



HaiSea Marine

A Haisla - Seaspan partnership

HaiSea Marine & Decarbonization

June 16, 2023
Vincent Percy



HaiSea Marine LP

- Joint venture, majority owned by the Haisla Nation in partnership with Seaspan ULC.
- Formed in 2019, with a commitment to operate the greenest tugboat fleet in the world
- Ship-assist and escort towing services to LNG carriers calling at the new export facility in Kitimat, in the unceded traditional territory of the Haisla Nation.

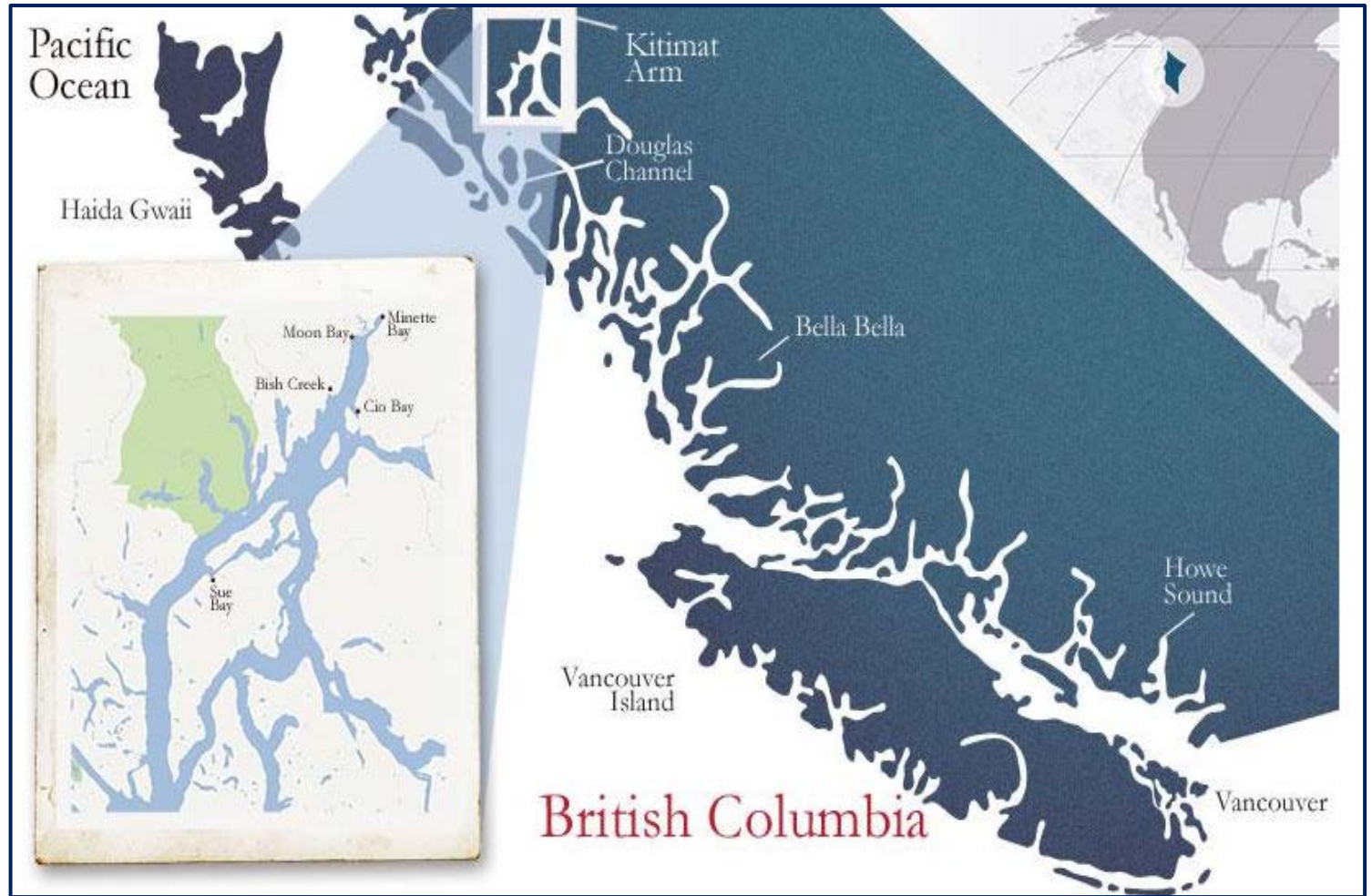
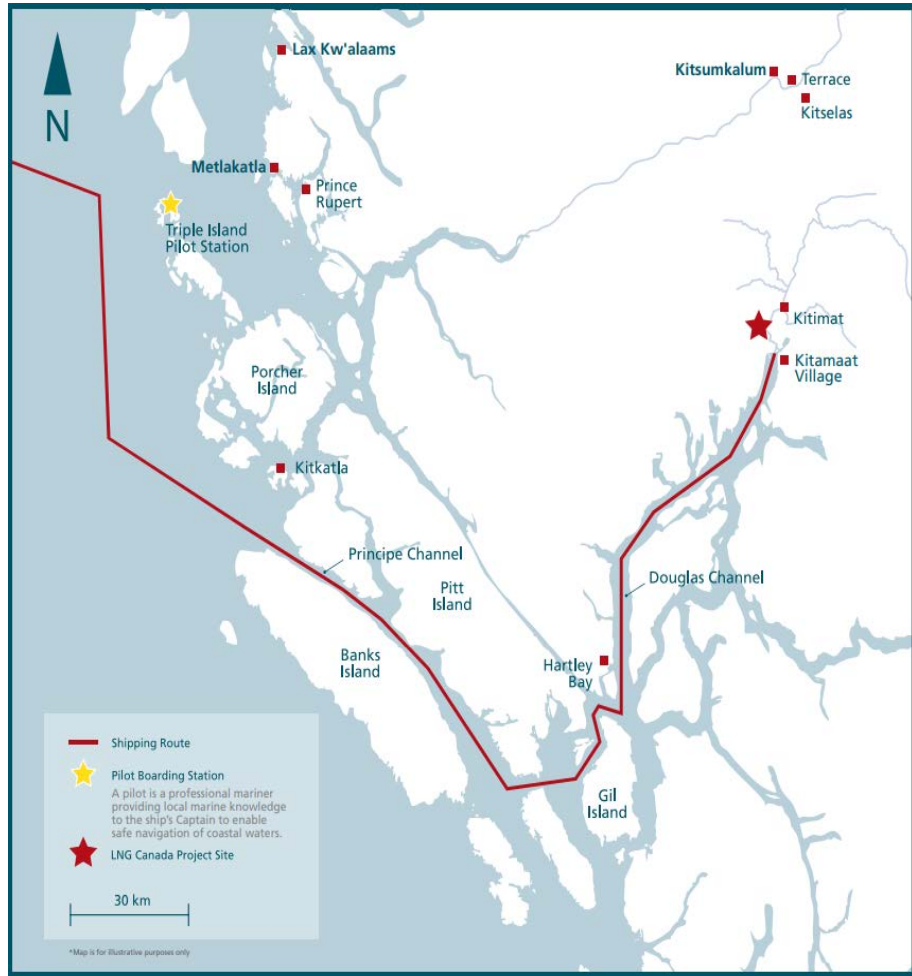


HaiSea Marine LP

- Alignment of core values, vision, mission
- The Haisla people have lived off the land and water resources of the Douglas Channel and their traditional territory for hundreds of years, and protection of those resources for future generations is a strong commitment by every Haisla member



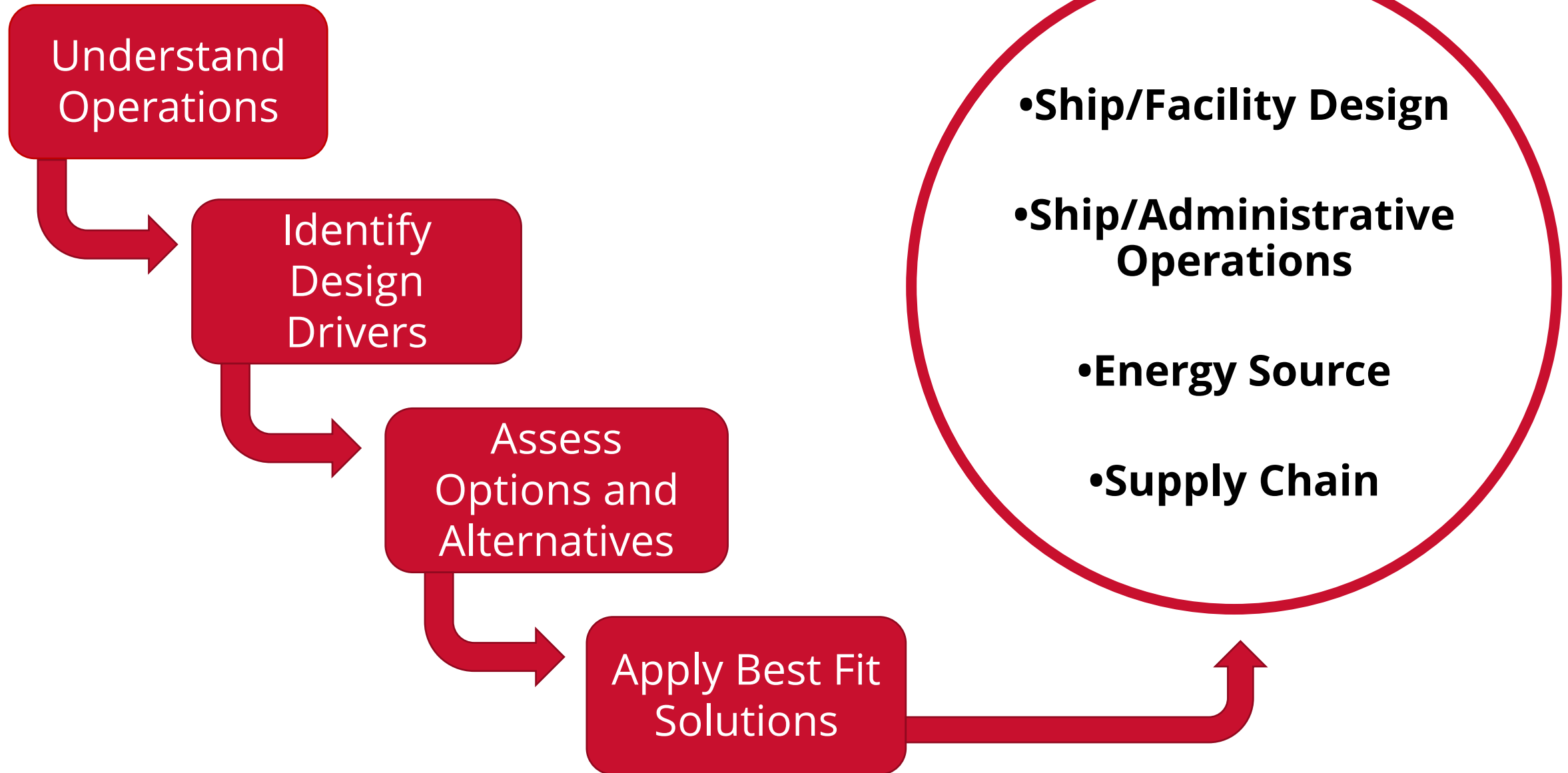
Kitimat and the Douglas Channel, British Columbia



Kitimat and the Douglas Channel, British Columbia



Developing a Plan



Collaboration and Partnerships

- Haisla and local stakeholders
- Client (LNGC)
- Designer (Robert Allan)
- Builder (Sanmar Shipyards)
- Class (ABS)
- Seaspan
- Equipment providers



3 x ElectRA 2800 - Battery Electric Harbour Tugs

Particulars

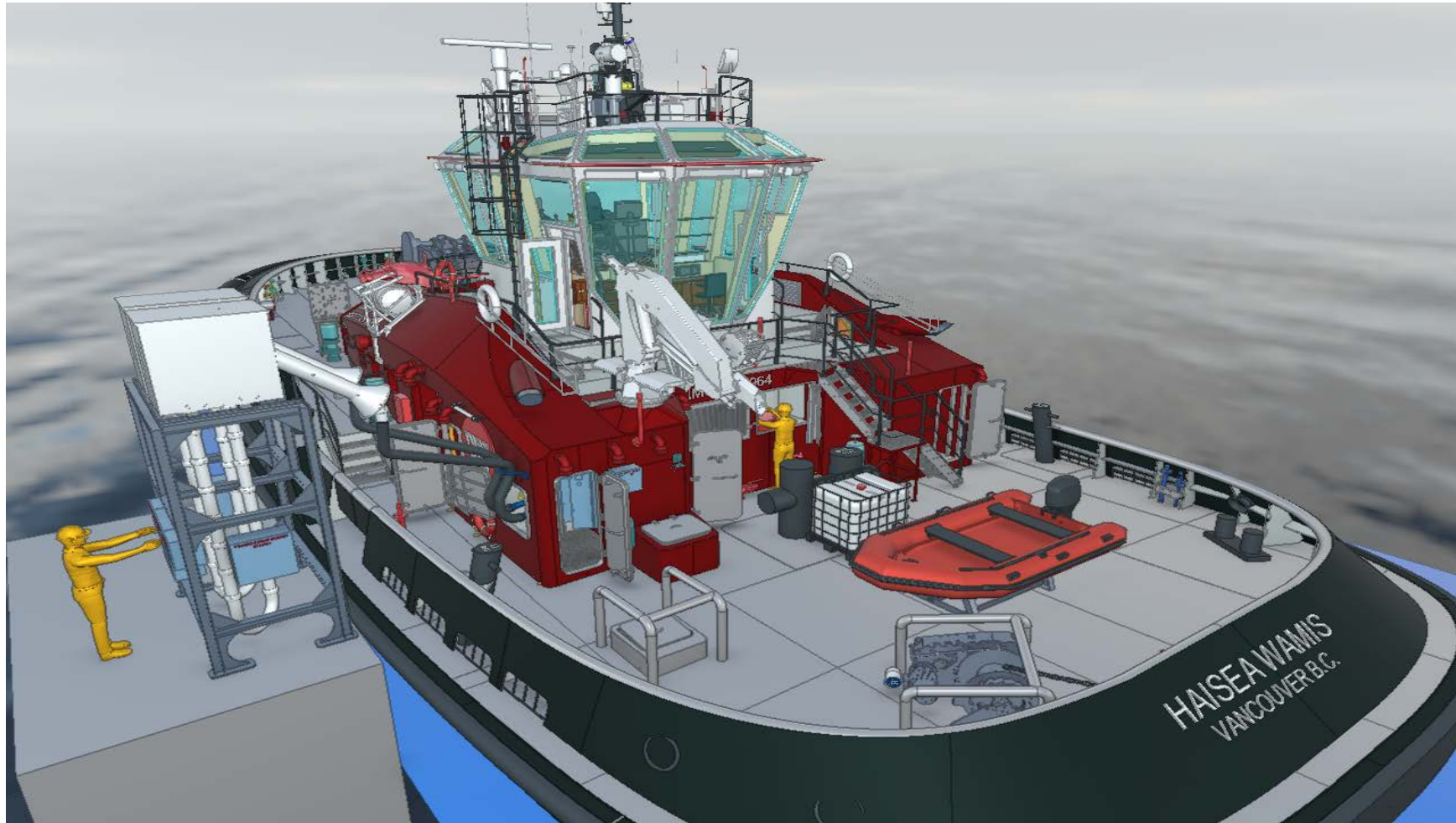
- Length overall - 28.4 metres
- International Gross Tonnage – 472
- Total battery capacity - 5288 kWh
- Full Speed 12.5 knots
- 70 tonne bollard pull

Key Environmental Benefits

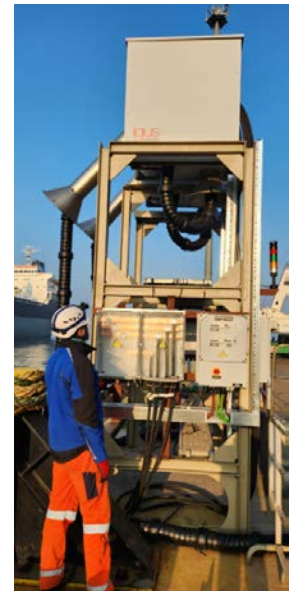
- 98+% operations will be on batteries
- Reduced GHG emissions by 3000-5000 MT of CO₂e / year (99% of total, including upstream)
- Elimination of local pollutants (SO_x, NO_x, PM)



ElectRA Charging Infrastructure



- Charge in 4 hours
- Station for each tug
- Easy connection



Design and construction is a joint effort between LNGC, the Haisla Nation, HaiSea and Sanmar Shipyard. Working together has achieved cumulative benefits.

2 x RAstar 4000DF - Dual Fuel Escort Tugs

Particulars

- Length overall – 40.2 metres
- International Gross Tonnage – 996
- Total LNG capacity – 57m³
- Full Speed 14.5 knots
- 100 tonne bollard pull

Key Environmental Benefits

- 97+% operations will be on LNG
- Reduced GHG emissions by 3000-4000 MT of CO₂e / year (30% of total emissions)
- Reduced local pollutants (SO_x, NO_x, PM)



Maintenance and Operations Facility



Location

- Directly next to tug berth in Kitimat

Design

- Purpose-built
- Electric with energy efficient equipment

Function

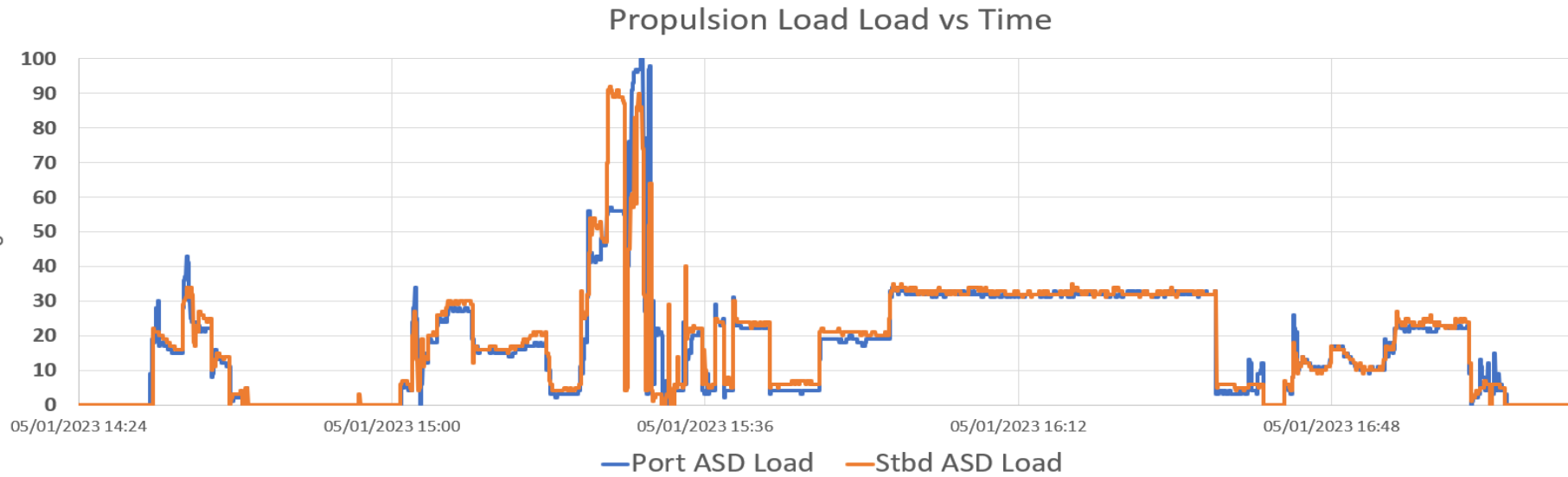
- Reduces travel to and from site

Current Status

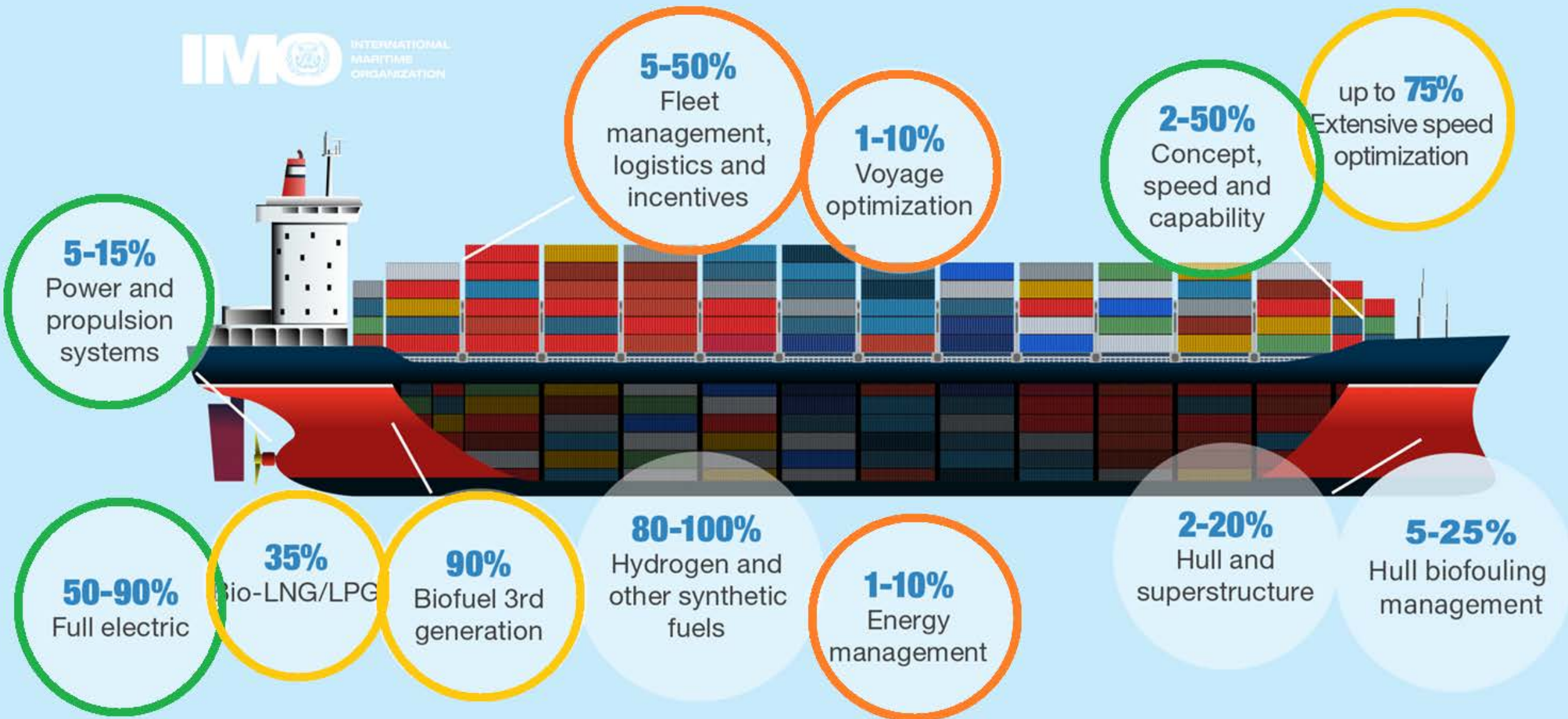


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Modelling Operations, Refinement, and Continuous Improvement



Looking Ahead - Net Zero Emissions by 2050



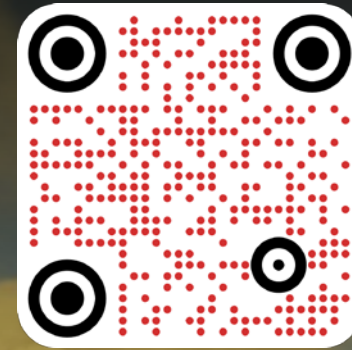


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Seaspan



HaiSea

