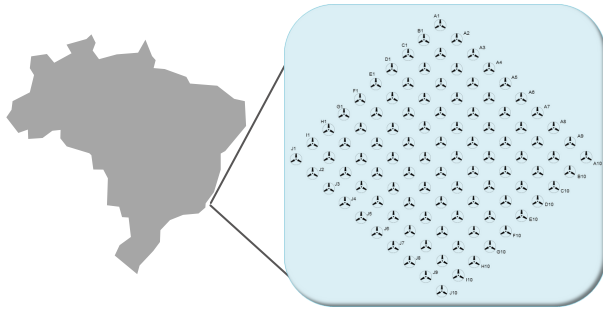


Brazil Offshore Wind Insight

This country insight report summarises the expected durations and vessel costs for the installation of an offshore wind farm (monopiles and transition pieces), off northern Vietnam. The work was carried out using JBA's ForeCoast Marine Design Desk software.



Two vessel strategies were compared:

The first was based on the use of two Jack up Barges (JUB), with a day rate of \$180,000 / day and an operating threshold of 2.5 m significant wave height.

The second was based on the use of 2 Heavy Lift Vessels (HLV) supplied by 4 feeder barges, with a day rate of \$130,000 / day and an operating threshold of 1.6m significant wave height.

TURBINES

100

CAPACITY

1,000 MW total

HUB HEIGHT

120m

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Strategic and operational planning software for the design, optimisation and management of offshore wind projects.

From planning to installation, operation to decommissioning, ForeCoast Marine guides you every step of the way.

Enabling you to de-risk your offshore wind farm, maximise its performance and increase the profitability of your project.

Dd Plan and optimise your offshore wind project with the Design Desk.

Cd Manage the day-to-day operations of your offshore wind project with the Control Desk.

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CAMPAIGN DURATIONS

- Clear seasonal variation, especially when using the HLVs.
- Throughout the year, campaign durations are significantly higher when using the more weather sensitive HLVs compared to the JUBs.

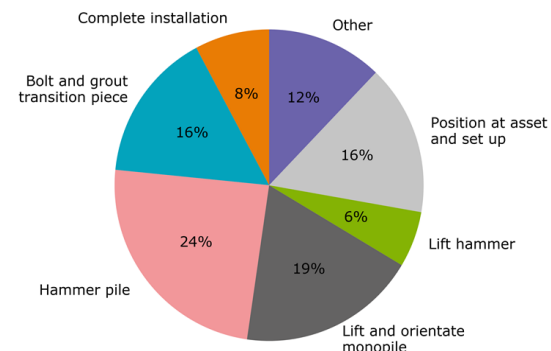
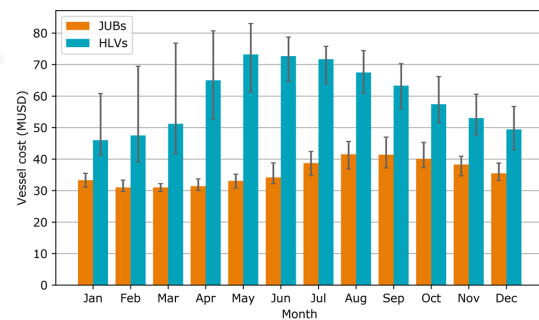
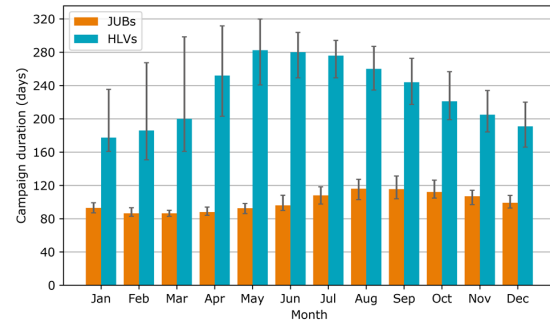
VESSEL COSTS

- Throughout the year, the vessel costs associated with the use of the HLVs are significantly higher compared to the JUBs, due to the long campaign durations of the more weather sensitive HLVs.

N.B. Simulations were started at the beginning of each month. Each bar in the plots represents the expected cost/duration if the installation campaign starts in that month.

DOWNTIME CONTRIBUTIONS

- This plot shows which operations contribute most to downtime,



The findings shown are for illustrative purposes only and are based on a hypothetical case study.