



Met Mast Amrumbank West

Wind energy is an energy source of the future. Its share in total power generation has been steadily growing over the last few years. New, innovative projects will ensure that the significance of wind energy for energy supply in Germany will continue to increase.

The green light has already been given for several offshore wind farms. Two of those will be constructed on the Amrumbank, a shallows 35 kilometers north of Helgoland island in the North Sea.

To use the wind energy as efficiently as possible, precise measurements have to be made prior to the wind

farm itself being constructed. In this context, HOCHTIEF Construction Civil Engineering and Marine Works in its capacity as leader of a joint venture was awarded the contract for design, technical processing, construction and maintenance of a met mast for the future wind farms Amrumbank West and Nordsee Ost.

Project data

Client:

Amrumbank West GmbH,
Müden / Aller

Execution:

HOCHTIEF Construction AG
Civil Engineering and Marine Works
(as leader of a joint venture)

Project scope:

Installation of a met mast with monopile foundation (steel pipe), measuring cabin and latticed steel mast

Technical data:

Total height	135 m
Foundation depth in seabed	23 m
Total weight	381 t

Monopile:

Length	63 m
Diameter bottom part	3.50 m
Diameter top part	2.00 m
Weight	285 t

Piling equipment:

Hammer	Menck MHU 800S
Blow energy	800 kNm

Installation:

March/April 2005

Offshore competence

Wind direction and speed, rainfall, water temperature and wave parameters—the met mast is to collect a wealth of individual data for a period of ten years. The required stability will be provided by a 23 meter deep foundation in the sea bed. The transport of the 63 meter long monopile which forms the basis of the met mast to its final destination was carried out by tug boats. A jack-up platform had already been installed for driving the pile into the sea bed with a hydraulic pile hammer.

On top of the monopile, we installed the actual measuring cabin, 21 meters above sea level. In addition to the measuring technology, the cabin

provides the power supply for the equipment. From the load-bearing structure of the measuring cabin, a steel-latticed mast rises up to a height of 90 meters above mean sea level. Over its entire height, eight fully equipped meteorological stations have been installed.

The structure was set up within a single day and it took less than a week to fully commission it.

For a safe and swift execution of offshore projects HOCHTIEF Construction uses its own jack-up platform Odin which has been specifically designed for offshore wind energy projects.

HOCHTIEF Construction AG

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