

# Ammonia as a sustainable marine fuel: Policy challenges and recommendations

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# MariNH<sub>3</sub>

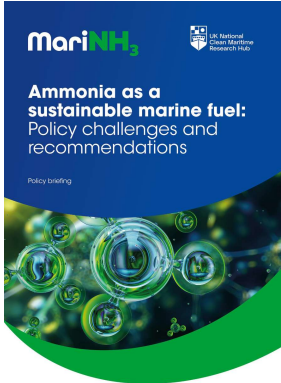
Clean, green ammonia engines for maritime



UK National Clean Maritime Research Hub



Durham University



The policy briefing outlines how ammonia, a chemical that has been traded for over a century and is used extensively in farming and refrigeration can be used in a new maritime shipping application.

Green ammonia produced using renewable electricity offers a pathway to significantly reduce well-to-wake maritime shipping fuel emissions by up to 80%.

3 key challenges for the adoption of green ammonia as an alternative shipping fuel

- Challenge #1 Ammonia as a fuel
- Challenge #2 Green ammonia supply
- Challenge #3 Safety management

Our key recommendations are summarised below – that **ammonia must be recognised as a fuel** to progress the industry, the **international supply of ammonia needs to be developed**, and whilst there is significant safety knowledge due to its established supply chain, there are **additional safety considerations** for the application of green ammonia as a fuel.

Ammonia as a fuel	Green ammonia supply	Safety management
Carbon pricing with ratchet thresholds to encourage shift to zero carbon fuels	Capitalise on ammonia and hydrogen's shared infrastructure requirement	Government support for skills and safety training in the new use of ammonia
Fuel standards based on whole life cycle (Well-to-Wake) and additional greenhouse gases (not just CO <sub>2</sub> )	Green Shipping Corridors with ammonia fuel could encourage development of supply	World class safety standards should be maintained
R&D for nitrous oxide and ammonia leakage mitigation technologies	Strategic planning around which ports to provide incentives for development of ammonia bunkering facilities	Communications campaign for public acceptability of ammonia as a fuel

Get the policy briefing:

[marinh3.ac.uk/ammonia-as-sustainable-marine-fuel/](http://marinh3.ac.uk/ammonia-as-sustainable-marine-fuel/)

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