

MoorPower – Scaled Demonstrator

Summary

Globally, as the aquaculture sector moves operations further offshore, the sector is encountering new challenges to access clean and reliable energy.

Without shore-based power, energy-intensive offshore aquaculture operations such as feeding barges become reliant on diesel generators with many associated costs, risks and carbon emissions. However, the shift into energy-intensive offshore wave environments presents an opportunity to utilise an untapped energy source constantly flowing around the facilities, wave energy.

Carnegie’s wave-powered barge concept, “MoorPower” offers a solution to this energy challenge – providing clean, reliable, predictable energy to support the growth of a diverse sustainable blue economy.

This Project addresses two major challenges.

1. Wave energy is an untapped renewable energy resource but its levelised cost of energy (LCOE) must continue to reduce to trigger significant uptake. Ocean Energy Europe (OEE) forecasts a significant opportunity with a €653b market potential by 2050. Fostering development of wave energy technologies facilitates the BECRC vision of supporting aquaculture with offshore renewable energy and supports the commercialisation of wave energy by validating new markets and advancing technology.
2. Aquaculture is moving further offshore in response to growing demand, environmental concerns, conflict with stakeholders and access to suitable sites. Other offshore industries are also developing in a diverse sustainable blue economy. However, significant challenges to overcome include the availability, safety, reliability and environmental aspects of energy supply.

This industry project addresses these key challenges and BECRC user needs through the design and delivery of MoorPower, a novel product enabling a wave-powered barge. The project will design, install and operate a scaled prototype of MoorPower at Carnegie’s private wave energy research facility in North Fremantle, Western Australia.



Image courtesy of Carnegie Clean Energy

Project ID

1.21.001

Research Program

RP1 Offshore Engineering and Technology (OET) Program

Project Leader

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Duration

39 months

Participants

- » Carnegie Clean Energy
- » Advanced Composite Structures Australia (ACS-A)
- » Climate-KIC Australia Ltd
- » Huon Aquaculture
- » Tassal Group Limited
- » University of Tasmania
- » University of Queensland
- » DNV
- » AMC Search