FRENCH NUCLEAR EXPERTISE

KEY INFO IN

10

POINTS

1 A MAJOR INDUSTRY

France has expertise in all stages of nuclear energy production, from fuel extraction to reprocessing. With 220,000 professionals at 2,500 companies (operators, large corporates, SMEs, mid-size companies, startups), nuclear power is one of France's largest industrial sectors. (French nuclear energy association SFEN, 2018)

2 #1 SOURCE OF ELECTRICITY

France's 58 nuclear reactors at 19 sites, with a capacity of nearly 63 GWe (SFEN), accounted for 71.6% of all energy generated in 2017, ahead of hydraulic power (10.1%), gas (7.7%), wind (4.5%) and solar (1.7%). Thanks to nuclear power and renewable energy, France's electricity grid is more than 89.7% low-carbon. (French grid operator RTE, 2018)

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, 2018)

4 ELECTRICITY EXPORTS

Every year, France exports 10-15% of all electricity produced. In 2017, it provided the equivalent of €2.45 billion in low-carbon electricity per year to its neighbors (French Customs Authorities). The nuclear industry exports €6 billion in goods and services every year, generating a trade surplus of around €5 billion. (SFEN,2018)

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, CNIM, 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, 2018)

7 REACTORS OF THE FUTURE

Nuclear research is the fourth leading sector in France for R&D spending (SFEN, 2016). A major global player in future reactor research, France is developing a fourth-generation, sodium-cooled, fast breeder reactor named ASTRID. The International Thermonuclear Experimental Reactor (ITER) is a nuclear fusion project located in the Provence-Alpes-Côte d'Azur region, involving 35 countries.

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, 2016)

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. EDF runs nuclear reactors throughout France and is currently building an EPR reactor in Flamanville, Normandy.

For further information, please visit:
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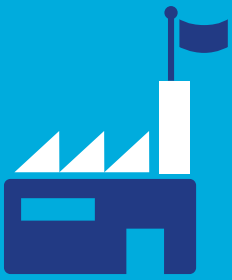

FRANCE: EUROPE'S

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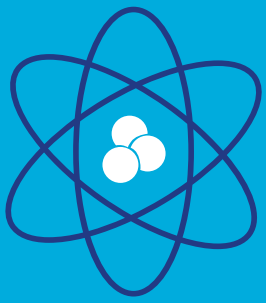
DESTINATION
FOR FOREIGN INVESTMENT
IN INDUSTRY

(EY, 2017)



220,000

PROFESSIONALS WORKING IN THE NUCLEAR INDUSTRY

(SFEN, 2018)

ACCESS TO A MARKET OF
67
MILLION CONSUMERS
AND GATEWAY TO THE EMEA

(INSEE, 2018)

NUCLEAR

#1

SOURCE OF ELECTRICITY IN FRANCE

(RTE, 2018)

March 2018

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