Just in time - Integrating the multi-model-supply chain to meet tight installation windows.

Stephanie De Decker – Business Development Manager Floating Wind

Boskalis
Company overview

- Leading global dredging & maritime expert
- With 9,900 employees and 650 vessels (incl JV’s)
- Active in more than 90 countries across 6 continents
- Three business segments:
  - Dredging & Inland Infra
  - Offshore Energy
  - Towage & Salvage
- Headquarters in Papendrecht, the Netherlands
- Listed on Euronext
Offshore Wind Projects from A to Z

(U XO) detection and removal

Geophysical and Geotechnical Survey

Foundation / Substation Transport & Installation

Scour protection, seabed preparation & (solid) ballasting solutions

Subsea Cable Installation & Burial

Diving and ROV Services

Boulder Clearance

Decommissioning

Floating Wind Solutions

The Marriott Marquis, Houston 1-3 March 2022
Boskalis in Floating Wind

- Hywind Scotland
- Windfloat Atlantic
- Kincardine T&I
- Commercial scale

Floating Wind Solutions
Just in time – integrating the multi-model supply chain to meet tight installation windows
Installation strategy is highly dependent on:

- Size and timeline of the project
- Floater concept and design
- Supply chain (local versus global)
- Available Port infrastructure, water depth
- Storage area
- Fabrication facility
- Serial production process
  - Production speed and output
    - 1 floater every 2 weeks, ideally 1 floater / week
    - Floater storage / buffer capacity
- Logistics hub and turbine integration hub locations to site
- Vessel availability and specifications

Installation strategy is very project specific, but standardization is key.
Kincardine

- 3 countries: Spain, The Netherlands, Scotland
- 5 work sites
  - 2 fabrication locations
  - 1 turbine integration location
  - 1 logistical hub
  - 1 offshore site
- 7 vessels
  - 1 Semi-sub barge + 1 towing tug
  - 1 Anchor and mooring installation vessel
  - 1 towing tug
  - 1 positioning tug
  - 1 hook-up vessel
  - 1 CTV
- 2 installation seasons
Operational limits per offshore activity
- Foundation dry / wet transport
- Float-off
- Anchor installation
- Pre-lay of moorings
- Tow
- Positioning
- Hook-up
- Cable lay / burial

Assessment of the environmental data and impact on the vessel's motions

Low workability seasons resulting in tight installation windows

Innovative solutions to increase workability limits

Floating Wind Solutions
Reliability and performance

- Experience from oil and gas and demo projects
- Live DPR input for each asset during the project
  - Tracking each activity
  - Tracking each vessel
  - Tracking each floater
- Output performance reports
  - Actual output versus budget
  - Current project status
  - Forecasted estimates to complete
  - Variance
  - Realistic installation durations
  - Repetitive optimization trends

**Project execution experience and reliability is crucial**
**Integrating supply chain in installation strategy**

- Installation is a relatively small part in CAPEX cost but is crucial for first power.
- Pressure high for reduced installation cost and schedule.
- Demonstrating a reliable and integrated strategy is crucial.

**Joint effort from all stakeholders** *(Developer, designers, supply chain, fabricator, authorities, ports, installation contractors, vessel owners)*
Conclusions

- Project execution experience is crucial
- For a competitive supply chain, we require efficient and standardized operations
- Adopt your fabrication, logistics and installation strategies to find the most viable option for schedule and cost
- Collaboration between all stakeholders (developer, fabricators, T&I contractor, ports,…) from preparation phase
Thank you and meet us at booth #404

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