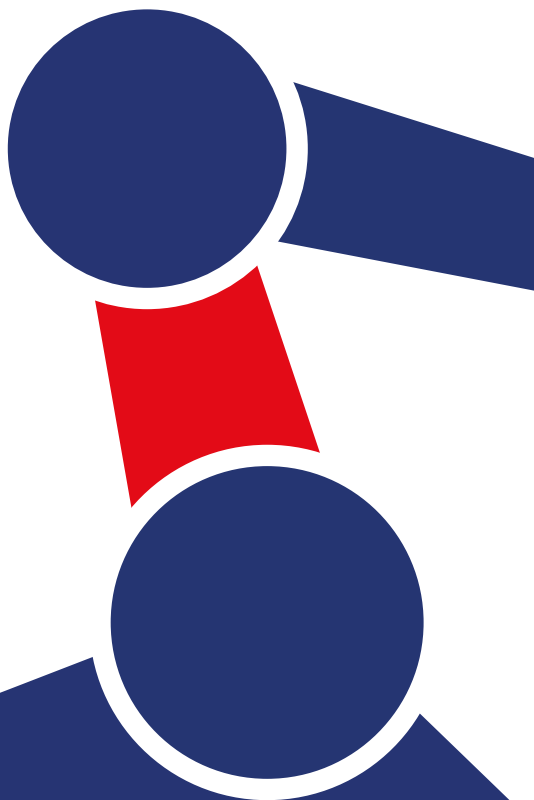


ENERGY TRANSITION



1

MOVING TOWARDS CARBON NEUTRALITY WITH RENEWABLE ENERGY

France is the fifth largest producer of renewable energy in Europe (IRENA, 2020). The Multi-Annual Energy Plan (PPE), which was adopted by decree on April 21, 2020, plans to double the production capacity of electricity from renewable sources by 2028 as part of its aim to achieve carbon neutrality by 2050.

2

ABUNDANT RESOURCES

The leading producer of tidal energy, second for hydropower, geothermal energy, ambient heat and wind and fifth in terms of sunshine in Europe, France is also home to the fourth largest forest park and has the second largest maritime exclusive economic zone in the world. Moreover, France has many geothermal resources; The Paris region is home to the highest density of geothermal doublets in the world, with around 50 sites (Eurostat, 2019).

3

HYDROGEN: THE ENERGY OF THE FUTURE

Some €7 billion of public funds will be invested in green or low-carbon hydrogen by 2030, including €2 billion in 2021 and 2022, as part of France's recovery plan. In addition to R&D, this financial package is expected to promote future gigafactories of fuel cells for hydrogen vehicles. Produced via the electrolysis of water, hydrogen can come from alternative sources such as wind or solar power, or even from nuclear sources, and it can also be stored.

4

PIONEERING REGIONS

Brittany and Pays de la Loire have launched SMILE (SMart Ideas to Link Energies), a large smart electricity grid in four departments, including three islands in the Finistère department. The Provence-Alpes-Côte d'Azur region and Capenergies have piloted FLEXGRID, a program dedicated to the deployment of optimized energy networks and systems. Supported by the Hauts de France region and the European Metropolis of Lille (MEL), You & Grid aims to implement a set of mature services and technologies in terms of smart electricity grids.

5

'RELAUNCH FRANCE' PLAN: €30 BILLION FOR THE ECOLOGICAL TRANSITION

This package will award funds to the following key areas: transport (€11 billion), energy-industry (€9 billion), construction (€7.5 billion), and agriculture (€1.2 billion). In terms of energy support, €2 billion is intended for the green hydrogen sector, which should benefit from €7 billion by 2030. The nuclear sector, meanwhile, will receive €470 million, and €50 million will be used to strengthen the resilience of electricity networks: reconstruction of networks and small battery banks, the underground installation of the distribution network, etc.

6 KEY PLAYERS

The Ecological Transition Agency (ADEME), the Syndicate of Renewable Energies (SER), Think Smartgrids, which represents the French Intelligent Electric Grids sector, and Smart Energy Alliance, are helping to accelerate the implementation of the energy transition and the digital transformation in France's regions. Smart Energy Alliance has already certified over 2,500 projects linked to 11 innovation clusters.

7 THE 2020 ENVIRONMENTAL REGULATION AND CARBON NEUTRAL BUILDINGS

The 2015 law on the energy transition for green growth aims to reduce energy consumption in the construction sector by 50% by 2050. The new law requires that the external walls in homes and public buildings are completely insulated. Delayed due to the health crisis, the RE 2020 Environmental Regulation, which aims, to reduce carbon levels in buildings, is now expected to come into force in January 1, 2022. As part of the 2020 recovery plan, a total of €6.7 billion will be used to finance energy-efficient building renovations over a two-year period.

8 SMART GRID INVESTMENT

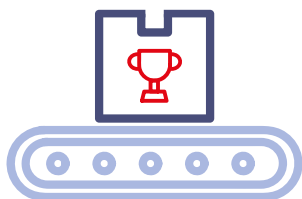
The smartgrids sector is responsible for more than 20,000 direct jobs in France, with revenues of €3 billion, of which 50% is in exports (Think Smartgrids). Among the projects financed by investments for the future, there is Next (Ile de France/Paris region), specializing in network dimensioning optimization; Smart Occitania, which is experimenting with new distribution networks adapted to rural areas; Pride (Brittany/Pays de la Loire), an energy data management platform; and PicoWatty (PACA), a multi-service energy-environment-health platform.

9 EXPORTING FRENCH EXPERTISE

In September 2018, EDF Renewable Energy was awarded wind projects totaling 276 MW in the state of Bahia in Brazil. In early 2019, Engie announced the commercial start-up of a 100 MW thermodynamic solar power plant in Kathu, South Africa. The latter is equipped with parabolic tray technology and a molten salt storage system.

10 WORLD'S #3 GREEN BOND ISSUER

In 2017, France was the world's first country to start issuing sovereign green bonds, worth €7 billion. This amount has since been increased to €14.8 billion. In 2018, France was the world's third largest issuer of green bonds.



#1
HOST COUNTRY IN
EUROPE FOR INDUSTRIAL
INVESTMENTS

(EY)



FRANCE IS THE THIRD
LARGEST GLOBAL
ISSUER OF GREEN
BONDS

(CLIMATE BONDS)



€7.2 OF PUBLIC FUNDS
WILL BE INVESTED
IN LOW-CARBON
HYDROGEN

(FRANCE HYDROGÈNE)



ACCESS TO A MARKET
OF 67 MILLION
CONSUMERS AND
PLATFORM FOR THE
MIDDLE EAST/AFRICA
ZONE

(INSEE)

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