

ASX Announcement

27th October 2010

Commercial Scale CETO Unveiled

Wave Energy developer Carnegie Wave Energy Limited (ASX:CWE) unveiled a key component of its commercial scale CETO 3 unit in Perth today. Once deployed, Carnegie's CETO 3 will be the first commercial wave energy unit operating in Australia.

Carnegie's Managing Director, Dr Michael Ottaviano, revealed the CETO unit's buoyant actuator (BA) at Henderson south of Perth. The CETO 3 BA is a key component of the complete CETO commercial scale system that will begin its onshore and offshore test program within weeks.

Carnegie's CETO technology is capable of generating zero-emission power and desalinated freshwater. CETO 3 is Australia's first commercial scale wave energy unit and the buoyant actuator is the CETO technology's energy collection system.

The successful completion of the CETO 3 testing process will allow Carnegie to proceed with its first grid-connected commercial wave power project and deliver Carnegie its first revenues from power sales. This will then be followed by the roll out of CETO projects at the most prospective sites internationally and in Australia.

Dr Ottaviano said, "The increased attention being paid to wave power internationally combined with the increasing global demand for clean energy and freshwater makes our team's efforts here off Perth timely.

The first step in the CETO 3 test program is the individual component testing that ensures that each component has met its design specification. This is followed by component assembly and system integration tests onshore, and then finally offshore deployment and operational testing off Garden Island.

Every aspect of Carnegie's CETO 3 program has a high level of novelty from the detailed system design to its manufacture and deployment. Even ensuring that the CETO 3 unit is designed not just to operate well but that it is easy to deploy and retrieve is important and is something that we will likely test. We are confident that CETO 3 will perform as expected."

The Western Australian Government is supporting Carnegie's Perth Wave Energy project with a Government grant of \$12.5 million.



BA facts:

- The buoyant actuator is the energy collection system of the CETO technology
- It is a spherical structure 7m in diameter and 5m high
- It is manufactured primarily from steel and rubber and weighs around 25 tonnes
- The buoyancy is provided by both internal fixed and variable buoyancy
- In operation, the BA will typically sit one to two metres below the ocean surface
- The BA contains a proprietary system within it to reduce energy in very high wave energy climates



Michael Ottaviano and Nigel Laxton, at the Buoyant Actuator unveil





One-third scale CETO 3 unit in operation at Carnegie's Fremantle test site



Illustration of the CETO 3 unit unit

About Australia's Wave Resource

A report released in August 2010 by Australia's national science agency CSIRO (Commonwealth Scientific and Industrial Research Organisation) estimated that Australia has a potential near-shore wave resource of 146,000 MW or three times the current power generation capacity of Australia.

The research used advanced computational modelling and direct observation to more accurately assess the near-shore resource. The report concludes that if only 10% of this resource is extractable, half of Australia's electricity needs could be met by wave energy.

About the Perth Wave Energy Project

Carnegie's Perth Wave Energy Project is located offshore Fremantle in the ocean between Garden Island and Five Fathom Bank at a depth of approximately 25 metres. Upon completion, it will be Australia's first commercial scale wave energy project.



The primary aim of the project is to demonstrate the CETO technology in commercial operation and deliver Carnegie its first project based revenues from the sale of power. The project site could also be a base for a desalination pilot project utilizing Carnegie's CETO technology.

About CETO

The CETO system distinguishes itself from other wave energy devices by operating out of sight and being anchored to the ocean floor. An array of submerged buoys is tethered to seabed pump units. The buoys move in harmony with the motion of the passing waves, driving the pumps which in turn pressurise water that is delivered ashore via a pipeline.

High-pressure water is used to drive hydroelectric turbines, generating zero-emission electricity. The high-pressure water can also be used to supply a reverse osmosis desalination plant, replacing greenhouse gas emitting electrically driven pumps usually required for such plants.



CETO Technology characteristics include:

- CETO converts wave energy into zero-emission electricity and desalinated water
- CETO is environmentally friendly, has no visual impact and attracts marine life
- CETO is fully submerged in deep water away from popular surf breaks

About Carnegie

Carnegie Wave Energy Limited is an Australian, ASX-listed (CWE) wave energy technology developer. Carnegie is the owner and developer of the CETO Wave Energy Technology intellectual property.

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