

#### **BOARD OF DIRECTORS & CEO**

**Non-Executive Chairman Terry Stinson** 

**Non-Executive Director Grant Mooney** 

**Non-Executive Director** Michael Fitzpatrick

**Non-Executive Director Anthony Shields** 

Chief Executive Officer Jonathan Fievez

#### **CONTACT DETAILS**

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## **QUARTER HIGHLIGHTS**

- Carnegie secures an Export Growth Bond Facility with Export Finance Australia (EFA) to provide advance payment guarantee bonds for the **ACHIEVE Programme**
- Financial support acquired for the ACHIEVE Programme through \$2.5M loan agreement
- Receipt of €203,437 (approximately \$338,046 AUD) EuropeWave contract payment for successful completion and delivery of CETO design reports
- Carnegie extends collaboration agreement with Hewlett Packard Enterprise (HPE) to continue work on Reinforcement Learning for CETO
- Annual General Meeting held with all resolutions passed
- Carnegie grows in presence in the Basque Country, establishing an office in the BIC Bizkaia Ezkerraldea

# Carnegie's CEO, Mr Jonathan Fiévez, commented on the Quarter:

"The ACHIEVE Programme has progressed significantly throughout the quarter, marked by key achievements advancing us towards CETO deployment in the Basque Country. The completion of critical design milestones unlocked payment through EuropeWave and paved the way for the procurement and testing of CETO components.

Recent visits to key suppliers provided an opportunity to witness firsthand the progress being made on key components in manufacture and testing for the ACHIEVE Programme. These visits also strengthen our relationships with the supply chain for the CETO technology, fostering the innovation and collaborative attitude that is essential for the development of the emerging wave energy industry.

We are also pleased to announce the extension of our collaboration with Hewlett Packard Enterprise (HPE), a marker of our shared commitment to innovation. This collaboration is helping us make exciting technological advancement in the wave energy sector.

Looking ahead, we remain focused on commercialising our CETO and MoorPower technologies and working collaboratively with partners to drive the transition towards a more sustainable energy future."

## **REPORT TO SHAREHOLDERS**

QUARTER ENDED 31 DECEMBER 2024



Who is Carnegie?		Carnegie develops ocean energy technologies to make the world more sustainable. We provide advanced and competitive wave energy products for global renewable energy markets.  Waves are an untapped renewable energy source that is consistent, predictable, and globally distributed. The scale of the opportunity is significant, Ocean Energy Europe (OEE) forecasts significant growth for wave energy with a €653b market potential by 2050.
Core Products	CETO	CETO is a submerged buoy harnessing energy from ocean waves. Sitting a few meters below the surface of the ocean, CETO converts wave energy into zero-emission electricity. This clean and predictable energy supply can be harnessed to provide a reliable energy source 24/7. The CETO technology is continually improving through cost reduction measures and increasing the energy supply capacity through intelligent innovation.
	MoorPower	MoorPower is a wave energy product for offshore demand applications. A spin-off from the CETO technology, MoorPower provides power for offshore moored vessels, such as feed and lighting barges used in Aquaculture. MoorPower can replace and reduce diesel generator usage in offshore environments, reducing risk and carbon emissions.

#### **PRODUCTS**

Carnegie continued to advance the commercialisation pathways of our core wave energy technologies through the quarter. The MoorPower and Mooring Tensioner Projects with the Blue Economy CRC have been completed, with focus now shifted onto the commercial applications of the MoorPower and Mooring Tensioner technologies. The team continues to progress the ACHIEVE Programme, working towards Carnegie's planned 2025 deployment of CETO in the Basque Country. With ACHIEVE's design phase complete, component procurement and testing will continue to be the focus for the coming quarter.

### Products – MoorPower

The aquaculture sector's move further offshore brings the challenge of accessing clean and reliable energy. Without shore-based power, operations like feeding barges rely on diesel generators, incurring costs, risks, and carbon emissions. This issue also affects moored vessels across the blue economy. Carnegie's MoorPower offers a solution: a wave energy converter adapted from our CETO technology. Designed for offshore applications, MoorPower targets aquaculture barges and vessels as its first market, providing a clean energy alternative to diesel generation.

The successful deployment and operation of our MoorPower Scaled Demonstrator in 2024 was a major milestone, moving the technology closer to commercialisation. This allowed project partners and potential customers to witness the technology in action. The demonstrator deployments provided invaluable data, validating our design and numerical models across various sea conditions. Importantly, using the validated numerical models and design, the team estimated the performance potential of a Commercial MoorPower System. The results demonstrated the ability to produce at least 50% of the annual average energy demand, which achieves Carnegie's initial goal for the



MoorPower development. The future goal is for the commercial MoorPower system to produce 100% of the energy required.

With the MoorPower Scaled Demonstrator Project now finalised with the Blue Economy CRC, the team has shifted focus to commercial-scale deployments. Active discussions are underway with partners to develop the first commercial pilot project, which would integrate MoorPower units on a working feed barge, showcasing the technology's real-world capabilities and paving the way for wider adoption across the aquaculture sector. This exciting next step will demonstrate the significant benefits of MoorPower in reducing reliance on fossil fuels and supporting a more sustainable blue economy. In January, Carnegie's MoorPower Project Manager visited Huon in Tasmania to explore commercial opportunities, this visited included meetings and site tours of operating and docked feeding barges.





The MoorPower Scaled Demonstrator barge during the January 2024 deployment (left), Recent site visit to Huon feeding barge (right)

# **Products – CETO and the ACHIEVE Programme**

The ACHIEVE Programme is an initiative being delivered by Carnegie's subsidiaries CETO Wave Energy Ireland under contract by EuropeWave Buyers Group (ACHIEVE Project) and Carnegie Technologies Spain with the support of funding awarded by the Spanish Government through the RENMARINAS Demos Programme (AGUAMARINA Project) and the Basque Government through a grant from the Ente Vasco de la Energia (ACHIEVE+ Project).

Through this collaborative initiative, Carnegie will deploy and operate a CETO prototype at the Basque Marine Energy Platform (BiMEP) in the Basque Country, commencing in 2025. This will mark a key step on CETO's commercialisation pathway. The CETO Unit will operate for 2 years in this open ocean site and the data collected will be used to validate the performance of the CETO technology and propel it along the commercialisation pathway.

During the quarter Carnegie made significant strides on the ACHIEVE Programme, the most notable of which being the delivery of design reports for the EuropeWave Programme, unlocking a milestone payment to support the project. The team is now in the manufacture and testing stage of the ACHIEVE Programme, continuing the progress towards the 2025 deployment.

Team representatives conducted site visits to key suppliers including Oswald, Quoceant, SKF and Sumitomo to assess the progress of critical components for the ACHIEVE Programme during the quarter. These visits allowed for observation of the manufacturing and testing of essential components. The visits also provided a valuable opportunity to tour the suppliers' facilities and gain a deeper understanding of their capabilities and expertise in producing components for marine energy



applications. Site visits also foster stronger relationships with key suppliers, facilitating open communication and collaboration throughout the project. Carnegie maintains close working relationship with these key suppliers through the manufacture process to support this project and to develop the future commercial supply chain for CETO in Europe.



Carnegie CTO Alexandre Pichard pictured with Quoceant leadership and the Q Connect technology

# **Products - Mooring Tensioner**

The Blue Economy supported 'Mooring tensioner for wave energy converters' (MoTWEC) project has reached completion following a successful testing regime at Carnegie's bespoke test rig at its research facility in Western Australia.

Lessons learned from the testing phase provided detail for the design and manufacture of the mooring tensioner which was used in the MoorPower Scaled Demonstrator project. In addition, learnings from the testing and the operations of the tensioners in the MoorPower Project have fed into the design of the mooring tensioners for the CETO to be deployed at BiMEP through the ACHIEVE Programme.

Alongside Carnegie's upcoming applications of the technology on board the CETO and MoorPower devices, Carnegie is also exploring alternative applications of the technologies in the wider offshore industry to optimise the potential of the technology.

# **EVENTS**

Carnegie participated in a variety of community and technical events during the quarter. Quarter highlights included presentations at the Basque Energy Cluster and Ocean energy Europe — major technical conferences bringing together the wider ocean energy community.

Carnegie also participated in Maritime Day in Fremantle, Western Australia, showcasing our wave



energy solutions and facilitating conversations about the potential of wave energy to provide reliable and sustainable power to the local Fremantle community.



Top Left: ACHIEVE Project Manager Miguel Santos-Herran presents at the Basque Energy Cluster. Top Right: Carnegie MoorPower engineer James Walker at Maritime Day. Bottom: Carnegie CTO Alexandre Pichard presents CETO at Ocean Energy Europe.

### **CORPORATE**

# **Annual General Meeting:**

Carnegie held its 2024 Annual General Meeting (AGM) at the Swan Yacht Club in East Fremantle in November. The meeting served as a platform to engage with shareholders, providing updates on the company's progress and outlining its strategic direction. Key highlights included insights on the latest developments in CETO as a sustainable and clean energy solution. CEO Jonathan Fievez also outlined Carnegie's vision for the future of wave energy and commitment to playing a leading role in this developing industry. Shareholders had the opportunity to engage directly with the Company's Directors and CEO, asking questions and participating in discussions. All proposed resolutions raised at the AGM were successfully passed.

## **Bond Facility Secured:**

Carnegie Clean Energy secured an Export Growth Bond Facility with Export Finance Australia (EFA) to optimise cash flow for the deployment of CETO through the ACHIEVE Programme. The total bond facility limit is approximately €2.5m.This facility enables the Company to access beneficial advance



payments on grant funding from the Spanish and Basque governments by providing advanced payment guarantee bonds.

### **ACHIEVE Loan Agreement:**

In October, Carnegie secured additional financing support for the ACHIEVE Programme with the signing of a \$2.5m Loan Agreement with Ballamena Pty Ltd ATF Ellan Finance Unit Trust. The loan provides upfront cashflow support for the ACHIEVE Programme to address the time delay between cash expenditure and retrospective milestone payments, thereby smoothing the Company's cashflow during the period of construction, deployment and delivery of the Programme to completion.

### **HPE Collaboration Extension:**

The collaboration agreement between Carnegie and Hewlett Packard Enterprise (HPE) was extended to further develop the reinforcement learning controller for CETO. This partnership continues to leverage HPE's expertise in artificial intelligence and high-performance computing, combined with Carnegie's knowledge of wave energy control and operations. A key focus is the continued development of the Reinforcement Learning (RL) based controller, scheduled for deployment in an operating CETO unit through the ACHIEVE Programme in 2025. This advanced controller is expected to optimise the performance and efficiency of the CETO system.



Carnegie CEO Jonathan Fievez presenting CETO at the 2024 HPE Discover exhibition Las Vegas.

## **FINANCIAL NOTES**

At the end of the Quarter, Carnegie had approximately \$3.82m in cash reserves.

### Note 6 to Appendix 4C:

Payments to related parties of the entity and their associates were made during the Quarter. In total, approximately \$74k was paid to Directors and associates for salaries, superannuation and contracted services.



This announcement has been authorised by the Chairman and CEO.

### For more information

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#### **ABOUT CARNEGIE AND ITS SUBSIDIARIES**

Carnegie Clean Energy (ASX: CCE) is a technology developer focused on delivering ocean energy technologies to make the world more sustainable. Carnegie Technologies Spain and CETO Wave Energy Ireland are wholly owned subsidiaries of Carnegie Clean Energy. Carnegie is the owner and developer of the CETO® and MoorPower® technologies, which capture energy from ocean waves and convert it into electricity. Using the latest advances in artificial intelligence and electric machines, Carnegie optimally controls our technologies and generates electricity in the most efficient way possible. The company has a long history in ocean energy with a track record of world leading developments. <a href="https://www.carnegiece.com">https://www.carnegiece.com</a>

### ABOUT BLUE ECONOMY COOPERATIVE RESEARCH CENTER (CRC)

The Blue Economy Cooperative Research Centre (CRC) is established and supported under the Australian Government's CRC Program, grant number CRC-20180101. The CRC Program supports industry-led collaborations between industry, researchers and the community. With a 10-year life, the Blue Economy CRC brings together 44 industry, government, and research partners from ten countries with expertise in aquaculture, marine renewable energy, maritime engineering, environmental assessments and policy and regulation. Further information about the CRC Program is available at www.business.gov.au.







## **ABOUT EUROPEWAVE**



EuropeWave PCP is an innovative R&D programme for wave energy technology, which runs from 2022 to 2026. It combines over €22.5m of national, regional and EU funding to drive a competitive Pre-Commercial Procurement (PCP) programme for wave energy.

Originally pioneered by the Wave Energy Scotland programme, the PCP model provides a structured approach, fostering greater openness, collaboration and sharing of risk between the public sector and technology developers. The programme will focus on the design, development, and demonstration of



cost-effective wave energy converter (WEC) systems for electrical power production that can survive in the harsh ocean environment.

Match-funded by the EU's Horizon 2020 programme, EuropeWave is a collaboration between Wave Energy Scotland (WES), the Basque Energy Agency (EVE) and Ocean Energy Europe (OEE). This collaboration is closely aligned with the decarbonisation, industrial and competitiveness objectives of the European Green Deal, and is part of a range of actions being taken to meet the European Commission's targets of 100MW of ocean energy by 2027 and at least 1GW by 2030.



This is part of the EuropeWave project that has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 883751.

https://www.europewave.eu/

#### **ABOUT RENMARINAS DEMOS**

The RENMARINAS DEMOS Programme was established by Spain's Ministerio para la Transición Ecológica y el Reto Demográfico (Ministry for Ecological Transition and the Demographic Challenge) to grant aid for investment in pilot projects, test platforms and port infrastructure for marine renewables. This was established within the framework of the European Union-funded Recovery, Transformation and Resilience Plan, Next Generation EU. The programme provides aid in the form of a non-refundable grant managed by IDAE, Instituto para la Diversificación y Ahorro de la Energía (Institute for Diversification and Energy Saving).









## **ABOUT ENTE VASCO DE LA ENERGIA (EVE)**

The Ente Vasco de la Energía (EVE) is the Basque Country's energy agency, a public body established by the Basque Government. EVE serves as a central force in the region's energy sector, with a focus on the promotion of energy efficiency, the expansion of renewable energy sources, the development of sustainable energy policy, and the advancement of innovative energy technologies. The funding has been provided through the Grants programme for investment in the demonstration and validation of emerging marine renewable energy technologies 2023 to further support the ACHIEVE Programme.

