

Hydrogen Powering of Vessels

Summary

The main objectives of this research project are to undertake a feasibility study into the maturity of hydrogen and ammonia powered vessel technology, to consider the near-term market for such vessels operating in Australian waters and for overseas vessel exports, and to understand the relationship between the logistic supply chain for hydrogen fuels and the likely uptake of hydrogen vessel propulsion in Australia and New Zealand.

The maritime industry is responsible for producing 2.5% of Global Greenhouse Gas emissions. By switching to green fuel options such as hydrogen and ammonia, the industry is intended to introduce the first zero-emission fleet by 2030.

In line with the recent advances of the European countries in developing hydrogen-powered vessels, Australia and New Zealand intend to move toward a zero-emission shipping industry.

The hydrogen-powered vessel concept is still in its infancy with many unknowns and uncertainty around it. Small size experimental vessels powered by hydrogen fuel are already being trialled in other locations worldwide (UK, Canada). Safety issues, economic feasibility, port, and vessel requirements for being converted to hydrogen-based hubs/vessels are among the topics which require further investigations.

This research intends to shed light on the abovementioned unknowns by examining the previous attempts around the world for realising the hydrogen vessel concept. Furthermore, this research assesses the available guidelines, capabilities, and infrastructure in Australia for building and exporting Australian-made hydrogen vessels.

The output of this research allows the Australian and New Zealand shipping industries to make a smooth transition to the net-zero emission future with hydrogen-powered vessels.

End-users of the program outputs will include naval architects and marine engineers employed by ship and boat builders, equipment suppliers, shipping companies, port operators and developers, the hydrogen generation industry, and potentially informing the development of policy at state and federal government level.



Project ID

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Research Program

RP1 Offshore Engineering and Technology (OET) Program

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Duration

24 months

Participants

- » BMT Commercial Australia Pty Ltd
- » Auckland University of Technology
- » DNV
- » Griffith University
- » Huon Aquaculture
- » University of Tasmania
- » Tasmanian Government

Third Parties

- » Revolution Design
- » Australian Maritime Safety Authority
- » Riverside Marine
- » Tasmanian Ports Corporation
- » Flanders Investment & Trade