



Marine renewables

The marine renewables industry has experienced a number of marine blade failures. These failures are due to the harsh operating environments in which tidal devices are deployed.

There is currently no industry standard for the testing of tidal turbine blades, Narec will follow similar principles and apply techniques currently used in the testing of wind turbine blades.

Narec will also utilise tidal modelling studies undertaken for the development of its new 3MW drive train facility, to select appropriate loading for the testing of tidal blades.

Marine tidal turbine blade testing

Narec is currently developing a capability for the testing of marine tidal turbine blades at its existing wind turbine blade testing facility in Blyth, Northumberland. The facility, expected to be ready for commercial testing by late spring of this year, currently has a number of customer enquiries to test marine blades.

Modifying the wind turbine blade testing facility

Narec has operated its existing wind turbine blade testing facility since 2006, testing methodologies transferred from Narec's track record of testing wind turbine blades have been adapted and modified to accommodate tidal turbine blades on a second hub, within the existing facility, to meet developer requirements for the testing of smaller and more rigid tidal turbine blades.

Outcome

The modifications will improve the capability of the open-access prototype testing facility and increase accessibility for the marine renewables industry. In the longer term, the facility will help improve the robustness of future marine designs; helping to reduce the risk of failure once deployed.

Supported by funding from One North East, procurement of additional hydraulic actuation, instrumentation and data acquisition equipment will be commissioned to enable the facility to be suitable for both static and fatigue testing of marine turbine blades.

Following consultation with the marine renewable industry, Narec is working on a number of commercial enquiries and anticipates that a full testing programme, including static and fatigue testing, will take 6-8 weeks.



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