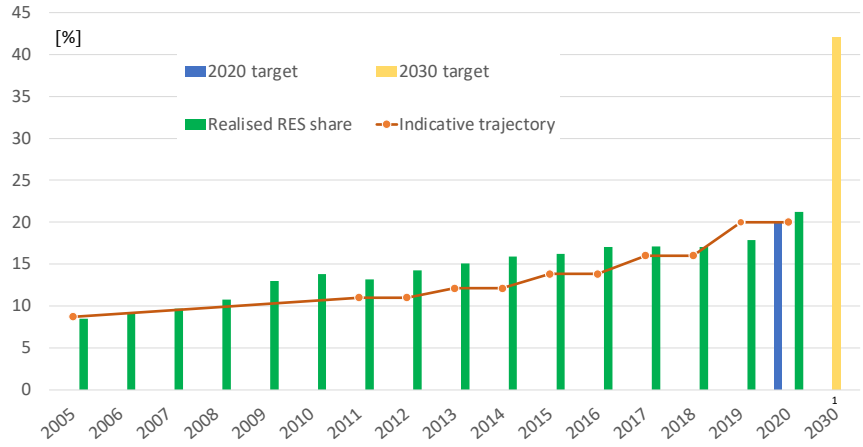
Renewable Energy Policy Factsheet

June 2022

Spain

Renewable energy status

Share of energy from renewable sources in total gross final energy consumption



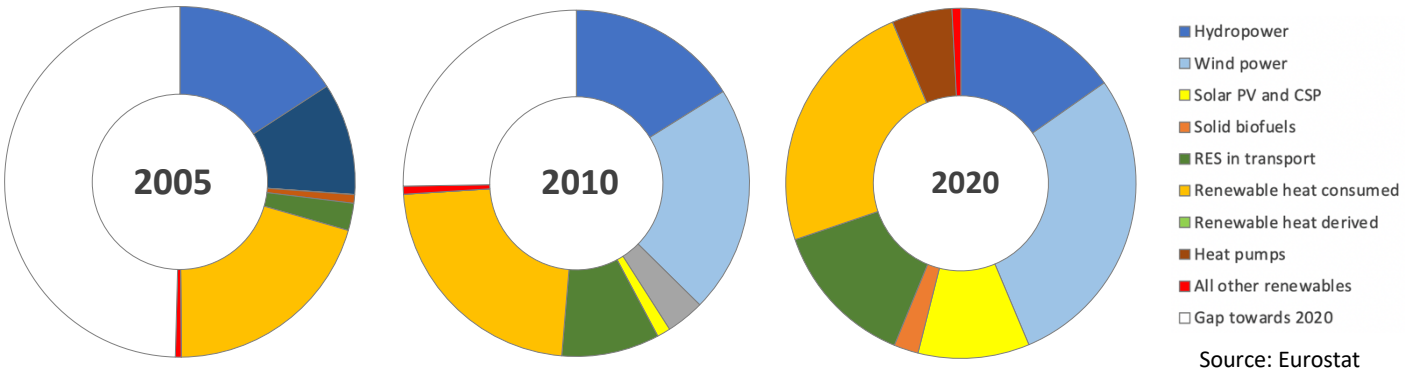
Source: Eurostat

Abbreviations used:

RES: renewable energy sources
RES-E: renewable electricity
RES-H/C: renewable heating/cooling
RES-T: renewable transport fuels

Data for 2020

Overall RES share:	21.22%	Avoided fossil fuels:	14.5 [Mtoe]
Overall RES 2020 target:	20%	Avoided fuel expenses:	3 111 [MEUR]
Overall RES 2030 target:	42%	RES Turnover:	15 930 [MEUR]
Share RES-E in electricity:	42.94%	RES Employment:	140 500 [jobs]
Share RES-T in transport:	9.53%	RES imports[2]:	1 266 [MEUR]
Share RES-H/C in heating:	17.97%	RES exports[2]:	996 [MEUR]



Source: Eurostat

	2005	2010	2020		
	Energy in ktoe	Energy in ktoe	Energy in ktoe	Employment in FTE	Turnover in MEUR
Hydropower	2 733.4	2 782.2	2 637.0	3 600	430
Wind power	1 782.4	3 672.1	4 901.4	44 300	5 860
Solar PV, and CSP	4.1	617.9	1 777.0	25 500	2 990
Solid biomass	135.8	215.6	390.5	20 900	1 550
Ren. energy in transport[3]	434.6	1 579.6	2 345.6	13 900	1 380
Renew. heat consumed	3 523.6	3 910.2	4 116.1		
Renew. heat derived	0.0	0,0	0.0		
Heat pumps	0.0	0,0	960.3	30 900	3 560
All other renewables	92.3	129.6	140.3	1 400	160
Gap towards 2020	8 562.0	4 361.0			

Source: Eurostat, EurObserv'ER

FTE = Full time equivalent, PV=Photovoltaics, CSP=Concentrated Solar Power. Biofuels in transport only covers compliant fuels (employment and turnover additionally cover the non-compliant biofuels). Derived heat includes heat produced in main activity producer plants and heat sold produced in auto-producer plants. Its counterpart is the final heat consumption in the final consumption sectors (such as households).

[1] From Integrated National Energy Climate Plan

[2] Referring to the International Trade chapter from the publication: EurObserv'ER - *The State of Renewable Energy in Europe, 2021 edition*

[3] Employment and turnover are only referring to biofuels in transport.

CURRENT RENEWABLE ENERGY POLICY

General

The main directives in the renewable energy sector in Spain are the Electricity Law, Royal Decree-Law 23/2020, New Law on Climate Change and Energy Transition, the National Energy and Climate Plan (NECP), and National Recovery and Resilience Plan – Green Transition.

Spain has reached the European targets for renewable energy and energy efficiency in 2020. The RES target was set to cover 20% of energy demand from renewable energy sources, with Spain exceeding this figure, achieving 21.2%. In terms of energy efficiency, Spain has also surpassed the target of 20%, reaching 35.4%.

Spain has stopped issuing new oil and gas exploration licenses, closed most coal mines and stopped its nuclear program. Many workers are retrained to work with clean energy and to restore the environment. Spain is also expanding its renewable energy development programme, focusing on solar and wind energy. The government has pledged to install at least 3,000 megawatts of wind and solar power each year for 10 years (Government of Spain, 2021).

RES-E

The share of renewable electricity in Spain rose from 37.13% to 42.94%. One of the factors that contributed to this increase was a significant 10.1% year-on-year increase in renewable electricity production and a 4.81% decrease in total demand. The Royal Decree-Law from 23 June 2020 (Real Decreto-ley 23/2020) was established to specifically promote the development of renewable energies in the power sector. It was designed to align with the European Green Deal, as well as a measure to revive the Spanish economy in response to the effects of the global health crisis.

The Decree proposes four essential strains of action. The first regulates access and connection, and a new auction mechanism to offer renewables with a predictable and solid framework. The second centers on new business models, with a purpose to be key withinside the coming years, consisting of the aggregation of demand, storage and hybridisation. Third, the Royal Decree-Law addresses energy efficiency enhancement via way of means of making the National Fund for Energy Efficiency extra flexible; and, lastly, a chain of sectoral measures are set up to strengthen economic recovery and job creation in reaction to the crisis sparked by the COVID-19 pandemic.

Spain's regulatory framework on self-consumption was updated in 2019, with Royal Decree 244/2019, in order to provide "clearer definitions of self-consumption, simplified compensation schemes, and streamlined technical and administrative requirements" (IEA, 2021). Individual self-consumption as well as collective self-consumption, which has numerous participants, are defined in the decree. Due to its many advantages (efficient use of restricted spaces in urban areas, lower investment cost per user, sharing technical, administrative and operational know-how), collective self-consumption is supported by the Government of Spain and regarded as an appealing instrument to amplify renewables capacity.

The Climate Change and Energy Transition Law brought back auctions to the set of Spanish renewable energy policy instruments. After a three-year break, auctions for renewable electricity projects were held in 2021 and yielded 3,256 MW of wind energy and 2,902 MW of solar PV. Approximately 5 GW of renewables capacity shall be auctioned per year. The

Government introduced a calendar for 2020-2025, indicating minimum auction volumes of capacity for every renewable energy technology, with annual updates.

RES H&C

The share of renewable energy sources in heating and cooling increased slightly from 17.2% to 17.97% in 2020, which is attributed to a reduction in demand.

Before issuing the NECP, Spain was lacking support schemes for renewable heating and cooling. The plan foresees to double the share of the renewable sources in the heating and cooling sector by 2030, compared to 16.8% in 2015. The focus lies on expanding district heating and cooling installations with renewable energy. Furthermore, the government anticipates to pass economic aid schemes for renewables installations in buildings or heating networks, to support in particular: "upgrading solar thermal facilities; high-efficiency ambient energy equipment; upgrading biomass equipment with other high-efficiency equipment; geothermal facilities with heat pumps and direct use; hybrid systems of renewables technologies to achieve nearly-zero energy buildings; and integrated, standardised and compact heating and cooling installations" (IEA, 2021).

RES-T

Promotion of biofuels in Spain consists of a quota system and a tax regulation mechanism. The quota system obliges whoever feeds fuels in the national system (retail and wholesale operators) as well as consumers relying on sources other than retail and wholesale operators, to feed in or consume a certain amount of biofuels every year. This amount is established in percentage; compliance is proven to the national energy commission (CNE) through certificates. At the end of each year, obligated parties must turn in the certificates corresponding to their biofuel sale / consumption. The CNE checks compliance and collects fees for non-compliance from obligated parties. The penalty fees paid by the parties who did not reach their quota are redistributed among the parties who sold or consumed more biofuels than their set quota. These amounts are redistributed in proportion to the amount of biofuels that complying parties have sold or consumed in addition to their set quota.

The policies of promoting biofuels in Spain's road transport have proven successful. The renewables share in final energy consumption in the transport sector increased from 7.61% to 9.54% in 2020.

Additionally, Real Decreto 205/2021 was approved to promote the use of biofuels in Spain. It regulates the sales and consumption targets for 2021 and 2022, along with the obligation that biofuels account for 9.5% of total fuel sales in the mobility sector in 2021 and 10% in 2022.

Table 1: Brief description of key policy instruments aimed at promoting RES in the Spain

Instrument	*Description*
Premium tariff *Régimen Retributivo Específico*	The premium tariff or "specific remuneration regime" is not technically defined as a support scheme, but as a complementary retribution to allow renewable technologies to compete with traditional technologies in the energy market. The Real Decreto 947/2015 was approved to regulate the premium tariff ("Régimen Retributivo Específico"), aiming at supporting new biomass plants located in the mainland electricity system and existing or new wind energy plants. The selected procedure to allocate the premium tariff is a call for tenders regulated through Order IET/2212/2015. The latter also approved the value of the different compensation parameters for the reference RES plants under the new remuneration regime or premium tariff. In 2015 Real Decreto 900/2015 was approved, establishing charges on existing and new self-consumption RES plants, both on capacity and generation levels. According to RD 900/2015 these are not taxes or compensation for utility losses, but contributions to overall system costs. Self-consumption installations under 10 kW and plants located not on the Spanish mainland will be spared the generation charge, but will still be subject to a fixed charge per kW of capacity.
Certification Programmes for RES installations	This is an obligatory certification for thermal solar panels to comply with the following international standards: UNE-EN 12975-1, ISO 9806 and UNE-EN 12976. Specifically, UNEEN 12975-1 and ISO 9806 apply to solar collectors with liquid cooling systems and UNE-EN 12976 applies to prefabricated thermal solar panels.
Training programmes for installers	The national system of qualification and professional formation (NSQPF) provides a structured framework for the provision of vocational training in 26 different professional areas, among which "energy" is also considered. Within this area, the following certifications are listed, along with the training requirements necessary for their achievement: Installation and maintaining of PV facilities, Installation and maintaining of solar thermal facilities, Installation and maintaining management of wind parks.
Biofuels quota system / Royal Decree 205/201	Wholesale and retail operators of fuels, as well as consumers of fuels not supplied by wholesale or retail operators, are obliged to sell / consume a minimal quota of biofuels. The minimal amount is set at a general level (all biofuels) and at a specific level (minimal amount of biofuels in diesel and in gasoline). Each obligated subject will have to present a number of certificates to the National Energy Commission (CNE) to prove compliance.
Royal Decree-Law 23/2020	The Spanish Government has adopted the Royal Decree ("Decree to promote the development of renewable energies") as a measure to revive the economy and consolidate energy measures. The rule provides for measures to strengthen the energy sector after the impact of COVID-19 on the economy, especially for investments in renewable energy sources, energy efficiency and new generation processes. The decree also emphasises the need to revitalise the economy through small-scale measures and sustainable planning.
Integrated National Energy and Climate Plan (NECP), 2021-2030	By 2030, the share of renewable energy sources in final energy consumption is expected to reach 42%. In the EU, 32% is well above the target. This level is managed by the energy sector, and according to this plan, the share of renewable energy will increase from 42% in 2020 to 60% in 2025 and 74% in 2030. This will allow Spain to reach the 2050 target of achieving 100% renewable energy, in line with the goal of carbon neutrality by 2050. For heating and cooling, the NECP predicts that the share of renewable energy will increase from 18 % in 2020 to 25% in 2025 and 31% in 2030. Lastly, the share of renewables in the transport sector is expected to grow from 10% in 2020 to 15% in 2025 and 28% in 2030.
Climate Change and Energy Transition Law, 2021	Spain's latest legislation on Climate Change and Energy Transition is in line with the national target for reducing greenhouse gas emissions from 1990 levels by 2030. The law enters into force immediately for all new exploration permits and coal production. Gas and oil are banned. Fossil vehicle sales are banned by 2040. The main purpose of this law is to help decarbonise the Spanish economy and combat climate change. The ultimate objective of this law is to achieve pure carbon neutrality by 2050.
National Recovery and Resilience Plan	Spain's National Recovery and Resilience Plan supports a green transition by investing in the energy efficiency of public and private buildings. Sustainable mobility shall be achieved through investments in the improvement of railway infrastructure, the creation of low-emission zones in

– Green Transition, 2021	urban areas, the financing of green buses, the installation of electric charging stations and the development of urban public transport. The initiative supports the decarbonisation of the energy sector by investing in clean technologies and infrastructure and accelerating the development and use of renewable energy sources, including renewable hydrogen.
Hydrogen Roadmap of Spain (2020-2050)	The Hydrogen Roadmap of Spain seeks to push the development of renewable hydrogen in the country. The roadmap is in line with the European Hydrogen Strategy and Spain's long-term strategy regarding renewable gases. It provides specific objectives for 2030 and 2050, focused primarily on the installation of electrolysers and the use of hydrogen in industry and transport. The targets are reviewed in 3-year cycles to align the roadmap with technological change and market developments.

For further information:

The Real Decreto 947/2015, www.boe.es/boe/dias/2015/10/17/pdfs/BOE-A-2015-11200.pdf

National Energy and Climate Plans (NECPs), https://ec.europa.eu/energy/en/topics/energy-strategyand-energy-union/governance-energy-union/national-energy-climate-plans

Member State Progress Report, available at the Renewable Energy pages of the European Commission, http://ec.europa.eu/energy/en/topics/renewable-energy

IEA, Spain 2021 Energy Policy Review, https://iea.blob.core.windows.net/assets/2f405ae0-4617-4e16-884c-7956d1945f64/Spain2021.pdf

Energy Policy Tracker, Spain, 2022, https://www.energypolicytracker.org/country/spain/

IRENA, Energy Profile Spain, 2021, https://www.irena.org/IRENADocuments/Statistical_Profiles/Europe/Spain_Europe_RE_SP.pdf

GlobalData, Spain Renewable Energy Policy Handbook 2022, 2022, https://www.globaldata.com/store/report/spain-renewable-energy-government-regulation-policy-analysis/

La Moncloa, Decarbonisation process, 2021, https://www.lamoncloa.gob.es/lang/en/gobierno/news/Paginas/2021/20211227_eu-targets.aspx

Government of Spain, Hydrogen Roadmap, 2020, https://ec.europa.eu/info/sites/default/files/energy_climate_change_environment/events/presentations/02.03.02_mf34_presentation-spain-hydrogen_roadmap-cabo.pdf

Table 1: Brief description of key policy instruments aimed at promoting RES in the France

Instrument	*Description*
Premium tariff *Complément de Rémuneration*	Premium tariffs are allocated through a quasi-tendering process, where energy producers compete against each other for feed-in premium support. For all RES technologies, FiP are reachable through calls for tenders auction published by Authority. The aim is to pilot the technologies growth as close as possible to the RES investment program define by the government in October 2018. Website: http://www.ecologique-solidaire.gouv.fr/index.php/dispositifs-soutien-aux-energies-renouvelables
RES-H building obligations *Réglementation thermique*	The thermal regulation 2012 obliges new buildings to comply with minimum energetic performance requirements as defined by the label BBC-Effinergie. Since 2012, the use of renewable energies in order to reach energetic performance requirements (including the use of sanitary hot water and heating devices) is mandatory for single-family houses (Art. 16 arrêté du 26 octobre 2010). The thermal regulation 2012 applies for new buildings as follows: • For service sector buildings and residential buildings situated within a national renovation programme area: from 28 October 2011 • For residential buildings situated within 500 meters of a national renovation programme area: from 1 March 2013 • For other residential buildings: from 1 January 2013 As far as existing buildings are concerned, buildings of the service sector and public service sector are obliged from January 2012 to improve their energetic performance by 2020 (Art L 111-10-3 Code de la construction et de l´habitation), including renewable energy plants for heating purposes. Except single-family houses, there are no RES-H building obligations directly supporting the use of heating systems from renewable energy sources. However, RES-H can be required indirectly through the energetic performance obligations.
Heat Fund scheme *Fonds chaleur*	The Heat Fund, managed by ADEME since 2009, is dedicated to renewable heat production in collective housing, communities and businesses. The fund can participate to a project financing up to 30% of its total amount. During the period 2009-2018, the heat Fund allocated 2.17 billion euros to support nearly 4,820 projects and a total production of 2.38 million toe. Website: http://www.ademe.fr/expertises/energies-renouvelables-enr-production-reseaux-stockage/passer-a-laction/produire-chaleur/fonds-chaleur-bref
RES premium *MaPrimeRenov*	MaPrimeRénov 'is a new public support tool that simplifies aid for energy renovation. It can finance a wide variety of insulation, ventilation or heating changes including RES equipment,. To be eligible for MaPrimeRénov ', you need : be the owner of a home built for more than 2 years; occupy it as a main residence; not exceed the resource limit and have the work carried out by a RGE labeled company. Website : . https://www.maprimerenov.gouv.fr
Investments for the Future programme *Programme investissement d'avenir*	The Investments for the Future programme is intended to support projects fostering innovation and the creation of non-relocatable jobs in sectors with strong potential for the French economy. It is a matter of strengthening France's strategic competitive advantages. The implementation of the Investments for the Future program is steered by the General Investment Commission (CGI). It is supported by several operators, including ADEME, which is responsible for innovation for energy and ecological transition. RES technologies and smart electricity grids are eligible to this programme. Website: http://www.ademe.fr/en/investments-for-the-future
Training programmes for Installers *Référencement RGE*	The association Qualit´EnR was established in 2006 as an initiative of five national professional organisations in order to promote quality installations in the field of solar thermal energy, photovoltaic, biomass as well as heat pumps and geothermal probes. The association was established for private households willing to install a renewable energy plant, with the aim to ensure them a quality installation.

Biofuel quota (Réduction de la taxe générale sur les activités polluantes TGAP)	The act on energy transition of 2015 sets a target of 10% renewable energies in the total energy consumption of the transport sector by 2020 and of at least 15% by 2030. In order to reach these targets, the quota of biofuels to be blended within conventional fuels is defined for each fuel type. In case companies releasing fuel for consumption do not respect the biofuels quota, they are submitted to a higher rate of the tax on polluting activities (TGAP).

For further information:

Details of the French Heat Fund, http://www.fonds-chaleur.ademe.fr

Feed-in Premium French scheme, http://www.ecologique-solidaire.gouv.fr/index.php/dispositifs-soutien-aux-energies-renouvelables

French Energy investment program, http://www.ecologique-solidaire.gouv.fr/sites/default/files/PPE%20int%C3%A9gralit%C3%A9.pdf

French RES-E sectors barometer, http://www.energies-renouvelables.org/observer/html/energie_renouvelable_france.asp
Official French RES data, https://www.statistiques.developpement-durable.gouv.fr

Member State Progress Report, available at the Renewable Energy pages of the European Commission, http://ec.europa.eu/energy/en/topics/renewable-energy

Individual RES investment support scheme, https://www.maprimerenov.gouv.fr

National Energy and Climate Plans (NECPs), https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/governance-energy-union/national-energy-climate-plans

What is meant by …?

Auctions for granting renewable energy support	An auction is a process of granting production or investment support to renewable energy projects based on the lowest bids by eligible project developers.
Feed-in tariff (FiT)	A support scheme which provides for a technology-specific remuneration per unit of renewable energy payable to eligible renewable energy producers. A proper, periodic review of FiT rates is often undertaken with the aim to prevent both too high FiTs so as to minimise regulatory rents, i.e. supra-normal returns and too low FiTs to preclude below-target market uptake because of FiT levels that are perceived by market participants to be less attractive. In addition, feed-in tariffs often include "tariff degression", a mechanism according to which the price (or tariff) ratchets down over time.
Feed-in premium (FiP)	A scheme which provides for a support level per unit of renewable energy to eligible renewable energy producers, typically for a period of 10-20 years, at a pre-set fixed or floating rate. The premium is typically adjusted periodically to exactly offset change in the average energy wholesale market price, based on a pre-specified benchmark market price. A floating FiP may move freely or may only be allowed to move within a pre-set interval.
Grants	Grants are non-repayable funds disbursed by one party (grant makers), often a government department, corporation, foundation or trust, to a recipient, often (but not always) a non-profit entity, educational institution, business or an individual. (Source: Wikipedia.org)
Green public procurement	In Green public procurement contracting authorities take environmental issues into account when tendering for goods or services. The goal is to reduce the impact of the procurement on human health and the environment. (Source: Wikipedia.org)
Renewable quota scheme (RQS)	A RQS mandates certain market actors (typically retail suppliers or large energy end-users) to respect a pre-set minimum share or amount of their total energy procurements from renewable sources of energy. Typically a tradable green certificate (TGC) scheme is operated to enable the obligated parties to prove their compliance with the prevailing renewable quota target by means of TGCs.
Sliding feed-in-tariff	A FiT scheme which pre-sets technology-specific declining feed-in tariffs for certain prospective vintages in line with the technology-specific learning curve, as projected by the National Regulatory Agency (NRA). Often a degression rate is used indicating the %/annum decrease in the rate level.
Soft loans	Loans at concessional (below market-based) terms, for example at sub-market-conform interest rates, made available in several Member States to stimulate certain renewable energy technologies.
Tax credits	These are amounts a tax paying entity is allowed to deduct when declaring payable taxes, for example company tax or income tax, to the tax authorities, for example the producer tax credits (PTCs) used in the United States to stimulate among others wind energy deployment.

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