

PROJECT SHEET

EAST HUB BLOCK 15/06, ANGOLA
SUCTION PILE AND MOORING LEG INSTALLATION,
FPSO HOOK-UP

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 the brands Boskalis, Dockwise, Fairmount, VBMS and Smit Lamnalco we offer more services than any other company in our industry, making us your next one-stop solution provider.

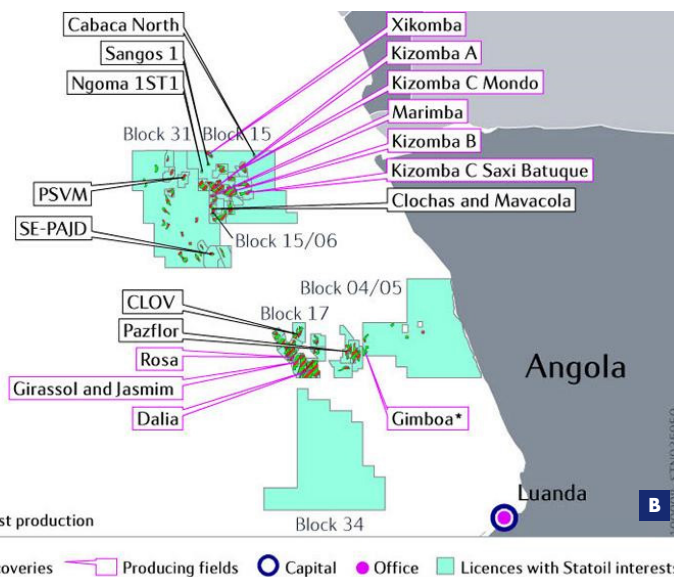
We support the development, construction, maintenance and decommissioning of oil and gas import and export facilities, fixed and floating exploration and drilling facilities, pipelines and cables, and offshore wind farms.

The project consisted of 5 phases:

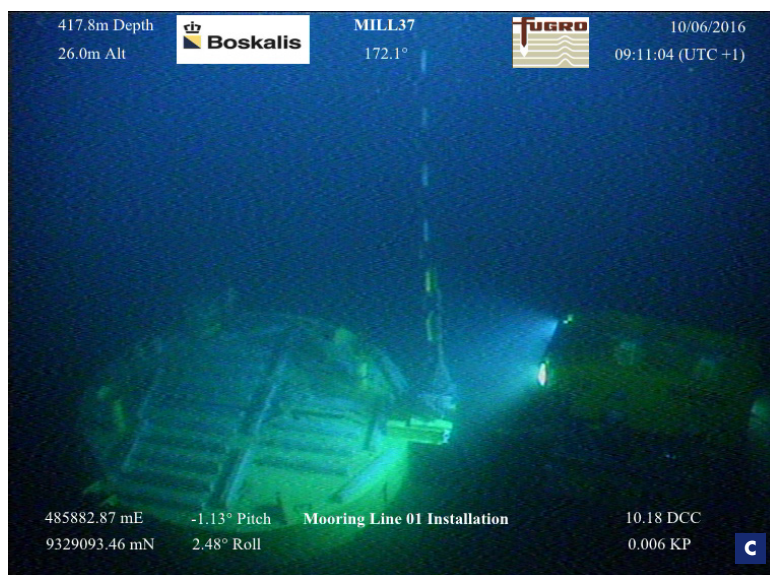
1. Suction Pile and Mooring leg Installation
2. FPSO Mooring Hook-Up
3. Seawater Suction Lift Hose Installation
4. SURF Hook-Up Assistance
5. Offloading Hose Assembly and Installation

FEATURES

Company	Eni
Location	Block 15/06, Angola
Period	May 2016 – February 2017
Contractor	Bumi Armada



- A** Suction Pile overboarding
- B** Location map
- C** Suction Pile Installation



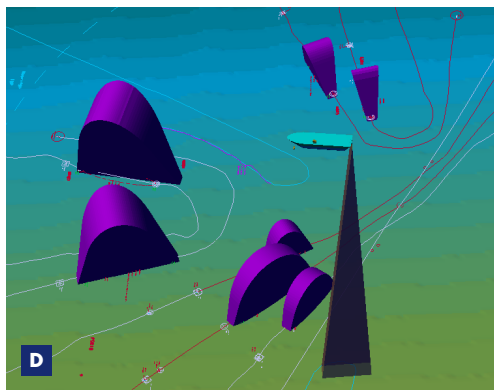
EAST HUB PROJECT

The East Hub development Project involves the development of the Cabaça North and Cabaça South-East discoveries located within Block 15/06. ENI Angola is the Operator of the Field. Block 15/06 is located approximately 350 km north northwest of Luanda and 130 km west of Soyo. Water depth in East Hub development area ranges between 400 m and 600 m. The development consists of a Subsea Production System tied back through Subsea Umbilical, Flow Lines and Riser systems to a Floating Production Storage and Offloading unit containing the process, storage and offloading facilities.

Boskalis scope of work included:

Engineering and outfitting of the construction support vessel, suction pile installation engineering, mooring leg catenary analyses and rigging design, FPSO station keeping analyses, FPSO hook-up analyses, Several mooring analyses.

Provision of procedures for suction pile installation, mooring leg installation (chain and spiral strand wires), FPSO station keeping, FPSO hook-up, seawater suction lift hose installation and offloading installation.



EAST HUB BLOCK 15/06, ANGOLA

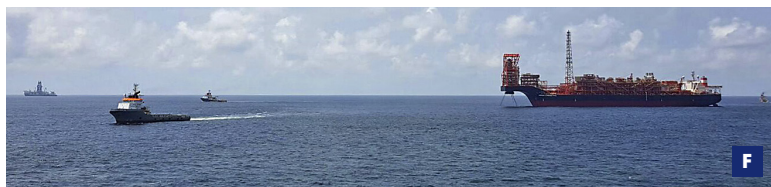
SUCTION PILE AND MOORING LEG INSTALLATION, FPSO HOOK-UP

Project management, engineering, procurement, logistics and operations were done in house. The required survey scope was managed, supervised and executed by Boskalis survey department.

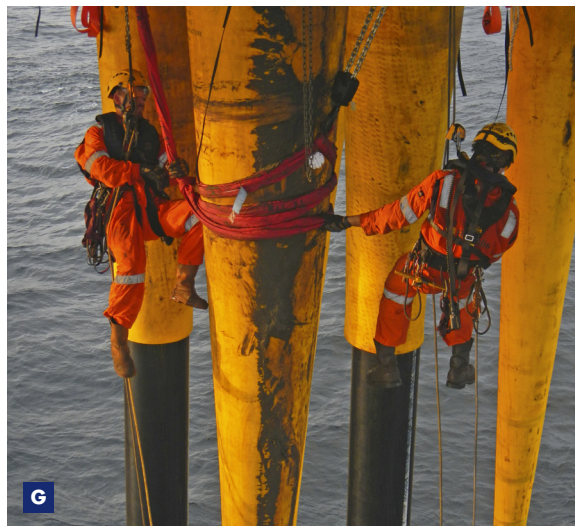
Third party installation vessels were chartered where required, all tugs used were Boskalis assets namely Union Manta, Union Princess, Union Sovereign, Union Lynx and Union Bear

Phases 1,2,3 and 5 were completely executed under management of Boskalis.

Another FPSO successfully moored by Boskalis!



Station keeping and heading control have been performed in DP to ascertain a small footprint of the FPSO turret mooring center above its design position during installation.



- D** Online Subsea 3D obstacle monitoring
- E** Mooring installed and pretensioned
- F** Union Lynx and Manta with FPSO
- G** Rope access technicians at work
- H** Union Sovereign and Manta in Field

Royal Boskalis Westminster N.V.
PO Box 43
3350 AA Papendrecht
The Netherlands

T +31 78 69 69 000
F +31 78 69 69 555

royal@boskalis.com
www.boskalis.com