



WINDQUEST

DEMONSTRATOR FOR FLOATING OFFSHORE VERTICAL-AXIS DUAL-ROTOR WIND TURBINE

The WINDQUEST project is seeking to develop the innovative technology required for a floating offshore vertical-axis dual-rotor wind turbine (DRWT). Unlike traditional offshore and onshore wind turbines with a horizontal axis, the floating turbine developed by HydroQuest is characterised by its vertical axis.

Its form is designed to generate a maximum of 10 megawatts. This target output is equivalent to that of horizontal-axis wind turbines on other projects.

The unique vertical-axis design offers several advantages. The bulk of the DRWT structure is concentrated at the foot of the mast. Its centres of gravity and thrust are therefore situated 20% lower than in wind turbines with a horizontal axis. Given its greater stability, this turbine can be installed on a floater that is 40% smaller. This implies lower manufacturing costs and, consequently, a cheaper final kWh cost.

A further advantage is that the WindQuest wind turbine copes better with variations in wind direction than traditional wind turbines, which must orientate their rotor accordingly.

A series of experiments was launched in July 2019 in the Ifremer test basin to characterise the behaviour of wind turbine structures subjected to the effects of the thrust generated by the rotating blades.

The first phase involves testing the reaction of the floater supporting the wind turbine. Once this phase has been completed, the intention in 2020 is to test the same floater but under dynamic thrust, and then run trials at sea in 2021 at Ifremer's Sainte Anne du Portzic test sites using a 1/10th scale demonstrator with a target output of 2000 kW.

Partners

COM_PROJECTS_CATEGORIE_PARTNER_ENTREPRISES

HydroQuest, Meylan [\[Project Developer\]](#)

Research center

Ifremer, Plouzané

Funder

En recherche de financement

Labelisation

26/04/2019

Overall budget

2 950 K€