

# France

<i>Capital:</i>	Paris
<i>Population:</i>	66.84 million
<i>GDP:</i>	\$2.833 trillion
<i>GDP per capita:</i>	\$44,400.20
<i>Currency:</i>	Euro
<i>Language:</i>	French



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## Market Trends

France continued to invest in Smart Grid technology in 2016, rising from 13th to 10th in a world Smart Grid infrastructure market estimated to be worth 65.42 billion USD in 2021. In 2016, France was considered to be a “Smart Grid Procurer” alongside Japan and China. Attributes of a procurer include a growing Smart Grid investment, major procurements and deployments underway, and advanced metering infrastructure.

The EU substation and distribution automation market, which was valued over 3 billion USD in 2015, is expected to see a compound annual growth rate of 8.6% through 2025. As the Smart Grid market continues to expand and France continues to invest in updating its infrastructure with Smart Grid technology, it is anticipated that France will overtake Spain as the largest Smart Grid market in Europe by 2018. Given that smart grids sit at a junction between numerous technologies, many providers from different sectors are rapidly positioning for market entry. In 2016 alone there were 450 Smart Grid projects across the 28 member states of the EU worth approximately 4.28 billion USD. France leads the EU in Smart Grid technology with more than 20 projects underway as part of the National Investment Program.

## National Investment

In response to the Energy Act of 2005 passed by the French legislature, France has worked to meet goals of energy independence and competitive energy prices. The French national government is involved in incentivizing smart grid technology development particularly through its efforts to install Linky smart meters across France in collaboration with the French company Enedis, formerly known as Électricité Réseau Distribution France (ERDF).

Enedis contracted nearly 3 million smart meters as part of a larger 35 million smart meter implementation program set to be completed by 2020, at a cost of 5.6 billion USD. The goal since January 2012 has been to install only electronic meters and to have 95% coverage by the end of 2016. The automated electric meters will ensure consumers are accurately billed and that utilities companies improve their management of grid networks through provision of real-time grid events data.

France has invested millions of dollars in improving energy efficiency in buildings, particularly in energy storage and control. Implementation of further smart grid technology is primarily left to municipal governments. As a result, it is taking place with varying degrees of promptness and rigor across France. In 2015, the Energy Transition Law was passed to facilitate the transition of France’s infrastructure, particularly public services, to green, energy-efficient materials. The French government has shown that it is committed to investing in environmentally friendly technology as demonstrated by a plethora of projects such as the

Linky initiative, whose aim it is to further implement energy-saving smart technology, from grid management to household consumer product design.

## EU and French Regulations

With the 2015 establishment of the Energy Union, the EU embraces technology that will bring the Europe closer to meeting its goals of

- Energy security, solidarity and trust
- A fully integrated European energy market
- Energy efficiency contributing to moderation of demand
- Decarbonizing the economy
- Research, innovation and competitiveness.

([https://ec.europa.eu/commission/priorities/energy-union-and-climate\\_en](https://ec.europa.eu/commission/priorities/energy-union-and-climate_en))

## Competition

Former French monopolist giants like EDF and ENGIE are very influential and well positioned to dominate the market. Électricité de France (EDF) was created following the nationalization of the French energy sector. Following the 2004 transformation into a LLC, shares were sold on the Paris Stock Exchange. ENGIE, formerly known as GDF Suez, also originates from the era of government controlled utilities. The French government maintains a strong control over the energy sector holding 85.6% ownership over EDF and 28.7% of ENGIE. This presents challenges for foreign interests to make an entrance into the energy and Smart Grid markets.

Dynamic American companies with novel products or original designs may, however, have a competitive advantage on the French market, which is always seeking innovative solutions. Therefore, attractive business opportunities exist for inventive American companies wishing to enter the French smart grid market, but they should also consider the possibility of pursuing joint ventures or other partnerships as a market entry strategy. In the coming years, the barrier for entry of foreign firms will lower significantly as the market matures.

American companies have already made successful entries into the French Smart Grid market. In the last few years, California company Silver Springs Networks partnered with French utility company EVESA to install a Smart Grid in Paris. Major corporations like General Electric (GE) have entered the French energy market via corporate mergers. In 2014, GE merged with French turbine producer Alstom. By way of the Alstom merger, GE has become involved in Smart Grid and Smart City projects.

## Existing Projects

In 2016, Électricité de France (EDF), the largely state-owned utility company, collaborated with international partners Dubai Electricity and Water Authority (Dewa) and German company Stornetic to leverage the opportunities associated with the current energy transition taking place in the sector.

Dewa, a public service infrastructure company based in the UAE, partnered with EDF in research and development regarding Smart Grid technologies among other energy infrastructure and renewable energy ventures in 2016. At the start of 2017, this partnership was renewed when both firms signed an agreement to work together on a range of initiatives including energy storage and renewables.

Stornetic and EDF installed a concept grid in Moret-sur-Loing, south of Paris. Stornetic, a German energy storage manufacturer worked with EDF to design a concept grid consisting of 10 km of voltage networks with several substations and test areas and a neighborhood of five houses fitted with local generation. Stornetic has developed the energy storage device to be installed in the concept grid next summer.

The Smart Cities Council along with Alstom hosted together an event at the Innovative City conference held in Nice, France in June of 2016 to promote next generation initiatives for smart grid and smart city developments internationally. With experts convening from Europe and the U.S., the event combined the public and private sectors to further identify solutions for overcoming common barriers city leaders face when transforming their grids and moving toward smarter cities. French turbine producer, Alstom is a pioneer in smart grids, control systems and microgrids, which serve as the foundation of smart infrastructure.

To be completed by 2019 is a new energy transmission line that connects France and Italy manufactured by Alstom. When completed, it will be the longest line of its type in the world, but perhaps more importantly; it will be another key step in connecting Europe's electrical grids. Alstom's role in the project is to build two High Voltage Direct Current (HVDC) converter stations, one at each end of the new link. It will design, manufacture and commission the stations.

## Market Entry

### Best Prospects for U.S. companies in the French Smart Grid Market:

- Intelligent equipment for remote monitoring based on wireless sensor networks
- Advanced energy storage components, to apply the latest research in superconductivity, power electronics and diagnostics
- Smart infrastructure in the gas and water industries with integrated communications and connecting components to open architecture for real-time information and control, that allow every part of the grid to both 'talk' and 'listen'
- Sensing and measurement technologies, to support faster and more accurate responses such as remote monitoring, time-of-use pricing and demand-side management
- Advanced control methods, to monitor essential components, enabling rapid diagnosis and precise solutions appropriate to any event
- Improved interfaces and decision support, to amplify human decision-making, transforming grid operators and managers quite literally into visionaries when it comes to seeing into their systems

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