

28 September 2016



ASX:POW

## Second Phase Testing of Protean™ Wave Energy Converter (WEC) in Progress

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- Second phase of pre-commercial ocean testing commenced and in progress in the waters offshore Fremantle, Western Australia
  - Successful series of dry and wet tank tests completed in partnership with ASX listed Neptune Marine Services (ASX: NMS)
  - Meaningful data continues to be gathered from the WEC and will feed into the commercial design in conjunction with the recently completed numerical model to determine energy generation capacity
  - During the recent trials the WEC unit has withstood harsh weather conditions and continues to provide a continuous stream of valuable input data including survivability design characteristics
  - A second WEC unit will be deployed in the next month in approximately 20 metres water depth, to validate the unit's capabilities in deeper waters
  - Completion of offshore trials and numerical model results analysis will enable the Company to define wave farm configurations and begin marketing the technology to provide clean energy solutions
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Protean Wave Energy Ltd (**Protean** or the **Company**) is pleased to advise on 21 September 2016 it commenced the second phase of pre-commercial ocean testing with the safe deployment of a Wave Energy Converter (**WEC**) in 10 metres water depth 3km off the coast of Fremantle, Western Australia and within *Fremantle Ports'* boundaries.

### Deployment of WEC

Each test WEC is fitted with a suite of electronic monitoring equipment that transmits motion and energy generation data through a 4G data link to the cloud for analysis at Protean's head office.

The Company has entered into a services agreement with ASX listed *Neptune Marine Services Limited (Neptune)*, a leading provider of integrated engineering solutions to the oil and gas, marine and renewable energy industries with operations in Australia, Asia, the UK and Middle East, to provide technical and installation services in support of the onshore and offshore testing program.

Over the past month Protean and Neptune conducted a series of dry and wet tank tests (photographs available on page 2) at Neptune's state-of-the-art facilities in Perth. Following these tests and the initial deployment at Bunbury Port a number of refinements and optimisations were made, including enhancing the durability and performance of the WECs. Additional data monitoring equipment was added to facilitate precise comparisons to be made against the recently completed numerical model, developed by international wave energy consultants *WavEC Offshore Renewables*.

Importantly, comparisons can be made from the offshore trials to numerical model results allowing the development of a tool to facilitate scaling and design of WEC pods for commercial deployment. The data will also allow Protean to commence the process of marketing to offer clean, affordable and reliable energy to customers in the Asia Pacific region and globally.

### Strong team of consultants to support and accelerate WEC optimisation and path to commercialisation

Protean has assembled a strong team of consultants to accelerate the optimisation of its WECs and path to commercialisation. In addition to Neptune, the Company has contracted specialist subsea engineering consultancy *Intervention Engineering* to oversee the final preparation of data gathering equipment incorporated into the WEC assembly. *Intervention Engineering* specialises in subsea robotic technology and has a strong track record of delivering high quality efficient inspections and innovative underwater solutions.

RPS Met Ocean (RPS), a leading consultancy providing oceanographic and meteorological services in support of coastal and ocean engineering, has also been contracted to provide a wave and current recording unit (AWAC), which has been deployed alongside the unit to provide reference wave motion data and assist in conducting data analysis.

Steve Rogers Managing Director and CEO of Protean commented: *“We have successfully recommenced our offshore testing program and I am pleased to say we have been gathering a significant amount of data to compare with our numerical model and determine the energy capacity of the WECs. The results will add considerable value in the detail design effort.*

*“This is a significant step forward for Protean as we progress our path to become a provider of clean, affordable and reliable energy and will facilitate the move into the next stage of optimisation and enhance our ability to secure commercial projects for a wave energy farm.”*

### Next steps

Since deployment, substantial data has been collected and initial analysis of operating data and energy generation capability has commenced, with final conclusions expected to be drawn within the coming two to three months.

In parallel, detail design and manufacturing planning will commence, drawing on lessons learned from this test program and the recently completed design review.

The target for completion of a commercial prototype WEC unit is Q1 2017 with a plan to be ready for a commercial wave energy pod trial in Q2 2017. Work is ongoing to identify the most suitable location for such a trial.

### Photographs of the tank test and deployments



Figure 1: Wet tank test at Neptune's facilities, Welshpool, WA

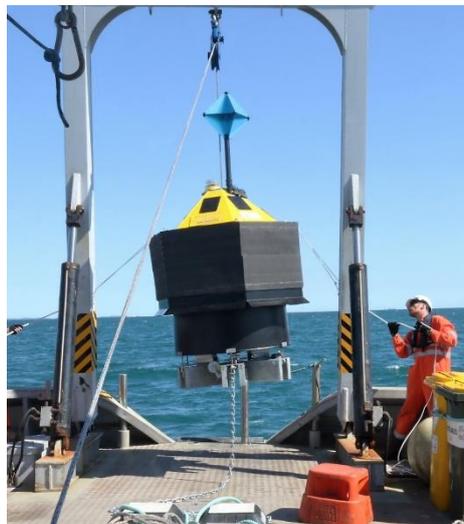


Figure 2: Deployment offshore Fremantle, WA



Figure 3: WEC unit deployed offshore Fremantle, WA

## **ABOUT NEPTUNE MARINE SERVICES**

NMS (<http://www.neptunems.com>)

Neptune is a leading provider of integrated engineered solutions to the oil and gas, marine and renewable energy industries. Headquartered in Perth, Western Australia, Neptune's presence spans operational centres located throughout Australia, the UK, Asia and the Middle East.

## **ABOUT INTERVENTION ENGINEERING**

Intervention (<http://www.intervention.com.au>)

Intervention Engineering, originally established as a subsea robotics consultancy has evolved to become a full solution provider, specializing in "inspection class" ROV operations. With a proven capability to deliver turnkey services such as full field inspections it always embraces technology in seeking the best solution for its clients.

## **ABOUT RPS Met Ocean**

RPS Met Ocean (<http://www.rpsgroup.com>)

RPS MetOcean (MetOcean) is a leading consultancy providing oceanographic and meteorological services in support of coastal, ocean engineering and environmental protection.

## **ABOUT WavEC**

WavEC Offshore Renewables (<http://www.wavec.org>)

WavEC Offshore Renewables is a private non-profit association created in 2003 to develop its activities in three areas: applied research, consulting, and pro bono activities, in the marine renewable sector. Today amongst other things it is considered one of the world's leading consultancies in wave energy modelling.

## **ABOUT PROTEAN WAVE ENERGY LIMITED (ASX: POW)**

Protean Wave Energy Limited is a new energy company focused today on the commercialisation of its proprietary Protean™ Wave Energy Converter (WEC) system. The Protean™ WEC is an innovative wave energy technology that is designed to convert all six degrees of wave motion into a usable form of energy. The Protean™ WEC has been developed to use compact architecture to produce power from a small, low cost, scalable design targeted at keeping the projected cost of energy down and has been designed to be cost competitive to manufacture, deploy and maintain.

For further information, see [www.proteanwaveenergy.com](http://www.proteanwaveenergy.com) or contact:

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