



To whom it may concern

The Australian Maritime College (AMC) is a specialist institute of the University of Tasmania and is the National Institute for Maritime Education, Training and Research.

AMC has worked collaboratively with Wave Swell Energy Limited (WSE) since 2016.

During this period the WSE technology has been extensively tested and optimised by performing many comprehensive series of physical scale model experiments in the AMC ocean wave basin and oscillating flow test rig at Launceston, Tasmania.

Since 2020, AMC have been involved in establishing the instrumentation, data acquisition and analysis techniques to be used on the full scale 200kW Wave Energy Converter (WEC) installed off the coast of King Island, Tasmania.

AMC has been analysing the comprehensive set of data as it is being fed back into a database. This work commenced in July 2021.

A snapshot of the data analysis to date has concluded the following to be the case:

- UniWave200 is operating and exporting power consistently and efficiently across a broad range of sea states, from significant wave heights of 0.5m to 1.9m, and from peak wave periods of 9s to 17s.
- The turbine currently operates at a constant speed. However, the analysis of the operational data from the UniWave200 turbine confirms improvements can be made by incorporating a variable speed control system, optimising the turbine's performance and increasing its conversion efficiency.
- The peak dynamic turbine efficiency, including losses, is approximately 76%. This is in close agreement with the idealised turbine peak efficiency of around 83%, which assumes steady flow and ignores losses.
- The custom-made one-way valves work efficiently and reliably, allowing for the successful operation of the world's first unidirectional OWC.
- The power systems operate efficiently throughout all wave conditions.
- The measured full scale performance data from the UniWave200 WEC will feed into the design of larger commercial WECs, resulting in higher efficiencies and less uncertainty.

The data analysis will continue throughout the duration of the project, providing insight and technical advice for further optimisation and will help guide WSE in their future research and development plans.

Please do not hesitate to contact me on +61 (0)419 543 918 or email gregorm@amc.edu.au should you wish any further information.

Yours sincerely,

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