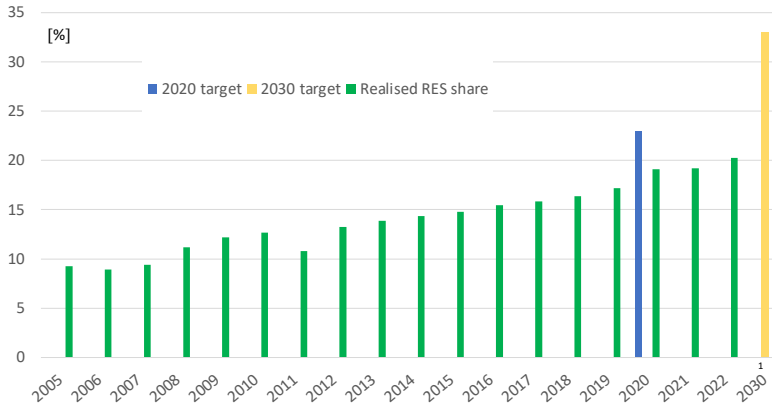


France

Renewable energy status

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



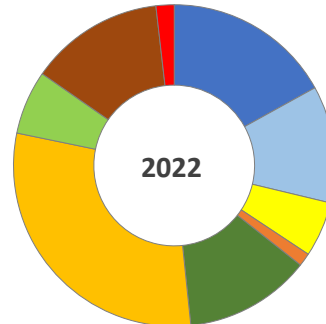
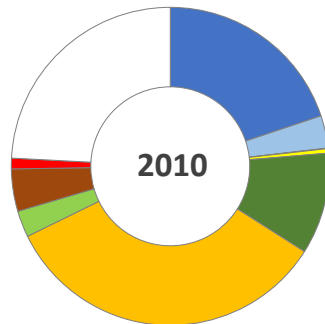
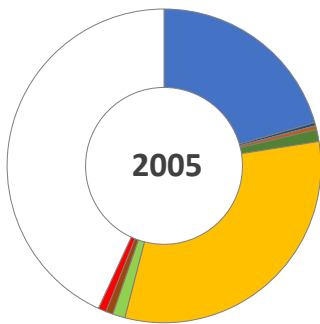
Source: Eurostat

Abbreviations used:

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

Data for 2022

| | | | |
|-----------------------------|-------|----------------------------|----------------|
| Overall RES share: | 20.3% | Avoided fossil fuels: | 19.0 [Mtoe] |
| Overall RES 2020 target: | 23.0% | Avoided fuel expenses: | 15 722 [MEUR] |
| Overall RES 2030 target: | 33.0% | RES Turnover: | 29 660 [MEUR] |
| Share RES-E in electricity: | 27.3% | RES Employment: | 197 900 [jobs] |
| Share RES-T in transport: | 9.0% | RES imports ² : | 2 277 [MEUR] |
| Share RES-H/C in heating: | 26.3% | RES exports ² : | 891 [MEUR] |



- Hydropower
- Wind power
- Solar PV and CSP
- Solid biofuels
- RES in transport
- Renewable heat consumed
- Renewable heat derived
- Heat pumps
- All other renewables
- Gap towards 2020

Source: Eurostat

| | 2005 | | 2010 | | 2022 | | |
|---------------------------------------|----------------|--|----------------|--|----------------|-------------------|------------------|
| | Energy in ktoe | | Energy in ktoe | | Energy in ktoe | Employment in FTE | Turnover in MEUR |
| Hydropower | 5 608.7 | | 5 422.1 | | 5 153 | 3 800 | 560 |
| Wind power | 92.2 | | 901.1 | | 3 577 | 36 500 | 5 910 |
| Solar PV, and CSP | 0.9 | | 15.0 | | 1 689 | 21 900 | 3 140 |
| Solid biomass | 107.8 | | 125.8 | | 402 | 30 500 | 4 620 |
| Ren. energy in transport ³ | 336.4 | | 2 822.4 | | 3 862 | 19 000 | 2 290 |
| Renew. heat consumed | 8 602.3 | | 9 208.8 | | 9 076 | | |
| Renew. heat derived | 351 | | 733.2 | | 1 951 | | |
| Heat pumps | 200.9 | | 1 175.5 | | 4 104 | 80 300 | 12 250 |
| All other renewables | 225.1 | | 297.0 | | 554 | 5 900 | 890 |

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 for France

² Referring to the International Trade chapter from the publication: EurObserv'ER - *The State of Renewable Energy in Europe, 2022 edition*

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



CURRENT RENEWABLE ENERGY POLICY

RES-E

In France, electricity from renewable sources for large plants (hydro, wind or PV) is promoted through a premium tariff system. Some renewable energy producers may benefit from a premium tariff on top of the sale price they get on the electricity market, in order to cover the costs of their installations and ensure their profitability. For the smaller plants- (less than 500 kW - mainly individual PV plants or very small hydropower) sectors are promoted through a feed-in tariff scheme. Furthermore, persons that install photovoltaic installations on buildings are eligible for a reduced VAT rate. For almost all RES technologies, The French government invites tenders for the construction of renewable energy plants and storage facilities in order to reach the target capacity set by the multi-annual energy investment plan (Programmation Pluriannuelle de l'Énergie - PPE) of which last version was validated in early 2020.

RES H&C

For heating and cooling purposes the Heat Fund (Fonds Chaleur), implemented to finance RES-H&C projects and which has been implemented in 2009 and is still the main supporting measure for RES application in collective buildings. Its budget has been increased in 2023 to reach €600 millions. The Environmental Regulation 2020 (RE2020) entered into force in the new individual and collective housings on the 1st January 2022. It creates new building standard and emission threshold, banishing gas and oil heating. Thus, thermal renewable energies, in addition to insulation, are more than ever recommended.

For individual housing the main tool is a new premium called "MaPrimeRenov". This tool took over to the tax credit measure that supported individual RES investment for nearly 15 years (implemented in 2005). MaPrimeRenov offers financial aids based on the earnings of the consumer. This measure covers almost all RES individual equipment (individual wood stoves or wood boilers, solar thermal collectors and ambient heat except air-air appliances). Moreover, lower VAT rates were implemented for RES-H&C materials and also zero rates eco-loan to improve overall energy performance of housing.

RES-T

The main support scheme for renewable energy sources used in transport is a quota system. This scheme prompts companies importing or producing petrol, gas or diesel fuels to ensure that biofuels make up a defined percentage of the company's total annual sale of fuel. On the one hand, the lower competitiveness of biofuels compared to conventional fuels is supported through a partial exemption of the domestic consumption taxes. On the other hand, the tax on polluting activities foresees higher rates for companies releasing fuel for consumption, in case they do not respect the national quota of biofuels to be blended within conventional fuels, which is defined for each fuel type.

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

| <i>Instrument</i> | <i>Description</i> |
|---|---|
| Premium tariff <i>Complément de Rémunération</i> | 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 multi-annual energy investment plan validated in 2020. Website : http://www.ecologique-solidaire.gouv.fr/index.php/dispositifs-soutien-aux-energies-renouvelables |
| RES-H building obligations <i>Réglementation environnementale 2020</i> | The Environmental Regulation 2020 is the one that replaces the thermal regulation 2012 in new buildings. The main information to remember is that it bans gas and oil heating in new buildings <ul style="list-style-type: none"> • The RE2020 entered into force in new individual and collective housing in January 2022 • it will enter into force for tertiary building in July 2022 • and for the others buildings it will enter into force in 2023. <p>The RE2020 goes further than the RT2012, it gives more importance to energy efficiency as well as decarbonized energy sources (heat, cooling and electricity). It also better takes into account the comfort needs in summer, essential for better insulated houses. Moreover, an ACS is now mandatory to calculate the carbon impact of the entire building, it incentivizes the use of low carbon and bio-based materials Website : https://www.ecologie.gouv.fr/reglementation-environnementale-re2020</p> |
| Heat Fund scheme <i>Fonds chaleur</i> | 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. Almost 1 billion euros is allocated over the period 2020-2022 Website: http://www.ademe.fr/expertises/energies-renouvelables-enr-production-reseaux-stockage/passer-a-l'action/produire-chaleur/fonds-chaleur-bref |
| RES premium <i>MaPrimeRenov</i> | 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 |
| Solar obligation on the roof <i>Loi Climat et résilience</i> | The climate & resilience law was enacted in the summer of 2021. It was supposed to be inspired by the proposals of the Convention Citoyenne pour le Climat (CCC) in which 150 citizens were randomly selected and trained in climate issues (after the yellow vests protests) with the aim of finding socially acceptable solutions. For renewable energies the main point added by the law is the obligations to solarize (or vegetate) warehouse of more than 500 m ² , tertiary buildings of more than 1 000 m ² , and the parking areas of more than 500 m ² and their shades. Website : https://terresolaire.com/Blog/reglementation-solaire/loi-climat-et-resilience-photovoltaique/#:~:text=A%20compter%20du%201er%20janvier,solariser%2030%20%25%20de%20eur%20surface. |
| Investments for the Future programme <i>Programme investissement d'avenir</i> | The Investments for the Future programme (PIA) 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. Since 2010, more than 1 000 projects have been subsidized. Website: https://data.ademe.fr/datasets/investissements-d-avenir-projets |
| Training programmes for Installers | 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. |

| | |
|--|---|
| <i>Référencement RGE</i> | |
| Biofuel quota (Réduction de la taxe incitative relative à l'incorporation de biocarburants (TIRIB)) | <p>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 incentive tax relating to the incorporation of biofuels (TIRIB).</p> <p>Web : https://www.demarches.interieur.gouv.fr/professionnels/taxe-generale-activites-polluantes-tgap</p> |

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 multi-annual energy investment plan, <https://www.ecologie.gouv.fr/programmations-pluriannuelles-lenergie-ppe>

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. |



Disclaimer

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