Efficient and safe maintenance

MAMMOET

Background

With more and more installed capacity of offshore wind and with the future floating offshore wind farms, maintenance will be significant part of the total OPEX cost. Turbines are getting, larger, hub height is increasing and the impact of offshore wind on our energy requirements is increasing as well. Due to these reasons downtime must be prevented as much as possible.

Use of large floating assets for maintenance is out of scope as there is only a handful of floating vessels with the height and capacity to perform this operation and therefore scarce and costly.
In the case of floating wind, the original idea of disconnecting the mooring and cables to allow the floaters to be towed back to port introduces a large number of questions, when considering the effect of marine life on these components and the timespan of these operations.

Therefore fast, reliable and safe maintenance should be done to prevent expensive ships and lifting gear. Also to guarantee flexibility and short time for 'call offs' the requirements for special gear should be limited. In addition, using low cost and flexible gear is prefered in order to have this always available.

The Challenge

The challenge is to find solutions for efficient and safe maintenance of offshore (floating) wind turbines. To reduce cost and scheduled impact the use of large (floating) installation vessels should be prevented.

The challenge is to safely transfer maintenance parts and lifting gear from a floating object (barge, ship, vessel) to an offshore (floating) turbine foundation. These components than need to be brought/lifted to the nacelle and the wind turbines parts need to be exchanged and brought back to the vessel. Solutions for both fixed bottom foundations and floating foundations are within the boundaries of this challenge.

The challenge can be split in three different sub parts:

- **Logistics:** Positioning of the marine spread (barge, ship, vessel) close to the WTG-foundation, floater or tower in order to;
- **Transfer:** Transferring the (WTG) components required for the maintenance and or repair from a marine spread (barge, ship, vessel) onto the WTG-foundation or WTG-floater
- **Lift:** Transfer / lift the components from position (level) of transfer (landing position on floater/foundation) towards the nacelle.

In other words, are there logistical, transferring and lifting solutions available for specialized maintenance purposes.
The maintenance gear weights up to 200 metric tons and could have dimensions up to 5 by 5 by 5 meters.

Companies can apply with a specific solution for 1 of the sub parts or can search for solutions for multiple sub parts.

Illustration

To be added shortly in the form of illustrations/pictures/technical drawings