

AWS and Trident Energy collaborate to “control pressure” in new innovative wave energy device

17 October 2016

AWS and Trident Energy have today jointly announced the signing of a Memorandum of Understanding (MoU) which will see the two companies working together on an optimised wave energy converter (WEC) design. The improved Archimedes Waveswing™ WEC will be fitted with Trident Energy’s optimised PowerPod™ II direct drive linear generator technology.

The Archimedes Waveswing WEC takes a highly efficient sub-sea pressure-differential point-absorber concept and combines it with efficient linear generator technology and advanced control algorithms resulting in maximised yield.

Trident Energy’s PowerPod II is a highly scalable and modular Power Take-Off (PTO) system based around a patented tubular linear generator design. The PowerPod II combines Trident’s linear generator with proven off-the-shelf solid state power electronics to provide a full 4-quadrant generator control capability. The generator control system enables fully reactive force feedback in real-time on a wave by wave basis, thus maximising efficiency.

The AWS and Trident teams will work together to further develop an advanced control system and share their existing numerical models to develop a complete “wave-to-wire” system model of the full Waveswing WEC.

Wave Energy Scotland (WES) is providing financial support to both AWS and Trident Energy under separate funding calls. AWS secured £285k of funding for its Stage 1 project in the Novel Wave Energy Converter (NVEC) call. Trident has secured £485k of Stage 2 funding for its “WaveDrive” project in the “innovative power take-off systems” call.

Simon Grey, AWS CEO commented: “We are delighted to be working with Trident Energy on this initiative. The Archimedes Waveswing is one of the most structurally efficient wave energy converter designs however economic performance is critically dependant on our ability to control the device in real time using our advanced algorithms. The Trident linear generator allows us to achieve this whilst also delivering best-in-class cost per kW and a highly robust design”.

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Steve Packard, Trident Energy CEO said: “We are really looking forward to working with the AWS team and delivering a fully controllable PTO system, tailored for optimal performance of their Waveswing device. I am delighted that Trident and AWS are working together to bring a “next generation” WEC to market. Integrating the technologies is an exciting development for us and I believe it demonstrates the maturing nature of the marine energy sector as a whole.”

Tim Hurst, WES managing Director added: “We are very pleased to see the development of this new collaboration of a WEC (wave energy converter) developer and PTO provider. It’s something that we’re keen to encourage, especially within the WES programme.”

Notes for editors

About AWS

AWS Ocean Energy has been developing marine energy systems for over 10 years. We work with customers and development partners to produce solutions to offshore power needs from isolated power supplies for remote communities and aquaculture through to the multi-MW AWS-III utility-scale wave power generator. For further information see: www.awsoccean.com

About Trident Energy

Trident Energy’s PowerPod uses a linear generator to convert the motion in sea waves directly into electricity, without the need for intermediate systems such as gearboxes and hydraulics, and thereby potentially offering a simpler, lower cost and more reliable power take-off (PTO) solution for the emerging wave energy sector.

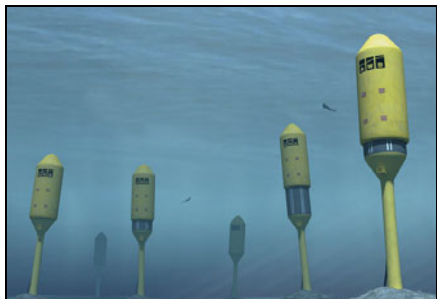
PowerPod PTOs offer 4-quadrant system control capability which can be operated in real-time using solid state power electronics. Using this approach to deliver WEC (wave energy converter) system control capability means the PowerPod PTO is able to instantaneously alter the spring and damper characteristics and thereby opening the door to advanced WEC control systems.

The rapidly emerging advanced control systems for WEC devices are seen as a possible “step change” in the economics of converting wave energy into low cost renewable electricity.

- For further information see www.tridentenergy.co.uk
- Press enquiries or requests for supporting images should be directed to Simon McKay on +44 (0)1353 741075 or email to simon@simonmckaypr.com

Photography

A high resolution version of the image embedded in below has been attached to the original email or is available from Simon McKay (contact details above).



1 – AWS and Trident Energy will work together to optimise the design of the Archimedes Waveswing WEC (shown above) and to help bring a next generation device to market. The Waveswing reacts to changes in sub-sea pressure caused by passing waves and is designed to provide reliable and affordable power for maritime communities and offshore applications.

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