

Liebherr cranes erect prototype of the most powerful offshore wind turbine in the world

- Two LR 11350 crawler cranes hoist 780 tonnes to a height of 150 metres
- Prototype of 12 Megawatt system erected in the port of Rotterdam (NL)
- Power-Boom configuration increases cranes' lifting capacity values by over 70 percent

Ehingen / Donau (Germany), 2 December 2019 – A few weeks ago, the prototype of what is currently the most powerful offshore wind turbine in the world were erected in the Dutch port of Rotterdam. The system gondola, which measures an overall 207 metres in height and has a net weight of 675 tonnes, was the heaviest load for the two Liebherr crawler cranes used for the job. In a tandem hoist, the two LR 11350 cranes managed a gross load of 780 tonnes and placed the massive component onto the 150 metre tower for the gigantic turbine.

General Electric (GE) unveiled this 12 Megawatt with the name "Haliade-X 12 MW" in October, making it currently the most powerful wind turbine in the world for offshore use. The massive tower and the complete gondola with its gigantic dimensions of around 1500 cubic metres surrounding sophisticated technology was installed at the port of Rotterdam during the summer. The prototype was erected on land to make access to the system easier during the test phase.

BMS Group from Denmark received the order to erect the wind turbine. This expert for crane work, engineering, heavy haulage and special transports is not only active in Europe but also in Australia, South Africa, and the United States. In Rotterdam BMS used two LR 11350 crawler cranes to erect the 12 Megawatt system, using tandem hoists in some cases. One of the two crawler cranes came straight from the production line at the Liebherr plant in Ehingen to the site.

This crane job with an extraordinarily heavy load was absolutely ideal for the set-up for the two crawler crane shown here – the Power-Boom system to increase lifting capacity, for which the main boom is doubled at the bottom to two sections of lattice boom, increases the capacity of the lifting gear massively. The upright boom position

required in Rotterdam and a boom length of 150 metres meant that this system increased the lifting capacity of these Liebherr cranes by over 70 percent compared to a standard lattice boom system.

Windy weather made them wait

As so often on wind power sites, the weather here at the port of Rotterdam dictated the timetable for the major hoists. For example to install the gigantic gondola, the load was positioned between the two crawler cranes for more than two days until the wind conditions finally allowed them to complete the hoist onto the 150 metre high tower. The 675 tonne heart of the system then required around one hour to cover the route to its final position. With the enormous special cross beams and the lifting tackle, the two crawler cranes had to manage a total load of 780 tonnes. After reaching the final height, the crawler carriers carefully started to move – the two LR 11350 cranes had to move around 20 metres with the load on their hooks until the gondola could be positioned precisely on the tower.

Only one of the two cranes had to remain in Rotterdam to install the 107 metre rotor blades a few weeks later. The system was finally completed by the end of October. According to the manufacturer, a turbine of this type should be able to generate 67 Gigawatt hours of electricity every year. That corresponds to the consumption of around 16,000 households.

Captions

liebherr-lr11350-bms-rotterdam-motiv1.jpg

Power-Boom – both LR 11350 cranes were fitted with this system to increase their lifting capacity. The double lattice boom sections at the bottom produce a massive increase in lifting capacity values. The multicoloured crane on the left of the photograph is from crane hire company Van Adrighem and has been in non-stop action for BMS for the last three years.

liebherr-lr11350-bms-rotterdam-motiv2.jpg

A heavy load – 780 tonnes had to be hoisted to position the gigantic gondola. The two LR 11350 cranes had to move around 20 metres with the load on their hooks after the initial hoist to position the gondola.

liebherr-lr11350-bms-rotterdam-motiv3.jpg

Impressive – a total of 105 tonnes of the total load was made up by the massive cross beams, hook blocks and lifting tackle.

liebherr-lr11350-bms-rotterdam-motiv4.jpg

Practical – a filled suspended ballast pallet was transported over the port site using self-propelled modular transporters.

liebherr-lr11350-bms-rotterdam-motiv5.jpg

Heavyweight – the heaviest of the three tower segments weighs a massive 330 tonnes.

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