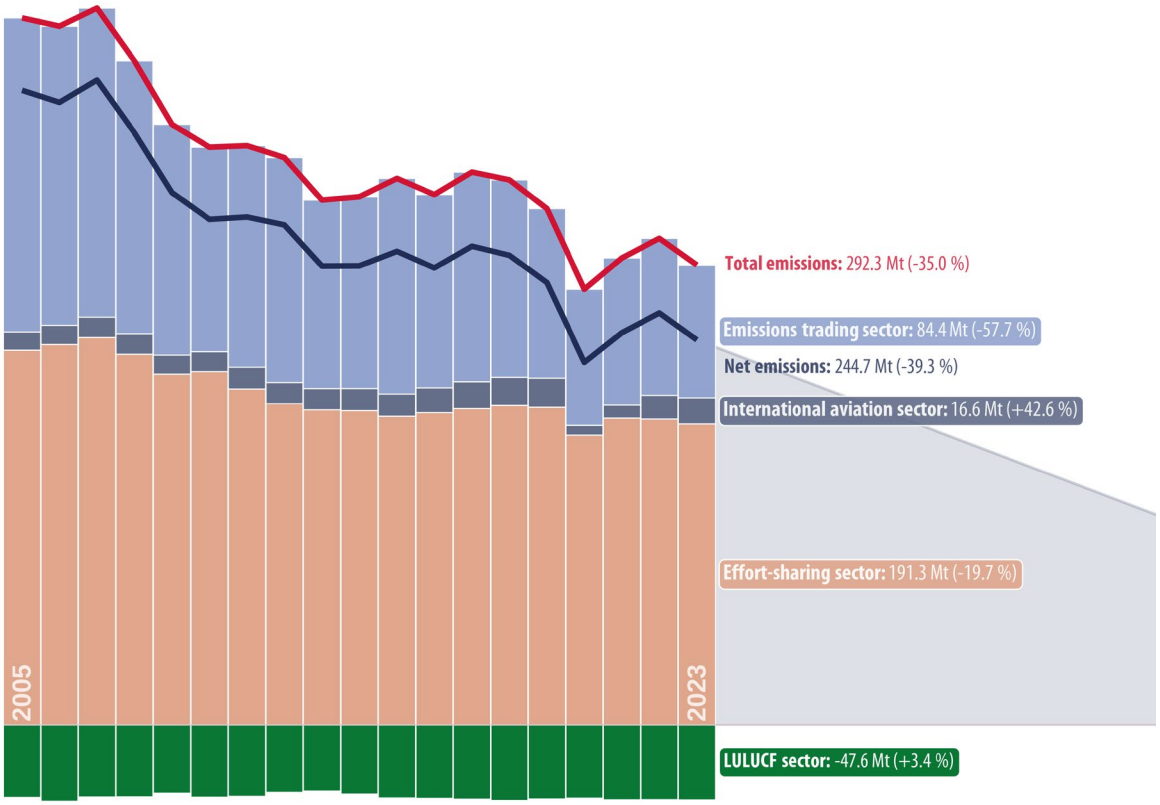
European Parliament

Spain's climate action strategy

Spain aims to achieve climate neutrality by 2050 (see trajectory in Figure 1). In 2023, Spain accounted for 8.2 % of the EU's net greenhouse gas (GHG) emissions and achieved a net emissions reduction of 39.3 % in the years 2005 to 2023, above the EU average reduction of 30.5 %. During the same period, the country reduced emissions covered by the EU emissions trading system (ETS) by 57.5 %. Spain's land use, land-use change and forestry (LULUCF) sector has consistently performed as a carbon sink, despite an increasing number of forest fires. In June 2023, Spain updated its recovery and resilience plan and included a REPowerEU chapter. The plan dedicates 39.9 % of total funding to the green transition. Spain submitted a draft updated national energy and climate plan (NECP) on 13 July 2023. The European Commission assessed it and made recommendations for the final updated NECP, which was published on 26 September 2024.

In a 2023 Eurobarometer survey, 48 % of Spaniards, compared with an EU average of 46 %, consider climate change to be one of the four most serious problems facing the world. Most expect the EU (56 %), national governments (56 %) and business and industry (54 %) to tackle climate change, while 36 % find it to be a personal responsibility.

Figure 1 – Spain's greenhouse gas emissions in million tonnes (Mt), 2005–2023



Data source: European Environment Agency (EEA), 2024.

This briefing is one in a series covering all EU Member States.

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Spain's starting point

The Spanish government presented a strategic energy and climate framework in February 2019, and declared a climate and environmental emergency in January 2020. The framework consists of a climate law, the NECP and a just transition strategy. Spain adopted the Climate Change and Energy Transition Law in May 2021. It sets the target to achieve climate neutrality before 2050, and energy and climate targets for 2030 that will be reviewed regularly. It comprises sectoral rules, including a stop to new licences for the exploration and extraction of oil and gas in the country. The law establishes the NECP as the main climate planning instrument, in line with the requirements of the EU's Governance Directive. It established a Citizens' Climate Assembly, which delivered its recommendations in May 2022. Spain's long-term decarbonisation strategy from November 2020 lays out a strategic orientation and scenarios for the period between 2030 and 2050.

The 2019 just transition strategy establishes a regulatory framework regarding State aid for coal mine closures, for exceptional costs and for supporting mining areas. The work is coordinated by the Just Transition Institute through just transition agreements with impacted regions.

Between 2005 and 2023, Spain achieved considerable emissions reductions in energy industries (-69 %) and industry and construction (-52 %), in contrast to modest reductions in waste management (-3 %) and agriculture (-4 %). Spain's per capita emissions dropped by 41 % from 2005 to 2023, reaching 6.1 tonnes of CO_2 equivalent (tCO_2e), well below the EU average of 7.2 tCO_2e. In addition, the Spanish economy's carbon intensity fell by 46 % between 2005 and 2023, and is just 1 % above the EU average. Spain achieved its 2020 targets for GHG emissions, renewable energy and energy efficiency under EU legislation. The final updated NECP projects a 55 % reduction in Spain's GHG emissions by 2030 compared with 2005.

The Council's 2024 country-specific recommendations ask Spain to improve water management in order to adapt to the current and future climate impacts more effectively, and to ensure economic, social and environmental resilience. The Commission's country report highlights Spain's progress in the roll-out of green energy, and strong support policies for sustainable mobility, energy efficiency in buildings, circular economy and water management. It recommends further measures to support the shift towards sustainable modes of passenger transport and targeted support for energy efficiency improvements to address energy poverty.

In the 2025 Climate Change Performance Index (CCPI), Spain received a 'medium' score in all categories (GHG emissions, renewable energy, climate policy and energy use). CCPI ranks countries based on their climate protection performance using primarily quantitative data, with experts in the field providing qualitative evaluation of a country's forward-looking climate policies.

Climate action governance

The Spanish Climate Change Office is responsible for the formulation of national climate change policies; the National Climate Council issues recommendations on climate change-related plans, programmes and measures; the Commission for Climate Change Policy Coordination coordinates between the national and regional authorities; and the Interministerial Commission for Climate Change is responsible for administrative coordination in relation to climate action.

Spain's autonomous communities have focussed on designing and implementing regional climate change policies, as opposed to demanding a higher level of involvement in national climate action.

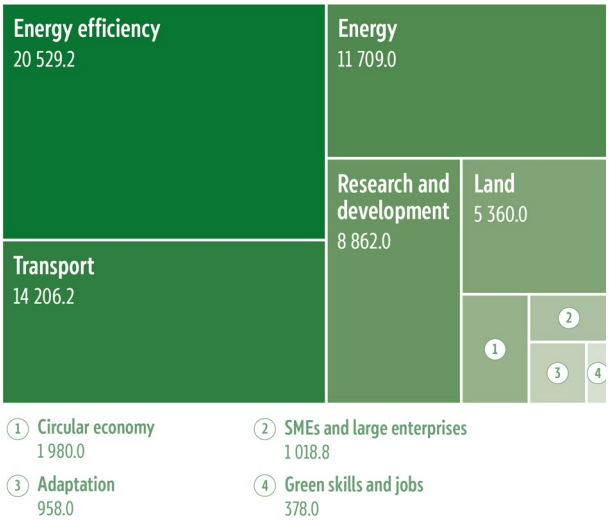
Spain's climate change adaptation plan for the 2021-2030 period, required by the climate law, is accompanied by a work programme for 2021-2025. Spain adopted several sectoral adaptation plans and established sub-national networks and collaborations. The country has its own climate change adaptation portal. The ministry of ecological transition and the demographic challenge carries out regular and ad-hoc climate risk assessments, as required by the climate law and the adaption plan.

Climate action in the national recovery and resilience plan

Spain submitted its national recovery and resilience plan (NRRP) to the Commission in April 2021, its first update (introducing a REPowerEU chapter worth €2.6 billion) in June 2023, and another update in March 2024. The country will receive the maximum amount of €163 billion from the Recovery and Resilience Facility (RRF) in the form of non-repayable grants (49 %) and loans (51 %), equivalent to 13.1 % of Spain's gross domestic product in 2019.

The green transition (Figure 2) is one of the main objectives of the Spanish NRRP. Measures relating to this objective reach over €65 billion, or 39.9 % of the allocation, above the RFF target of 37 %. Examples of green transition-related investments and reforms include: development of innovative renewable energies, integrated into buildings and production processes; development of a robust and flexible energy system while integrating renewable energies; development and connectivity of green infrastructure; advances in waste policy; and promotion of a circular economy.

Figure 2 – NRRP climate dimension (€ million)

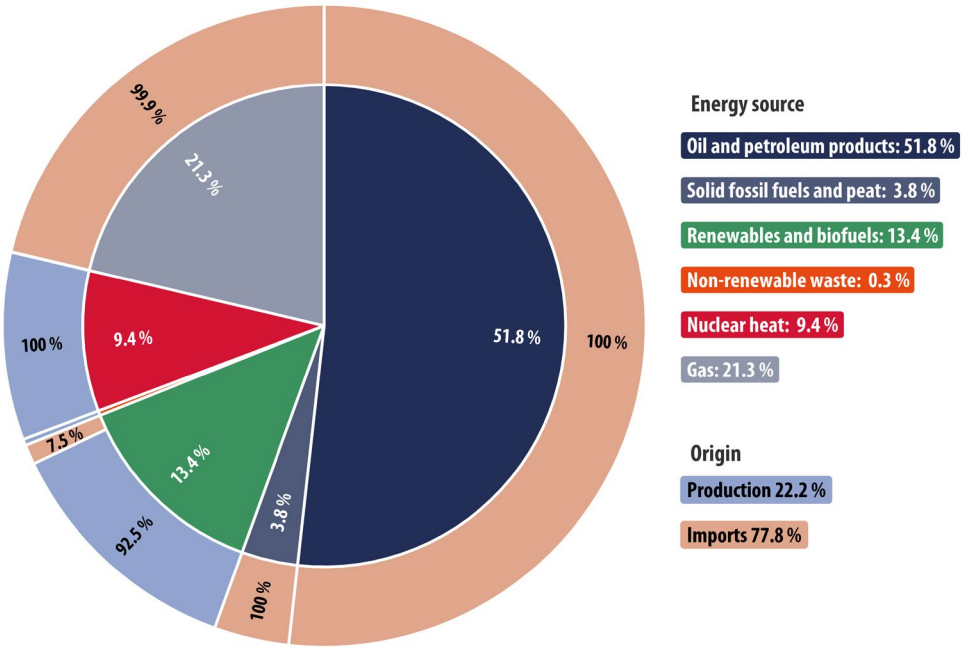


Data source: European Commission, 2023; graphic by Lucille Killmayer, EPRS.

Energy situation

Spain was dependent on imports for 77.8 % of its total energy supply (Figure 3) in 2022 – the fifth highest share among EU Member States. Driven the by the current geopolitical context, Spain intends to use its renewable energy potential to reduce the share of imports to 50 % by 2030, leading to estimated economic savings in fossil fuel imports of €87 billion over the decade to 2040.

Figure 3 – Energy mix and import dependency, 2022



Data source: Eurostat (nrg_bal_sd), 2024.

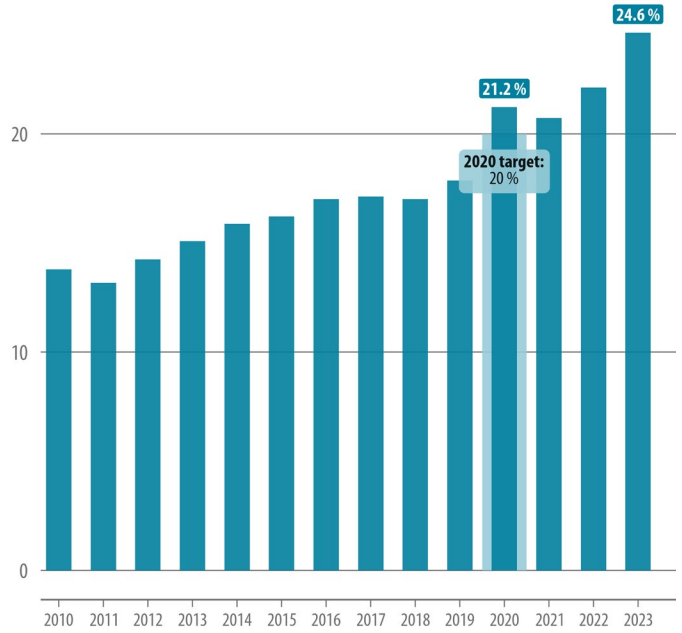
Oil and petroleum products, all imported, accounted for more than half of Spain's energy supply in 2022. Spain exports about a fifth of its total energy supply, mostly in the form of refined petroleum products. The Spanish climate law prohibits new oil and gas exploration and exploitation.

Gas had a 21.3 % share in Spain's energy supply, almost all of it imported. Algeria is the main supplier via pipeline. Spain has seven liquefied natural gas terminals, with supplies coming mainly from Russia and the United States. Gas pipelines connect Spain with France, Portugal and north Africa.

Solid fossil fuels, mostly coal, make up 3.8 % of Spain's energy supply. Spain shut down its coal mines and is completely dependent on imports. Only a few coal power plants remain to ensure the stability of electricity supply. Spain joined the Powering Past Coal Alliance that aims to end coal use for electricity generation by 2030.

Nuclear energy accounted for 9.4 % of energy supply. Spain has seven nuclear reactors and plans to close all of them between 2027 and 2035.

Figure 4 – Renewable energy share in final energy consumption



Data source: Eurostat (nrg_ind_ren), 2024.

In 2023, **renewable energy sources** (RES) accounted for almost a quarter of Spain's final energy consumption (Figure 4) and more than half of electricity generation. The country overachieved its 2020 target of a 20 % RES share under the Renewable Energy Directive by 1.2 percentage points. For 2030, the updated final NECP projects an 81 % RES share in electricity generation, and a 48 % RES share in final energy consumption, well above Spain's indicative 43 % share resulting from EU legislation. The Commission's assessment of the draft updated NECP found the presented measures sufficiently detailed with regard to legislation, scope, timeframe, budget, and expected impacts. The final NECP outlines the potential of renewable hydrogen and other renewable gases, and accelerated deployment of solar energy and energy storage projects.

Sectoral challenges and strategies

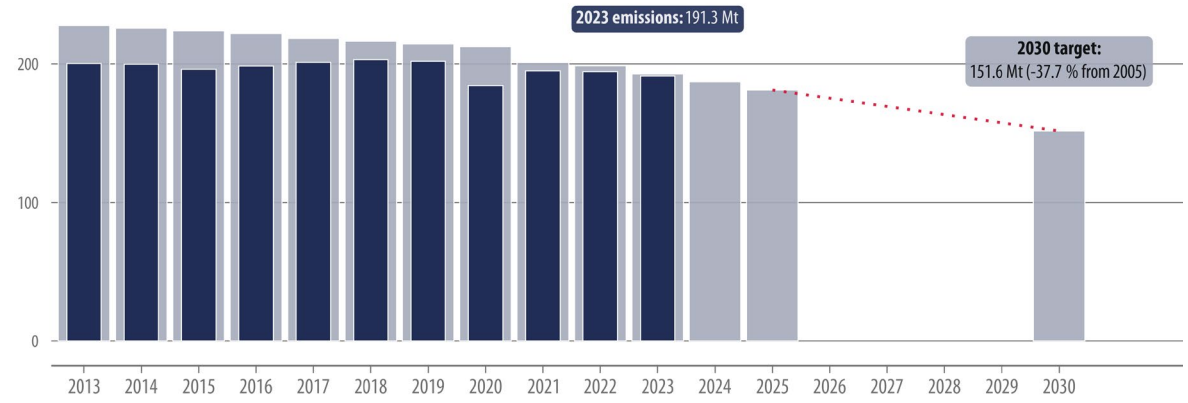
Spain stayed under its allocation every year over the 2013-2020 period under the Effort-sharing Decision (Figure 5 below). The revised Effort-sharing Regulation (ESR) sets Spain's emissions reduction obligation for 2030 to 37.7 % compared with 2005, which Spain expects to exceed. Sectors covered by the ESR include transport, buildings, agriculture, and small industrial installations.

While energy industry was the highest-emitting sector (28 %) in 2005, it cut emissions by 69 % and accounted for only 13.5 % of emissions in 2023, thanks to the expansion of RES. In 2023, Spain was the world's largest recipient of foreign investment in green-field RES projects, and in July 2024, the government approved almost 300 RES projects (solar, wind and hydropower) worth €17 billion.

Measures for decarbonising the industrial sector include further electrification and the promotion of renewable hydrogen and other renewable fuels, as well as technological improvements for industrial companies and processes not deemed energy-intensive. The McKinsey consulting firm's Industry and Energy Transition Initiative considers that Spain's successful energy transition and competitive electricity prices present an opportunity for sustainable reindustrialisation and economic growth.

In 2023, transport was the highest-emitting sector, with 31 % of total emissions. Emissions in this sector fell by only 13 % since 2005. As one of the reforms in Spain's NRRP, the government proposed a sustainable mobility law in February 2024, yet to be adopted by the parliament. It promotes a shift towards more sustainable modes of transport such as walking and cycling, collective public transport, shared mobility services, and innovative private collaborative mobility systems. The December 2021 strategy for secure, sustainable and connected mobility aims to improve the efficiency of the transport system, promote comfort and intermodality, reduce energy consumption and pollution, and reduce GHG emissions through electrification. In 2023, only 12.2 % of newly registered vehicles in Spain were electric, bringing the total number to 466 178. The final updated NECP projects the number of electric vehicles to reach 5.5 million in 2030. The government supports electric vehicles through the EU-financed MOVES III programme and is working on a follow-up.

Figure 5 – Spain's emissions under the Effort-sharing Decision/Regulation



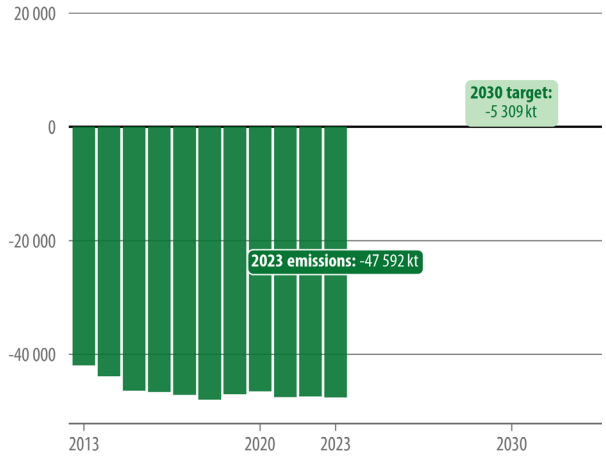
Data source: EEA, 2023.

The projected 2030 share of RES in final consumption in the buildings sector is 67.6 %, based on measures presented in Spain's June 2020 long-term strategy for energy renovation in the building sector. Furthermore, the country's building stock is expected to be emissions-free by 2050.

Agriculture accounted for 11.5 % of Spain's total emissions in 2023, and reduced emissions by only 3.7 % since 2005. The final updated NECP projects an 18.6 % emissions reduction in the sector by 2030 relative to 2005 levels. Measures to achieve this reduction while adapting to climate change include crop rotations on arable land, conservation agriculture, adjustment of nitrogen input to crop needs, and use of woody crop pruning residues as biomass. Spain supports energy efficiency improvements in farms, irrigation communities and agricultural machinery.

By 2030, Spain must reduce its LULUCF emissions (Figure 6) by 5 309 kilotonnes of CO_2e (ktCO2e) compared with its average emissions in 2016, 2017 and 2018 (where accounting adjustments may occur). In 2020, this baseline was -38 326 $ktCO_2e$. Spain is unlikely to reach this target and intends to make use of flexibilities in the LULUCF Regulation. The final updated NECP states that Spain's natural sinks are saturated, and any expansion would be challenging for forestry, agricultural and livestock policy.

Figure 6 – LULUCF emissions in Spain



Data source: EEA (2030 target is based on 2016-2018 baseline), 2024.

Latest policy developments

On 29 October 2024, the Valencia region was hit by flash floods that killed over 200 people. Climate change made this extreme rain event twice as likely and about 12 % more intense. Warnings came late and without clear instructions how and where to evacuate. In the year before, the government of the Valencia region had dismantled the Valencia Emergency Unit set up by the previous government to respond to weather-related emergencies such as flooding or wildfires. Spain requested and received emergency assistance through the EU civil protection mechanism. France and Portugal sent expert teams and equipment, supported by liaison officers from the EU's Emergency Response Coordination Centre. On 28 November 2024, the government approved a law that gives workers up to 4 days of paid leave if they cannot get to work because of extreme weather.

Spain has emerged as a leader in renewable hydrogen, with 20 % of announced projects in Europe. The country offers a favourable regulatory framework, government support, and ample supply of cheap renewable electricity for electrolysers that split water into hydrogen and oxygen. The Spanish final updated NECP sets a 12 gigawatt target for electrolyser capacity by 2030, almost a fifth of the capacity needed to reach the EU-wide targets set out in the EU hydrogen strategy. The H2med project works towards a hydrogen corridor connecting Spain, Portugal, France and Germany. Experts in energy law recommend that Spain use the new EU gas and hydrogen market legislation as an opportunity to further develop the regulatory framework. In October 2024, McKinsey published a report on opportunities and challenges for renewable hydrogen on the Iberian Peninsula.

Two Spanish projects were among the six winners of the European Hydrogen Bank's pilot auction. They will receive €239 million in EU funding, a third of the total. Spain will use the hydrogen bank's 'auction as a service' scheme to support further renewable hydrogen projects with up to €400 million. In July 2024, the government launched a €1.2 billion NRRP-financed support programme for renewable hydrogen clusters, and allocated €794 million in State aid to support industrial activities in the renewable hydrogen value chain under the Hy2Use IPCEI (important project of common European interest). In September 2024, companies BP and Iberdrola announced the final investment decision for Spain's largest renewable hydrogen plant to the tune of €15 million of NRRP funding. Envision Energy partnered with the Spanish government for an initial US$1 billion investment in Europe's first integrated renewable hydrogen net-zero industrial park.

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