

Press Release
26-1-2021 09:00 GMT

CTV's are innovatively transformed in preparation for Hornsea Two construction

Leading renewable energy provider, Ørsted is set to welcome three new hybrid crew transfer vessels (CTVs) to assist with the construction at Hornsea Two offshore wind farm.

The company has worked alongside Northern Offshore Services (N-O-S) and MHO-Co to develop the innovative vessels which will take around four hours to travel to site, from their base at the port of Grimsby, on the east coast of the UK.

The Hornsea Two CTV's will also carry Z-Bridge's newly developed motion compensated transfer system, called Bring-to-Work.

This unique transfer system will be installed as an additional feature for technicians to access the Hornsea Two transition pieces (TPs) directly from the CTV.

Jan Stilling, Lead Marine Specialist for Ørsted said: "The new CTV's have incorporated large battery capacity that makes it possible to stay offshore overnight in hybrid mode meaning they're not burning fuel for up to eight hours while the vessels keep their positions without anchoring or mooring to a buoy.

He continued: "The new gangways will work as additional support for the extra access required during construction on site."

N-O-S will take delivery of their 39-meter "Energizer" in Spring 2021 and MHO-Co are due to deliver their two 35-meter CTV's in Summer 2021.

The batteries installed on all three vessels can be recharged either by power surplus, the onboard generator or via a recharging buoy system that will be tested during the construction phase of the wind farm.

Both designs have been created in preparation for implementing fuel-cell technology once suitable storage for the fuel types such as hydrogen or methanol has been developed for use onboard.

David Kristensson, Group CEO of Northern Offshore Services said: "I am grateful that N-O-S has been awarded the contract for supplying our CTV services to Ørsted during the construction of Hornsea Two. Energizer, the first CTV in our E-Class series, represents years of research and development and will provide the best possible performance during the most difficult sea conditions. In addition, I am very excited about our new hybrid solutions that will reduce both the fuel consumption as well as the emissions at sea. The Hornsea Two project represents the perfect start for our new vessel series."

In a world first, MHO-Co's vessels feature both a diesel mechanical and a diesel electric Inboard Performance System (IPS) driveline setup in both hulls. The diesel electrical drivelines can also be powered from the large onboard rechargeable battery pack during night-time and slow steaming.

Mik Henriksen, Group CEO of MHO-Co said: "We at MHO-Co are very happy with the award of contracts to supply four CTV's for the construction of Hornsea Two, with two already set to work, the MHO Asgard and the MHO Apollo are the next step towards carbon neutral operation. As with our previous CTV's we have worked with Ørsted to design superior sea keeping to support windfarms further offshore, with a high level of comfort for the technicians. These new boats will also be used to take next step technologies like hydrogen fuel cells, methanol and new types of

batteries to market. MHO-Co has also been involved in the development of new ways to access turbines, such as the Z-Bridge.”

Bastiaan Spruit, General Manager at Z-Bridge said: “We are extremely proud that we have been contracted to support Ørsted’s ambition to reduce the CO2 footprint and increase safety during transfer of technicians by CTV’s . The Bring-to-Work is a fully motion compensated offshore access system. It will allow teams of four technicians to transfer in a trolley direct from the CTV to the TP platform. By eliminating stepping to the boat landing and climbing ladders this will improve safety. We see that this will also significantly reduce the required visit time per TP, lowering fuel consumption and improving operational efficiency. The Bring-to-Work system is the first offshore access system installed on a CTV that is able to transfer people direct to the TP platform elevation.”

Scheduled for completion in 2022, Hornsea Two will become the world’s largest offshore wind farm, with a capacity to generate 1.4GW of clean energy, enough to power 1.3 million homes in the UK.

- ENDS –

NOTES TO EDITORS

About Ørsted

The Ørsted vision is a world that runs entirely on green energy. Ørsted develops, constructs and operates offshore and onshore wind farms, solar farms, energy storage facilities, and bioenergy plants, and provides energy products to its customers. Globally, Ørsted is the market leader in offshore wind and it is constructing the world’s biggest offshore wind farms off the East Coast of the UK. Its UK offshore wind farms generate enough clean electricity for over three million UK homes. Ørsted ranks #1 in Corporate Knights’ 2020 index of the Global 100 most sustainable corporations in the world and is recognised on the CDP Climate Change A List as a global leader on climate action. Headquartered in Denmark, Ørsted employs 6,500 people, including over 1000 in the UK. Ørsted’s shares are listed on Nasdaq Copenhagen (Ørsted). In 2019, the group’s revenue was DKK 67.8 billion (EUR 9.1 billion). Visit orsted.co.uk or follow us on [Facebook](#), [LinkedIn](#), [Instagram](#) and [Twitter](#)

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About MHO-Co

MHO-Co is a Danish shipping company specializing in service and transport of crew in the offshore wind industry. The company was founded in Esbjerg, Denmark in 2015 by Mik Henriksen, who has many years of experience with catamarans and CTVs. The company has a number of vessels including the twin ships MHO Gurli and MHO Esbjerg, which with their 39 meters are the world’s largest CTVs.

From day one, the ambition has been to serve the offshore industry with reliable vessels with high performance and safety, where the environment and fuel economy go hand in hand. For further info: www.mho-co.dk

FACTS ABOUT THE MHO -Co HYBRID CTVs

- Designed by Mik Henriksen, MHO-Co
- 35-meter catamaran
- 110 m² fore deck and 15m² aft deck
- Equipped with Volvo IPS 900 and Volvo E-IPS with Danfoss’ Editron PM-Electric motors
- Fits 24 passengers
- Fitted with large lounge area and eight cabins

- Completed 2nd quarter 2021
- Will service the Hornsea Project 2 Offshore Wind Farm for Ørsted based out of Grimsby, UK
- Built by Afai Southern Shipyard (Panyu Guangzhou) Ltd., in Guangzhou, China

For further information please contact CEO Mik Henriksen, MHO-Co on mobile: + 45 53 62 46 45 or via email: mik@mho-co.dk

About Northern Offshore Services (N-O-S)

Northern Offshore Services is one of the market leading operators of CTV's on the European market. Northern Offshore Services operates 42 vessels in which most are CTV's and has a complete set of onshore technical and commercial management services. N-O-S has offices located in Copenhagen, Gothenburg, Hamburg, and Great Yarmouth.

Northern Offshore Services is part of Northern Offshore Group. The group is driven by entrepreneurship and consists of several well-established, privately owned companies that operate in various parts in the marine industry. The group has a clear vision and values rooted in the strong shipping culture and entrepreneurial spirit of Donsö, an island in Gothenburg's southern archipelago, in Sweden.

FACTS ABOUT THE N-O-S HYBRID CTVs

- Designed by Northern Offshore Services
- 39 meter catamaran
- 170 m² fore deck and m² aft deck
- Equipped with 2x3 Volvo Penta D16 engines plus large battery pack with PTI on gear
- Fits 24 passengers
- Fitted with large lounge area and eight cabins
- Completed 2nd quarter 2021
- Will service the Hornsea Project 2 Offshore Wind Farm for Ørsted based out of Grimsby, UK
- Built by Grovfjord Mek in Norway

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About Z-Bridge Offshore Access Solutions (Z-Bridge)

Z-Bridge is a company specialized in the design, rental and sales of Offshore Access Solutions. The company is providing 24/7 project support to clients to ensure safe and efficient operations. After the design of the W2W system Z-Bridge focused on the development of the Bring-to-Work concept, a lightweight, cost efficient system that will also open up the "W2W" market for smaller vessels like mini SOV's and CTV's. The company is based in the offshore port of IJmuiden in the Netherlands.

FACTS ABOUT THE BRING-TO-WORK SYSTEM

- Able to operate from (smaller) DP vessels & CTV's.
- Fully motion compensated for roll / pitch / heave
- Certified by Bureau Veritas for:
 - Transfer 4 persons in the trolley
 - Transfer 1 ton of cargo in the trolley
 - Hoist 3 ton in crane mode

- Able to dock at standard W2W interface
- Own weight 25 ton/ footprint D=3,5 m
- Quick mobilization (Plug & Sail)
- B2W-002 & B2W-003 will be ready for operation mid 2021

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