

Van Oord

AEOLUS

Jack-up vessel solution for FOW

Arjan Keuzenkamp

17 May 2023

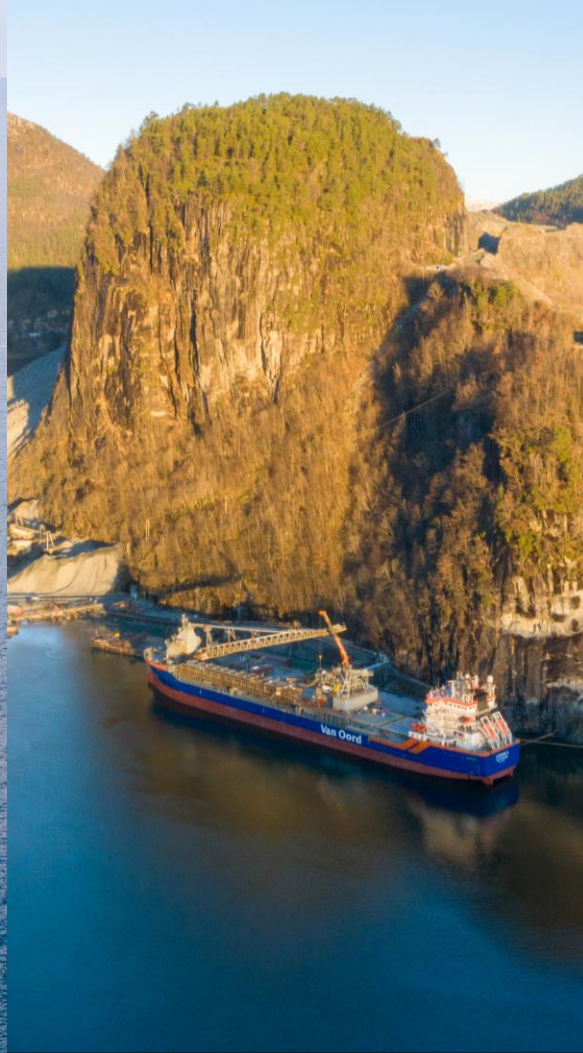
JUV solution for FOW Introducing Van Oord

Offshore Wind



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Offshore



Dredging













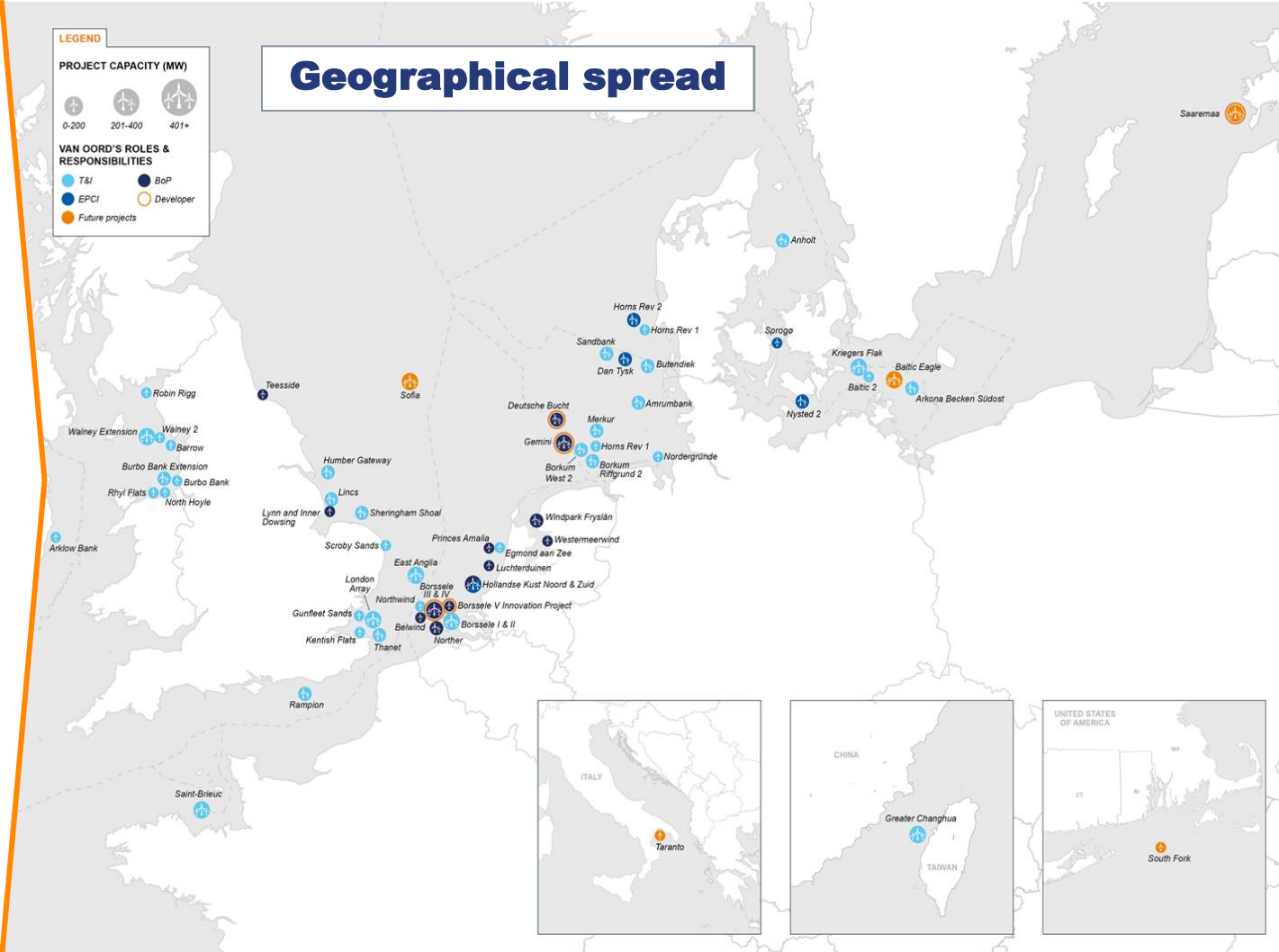
Netherlands



JUV solution for FOW

Van Oord involvement in ~16GW of offshore wind capacity since 2002

| | |
|--|---|
|  20 years of experience |  16 GW capacity involvement |
|  9 countries |  57 projects |
|  ~2,500 foundations |  ~1,500 km cables |
|  ~1,400 turbines |  50 maintenance campaigns |
|  ~2,7 mln tonnes of scour protection |  3 projects with ecological measures |



Note: projects included which are executed and/or in execution

JUV solution for FOW Heavy lift fleet Van Oord



Aeolus

[Aeolus fitted with impressive new crane | Van Oord](#)



MPI Adventure

Wärtsilä Methanol Engines to Power Van Oord Mega Jack-Up

CONTRACTS & TENDERS

January 24, 2022, by Adnan Durakovic

Finnish technology group Wärtsilä has received its first order for newbuild methanol-fuelled engines. A new Offshore Wind Installation Vessel (WIV) being built for Dutch contracting company Van Oord at Yantai CIMC Raffles shipyard in China will be powered by five Wärtsilä 32 engines capable of operating with methanol.



Boreas

Source: Van Oord

The order, which includes the methanol fuel supply system, was placed in November 2021, with the delivery of the equipment scheduled for early 2023.

[Van Oord orders mega ship to install 20 MW offshore wind foundations and turbines | Van Oord](#)



HLV Svanen



MPI Resolution

JUV solution for FOW

FOW base case

Current base case for heavy lift operations in FOW is use of large ring cranes (15-20 MW turbines, 150-175 m hub height, 650-1000 t)

Main advantage:

- Lower dayrate compared to JUV

Main disadvantages:

- Limited amount available worldwide
- Long mobilisation period
- Restrictions on quaysides

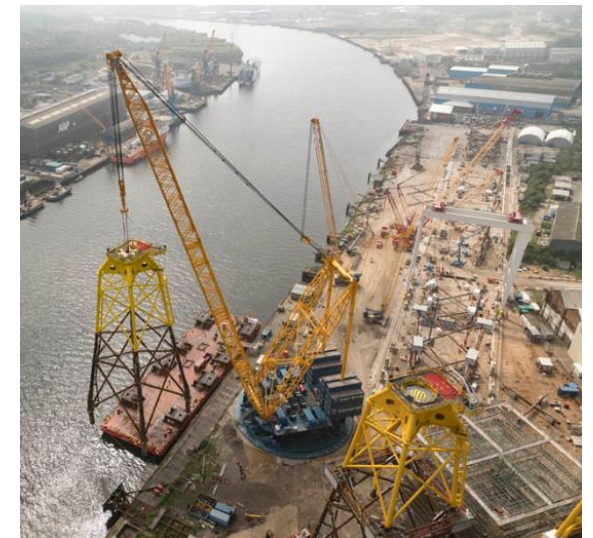
Example:

Mammoet PTC200-DS



Example:

Sarens SGC-120



Where can 'traditional' jack-up vessels be an alternative?

- Major Component Replacement
- Alternatives in restricted ports
- Flexibility, given the limited amount of ring cranes and alternatives

- Potential for older generation JUV
- Potential for filling the bottom fixed 'gap' in winter season

Similar to ring cranes, JUV solution is relatively technology agnostic



Example bringing components to installation vessel in sheltered locations
(Van Oord | Windpark Fryslan)

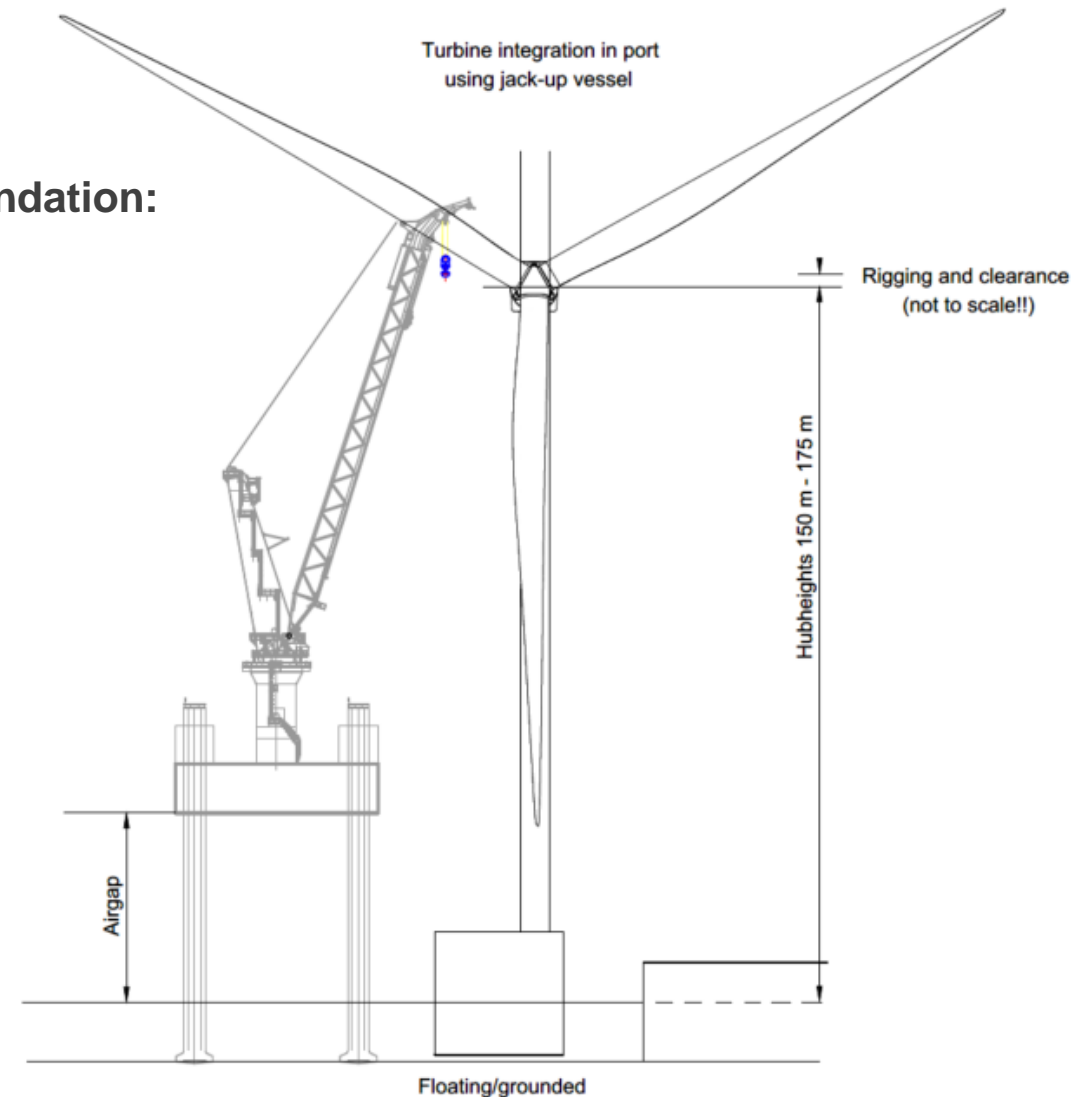
JUV solution for FOW

Considerations using traditional JUV

Main considerations choosing between floating / grounded foundation:

- Technical restrictions foundation
- Hub height
- DAF factors
- Preparations in port
- Interaction with legs and quayside
- Flexibility in case of critical installation radius

Note: considerations can be different for integration and MCR



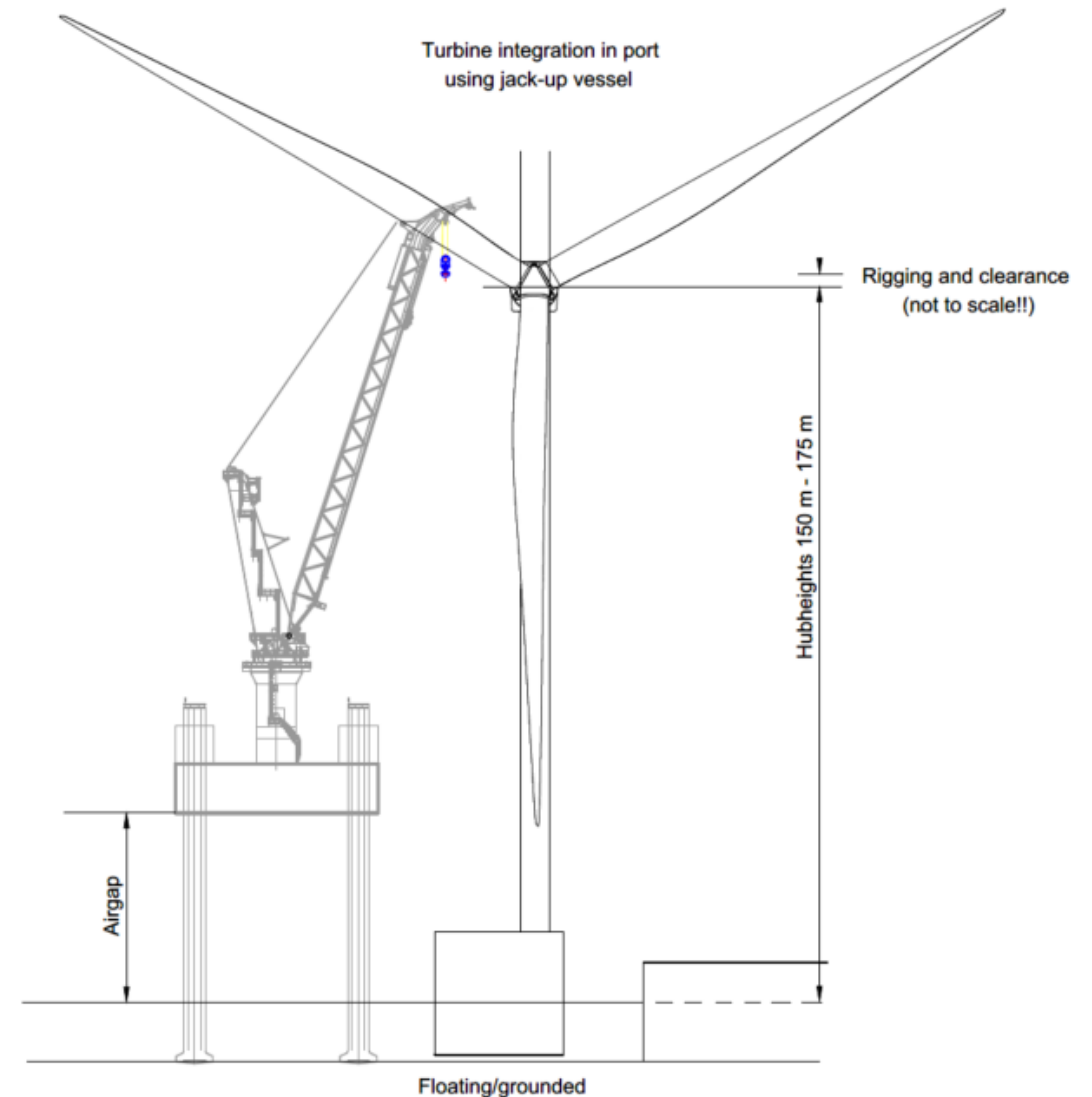
JUV solution for FOW

Considerations using traditional JUV

Main considerations related to jack(ed)-up vessel:

- Crane specifications
- Airgap (normally based on life saving equipment)
- Access requirements
- Cooling
- Wirelength
- Full/sectional tower integration

Note: considerations can be different for integration and MCR



JUV solution for FOW

Considerations using traditional JUV

Closing remarks

- Similar to FOW market, the bottom fixed market is still growing, leading to shortage in (capable) manpower and (jack-up) vessels
- Use of JUV is (still?) a good alternative in FOW market, particularly for short installation windows like MCR.
- Investments in new jack-up vessels for FOW are not too likely, however upgrades to 'old' vessels for FOW are seriously considered.
- Preparations for tow-to-port and tow-to-shore options can/should start early: identifying closest locations, preparing plans and putting in place call-off contracts

