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Leading | Protecting | Enhancing

SHIP REPLACEMENT PROJECT

Owner / Operators perspective to new vessel design development.

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afbini.gov.uk

Background

- Master Mariner – Oil & Gas Construction, Saturation Diving Vessels, Cable ships in Offshore Renewables.
- Working at AFBI for three years
- Management of RV Corystes
- New build RV project manager
- Manage small engineering team – Bespoke engineering

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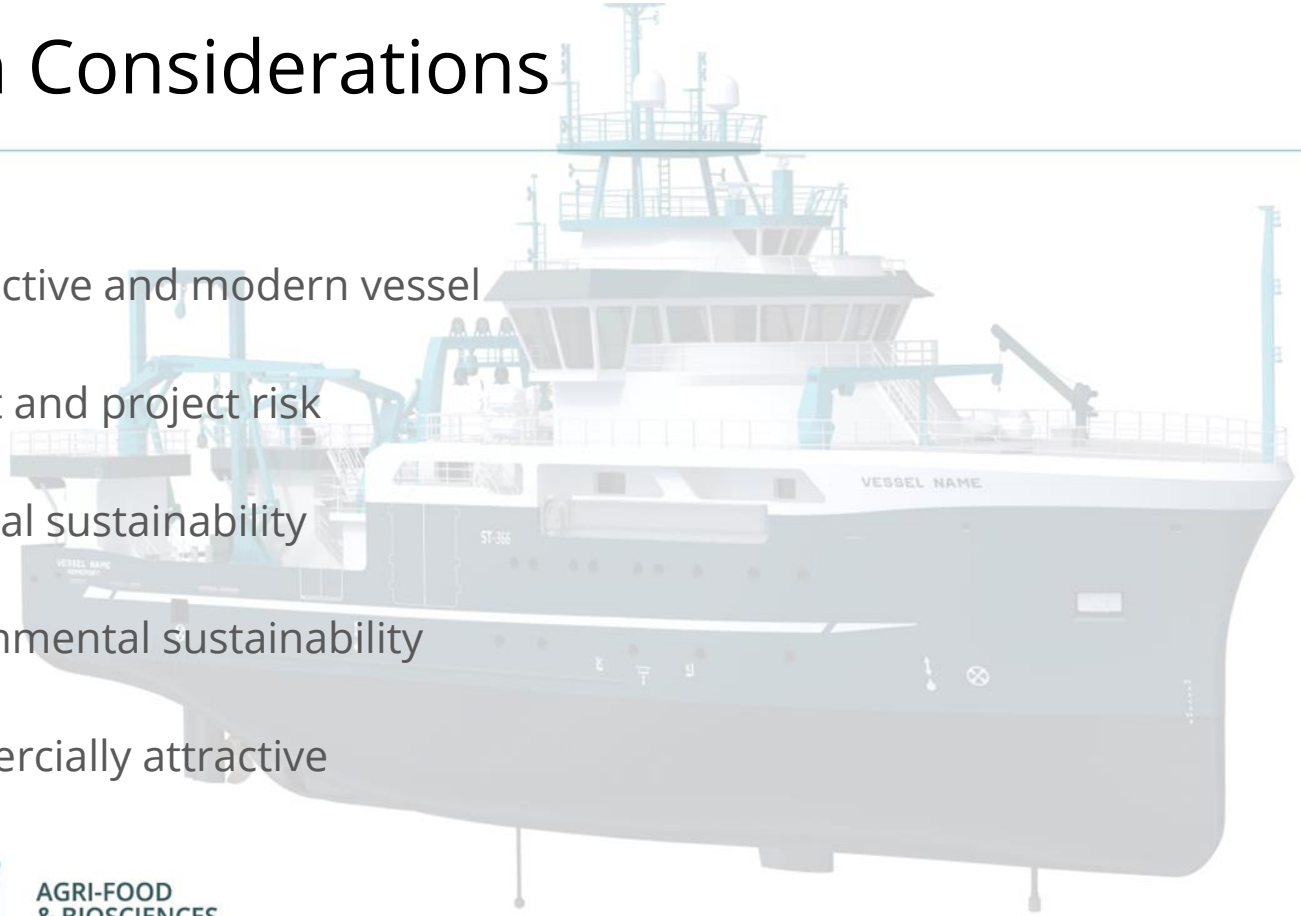
Design Considerations



1. An effective and modern vessel
2. Budget and project risk
3. Financial sustainability
4. Environmental sustainability
5. Commercially attractive

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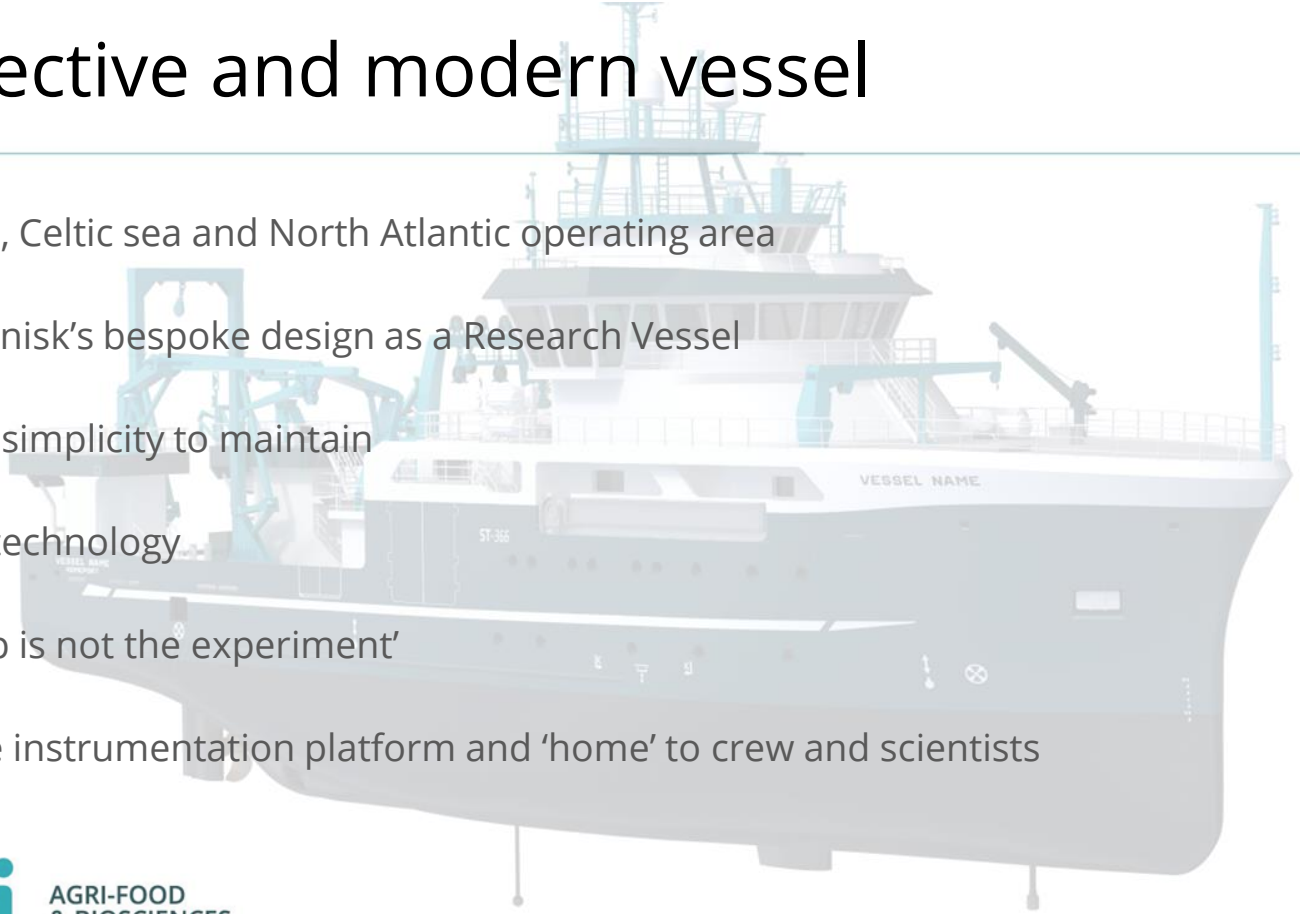
An effective and modern vessel



- Irish sea, Celtic sea and North Atlantic operating area
- Skipsteknisk's bespoke design as a Research Vessel
- Relative simplicity to maintain
- Proven technology
- 'The ship is not the experiment'
- Effective instrumentation platform and 'home' to crew and scientists

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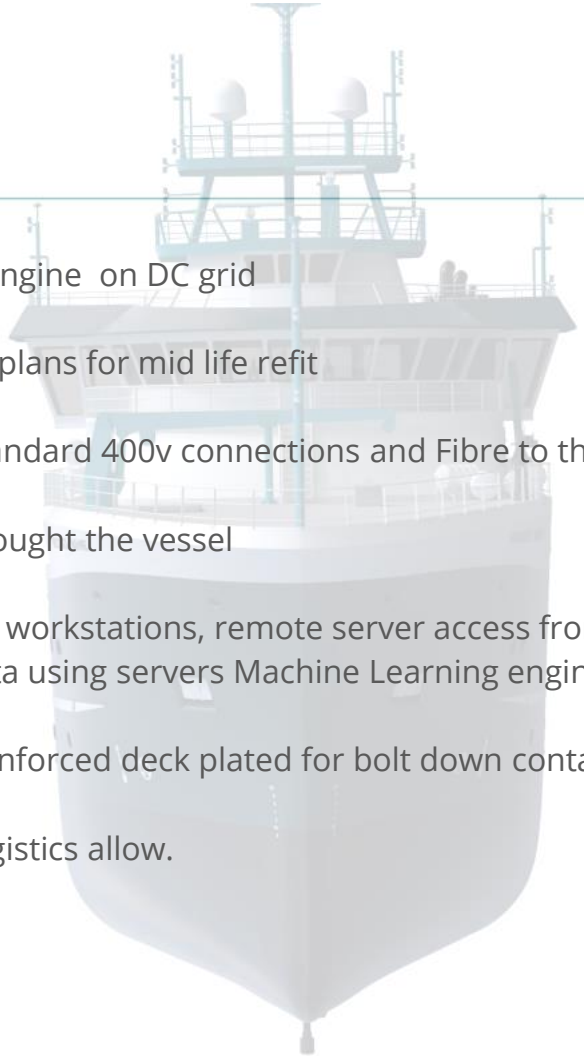
Futureproof....



- Medium speed diesel main engine on DC grid
- Battery pack – modular with plans for mid life refit
- Plug in capability through standard 400v connections and Fibre to the ship in Port
- Extensive Fibre backbone thought the vessel
- 12Kw computer – Virtualised workstations, remote server access from AFBI Operations room ashore, ship is able to output fully processed data using servers Machine Learning engine.
- Modular aft deck layout – reinforced deck plated for bolt down containers / LARS
- HVO fuel ready when fuel logistics allow.

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Budget and Project risk

Budget –

- Capital and 25 Year resource required in Full Business Case – secured prior to contract award.
- Running of the vessel major consideration on design

Risk management–

- Instrumentation capture within specification for ship yard fit out.
- Design and build strategy – Skipsteknisk procured in 2021, Procurement commenced 2022-2023 with award to Armon March 2024
- Capitalising on proven design to de risk elements of the project to allow pursuit of innovative propulsion system.
- Yard warranty procured to be 2 years

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Risk Cont’d

Risk management–

- BIMCO contract – Standard contract amended to take into account bespoke nature of AFBI RV build.
- At the earliest stage Lawyers from NI procurement specialist law firm and London base Maritime law firm involved. They will be available on a call off to AFBI until project end (post warranty).
- Procurement – As NI straddles BREXIT and EU law we used the Competitive Procurement with Negotiation (CPN). AFBI needed to run a robust, transparent and fair procurement with flexibility.

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Financial sustainability

- Main costs - Crew – Fuel - Insurance
- Minimal crew – ship needed to be maintainable by crew.
  - Crew skill
  - Crew retention
  - Crew availability
- Fuel – Belfast fuel logistics unlikely to give many options in the near future. Goal was to minimise fuel burn over the life of the vessel.
- Insurance – ensure we didn't create a vessel with a risk profile that might send H&M and P&I premiums sky high

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Environmental sustainability

- The Hybrid system – minimize fuel burn
  - Plug in in Belfast
  - Hybrid – power management savings
  - Medium speed diesel savings – ‘the one engine ship’

We expect to burn **160 CBM** less per year than Corystes with similar operational profile

Saving **£109600** a year on fuel (at current market prices)

Using the Norwegian Statistics Bureau with a Diesel/CO2 factor of 3.18, this gives reduced CO2 emission of **253.6** tons per year.

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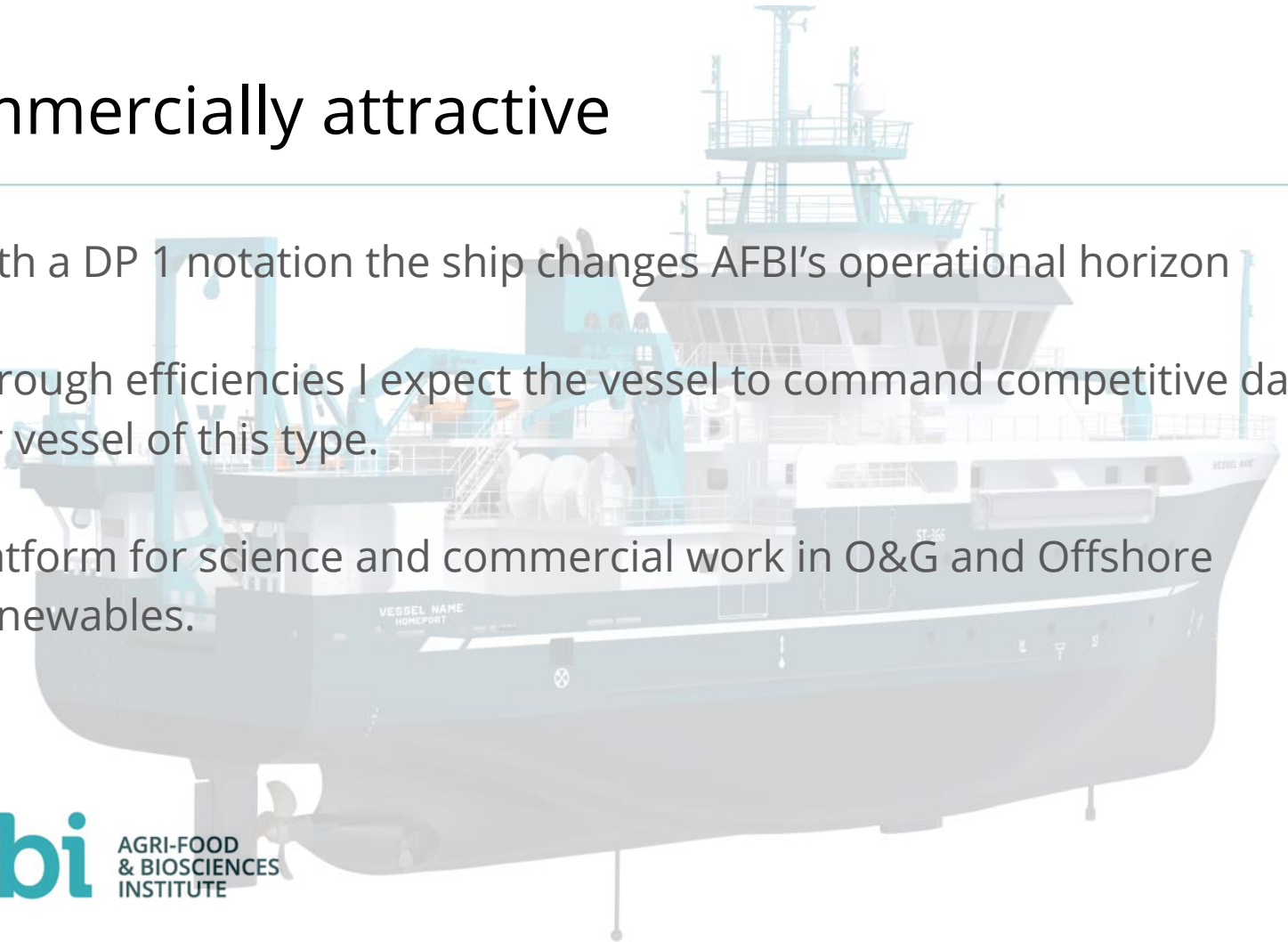
Commercially attractive

- With a DP 1 notation the ship changes AFBI's operational horizon
- Through efficiencies I expect the vessel to command competitive day rate for vessel of this type.
- Platform for science and commercial work in O&G and Offshore Renewables.



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