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# France smart grid technologies and applications

Is France ready for a smart grid?

Today, France is one of the most advanced countries in the worldwhen it comes to the digitalisation of its electrical grid and the industrial deployment of smart grid use cases. RTE and Enedis, respectively France's TSO and DSO, have already integrated many smart grid solutions into their day-to-day network management process.

#### What are smart grid technologies?

Smart grid technologies can be defined as self-sufficient systems that can find solutions to problems quickly in an available system that reduces the workforce and targets sustainable, reliable, safe and quality electricity to all consumers.

#### How will smart grids affect France's future energy grids?

With smart grids, consumption can be tailored to production, which is why " consum'actors " play a vital role. Smart electricity meters, like Linky, or their natural gas equivalents, such as Gazpar, are among the first additions to France's future energy grids.

#### How are smart grid projects distributed across Europe?

Geographically, the smart grid projects and investments are not uniformly distributed across Europe (Figures 13). The great majority of projects (93 %) are in EU15 countries, while EU12 countries are still lagging behind significantly. 13 A few countries stand out in terms of spending.

#### What is smart grid Vendée?

ation of the distribution network, at the lowest possible cost. In particular, Smart Grid Vendée has experimented with intelligent connection solutions for renewable energies: two wind farms an a photovoltaic farm have been connected to the nearest dis - Council of the European Union - Adjustment to Objective 55 European Commission

#### What is smart grid architecture?

Smart grid architecture increases the capacity and flexibility of the network and provides advanced modern communications technologies through sensing and control . Table 1. Smart Grid Communication Technologies

A smart electricity grid opens the door to new applications with far-reaching impacts: providing the capacity to safely integrate more renewable energy sources (RES), electric vehicles and

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The Smart Grid Vendée project has made it pos-sible to set up Smart Connection Offers (SCOs) for medium-voltage (MV) renewable electricity production. The economic gain, depending on the type of network, can reach EUR90K/MW. Such projects also reduce carbon footprint, as civil engineering work is reduced. Today"s indus-

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for grid operators, smart grids make the network more adaptable. This boosts the resilience of the electricity system to optimise power supply reliability and quality levels, while making it easier to introduce new types of energy production in grids, particularly renewable energy (wind and solar), which are both intermittent and decentralised;

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IN FRANCE Smart grids integrate digital technologies to improve the management of energy grids (electricity, natural gas and water). Using smart sensors combined with decision-support software, it is now possible to optimize grid management (e.g. remote monitoring, surveillance and meter readings), save resources (preventing pollution

In this paper, a survey on various Smart Grid enabling technologies, Smart Grid metering and communication, cloud computing in Smart Grid and Smart Grid applications are explored in detail. Opportunities and future of Smart Grid is also described in this paper.

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