



Driving forward smart metering on a global scale

Through participation in the pilot for one of the world's biggest smart metering projects with ERDF France, Landis+Gyr is confirming its position as the world's leading provider of smart metering technology.

Landis+Gyr supplied 100,000 meters and 3,500 concentrators for the successful pilot project of what will be one of the world's largest smart metering rollouts to date. The French energy provider ERDF plans to deploy a total of 35 million smart meters in its domestic market between 2013 and 2018, well in advance of the European target of 80 % smart metering coverage by 2020.

In September 2011, the French ministry for Industry, Energy and Digital Economy gave the green light for a nationwide rollout of smart metering technology and the technical decree was published in January 2012. Another decree, including, i.e., the financial items, is in progress. As soon as the regulation has been finalized, ERDF will launch a tender for the first step of the mass rollout: seven million Linky meters in 2013/2015.

The comprehensive smart metering pilot, including 300,000 meters and 7,000 concentrators in total, was carried out in order to validate the technical performance of the smart metering solution and the smart Linky-meters developed especially for ERDF. Installation, logistics and rollout

management practices were tested and verified. A smooth rollout of meters is essential for success. Installation costs will amount to over 60 % of the total investment. The benefits in terms of distribution quality, customer satisfaction and internal efficiency had to be verified, too. The total investment of 4.4 billion Euro will be fully financed by ERDF, no additional costs will be allocated to the French consumers.

The pilot took place in the Tours region, a rural area, and Lyon, an urban area. By focusing on these two diverse regions, the widest possible variety of installation requirements could be tested. ERDF and Landis+Gyr evaluated physical meter installation as well as all the associated logistics. The partners took a careful look at production, warehousing, distribution and installation. They also ran tests on data collection and collating within the central system.

Smart technology for the future

"ERDF was very satisfied with the result of the pilot and has named Landis+Gyr a strategic supplier," says Christian Huguet, CEO Landis+Gyr France.

As the market leader, ERDF defined the functionality and technology of the entire smart metering solution to match their exact requirements now and in the future. The leading smart metering vendors work in consortiums for ERDF, in order to ensure interoperability between their systems and devices. Besides interoperability, a robust integration of ERDF's own communication network was a criterion for the technology.

Linky is a smart electricity meter, developed especially for ERDF, according to their specifications. It includes a breaker

ERDF in brief

ERDF, a wholly owned subsidiary of EDF, manages the public electricity distribution network for 95 % of continental France. The electricity network belongs to local authorities, who subcontract to ERDF to manage the network through a public service delegation. ERDF offers a number of services to its customers, whether private consumers, companies, local authorities, producers, suppliers or construction professionals.

for remote power disconnection and connection, advanced tariff management possibilities, and a two-way PLC communication modem, based on IEC61334 S-FSK profile. The future PLC-G3 OFDM standards have also been considered in the meter design. The system reads the data through concentrators and a GSM interface. In the pilot-phase, ERDF used the networks of the three main telco operators for better coverage. The pilot has proven that the Linky meters delivered by Landis+Gyr not only communicate reliably with the smart metering system, but also have the capacity to work in conjunction with all the different types of devices ERDF uses.

ERDF's desire is to upgrade every one of their meter points in the entire network and to initiate a conceptual change. The smart infrastructure with Linky meters forms the foundation for the future development. All of the expected functions of the AMM system point towards the implementation



of a true smart grid, where the network can be monitored, outages detected and even future infrastructure development can be planned.

Network status awareness

A major objective for the rollout is improved network monitoring. Based on the pilot experience this can be achieved. Meters will be smart enough to inform the central system about outages, in near real time. Once the smart meters are deployed, customer service will be able to tell if the meter is working or not in case of a black out. This will give an indication whether it is a network fault or one limited to the customer's building. Other services and functions are planned to clear the way for smart grid capabilities to take hold. The network will have load shedding and restoring functions. It will also be able to analyze load curves on the meters in the low-voltage nodes.

The near real time information of energy consumption and network status provides valuable information for investment planning and development of the network. Quality of power supply is another important issue. The AMM system can detect voltage drops or increases outside the accepted margins. Service capability will also greatly benefit from the ability to monitor the substations, with local events and even the substations temperature being surveyed remotely.

Customers engaged

The meters will be supplied to customers free of charge, with the additional costs of the deployment expected to be offset by the productivity gains ERDF will achieve. Starting in 2013, customers will benefit from new services, including invoices based on actual consumption, an improvement expected to eliminate the main cause of customer complaints. In addition, customers will have access to up to two years of consumption history online,

and they will be able to set consumption thresholds. Should they exceed their self-imposed thresholds, they will receive notification via SMS. The system also enables flexible tariffing and demand response. Thus, the end consumers can decrease their energy costs by adapting the timing of their consumption and the utility has powerful tools to cut off peak loads.

A strong partnership

Landis+Gyr has a long successful history of working with EDF (ERDF's parent company) and now with their distribution arm ERDF. As one of their preferred suppliers, Landis+Gyr provides them with residential and commercial meters and associated services. Historically, Landis+Gyr has a close cooperation with EDF's engineers and their marketing and sales teams in order to understand the customer's needs and provide them with the latest technology that meets their expectations and their specifications.

"Our ambition is to deliver 14 million Linky meters to ERDF during the rollout. This would mean a significant production capacity increase, and we are already planning to set up a new site in Montluçon", says Christian Huguet. "The Linky roll out is clearly a strategic project for French industry. It will create at least 10,000 jobs in France for seven years, and if we succeed around 100 people will be hired by Landis+Gyr in Montluçon."

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Building the foundation for smart infrastructure

Our technology

- 100,000 Linky smart electricity meters with breaker, tariff management possibilities and 2-way PLC communication modem
- 3,500 data concentrators
- Interoperability with the different types of metering devices ERDF uses

- + ERDF builds the smart metering system to enable implementation of a true smart grid
- + Improved network monitoring is one of the immediate benefits of the project, as the system provides comprehensive information on power quality and network status
- + Consumers benefit through billing based on actual consumption, on-line access to consumption history, and improved customer services