



CASE STUDY

ANAKATA & VENTIENT ENERGY

ORE Catapult is collaborating with Anakata, Ventient Energy and Swansea University through its Marine Energy Engineering Centre of Excellence (MEECE) on a project that aims to better understand leading edge erosion and its effects on wind turbine performance.

The project will test a number of widely used wind turbine aerofoil profiles in Swansea University's wind tunnel under a range of erosion states to assess how aerodynamic performance is impacted. The results will be applied to Ventient Energy's Ffynnon Oer wind farm in South Wales, where 16 x 2 MW wind turbines have been operating since 2006. The project will conduct infrared thermal imagery measurements at the wind farm to understand current blade condition and how wind flow behaviour around the blades is being affected by erosion. Lastly, ORE Catapult will perform aeroelastic modelling to identify how performance can be recovered at the wind farm using blade furniture solutions developed by Anakata.

“Leading edge erosion is a widespread problem to both onshore and offshore wind turbines and the industry currently has a poor understanding on quantifying its effect on performance. This collaborative project aims to develop a database on blade erosion state such that it is possible to make informed decisions on when it becomes cost-effective to address leading edge erosion.”

Magnus Harrold
Innovation Manager, ORE Catapult

“This project is an excellent opportunity for Anakata to build on its experience examining the effects of leading edge erosion on different blade profiles, quantifying the impact on energy production and developing remedial solutions that help recover lost production and reduce the impact of future erosion. It is also great to be working again with ORE, MEECE and Ventient Energy, delivering solutions for both onshore and offshore.”

Huw Griffiths
CEO, Anakata

“Leading edge erosion is a key challenge for Ventient Energy, from both a structural integrity and a power performance point of view. This project will equip us with empirical data which we can implement into our processes to better understand and quantify the performance impact of leading edge erosion, helping us make better informed decisions on remedial actions and to maximise the power performance of our fleet. We are excited to be able to use our Welsh wind farm, Ffynnon Oer, in the project.”

Steven Heath
Lead Mechanical Engineer, Ventient Energy



In collaboration with:



Cardiff Metropolitan University

Prifysgol Metropolitan Caerdydd