

# CREATING NEW HORIZONS IN OFFSHORE OIL & GAS





'WE OFFER AN UNPARALLELED RANGE OF ACTIVITIES  
WITHIN THE OIL & GAS LIFE CYCLE'







# WHO WE ARE

## CREATING NEW HORIZONS

Boskalis creates new horizons for all its stakeholders. As a leading global dredging contractor and marine services provider, we offer a unique combination of experts, vessels and services. Maintaining the highest safety and sustainability standards, we deliver innovative and competitive all-round solutions to our clients.

## UNIQUE RANGE OF ACTIVITIES IN OFFSHORE ENERGY

In the international offshore energy sector we offer an unparalleled range of specialist services as either a service provider or a lump sum contractor bearing risk for the execution of projects requiring our services.

## OFFSHORE OIL & GAS PROJECTS FROM A TO Z

We are active in all phases of the offshore oil & gas life cycle. Our unrivalled track record of service provision is testimony to our capabilities in the (pre) FEED, execution, operational and end of life phase. Our wide variety of activities brings together a range of fields of expertise to create comprehensive, cost-effective solutions that are specifically tailored to meet your needs. With our fleet, we offer fully integrated solutions supported by in-house engineering, procurement and dedicated project management capabilities.



# OUR ACTIVITIES IN THE OFFSHORE OIL & GAS LIFE CYCLE

Within the oil and gas industry Boskalis has a successful track record in providing services throughout every phase of a project. From the (pre) FEED phase through to the execution and operational phase to the end of life phase.



## PRE-FEED PHASE

- Early contractor involvement
- Concept Design
- Geophysical and geotechnical survey
- FEED services



## EXECUTION PHASE

- UXO detection and removal
- Dry and Wet transport
- Seabed preparation
- Jacket and topside installation
- Mooring installation
- Station keeping and hook-up
- Subsea Umbilicals Risers and Flexibles (SURF)
- Landfall and terminal activities



## OPERATIONAL PHASE

- Inspection Repair and Maintenance (IRM)
- Mooring replacement



## END-OF-LIFE PHASE

- Decommissioning of floating and fixed oil & gas facilities
- Onshore dismantling, recycling and disposal
- Subsea infrastructure removal

EXPLORATION (PRE) FEED PHASE



FEED

FABRICATION

TRANSPORT

SEABED



EXECUTION PHASE

FIXED STRUCTURES

FLOATING STRUCTURES

PIPELINES AND FLOWLINES

POWERCABLES

SURF

SUBSEA IRM



OPERATIONAL PHASE

MOORING REPLACEMENT

DECOMMISSIONING



END OF LIFE PHASE



# OUR OFFSHORE OIL & GAS SOLUTIONS



Rock installation by fallpipe vessel Rockpiper

## 'MAKING SURE THE SEABED IS PROTECTED AND PREPARED FOR INSTALLATION'

### GEOPHYSICAL AND GEOTECHNICAL SURVEYS

Boskalis provides best-in-class geophysical, geotechnical and environmental marine surveys through its wholly-owned survey companies Gardline and Horizon. We offer a comprehensive package to the marine industry supporting the development of marine facilities for the energy sector. Our core business and expertise is the provision of marine surveys, which are critical for geohazard assessments and the correct design of the foundations of offshore structures and associated infrastructure.

### UNEXPLODED ORDNANCE DETECTION AND REMOVAL

We manage the risk of unexploded ordnance (UXO) in the offshore industry. Before any project can enter the construction phase this risk needs to be reduced to an acceptable level by today's standards. With a significant track record of projects within the oil & gas market Boskalis is able to deliver a comprehensive package of risk mitigation for offshore oil & gas projects. These comprise of research and risk assessment, geophysical survey, data interpretation and target discrimination, physical identification of UXO locations and clearance via avoidance, removal or low and high order detonation.

### SEABED PREPARATION

To prepare and protect the seabed and the assets placed in or on it we offer a range of activities. Using our specialized fallpipe vessels we prepare the seabed prior to the installation of artificial items such as pipelines and umbilicals. Seabed preparations can also consist of leveling the seafloor by removing top soil layers by dredging, thus creating a flat and stable area for the foundation of an artificial structure. Depending on the construction and the project-specific requirements, Boskalis can provide and install several different types of solid ballast, including high-density ballast material.



Survey vessel Ocean Resolution





Dry transport of an FPSO by Boka Vanguard

‘TRANSPORTATION FOR THE OIL AND GAS INDUSTRY, DRY OR WET, HAS NO SECRETS FOR US’



Towage of a rig by anchor handling tugs Sentosa and Seraya



Dry transport of an FPSO by Boka Vanguard

#### DRY AND WET MARINE TRANSPORT

As a major player in ocean transportation of the largest and most valuable assets we deliver dry and wet heavy marine transport using our extensive fleet of semi-submersible heavy transport vessels and oceangoing tugs. We take care of the transport of drilling rigs, floating offshore production structures as well as fixed offshore production structures. Additionally we provide turnkey logistical solutions to cover multiple module transportation. Our in-house capabilities enable us to realize the lowest overall cost by coordinating logistics, and optimizing schedules between fabrication yards, subcontractors and clients.



## INSTALLATION

Boskalis delivers fully integrated solutions for the installation of offshore oil and gas production facilities, whether fixed in shallow water or floating in deep water, like SPARs and FPSOs. This includes landfall construction, trenching, backfilling, nearshore pipeline installation and the installation of jackets and topsides. In addition, our services for floating structures includes mooring installation, station keeping, hook-up and subsea installation of umbilicals, risers and flow lines. Furthermore our versatile fleet of anchor handling and towage vessels enables us to provide anchor handling, towing, rig- and move services and our fleet of semi- submersible and regular cargo barges are available for operation in both offshore and inshore projects.

### • Mooring installation, station keeping and hook-up

With our specialized deep water anchor handling tugs and other specialist offshore support vessels we provide mooring line installation, heading control and positioning, mooring system installations and riser hook-up services.

### • Jacket and topside installation

With the combined availability of DP heavy lift, sheerlegs and moored crane barges we provide clients with the unique ability to deal with all forms of jacket, topsides and module installations ranging from shallow and sheltered waters jacket and topsides installation through to deep water topsides and module installations. Installation activities include the (pre-) piling of jacket foundations, transportation of the facilities to the field and subsequent lifting and placement in their designated location including any required welding and non-destructive testing activities.

## 'FULLY INTEGRATED INSTALLATION SOLUTIONS FOR ALL FIXED AND FLOATING OIL & GAS FACILITIES'



Mooring installation and hook up operations



Subsea tieback



Landfall operations

### • Landfall activities

We have extensive experience in sea to shore landfall constructions, consisting of activities with a full-scope approach. This includes trench dredging and post trenching from the offshore zone, the backfill string yard and pipe-pull operations, cofferdam installation and trenchless shore crossings such as HDD direct pipe and tunnel. Our wide range of dredging and rock-placing equipment enables us to select the right equipment based on project requirements and local conditions, such as the sea state and the seafloor.

### • SURF

We are fully equipped to provide EPIC subsea tie-back solutions between new wellhead locations, manifolds and processing facilities. This is a turnkey solution from concept to detailed design, procurement, and through installation and commissioning.

### • Scour protection

After installation we ensure stability of the location by placing small rock gradings on top of or adjacent to the structure and we install scour protection near the foundation of gravity-based structures.

### FSRU

When it comes to the installation of new floating gas and regassification (FSRU) terminals, we are keen to assist on an EPCI basis with the nearshore subsea pipeline, mooring installation, hook-up and subsea PLEM, umbilical, riser and flowline (SURF)-related activities. This enables us to streamline marine operations and reduce the interfaces for the client.



### SUBSEA IRM

Utilizing our fleet of saturation diving support vessels, construction support vessels and ROV's we are able to offer a wide range of IRM solutions. Our in-house inspection, repair and maintenance (IRM) specialists work with a broad range of inspection methods enabling us to manage the entire work-flow from preparation to final reporting. We are skilled in the planning and executing of cost effective repairs or component replacement of subsea facilities. Our solutions are safe, reliable and cost-effective ensuring the hydrocarbon production to be maintained. We offer IRM solutions for offshore structures and floating assets including seabed infrastructure and pipelines, risers, flowlines, and umbilicals. Furthermore our deep water anchor handling tugs offer IRM and services for moorings.



Subsea IRM

**‘WE HAVE EXTENSIVE TRACK RECORD IN MAINTAINING AS WELL AS THE DECOMMISSIONING OF OIL AND GAS FACILITIES’**



Decommissioning by crane vessel Bokalift 1

### DECOMMISSIONING

Boskalis has a successful track record decommissioning oil and gas facilities that are nearing the end of their design life or economic operation; spanning a period of more than 15 years. With our extensive fleet, specialized equipment, engineering and soil expertise, we can provide innovative and cost-effective and tailor made solutions. Our decommissioning services cover the entire process from on- and offshore preparatory works, including marine survey, topsides and subsea inspections, through to removal and dismantling of the platform. Our specialized equipment, diving support vessels and crane vessels enable us to remove large subsea structures. Finally we take care of onshore dismantling, recycling and disposal of the offshore structures, always with a clear focus on the environment and ecological restoration of the marine environment.



# OUR BROAD SERVICES, YOUR CHOICE OF CONTRACT OR PARTNERSHIP

‘WE ARE ABLE TO OFFER A COMBINATION OF ALL OUR CONTRACTING DISCIPLINES RESULTING IN EFFICIENCY AND DECREASED COMPLEXITY IN MULTIDISCIPLINARY PROJECTS.’

## CONTRACTING SOLUTIONS

Boskalis prides itself on being an experienced, open and transparent contractor. With our large variety of vessels and activities we are used to a wide range of contract forms:

- Day-rate charter: e.g. BIMCO for the hire of vessels, barges;
- Lump sum contracts: e.g. LOGIC Marine Construction for subsea or marine works;

## PARTNERSHIP

In addition to the classic contracting process and format we can offer substantial added value in a partnership role. In a partner-driven development process the project risks and opportunities are shared, resulting in a lean construction process. This includes ideas, life cycle, financing costs and parallel design and construction processes. It shortens the permitting process and allows for optimized concepts and designs through value engineering, bearing in mind the potential cost impact of different project iterations. An added benefit is that risks can be properly balanced by allocating them to the party that is best suited to take them on.

Boskalis has experience with various partnership principles, from Early contractor involvement (ECI) and Pre-construction agreements (PCA) to Joint Development Approach (JDA). Costing can be agreed based on a ‘closed book’ or ‘open book’ approach with a view to complete transparency and maximizing the advantages of the partnership to all involved. We know from experience that significant capex reductions can be achieved through the use of ECI, PCA and JDA.



Subsea construction work by diving support vessel Boka Atlantis



# OUR VERSATILE AND SPECIALIST OFFSHORE FLEET



**15** ANCHOR HANDLING TUGS/  
SUPPLY VESSELS



**3** SEMI-SUBMERSIBLE  
OCEAN GOING BARGES  
Up to 21,000 DWT



**2** HEAVY LIFT VESSELS  
Up to 4,000 t



**11** SEMI-SUBMERSIBLE  
HEAVY TRANSPORT VESSELS  
Up to 117,000 DWT



**5** DIVING SUPPORT VESSELS  
Air/sat diving, ROV



**5** OCEAN TOWAGE TUGS  
Up to 205 T BP



**5** MULTI PURPOSE /  
CABLE-LAYING VESSELS  
Up to 7,500 DWT  
5,000 t turntable capacity



**3** FALLPIPE VESSELS  
Up to 24,000 DWT



**5** CONSTRUCTION SUPPORT VESSELS  
Up to 403 T BP



**17** SURVEY VESSELS



**6** FLOATING SHEERLEGS OR  
CRANE BARGES  
Up to 5,000 t



**6** TRENCHING EQUIPMENT



**8** ROVS

Boskalis operates one of the largest fleets of specialized offshore vessels and equipment in the world. Our fleet includes crane vessels, heavy transport vessels, fallpipe vessels, semi-submersible heavy lift vessels, diving support vessels, construction support vessels, (anchor handling) tugs, floating sheerlegs, cable-laying vessels, trenching support vessels and survey vessels.

Furthermore we have specialized mission equipment such as a wide range of ROVs to support and enhance our activities in all phases of an oil & gas project.



# OUR WORLDWIDE OFFSHORE OIL & GAS ACTIVITIES

Highlighted projects:



## MARINE SURVEY PROJECTS

Multiple geophysical site investigation surveys on the Norwegian Continental Shelf. Work scopes included 3DHR, 2DHR, shallow geotechnical and environmental investigations.



## ENERGIA DEL PACIFICO

- Installation of subsea pipeline, manifold, flexible riser and spread mooring
- Trenchless shore approach (micro tunnel)
- FSRU hookup



## VIKING & VULCAN

Removal, transportation and disposal services for ten decommissioned oil platforms in the Southern North Sea.



## TOTAL TYRA REDEVELOPMENT

- EPIC procurement & construction of subsea valve, spools, risers, clamps, umbilicals, mechanical connectors
- Re-route and tie-in of the pipelines to TEE



## P70

Transport of the 91,118 ton P70 FPSO from China to Brazil.



## KAKINADA 98/2

- Transport and installation of the suction piles and mooring chains for the FPSO
- Transport and installation of the turret buoy (2022)



## BOKOR

Float-over installation of the 11,500 ton Bokor CPP-A platform topside.



‘OUR WIDE RANGE OF SPECIALIZED  
OFFSHORE VESSELS TO PERFORM AN  
UNPARALLELED RANGE OF ACTIVITIES.’

WHAT SETS US APART

- UNPARALLELED RANGE OF ACTIVITIES
- COMMITMENT TO SAFETY
- ABILITY TO MANAGE COMPLEXITY
- COMBINING SPECIALIZED SERVICES INTO INTEGRATED SOLUTIONS
- VERSATILE FLEET OF VESSELS AND MISSION EQUIPMENT
- INNOVATIVE AND SUSTAINABLE SOLUTIONS
- GLOBAL PRESENCE





# LET'S TALK

'TELL US ABOUT YOUR  
CHALLENGES'

For over 100 years Boskalis has been helping clients meet some of the toughest challenges. How can we help you? Give us a call and tell us about your challenges. Or take a look at our portfolio on [www.boskalis.com/offshore](http://www.boskalis.com/offshore)

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