

# Wave energy developers team up with Bosch Rexroth



*Wave industry leaders including Edinburgh's Aquamarine Power and Bosch Rexroth join forces to develop a standardised offshore power system*

Ground-breaking project offers a 'quantum leap' for the wave energy sector

Pan-European collaboration brings leading players together for first time

A number of leading wave energy firms have joined forces with global drive and control manufacturer Bosch Rexroth in a bid to create a standardised, self-contained offshore electricity generator for the wave industry.

The project tackles head-on one of the biggest challenges in wave energy – how to generate electricity reliably and cost effectively at sea – and has the potential to “transform the wave industry in the same way the internal combustion engine made the motor car possible,” according to Aquamarine Power Chief Executive Officer Martin McAdam.

The new collaboration brings together project founders Aquamarine Power and Bosch Rexroth, along with wave technology developers Albatern, Carnegie Wave Energy UK and Professor Stansby of Manchester University. It also includes Irish utility ESB which is developing the European-funded Westwave wave farm off the west coast of Ireland.

The WavePOD (Wave Power Offtake Device) will provide a commercial solution for the problem most wave energy

developers face in transforming linear motion into electrical energy. It comprises an offshore hydraulic generator housed in a sealed nacelle which generates electrical power which is then cabled back to shore.

Bosch Rexroth and Aquamarine Power have already made significant progress with the project and are developing a tenth-scale prototype to be tested at the world-leading Institute for Fluid Power Drives and Controls (IFAS) at Aachen University, Germany.

Commenting on the project Louis Verdegem, ocean technology specialist at Bosch Rexroth, said: "Creating a way of converting kinetic energy into electricity is essential if we are to effectively harness the power of waves. Currently however, cost effective transformation of the captured energy into electricity remains beyond the industry's grasp. This is due in part to the fragmented nature of current research and development, which is largely commissioned by individual manufacturers. Through this collaboration we expect the use of standardised components and system architectures to accelerate learning and propel the industry forward."

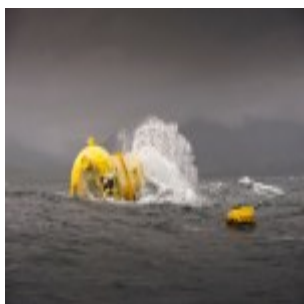
The pan-industry initiative has been welcomed by trade body Ocean Energy Europe. Their Chief Executive Officer Dr Sian George said: "If Europe is to turn its advantage in ocean energy technologies into a new industrial sector, collaboration will be key. The WavePOD project provides a vehicle for ocean energy developers from all over Europe to work together and tackle problems in an efficient and cost effective way. We would encourage as many developers as possible to get involved in this project and hope to see this partnership approach applied to other barriers on the road to commercialisation."



Martin McAdam CEO of  
Aquamarine Power

“WavePOD is a quantum leap for the wave energy industry,” says Martin McAdam, Chief Executive Officer of Aquamarine Power. “The global wave energy market has an estimated value worth hundreds of billions of pounds and the WavePOD addresses the sector’s challenges of improving reliability, developing standard components, fostering collaboration and driving down costs.

“This is a historic moment for the industry as it is the first time technology developers have come together to solve a key industry challenge. It is my passionate belief that the only route to commercialisation is through collaboration, where we work together to solve the common problems we all face.”



The project has been welcomed by Brendan Barry, Manager, Emerging Energy Technologies at ESB, who said: “Wave energy has the potential to provide large quantities of indigenous, renewable energy and reduce our dependence on imported fossil fuels. A number of companies have demonstrated concepts for capturing this energy at scale. As an end user of this type of equipment at the ESB Westwave project and follow on developments in Ireland and Europe, I am pleased to see the collaborative WavePOD project driving innovation towards a low carbon future.”

Commenting further on the programme, Tim Sawyer, Project Development Officer at Carnegie Wave Energy said: “Working with Bosch Rexroth we intend to create an industry-enabling technology which will be available as a commercial product for a range of different ocean energy technologies. This makes a huge amount of sense for the industry – rather than every company developing its own power offtake technology, WavePOD will be a standard product which frees companies to pursue the development of their own unique machines, without having to worry about converting their technology’s motion into electricity.”

David Campbell, Chief Financial Officer, Albatern, said: “The broad base of this collaboration offers additional confidence to a leading supplier to the industry that the application of their expertise to a common challenge will improve reliability, reduce costs and accelerate a new line of business both for them, and for the other participants.”

Professor Peter Stansby of University of Manchester, developer of the new line absorber M4M Wave Power, said: “Conversion of mechanical power into electricity is a generic component of any wave energy converter. As a new developer striving to improve wave energy capture the WavePOD consortium approach to hydraulic PTO development is a great bonus since hydrodynamic expertise in wave-body interaction is quite different from that for hydraulic systems.”