

US awards support to Carnegie collaboration with US National Renewable Energy Laboratory

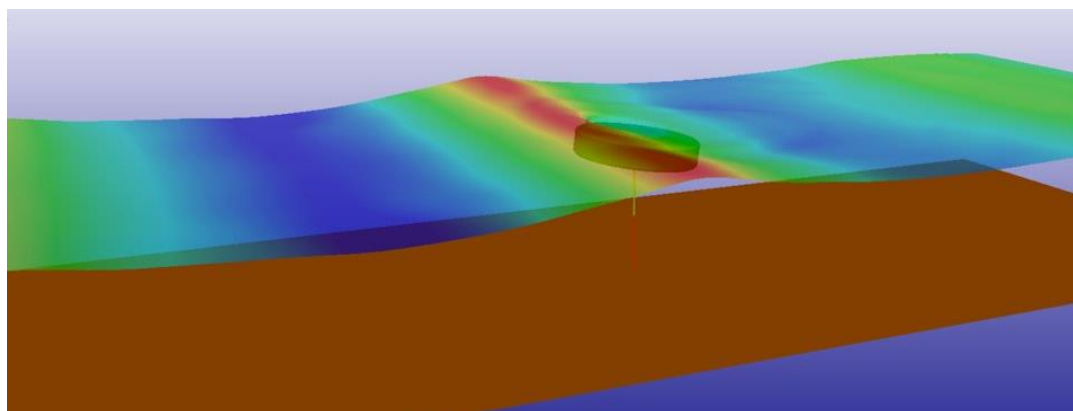
- Carnegie Clean Energy selected as a Technical Support Recipient under the U.S. Testing Expertise and Access to Marine Energy Research (TEAMER) program
- Carnegie's \$95k (USD) Project will support collaboration between Carnegie and the National Renewable Energy Laboratory (NREL) in the US
- Project will deliver advanced computational fluid dynamics (CFD) modelling to predict loads associated with extreme wave events, supporting reduced risk for future CETO deployments
- Exciting opportunity to bring together the leading expertise within NREL and Carnegie to tackle complex CFD analysis

Carnegie Clean Energy (ASX: CCE) ("Carnegie" or the "Company") is pleased to announce it has been awarded support under the US Testing Expertise and Access to Marine Energy Research (TEAMER) program.

The Project was awarded \$95,000 to support a collaborative project that brings together the extensive modelling and testing expertise of both Carnegie and the National Renewable Energy Laboratory (NREL), a national laboratory of the US Department of Energy. The project will tackle the challenge of predicting accurate loads in extreme wave events, an important aspect of survivability in wave energy converters.



The loads from extreme wave events cannot be accurately predicted with the commonly used mid-fidelity WEC modelling tools. However, they can potentially be limiting conditions for a device. In order to reduce the risk for open-ocean deployment, this project will work to deliver better predictions for these highly nonlinear wave conditions. An important impact for the broader WEC industry is the validation of a highly efficient high-fidelity modelling approach. Carnegie's experimental data will be used for validation to increase confidence in the analysis, which can be replicated across the field.



CETO being simulated in extreme waves using a fluid dynamics model

For Carnegie, the results will identify loads and associated stresses for potentially design-driving conditions. The analysis will compare the results for a set of control strategies, helping to identify the optimal approach to use in extreme conditions.

Carnegie CEO Jonathan Fievez said the work is an important part of our efforts to enhance the survivability of wave energy converters under extreme conditions.

“Our technology is built with survivability front of mind and this work will enhance its resilience under the ocean’s more extreme conditions,” he said.

“The energy in waves is a double-edged sword, a powerful source of generation, but also potentially damaging to the infrastructure that harvests it. This modelling work will help accurately validate that our technology can survive a range of scenarios.

“With high confidence in the modelling of extreme wave conditions, we can further optimise the technology and continue lowering the levelised cost of the energy produced.”

This international recognition follows over €4.7m in funding awarded to Carnegie’s subsidiaries in Europe last year, all aimed at bringing its CETO wave energy technology to commercial scale internationally.

This Project, formally named ‘*Extreme Wave Computational Fluid Dynamics Modeling with 1-Way Fluid Structure Interaction for a Wave Energy Converter*’ will be delivered over the course of 2024, with completion expected in December 2024.

Mr Fievez said: “We are grateful for the funding through the TEAMER Program, it is both a validation and milestone on our journey to reaching commercial scale. We look forward to working closely with NREL, benefiting from their significant experience in renewable energy and sharing our experience gained through the development of CETO.”

This announcement has been authorised by the Chairman and CEO.

For more information

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ABOUT CARNEGIE

Carnegie Clean Energy (ASX: CCE) is a technology developer focused on delivering ocean energy technologies to make the world more sustainable. 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. Based in Australia with a global presence, Carnegie's wholly owned international subsidiaries such as CETO Wave Energy Ireland and Carnegie Technologies Spain are actively engaged in our product development.