

## ASX Announcement

Monday, 3<sup>rd</sup> February 2014

### Perth Project Pipeline Installation Commences

- Pipelines and fittings now arrived from US
- Pipeline conduit installation through shoreline crossing underway
- Installation of offshore pipeline section to commence in February

Carnegie Wave Energy Limited (ASX: CWE) is pleased to provide an update on the pipeline installation work package of its Perth Wave Energy Project in Western Australia.

Carnegie is pleased to advise that pipeline installation works have now commenced. The first stage of installation is the shoreline conduit crossing which involves the installation of a 400mm diameter high density polyethylene (HDPE) pipe which will hold the high pressure delivery and return pipes that transmit the high pressure water between the offshore and onshore project sites, and a 110mm HDPE pipe which will hold the communications cable and desalination outfall pipe.



Installation of pipeline conduit onshore at Garden Island, Western Australia

Carnegie can also advise that the two main subsea pipelines, and associated end fittings and interconnections have now arrived in Australia from the US ahead of swaging and testing before delivery to offshore installer, Total AMS Pty Ltd, for mobilisation ahead of installation.



**Pipeline interconnections and end fittings in Perth, Western Australia**



**High pressure pipeline reels**

The Perth Wave Energy Project utilises subsea high pressure pipelines for the transmission of high pressure water. The pressurised water is pumped by the CETO units to the onshore power station and desalination plant, which then returns the low pressure water back offshore to the CETO units to be re-pressurised.

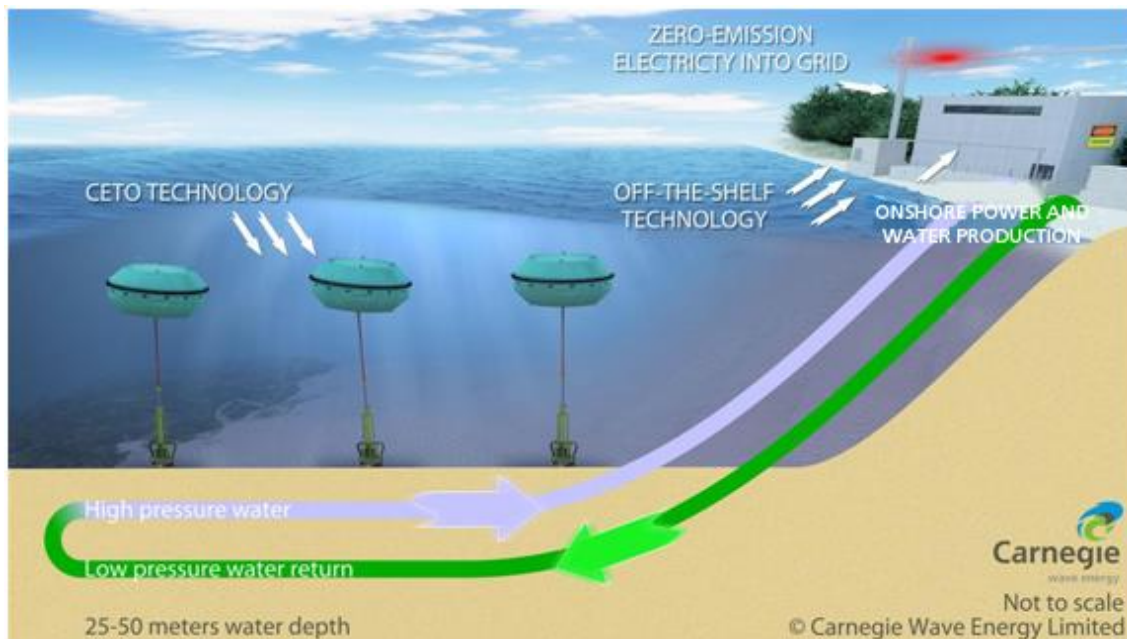
Carnegie placed an order for the manufacture and supply of 6km of flexible steel reinforced pipe and associated end fittings and interconnections in July 2013 with FlexSteel Pipeline Technologies (FlexSteel) based in Houston, Texas. FlexSteel is an experienced piping manufacturer and supplier, with over 20 years' experience, specialising in flexible steel reinforced pipe for demanding offshore environments. In December 2013, Carnegie announced the award of the pipeline and shore crossing conduit installation contract to Total AMS Pty Ltd (TAMS).



**About Carnegie**

[Carnegie Wave Energy Limited](#) is an Australian, ASX-listed (ASX:CWE) wave energy technology developer. Carnegie is the 100% owner and developer of the CETO Wave Energy Technology intellectual property.

**About CETO**



**CETO Power & Water**

The CETO system is different from other wave energy devices as it operates under water where it is safer from large storms and invisible from the shore. Fully submerged buoys are tethered to seabed pump units. These buoys move with the motion of the passing waves and drive the pumps. The pumps pressurise water which is delivered onshore via a subsea pipe.

Onshore, 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 or reducing reliance on greenhouse gas-emitting, electrically-driven pumps usually required for such plants. The technology is also capable of generating power offshore should the specific characteristics of a project site require it.

CETO technology characteristics include:

- Converts ocean wave energy into zero-emission electricity and desalinated water.
- Environmentally friendly, has minimal visual impact and attracts marine life.
- Fully-submerged in deep water, away from breaking waves and beachgoers, and unaffected by storms.

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## Perth Wave Energy Project ('PWEF') Fact File

- Upon completion, PWEF will be the first commercial-scale CETO grid and desalinated water connected wave energy project.
- The Perth Wave Energy Project is supported by \$13.1m in Australian Government funding through the Australian Renewable Energy Agency's Emerging Renewables Program.
- PWEF is supported by \$7.3 million from the Government of Western Australia's Low Emissions Energy Development (LEED) Fund. This is part of a larger \$10 million LEED grant, awarded to Carnegie by the Western Australian Government, to support the development of the CETO technology from concept through to completion of PWEF.
- The Desalination Pilot is supported by a \$1.27m AusIndustry grant from the Clean Technology Innovation Program.
- Utilising Carnegie's fully submerged and commercial proven CETO wave energy device.
- Providing clean, renewable energy and potable desalinated water to Australia's largest naval base, HMAS Stirling, on Garden Island in Western Australia.

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