



ITEG: Integrating Tidal Energy into the European Grid

The ITEG (Integrating Tidal Energy to the European Grid) project will adopt three low carbon technologies to demonstrate a combined tidal energy and hydrogen production solution for clean energy generation in remote areas facing grid export limitations.

The integrated solution combines Orbital Marine's O2 2 MW tidal turbine with a custom built 500 kW AREVA H₂Gen electrolyser and a smart onshore energy management system (EMS) to be designed and installed at the European Marine Energy Centre (EMEC)'s hydrogen production site on Eday.

The EMS will enable EMEC to control whether the power produced by the Orbital O2 is fed into the national grid or into the AREVA H₂Gen electrolyser to produce hydrogen.

A roadmap will be produced to support the replication of the integrated hydrogen production solution in other remote areas of North-West Europe and globally.

ITEG Objectives

The ITEG project will develop and validate an integrated hydrogen production solution to overcome grid constraints in remote communities.

The project aims to:

- Open new market opportunities for the ocean energy sector through hydrogen production and energy storage;
- Optimise the EMS and fast-track a clean energy generation, management and storage solution towards commercialisation;
- De-risk future integrated energy generation and hydrogen production projects;
- Build a roadmap to support replication of the integrated tidal and hydrogen production solution in other remote, grid restricted regions.

Orbital O2 2MW



Device model courtesy of Orbital Marine Power



ITEG project in numbers

- 20** Maintained direct jobs
- 40** Maintained indirect jobs
- 3** Applied low carbon technologies
- 3000** Tonnes estimated reduction in GHG
- 850** Homes to be powered by the additional capacity of renewable energy produced
- 15** Enterprises cooperating with research institutions

Interreg North-West Europe Programme

Interreg North-West Europe is a European Territorial Cooperation Programme funded by the European Commission including eight countries of the region.

The objective of the programme is to encourage high levels of innovation, sustainability and cohesion between regions of North-West Europe, reducing socio-economic disparities.

The ITEG project has a budget of € 11m until 2020 and contributes to the programme's Low Carbon thematic priority.

AREVA H₂Gen Electrolyser



Photo courtesy of Areva H2Gen



ITEG consortium

Led by EMEC, the ITEG project is made up of a consortium of leading research institutions, regional development agencies, tidal energy and hydrogen infrastructure developers spanning four countries in North-West Europe: UK, France, Netherlands and Belgium.

