

CASE STUDY

ENEDIS AND LINKY BRING THE SMART GRID TO 95% OF FRENCH CONSUMERS



Enedis

Enedis is the leading European electricity distributor and elected smartest distribution network operator / distribution system operator in the world by the Singapore Grid Index in 2021.

Enedis is a public service company that operates the LV and MV electricity distribution network for 95% of continental France. They employ 38,700 people, and ensure that 37 million consumers receive the electricity they need. In order to perform this enormous task, a network of 1.4 million kilometers of cable is constantly in operation, while developments and extensions ensure the system is up to the challenges of a 21st century energy market.

Enedis pilots, develops and modernizes the electricity network to guarantee a high-quality power supply for all the customers. It is a major challenge to build and maintain a solid, sustainable, reliable and efficient network which is achieved by investing €4.4 billion per year (+10% in 2021), by installing 15,000 km of new network every year and 500 specialists observe the state of the network 24/7, and by providing trouble shooting solutions to any incident in a matter of minutes.

Enedis is developing networks of the future or "Smart Grids", where technologies from the fields of electrical information and telecommunications technologies converge. The Linky system is the "first brick" in this new set-up.





The Challenge

Following a European Council directive in 2006, France and all other EU member states were required to replace 80% of their meters with smart devices by 2020, an enormous technical undertaking. Very early in the project planning, Enedis decided to go further than the basic EU requirements, and equip France for the energy challenges of the future with one of the most technologically advanced grids in the world.

The modernization plan called for the replacement of 100% of the 35 million residential meters with smart devices by 2023. In addition to these, a total of 700,000 data concentrators would be installed across the country to manage the flow of data from the new smart meters. To future-proof this enormous investment, all devices installed were required to have a 20-year lifespan.

In order to deliver the project in time, the provider of these smart devices would have to manage deployment with local suppliers and installers, and install 30,000 smart meters every single day.

The Solution

Landis+Gyr have a longstanding relationship with Enedis, going back to 1998, and were able to work closely with the French DSO to design a completely new device to meet their very specific needs. Enedis financed the initial development and worked with selected suppliers, including Landis+Gyr, to create a rigorous and thorough supplier selection process. This process would ensure excellent performance from all suppliers involved in the project.

The result of this rigorous development process was the Landis+Gyr E450 smart meter (single phase and poly phase) branded as "Linky" meters for end consumers. A key component of these devices is the PLC-G3 technology, which allows the end devices to send data to data concentrators along the same power lines the grid uses to conduct electricity to its users. It's an ingenious technical solution that provides fast, secure transfer of smart grid data without the need to build extra cables or other expensive data transfer systems.

Landis+Gyr manufactures Linky meters and Linky concentrators required for this massive project in their factory in Montluçon, delivering more than 1.000,000 meters per year to enable the installation of 30,000 units a day. This location supports the entire project across France, providing local R&D, fully automated and flexible production lines, quality, after-sales services, and more.



Unlocking the power of the smart grid

The result of this 11-year project (and counting) is a network built to last, which goes far beyond the technical requirements set out by the EU. With increased operational efficiency comes improved quality of supply. And when things do go wrong, Enedis is able to respond faster, with rapid diagnostics available to help solve any network failure. The French network is ready for the predicted energy transition, with consumers becoming pro-sumers, as well as increasing integration of renewable generation and the massive challenge of charging the electric vehicles that will increasingly take over the road.

On the business side, the new network will benefit both Enedis and the consumers themselves. The additional functionality will enable energy suppliers to provide new, flexible supply contracts and flexible models to their consumers.

Consumers will see a reduction in their energy bill of 5-15%, according to ADEME, the French Environment and Energy Management Agency. And access to their own consumption data will empower them to make choices about their own consumption behavior.

But for all of its impressive scale, the Linky project is just the first step in the French DSO's network digitalization plan. Building on this solid foundation, designed and delivered in cooperation with Landis+Gyr, Enedis have ambitious plans for the future. These include advanced metering infrastructure for commercial & industrial customers as well as low voltage monitoring. Microgrids or "collective Linky prosumers" within the Enedis network will empower the growth of the prosumer segment. By 2035, Enedis plan to be able to power 9 million electric vehicles, with a network of 12 million charging stations. The grid is powerful enough to service the additional 28 GW from wind generation and 39 GW from photovoltaic that projections indicate will be online by 2035.



About Landis+Gyr

Landis+Gyr is a leading global provider of integrated energy management solutions for the utility sector. Offering one of the broadest portfolios, we deliver innovative and flexible solutions to help utilities solve their complex challenges in Smart Metering, Grid Edge Intelligence and Smart Infrastructure.

With sales of USD 1.4 billion in FY 2020, Landis+Gyr employs more than 5,000 people in over 30 countries across five continents, with the sole mission of helping the world manage energy better.

Learn more at landisgyr.eu/resources or [get in touch with us](#).

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