

Carnegie Wins European Wave Energy Contract

Strategic contract for CETO technology awarded under the EuropeWave PCP Programme

- CETO Wave Energy Ireland Ltd selected as 1 of 7 contractors for Phase 1 of the €20m EuropeWave PCP, a competitive programme to advance wave energy
- Awarded €291k (A\$463k) for Phase 1 to deliver a CETO tank testing campaign and a CETO concept design for sites in Scotland and the Basque Region, subject to contract signing
- Selection of subsequent Phase 2 (€600k) and Phase 3 (€3.75m) EuropeWave PCP contracts based on competitive selection within the selected contractors
- CETO was assessed by industry experts against criteria including power performance, survivability, availability and affordability
- Strong third-party validation of CETO's technical and commercial potential as a source of renewable energy and strong alignment with the Company's strategic objectives

Carnegie Clean Energy (ASX: CCE) ("Carnegie" or the "Company") is pleased to announce that its wholly owned subsidiary, CETO Wave Energy Ireland Limited, has been selected to receive a contract under the EuropeWave Pre-Commercial Procurement (PCP) programme. EuropeWave PCP is an innovative and competitive stage-gate programme designed to address a specific challenge: *To advance promising wave energy converter systems to a point from which they can be developed to commercial exploitation through other national/regional programmes and/or private investment*.

CETO Wave Energy Ireland Limited was selected alongside six other companies to deliver Phase 1 of the programme after meeting rigorous selection criteria including the performance, survivability, availability and affordability characteristics of the proposed systems. Subject to signing contracts, the Company will be paid €291k (A\$463k) to deliver required Phase 1 activities including undertaking tank testing and delivering a CETO concept design for deployment at the open-water facilities of the Biscay Marine Energy Platform (BiMEP) in the Basque Country and the European Marine Energy Centre (EMEC) in Scotland in Phase 3. Phase 1 will commence on 3rd January 2022 and run for 7 months.



With almost €20 million in funding for the 3 phases of the programme, which runs from 2022 to 2026, the EuropeWave PCP is a collaboration between Wave Energy Scotland (WES), a subsidiary of the Scottish Government's Highlands and Islands Enterprise, the Basque Energy Agency (EVE).

Europe and the UK are driving forces behind the adoption of wave energy with several investments and support mechanisms underway. EuropeWave PCP's objective is to accelerate the development of cost-effective wave energy converter systems that can survive in the harsh ocean environment, and



ultimately EuropeWave PCP will contract three of the Phase 1 contractors to deploy their prototypes at BiMEP or EMEC in Phase 3.

Carnegie's CEO, Mr Jonathan Fiévez, commented: *"We are extremely pleased that our CETO technology was chosen as one of the promising solutions to be advanced through the exciting and innovative EuropeWave PCP Programme. The EuropeWave Buyers Group represent great strategic partners. Being selected for this contract is a strong third-party validation of the technology we've developed and will help us to establish a solid framework for future commercial project investments. We are excited to demonstrate the technical and commercial potential of our CETO technology and thrilled to be part of the EuropeWave PCP programme which will show future investors the wealth of exciting opportunities emerging within the wave energy industry.*

"Programmes like this show the urgency and the opportunity to drive wave energy and accelerate global efforts towards decarbonisation. Wave energy is beginning to gain traction and will complement existing renewables such as wind and solar. Harnessing the power of our vast oceans is a vital step in our transition to the use of sustainable clean energy, and to achieve net zero emissions as soon as possible."

The European Commission's Strategic Energy Technology Plan (SET Plan) has set ambitious targets for ocean energy technologies to reduce its levelised cost of energy (LCOE) over the next fifteen years to at least 20 c€/kWh (2025), 15 c€/kWh (2030) and 10 c€/kWh (2035). By 2050 ocean energy will be able to provide 10% of Europe's current electricity needs and 400,000 jobs¹.

CETO Wave Energy Ireland will deliver Phase 1 of the PCP with the support of an impressive team including its consortium partner SAITEC Offshore Technologies and subcontractors Yavin Four Consultants, DNV UK Ltd, IHCantabria and Julia F. Chozas Consulting Engineer.

The CETO design to be delivered in Phase 1 builds on Carnegie's Digital Development Pathway and aligns with Carnegie's plans to progress and validate recent technical achievements. For instance, the performance improvements delivered by Carnegie's new advanced controllers, already demonstrated via simulations, will be validated in the tank tasking campaign at the Cantabria Coastal and Ocean Basin (CCOB) in Spain during Phase 1. Ultimately, if successful in subsequent phases, the innovations delivered in the Digital Development Pathway and EuropeWave PCP Phases 1 and 2 would be demonstrated and validated via a CETO prototype deployment at EMEC or BiMEP in Phase 3.

Following the conclusion of Phase 1, another rigorous selection process will be conducted, with five companies out of the seven selected for Phase 2, and subsequently, three companies selected for the third and final phase.

Each company involved will retain ownership of the intellectual property, the results and any physical models, prototypes or other test pieces produced during the PCP.

The final contract is expected to be signed in December 2021, and Carnegie will keep shareholders informed with its progress throughout 2022.

¹ Ocean Energy Europe, About Us <u>https://www.oceanenergy-europe.eu/</u>



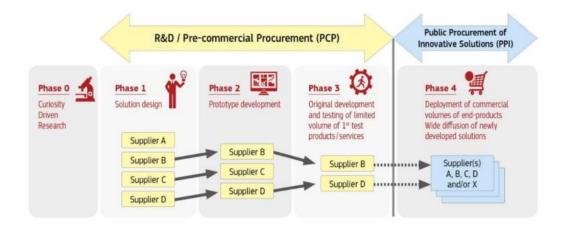
This announcement has been authorised by the Chairman and CEO.

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ABOUT EUROPEWAVE PCP

EuropeWave PCP is an innovative R&D programme for wave energy technology, which runs from 2022 to 2026. It will combine 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, it 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 2025 and at least 1GW by 2030.

The main technical challenges to be addressed in EuropeWave PCP may be expressed in terms of:

• Performance – obtain quantitative evidence of appropriate power capture and conversion. capability and increase confidence in yield predictions from numerical model simulations.



- Survivability demonstrate effective strategies for survival in survival events.
- Availability demonstrate levels of availability through reliable prototype operation.
- Affordability increase confidence in the estimation of the technology costs (capital and operational) and determine a route to cost reduction to achieve a competitive LCOE.

The 3 Phases of the Europe Wave PCP:

			Number of Contracts		Contract Maximum Value	
	Start date	End Date	Minimum	Anticipated	ex. VAT	inc. VAT
Phase 1 [Concept Development]	03 Jan 2022	29 July 2022	5	7	€ 291,667	€ 350,000
Phase 2 [FEED and Modelling]	26 Sept 2022	30 June 2023	4	5	€ 608,333	€ 730,000
Phase 3 [Open- water deployment]	11 Sept 2023	29 May 2026	3	3	€ 3,750,000	€ 4,500,000
				Totals	€ 4,650,000	€ 5,580,000

Phase 1 is expected to complete the following mandatory development tasks:

- Conceptual design development of the complete system which will be tested during Phase 3.
- Physical testing of a small-scale model in the mandatory test conditions.
- Independent review of tank testing activities.
- Preliminary Design Review of the conceptual design for the Phase 3 prototype.

https://www.europewave.eu/

ABOUT CARNEGIE & CETO WAVE ENERGY IRELAND

Carnegie Clean Energy (ASX: CCE) is a technology developer focused on delivering ocean energy technologies to make the world more sustainable. CETO Wave Energy Ireland is a wholly owned subsidiary 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 can optimally control our technologies and generate electricity in the most efficient way possible. The Wave Predictor technology developed by Carnegie uses a proprietary machine learning algorithm to improve the performance of our wave technologies and has additional applications beyond the wave energy industry. The company has a long history in ocean energy with a track record of world leading developments.

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