

PROJECT SHEET

EAST ANGLIA 1 OFFSHORE WIND FARM (EA1), UK
TRANSPORT AND INSTALLATION

BOSKALIS

Royal Boskalis Westminster is a leading global marine contractor and services provider. With safety as our core value, we offer a wide variety of specialist activities to the oil & gas and renewables sectors. These activities include marine installation and decommissioning, seabed intervention, marine transport and services, subsea services and marine survey. In addition, Boskalis is a global dredging contractor, provides towage and terminal services across the globe and delivers marine salvage solutions.

By understanding what drives our clients we are able to provide the solutions that enable them to meet their specific business goals. For this reason we are constantly looking for new ways to broaden and optimize our offering and are committed to expanding our proposition, supported by our financial strength.

With our committed professionals in engineering, project management and operations, 900 specialized vessels and an unprecedented breadth of activities in 90 countries across six continents we help our clients in the offshore industry push boundaries and create new horizons.

INTRODUCTION

Located 43 km off the Suffolk Coast, the 714 MW East Anglia ONE will comprise 102 Siemens Gamesa 7 MW wind turbines, installed on jacket foundations and that will provide green energy to 500.000 UK households.

Boskalis was contracted to transport a part of the jackets from the middle East to Flushing.

Additionally it included the transport and installation of 102 x 3 pinpiles and jackets on 55 meters of water depth and the installation of 66 kV inter-array cables.

SAFETY

Safety is our first priority during the execution of a project. The Boskalis NINA (No Injuries No Accidents) program was implemented in all facets of the project and adopted by the client and all subcontractors. All personnel involved in the operations were trained in the NINA program, resulting in a high level of safety awareness and commitment. The project was completed without incidents or accidents.

FEATURES

Client	Scottish Power, Lamprell, Van Oord
Operator	Iberdrola
Location	EA1 Offshore Site (North Sea, United Kingdom), Flushing (Netherlands), Dubai (Middle East)
Period	Transport: February 2018 - September 2019 Pinpile & Jacket installation: February 2018 - July 2019 Cable installation: Q2 2019 – Q2 2020
Vessels	Installation: Bokalift 1, NDurance, Ndeavor, Spirit Transport: Mighty Servant, T-Class, Manta, Lynx



A Location map

B Bokalift 1 in transit to the site with 5 jackets on board.

TRANSPORT

In the first quarter of 2018, the Boskalis Mighty Servant 1 started transporting jackets, fabricated at Lamprell Middle East, to marshalling yard Flushing, the Netherlands. The transportation of the 28 jackets continued till Autumn 2018, when the last jackets were delivered to the Marshalling port.



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INSTALLATION

During the tender phase for EA1, Boskalis developed the Bokalift 1 for the special requirements of this project. Designed with a large deck space, the Bokalift 1 has the capability to execute the project based on a combined deck layout for both pin pile and jacket installation operations, without deck layout adjustments. This capability created a huge advantage towards schedule and risk. Within a year, the former Dockwise Heavy Transport Vessel Finesse, was converted into an installation vessel with 3,000 ton lifting capacity. When Bokalift 1 arrived in Rotterdam from the conversion yard in Singapore, the delivery of the vessel was celebrated on board, with all Boskalis employees. Two days after the celebration in February 2018, Bokalift 1 was ready for her first assignment, the transport and installation of 102 pin-piles and jackets. With full satisfaction of owners and charterers of the performance of the Bokalift 1, the pinpile campaign was finished in January 2019. After finalizing the pinpile campaign, the deck was converted to a carrying capacity of 5 jackets per trip. Being able to install 5 jackets within 24 hours, the remaining 65 jackets have been installed between May and July.

INTER-ARRAY CABLES

After 2 pilot projects (also executed by Boskalis), EA1 was the first project to utilize high voltage 66 kV inter-array cables on an industrial scale. Boskalis has been working closely together with the clients team during the tender phase, to ensure this industry first would be delivered without any issues.

The Boskalis scope included the supply, design, engineering, installation, burial protection and termination & testing of the inter-array cables.

Following an extensive design & engineering period, including pre-installation surveys by sister company Gardline, the 102 array cables with different cross sections were loaded onto the Ndurance. This was done directly from the JDR factory in Hartlepool, whereafter the cables were installed across the field, buried, connected and tested on time.

In order to meet the master timeframe from the client, termination & testing was carried out by multiple crews working from 2 walk-to-work vessels and multiple CTV's.

PROJECT CHALLENGES

The main challenge for the EA1 project was the short timeline for conversion of the former heavy transport vessel Finesse. Within a year time, a 3,000 ton offshore crane had to be commissioned, including an upgrade from 30 to 150 accommodations and an overhaul of the engine room to a DP11 operated system. The installation of cables was complex because of the challenging soil conditions which required the utilization of our jetting ROV 107 (on board of the Spirit), in combination with a newly acquired and trialled mechanical tracked trencher, the CBT2400, which was operated from the Boskalis owned dedicated trenching vessel Ndeavor.

MISSION COMPLETED

Seamless coordination, precision timing and teamwork were vital for a successful transport and installation of East Anglia 1. We are delighted to have lived up to the high expectations of our clients. Thanks to a great performance of all involved, we were able to complete the East Anglia 1 project safely and successfully. The broad deployment of many different disciplines and of our versatile fleet made this project a prime example of our capabilities. The East Anglia 1 project shows Boskalis' expertise in providing clients a one-stop-shop for highly complex multidisciplinary offshore projects.



C Trenching vessel Ndeavor