Boskalis
Dredging & Marine Experts

PROJECT SHEET

VEJA MATE
OFFHORE WINDFARM PROJECT

BOSKALIS ENERGY SOLUTIONS

Boskalis is a leading global dredging and marine expert. With safety as our core value we provide innovative, sustainable and all-round solutions for our clients in the energy market. Realizing projects in remote locations with a heightened environmental focus is one of our specialties. Under brands such as Boskalis, Dockwise, SMIT, Fairmount, VBMS and Smit Lamnalco we offer more services than any other company in our industry, making us your next one-stop solution provider. We support the development, construction, maintenance and decommissioning of oil and gas import and export facilities, fixed and floating exploration and drilling facilities, pipelines and cables and offshore wind farms.

VEJA MATE OFFHORE WINDFARM PROJECT

The Veja Mate Offshore Windfarm Project is a 402 MW Offshore Windfarm in the German Sector of the North Sea. The windfarm is about 100 km offshore in the so called "German Bight". The windfarm consists of 67 Siemens 6 MW turbines and an offshore substation. Our employer, Veja Mate Offshore Project GmbH, is a special purpose company developing the windfarm for a consortium of investors.

The 180 m high wind turbine generators, measured from seabed to the top of the blades, are founded on Monopiles with Transition Pieces. The Monopiles have a maximum weight of 1,300 t and a length upto 85 m. The Transition Pieces, which contain the switch gear, weigh 330 t and have a length of 22 m. The Monopiles are to date the heaviest

FEATURES

Client	Veja Mate Offshore Project GmbH
Operator	Veja Mate Offshore Project GmbH
Loading locations	Rostock (Germany) and Aalborg (Denmark)
Discharge location	Feeder Port: Eemshaven
Period	2015-2016
Vessels	Rockpiper, Scylla, Zaratan, Galyna, Liz-V

A

A Veja Mate Offshore Windfarm foundations installed
B Monopile loading in Eemshaven


B

Monopiles produced and installed. The water depth in the field is approximately 40 m. The connection between the Monopiles and Transition Pieces is established by a bolted flange connection with a grouted sealing.

EPCI FOUNDATION WORKS

Boskalis Offshore International was responsible for the design, fabrication, transport and installation of the Monopile foundations. The works were executed under the Offshore Windforce Veja Mate joint venture. Boskalis managed several subcontractors for the works and directly installed the Monopiles with the chartered jack-up vessel Seajacks Scylla.

The scour protection, consisting of a filter and an armour layer, was installed by Boskalis Offshore Marine Contracting using the Rockpiper. The design was subcontracted to Ramboll, Monopile and Transition Piece fabrication was subcontracted to EEW and Bladt. The Monopile transport and port services were provided by Buss. Transition Piece transport was subcontracted to SAL and the Transition Piece installation was subcontracted to Seajacks.

Apart from the EPCI Foundation Works, Boskalis Hirdes was contracted directly by the employer for the UXO identification survey and removal.

PROJECT CHALLENGES

The biggest challenge was the limited time available from contract signing on the 6th of June 2015 and start of piling works on the 1st of April 2016. Because of the size of the Monopiles all equipment needed to be bespoke for the project. Even the installation vessel was a new built arriving in Europe only 6 weeks before mobilization. Lean sessions on the time schedule were held with the supply chain partners to manage the limited time available.

Not only the timely provision of installation equipment but also the completion of the design prior to the start of fabrication was a challenge. Close cooperation with designer and fabricator resulted in timely delivery of over 100,000 t of steel for the Monopiles and Transition Pieces.

Another challenge was to develop a noise mitigation system which was able to stay within the noise limits put down by the German authorities. As Boskalis was using world's biggest piling hammer on the largest Monopiles at these great water depths, a Hydro Sound Damper and a double big bubble curtain were used to reduce the underwater noise to levels below 160 dB.

The continuous effort to maintain Boskalis NINA safety standards throughout the supply chain resulted in an overall safety level beyond industry standards.

CONCLUSION

The works were completed in time, offshore installation started January 2016 with the installation of the scour protection and the punch list was completed December 2016, and to the full satisfaction of our employer without any financial claims. The overall results prove once more that Boskalis is ready and well occupied for EPCI delivery of large deep-water wind turbine generator foundations.

C Monopile installation with double pile gripper frame
D Transition Piece installation

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