IREC AND THE ZÈFIR PROJECT

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The Catalonia Institute for Energy Research (Institut de Recerca en Energia de Catalunya, IREC) was set up in 2008. The centre is an example of a strong commitment to research and technological development within the energy sector and is currently the research centre of reference in the energy sector in Catalonia. It specialises in research and technological development related to energy saving and efficiency and renewable energy. Specifically, it addresses technological areas related to microgrids, electric vehicles, energy storage, building efficiency, bioenergy and biofuels, lighting, and offshore wind energy. The Institute also has a department for electricity and power electronics, another for energy materials research, design and characterisation, and a department working on energy economy. The IREC's main mission is to draw on, develop and implement current scientific and technological knowledge, contribute to sustainable development and increase business competitiveness through innovation, as well as to develop new technology products.

The coming years will be decisive in placing countries at an advantage or disadvantage when it comes to facing the challenges of energy supply sources, environmental protection and the economic competitiveness of their industrial structure. For all these reasons, urgent endeavour is called for in the energy sector to promote knowledge generation through technological research and development, and making it available to the business sector. Coordinated guidelines should also be established in order to address this new emerging model together, as we are heading towards a new global energy scenario. Issues such as energy supply safety and respect for the environment are gaining momentum in the design of a new model that must prevail over conventional energy sources. Accordingly, the energy business model is changing and there are new technological opportunities and challenges facing industry in this sector, as well as others involving this economic activity.

■ ZÈFIR: OFFSHORE WIND ENERGY

In this context, trends in the wind energy market are changing, and wind turbines are starting to be erected out at sea (offshore) rather than on land. The first offshore projects were built in the North Sea, due to its shallow depth; however, this feature is unique and therefore wind turbines must be placed at greater depths, requiring the application of new technologies. In this respect, the industry is busy developing prototypes and associated technologies, thus making the field of offshore wind one of the few sectors booming at present.

Given this scenario, IREC is leading an ambitious project within the area of research into offshore wind: the Zèfir Test Station. This is the development of an international test-site for offshore wind turbines where, on the one hand, industry can test its new technological developments and, on the other, the IREC can contribute its technology and know-how to the foresaid companies. This is a project built on the basis of technological research, training and creating new business opportunities for the business sector.

It is an ambitious project which, given its uniqueness, will become a driver of economic development and knowledge in the Tarragona region and in Spain. The project will facilitate the creation of an associated industrial structure, with great export potential and tangible benefits, such as the creation of jobs, specialised training and dissemination centres. The programmes run at the Zèfir Test Station include environmental monitoring as well as technical and touristic visits. In short, the Zèfir Test Station is a unique project of great strategic value, as it provides an opportunity for Spain to lead a new industry with high international demand. ◉

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The visual impact of offshore wind turbines, seen from the coast, will be very low, as shown in these simulations (Ametlla de Mar, El Baix Ebre, Tarragona, Spain).

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