



North Sea expansion takes off

Belgian construction company DEME is currently installing foundations for Vattenfall's Vesterhav Nord and Syd offshore wind farms on the Danish North Sea coast. Installation of the 41 foundations, to support the 8.4 MW Siemens Gamesa offshore wind turbines, is handled from a new offshore wind port, the Port of Thyboron.



The foundations DEME is installing are the large steel structures of 41 monopiles and transition pieces (TPs). The 77m long monopiles, each weighing around 622 tonnes, are produced by EEW in Rostock, Germany. The associated TPs between the monopiles and the turbines are produced in Aalborg by Bladt Industries A/S. Each TP is 22.5m high and weighs 275 tonnes. DEME's large installation vessel, Innovation, which is 147.5m long and 42m wide, is regularly sailing into the Port of Thyboron to load foundations, and then out to the offshore wind farms in the North Sea to install them.

DEME pushes port towards the future

This is the first time such a large offshore wind farm installation project is serviced from the Port of Thyboron. By choosing this

location for the installation, DEME and Vattenfall AB are actively contributing to the expansion of port capacity near the North Sea, in relation to the future need for large quayside areas and deep water in the offshore wind energy sector. There has been close dialogue and trustful and open cooperation between DEME and the port on the project for a long time.

It is part of the Port of Thyboron's strategy to develop in close cooperation with its users. The close cooperation with DEME during this project has given the port a valuable foundation for yet another expansion that supports the sector. This has resulted in the establishment of a new 11m deep channel from the North Sea, all the way to the offshore project quay facilities at the port.

'As a port, we have found DEME to be a very professional and serious partner who has helped push us the last mile. We have also shown that a port like ours can deliver the conditions we have promised. We are proud of this,' says Jesper Holt Jensen, Port of Thyboron Director.

The port currently offers 300,000m² of quayside land for storing primary components, a quay with a load bearing capacity of up to 23 tonnes per square metre, and now also a channel up to 11 m deep from the North Sea to the project quay facilities in Sydhavnen. Given the port's location as a natural harbour inside the Liim Fiord, it has further potential for greater capacity in the form of port expansions that add more quayside land and quays in the long term.



DEME's project manager, Jan Van de Veldereports: 'We recognised the potential to optimise the installation project using the good quay facilities we saw during a site visit. We have some unique port facilities for offshore installation. The open dialogue we

have been able to have with the port about the project preparations has also been outstanding. Our engineers have prepared everything down to the smallest detail. We are pleased to be able to advance development through our choice of port and

contribute to greater port capacity for the many projects being planned for the North Sea in the future.'

Ample space for the work

Van de Velde sees great opportunities in the project quay at the Port of Thyboron, with solid heavy-lift facilities and lots of quayside space. He notes: 'There are clear advantages in the fact that we can work undisturbed at the quay throughout the installation project, without disturbing others.'

The installation vessel works 24/7 when weather conditions allow, handling the large, heavy foundations during an installation project. It is therefore an advantage that the port's project quay facilities are located in a closed harbour area, far from the city centre.

Safe navigation in any weather due to the port's naturally protected location inside the Liim Fiord, and a channel with absolutely no queues, were equally key factors in choosing the Port of Thyboron for installation of the foundations. Installation vessels are very cost-intensive. It is therefore crucial that the project can be run without disruption throughout the installation. Installation vessels do not wait, except in cases of force majeure.

Good North Sea location

The port's close proximity to the offshore wind farms clearly maximises project



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efficiency. Being able to ship the foundations to a port that is near at hand reduces the distance the installation vessel has to sail, to the benefit of the project timetable and budget, and not least the environment.

Three major new records for the Port of Thyboron

This installation project moves the Port of Thyboron into another league. The first offshore wind farm, Nisum Bredning, has already been installed, and several large onshore wind turbines have also been handled at the port. The heavy transformer lifts have been efficiently executed. The offshore wind energy segment has been generally stable at the port every year since 2017, with all kinds of seabed surveys and various offshore vessel mobilisations and demobilisations.

Several offshore shipping companies use

Thyboron as their home port, including Offshore Windservice A/S with Fob Swath vessels, underwater construction specialist JD-Contractor A/S, which has home ports in Kalundborg and Thyboron, and Northern Survey A/S uses the port on a regular basis for their vessels and has qualified maritime service done here in the winter season. But this is the first time in the port's more than 100-year history that an installation vessel as large as Innovation has called at port, that such heavy lifts have to be performed via jack up, where the ship rises up on four pillars as the crane loads the vessel, and that such a large scale offshore wind farm will be installed from the port.

'It is a major project, in full production scale, which we have fully enjoyed preparing for and we enjoy delivering every single day,' says Tine Jensen Le Breton, from the Port of

Thyboron, who has run the entire project in close collaboration with DEME's project team. 'Good service and our flexible and service-minded approach in Thyboron have been key for the project. Not a single task has arisen that could not be handled in Thyboron during the preparations. The more than 100 local companies have a solution-oriented focus and are extremely service-minded.

'It was even possible to provide Covid-19 tests, at a time when Denmark has reduced testing to virtually nil, through a joint effort in Thyboron, where cooperation is an art that dates back to the port's establishment in 1914, more than one hundred years ago. It lies in the DNA of the whole town to pull together, and it is a real pleasure to be part of it.

<https://www.thyboronport.com/offshore/>



The Vesterhav Nord and Syd offshore wind farms are owned by Swedish energy company Vattenfall AB.

They will add 344 MW of renewable energy capacity to the Danish energy system, corresponding to the power consumption of more than 350,000 households.

Vesterhav Nord will have a capacity of 176 MW and Vesterhav Syd 168 MW.

DEME installs the foundations for West Jutland and all of Denmark's new large-scale renewable energy production, from the Port of Thyboron.