

CASE STUDY



SUB-MEGAWATT POWERTRAIN TESTING TO OPTIMISE DESIGN OF TURBINE ELECTRICAL GENERATION AND POWER TAKEOFF

Tocado International and ORE Catapult collaborated as partners of the TIDAL-EC* project, involving research and development activities to substantially improve the economic competitiveness of tidal stream power generation – a key developing sector of the offshore renewable energy market.

The project's overall objective was to optimise and improve tidal turbine reliability, increasing power conversion efficiency and facilitate reduction in the cost of tidal power. The project also supports SME tidal developers in offering warranties and guarantees to end customers, enabling large scale roll out of tidal energy in the EU.

ORE Catapult's role in TIDAL-EC was to provide the powertrain expertise and facilities in order to validate and optimise Tocardo's T2 turbine. Specifically, the project focussed on two critical components: the power take off system and the electrical generator. ORE Catapult's drivetrain experts were challenged to develop a 1MW powertrain test rig, including a bespoke tank for submerging the generator, as well as support Tocardo's T2 testing programme.

As a result, Tocardo were able to conduct a successful test programme before deploying eight T2 turbines at the European Marine Energy Centre (EMEC) in Orkney for further validation testing.

“ It was a valuable experience for Tocardo to test our T2 turbine at the new test rig and it gave us a lot of information ”
Hans van Breugal, Chief Operating Officer at Tocardo International



Increasing economic competitiveness of tidal stream power generation for large scale roll out in the EU.



Designing and developing a bespoke solution in response to the powertrain testing requirements of TIDAL-EC.



Supporting disruptive SME tidal solutions technology and innovation – increasing investor confidence.

Inovo
121 George Street,
Glasgow, G1 1RD
T: +44 (0)333 004 1400

National Renewable Energy Centre
Albert Street, Blyth,
Northumberland, NE24 1LZ
T: +44 (0)1670 359 555

Fife Renewables Innovation Centre (FRIC)
Ajax Way,
Leven, KY8 3RS
T: +44 (0)1670 357 649

ore.catapult.org.uk
@ORECatapult
info@ore.catapult.org.uk