

Iberdrola moves forward in the synchronisation of distribution networks with British start-up SMPnet

- Smart Power Networks was the winner of the challenge launched by the Global Smart Grids Innovation Hub in Bilbao on the synchronisation of equipment from different manufacturers to work as one.
- They recently visited the Iberdrola Hub in Bilbao, which fosters a collaborative environment for future projects by testing with leading technology companies, such as the Basque company Ingeteam.

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Iberdrola's global innovation and smart grid centre in Bilbao continues to advance proposals to maximise the potential of smart grids as a vehicle for job creation and to develop the next generation of smart grids.

One of the focal points of this new hub is collaboration with start-ups from all over the world. Thus, among other initiatives, the company has launched several challenges or challenges in search of innovative solutions related to the area of networks.

The winners of one of them, the British company SMPnet, has been in Biscay these days with its project on the synchronisation of distribution networks. That is, the coordination of the operation of equipment from different manufacturers, synchronised to work as one.

This collaborative environment, fostered by the hub, aims for several collaborators to work together and for the companies in the Global Smart Grids Innovation Hub environment, such as the Basque company Ingeteam, to take advantage of the technology developed by an international start-up, while it obtains clients and business relations.

Yet another example of Iberdrola's collaboration with leading companies in the technology sector. Ingeteam has been visited at its Zamudio facilities by the promoters of this innovative project in grids in terms of the technological leap it represents in this coordination between various manufacturers of electrical equipment.

The GSGIH Challenge

Electricity is transmitted with a "three-phase voltage system", where three single-phase alternating voltages travel from generation assets to consumption points, passing through transmission and distribution grids, maintaining their frequency and with limited changes in their angles. However, distributed generation allows the creation of microgrids, areas of the distribution grid that operate disconnected from the rest of the grid at times of availability, improving the quality of supply. In these islands, the voltage is generated internally, so it is not synchronised with the rest of the grid. Iberdrola's team of experts in the Networks area uses various technologies to synchronously measure the magnitudes and angles between the phases along different points of the electricity grid. In order to maintain system stability, these phasor measurement units (PMUs) are mainly used in transmission grids, as they have traditionally been expensive.

Press release

However, there is an increasing need for phase measurement solutions in distribution networks due to the major changes and expansion these networks are undergoing as a result of the energy transition and the rise of distributed renewable generation.

Global Smart Grids Innovation Hub

The Global Smart Grids Innovation Hub is a pole of attraction for talent and promotion of new technologies that will enable the energy transition, maximising the use of renewables, fully integrating energy storage systems and optimising access to new uses of electricity, such as mobility and air conditioning.

Iberdrola and the Provincial Council of Biscay, which together with the energy company is promoting this public-private collaborative framework, have so far brought together the capacities of 50 industrial companies, universities and technology centres, which contribute their technological capacity, industrial character and research experience.

The smart grid innovation hub is also an international project, bringing together the potential of more than 200 professionals in the development of innovation projects to be developed in countries in Europe, America and the Middle East. So far, 120 projects worth €110 million have been identified.

The lines of work will provide solutions in new materials and technologies to reduce the environmental impact of electrical installations, equipment to facilitate the integration of renewable energies and boost the deployment of electric vehicles, power electronics and energy storage systems, and the digitalisation of the distribution grid supported by the latest generation of telecommunications systems, such as 5G. It will also promote solutions related to energy savings and efficiency based on demand management and the reduction of grid losses.

One of the hub's main areas of innovation is the digitalisation of the low-voltage grid, the basis for building the smart city of the future. In this regard, projects will focus on developing the new generation of smart meters and ensuring that equipment and the grid provide data and intelligence.

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