

ST3 Lifts Jacket Foundations for Wind Farm with Modulift Beams



Modulift has supplied two large spreader beams to complete a rig that will lift 20 wind farm jacket foundations onto vessels at ST3 Offshore's dockside location in Szczecin, Poland, close to the country's northwestern border with Germany. The jackets are bound for Cuxhaven and will eventually be installed at the Borkum Riffgrund 2 offshore wind farm.

The two beams, MOD 400/600s, both 8m-long, were used in an inverted configuration above another Modulift beam, an 800/1000, which was hired in from Schmidbauer GmbH & Co. KG. The beams combined with shackles and other rigging gear, including delta plates, to form the rig beneath the hooks of a rail-mounted, 117m-high, 1,400t capacity gantry crane.

The 400/600s offer up to 600t at 14m or 44 ft. and up to 24m or 78 ft. at a lower capacity, while the 800/1000 can lift up to 1,000t at 15m or 51 ft. and up to 26m or 85 ft. at a lower capacity. The foundation jackets weigh 700t apiece and stand 52m high. They are lifted in their entirety onto a barge that can transport three at a time. John Baker, sales and marketing director at Modulift, explained that the top two 400/600 beams were used in an inverted (upside down) configuration to utilise the four hoist hooks on the crane, and allow the lower slings to come down to a single point on top of the lower 1,000t beam; below that again, two delta plates and a horizontal sling created the vertical angle for the bottom slings that attached the rig to the top of each jacket.



Baker added: "Modulift spreader beams are put into compression when loaded so another beam wouldn't have been suitable at the bottom of the rig between the delta plates because the forces applied are tensile rather than compressive. A wire rope grommet acted as a tie sling between the delta plates and created the vertical sling angle for the bottommost slings in the rig."

ST3's facility is specifically designed for the production of transition pieces, jacket foundations and offshore wind foundation components and other large fabricated structures. In this case, the jacket foundations will be assembled at their destination with 10m-high suction buckets, used to anchor the structures. Water will be pumped out of the buckets to lower pressure and, combined with the weight of the foundation, the structures will sink to the sea floor.

At the time of writing, the first phase of loadout remains ongoing. The rig will stay in Szczecin for the duration of the project. A different lifting and rigging solution will take the weight of offload and installation at Borkum, which is one of the largest offshore power plants in Germany, with a capacity of 450MW, expected to supply electricity to nearly 500,000 households per year.

Baker concluded: "It has been fascinating to spend time at the Szczecin site and work with the great team there to consult on this below-the-hook application. The inverted solution was an effective way to utilise the four hoists on the crane and further innovation was demonstrated by the delta plates further down the rig."

"We are continuing to welcome greater demand from the wind energy sector and look forward to meeting many more challenges in the future."

