



# HSM *offshore*

EPCI HV Offshore Substations

an **ANDUS** group company



## HSM Offshore

### History

HSM Offshore completed the first ever Offshore High Voltage Substation in 2002, backed by extensive experience obtained during 40 years construction of complete platforms and modules for the offshore Oil & Gas sector.

Since 2004 the company is part of the Andus Group, an organisation with a strong financial basis and additional structural fabrication facilities and resources within the Netherlands.

### EPC, EPCI & EPCIC Capability

The vast majority of OHVS projects have been contracted on EPC, EPCI or EPCIC basis. HSM Offshore has during the past decades specialized in these disciplines, whereby concept design and FEED studies are also part of its offering.

This puts HSM Offshore in an ideal position for very early involvement in asset development, being able to provide basic designs, complete with full costing and schedule for the purpose of internal review and approval by its customers.

Focus is on cost efficiency, constructability, alternative T&I methods and low cost decommissioning or re-use.

In particular this type of input proves to be very valuable for the participation in Offshore Wind Farm auctions.

### Facilities and Resources

The fully owned premises are situated in the Rotterdam harbour area and include extensive covered fabrication facilities, blasting and painting halls, large warehouses, deep water quaysides with jetty and open North Sea access. Full details can be found on the back side of this brochure.

Client offices with 70 FTE capacity are situated near the main gate.

HSM Offshore experienced and highly qualified staff has an average employment well in excess of 15 years, many having started as an apprentice or trainee.

An extensive pool of qualified welders as well as reputable sub-contractors for HV system integration, E&I, HVAC and heavy lift services are based in the direct vicinity of HSM Offshore premises.

### QA/QC and HSE

HSM Offshore boasts an excellent performance record on Quality, Health, Safety and Environment.

The management systems have been independently audited and certified for more than 20 years.



First OHVS project 2002



FEED & engineering



Construction

### Concept studies - FEED - Detailed Engineering

HSM Offshore has for several projects provided concept design and FEED studies to define the optimum development solution, making extensive use of its long term experience obtained from well over 150 projects delivered.

This enables HSM Offshore to provide full and detailed information on the preferred concept, schedule, overall costs and T&I options. HSM Offshore will fully commit to the study output when awarded the contract.

### Project Management

The flat organisation of HSM Offshore is characterized by open and short communication lines.

Highly skilled and experienced project management staff is a major company asset.

Long term relationships with key suppliers and subcontractors allows HSM Offshore to maintain firm control on safety, quality, planning and costs.

A fully integrated project team, consisting of the client site team, HSM Offshore and its major subcontractors, will be permanently based on HSM Offshore premises throughout the project execution phase.

The Primavera P6 planning programme has been fully implemented and allows close progress monitoring and comprehensive reporting.

### Procurement and Subcontracting

Procurement and subcontracting is done in close cooperation with the engineering subcontractor and fully covers the provision of requisitions, data sheets and technical review. External auditing and expediting will ensure timely and flawless delivery.

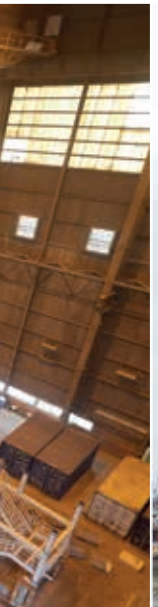
Climate controlled warehouses are available to store equipment and to allow for early delivery.

### Construction – Assembly – Pre-commissioning

Modern large construction and assembly halls in combination with highly qualified and experienced construction staff are prerequisites for the highest quality and on time delivery.

Further key features are heavy lift overhead cranes, automated welding, plasma steel cutting and own preservation shops on the premises as well as 600+ FTE facilities.

This enables HSM Offshore to complete the maximum level of pre-commissioning prior to rollout making use of its own or clients commissioning programmes.



Loadout OHVS 700 MW

Transport & installation / hook-up & commissioning

## Transport and Installation

SPMT's, heavy lift mobile- and floating cranes are all readily available to facilitate cost efficient and safe loadout operations at the deep water high strength quayside.

A 270 metre jetty is available for final sea transport preparations and to accommodate the barge up to sailaway.

The services of HSM Offshore also include the provision of all grillages and seafastening.

HSM Offshore has extensive experience with offshore transportation and installation of platforms and modules, either through integral subcontracting to a heavy lift contractor or through managing all resources such as barges, tugs, floating sheer legs, pile driving/ grouting equipment and ROV-services.

HSM Offshore staff manages all interfaces offshore, with back-up from its onshore support organisation.

## Hook-up and Commissioning

Prior to final handover to the client, HSM Offshore will undertake full offshore hook-up and final commissioning, being supported by its subcontractors and OEM staff.

For client convenience, the provision of temporary accommodation, construction support and offshore transportation can be arranged as well.

## Project References

The following contracts with respect to Offshore High Voltage Substations have been awarded to HSM Offshore:

- 2001 - 160 MW - Horns Rev A - Danish North Sea
- 2007 - 250 MW - Horns Rev B - Danish North Sea
- 2010 - 325 MW - Thornton Bank - Belgian North Sea
- 2014 - 400 MW - Horns Rev C - Danish North Sea
- 2016 - 400 MW – Rampion - UK North Sea
- 2016 - 450 MW - Borkum Riffgrund 2 - German North Sea
- 2017 - 700 MW - Borssele Alpha - Dutch North Sea
- 2017 - 700 MW - Borssele Beta - Dutch North Sea

- Detailed design
- Procurement
- Fabrication
- Soil investigations
- Anti scour protection
- Transport & Installation
- Provision of accommodation/construction support facilities
- Hook-up
- Commissioning



OHVS 325 MW



OHVS 400 MW



Jacket 2,900 tonnes

## Construction facilities

<b>Total area</b>	75,000 square metres
<b>Covered production area</b>	13,000 square metres
<b>• Prefabrication and steel cutting shop</b>	50 x 40 x 9 metres, crane lift 4 x 16 tonnes
<b>• Assembly shop (hall 1)</b>	102 x 20 x 6 metres, crane lift 3 x 10 tonnes
<b>• Assembly shop (hall 2)</b>	102 x 26 x 19 metres, crane lift 2 x 50, 1 x 25 and 2 x 10 tonnes
<b>• Assembly shop (hall 3)</b>	100 x 40 x 30 metres, crane lift 4 x 40 tonnes
<b>Painting and preservation facilities, fully conditioned</b>	Shop 1: 29 x 20 x 10 metres Shop 2: 30 x 14 x 7 metres

<b>Open assembly area</b>	15,000 square metres
<b>Travelling gantry cranes</b>	40 tonnes 15 tonnes
<b>Fully conditioned warehouses</b>	2,000 square metres
<b>Loadout quay</b>	50 metres wide, berthing all types of offshore barges, sheer legs, no weight limitations
<b>Jetty</b>	270 metres
<b>Water depth</b>	11 metres



HSM Offshore facilities in Rotterdam harbour



Jetty 270 metres

# Serving the industry



## Refractories

- Gouda Refractories
- Gouda Vuurvast Belgium
- Gouda Vuurvast Services
- Gouda Feuerfest Deutschland

## Steel Structures

- HSM Offshore
- HSM Steel Structures
- Lengkeek Staalbouw
- RijnDijk Staalconstructies

## Specialties

- Armada Mobility
- FIB Beer Systems
- FIB Industries
- ISS Projects Slovakia
- Van Voorden Foundry

## Part of a greater whole

HSM Offshore is part of Andus Group, an international operating holding company. The subsidiaries of Andus Group have one aim: Serving the industry. And they have one characteristic in common: to be the best within their own specialisation. On specific projects, group companies work together, combining their experience and resources.

The ambition is clear: the Andus Group companies are always aiming to achieve maximum client satisfaction. This requires high quality, experienced and skilled project management and the use of innovative methods when designing, producing and realising projects. That is why Andus Group can continue to further strengthen their possibilities at the top of the different market segments.

In short: Andus Group is a powerful and reliable partner completely geared to your success.



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