

Wave Energy Kicks into High Gear

Energy News Bulletin

17th October 2014



Press Media

Monday, 8 April 2013

A PARTNERSHIP between Perth-based Bombora Wave Power and the University of Tasmania's Australian Maritime College will advance into the next phase research into the optimal design for ocean wave energy converters.



How the new system works

In conjunction with Bombora's financial commitment, a \$256,000 Australian Research Council Linkage Program funding injection will support an increase in research effort, starting with a series of complex physical scale model experiments in AMC's shallow water model test basin due to start later this month.

Bombora developed a unique system that converts wave energy into cost-effective electricity and has many other "addressable markets" in food, water, shelter and recreation applications.

"Waves are an abundant, inexhaustible and untapped source of renewable energy that is less variable and more predictable than other renewable resources such as wind or solar," Bombora director Shawn Ryan said.

"Our system features a sturdy, seabed mounted structure with a flexible membrane that enables it to withstand storms and harness a greater proportion of the available wave energy. The system's flexible membrane and simple valves squeeze air through a closed circuit and extracts energy with a central air turbine to generate electricity."

Each unit was rated at 1.5 megawatts and had the potential to supply renewable electricity to 500 homes, equivalent to producing 1 gigalitre of desalinated water each year or taking 825 cars off the road.

AMC researchers – doctors Irene Penesis, Gregor Macfarlane and Alan Fleming – have been collaborating with Bombora to investigate the performance of their innovative ocean wave energy converter systems since 2012.

"We expect that the research outcomes will help Bombora to realise and expand upon its existing development, calibrate its computer modelling and advance further the

understanding of the technical (hydrodynamic) characteristics of the system,” Dr Macfarlane said.

“Bombora has been heavily involved in programs development to date, providing input into the definition of tank testing objectives and the initial design of the test equipment. This investment will continue with their assignment as partner organisation on the ARC Linkage project.”

Macfarlane said the company had also been a strong supporter of the undergraduate program over the past couple of years, contributing on three design projects undertaken by final-year maritime engineering students.

Plans for further collaboration on another ARC Linkage Project in next year’s round are already underway. It is hoped that this new project will see additional collaborators from Edith Cowan University and Curtin University join the project team.