

## ASX Announcement

26<sup>th</sup> October, 2016

### **Carnegie Acquires 100% of Solar & Battery Microgrid Business “Energy Made Clean”**

- Carnegie invests AU\$13 million through shares and cash to take ownership of solar and microgrid business Energy Made Clean (EMC)
- Fast tracks Carnegie’s diversification and ability to deliver world-first microgrid project combinations of wave, solar, wind and battery energy storage globally.
- Global microgrid market potential estimated at US\$40 billion by 2020

**Carnegie Wave Energy Limited (ASX: CWE) is pleased to announce that it has acquired 100% of leading Australian battery and solar engineering company Energy Made Clean, subject to formal agreements and shareholder approval.**

This acquisition will make Carnegie the only ASX-listed company with a dedicated renewable energy microgrid project delivery capability.

The agreement will see Carnegie invest \$2.6 million in staged cash and \$10.4 million in Carnegie shares to take the remaining 65% per cent stake in EMC, adding to the 35% stake it currently owns. EMC, with its track record of projects, is a proven specialist in the design, construction and operation of microgrids, commercial scale solar projects and energy storage systems.

Through this acquisition, Carnegie is now at the forefront of designing, developing, financing, constructing, operating and maintaining microgrids, utilising a world-first combination of wave, solar, wind, energy storage, desalination and diesel in both on and off-grid applications in Australia and internationally.



**Carnegie Managing Director, Dr. Michael Ottaviano and EMC Managing Director, John Davidson after finalising the acquisition**

Carnegie Managing Director, Dr Michael Ottaviano said EMC, who turned over \$16 million in revenues in the 2016 financial year, has a demonstrated capability of delivering innovative commercial-scale solar and microgrid projects in Western Australia.

“We’ve been extremely impressed with EMC’s capability to deliver unique, pioneering microgrid systems to blue-chip clients such as Western Power, Synergy, Horizon Power, Water Corporation and the Australian Department of Defence.

“The potential for the global microgrid market is estimated at US\$40 billion by 2020. This acquisition unlocks Carnegie’s ability to deliver a unique, in-house capability to capitalise on a rapidly growing segment of the renewable energy market globally.

“Microgrids are increasingly a major part of the renewable energy market as they can deliver cost competitive, clean power and energy security. It is the right time to seize this opportunity.”

EMC’s Managing Director, John Davidson said, “Over the past few years, EMC has grown from an innovative start up to delivering major contracts to local utilities, developing a unique capability that can be applied across Australia and globally. With Carnegie we will be able to grow larger, more quickly and capture this enormous market opportunity.”

EMC has built a significant track record of grid connected and offgrid microgrid projects:

- Delivery of New Zealand’s first grid connected, commercial Battery Energy Storage System (BESS) for Alpine Energy, with strategic alliance partner Infratec.
- Solar, BESS and diesel microgrid project with remote monitoring on Mackerel Island off the coast of Onslow in Western Australia.
- Engineering, procurement and construction of a 1.6MW solar and 2.4MWh BESS array for the CSIRO-led Australian Square Kilometre Array Pathfinder.
- Construction of a 600KW solar farm on Rottnest Island, Western Australia for Hydro Tasmania.
- Delivery of a 1.1MWh BESS for Western Australian power retailer Synergy in Western Australia.
- Delivery and ongoing remote monitoring and maintenance of a number of Standalone Power Systems (SPS) to Western Power customers, replacing traditional poles and wires and bringing energy security, reliability and stability of supply in areas that had suffered significant fire damage in Western Australia.
- EMC is also currently working with Carnegie on its Mauritius wave and microgrid design project.



**EMC’s utility battery system for Synergy’s Alkimos project (left) and solar array for CSIRO’s Square Kilometre Array (right)**

Carnegie's analysis of the international island market alone has identified that there exists at least 40GW (out of 400GW of existing installed thermal capacity on islands) suitable to be replaced with wave energy, in addition to at least 360GW of the remaining market suitable for replacement with non-wave renewable energy microgrids. Navigant has forecast the global microgrid market to be worth US\$40 billion by 2020.<sup>1</sup>

Carnegie's 100% ownership of EMC will enable the company to capitalise on its existing strategic relationships in Mauritius, Sri Lanka and Bermuda - among others - to further expand this project pipeline.

Carnegie will now be able to fast track its delivery of a combination of renewable technologies such as solar, wave, wind and energy storage in the form of microgrids to islands, off-grid and grid-connected communities.

## **TRANSACTION TERMS**

The deal terms will see Carnegie Wave Energy Limited invest \$10.4 million in Carnegie shares (297,142,857 CWE shares in escrow) and \$2.6 million in staged cash payments to acquire the remaining 65 per cent stake in the Energy Made Clean Group (via EMC Solar Construction Pty Ltd and EMC Engineering Pty Ltd). The \$10.4 million of Carnegie shares will be escrowed such that 50 per cent of them cannot be sold within the first year and the remaining 50% cannot be sold within the first two years. The cash component is structured in three tranches, \$1.6 million initially, \$0.7 million against an EMC revenue target of \$20 million for FY17 and \$0.3 million against an EMC revenue target of \$30 million for FY18.

EMC's current Managing Director, Mr John Davidson, will join the CWE board as an Executive Director upon completion of the transaction.

The transaction is subject to formal agreements and the approval of Carnegie shareholders which will be voted on at an Extraordinary General Meeting prior to the 19<sup>th</sup> December 2016. Subject to shareholder approval, the transaction is expected to be completed within 10 days of that meeting.

The acquisition also includes EMC's project portfolio of grid-connectable solar PV sites in Western Australia and its Clear Energy Pty Ltd subsidiary which holds an energy retail licence in Western Australia. Carnegie will continue to work with EMC's existing alliance partners, New Zealand's Infratech and Pilbara indigenous engineering services Eastern Gurama Pty Ltd.

The Company is not aware of any reason why the ASX would not allow trading to recommence immediately.

## 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. Carnegie is focussed on commercial opportunities in key target markets including UK, Europe, Australia and remote islands. Subject to the approval of its shareholders before 19 December 2016, Carnegie will also become the 100% owner of leading Australian battery/solar microgrid Engineering Procurement and Construction (EPC) company Energy Made Clean, which specialises in the delivery of mixed renewable energy microgrid projects to islands and remote and fringe of grid communities. Through this acquisition, Carnegie will be the world's first company to deliver a combination of wave, solar, wind, storage and desalination into microgrids.

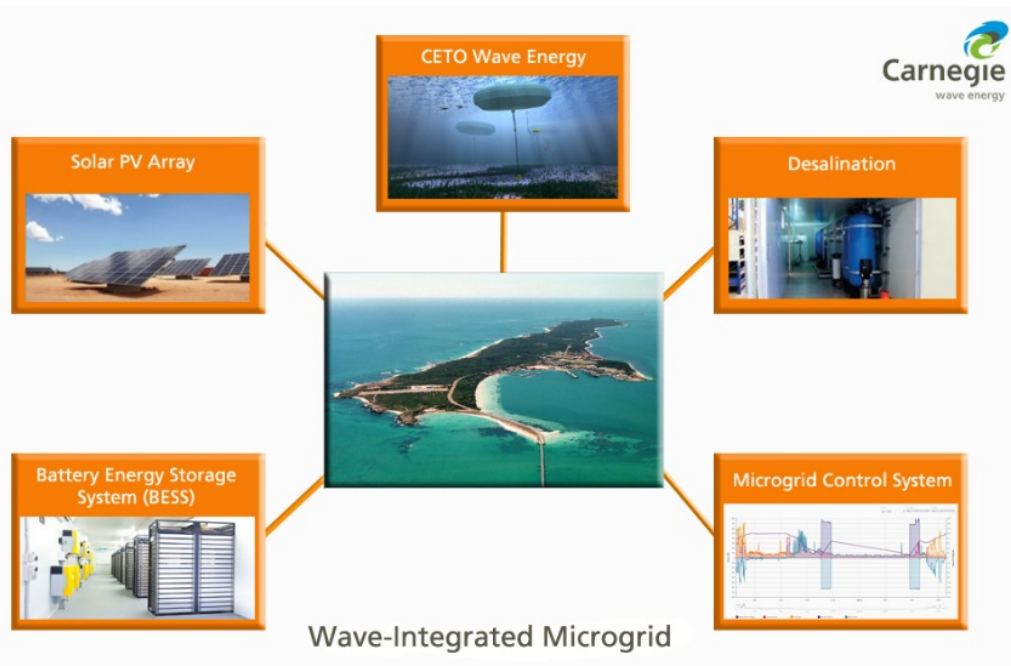
## Microgrids

A microgrid is a discrete energy system made up of distributed energy sources that are capable of operating independently from the main power grid.

Renewable microgrids that combine multiple renewable energy generation sources (e.g. solar, wind and wave) take advantage of different renewable energy profiles at different times of day, and with different seasonal variation, to reduce the amount of energy storage and diesel generation required.

Renewable microgrids can be used to cut costs, cut greenhouse gas emissions, and in the case of high penetration renewable microgrids, allow communities to be more energy independent and more environmentally sustainable. The precise mix of renewable sources, energy storage, fossil fuel and desalination will depend on the mix of renewable resources available locally and the needs of the customer.

<sup>1</sup>According to Navigant Research's 2013 Report *Market Data: Microgrids*, the global microgrid market is estimated to be worth US\$40 billion by 2020.



## **For more information:**

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