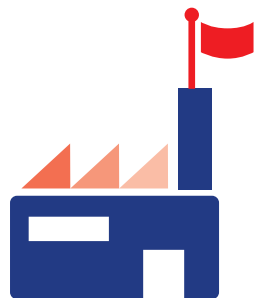


200,000
PEOPLE WORKING IN
THE NUCLEAR INDUSTRY

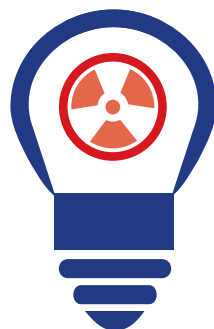
(SFEN)

ACCESS TO A MARKET OF
67
MILLION CONSUMERS
AND A GATEWAY TO EMEA MARKETS
(INSEE)



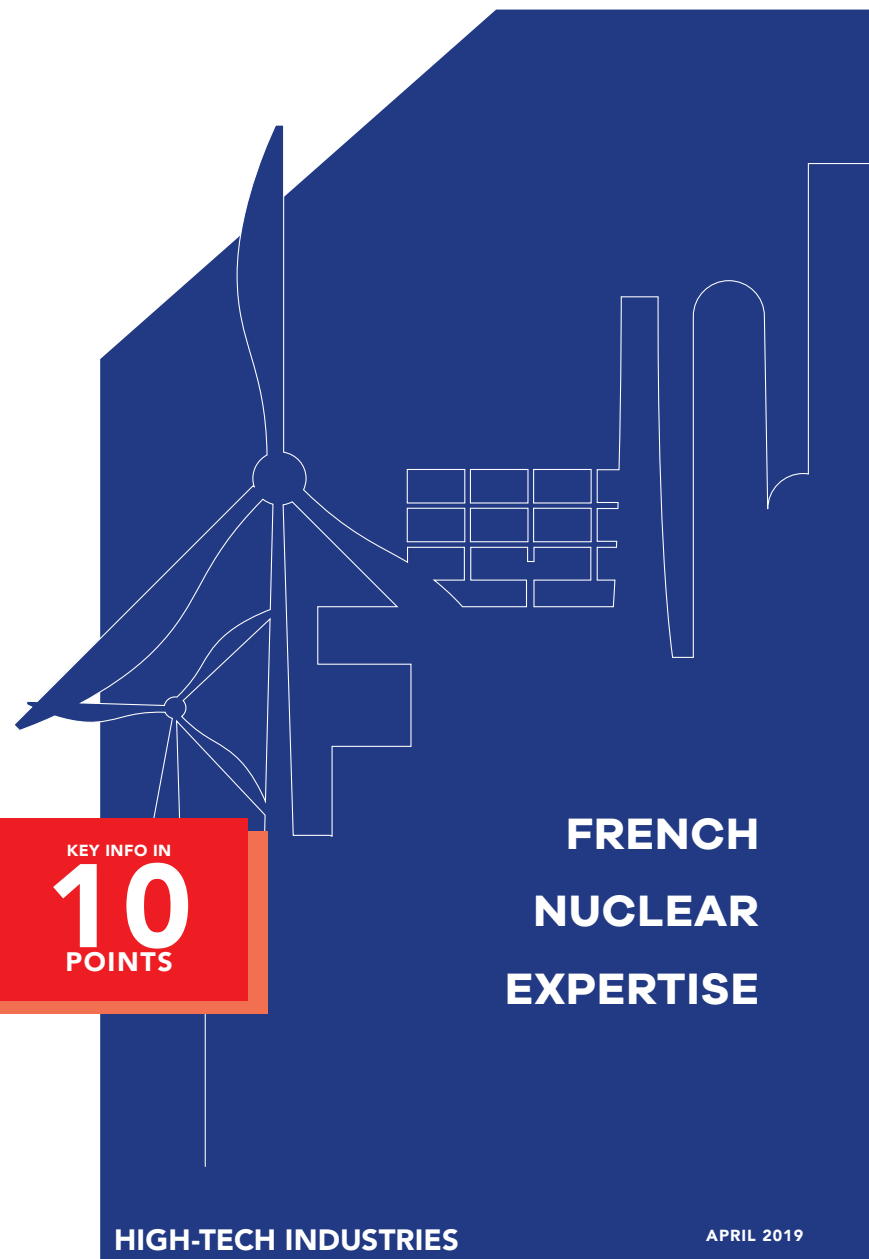
#1
HOST COUNTRY FOR
FOREIGN INVESTMENT
PROJECTS

(EY)



#1
SOURCE OF
ELECTRICITY IN FRANCE

(RTE)



KEY INFO IN
10
POINTS

**FRENCH
NUCLEAR
EXPERTISE**

HIGH-TECH INDUSTRIES

APRIL 2019

BUSINESS FRANCE
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1 A MAJOR INDUSTRY

France has expertise in all stages of nuclear energy production, from fuel extraction to reprocessing. With 220,000 professionals at 2,600 companies (operators, large corporates, SMEs, mid-size companies, startups), nuclear power is one of France's largest industrial sectors. (French nuclear energy association SFEN, 2019)

2 #1 SOURCE OF ELECTRICITY

France's 58 nuclear reactors at 19 sites, with a capacity of nearly 63 GWe (SFEN), accounted for 71.7% of all energy generated in 2018, ahead of hydraulic power (12.4%), gas (7.2%), wind (5.1%) and solar (1.9%). Thanks to nuclear power and renewable energy, France's electricity grid is more than 91.1% low-carbon. In 2018, nuclear power generation in France increased by 3.7% to 393.2 TWh. (French grid operator RTE, 2019)

3 HIGHLY SKILLED JOBS

Two-thirds of the nuclear sector workforce are executives or 'ETAMs' (employees, technicians and supervisors), with twice as many highly skilled jobs as the French industrial average. There are nearly 70 specialist nuclear training courses in France. (SFEN, 2019)

4 ELECTRICITY EXPORTS

Every year, France exports 10-15% of all electricity produced. From July 2017 to June 2018, France was the second largest exporter of electricity in Europe, with an export balance of +51.7 TWh, slightly lower than that of Germany (+52.2 TWh). The nuclear industry exports €6 billion in goods and services every year, generating a trade surplus of around €5 billion. (SFEN, 2019)

5 GLOBALLY RECOGNIZED EXPERTISE

With its EPR (capacity: 1,600 MWe) and ATMEA (1,000 MWe) reactors, France is involved in building various power plants around the world, in countries including Finland, China, the United Kingdom, and Turkey, with India soon to join the list. There are numerous key French players working internationally in the sector, including Orano (formerly Areva), EDF, Framatome, Engie and its subsidiaries, Apave, Bureau Veritas, Assystem, Egis, GE Alstom, Nuvia, and Onet.

6 WASTE MANAGEMENT SUCCESS

The French nuclear industry boasts some of the world's finest technological expertise. Ninety-six percent of materials derived from spent fuels are recycled to produce new fuels, with the volume of high-level long-lived waste (HAVL) five times less. This technique creates up to 10% of French electricity every year. (SFEN, 2019)

7 REACTORS OF THE FUTURE

Nuclear research is the fourth leading sector in France for R&D spending (MESRI, 2019). A major global player in future reactor research, France is developing a fourth-generation, sodium-cooled, fast breeder reactor named Astrid/ASTRID. The International Thermonuclear Experimental Reactor (ITER) is a nuclear fusion project located in the Provence-Alpes-Côte d'Azur region, involving 35 countries. The CEA Nuclear Energy Division has formed an international consortium to develop the Jules Horowitz research reactor (JHR) to test fuels and material behavior under irradiation.

8 SPECIALIST REGIONS

Some areas of France have developed specific nuclear skills, such as Auvergne-Rhône-Alpes, specializing in uranium enrichment, Normandy, which works in spent fuel reprocessing, Burgundy-Franche-Comté, which manufactures large components for reactors, and the Rhone Valley, home to many equipment manufacturers and service providers. (SFEN, 2019)

9 FRENCH DECOMMISSIONING EXPERTS

Having already had experience of decommissioning nuclear sites in France such as La Hague and Chooz, the French nuclear sector is going global. In 2017, Orano, in partnership with American firm NorthStar, took over the remediation and decommissioning program for the Vermont Yankee site in the United States, while South Korean company Korea Hydro & Nuclear Power Co. has also decided to work with France to decommission its plants.

10 KEY RESEARCH PLAYERS

The French Alternative Energies and Atomic Energy Commission (CEA) conducts research into the use and control of nuclear energy, while ANDRA manages radioactive waste produced in France. Orano works on the entire nuclear fuel cycle, and Framatome on the design, manufacture and maintenance of nuclear reactors. The World Nuclear Exhibition, which takes place once every two years in Villepinte, on the outskirts of Paris, is the leading marketplace dedicated to the global civil nuclear community.