

Advancing Renewable Energy

www.narec.co.uk

National Renewable Energy Centre
Accelerating the Deployment of Offshore Renewables



50m blade test facility, Narec.

800kV HVDC valve stack testing, Areva.

Oyster® Wave Energy Device, Aquamarine Power.

Introducing Technology-led Innovation

Narec is the UK's national translational research centre for accelerating grid integration of renewable energy systems and catalysing the development and deployment of offshore wind, wave and tidal energy generation technologies.

Our highly experienced, multidisciplinary team of scientists and engineers operate some of Europe's largest translational research and testing facilities for electrical networks, offshore wind, marine and tidal power generation technologies.

Clients range from large multi-national companies, to technology start-ups, local authorities and major investors in renewable energy projects. We play an important role in supporting delivery of the government's policy objectives and in attracting and anchoring internationally mobile investment to the UK.



Andrew Mill

Andrew Mill CEO



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Project Snapper, linear generator for marine wave energy extraction, Seventh Framework Programme (FP7).



Aerogenerator, offshore vertical axis turbine, Wind Power Limited.



ADCP deployment and modelling of tidal turbine performance for Narec 3MW drive train rig development, operational 2012.

RESEARCH



ROV factory acceptance trials, Soil Machine Dynamics Ltd (SMD).



'Tidel' tidal stream generator, SMD Hydrovision.



Oyster wave energy device power take off simulation.

DEVELOPMENT



15MW drive train test facility, Narec, operational 2013.



100m blade test facility, Narec, operational 2012.



Training Tower, Narec.



Offshore substation, Lillgrund, Sweden, Siemens.

DEPLOYMENT

Applied Research

Narec undertakes mission-oriented research, development and demonstration projects between Technology Readiness Levels 3 and 8 - the range between proof-of-concept and system test and demonstration.

We adopt an open access model and collaborate closely with a global network of universities, businesses and governments to secure breakthroughs in the design, deployment and commercialisation of renewable energy technologies.

Narec has been successful in securing a wide range of European (e.g. FP7) and national research and development projects and has worked with more than 60 UK and international universities.

Prototype Development and Testing

The scale-up of new, more reliable and cost effective renewable technologies required globally, demands that new ideas are brought to the market quicker than ever before. Our technical facilities are sized to address the problems and issues faced by companies seeking to develop and demonstrate technologies at full scale. Synergies and crossovers between offshore wind and marine energy technologies must be exploited to reduce the cost of energy offshore.

Narec works with developers to take their new concepts into the open sea and with the wider marine renewables industry, to tackle the technical, logistical and commercial challenges to be overcome. We offer a controlled testing ground; supporting projects through all stages of development from idea generation to design fulfilment and installation in the field.

Proving Performance to Mitigate Technical and Market Technology Risk

Narec's technical and market know-how is playing a critical role in the innovation and commercialisation process for the development of new wind, wave and tidal technologies.

Our technology testing and demonstration assets are focused on accelerating the transformation process for taking new ideas to commercial success. These unique facilities are aimed at de-risking the development of the offshore renewable industry in the UK, in order to build confidence in the capital markets and progress proposals for new offshore power plant.

Understanding reliability and being able to forecast performance before plant is built is the only way to minimise uncertainty in the market. Narec informs this process, based on solid performance data and our experience of working with whole power systems.