

## ASX Announcement

October 31<sup>st</sup>, 2016

### Report to Shareholders for the Quarter Ended September 30, 2016

Dear Shareholder,

It's been a transformational quarter for Carnegie, headlined by our game changing announcement of our 100% acquisition of Australian microgrid developer, Energy Made Clean (EMC) and the raising of debt and government grant funding for our Garden Island Microgrid project. Meanwhile, strong progress has continued on the commercialisation of our CETO 6 wave power technology and world first microgrid project. Your company remains in a strong financial position with \$10m cash at bank, \$15m in undrawn Government funding \$21m in an undrawn debt facility. Subject to shareholder approval, we also now own 100% of a growing business that generated \$16m of revenue last financial year.



The acquisition of EMC fast tracks our diversification and ability to deliver microgrids in any combination of wave, solar, wind and energy storage to island markets around the world. It also makes Carnegie the only ASX-listed company with a dedicated renewable energy microgrid project delivery capability. Carnegie is now at the forefront of designing, developing, financing, constructing, operating and maintaining microgrids, utilising a world-first combination of wave, solar, wind, storage, desalination and diesel in both on and off-grid applications in Australia and internationally.

The Carnegie team have continued to progress our microgrid projects throughout the quarter and has been rewarded with outstanding progress. For the Garden Island Microgrid Project (GIMG), we announced the award of a \$2.5m funding package from the Australian Renewable Energy Agency (ARENA) as well as a new \$3.7m private debt financing agreement. The balance of funding for the \$7.5m GIMG Project will be provided by Carnegie equity. The Project is on track to begin before the end of the year and be producing electricity by the middle of 2017. The Garden Island Project will demonstrate the microgrid model we roll out to island nations around the world.

In parallel, strong progress has been made in Carnegie's development of CETO 6, the design remaining on track to be completed this year ahead of manufacturing and construction. We expect to continue to see progress toward commercialisation of CETO in the December quarter, in particular with our Wave Hub project plans, and to deliver value in growing the EMC microgrid business.



**Dr Michael Ottaviano**  
CEO & MD

Highlights from the quarter include:

- Financial snapshot
  - AU \$10m cash at bank.
  - AU \$15m undrawn Government grants and funding.
  - AU \$21m undrawn debt facility on standby.
- CETO 6
  - Domestic and international suppliers delivered CETO 6 subsystem designs
  - Planning permission granted by the Western Australian State Government for the Garden Island CETO 6 Project
- Microgrids
  - \$2.5m funding received from ARENA for Garden Island Microgrid (GIMG)
  - \$3.7m Debt Re-Financing Agreement signed to support GIMG
- Corporate
  - Carnegie committed to invest \$2.6 million in cash over 3 tranches and \$10.4 million in shares to take the remaining 65% ownership of EMC, to move to 100% ownership of the company.

## 1. CETO 6 Development

During the quarter, the design of CETO 6 matured significantly with more than a dozen domestic and international suppliers delivering subsystem designs and associated documentation. The technical team have been hard at work integrating this information into a consolidated design and ensuring compliance with the specified requirements. New advances have been incorporated into various sub-systems including the mooring system, power take off system and the buoyant actuator.

Also during the last quarter, planning permission for the CETO 6 project was granted by the State Government of Western Australia.



**CETO 6 Concept Graphic**

Carnegie also continued to advance the development of its UK CETO 6 Project at Wave Hub in Cornwall in the South West of England. The Project is currently planned as a two stage development with Stage 1 consisting of a single CETO 6 unit, followed by an expansion to a 10-15MW stage. The Wave Hub facility is a pre-consented, pre-developed site with sub-sea cable and grid connection already in place. Feed-in-tariffs dedicated to wave and tidal energy projects exist in the UK and there is significant capital grant funding support available from the European Union for innovative and renewable energy projects.

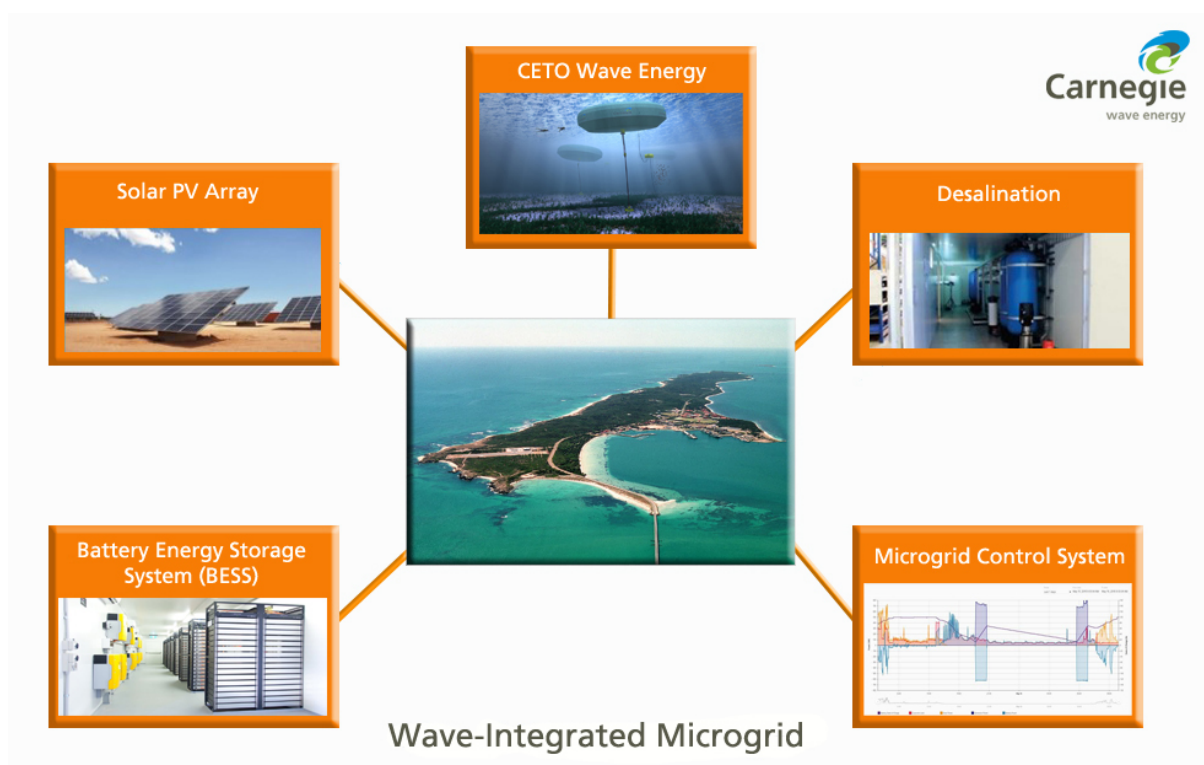
Carnegie's UK subsidiary, CWE UK, is progressing toward securing the financing for stage 1 of the Wave Hub project. This is despite a challenging economic and political climate, driven in part by the UK announcing its intention to exit Europe.

## 2. Island and Microgrid Activities

### Garden Island Microgrid Project

During the Quarter, Carnegie secured \$2.5m of funding from the Australian Renewable Energy Agency (ARENA) for the Garden Island Microgrid (GIMG) Project. It also signed a \$3.69m Debt Re-Financing Agreement with an investment group consisting of existing Carnegie shareholders. The remaining balance of the \$7.5m solar and battery elements of the Project will be provided by Carnegie equity.

Carnegie is progressing the design and approvals of the Project and expects to commence construction by the end of year. Initially it will integrate 2MW of Solar PV, a 2MW/0.5MWh battery storage with Carnegie’s existing reverse osmosis desalination plant. The Project will subsequently incorporate the CETO 6 system as part of a microgrid integrating wave, solar, battery storage and seawater desalination.



### Mauritius Wave and Microgrid Design Project

During the quarter, Carnegie’s Mauritius Project continued to progress, collecting valuable wave data from the previously deployed wave monitoring buoy, which will be used to quantify the wave energy resource in support of a potential CETO wave energy project in Mauritius.

The Mauritius Project is also now well advanced into the design of a high penetration renewable energy roadmap for the islands of Mauritius and Seychelles. Additionally, the design of a first Mauritius microgrid project is well advanced. Such a project will be capable of producing electricity, as well as desalinated water.

Carnegie is being paid \$800,000 for the design, roadmap and wave assessment phases of the Project through a partnership between the Australian and Mauritian Governments.





### **Wave Monitoring Buoy Deployed off the south coast of Mauritius**

The project will deliver the following three outcomes and is expected to be completed in the coming months:

1. A renewable energy roadmap for Mauritius, including: technical, commercial and financial feasibility of high penetration renewable energy.
2. An assessment of the Mauritian wave energy resource and the identification of a preferred site for a commercial CETO wave energy project.
3. The design of a microgrid powered desalination plant on the Mauritian island of Rodrigues.

### **Sri Lanka**

The quarter also saw Carnegie expand its project pipeline into the island nation of Sri Lanka, through the signing of a Memorandum of Understanding (MoU) with Sri Lankan energy utility Lanka Energy Conservation (Pvt). The agreement focusses on identifying the opportunities and development pathways for commercial wave energy plants on Sri Lanka, as well as potential microgrid opportunities that would enable CETO wave farms to be integrated into the existing or new power infrastructure to supply clean power and freshwater. Sri Lanka has a population in excess of 20 million people and extremely low levels of solar penetration currently.

### 3. Corporate Activities

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

Carnegie was pleased to announce that it had acquired 100% of leading Australian battery and solar microgrid 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 cash across three stages 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 innovative project delivery, 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, “We’ve been extremely impressed with EMC’s capability to grow their revenue by delivering unique, pioneering microgrid systems to blue-chip clients such as Western Power, Synergy, Horizon Power, Water Corporation and the Australian Department of Defence.

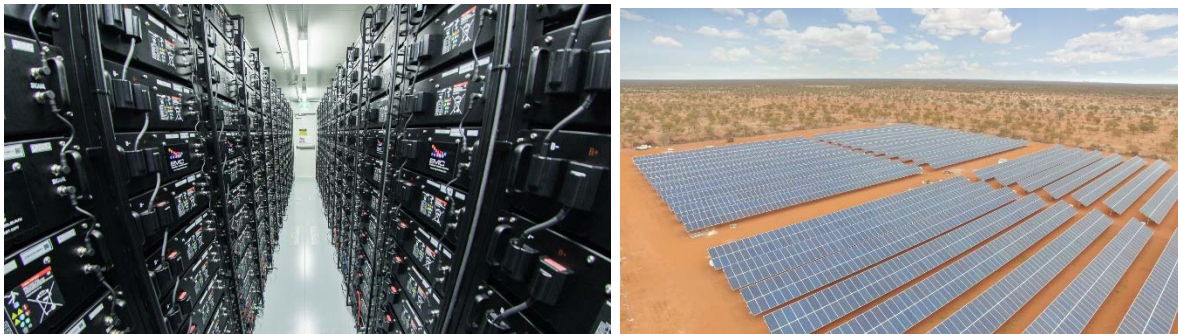
“Microgrids are increasingly a major part of the renewable energy market as they can deliver cost competitive, clean power and energy security. With EMC rapidly growing and turning over \$16 million in revenues in the 2016 financial year, it is the right time to seize this opportunity.”

The potential for the global microgrid market is independently 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.

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.

## ***Company Presentations***

The quarter provided several opportunities for Carnegie to further its national and international exposure through several presentations including; the Scottish Renewables Marine Energy Conference in Scotland, the African Australian Technology and Infrastructure Conference in Perth, the AORE Conference in Melbourne, the ASX spotlight series in Singapore and Hong Kong the AWTEC Conference in Singapore and the Impact Conference in Sydney.

These platforms brought together the world's leading renewable energy delegates to share knowledge, showcase technologies and meet new international partners, investors and suppliers. They also attracted industry stakeholders to exchange knowledge through discussions and recent research presentations, promoting international and multi-disciplinary collaboration in the wave and tidal industries.



### **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 and remote islands. Subject to shareholder approval, Carnegie will also take 100% ownership of leading Australian battery/solar microgrid EPC, Energy Made Clean, to aid in delivering mixed renewable microgrid projects to islands and remote and fringe of grid communities.

### **About CETO**

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. 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.

### **CETO 6 Project Fact File**

The CETO 6 unit has a targeted 1MW (1000kW) power capacity, some four times of the CETO 5 generation. It will also have a higher efficiency, lower capital and maintenance costs than any CETO product generation developed to date. The CETO 6 Project is supported by \$13m in Australian Government grant funding through the Australian Renewable Energy Agency's Emerging Renewables Program and a five year \$20 million loan facility currently on standby. The clean, renewable energy generated by the Project will be sold to the Australian Department of Defence at Australia's largest naval base, HMAS Stirling, on Garden Island in Western Australia.

### **Mauritius Project Fact File**

The island of Mauritius has been identified as an attractive site for Carnegie's CETO technology and the installation of a microgrid, to allow the island to become energy independent and taken 'off-grid'. After signing a MoU with the Mauritian Research Council and deploying a wave monitoring buoy off the south coast of Mauritius, Carnegie's world first renewable wave energy micro-grid project is now well underway.

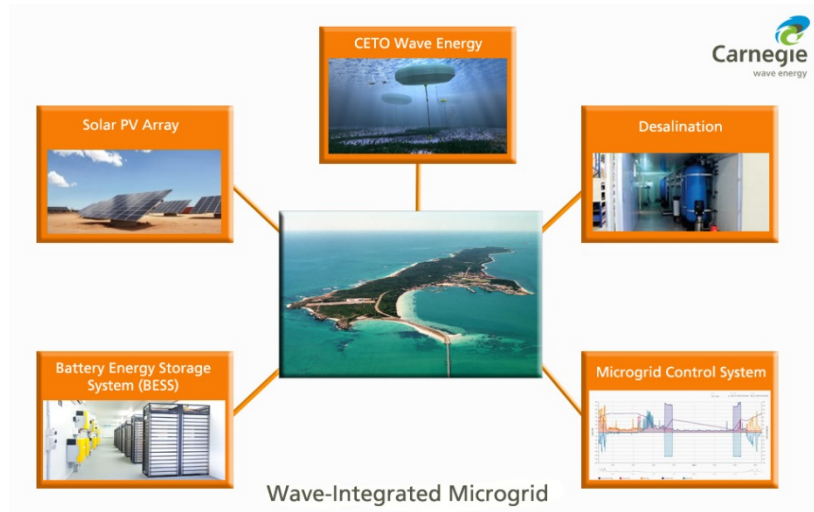
The Mauritius Project is broken into 3 work packages:

1. A high penetration renewable energy roadmap for Mauritius, including technical, commercial and financial feasibility
2. Assess the wave energy resource, site conditions and priority sites for commercial CETO wave energy devices
3. Design a decentralised microgrid for the Island of Rodrigues, offering battery storage and control systems that enable higher renewable energy penetration (including wave).

### **About 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.



### **About ARENA**

ARENA was established by the Australian Government to make renewable energy technologies more affordable and increase the supply of renewable energy in Australia. Through the provision of funding coupled with deep commercial and technical expertise, ARENA provides the support needed to accelerate the development of promising new solutions towards commercialisation. ARENA invests in renewable energy projects across the innovation chain and is committed to sharing knowledge and lessons learned from its portfolio of projects and information about renewable energy. ARENA always looks for at least matched funding from the projects it supports and to date has committed \$1.1 billion in funding to more than 270 projects. For more information, visit [www.arena.gov.au](http://www.arena.gov.au).

### **For more information:**

Dr Michael Ottaviano  
CEO & Managing Director  
Carnegie Wave Energy Limited  
+61 8 9335 3993  
[enquiries@carnegiwave.com](mailto:enquiries@carnegiwave.com)  
Website: [www.carnegiwave.com](http://www.carnegiwave.com)

## Appendix 4C

### Quarterly report for entities subject to Listing Rule 4.7B

Introduced 31/03/00 Amended 30/09/01, 24/10/05, 17/12/10, 01/09/16

**Name of entity**

CARNEGIE WAVE ENERGY LIMITED

**ABN**

69 009 237 736

**Quarter ended ("current quarter")**

30 September 2016

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (3 months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	89	89
1.2 Payments for		
(a) research and development	(1,761)	(1,761)
(b) product manufacturing and operating costs	-	-
(c) advertising and marketing	(27)	(27)
(d) leased assets	(7)	(7)
(e) staff costs	(593)	(593)
(f) administration and corporate costs	(494)	(494)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	46	46
1.5 Interest and other costs of finance paid	(62)	(62)
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other – Royalty Income	225	225
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(2,584)</b>	<b>(2,584)</b>

<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire:		
(a) property, plant and equipment	(14)	(14)
(b) businesses (see item 10)	-	-
(c) investments	-	-

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (3 months) \$A'000</b>
(d) intellectual property	-	-
(e) other non-current assets	-	-
<b>2.2 Proceeds from disposal of:</b>		
(a) property, plant and equipment	-	-
(b) businesses (see item 10)	-	-
(c) investments	-	-
(d) intellectual property	-	-
(e) other non-current assets	-	-
<b>2.3 Cash flows from loans to other entities</b>	-	-
<b>2.4 Dividends received (see note 3)</b>	-	-
<b>2.5 Other (provide details if material)</b>	-	-
<b>2.6 Net cash from / (used in) investing activities</b>	<b>(14)</b>	<b>(14)</b>

<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of shares	-	-
3.2 Proceeds from issue of convertible notes	-	-
3.3 Proceeds from exercise of share options	-	-
3.4 Transaction costs related to issues of shares, convertible notes or options	(80)	(80)
3.5 Proceeds from borrowings	-	-
3.6 Repayment of borrowings	-	-
3.7 Transaction costs related to loans and borrowings	-	-
3.8 Dividends paid	-	-
3.9 Other (provide details if material)	-	-
<b>3.10 Net cash from / (used in) financing activities</b>	<b>(80)</b>	<b>(80)</b>

<b>4. Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1 Cash and cash equivalents at beginning of quarter/year to date	12,610	12,610
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(2,584)	(2,584)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(14)	(14)
4.4 Net cash from / (used in) financing activities (item 3.10 above)	(80)	(80)



<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (3 months) \$A'000</b>
4.5	Effect of movement in exchange rates on cash held	-	-
<b>4.6</b>	<b>Cash and cash equivalents at end of quarter</b>	<b>9,932</b>	<b>9,932</b>

<b>5.</b>	<b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1	Bank balances	5,782	2,200
5.2	Call deposits	-	6,000
5.3	Bank overdrafts	-	-
5.4	Other – <i>Guarantee facilities</i>	4,150	4,410
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>9,932</b>	<b>12,610</b>

**6. Payments to directors of the entity and their associates**

- 6.1 Aggregate amount of payments to these parties included in item 1.2
- 6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3
- 6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2

<b>Current quarter \$A'000</b>
325
-

Payments to Directors are consulting fees, salary and superannuation.

**7. Payments to related entities of the entity and their associates**

- 7.1 Aggregate amount of payments to these parties included in item 1.2
- 7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3
- 7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2

<b>Current quarter \$A'000</b>
-
-

8. <b>Financing facilities available</b> <i>Add notes as necessary for an understanding of the position</i>	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
8.1 Loan facilities	26,490	3,690
8.2 Credit standby arrangements	-	-
8.3 Other – Government grant funding	13,700	250
8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.		

The loan facilities includes a \$21 million senior secured debt loan facility with the Commonwealth Bank of Australia which has not yet been drawn upon, therefore no interest has been paid. This facility was placed on standby subsequent to the end of the quarter.

The loan facilities also include 3,690 convertible notes at an issue price of \$1,000 each. The notes can convert to equity at any time at 4.2 cents per share and do not pay an interest coupon. These notes were re financed subsequent to the end of the quarter. Terms of the refinancing included changing the conversion price to 3.8 cents per share and changing the coupon to 8% per annum.

The loan facilities also include \$1.8 million in unsecured convertible notes from the Australian Renewable Energy Agency - Emerging Renewables Program. The notes can convert to equity at 5.3 cents per share and do not pay an interest coupon.

Government funding includes \$13.7 million across two grants from the Australian Renewable Energy Agency - Emerging Renewables Program.

9. <b>Estimated cash outflows for next quarter</b>	\$A'000
9.1 Research and development	2,000
9.2 Product manufacturing and operating costs	-
9.3 Advertising and marketing	20
9.4 Leased assets	8
9.5 Staff costs	600
9.6 Administration and corporate costs	550
9.7 Other (provide details if material)	-
<b>9.8 Total estimated cash outflows</b>	<b>3,178</b>

10. <b>Acquisitions and disposals of business entities (items 2.1(b) and 2.2(b) above)</b>	Acquisitions	Disposals
10.1 Name of entity	-	-
10.2 Place of incorporation or registration	-	-
10.3 Consideration for acquisition or disposal	-	-
10.4 Total net assets	-	-
10.5 Nature of business	-	-

### **Compliance statement**

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Sign here:



(Company secretary)

Date: 31 October 2016

Print name: Aidan Flynn

### **Notes**

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.