



The REpower 5M in the Beatrice Field – the Installation Phase

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REpower Systems AG

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- 1. Assembly and Transport of the REpower 5M to Nigg**
 - 2. Onshore Installation at the Nigg Yard**
 - 3. Sailout of the Turbine to the Beatrice Field and Offshore Installation**
 - 4. Challenges, Obstacles and Achievements of the Demonstrator Project**



- 5M Nacelle Assembly Status end of April



- Transport of the two Nacelles to the Quayside in Bremerhaven end of May



- The two Nacelles at the Quayside in Bremerhaven



- Load-out of the Nacelles and Hubs in Bremerhaven



- Load-out of the Nacelles and Hubs in Bremerhaven



- Load-out of the first set of Blades in Esbjerg



- Offloading of the Blades in Nigg



➤ Offloading of the units in Nigg



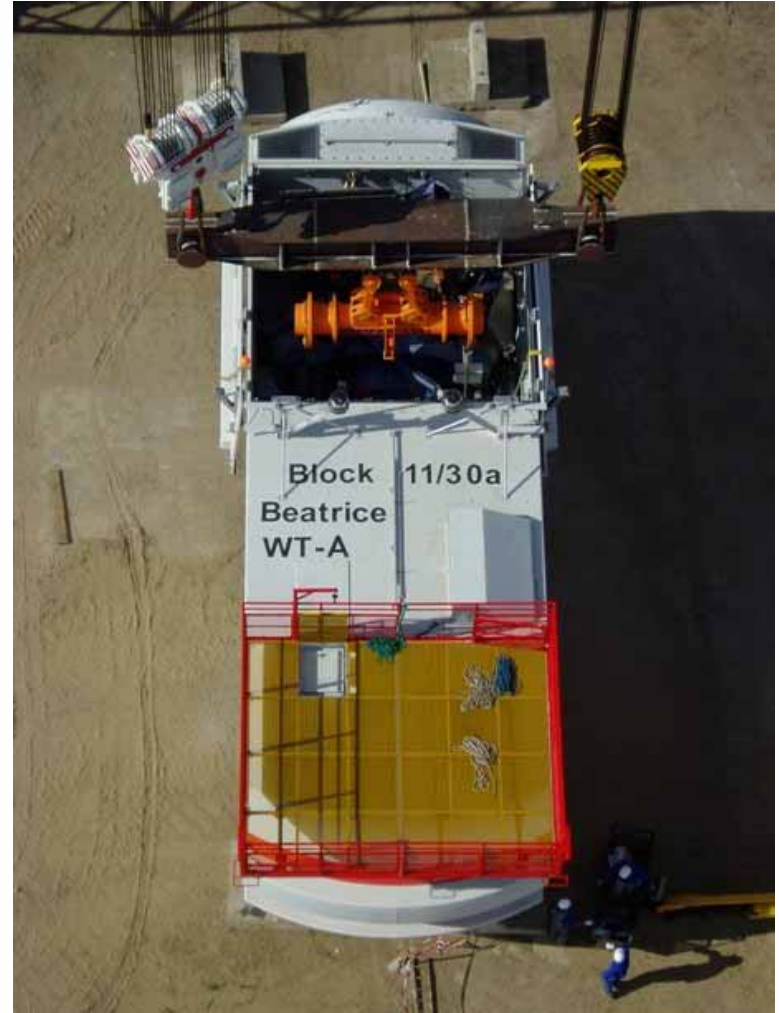
- Offloading of the Towers in Nigg



- Up-righting of the first Tower and mounting on the TIF – Tower Interface Frame



- WT-B Parts stored at the Site



- WT-A Nacelle getting prepared for the lift onto the Tower



- WT-A Nacelle Lift onto the Tower



- WT-A Nacelle installed 19th July 2006



- Preparations for the Rotor Lift



- Lift and Mounting of the Rotor to the Nacelle



- Lift and Mounting of the Rotor to the Nacelle



- WT-A Onshore Installation completed



➤ The Spreader Beam in Place



- WT-A on the Hooks of the Rambiz



- Sailout - WT-A on its way to the Beatrice Field 20th August



➤ The Lift



➤ The Landing




- WT-A Offshore Installation completed 22th August




- WT-A Onshore installed in the Beatrice Field

The Challenges and Obstacles

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- A faint, light-colored image of a wind turbine is visible on the left side of the slide, serving as a background element.
- **First offshore wind turbine installed in 45m water depth**
 - **First time installation of WTG from floating crane barge**
 - **Completely new installation methodology with onshore pre-assembled WTG**
 - **New OWEC Quattropod design for offshore substructure**
 - **Very tight project schedule and limited installation window**
 - **Overheated component supplier market**

The Achievements

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- A faint, light-colored image of a wind turbine is visible on the left side of the slide, serving as a background element.
- **Both Jackets installed in the field**
 - **Onshore installation of both 5M on TIF w/o problems**
 - **First REpower 5M successfully installed in 45m water depth**
 - **Fully pre-assembled 5M has been proven to cause no difficulties on the Rambiz floating crane barge**
 - **New installation methodology with pre-assembled WTG and the soft landing device has been proven as feasible**



Thank you for your attention.

