PRESS RELEASE

A technological boost for offshore wind power production in Spain

- *The Tekniker technology centre is playing a leading role in the OPTIMAR project by studying and designing advanced digital technologies aimed at optimising operation and maintenance for offshore wind turbine generators*
- *The initiative, funded by CDTI, will enhance the country's capabilities in terms of contributing towards the energy transition and achieving climate neutrality goals by 2050.*

[Eibar, November 13, 2024] – The 2021-2030 National Integrated Energy and Climate Plan (PNIEC) has envisioned 50 GW of installed wind capacity in Spain by 2030 to be provided by onshore and offshore windfarms. Consequently, the current figure of 25.7 GW will be doubled and a sizeable investment in R&D will be required during this period, mainly focused on offshore wind power.

It is in this context that the **Tekniker** technology centre, a member of the Basque Research and Technology Alliance (BRTA), has joined the **OPTIMAR** project this year that is funded by CDTI and supported by the Ministry of Science and Innovation via the TRANSMISIONES 2023 programme to help further Spain's energy transition. By designing innovative solutions applicable to offshore wind power, the aim of the project is to ensure optimum energy production at offshore wind farms so the resulting power can be fed into the grid.

Over the three-year lifespan of the initiative, new operation & maintenance (O&M) tools will be investigated to incorporate innovative technologies such as artificial intelligence (AI) to manage data more efficiently and boost real-time decision making by applying cutting-edge communication standards.

The end result is that Spain will be able to boost autonomous production and supply offshore wind power efficiently as stipulated by environmental standards and regulations whilst strict cybersecurity requirements are met.

Tekniker's scientific leadership

The scientific leadership role to be played Tekniker in the project will focus, firstly, on gathering more knowledge on how structural materials behave in marine environments although specifically focusing on corrosion and tribo-corrosion processes. The information obtained will allow for the generation of advanced methods that will monitor the degradation of wind turbine generator structures.

Secondly, the technology centre will investigate how AI technologies can be applied to obtain robust algorithms to detect, diagnose and predict structural and mechanical anomalies by using data-based digital twins as well as operating and condition images whilst ensuring data security and privacy.

Thirdly, Tekniker will implement simulation and optimisation technologies for O&M tasks and strategies at offshore wind farms and look into how they can be integrated in the grid to improve system reliability, maximise the utilization of resources and quantify the potential for improvements. All developments originating from OPTIMAR, that will be coordinated by ISATI Engineering Solutions, will serve to boost Spain's scientific-technological efforts aimed at generating offshore renewables that have been identified as one of the fundamental pillars to achieve the 2050 climate neutrality goals set at COP21 in Paris.

In addition to the previously mentioned Tekniker and Isati Engineering Solutions, the OPTIMAR project will also feature organisations such as HI IBERIA Ingeniería y Proyectos S.L., Grupo Técnico RIVI S.L., ENEROCEAN S.L., IDNEO TECHNOLOGIES, S.A.U., Atten2 Advanced Monitoring Technologies S.L., DataDron S.L., Fundació Institut Recerca Energia de Catalunya and the University of Salamanca.

More about Tekniker

Tekniker is a technology centre that specialises in advanced manufacturing, surface & material engineering and ICTs for production. Its mission is to further growth and wellbeing via R&D&I in society as a whole by furthering the competitiveness of the industrial fabric in a sustainable manner. Tekniker is a member of the Basque Research and Technology Alliance (BRTA).

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