes to Spain's significant skills polarisation. For three decades, the country has had one of the highest overqualification rates in the EU. The overall rate of young NEETs (15-29) has decreased to almost match the EU average (12.3% vs 11.2% in 2023). However, despite recent improvements, the rate of early school leavers was still among the highest in the EU in 2023, at 13.7% (Annex 15). More than EUR 1.11 billion of ESF+ funds will help address the challenge of early school leavers in the coming years.

Despite various efforts, there is room to improve the effectiveness of the social protection system. In 2023, Spain increased child benefits and raised the minimum wage again. Besides, several temporary benefits to face inflation were extended and the coverage of the minimum income was broadened. Nonetheless, income inequality and poverty rates remained high in 2022. Despite decreasing since 2021, the share of people at risk of poverty or social exclusion (AROPE) ranked among the highest in the EU (ES: 26% vs EU: 21.6% in 2022), notably for non-EU nationals (60.4%), persons with disabilities (30%), single parents (49.2%) and low-skilled people (33.7%). Child poverty also remains very high, with an AROPE rate for children of 32.2%. Social transfers had a limited impact on poverty reduction (22.9%, falling by 4.5 pps in 2023), with significant disparities between population groups and regions ([111]). The consequences of unfavourable working conditions are also reflected in higher poverty and deprivation rates for persons in non-standard forms of employment and in the rate of in-work poverty. To address these challenges, the ESF+ provides integrated socio-economic pathways for people at risk of poverty and social exclusion, and supports the implementation of the Child Guarantee with 10.5% of the national ESF+ financial allocation. This will be complemented by RRP measures such as the plan to reorganise and simplify the system of non-contributory financial benefits, the Family Diversity Law and the Social Services Law. Nevertheless, there is scope for greater social policy action to achieve Spain's national target of 2.815 million fewer people at risk of poverty or social exclusion by 2030 (compared to 2019), including 713 000 children.

Access to affordable housing is a challenge. In 2023, Spain extended the guarantee for basic supplies and enacted a new Housing Law, which supports the supply of public and affordable housing and introduces new provisions on rental prices. However, while the housing cost overburden rate was only slightly above the EU average (9.2% vs 8.7% in 2022), there are significant barriers to social inclusion. The share of social housing stock

([109]) European Business and Consumer Survey.

([110]) Bank of Spain, *Encuesta a las empresas españolas sobre la evolución de su actividad,* third and fourth quarters of 2023; pp. 9-10, and 7, respectively; Observatorio de las Ocupaciones, *Tendencias del Mercado de Trabajo en España 2023*, pp. 37 and 41.

([111]) Results from the Joint Research Centre, based on the EUROMOD model.

is less than one third of the EU average. Under the RRP, Spain is investing EUR 2 billion to construct at least 20 000 energy-efficient social rental housing units by 2026. The Spanish RRP and the European Regional Development Fund (ERDF) include measures to promote the supply of (social or affordable) rental housing. The available quantitative and qualitative evidence and the policy response undertaken and planned analysed in the second-stage analysis of the Social Convergence Framework of May 2024 (SWD(2024)132) point to challenges related to the transition from education to the labour market as well as to child and energy poverty and the impact of social transfers but do not point to major social convergence challenges for Spain overall, in light of the positive developments recorded, especially in the labour market.

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

Indicators	Latest data	Trend (2016-2023)	2030 target	EU target
Employment (%)	70.5 (2023)		76	78
Adult learning[1] (%)	34.1 (2022)		60	60
Poverty reduction[2] (thousands)	+383 (2023)		-2 815	-15 000

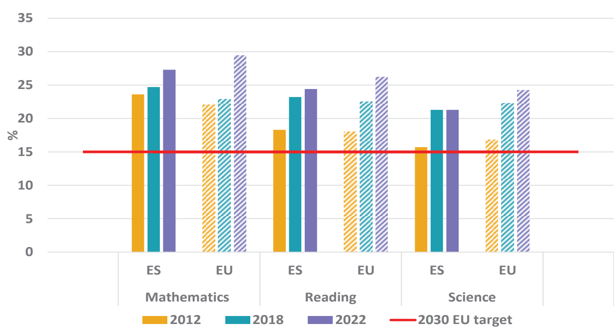
(1) Adult Education Survey, adults in learning in the past 12 months, special extraction excl. guided on-the-job training.
(2) Change in the number of persons at risk of poverty or social exclusion (AROPE), reference year 2019.
Source: Eurostat, DG EMPL.

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

Underachievement in basic skills has increased over the past decade, albeit moderately, warranting policy action. The proportions of 15-year-old students who underachieved in PISA 2022 ([112]) - in mathematics (27.3%), in reading (24.4%) and in science (21.3%) - were below the EU averages (29.5%, 26.2% and 24.2% respectively), but still far from the EU-level target (<15%). Compared with 2012, underachievement rates increased by 3.7 pps in mathematics, 6.1 pps in reading and 5.6 pps in science, while the average performance remained relatively stable compared with 2018 (see Table A15.1 and Graph A15.1). The existing gap in the PISA test results based on the socio-economic and/or migrant backgrounds of students, although still relevant, is one of the smallest at EU level. Several factors like school closures during the pandemic, the further use of TIC or the readiness of teachers for distance teaching (as perceived by students) seems not to have strongly influenced the PISA 2022 ([113]) However, it seems that it has been more challenging for low performing students which required greater study support and faced more difficulties to adapt to distance learning than their fellows. Educational achievement of students provides the foundation for the skills of the future labour force; this determines long-term economic growth, innovation capacity, productivity, and Spain's potential for improving its overall competitiveness.

The low proportion of top performers may pose a risk for future productivity and competitiveness. PISA 2022 shows shares of top performers in Spain in the mathematics, reading and science tests (5.9%, 5.3% and 4.9% respectively) to be below the EU averages (7.9%, 6.5% and 6.9%). Compared with 2012, the share of top-performing students dropped by 2.1 pps in mathematics but remained relatively unchanged in reading and science.

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



Source: OECD (2023).

Teacher shortages in STEM fields and the lack of job stability represent challenges for the teaching profession. The proportion of teachers (ISCED 1-3) aged 55+ is below the EU average (20.2% vs 24.5%). However, national data show that the share of older teachers is higher in secondary education and vocational education and training (VET) than in primary, and it is even higher in higher education. While there are no overall teacher shortages, it is becoming more challenging to fill posts with qualified staff in STEM subjects. In addition, a significant share of teachers is employed under temporary contracts. In 2022-2023, 22.47% of all teachers held such contracts (ranging at regional level from 4.7% to 43.4%) ([114]). The high turnover of teaching staff may have a negative impact on job satisfaction, educational outcomes, and the effectiveness of pedagogical projects. The government plans to reduce the share of interim teachers to 8% by 2025. They are also reviewing the requirements, unchanged for more than 40 years, for getting access to the teaching profession.

The rate of early leavers from education and training (ELET) fell sharply since 2012 but remains above the EU average. The ELET rate in 2023 was 13.7%, 0.2 pps less than in 2022 (EU average 9.5%). After 2 years of sharp decline (1.3 pps in 2020 and 2.7 pps in 2021), the rate rose slightly in 2022 (0.6 pps). Gender and regional differences in ELET rates persist, although the gender gap is de-creasing (from 8.4 pps in 2012 to 4.7 pps in 2023). Even though the regional disparities have shrunk, they remain significant. ELET rates in 6 out of 19 regions are

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

([113])https://www.libreria.educacion.gob.es/libro/pisa-2022-programa-para-la-evaluacion-internacional-de-los-estudiantes-informe-espanol_183950/

([114])https://www.csif.es/sites/default/files/field/file/INFORME%20CURSO%202023-2024.pdf

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

Indicator			Target	2012 Spain	2012 EU-27	2018 Spain	2018 EU-27	2023 Spain	2023 EU-27
[1]Participation in early childhood education (age 3+)			96%	96.6% [2013]	91.8% [2013]	97.5%	92.2%	96.0% [2021]	92.5% [2021,d]
[2]Low-achieving 15-year-olds in:		Reading	< 15%	18.3%	18.0%	23.2%	22.5%	24.4% [2022]	26.2% [2022]
		Mathematics	< 15%	23.6%	22.1%	24.7%	22.9%	27.3% [2022]	29.5% [2022]
		Science	< 15%	15.7%	16.8%	21.3%	22.3%	21.3% [2022]	24.2% [2022]
Early leavers from education and training (age 18-24)	[3]Total		< 9 %	24.7%	12.6%	17.9%	10.5%	13.7%	9.5%
	[3] *By gender*	*Men*		28.9%	14.5%	21.7%	12.1%	16.0%	11.3%
		Women		20.5%	10.6%	14.0%	8.7%	11.3%	7.7%
	[4] *By degree of urbanisation*	*Cities*		21.1% [b]	11.2%	15.5%	9.4%	12.8%	8.6%
		Rural areas		29.6% [b]	14.0%	19.7%	11.0%	14.4%	9.9%
	[5] *By country of birth*	*Native*		21.4%	11.3%	14.9%	9.2%	10.5%	8.2%
		EU-born		38.8%	26.2%	34.2%	22.4%	25.0%	21.0%
		Non EU-born		40.5%	30.1%	31.4%	23.0%	29.5%	21.6%
[6]Socio-economic gap (percentage points)				31.9	:	:	29.5	33.4 [2022]	37.2 [2022]
[7]Exposure of VET graduates to work-based learning			≥ 60% (2025)	:	:	:	:	96.7%	64.5%
Tertiary educational attainment (age 25-34)	[8]Total		45%	40.4%	34.1%	44.3%	38.7%	52.0%	43.1%
	[8] *By gender*	*Men*		34.9%	29.1%	38.4%	33.3%	46.1%	37.6%
		Women		46.0%	39.2%	50.1%	44.2%	58.0%	48.8%
	[9] *By degree of urbanisation*	*Cities*		46.0% [b]	43.5%	50.2%	49.0%	57.5%	53.3%
		Rural areas		31.8% [b]	24.8%	35.3%	27.7%	44.5%	31.7%
	[10] *By country of birth*	*Native*		45.4%	35.4%	48.7%	39.7%	59.1%	44.2%
		EU-born		26.5%	29.3%	32.5%	36.7%	39.4%	40.2%
		Non EU-born		21.1%	24.2%	26.5%	31.0%	32.5%	37.1%
[11]Participation in adult learning (age 25-64)			≥ 47% (2025)	:	:	30.4% [2016]	37.4% [2016]	34.1% [2022]	39.5% [2022]
[12]Share of school teachers (ISCED 1-3) who are 55 years or over				18.0% [2013]	22.7% [2013]	20.2%	23.8%	20.2% [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.

below or close to the EU average. A further 4 regions show ELET rates below the national average, and the remaining 9 show the highest ELET rates (from 15% to 21%).

Tertiary educational attainment (TEA) increased further. In 2023, the TEA rate among people aged 25-34 kept its growing tendency and was at 52% (1.8 pps more than in 2022) and much higher than the EU average (43%) ([115]) and the EU-level target (45%). Nevertheless, significant regional differences in TEA rates remain (ranging from 28.1% to 67.6%). The differences are also significant by birth-place ([116]) and by students' place of residence ([117]). Compared with 2016, the share of university entrants in STEM areas remains similar (around 25%, EU average 28.1%) ([118]), while the share on the ICT field has increased (6.3% vs 5%), being higher than the EU average (4.9%).

Many recent tertiary graduates only find work below their qualifications. In 2023, the employment rate of recent tertiary graduates (aged 20-34) continues to rise, but it is still below the EU average (83% vs 88%) ([119]). Employment opportunities for young people do not always match their qualifications. Spain has one of the highest overqualification rates in the EU among people aged between 25 and 34 ([120]). One in three tertiary-educated workers are employed in low-skilled jobs (36% in 2020 vs an EU average of 24.2%). Overqualification affects men more than women and people born outside Spain than native-born. Skills mismatches are widely accepted as a factor that acts as a drag on potential economic growth. Against a projected decline and ageing of the labour force, European economies cannot afford to waste human capital.

([115])Eurostat: edat_lfse_03.

([116])Eurostat: edat_lfs_9912.

([117])Eurostat: edat_lfs_9913.

([118])Eurostat: educ_uoe_ent02.

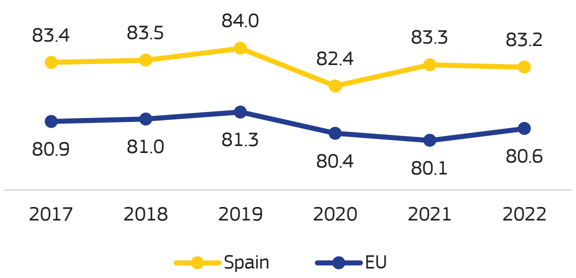
([119])Eurostat: edat_lfse_24.

([120])Eurostat: lfsa_eoqgan.

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 Spain.

Life expectancy in Spain is among the highest in the EU and has partially rebounded after it fell in 2020. There was a drop in life expectancy in Spain with the onset of the COVID-19 pandemic in 2020. Then, life expectancy rebounded, although not to pre-pandemic levels, as mortality from COVID-19 fell in 2021 and 2022 ([121]). Spain fares comparatively well in avoiding deaths from treatable causes. In 2021, diseases of the circulatory system, cancer and COVID-19 were the leading causes of death.

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

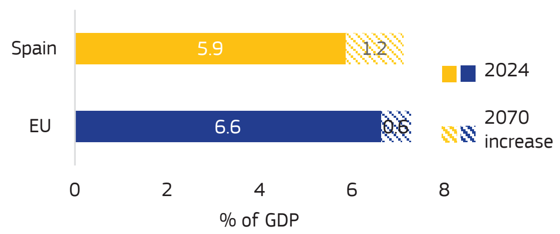


Source: Eurostat

Health spending relative to GDP in Spain was slightly below the EU average in 2021. Provisional data from the OECD suggest that in 2022 total health spending fell back to 10.4% of GDP. Spending per capita on outpatient care is below the EU average, underlining the importance of investment in primary care. Public health spending as a proportion of total health spending is comparatively low (71.6% in 2021), lower than the EU average (81.1%). Based on the age profile of the Spanish population, public spending on health is projected to increase by 1.2 percentage points (pps) of GDP by 2070 (compared to 0.6 pps for the EU overall), raising medium and long-term fiscal sustainability concerns (see Graph 16.2 and Annex 21).

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

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



Baseline scenario
Source: European Commission / EPC (2024)

Spending on prevention in Spain amounted to 3.5% of total spending on healthcare in 2021, compared to 6% for the EU overall. Between 2019 and 2021, spending on prevention in Spain increased by around 61%, 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. Further strengthening preventive care in Spain is a precondition for efficiency gains. Another measure to safeguard public health in Spain is the ongoing rationalisation of the use of antimicrobials, as part of broader efforts to foster the rational use of medicines. Despite the slight decrease in the use of antibiotics between 2019 and 2022, Spain is below the national target of 27% reduction by 2030 in relation to 2019 level, which was set by the Council Recommendation on stepping up EU actions to combat antimicrobial resistance in a One Health approach.

Spain faces shortages and an uneven distribution of health workers. The number of doctors per 1 000 population is slightly above the EU average. However, family medicine, anaesthesiology, geriatrics, radiology and psychiatry have been identified as specialisations with shortages and greatest future needs. While the proportion of physicians who practise as general practitioners increased slightly between 2020 and 2021 (from 20% to 21%), this remains lower than in 2018, when the figure peaked at 22.2%. The number of nurses per 1 000 population is well below the EU average, and shortages have a negative impact on primary care. The percentage of the health workforce aged over 55 (33% of doctors and 21% of nurses) may exacerbate shortages if the number of graduates does not increase. Both the rate of medical

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)	64,6	62,6	62,2	61,0	NA	93.3 (2021)
Cancer mortality per 100 000 population	221,9	218,3	214,5	213,3	NA	235.4 (2021)
Current expenditure on health, % GDP	9,0	9,2	10,7	10,6	NA	10.9 (2021)
Public share of health expenditure, % of current health expenditure	70,2	70,6	73,1	71,6	NA	81.1 (2021)
Spending on prevention, % of current health expenditure	2,1	2,1	3,0	3,5	NA	6.0 (2021)
Available hospital beds per 100 000 population	297	295	296	296	NA	525 (2021)
Doctors per 1 000 population	4,0	4,4	4,6	4,5	NA	4.1 (2021)*
Nurses per 1 000 population	5,9	5,9	6,1	6,3	NA	7.9 (2021)
Total consumption of antibacterials for systemic use, daily defined dose per 1 000 inhabitants per day ***	26,2	24,9	19,7	20,0	23,2	19.4 (2022)

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

graduates (14.2 per 100 000 population) and the rate of nursing graduates (23 per 100 000) in Spain were below the respective EU averages in 2021. The distribution of health professionals has persistently varied across regions. In 2020, the number of primary care physicians ranged from 0.6 to 1.1 per 1 000 population while the number of primary care nurses ranged from 0.5 to 0.9 per 1 000 population across regions. The number of specialist doctors varied from 1.5 to 2.6 per 1 000 population, and the number of specialist nurses ranged from 3.0 to 6.9 per 1 000 population. Working conditions remain an issue, with increasing use of temporary contracts (41.9% of all health workers in 2020, up from 28.5% in 2012). Royal Decree-Law 12/2022 modified the status of health professionals and included measures to reduce the use of temporary contracts. However, its impact has yet to be assessed.

Through its recovery and resilience plan (RRP), Spain plans to invest EUR 2.4 billion (1.5% of the RRP's total value) in healthcare. A set of measures have started, relating to innovation in the health sector, investment in renewing hospital equipment, training of health professionals and health promotion. The government has adopted an action plan for the modernisation of primary and community care and a public health strategy. Pending measures include reforms to expand health coverage, and reforms of the healthcare workforce, digital health infrastructure and pharmaceutical policies (rational use of medicines, innovative pharmaceuticals). The digital health strategy, adopted in 2021, created a framework for digitalisation of healthcare, including related RRP investments. Investment in primary care under the RRP is limited to EUR 230 million, for digitalisation. Complementary investments in healthcare worth more than EUR 1.6 billion are planned under the cohesion policy funds for 2021-2027 and will focus mainly on health infrastructure, e-health and health equipment ([122]).

The action plan for the modernisation of primary care adopted under the RRP aims to expand roles, activities relating to primary care and resources for it. Effective implementation of the plan will depend on appropriate investment in staff, infrastructure and facilities. According to OECD health statistics ([123]), primary care accounted for just 13% of total spending on healthcare in Spain in 2020 and is on a downward trend, decreasing from 14.5% in 2002 and 14% in 2019. Moreover, there are substantial disparities in investment levels for primary care at subnational level. Shortages of general practitioners and nurses in particular hamper the delivery of primary care, with a large variation in staffing levels across regions. Measures to attract more students to pursue medical careers and to foster recruitment and retention appear relevant in this context.

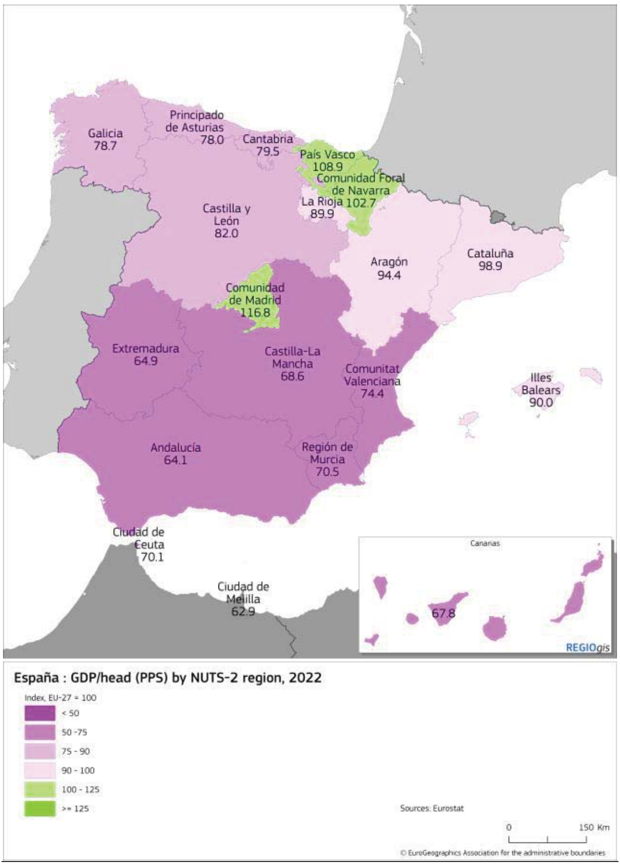
([122])The EU cohesion policy data reflect the status as of 13 May 2024.

([123])OECD Health Statistics, 2022.

Annex 17 showcases the economic and social regional dynamics in Spain. It provides an analysis of economic, social and territorial cohesion 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

Map A17.1: **GDP per capita (2022) in Spain, by NUTS2 region**



Source: Eurostat, DG REGIO elaboration

Regional disparities in Spain remain high and most of the regions are diverging from the EU's average GDP per capita (in purchasing power parity). In Comunidad de Madrid, this corresponded to 117% of the EU average in 2022, followed by Pais Vasco (at 109%) and Navarra (at 103%). These regions were far ahead of the autonomous city of Melilla (63%), and the regions of Andalucía (64%), Extremadura (65%) and Canarias (68%) ([124]).

Hampering internal convergence, 10 regions grew slower than the national average (of 1.19%). Between 2013 and 2022, only one region (Galicia) reached the EU's annual average GDP growth per capita (1.44%). The lowest rates are found in Illes Balears (0.46%) and in the outermost region of Canarias (0.29%).

While many regions in Spain rank below the EU average in terms of GDP per capita and productivity, some regions are more acutely affected than others. Disparities in GDP per capita go hand in hand with disparities in labour productivity. Labour productivity stood at 96% of the EU average in terms of PPS in 2022. Productivity was the highest in País Vasco (109% of the EU average), in Madrid and Navarra (106% and 105% respectively). It stood at 86% of the EU average in Canarias, at 84% in Andalucía and Extremadura and at 81% in Murcia. Three transition regions, Rioja, Illes Balears and Canarias, were identified as being in a development trap for the last 15 years. With their GDP per capita set between 90% and 68% of the EU average in 2022, they have experienced serious difficulties in catching up.

Only Madrid, País Vasco, and Cataluña ranked above the EU average in terms of competitiveness. As shown in Eurostat subnational indicators on regional competitiveness index (2022), regional disparities in competitiveness are mainly driven by disparities in higher education, lifelong learning, the labour market, and innovation.

R&D expenditure in 2022 was 1.4% of GDP, below the EU average of 2.3% of GDP and concentrated in the richest regions. R&D expenditure was the lowest in Extremadura (0.7%), Canarias (0.6%), and in Illes Baleares (0.5%), but 2.3% of GDP in País Vasco.

Similarly, the Spanish labour market still showed significant regional disparities. The employment rate reached around 75% in Madrid, La Rioja and Aragón, but just 63% in Andalucía and 65% Canarias in 2023. Overall, unemployment was nearly twice the EU average (12.2% versus 6.1%). Unemployment rates were below 9.5% in País Vasco, Cantabria, La Rioja, Cataluña and Aragón, and the highest in Extremadura and Canarias (17.4% and 16.1%and Andalucía (18.3%). Youth unemployment levels

([124])The analysis will not always mention Ciudad Autonoma de Melilla and Ciudad Autonoma de Ceuta.

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

	GDP per head (PPS)	Productivity (GVA (PPS) per person employed)	Real productivity growth 2013-2022	GDP per head growth 2013-2022	Population growth 2013-2021	Unemployment rate	Youth unemployment rate	At-risk-of-poverty or social exclusion	R&D expenditure	Greenhouse Gas Emissions	Greenhouse Gas Emissions	EU Regional Competitiveness Index 2.0 - 2022
	Index, EU27 = 100 (2022)	Index, EU27 = 100 (2022)	Average % change on the preceding year	Average % change on the preceding year	Average annual change per 1000 residents	% of active population (2023)	% of active population aged 15-24 (2023)	% of population (2022)	% of GDP (2021)	tCO2 equivalent per head (2022)	Percent change per head (1990-2022)	Index, EU27 = 100
European Union	100	100.0	0.7	1.44	1.9	6.1	14.5	21.6	2.3	8.0		100.0
España	86	96.0	0.2	1.19	1.7	12.2	28.7	26.0	1.4	6.7	-9.5	91.9
Galicia	79	92.3	0.9	1.55	-2.9	9.7	24.6	23.6	1.1	6.7	-25.2	87.9
Principado de Asturias	78	95.4	0.2	0.96	-6.6	12.1	29.2	25.3	0.9	18.0	-42.8	90.5
Cantabria	80	96.4	0.4	1.08	-1.1	8.1	19.9	19.5	1.0	6.7	8.0	92.8
País Vasco	109	109.2	0.7	1.19	0.0	7.7	23.8	15.7	2.3	7.2	24.2	107.0
Comunidad Foral de Navarra	103	105.2	0.5	1.04	3.5	9.9	25.8	14.5	1.9	10.1	25.1	97.8
La Rioja	90	98.0	0.2	0.87	-1.0	9.4	27.6	20.9	0.8	8.2	71.3	90.2
Aragón	94	98.1	0.4	1.29	-2.0	8.6	22.2	19.1	1.0	12.3	-14.1	90.8
Comunidad de Madrid	117	106.0	0.4	1.34	6.0	10	27.4	20.3	1.9	2.2	1.3	118.6
Castilla y León	82	93.4	0.2	1.25	-6.5	9.7	28	22.1	1.4	12.5	-11.5	85.4
Castilla-La Mancha	69	89.7	0.1	1.23	-2.4	13.2	29.7	31.6	0.8	12.7	-13.2	79.5
Extremadura	65	84.7	-0.3	1.25	-4.9	17.4	37.2	36.9	0.7	8.7	23.3	70.1
Cataluña	99	101.5	0.2	1.09	2.9	9.3	22.4	20.4	1.8	5.5	22.0	100.8
Comunitat Valenciana	74	91.2	0.2	1.30	1.9	12.8	28.3	27.5	1.2	5.2	19.7	91.2
Illes Balears	90	102.4	0.3	0.46	10.8	10.3	20.3	21.5	0.5	6.0	-23.3	86.4
Andalucía	64	84.8	-0.1	1.01	1.7	18.3	39.8	35.8	1.1	6.9	-4.3	74.9
Región de Murcia	71	81.8	0.4	1.31	4.5	12.8	28.6	31.0	1.1	9.8	45.8	83.3
Ciudad de Ceuta	70	87.3	0.2	1.01	-2.7	30	59.8	40.7	0.2	1.7	-11.4	62.5
Ciudad de Melilla	63	83.1	0.0	0.85	-0.5	26.6	47.3	41.3	0.4	1.6	-18.4	71.1
Canarias	68	86.5	-0.5	0.29	7.5	16.1	32.8	36.2	0.6	4.1	-12.4	74.9

Source: Eurostat, EDGAR database

remained high in 2023, at 28.7%, and reaching as high as 47.3% in Ciudad de Melilla, 59.8% in Ciudad de Ceuta, 37.2% in Extremadura and 32.8% in Canarias.

Depopulation is an ongoing issue in most Spanish regions, with more than half having shown a drop in population. The regions most affected by population decline were Principado de Asturias (-6.6%), Castilla y León (-6.5%), and Extremadura (-4.9%). This is in part due to the high shares of out-migration of people aged 15-39 in these regions and pose significant issues for their long-term prospects.

Although 9 of the regions lowered their greenhouse emissions per capita between 1990 and 2022, others increased theirs by over 20%. Asturias managed to reduce its emissions per capita by 42% thanks to the measures taken to transition towards a greener economy and by reducing the share of coal-dependent industries. However, the regions of La Rioja and of Region de Murcia had an increase of 71% and 45% per capita, respectively. All the other regions ranked in between, with an average reduction of 9% in Spain.

Regional disparities persisted in terms of being at-risk-of-poverty and social exclusion, with the highest being in towns and suburbs. More than one third of the population in Extremadura, Andalucía and Canarias were at-risk-of-poverty and social exclusion (as observed in AROPE).

Marked disparities are observed among the mainland regions, but also as regards the outermost region of Canarias, and the autonomous cities of Ceuta and Melilla. These three territories ranked below the EU average in GDP per capita (at less than 70%), and the two autonomous cities of Ceuta and Melilla had a high unemployment rate of 28.4% and 21.6%, respectively. 41% of the autonomous cities' population and 36.2% of the Canarian population were also at-risk-of-poverty and social exclusion, against the national average of 26%. All these factors, accompanied by poor opportunities in the labour market, translate into a lower incentive to stay in these regions. The two autonomous cities saw their population decline by 2.7% in Ceuta and

0.5% in Melilla between 2013-2022 and are at risk of falling in a talent development trap ([125]).

Investment and subnational reform needs ahead

Strengthening economic dynamism remains a challenge in many Spanish regions. This concerns in particular the capacity of businesses to innovate and invest in R&D, as well as public support to transform the key industries identified by the respective regional Smart Specialisation strategies, including investments in net-zero technologies manufacturing. The Spanish productive sector could be a driver of a stronger and a more resilient economy. Delivering the planned investment in competitiveness under the 2021-2027 cohesion policy programmes will be key to helping Span's less developed regions and regions in a development trap cope with this challenge and avoid falling into further development traps. Spain could benefit from the Strategic Technologies for Europe Platform (STEP) initiative investment opportunities to boost investments for critical technologies to support industry's transformation.

The need to invest in the green transition remains substantial. Public investments would be most effective if they triggered appropriate leverage for private sector investment. Together with the investments planned under the national recovery and resilience plan (NRRP), the 2021-2027 cohesion policy funding programmes should continue to be mobilised to support investment in the green transition to help Spain reach the climate objectives set out in the national energy and climate plan (NECP) and in the EU's Green Deal. This includes boosting the circular economy and waste management, improving water management, enhancing biodiversity, as well as adapting to climate and disaster risks. Territories more exposed to the effects of climate change, such as the territories along the Mediterranean coast, which face water scarcity, droughts and forest fires, merit special attention.

Depopulation remains a major challenge for many Spanish regions with half experiencing population losses, including Castilla y León, Castilla-La Mancha, Principado de Asturias, Extremadura, Galicia, La Rioja, Aragón, Cantabria, Ceuta and Melilla. Some Spanish territories are at risk of falling in a talent development trap due to young people leaving. Coupling investment in education and in the business environment are crucial for depopulating territories to remain competitive and attractive to people. Comprehensive strategies developed in partnership with local actors and pooling available resources, should be set up to help the regions more affected by this issue.

Addressing barriers to investments is relevant at both national and subnational level. Targeted reforms complementing those included in the NRRP could be carried out to address the challenges faced by the regions.

Administrative capacity needs to be strengthened to create the right conditions for a better absorption funds at all governmental levels and to address key emerging investment needs. A large amount of NRRP and cohesion policy funding has been made available in a short period to the national and regional authorities. To this end, the Spanish authorities will need to ensure that public administrations, including at subnational level, have sufficiently high administrative capacity. Finalising the regional administrative capacity roadmaps would be an important step in ensuring timely and correct implementation of public investment.

Green investments, including actions in water management, climate change adaptation, risk prevention and disaster resilience have faced difficulties during implementation. Reforms to address challenges such as water scarcity, droughts and forest fires along the Mediterranean coast, or the risk of flooding in inland and northern regions of Spain, would improve the situation. For instance, shortcomings in wastewater management are identified in the regions of Andalucía, Canarias, Castilla-La Mancha and Extremadura. Structural reforms could be envisaged to speed up and effectively deliver on planned investments, notably in wastewater, water efficiency and forest fire prevention. The Outermost Region of Canarias, a territory with an

([125]) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - Harnessing talent in Europe's regions, COM(2023) 32 final: https://ec.europa.eu/regional_policy/information-sources/publications/communications/2023/harnessing-talent-in-europe-s-regions_en.

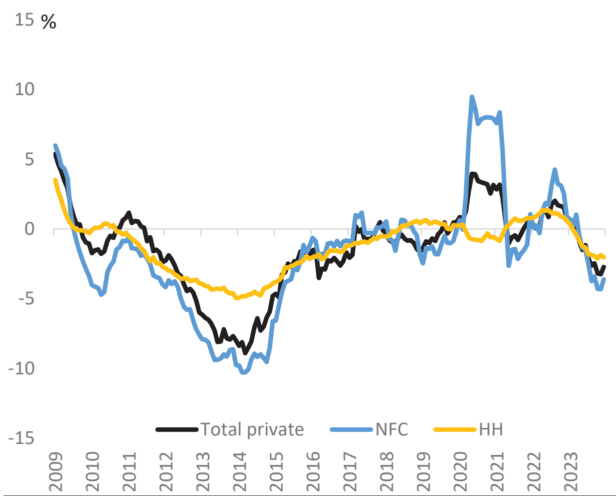
increased exposure to the effects of climate change, merits special attention

Targeted measures could be implemented at regional level to promote the upskilling and reskilling of workers, support businesses and the business environment, reduce unemployment rates and improve the quality of jobs. The regional innovation smart specialisation strategies underpinning the investments under the 2021-27 cohesion policy programmes need to develop strategic skills and support actions to retain and attract researchers and talent. The Territorial Just Transition Plan will be key to support these transitions in some of the most affected areas, as well as to make them fair and acceptable for their communities. Strategies for upskilling and reskilling of workers will help the regional workforce to adapt to the needs of thriving economic sectors with a high growth potential, notably due to the green and digital transitions.

Spain has a large bank-based financial sector and sustainable financing is steadily expanding. The banking sector is predominantly domestically owned (95% of total assets in 2023), with the five largest banking groups accounting for roughly 70% of banking-sector assets (Table A18.1). Two large banking groups (Santander and BBVA) have substantial international activities, operating in Latin America, the United Kingdom and Türkiye. The consolidation of the Spanish financial system in recent years has led to a reduction in the number of bank branches and bank employees due to a need to adjust capacity and reduce costs. In capital markets, inflows to investment funds have recently increased significantly, boosted by flows into fixed-income funds. Following several years of steady increases, the market funding ratio remained broadly unchanged at just above 44% in 2022, but still stood below the EU average (50.8%). At the same time, sustainable financing continued to expand in 2022, as Spanish companies issued significant amounts of green, social and sustainable bonds. The volume of total outstanding private and public green-bond issuance stood at EUR 11.8 billion at the end of 2022, replicating the peak issuance recorded in 2021. After Spain's first sovereign green-bond issuance (EUR 5 billion at 20 years maturity) in September 2021, the Spanish Treasury tapped the market three times in 2022 for a total of EUR 3.2 billion.

Spain's banking sector has remained resilient, amidst continued geopolitical tensions and uncertainty, high inflation, and tighter financing conditions for borrowers. Supported by a decrease in the stock of impaired assets, in particular due to sales of non-performing loans (NPLs) by banks, the NPL ratio declined to 2.7% at the end of 2022 and remained unchanged in Q3-2023 (but still above the EU average of 1.8%). The value of outstanding loans that have deteriorated significantly in credit quality [126] also declined in 2022, but remained broadly unchanged in 2023. While asset quality has remained relatively robust, the tightening of monetary policy and the high level of inflation may start to adversely impact the debt repayment capacity of borrowers. The liquidity position of banks remains reassuring, even after the repayment of a significant part of European Central Bank (ECB) TLTRO funding. Amidst rising prices and higher lending rates, the availability of deposit funding (notably corporate deposits) weakened in the course of 2023. Profitability continued to be robust in the third quarter of 2023, with return on equity at 12.1%, higher than both the EU average and the 2022 level. For the largest banks, in particular those mainly operating in the Spanish market, profitability has been adversely affected by the temporary bank levy introduced in 2022, payable in 2023 and 2024 [127]. After weakening in 2022, banking-sector capitalisation partially recovered in the first half of 2023. Overall, Spanish banks continue to have lower capital buffers than their EU peers, and in Q3-2023 they recorded the lowest common equity tier 1 ratio in the EU. In December 2023, the ECB raised the minimum capital requirements for Spanish lenders BBVA, Caixabank, Sabadell and Bankinter as part of the supervisory review and evaluation process.

Graph A18.1: **Evolution of credit activity**



Source: ECB.

The contraction in lending activity accelerated in 2023. In 2023, lending to non-financial corporations declined by 3.6% year-on-year, while lending to households was down by 2% year-on-year (Graph A18.1). Due to the tightening

[126] Stage 2 loans according to the classification by the International Financial Reporting Standards 9 (IFRS 9).

[127] The bank levy introduced in 2022 amounts to 4.8% of banks' net interest and fee income for operations in Spain and is applicable only to banks with taxable income above EUR 800 million in 2019. The levy is to be paid in 2023 and 2024 based on the 2022 and 2023 financial results.

Table A18.1:**Financial soundness indicators**

	2017	2018	2019	2020	2021	2022	2023	EU	Median
Total assets of the banking sector (% of GDP)	234.3	219.7	214.9	258.5	245.7	220.9	207.8	257.0	184.6
Share (total assets) of the five largest banks (%)	63.7	68.5	67.4	66.4	69.3	69.6	-	-	69.6
Share (total assets) of domestic credit institutions (%)[1]	95.5	95.3	95.2	95.0	95.0	94.7	95.0	-	62.9
NFC credit growth (year-on-year % change)	0.2	-1.9	0.0	7.9	1.1	0.8	-3.6	-	2.4
HH credit growth (year-on-year % change)	-0.5	0.4	0.2	-0.6	0.8	0.6	-2.0	-	1.4
Financial soundness indicators:[1]									
- non-performing loans (% of total loans)	4.4	3.7	3.1	2.8	2.9	2.7	2.7	1.8	1.8
- capital adequacy ratio (%)	15.4	15.4	15.7	16.8	17.3	16.5	16.8	19.6	20.1
- return on equity (%)[2]	7.0	8.2	6.7	-3.5	10.2	9.9	12.1	9.9	13.2
Cost-to-income ratio (%)[1]	52.6	53.3	53.4	50.2	52.1	48.0	44.9	52.8	44.9
Loan-to-deposit ratio (%)[1]	89.3	90.6	92.6	85.5	82.8	87.0	88.4	93.3	80.2
Central bank liquidity as % of liabilities	7.9	7.9	6.1	10.9	11.5	5.6	1.2	-	0.7
Private sector debt (% of GDP)	139.2	133.1	129.0	147.9	137.7	123.5	-	133.0	118.4
Long-term interest rate spread versus Bund (basis points)	123.8	102.6	91.4	88.8	72.1	103.8	104.2	107.7	104.2
Market funding ratio (%)	40.9	42.1	43.7	43.2	44.4	44.1	-	50.8	39.8
Green bonds outstanding to all bonds (%)[3]	-	-	-	1.4	2.2	2.8	3.2	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 euro area.
Source: ECB, Eurostat.

of the monetary policy stance in the euro area, the cost of lending has gradually increased since mid-2022. After hitting a peak in September 2023, the 1-year Euribor rate (which is used as the main reference to set interest rates on mortgage loans granted by banks) moderated to 3.609% in January 2024, up by 27.2 bps since January 2023. Meanwhile, private sector debt decreased further in 2022 to 123.5% of GDP, the lowest level since 2003. In this context, boosting equity financing for Spanish SMEs is crucial, especially for those with a high risk-return profile, such as new, innovative, and high-growth firms. However, Spain significantly lags behind the EU average in SMEs' access to equity, resulting in the third-highest equity financing gap in the EU ([128]).

Housing prices in Spain saw continued growth until the third quarter of 2023, but mortgage loans contracted. After an increase of 5.5% year-on-year in 2022, house prices continued growing in 2023 and were up by 4.5% year-on-year in Q3-2023. The credit-to-GDP gap relative to trend levels ([129]) remains in negative territory and on a downward path, due to a contraction in credit that started towards the end of 2022. The number of house purchases significantly declined in year-on-year terms in 2023, but remained above their average pre-pandemic level. Likewise, new mortgage loan volumes have continued to lose momentum. Some tightening was observed in credit standards in 2023, and this was reflected in a slight decrease in the loan-to-value ratio for new mortgage loans. Overall, real-estate-market indicators still show some signs of overvaluation, although much more contained than in other EU Member States. The Bank of Spain has maintained the countercyclical capital buffer at zero. In December 2023, the authorities enabled partial or early repayment of variable-rate mortgage loans without fees.

The insurance sector has remained resilient. Spain's insurance market is comparatively small, with total assets of insurers amounting to 21.1% of GDP in Q3-2023 (down from 22.3% of GDP in 2022), well below the EU average of 53.7%. The solvency position of the insurance sector remained broadly unchanged in 2022 and in 2023, as the solvency capital ratio stood at 238.7% in Q3-2023, thus slightly below the EU average (at around 262.3%). Motor insurance has continued to be the line of business that has contributed the largest volume of premiums in the non-life business, although its share has continued to decline progressively over the last two decades. Most recently, the volume of life-insurance-sector premiums has grown significantly. Spanish insurers have a relatively sizeable portfolio of sovereign and corporate bonds, which exposes them to changes in interest rates. On the upside, the ongoing monetary policy tightening by the ECB may mitigate the exposure of the sector to risks stemming from the low-interest-rate environment.

([128])Commission's CMU indicators 13 and 14, August 2023.

([129])The credit-to-GDP gap measures the deviation of the ratio of private non-financial-sector credit to GDP from its trend level.

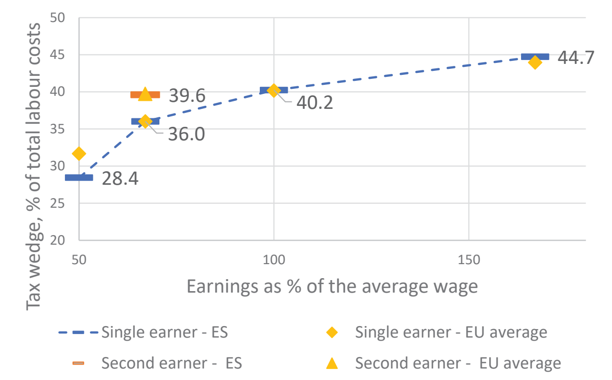
This annex provides an indicator-based overview of Spain's tax system. It includes information on the tax structure (the types of tax that Spain derives most of its revenue from), the tax burden on workers, and the progressivity and redistributive effect of the tax system. It also provides information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

Despite recent improvements, Spain's tax burden remains below the EU average. Spain's tax revenues reached 37.7% of GDP in 2022 (Table A19.1). It is still 2.5 pps below the EU average, despite having increased significantly since 2019 (34.8%). Most of the recent increase has been driven by a pro-cyclical enlargement of the labour and capital tax bases, in a context of robust job creation; strong rises in pensions, public wages and statutory minimum wage; and mounting company profits. As regards the tax structure, Spain is one of the EU countries with the lowest revenue from consumption taxes (9.7% of GDP). This is largely due to the extensive use of reduced VAT rates and exemptions, leading to the highest VAT policy gap rate in the EU, which is estimated at 59% of the notional ideal revenue. The share of labour taxes over total tax revenues was in line with the EU average in 2022, while that of capital taxes was slightly above (Graph A19.2). Overall revenues from property taxes in 2022 were among the highest in the EU and, in the case of recurrent property taxes, were slightly above the EU average. The forward-looking effective average tax rate on corporate income exceeded the EU average by 4.3 pps in 2022, which reflected some possible competitiveness hindrances stemming from Spain's corporate taxation system ([130]). The performance of the tax system should be viewed in a context of persistent public deficits and a high debt-to-GDP ratio.

Environmental taxation is below the EU average. Revenues from environmental taxes declined to 1.5% of GDP in 2022 (against 2.0% on EU aggregate) and were affected by the extraordinary measures adopted to contain inflation, some of which still remain in place. There is potential to strengthen the application of the 'polluter pays' principle because Spain has not yet implemented two of the six main types of pollution and resources taxes (i.e. taxes on fertilisers and pesticides).

Some important tax reforms included in Spain's Recovery and Resilience Plan (RRP) are still pending. To guide a comprehensive reform of the tax system, the government appointed a committee of experts to prepare a white paper, which was published in March 2022 ([131]). It also tasked the independent fiscal authority (AiREF) with producing a spending review on the system of tax benefits (this review was published in July 2020) and created a task force that assessed 15 tax benefits in 2021-2022. On the basis of these inputs, Spain committed to enacting legislative reforms with a view to bringing its revenue-to-GDP ratio closer to the EU average and making the tax system more efficient. Some short-term tax measures have been adopted in the meantime, but further measures aim to strengthen corporate, wealth and environmental taxation; reduce tax exemptions; and modernise the tax system.

Graph A19.1: **Tax wedge for single and second earners as a % of total labour costs, 2023**



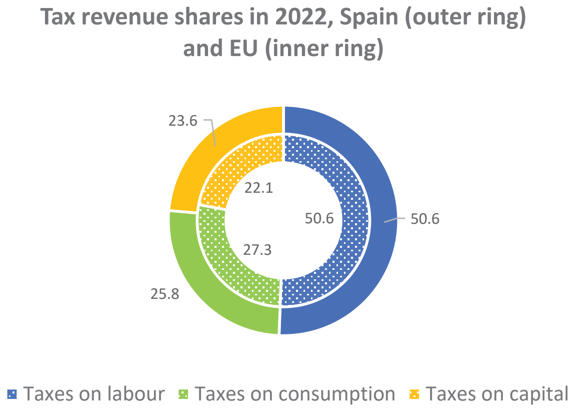
Note: Second earners are members of a family with the primary earner earning 100% of the average wage and no children. For the methodology of the tax wedge for second earners, see OECD, 2016, *Taxing Wages 2014-2015*.
Source: European Commission

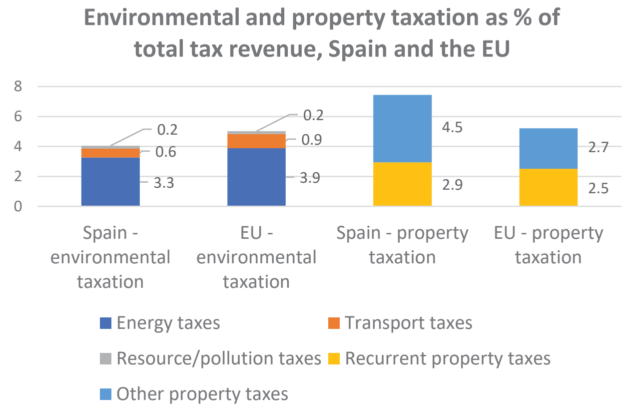
Spain's labour tax burden is relatively more progressive than the EU average. Graph A19.1 shows that the labour tax wedge for Spain in 2023 was lower than the EU average for single people at 50% of the average wage and close to the EU average at higher wage levels. Second earners, at a wage level of 67% of the average wage and whose spouses earn the average wage, face a

([130]) Herranz, M. M. and Turino, F., *Tax Evasion, Fiscal Policy and Public Debt: Evidence from Spain*, Economic Systems 2023, 47 (3), 101121, https://doi.org/10.1016/j.ecosys.2023.101121.

([131]) Libro Blanco sobre la Reforma Tributaria 2022 (ief.es)

Graph A19.2: **Tax revenues from different tax types, % of total revenue**





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

higher tax wedge than single earners at the same wage level. At the same time, their tax wedge is close to the EU average of the tax wedge for second earners. Spain's RRP includes a reform to make the tax system even more progressive. The tax and benefit system reduced the Gini coefficient (a measure of income inequality) in 2022 by 7.6 pps, which was close to the EU average of 7.9 pps (see Table A19.1).

Spain performs relatively well in terms of tax compliance and tax administration, although the age profile of its staff poses challenges for the latter. Spain is doing well in digitalising its tax administration, which can help reduce tax arrears as well as cut compliance costs. Outstanding tax arrears were low at 8.7% of total tax revenues in 2021 (significantly below the EU-27 average of 35.5%). The VAT compliance gap decreased further in 2021, in line with most EU countries. The average age of the Spanish tax administration's employees is relatively high (50.7% of them are older than 54). Some recent initiatives are trying to renovate the staff, but more ambition will be needed in order to ensure the replacement of half of the workforce in the next decade. Spain's RRP includes measures to further strengthen both the tax system and the tax administration (e.g. measures to prevent and combat tax fraud, modernise the national tax agency, and improve assistance to taxpayers and international cooperation by increased use of digital tools). Most of these have been carried out.

Table A19.1:**Taxation indicators**

		Spain					EU-27				
		2010	**2020**	**2021**	**2022**	**2023**	**2010**	**2020**	**2021**	**2022**	**2023**
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	31.3	37.0	37.9	37.7		37.9	40.0	40.4	40.2	
	Labour taxes (as % of GDP)	16.6	19.9	19.3	19.1		20.0	21.3	20.7	20.3	
	Consumption taxes (as % of GDP)	8.1	9.2	9.7	9.7		10.8	10.7	11.2	11.0	
	Capital taxes (as % of GDP)	6.6	7.9	9.0	8.9		7.1	8.0	8.6	8.9	
	Of which, on income of corporations (as % of GDP)	1.8	2.0	2.6	2.7		2.4	2.5	3.0	3.4	
	Total property taxes (as % of GDP)	2.1	2.7	3.0	2.8		1.9	2.3	2.2	2.1	
	Recurrent taxes on immovable property (as % of GDP)	1.0	1.3	1.2	1.1		1.1	1.2	1.1	1.0	
	Environmental taxes as % of GDP	1.6	1.8	1.7	1.5		2.4	2.2	2.3	2.0	
Progressivity & fairness	Tax wedge at 50% of average wage (Single person) (*)	30.5	27.9	27.9	28.8	28.4	33.9	31.7	32.1	31.8	31.7
	Tax wedge at 100% of average wage (Single person) (*)	39.7	39.0	39.5	39.6	40.2	41.0	40.1	39.9	40.0	40.2
	Corporate income tax - effective average tax rates (1) (*)		23.4	23.4	23.3			19.5	19.0	19.0	
	Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*)	7.3	6.9	8.5	7.6		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 %) (*)		9.5	8.7				40.9	35.5		
	VAT Gap (% of VAT total tax liability, VTTL)(**)	11.9	5.5	0.8				9.7	5.4		

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

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

							forecast	
	2004-07	2008-12	2013-20	2021	2022	2023	2024	2025
Real GDP (y-o-y)	3.6	-1.3	0.5	6.4	5.8	2.5	2.1	1.9
Potential growth (y-o-y)	.	1.2	0.4	0.6	1.5	1.9	1.9	2.0
Private consumption (y-o-y)	3.9	-2.0	0.0	7.1	4.7	1.8	2.1	1.9
Public consumption (y-o-y)	5.7	1.4	1.6	3.4	-0.2	3.8	1.8	1.3
Gross fixed capital formation (y-o-y)	5.7	-8.5	2.7	2.8	2.4	0.8	1.9	2.9
Exports of goods and services (y-o-y)	4.6	1.0	0.1	13.5	15.2	2.3	1.6	2.4
Imports of goods and services (y-o-y)	8.3	-5.2	1.4	14.9	7.0	0.3	1.3	2.4
Contribution to GDP growth:								
Domestic demand (y-o-y)	4.9	-3.0	0.8	5.3	3.1	1.9	1.9	1.9
Inventories (y-o-y)	0.0	-0.2	0.0	1.4	-0.2	-0.3	0.0	0.0
Net exports (y-o-y)	-1.3	1.8	-0.3	-0.2	2.9	0.8	0.2	0.1
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	.	0.1	-0.2	0.0	0.8	1.1	1.1	1.1
Capital accumulation (y-o-y)	.	0.7	0.3	0.3	0.3	0.3	0.3	0.4
Total factor productivity (y-o-y)	.	0.4	0.2	0.3	0.4	0.5	0.5	0.6
Output gap	2.9	-4.8	-3.1	-3.9	0.2	0.8	1.0	0.9
Unemployment rate	9.2	19.1	18.3	14.9	13.0	12.2	11.6	11.1
GDP deflator (y-o-y)	3.8	0.5	0.8	2.7	4.1	5.9	3.3	2.3
Harmonised index of consumer prices (HICP, y-o-y)	3.2	2.3	0.4	3.0	8.3	3.4	3.1	2.3
HICP excluding energy and unprocessed food (y-o-y)	2.8	1.6	0.7	0.7	5.2	5.8	3.2	2.2
Nominal compensation per employee (y-o-y)	3.2	2.0	1.1	4.5	4.1	5.4	4.0	2.9
Labour productivity (real, hours worked, y-o-y)	0.6	1.7	0.4	-0.8	1.8	0.6	-0.2	0.3
Unit labour costs (ULC, whole economy, y-o-y)	3.4	0.4	1.9	0.4	1.0	6.1	3.9	2.3
Real unit labour costs (y-o-y)	-0.5	-0.1	1.1	-2.2	-3.0	0.2	0.6	-0.1
Real effective exchange rate (ULC, y-o-y)	2.2	-1.6	0.3	0.9	-2.8	-0.4	-0.3	0.0
Real effective exchange rate (HICP, y-o-y)	1.5	-0.1	-0.3	0.7	-1.2	-1.1	.	.
Net savings rate of households (net saving as percentage of net disposable income)	3.1	4.6	4.2	9.7	2.9	.	.	.
Private credit flow, consolidated (% of GDP)	27.1	-0.7	-0.4	3.0	0.3	-2.2	.	.
Private sector debt, consolidated (% of GDP)	166.6	198.3	145.7	137.7	123.4	111.6	.	.
of which household debt, consolidated (% of GDP)	73.5	83.2	63.6	57.6	52.3	46.9	.	.
of which non-financial corporate debt, consolidated (% of GDP)	93.1	115.1	82.1	80.1	71.2	64.7	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (1)	.	4.4	4.2	2.6	2.3	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	-3.9	6.1	5.4	3.6	6.1	5.4	5.7	6.6
Corporations, gross operating surplus (% of GDP)	20.4	23.8	23.6	21.3	23.9	23.0	23.1	24.0
Households, net lending (+) or net borrowing (-) (% of GDP)	-4.5	-0.2	2.0	4.8	0.2	2.9	2.8	2.4
Deflated house price index (y-o-y)	9.7	-8.2	3.5	1.4	0.8	-0.2	.	.
Residential investment (% of GDP)	11.3	6.9	4.9	5.8	5.7	5.7	.	.
Current account balance (% of GDP), balance of payments	-7.8	-3.9	2.0	0.8	0.6	2.6	2.8	2.9
Trade balance (% of GDP), balance of payments	-5.0	-0.9	3.0	1.0	1.2	4.1	.	.
Terms of trade of goods and services (y-o-y)	0.5	-0.9	0.1	-0.7	-6.9	6.4	0.6	0.2
Capital account balance (% of GDP)	0.6	0.4	0.4	0.9	0.9	1.1	.	.
Net international investment position (% of GDP)	-70.5	-91.3	-84.6	-71.0	-60.0	-52.8	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2)	-39.5	-71.8	-57.7	-39.6	-30.1	-23.9	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (2)	121.0	155.2	162.9	179.0	162.0	154.4	.	.
Export performance vs. advanced countries (% change over 5 years)	.	.	-0.6	-8.5	-4.6	1.0	.	.
Export market share, goods and services (y-o-y)	-2.7	-3.8	-1.0	0.4	5.1	1.2	-1.8	-1.3
Net FDI flows (% of GDP)	4.0	0.1	0.9	-1.4	-0.1	-0.3	.	.
General government balance (% of GDP)	1.3	-9.3	-4.9	-6.7	-4.7	-3.6	-3.0	-2.8
Structural budget balance (% of GDP)	.	.	-2.7	-4.3	-4.8	-4.1	-3.4	-3.3
General government gross debt (% of GDP)	40.7	62.7	104.5	116.8	111.6	107.7	105.5	104.8

(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 Spain 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 overall. The Commission's early-detection indicator (S0) does not signal major short-term fiscal risks (Table A21.2) ([132]). Government gross financing needs are expected to remain large, at around 18% of GDP over 2024-2025 (Table A21.1, Table 1). Financial markets' perceptions of sovereign risk are investment grade, as confirmed by the main rating agencies.

2 – Medium-term fiscal sustainability risks are high.

Under the DSA baseline, debt is projected to decline slightly before increasing again over the medium term, reaching around 113% of GDP in 2034 (Graph 1 and Table 1) ([133]). The increase in the government debt ratio is partially driven by the assumed structural primary deficit (excluding changes in cost of ageing) of 0.8% of GDP as of 2024. This level appears plausible compared with past fiscal performance, indicating that the country has room for corrective action (Table A21.2) ([134]). Moreover, ageing-related expenditure is projected to increase, weighing on public finances. At the same time, the baseline projection benefits from a still favourable (although declining) snowball effect up to 2034, notably thanks to the impact of Next Generation EU. Government gross financing needs are expected to remain large and to increase over the projection period, reaching 21.5% of GDP in 2034.

The baseline projection is stress-tested against four alternative deterministic scenarios to assess the impact of changes in key assumptions (Graph 1). All four scenarios lead to higher debt levels than the baseline. Under the adverse interest-growth rate differential scenario (in which the interest-growth rate differential deteriorates by 1.0 pp. compared with the baseline), the debt ratio would exceed the baseline level by around 9 pps. by 2034. Under both the historical structural primary balance (SPB) scenario (in which the SPB returns to its historical 15-year average of -1.4% of GDP) and the lower SPB scenario (in which the improvement in the SPB forecast for 2024 is halved), the debt ratio would be higher than in the baseline by around 4 pps. by 2034. Finally, under the financial stress scenario (in which interest rates temporarily increase by 2.1 pps. compared with the baseline), the government debt ratio would be higher by around 2 pps. by 2034.

The stochastic projections indicate high risk due to the high probability of debt increasing over the next five years ([135])**.** These stochastic simulations indicate that the debt ratio will be higher in 2028 than in 2023 with a probability of 42%, pointing to high risk given the high initial debt level. Some uncertainty surrounds the baseline debt projection, as measured by the difference of around 31 pps. of GDP between the 10th and 90th debt distribution percentiles in five years' time (Graph 2).

3 – Long-term fiscal sustainability risks are medium. This assessment is based on the

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

([133]) The assumptions underlying the Commission's 'no-fiscal policy change' baseline include in particular: (i) a structural primary deficit, before changes in ageing costs, of 0.8% 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 1.2%); (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).

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

([135]) 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.

combination of two fiscal gap indicators, capturing the required fiscal effort to stabilise debt (S2 indicator) and to bring it to 60% of GDP (S1 indicator) over the long term ([136]). This assessment is driven by the projected increase in ageing-related costs and by the unfavourable initial deficit and debt levels.

The S2 indicator points to medium risk. It signals that Spain would need to improve its structural primary balance by 5.6 pps. of GDP to ensure that debt stabilises over the long term (Table A21.1, Table 2). This result is mainly driven by the projected increase in ageing costs, which contributes 4.0 pps. of GDP, of which 2.7 pps. stemming from pension expenditure and 1.8 pps. jointly from health care and long-term care expenditure, partially offset by a negative contribution from education. The remainder of the needed effort is due to the unfavourable budgetary position, contributing 1.6 pps. of GDP. The impact of the recently adopted pension reform under the RRP is included in this projection. ([137])

The S1 indicator also points to medium risk. This indicator shows that a significant fiscal effort of 5.1 pps. of GDP would be needed for Spain to reduce its debt to 60% of GDP by 2070. This result is also mainly driven by the projected increase in ageing costs (contributing 3.2 pps. of GDP). The initial deficit and high debt level contribute an additional 1.0 pp. and 0.9 pp. of GDP, respectively (Table 2).

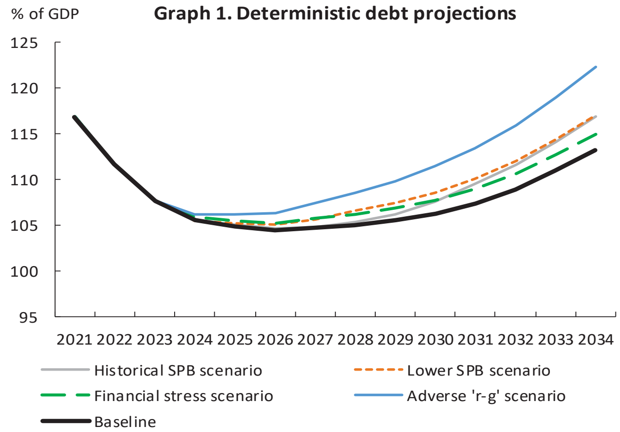
4 – Finally, several additional risk factors need to be considered in the assessment. On the one hand, risk-increasing factors relate to the context of higher interest rates given the elevated level of public debt. On the other hand, risk-mitigating factors include the lengthening of debt maturity in recent years, relatively stable financing sources featuring a well-diversified and large investor base, and the very large share of debt denominated in euro. In addition, the 'closure clause' introduced by the 2023 pension reform, if fully implemented, would contribute to addressing the emerging fiscal sustainability gaps related to public pension expenditure. Furthermore, while a number of investments and reforms in the RRP contribute to supporting the efficiency of the Spanish health system, measures may be required to further improve its efficiency and its fiscal sustainability.

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

([137])The pension reform includes measures aiming to preserve adequacy and intergenerational equity, including by increasing the effective retirement age and contributions to the pension system, while minimising the impact on the tax wedge on labour.

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

Table 1. Baseline debt projections	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Gross debt ratio (% of GDP)	**116.8**	**111.6**	**107.7**	**105.5**	**104.8**	**104.4**	**104.7**	**105.0**	**105.5**	**106.2**	**107.4**	**108.9**	**110.9**	**113.2**
Changes in the ratio	-3.4	-5.2	-4.0	-2.1	-0.7	-0.5	0.3	0.4	0.4	0.8	1.1	1.6	2.0	2.3
of which														
Primary deficit	4.6	2.4	1.2	0.4	0.3	0.6	0.9	1.2	1.3	1.5	1.7	1.9	2.1	2.4
Snowball effect	-8.0	-8.4	-6.4	-3.0	-1.9	-1.0	-0.7	-0.8	-0.9	-0.7	-0.5	-0.3	-0.2	-0.1
Stock-flow adjustments	0.0	0.8	1.2	0.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross financing needs (% of GDP)	23.9	19.0	20.4	18.0	18.2	17.7	18.2	18.5	18.8	19.2	19.6	20.2	20.9	21.5



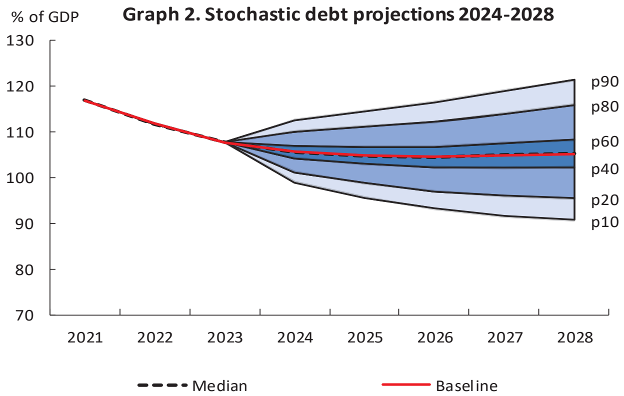


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

			S1	S2
Overall index (pps. of GDP)			**5.1**	**5.6**
of which				
	Initial budgetary position		1.0	1.6
	Debt requirement		0.9	
	Ageing costs		3.2	4.0
	of which	*Pensions*	2.4	2.7
		Health care	0.9	1.1
		Long-term care	0.5	0.7
		Education	-0.5	-0.5

Source: Commission services

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

Short term	Medium term - Debt sustainability analysis (DSA)								Long term		
			Deterministic scenarios					Stochastic projections			
Overall (S0)	Overall		Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress		S2	S1	Overall (S1 + S2)
LOW	HIGH	Overall	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	MEDIUM	MEDIUM	MEDIUM
		Debt level (2034), % GDP	113.2	116.9	117.0	122.2	115.0				
		Debt peak year	2034	2034	2034	2034	2034				
		Fiscal consolidation space	71%	77%	76%	71%	71%				
		Probability of debt ratio exceeding in 2028 its 2023 level						42%			
		Difference between 90th and 10th percentiles (pps. GDP)						30.6			

(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: Commission services