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## BACKGROUND

Every offshore wind farm needs an onshore operations and maintenance (O&M) base – facilities at a suitable port that provide the following functions:

- Office space for the site's O&M team (e.g. engineers & site management)
- Storage / warehouse; berthing for O&M vessels (CTVs / SOVs)
- Training facilities & control room etc.

## OBJECTIVES

The proximity of new offshore wind farms will provide the ideal opportunity for operators to consider joint O&M bases (hub). With the main objective of reducing OPEX through measures such as:

- Reduction in cost for O&M Site
- Shared Quayside/Pontoon
- Optimised Offshore Logistics
- Shared Specialist Contracts
- Control Room Synergies and faster response
- Spares Management
- Training Facilities



## SUITABILITY FOR O&M HUBS

Below are some of the key drivers used to determine the suitability of an O&M base. This list is not fully exhaustive

- Is the site near other sites and within the same region/country?
- Is the WTG model/OEM the same across the cluster sites
- Is the foundation technology (fixed/floating) the same for adjacent sites?
- Do the OSWFs have long operations time overlaps with other sites?
- What are the OEM SMA periods?
- Are there any O&M base location obligations?
- Has the offshore wind farm achieved FID?
- O&M vessels CTV/SOV or both?
- Openness of JV partners to accept shared O&M Hub

## KEY DRIVERS

Some of the key drivers for implementing an O&M hub are explored below:

**Strategic spares:** Sharing a warehouse and relevant spares between operators can lead to a number of benefits. This is not only true for sites with the same Technology, but also for varying WTG types, where up to ~70% of components can be compatible.

Pooled procurement & higher negotiating power

Bigger volumes and better prices

Greater availability of critical spares

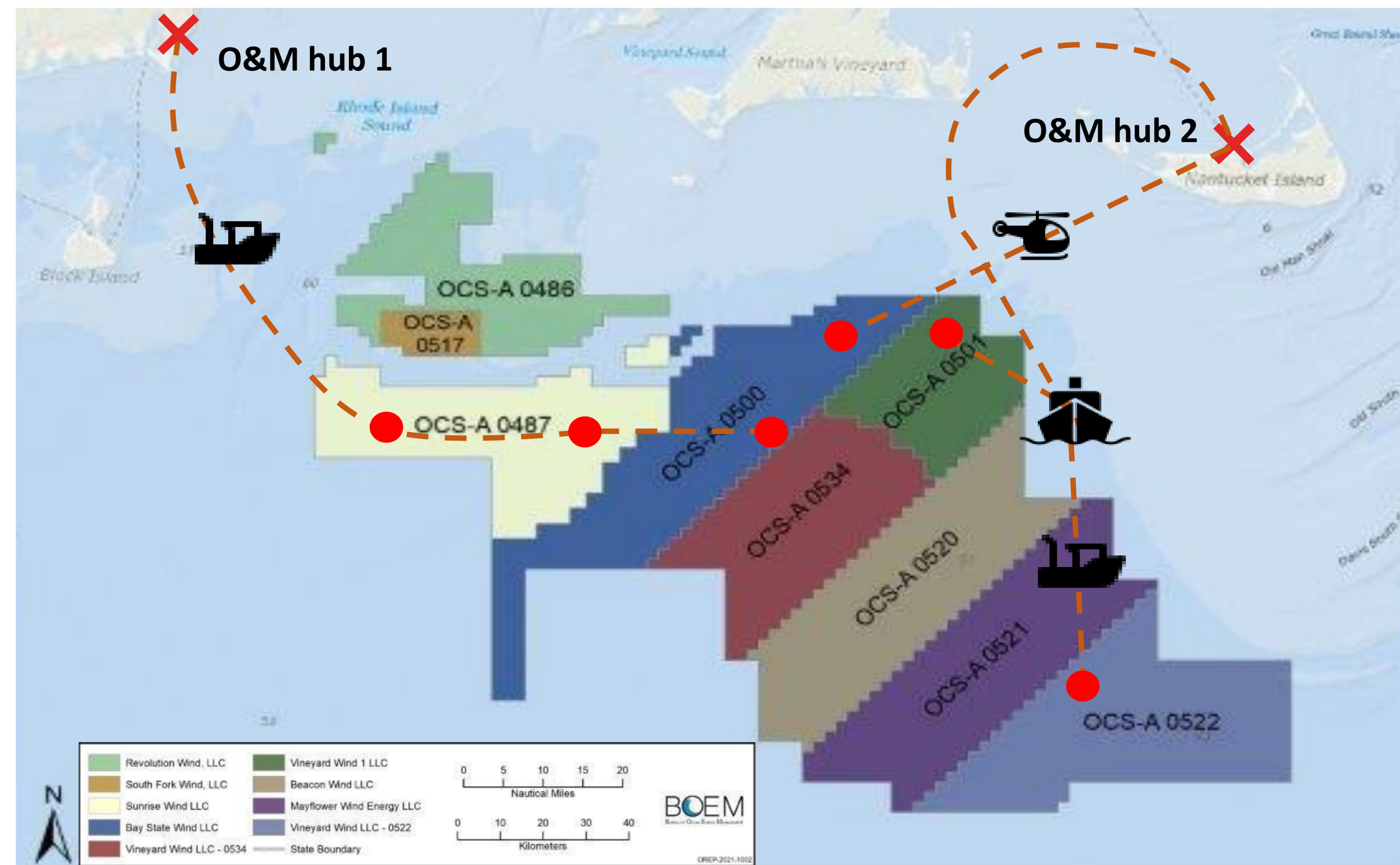
Reduction in transportation costs

Fast moving spares results in less tied up capital

Greater availability of special tooling due to pooling

**Control room synergies:** O&M hubs offer the opportunity to share a standardised control room for operating and monitoring multiple sites. Including the sharing of resource.

- Procuring more specialised IT equipment becomes possible
- Faster reaction to critical emergencies due to increased number of technicians, reducing WTG downtime
- 24/7 control room operation becomes financially attractive, bringing faster maintenance to night time faults.
- Bundled expertise and knowledge creates a vast knowledge base, allowing faster diagnosis of faults
- Single marine management system to optimise vessels and resources across multiple wind farms
- Emergency response, better utilisation of vessels and trained paramedics in the field



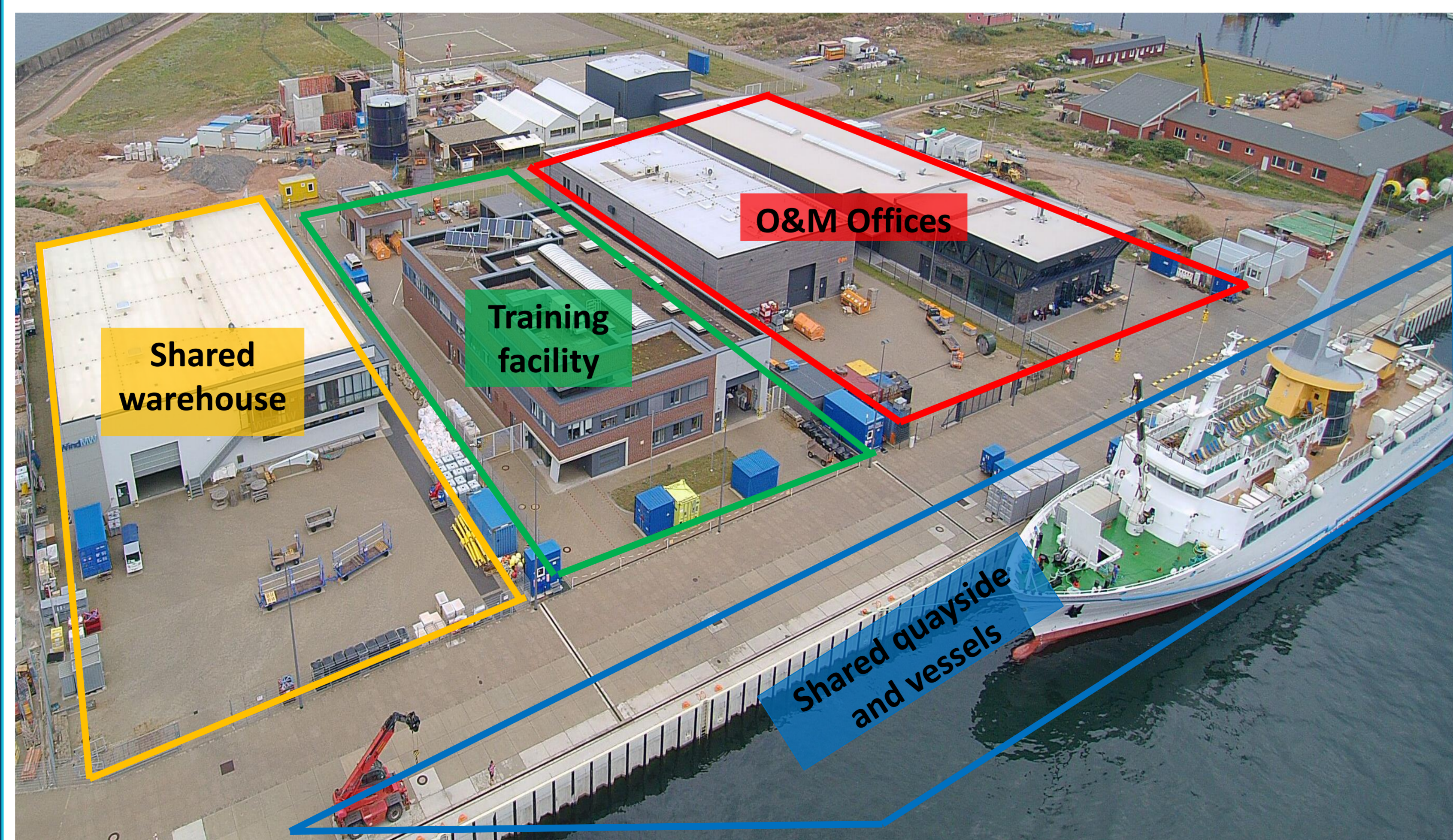
**Optimised offshore logistics:** Shared vessels and quaysides in an O&M hub greatly increases efficiency and decreases cost.

**Combined works** The cost of maintenance activities can be reduced by combing work schedules and manifests for the transfer of multiple technicians to multiple wind farms.

**Vessel sharing** Operators annual maintenance campaigns can share the use of expensive vessels, such as SOVs & JUBs

**Shared Quayside** Utilising rotation of port calls the number of berths for larger vessels such as SOVs can be reduced

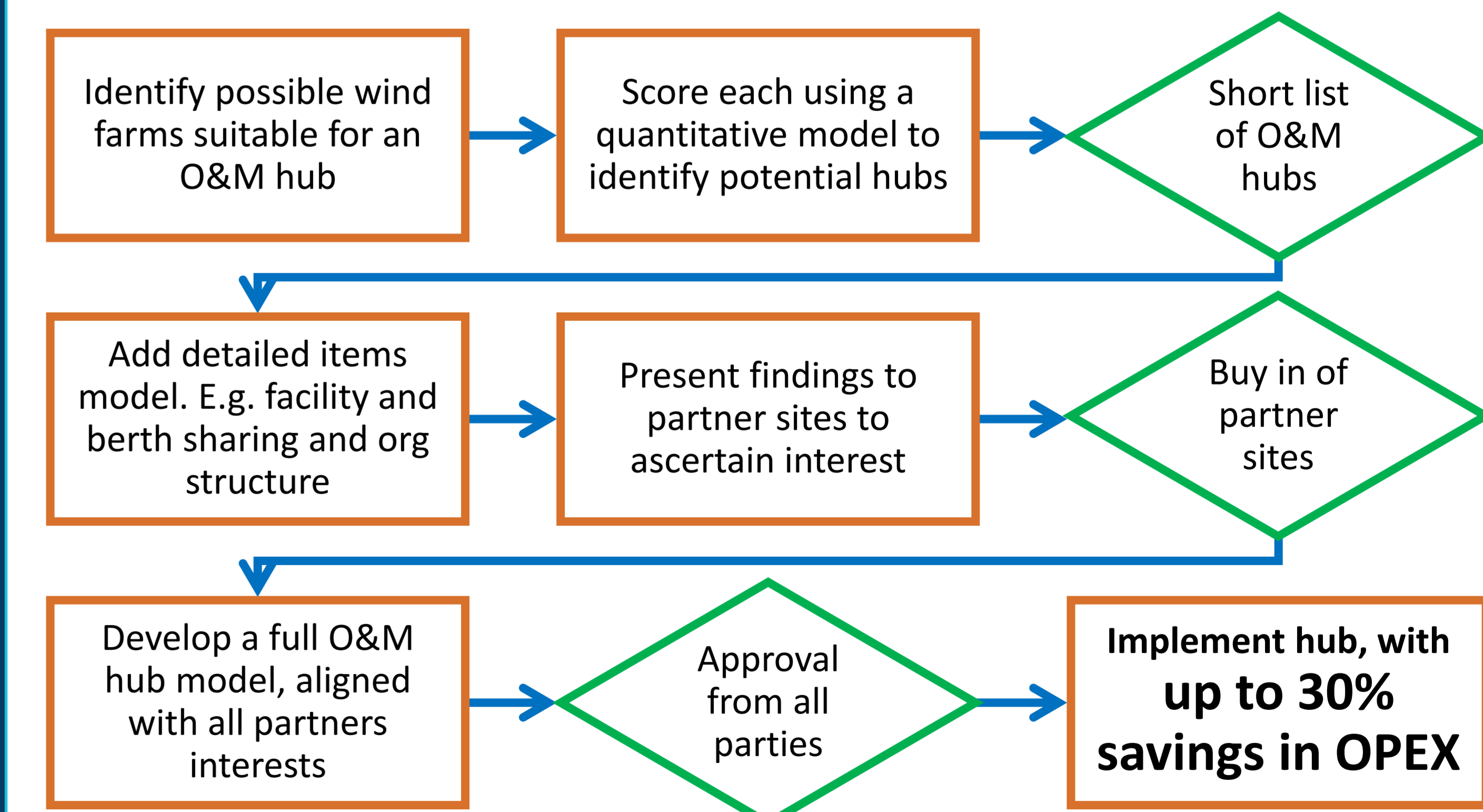
**Major Repairs** Major repairs can be co-ordinated to reduce the costs of specialist vessels such as large jack-ups, costing upwards of 500k/day.



**Training facilities:** On-site training facilities are not feasible for standard O&M bases. Training technicians is only possible externally. O&M hubs can offer the possibility of a private dedicated facility

- Courses can be specific to the site, WTGs and equipment providing a higher standard and quality of training.
- Large structures, such as a spare transition piece, davit crane, hub, blade and complete nacelle, can also be used becoming part of the hands on training for technicians.
- Reduced reliance on external training providers both reduces costs and decreases risk.
- Provides the opportunity to pre-test all new or innovative safety and lifting equipment and procedures prior to using offshore.
- Training facility can also be used by emergency services for familiarisation training.

## HUB DEVELOPMENT



## CONTACT INFORMATION

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