



REPORT FROM THE CONSULTATION SESSION

JULY 2018

Summary

- Upon invitation, a group of 18 industry representatives gathered in Amsterdam on 3 July 2018 to discuss and identify which benefits a hub island (± 200 km offshore) could bring to offshore wind farms during Installation and Commissioning (I&C) and Operations and Maintenance (O&M) and which requirements are essential to realize these benefits.
- This was an opportunity for industry participants and the North Sea Wind Power Hub consortium to have an open discussion on the possible functionalities, including foreseen innovations, in a brainstorm session to establish likely or totally non-likely potential functionality of a North Sea Wind Power Hub as an island.
- A feedback form was handed out to the participants after the meeting in order to present their views on several of the possibilities and parameters. The document includes a listing of parameter with associated values to enable the follow-up process of analysis and quantification of potential benefits.
- There was general consensus between the participants that, with future innovations, the requirements of functionality of the island will change over time. Breakthrough innovations could drastically change O&M installation and O&M. The largest challenge will be to enable flexibility while maintaining a positive business case.

Feedback from industry participants

- There are similarities between the requirements for I&C and O&M though it seems that a hub island provides more benefits for the operating phase than for the construction phase.
- No direct benefits were identified for a marshalling harbour during I&C. However, innovations in Wind Turbine Generator (WTG) installation methods could call for a change in this scenario. For example, a hub Island could be an enabler for fully-commissioned WTG installation, where the bottleneck is transportation.
- Sheltering in bad weather periods is definitely seen as a quick-win option on the leeward side of the island or in the island harbour. Short-distance sheltering can provide a quick win (200km distance is easily 12 hours of sailing).
- Accommodation and services for Service Operation Vessels (SOVs) and large Crew Transfer Vessels (CTVs) operations could be beneficial. The hub could provide hotel accommodation for vessel crews, commissioning teams and maintenance technicians during shifts, sheltering and crew changes. Bunkering of fuel, other consumables, drinking water and other supplies on the hub island are definitely seen as a quick wins. With regard to O&M, it is expected that robotics and remote monitoring will further develop and reduce the requirement to transport people to and from wind farms.
- Discussions with ship owners (CTVs as well as SOVs) and ship yard specialist are required to explore in more detail the potential benefits of having hardware and minor ship repairing facilities on a hub island.
- Offshore wind farm logistics could benefit from an airport and helicopter/airplane refuelling station for e.g. crew changes with small airplanes (100PAX). This provides fast and comfortable exchange of personnel as well as materials that are urgently required. Innovations in aviation (e.g. vertical landing/take-off) should be taken into account.
- A hub island could enable cost reduction through mutual cooperation between manufacturers, wind farm owners and service companies. Future predictive maintenance will improve planning, preparation and total repair time. This could have an impact on requirements for spare parts storage on a hub island.
- Future standardisation of equipment could provide benefits in sharing and storing spare parts centrally.
- Constructing gravity-based foundations on a hub island is seen as an option, whereas fabrication of larger parts (turbine blades) does not seem to be an option, however not totally ruled out.



- Shared facilities such as marine/traffic coordination, ERP activities, Medicaid, evacuation and marine police were considered as positive options to be considered for both the I&C and the O&M phases.
- With a centralised hub island, sharing larger repair vessels could be beneficial during the O&M phase.
- A hub island could provide various additional facilities and functionalities e.g. modularity to facilitate the roll-out of offshore wind, hydrogen (production, storage and use in 'clean shipping').
- Several questions and concerns were raised e.g. uncertainty about the impact (safety, weather windows, vessel requirements etc.) of severe weather conditions far from shore and co-use in terms of fisheries and nature.

Reflections from the consortium

- There was a good balance in representation from the wind industry, supply chain and dredging companies.
- The meeting and discussions were very interesting and provided the consortium with valuable new insights.
- We are still at the beginning of the elaboration of this project, and there are still many questions that need to be answered. The outcome of this meeting was essential in making the right steps forward.

Next steps

- Based on the information from participants, external consultant ECN, part of TNO, will be able to define several scenarios for further quantification of potential benefits of a hub island.
- The consortium endeavours to share first results of this study during an NSWPH side event (invitation only) at the Global Wind Summit in Hamburg on 27 September 2018.

Information and feedback

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About the NSWPH consortium

TenneT Netherlands, TenneT Germany, Energinet, Gasunie and Port of Rotterdam joined forces to develop a large-scale European energy system for offshore wind in the North Sea. The NSWPH consortium partners consider the project to be an important, possible alternative path of an internationally coordinated roll-out towards accomplishing the green energy transition and achieving the Paris Agreement. By developing the North Sea Wind Power Hub project, the consortium endeavours to make the energy transition both feasible and affordable. Central to the vision is the construction of one or more hubs at a suitable location in the North Sea with interconnectors to bordering North Sea countries. The whole system may function as a hub for transport of wind energy, an interconnection hub to the connected countries, a working hub for offshore wind developers and a location for possible Power-to-Gas solutions.



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