

HOW TO OPTIMIZE A SUBSTATION CAPABLE OF THE COLLECTION OF MORE THAN 50MW IN OFFSHORE WIND GENERATION ?



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THE COMPANY

We are a group that is engaged in the generation, distribution and marketing of energy and services, working to ensure the well-being of people, the progress of companies and society and the sustainability of the planet. Our objective of long-term value creation and sustainable management.

A multinational group operating in more than 20 countries. Our commitment to long-term value creation and sustainable management takes form in our Corporate Responsibility Policy. We currently have Electrical Substations in Asturias, some shared with Hidrocantábrico DE. Our commitment in the region comes since more than 60 years with the Thermal Power Plant in Narcea and our future commitment to invest and reconvert our thermal assets into renewable assets in the region.

Our Strategic Foundations seek to establish a business model focused on creating value. Naturgy is focused on responding to its own industrial model based on: Considering the energy transition as an opportunity. We are interested in growing new Energies Generations in Asturias. Especially Renewable Energies like Solar, Wind, Offshore floating Wind, and Hydrogen production.

Our approach and focus is to boost Offshore renewable generation in the region. We have presented our Manifestation of Interest to Ministry (MITECO) to develop floating offshore wind project and generate green hydrogen for consumption in the industry and decarbonization of the region. So we have two challenges in relation with this approach which have been submitted to the Resolutions Program.

THE CHALLENGE :

Naturgy has a great interest in promoting offshore renewable generation. Asturias and the Cantabrian region have enormous growth potential in marine technologies, but given the depth of our coasts it is necessary to find innovative solutions to optimize the installation. In offshore wind farms, both the power of the wind farm and its distance from the coast are determining factors in defining its connection scheme, the need for an offshore collecting substation and the evacuation line.

The balance between investment costs and energy losses until delivery at the connection point can make the difference between whether a project is viable or not, and therefore the search for a balanced technical-economic solution is essential. In the case of a large power farms, the evacuation of energy through a direct current line could even be considered, but if the converter stations are already elements that require a large investment on land, the economic requirements skyrocket even more so if one of the stations has to be offshore.

We need to optimize offshore wind farms in their design and connection. Objective: we launched the challenge of defining innovative solutions for the connection of the park considering its power and distance from the coast.

The substations for the conversion Alternating Current/Direct Current are expensive and if they also have to be floating their cost scalates. What technological solution is proposed for wind farms far from the coast?

THE EXPECTED BENEFITS

Technical and Economic Study to define innovative solutions for the connection of the offshore wind farm considering its power and distance to the coast.

Tracking will be close from Naturgy's Innovation team. If the solutions offered are disruptive and optimize our initial project, we try to implement them in those projects that we lead both in Asturias and in other regions. We are a company that can serve as a catalyst to expand Asturian technology to other geographies.