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19 December 05

QinetiQ's ZephIR to assess wind resource at world's deepest offshore wind farm

ZephIR undergoing landbased trial

Hi-res version on plain background (596kb)

QinetiQ's highly accurate wind sensing tool, the *ZephIR* LiDAR, has been selected to assess the wind resource for the Beatrice wind farm demonstrator project in the North Sea off the coast of Scotland. *ZephIR*, which provides developers with a clear picture of wind flow and behaviour at a particular site, can help to ensure optimal siting of wind farms and assess operational turbine performance.

The Beatrice demonstrator project is being developed by Talisman Energy and its co-venturer Scottish and Southern Energy, and will install two 5 megawatt wind turbines in 45 metres of water in Talisman's Beatrice field, 23 kilometres off the east cost of Scotland. It is part of the European DOWNVInD research and technology development programme, sponsored by the European Commission, the DTI and the Scottish Executive.

The *ZephIR* system will first undergo a series of evaluation and certification tests to ensure the accuracy of its wind measurements. These tests will be conducted by the German company Windtest at two sites, the Brunsbüttel test facility in western Germany and the FINO-1 platform in the North Sea off the German coast.

Welcoming the selection of *ZephIR*, Allan MacAskill, Talisman Energy's project manager, said: "The Beatrice offshore demonstrator project is an ideal example of the application of UK technology to overcome the significant challenges of wind resource measurement in a harsh, remote, offshore environment."

Ian Locker, QinetiQ's Director of Renewable Energy, said: "We are delighted to have been selected for this important project and that the potential significance of the *ZephIR* system has been recognised. *ZephIR* is the culmination of five years of development effort and has already undergone extensive onshore testing with the Danish National Laboratory, Risø. We are confident that we can now prove the value of the technology in an offshore environment."

The Beatrice demonstrator project has been incorporated into the pan-European initiative, DOWNVInD (Distant Offshore Wind farms with No Visual Impact In Deepwater). DOWNVInD has been established as a catalyst for commercialising deepwater wind farm technology and includes 14 different organisations from six European countries.

QinetiQ's *ZephIR* system is based on LiDAR (Light Detection And Ranging) and works by measuring the Doppler shift of radiation scattered from a moving object. In the case of wind LiDAR, the objects off which the radiation scatters are actually airborne particles - typically dust or water

droplets which are carried along with the wind. In this way wind speed and direction may be measured remotely from a ground-based instrument.

ZephIR is able to measure horizontal and vertical wind velocity to a height of 150m from the ground and has already proven its accuracy to be comparable to the best calibrated cup anemometers.

> More about ZephIR

Press Officer: Ben White
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