



EDP enhances energy management

Vodafone IoT enables EDP HC ENERGÍA to view real-time data on consumer electricity usage and improve service.

The future is exciting.

Ready?



Vodafone IoT provides EDP HC ENERGÍA with all the benefits of a smart grid

EDP HC ENERGÍA is one of the leading Spanish energy distributors. It forms part of the EDP Group and provides services for over 650,000 customers throughout the country. Vodafone IoT provides EDP HC ENERGÍA with smart metering data, including real-time information on the status of its distribution network and how its consumers are using electricity, the knowledge of which is essential for improving efficiency, quality, service and profitability.

The challenge

Connecting consumers in record time

In 2008, the European Union approved a directive stating that 80% of consumers must be able to monitor their energy usage by 2020. However, the Spanish government has already met this target and has established an even more ambitious goal. A 2007 ministerial decree requires all consumers to have this energy usage information by 2018, two years in advance of the European directive, and all meters with a contracted supply of up to 15 kW will be replaced by remotely managed smart meters.

EDP HC ENERGÍA launched its InovGrid project to implement this change and meet the requirements of the new regulatory framework. "With InovGrid, we were looking not just to replace old equipment with new smart meters and allow customers to play an active role in managing their energy usage; we also wanted to transform our distribution network into a smart grid. Doing this would enable us to improve service quality, energy efficiency, remote management (SCADA connectivity) of the grid and business profitability," explains Jesús Fernández López, Manager of the InovGrid Project at EDP HC ENERGÍA.



Power line communications are used to transmit information from smart meters in individual houses and buildings to the hubs at EDP HC ENERGÍA's transformer substations, where all the information received is grouped together before being sent to the company's control centres.

"In addition to 650,000 smart meters, the InovGrid project has also involved the installation of over 6,500 hubs, together with the communications required to transmit data quickly, securely and reliably," explains Jesús Fernández. "Vodafone is a key part of this process."

The Solution

Machine Link 3G and IoT communications

Each electricity hub is connected to a Machine Link 3G router (exclusive to Vodafone), which includes a global IoT SIM. Installation is straightforward and no special technical knowledge is required. The devices have been previously configured and only need to be connected to the electricity network and the hub, making it possible to start transmitting data across Vodafone's extensive mobile network right away.

The data is then sent to the EDP HC ENERGÍA data centre over two dedicated Vodafone lines. It is both encrypted and transmitted over a Virtual Private Network (VPN) to guarantee its security, confidentiality and integrity.

"In addition to our previous experience with the company and its in-depth knowledge of the energy sector, one of the most important factors in choosing Vodafone was the availability of a national roaming service. This means we can operate with any operator at any point on our distribution network," adds Jesús Fernández. "If there is no Vodafone coverage in a specific area or there is a temporary problem, the devices can connect to any other network, which prevents interruptions to service."

The integrated management of all implemented IoT solutions, including hardware, SIM cards, the management platform, national roaming and maintenance, is easy thanks to a single point of contact, Vodafone, helping make our prices more competitive.

“ We want to go beyond just providing our customers with remote metering and transform our network into a smart grid. Smart meters and Vodafone IoT communications provide us with all the information required to optimise the management of our electricity network.

Jesús Fernández López, InovGrid Manager, EDP HC ENERGÍA

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The Vodafone Managed IoT Connectivity Platform has an easy-to-use web-based interface and provides EDP HC ENERGÍA with the means to control and monitor all of its IoT devices, as well as managing activations and dealing with incidents, all in real-time.

“We used to have to read meters manually every two months, now we no longer need to physically read and record consumption. We no longer need to travel. Readings can be taken remotely, any day, any time,” explains Jesús Fernández, “providing us more detailed and accurate information that helps us practically eliminate the need for estimates of usage. All this makes us more flexible and rigorous when it comes to billing.”

“We want to go beyond just providing our customers with remote metering and transform our grid into a smart grid. Smart meters and the Vodafone IoT service provide us with all the information required to optimise the management of our electricity network,” adds Jesús Fernández. “The meters also work as sensors for a wide range of alerts and incidents. For example, we can locate faults and resolve incidents extremely quickly. Before we used to have to travel to the site and work our way along the lines to find faults, but we can now do this without having to leave the office.”

The Future

Improving energy efficiency

“There are a number of immediate benefits to consumers, such as a better service and improved quality,” explains Jesús Fernández. “Fault resolution is much quicker: things that used to take hours can now be fixed in a matter of minutes. What’s more, the available information makes consumers aware of not just how much energy they use but how they use it, allowing them to manage their consumption more efficiently and cost-effectively. Knowledge of their patterns of use and prices at the different times of the day allows them to modify their consumption profile and save money on bills. All of this is complemented by the speed with which it is possible to carry out certain remote operations, such as modifying power levels and connections or disconnections, reducing the execution time required for all these tasks.”

“Smart metering and Vodafone IoT have helped us manage our network more efficiently. Improved management of the network is essential for extending electricity generation to small scale production and self-consumption. We are moving away from a model based on a few large power plants to one based on thousands or millions of small plants - solar panels, small-scale wind turbines, etc.,” notes Jesús Fernández. “We’re aiming to provide the best customer experience by allowing the consumer to play a more active role in the management of their energy.”

The bottom line

- Vodafone IoT provides EDP HC ENERGÍA a full and easy-to-implement communications solution
- The coverage of the Vodafone network, together with national roaming, guarantees service anytime and anywhere in Spain
- Vodafone provides easy and integrated management of the implemented IoT service with a single point of contact

About EDP HC ENERGÍA

- EDP España has an installed capacity of 6 GW
- 42% of its energy comes from renewable sources
- A distribution network of 23,000 km
- A leader in electricity supply quality
- A natural gas distribution network of 10,000 km
- 2 million customers
- www.edpenergia.es

vodafone.com/iot

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