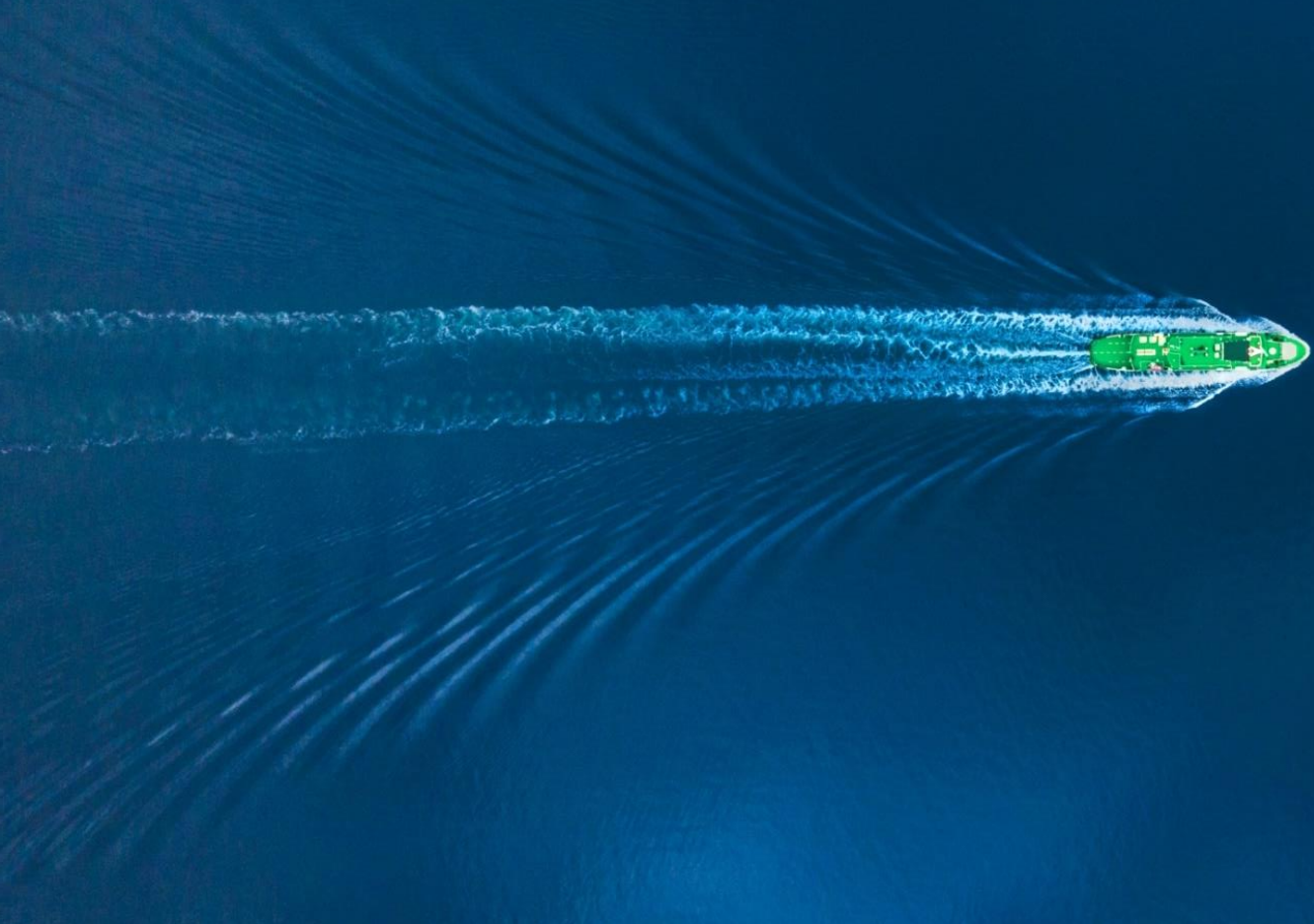




OCEANIA MARINE ENERGY

Sustainable Shipping



AEA APAC Conference

June 2025



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*Sustainable
Shipping*



SEATECH
Trusted Solutions



DNV



DNV Seatech Oceania MOU Signing

Singapore Maritime Week – March 2025



Nick Bentley – Oceania Marine Energy

Prabjot Singh Chopra – Seatech Solutions

Lukasz Luwanski - DNV



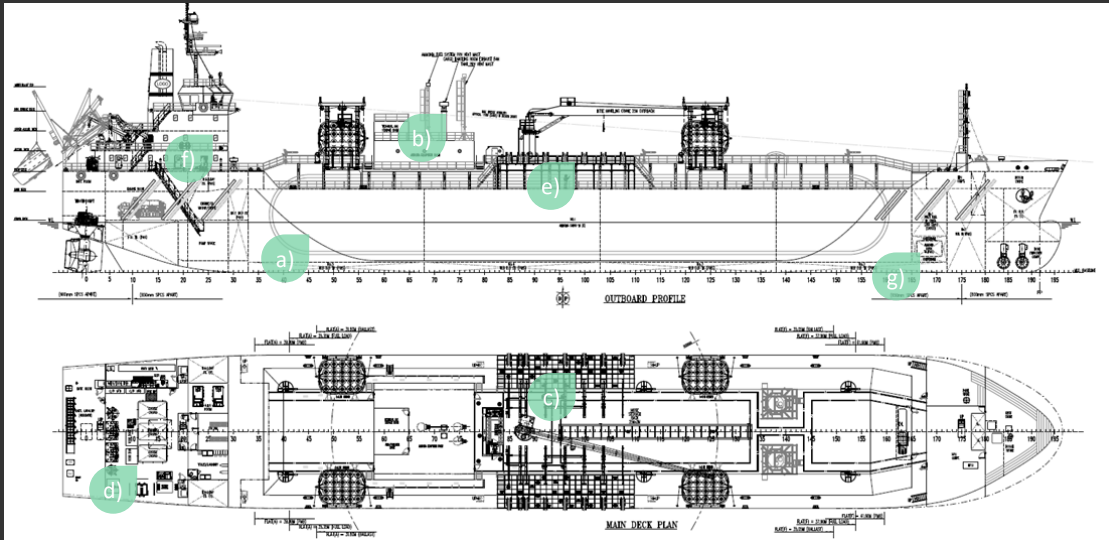




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Oceania α – Ammonia Systems



Regulation, Class and Guidance

- DNV-RU-SHIP-Pt5, Ch7, GF-NH3 (Ammonia Cargo as Fuel)
- DNV Ammonia as a Marine fuel safety handbook
- IMO MSC/Circ.1687 – Interim Guidelines
- IGF Code Part C-1 Guidelines for Ships using Alternative Fuels
- IGC Code Part C-2 Guidelines for Ships using Alternative Fuels
- MARPOL Annex VI
- OCIMF Recommendations for Liquefied Gas Carrier Manifolds
- SIGTTO
- SGMF – Bunkering Safety Guidelines

a) Fuel Containment System

- Bi-lobe Type C Tank
- 10,000 m³, -33°C, 5.3 barg

b) Gas Detection and Monitoring

- Fixed Detection (Pump Room, Manifold)
- Alarm at 30% LEL
- Portable Detectors
- 110 ppm alarm / 220 ppm toxic limit
- Linked to shutdown systems

c) Ammonia Release Mitigation

- Ammonia Cargo Re-liquefaction Plant
- Water Spray / Screen System
- Pressure Relief Vents to Masts
- Safe Havens (CCR & Portable)
- PPE

d) Engine and Fuel Use

- Dual Fuel Engines (Ammonia + MGO)
- Ammonia Gas Buffer Tank
- Water Mist System (ER/Battery Room)

e) Bunkering System

- Ship-to-ship Transfer Capability
- Midship Manifold P&S
- OCIMF Manifold Design
- Vapor/Liquid/N₂ Lines, Filters, Reducers
- ISO 18683, 20519, 28460 Compliance

f) Control and Safety Systems

- Computerized Cargo Control System
- ESD System with Quick-Closing Valves
- Audible/Visual Alarms

g) Piping and Materials

- SS316L for Ammonia Piping
- Spray Shields on Flanges/Valves
- Supports and Expansion Joints
- Double-walled Piping



AiP Award Ceremony for 10,000cbm NH3 Bunkering Vessel





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Alignment with Demand

The 1st NH3 powered Bulk Carriers will call in the Pilbara in 2026

Multiple Ship Owner-Operators seeking NH3 supply volumes for their fleets

Order book of 20+ NH3 powered Bulk Carriers secured by 2030

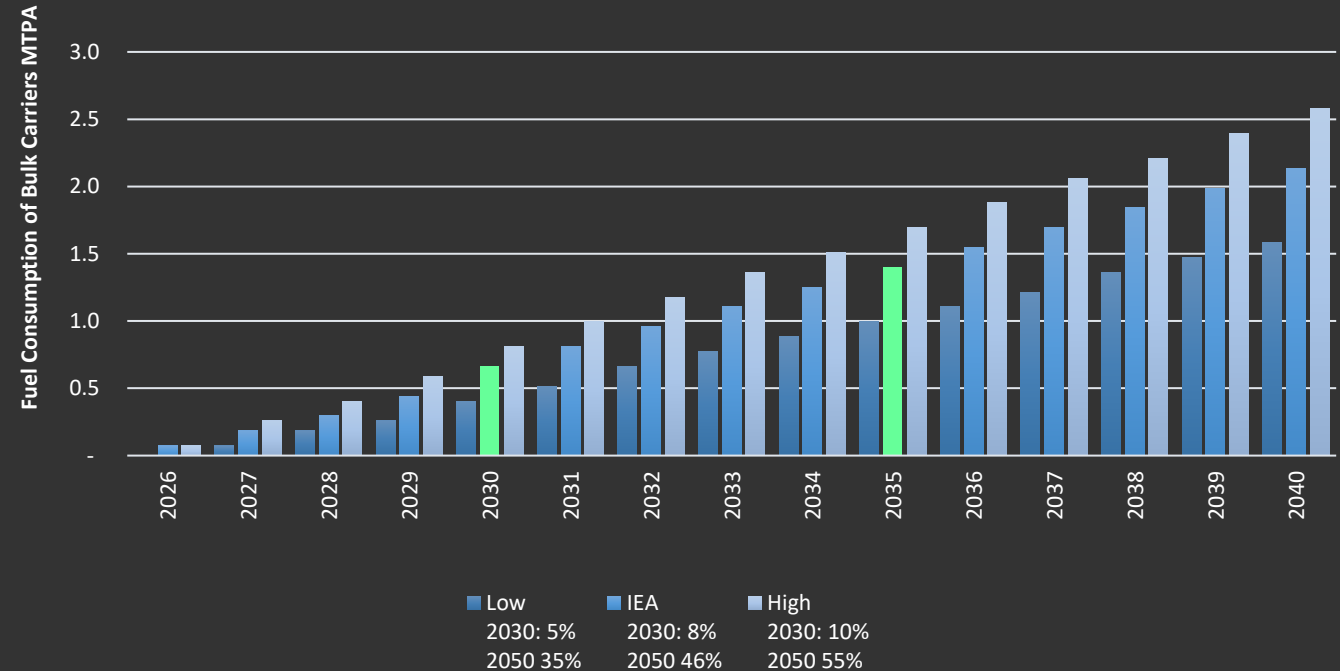
1st phase of 0.65 MTPA covers early mover fleet by 2030

2nd phase to 1.3 MTPA to serve uptake of demand to 2035

Market demand of NH3

- 2030 – 0.6 MTPA
- 2035 – 1.4 MTPA
- 2040 – 2.1 MTPA

Ammonia Demand Projection - Pilbara



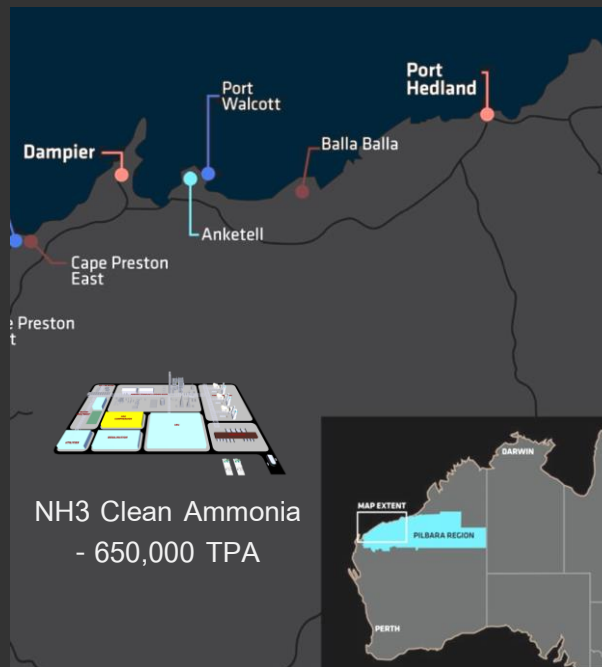


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Connecting the Market

Oceania's first vessel can deliver fuel sufficient to power over **200** shipments of iron ore, **5%** of the Pilbara shipping fleet.

At origin low Carbon Fuel Supply



Oceania's Bunker Vessels



NH3 BV - 10,000m³

Pilbara Port to Asia Over 3,650



Servicing the world's heaviest
tonnage shipping route





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Delivering The Transition

- A viable clean ammonia fuel supply of **650,000** tonnes per year by **2029**
- A flagship bunker vessel designed to DNV class, and aligned with **Port of Dampier's vision**
- A region ready - technically, commercially, and strategically - to lead in **maritime decarbonization**
- Let's make the **Pilbara** the launchpad of clean shipping for the Australia – Asia trade route





OCEANIA MARINE ENERGY

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Contact us

www.oceania.energy

info@oceania.energy

+61 (0) 432 968 909

Oceania Marine Energy Pty. Ltd.

Level 9

182 St Georges Terrace

Perth WA 6000

Australia

ABN 36 634 089 446