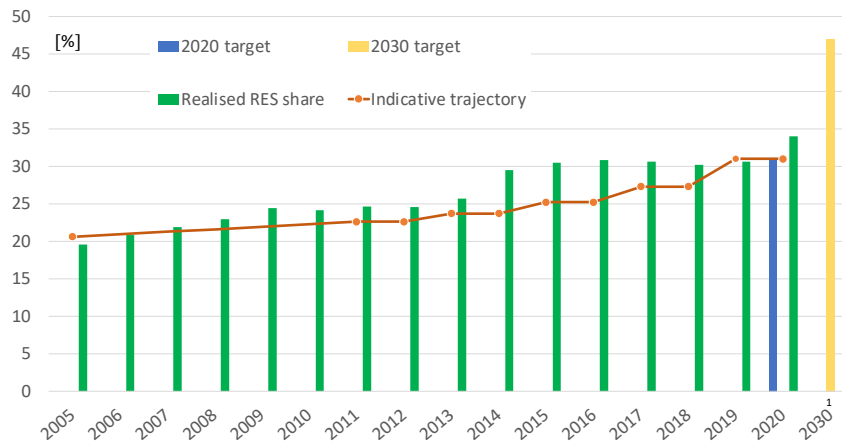


Portugal

Renewable energy status

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



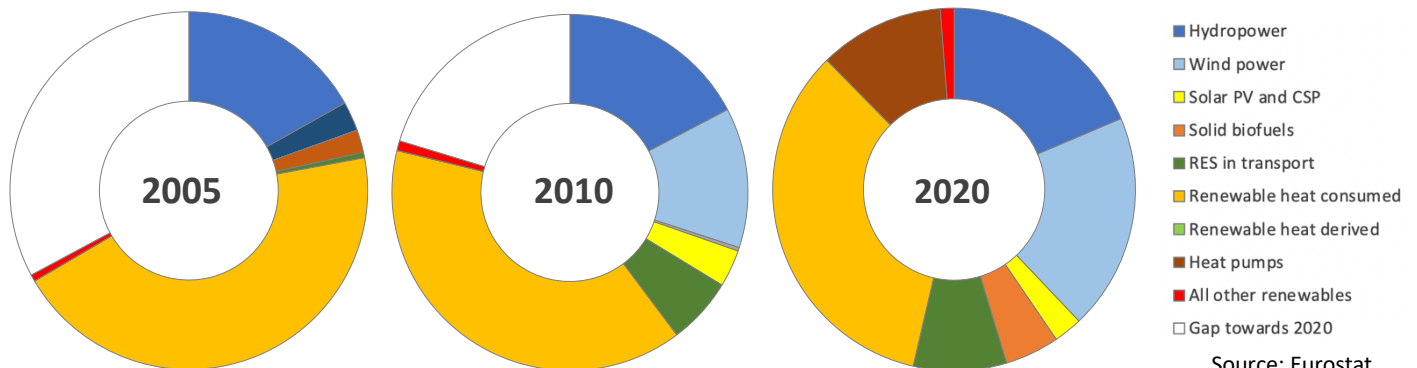
Source: Eurostat

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:	33.98%	Avoided fossil fuels:	3.2 [Mtoe]
Overall RES 2020 target:	31.0%	Avoided fuel expenses:	726 [MEUR]
Overall RES 2030 target:	47.0%	RES Turnover:	3 910 [MEUR]
Share RES-E in electricity:	58.03%	RES Employment:	60 800 [jobs]
Share RES-T in transport:	9.7%	RES imports ² :	386 [MEUR]
Share RES-H/C in heating:	41.55%	RES exports ² :	229 [MEUR]



Source: Eurostat

	2005		2010		2020		
	Energy in ktoe		Energy in ktoe		Energy in ktoe	Employment in FTE	Turnover in MEUR
Hydropower	957.9		982.7		1 057.3	2 000	120
Wind power	150.6		722.4		1 096.6	10 300	750
Solar PV, and CSP	0.3		18.2		145.4	3 000	160
Solid biomass	116.1		191.4		275.7	12 400	970
Ren. energy in transport ³	27.8		343.9		471.2	400	40
Renew. heat consumed	2 528.6		2 217.6		1 931.7		
Renew. heat derived	0.0		0.0		0.0		
Heat pumps	0.0		0.0		633.4	31 700	1 800
All other renewables	34.5		50.3		68.9	1 000	70
Gap towards 2020	1 864.4		1 153.7				

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

RES-E

Portugal plans to increase the share of energy production based on renewable energy sources within electricity consumption to at least 80 % by 2030 (58.03% in 2020). For renewable electricity generation installations commissioned the main support instrument is a scheme of administratively determined, technology-specific, feed-in tariffs. Support contract periods are technology-specific ranging from 12 to 25 years. Grid operators will pass on the (additional) cost of feed-in tariffs to final electricity consumers. Installations installed at the premises of industrial companies continue to benefit from such (non-expired) contracts.

A new support scheme was introduced in January 2015 for small renewable electricity generation installations (UPPs¹; capacity up to 250 kWe) and installations dedicated to self-consumption (UPAC² capacity ranging between 200 We and “more than”1 MWe). UPACs are allowed to be connected to the grid. This support scheme is based on a bidding model in which producers offer discounts to a technology-specific reference tariff which is also based on the “Z factor” reflecting the specific resource characteristics. The maximum support period is e.g. the first 12, 15, 20, 25 operating years in the case of geothermal, wind power, solar PV, and biomass respectively. Beyond the support period, the plants are allowed to directly sell their production into the market. UPACs > 1 MW, which are assumed to produce for self-consumption, are not allowed to do so. UPACs with a capacity not higher than 1 MW are remunerated for electricity fed into the public grid to the tune of 90% of the electricity market price. Certain wind power plants are eligible to opt for an alternative remuneration regime for an additional period of five or seven years after the end of the period of guaranteed remuneration. Their operators have to make an annual financial contribution to the sustainability of the national electricity system.

RES-H&C

According to its national plan, Portugal intends to reach out a 38% RES share within heat and cooling consumption. However this threshold was already achieved in end of 2020 (41.55%).

So far, no dedicated support scheme for renewable heating is currently in place. The Energy Efficiency Fund (FEE), co-funded by the EU, granted a subsidy to investments in solar water heaters in buildings in 2016, whilst another call for investment subsidy applications was open until 13 November 2018, for which among other “energy efficient” investments all renewable heating technologies in buildings were eligible. Only the Portugal’s national building code requires the installation of solar thermal heating systems with a minimum size of 1.0 m² per building occupant. Other forms of RES can be used as an alternative to solar thermal collectors, as well as for other purposes if they meet set efficiency criteria.

For renewable gases, the National Strategy for Hydrogen (EN-H2), approved in August 2020, foresees EUR 7-9 billion of investments by 2030 to rapidly scale up the production and use of hydrogen made using RES. Renewable-based hydrogen will cover:

- 1.5-2% of final energy demand
- 2-5% of industry energy demand
- 3-5% of domestic maritime shipping energy demande

¹ Small production unit regime

² Self-consumption production unit

- 1-5% of road transport energy demand, with 50-100 hydrogen filling stations
- 10-15% of the volume of gas delivered by the gas network

RES-T

In transport sector, Portugal is targeted a 20% RES share by the end of 2030. There are two support instruments for the promotion of transport fuels from renewable energy sources:

- a biofuels quota scheme for companies supplying transport fuels for consumption in the market. This scheme has specified annual minimum biofuel quotas for the period 2011-2020. Compliance is monitored by surrendered scheme certificates, called biofuel entitlements (TdeB's) representing 1 toe (tonne of oil equivalent). A penalty of €2000 per incompliant TdeB obtains. A request can be filed to surrender 1.5 extra TdB's in the next implementation year per incompliant TdB in the preceding implementation year. In 2017, Portugal passed a law transposing EU Directive 2015/1513, which promotes the production and use of advanced biofuels and seek to limit the use of first-generation biofuels.
- a tax exemption for small producers of biofuels (PPDs) from the Energy Product Tax (ISP) with a cap of 40,000 tons per year, which resulted in a total tax savings of EUR 5 million for small-scale biofuels producers from 2014 to 2017

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

<i>Instrument</i>	<i>Description</i>
Feed-in-tariffs	Applicable to electricity from renewable sources generated in existing plants. In general, all technologies used in renewable electricity generation are eligible for support. Large scale RES project commissioned receive a feed-in tariffs for 15 years from the start of operations. In 2014 a new FIT was introduced supporting RES from small-scale and self-consumption projects Website: http://www.res-legal.eu/search-by-country/portugal/single/s/res-e/t/promotion/aid/feed-in-tariff-tarifas-feed-in/lastp/179/
Remuneration system	Since 2015 applicable to new small RES power plants is based on a bidding model in which producers offer discounts to a reference tariff.
Obligation to use solar thermal collectors	Portugal's national building code requires the installation of solar thermal heating systems.
Biofuels quota scheme	Companies supplying fuels for consumption shall incorporate a certain percentage of biofuels in the fuels they supply to the market from 2011 to 2020 to be proved with TdB certificates. In 2017 , Portugal passed a law transposing EU Directive 2015/1513, which promotes the production and use of advanced biofuels and seek to limit the use of first-generation biofuels.
Tax exemption	Small producers of biofuels benefit from a total exemption of the Energy Product Tax.
National Strategy for Hydrogen (EN-H2)	Approved in August 2020, it foresees EUR 7-9 billion of investments by 2030 to rapidly scale up the production and use of hydrogen made using RES.

For further information:

European Alternative Fuels Observatory,

<https://www.eafo.eu/countries/portugal/1749/incentives>

European Commission, 2019. Assessment of the draft National Energy and Climate Plan of Portugal.

SWD(2019) 272. Brussels, 18 June

https://ec.europa.eu/energy/sites/ener/files/documents/pt_swd_en.pdf

EEA,2022. Progress towards renewable energy source targets for EU-27, 24 February

https://www.eea.europa.eu/data-and-maps/daviz/actual-res-progress-indicative-trajectory-12#tab-chart_6

European Union, 2018. Regulation (EU) 2018/1999 on the Governance of the European Union and

Climate Action, OJEU L328/1, Brussels, 21 December

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1999&from=EN>

Eurostat, 2020a. Renewable energy statistics; Share of renewable energy more than doubled between

2004 and 2020. Luxembourg, January 2022

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Renewable_energy_statistics#Share_of_renewable_energy_more_than_doubled_between_2004_and_2020

Eurostat, 2020b. Energy consumption in 2018. Primary and final energy consumption still 5% and 3% away from 2020 targets. Luxembourg, 4 February
<https://ec.europa.eu/eurostat/documents/2995521/10341545/8-04022020-BP-EN.pdf/39dcc365-bdaa-e6f6-046d-1b4d241392ad>

Government of Portugal, 2020. Portugal: National Energy and Climate Plan 2021-2030 (NECP 2030).
Lisbon, December
https://ec.europa.eu/energy/sites/ener/files/documents/pt_final_necp_main_en.pdf

International Energy Agency (IEA) database on policies and measures
<https://www.iea.org/policies?topic=Renewable%20Energy>

IEA, Portugal 2021 Energy Policy Review
<https://iea.blob.core.windows.net/assets/a58d6151-f75f-4cd7-891e-6b06540ce01f/Portugal2021EnergyPolicyReview.pdf>

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

RES Legal database, <http://www.res-legal.eu/search-by-country/portugal>
https://ec.europa.eu/commission/sites/beta-political/files/energy-union-factsheet-portugal_en.pdf(European Commission/ DG ENER, Energy Union Factsheet Portugal, November 2017)

REN21, 2022.
Global Status Report 2022. Paris, 15 June
https://www.ren21.net/wp-content/uploads/2019/05/gsr_2020_full_report_en.pdf

EURactiv, 2020. Lisbon. Energy auction world record. 20 August
https://www.euractiv.com/section/politics/short_news/lisbon-energy-auction-world-record/

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.



Disclaimer

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