

Liebherr LR 11350 crawler crane operated by Mammoet erects large near-shore wind farm on the IJsselmeer

- Liebherr crawler crane erected 48 wind turbines from a jack-up platform
- The largest near-shore wind farm in the Netherlands will generate enough power for 160,000 homes
- LR 11350 operated smoothly – the project was finished on schedule

Ehingen / Donau (Germany), 20 May 2016 – For around one year the IJsselmeer (Lake IJssel) in the north of the Netherlands was the scene of an unusual job for a Liebherr LR 11350 crawler crane. The second most powerful crawler crane model from the plant in Ehingen erected the complete "Westermeerwind" wind farm from a massive jack-up platform. Crane contractor Mammoet, a global player in the heavy transport and crane industry with extensive experience in the offshore wind industry completed the last of the 48 Siemens wind turbines on schedule in February.

The small town of Urk on the south-east coast of the IJsselmeer was the home port for the floating crawler crane with its six-strong crew from March last year. The Mammoet team started their mission in adequate weather conditions together with the Siemens fitters. 48 wind turbines in the 3 MW class had to be erected along the east coast of the largest lake in the Netherlands over a length of 15 kilometres and a maximum of one kilometre from the shore. This site was not just attractive for a wind farm due to its excellent wind conditions. The fact that after being cut off from the sea by a 30-kilometre dyke in 1932 led to the formation of a sweet water lake also gave it an advantage over offshore sites with saltwater.

Foundation piles driven 25 metres into the lake bed

During the initial phase of the project, gigantic foundation piles with a diameter of five metres had to be driven 25 metres into the bed of the lake which is just a few metres deep. The monopiles measured up to 40 metres in length and weighed 300 tonnes. The Liebherr crawler crane positioned these massive tubes precisely using a radius of 36 metres.

All the foundation piles had been inserted by the end of May. After the technical equipment had been installed in the foundations and the turbines connected to the network during the months of summer, work was started in September on installing the tower segments, gondolas and rotor stars, the final phase of the project. The lattice boom of the Liebherr LR 11350 had been extended to a length of 114 metres to enable it to assemble the wind turbines which have a hub height of 95 metres.

Large transport pontoons, each laden with the two-piece turbine tower and a gondola, were moved by tugs from the Port of Amsterdam to the construction site 60 kilometres away. The two tower sections measuring 50 and 40 metres in height were transported upright which enabled the LR 11350 to hoist and assemble the components without an auxiliary crane. The lower tower segment was the largest load for the crawler crane, weighing in at 150 tonnes. However the support of a small floating crane was required for lifting and tipping the rotor star. The rotors have a diameter of 108 metres and were assembled on the opposite coast of the IJsselmeer and then transported to the site on Arches.

Fast, complete assembly in one day in ideal conditions

Often the work on installing the lower tower section on the foundation pile started in darkness. In the ideal case, the turbine could then be completed in the evening with the installation of the rotor star. However, during the winter months there were storms and strong winds meaning that the weather was often too poor to travel to the erection site on the lake. Nevertheless the project was successfully completed on schedule at the end of February 2016 with the completion of the last wind turbine. The "Westermeerwind" wind farm then reached its full rated capacity, generating 144 MW for the first time in March.

The professional expertise of the contractors and teams involved ensured that the major project made rapid and smooth progress most of the time. The reliability of the Liebherr crawler crane was also important in this respect. "The LR 11350 worked without any problems", said William Soeters, Project Coordinator from Mammoet, commenting on the job done by the large crane from Ehingen. The Dutch group has four crawler cranes of this type in use around the world.

Liebherr LR 11350

Main boom (Phase I)	72 m
Main boom (Phase II)	114 m
Derrick boom	42 m
Central ballast	30 t
Turntable ballast	300 t
Suspended ballast	200 t
Maximum load (Phase 1)	310 t with max 36 m radius
Maximum load (Phase 2)	150 t with max 36 m radius

Captions:

liebherr-lr-11350-mammoet-foundation.jpg

This foundation pile weighing around 300 tonnes was positioned precisely here by the LR 11350.

liebherr-lr-11350-mammoet-night.jpg

During the winter months the erection work started in darkness. Here the LR 11350 is hoisting the lower tower segment from the transport pontoon.

liebherr-lr-11350-mammoet-transport-tower.jpg

The tower segments and the gondola were supplied upright on separate transport pontoons.

liebherr-lr-11350-mammoet-tower.jpg

The transport ship containing the ready-assembled rotor star had to cover a distance of around 30 kilometres to get to the site.

liebherr-lr-11350-mammoet-transport-rotor.jpg

With a diameter of 108 metres, the rotor star had a massive transport width.

liebherr-lr-11350-mammoet-windpark.jpg

Wind power as far as the eye can see. The LR 11350 completing one of the 48 wind turbines on the IJsselmeer.

liebherr-lr-11350-mammoet-lift-rotor.jpg

The massive crane required the help of a small ship's crane to pick up the rotor and turn it vertical.

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