

In The Pipeline

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AUSTRALIAN renewables technology company Bombora Wave Power has launched its wave energy converter device, designed to harvest wave energy and produce zero-emission electricity.



The WECD uses a simple, low impact design that offers inherent survivability from storms as well as resilience to rogue waves.

At the same time it is said to encourage marine ecosystems and it has potential shoreline protection and preservation.

Bombora's WECD is a V-shaped geo-polymer concrete device mounted on the seabed close to shore in water depths of 4-15m.

Each arm of the WECD contains a number of cells covered with a flexible membrane, separating the seawater from the air contained within the device and separating each cell from the others.

As the waves pass over the device they push down on the membrane and sequentially compress the air within each cell.

The air is allowed to flow from a cell through a valve to central air loop or manifold. This takes the pressurised air from all of the cells to a central apex module.

It then flows through an air turbine and so powers an electric generator. The air is then returned back to the cells by another low pressure manifold and valves on each cell.

The WECD recently won an award in the GE Australia & New Zealand low carbon ecomagination challenge.

Bombora director Glen Ryan wants the WECD to be cost competitive with onshore wind, which is presently the cheapest form of renewable energy.

"There is huge potential for using this technology to reduce carbon emissions around the world," he said.

"We can foresee significant economic benefits due to its large scale [1.5 megawatts] near-shore location, performance and survivability benefits.

"Each unit could potentially supply up to 500 homes with renewable electricity each year, or the equivalent of taking 825 cars off the road."

The International Energy Agency estimates the equivalent of 10% of the world's annual energy consumption is potentially available through wave power.

Wave energy is predictable in its yield, up to three days in advance, is a persistent resource and will provide diversity of supply to other renewable energy supplies.