

Technology Strategy Board

Driving Innovation

Press Release

23 July 2010

UK's wave and tidal stream technology companies receive £7m to boost innovation

Over 35 British businesses and universities have been offered support worth £7 million to help them to develop the wave and tidal energy technologies of the future. The investment has been allocated through a collaborative research and development funding competition designed to support innovation that will lead to the cost effective exploitation of UK and global wave and tidal stream resources.

The nine research and development projects will focus on the twin aims of driving down the cost of energy while improving the reliability and performance of wave and tidal stream energy devices. Some of the projects will look to enhance the performance of existing devices while others aim to develop novel, breakthrough concepts.

Research and development to be undertaken through this funding ranges from work to maximise the reliability and performance of tidal turbine blades and to advance the performance of wave energy technology through to the development of new devices for use in deep water locations. The Technology Strategy Board is investing £6.6m in the nine projects while the Engineering and Physical Sciences Research Council is contributing £400,000.

Energy Minister Charles Hendry, visiting Marine Current Turbines' SeaGen project in Northern Ireland today, said:

“As an island, the UK is surrounded by a massive energy resource. Wave and tidal stream technologies have the potential to supply millions of homes with low carbon energy – reducing our dependency on foreign energy imports and cutting dangerous greenhouse gas emissions. The UK has world-class engineering and offshore expertise and skills. These nine projects will drive forward the development of these technologies. They will help produce the innovations needed to bring down costs of marine energy, and improve performance to allow marine technologies to take their rightful place as part of a secure, low carbon system in the future.”

Iain Gray, Chief Executive of the Technology Strategy Board, said:

“By 2050 we are going to have very different energy needs than we have today and we will be getting our energy from different sources. The UK is well placed to exploit wave and tidal stream energy resources with all of the coast line that we have, and it is expected this kind of technology will be an important part of the renewable energy mix needed in the future.

“We still need to prove which technological solutions will most successfully harness marine energy and we need to reduce the cost of the energy produced to make the technology competitive with other renewable energy solutions. So there are a range of technological challenges to address.”

The nine projects funded by the Technology Strategy Board are led by Aquamarine Power Ltd, Aviation Enterprises Ltd, AWS Ocean Energy Ltd, Fred Olsen Ltd, Green-Tide Turbines Ltd, Marine Current Turbines Ltd, Offshore Wave Energy Ltd, Small Hydro Company Ltd and Tidal Generation Ltd

This competition is designed to complement the Carbon Trust's Marine Renewable Proving Fund. Together, these activities aim to advance wave and tidal stream technologies along the innovation chain in a concerted effort to grow business opportunities and achieve the government's renewable energy targets.

A second £3m Technology Strategy Board funding competition, due to open in September, focuses on supporting the deployment of pre-commercial full scale devices installed and operating in the sea. The competition will focus on monitoring the performance of devices and ensuring that they are reliable and can be installed and maintained effectively. This is specifically aimed at businesses that are already working towards full scale deployment of their technology.

Ends

Editor's notes

1. Case study examples of some of the successful projects:

Project Title: BOLT-2-WAVEHUB

Partners: Fred Olsen Limited (lead); Supacat Limited, Scotrenewables Ltd, University of Exeter

Description: BOLT is the name of the Fred Olsen wave energy device which has undertaken sea trials since June 09.

The BOLT-2-WAVEHUB collaborative project aims to integrate elements that will make truly pre-commercial deployment at the WaveHub site a reality. This will be achieved by reducing the production costs of wave energy converter units and by reducing the costs and risks of deployment, installation & retrieval processes of wave and tidal devices.

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Project Title: Maintenance Strategy and Remote Ballasting for Oyster wave energy converter

Partners: Aquamarine Power Limited (lead), BAE Systems Surface Ships Limited

Description: Aquamarine is currently developing Oyster 2, a next-generation demonstrator mini-array comprising 3 Oyster flaps. Rated at 2.4MW, Oyster 2 is scheduled for first installation at EMEC in 2011. This project will investigate and assess opportunities to decrease the delivered cost of wave energy from commercial Oyster arrays through significant improvements in device reliability and maintenance costs.

Contact: Jessica Owen, jessica.owen@aquamarinepower.com, 0131 718 6450 / 07807 239659

Project Title: Fully Submerged Evolution of SeaGen for Exposed Open Deep Water Locations

Partners: Marine Current Turbines Ltd (lead), Mojo Maritime Ltd, University of Edinburgh, Queens University Belfast

Description: This proposal is for a novel fully submerged (but surfaceable) turbine array utilising a novel mooring system to enable Marine Current Turbines to address deep water sites, sites with large tidal ranges or sites with significant wave environments. The evolution of the technology will build on the success of the SeaGen surface piercing using demonstrated components and fundamentals, such as the drive train and control systems.

Contact: David Ainsworth, david.ainsworth@marineturbines.com, 0117 979 1888

Project Title: Assessment of novel WEC with rubber air-water interface; performance validation, optimisation and demonstration of associated cost benefits

Partners: AWS Ocean Energy (lead), University of Strathclyde

Description: The AWS III system is a toroidal self-reacting surge/pitch mode multi-cell floating wave energy converter (WEC) that harnesses power from off-shore ocean waves to generate electricity. Reinforced rubber diaphragms

convert wave action to pneumatic power which in turn is converted to electricity by turbine-generators. AWS has acquired and developed transformational IP relating to the design and form of the rubber diaphragms.

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2. The **Wave and Tidal Stream Energy Technologies: Reducing Costs and Improving Performance** funding competition was managed by the Technology Strategy Board in partnership with the South West Regional Development Agency (SWRDA). SWRDA hope to be in a position to make an announcement shortly about providing financial support for a further research and development project through this competition.
3. For a complete list of the nine projects please visit: [Wave & Tidal Stream Energy Technologies - projects to receive support](#)
4. **Wave and Tidal Stream Energy Technologies: Underpinning Deployment.** Due to open in September 2010, this £3m competition will support applied research and experimental development addressing the challenges of verification of performance, device reliability in real environment and installation, operation and maintenance methodologies. The competition is targeted at pre-commercial, full scale wave and tidal stream devices that are looking to progress rapidly towards being eligible for the Government's Marine Renewable Deployment Fund and full scale deployment and those that have benefitted from the Carbon Trust's Marine Renewable Proving Fund. The deadline for receipt of applications for this competition is 21 October. To view a two page scoping document which provides information about the specific areas within the competition, please visit: <http://www.innovateuk.org/assets/pdf/competition-documents/briefs/waveenergytechunderpinningdeployment10-006.pdf>
5. As outlined in the Technology Strategy Board's Energy Generation and Supply Strategy (http://www.innovateuk.org/assets/pdf/Corporate-Publications/EnergyGenSupply_strategy.pdf), wave and tidal stream technologies are a priority for the Technology Strategy Board and we aim to help in identifying those technologies that will enable cost effective exploitation of UK and global wave and tidal resources. Together with the Marine Renewable Proving Fund we aim to help to achieve the conditions necessary to access Government's Marine Renewable Deployment Fund, fiscal incentives such as the Renewable Obligation, and private investment.
6. The UK has signed up to the EU Renewable Energy Directive which includes a UK target of 15% of energy from renewable sources by 2020. This target is equivalent to a seven-fold increase in UK renewable energy consumption from 2008 levels.
7. The Technology Strategy Board is a business-led executive non-departmental public body, established by the Government. Its role is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve quality of life. It is sponsored by the Department for Business, Innovation and Skills (BIS). For more information please visit www.innovateuk.org.
8. Companies and other organisations seeking further information about these and other funding competitions should visit the Competitions page of the Technology Strategy Board website –www.innovateuk.org - email competitions@tsb.gov.uk, or phone the Competitions Helpline at 0300 321 4357

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