



Soil investigation for test field Borkum West

45 kilometers off the East Frisian island of Borkum in the North Sea, the exploitation of wind energy is entering the next development phase: Twelve wind turbine generators, each with a capacity of five megawatts, provide valuable know-how for the design and construction of future offshore wind farms. The soil investigations for these facilities on the high seas were carried out under the responsibility of HOCHTIEF Construction.

A total of 208 wind turbine generators are planned to be constructed at Wind Farm Borkum West. Where Germany's first offshore wind farm will produce energy one day, the sea has a depth of roughly 30 meters—a technical challenge both for the design and construction of the wind energy facilities. The test field serves to deliver the required know-how. The Civil Engineering and Marine Works business unit performed 13 borings and cone penetration tests up to depths of 50 meters in order to explore the subsoil and to prepare the installation of the test facilities.

The test field off Borkum island is being constructed by DOTI, an association of energy suppliers. The German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety sponsors the project, together with the Offshore Wind Energy Foundation initiated by the German industry, and in this way supports the deployment of offshore wind technology in the German North Sea. HOCHTIEF Construction Civil Engineering and Marine Works is a member of the foundation.

Project data

Client:

Deutsche Offshore-Testfeld und Infrastruktur-GmbH & Co. KG (DOTI), made up of EWE AG, E.ON Energy Projects GmbH and Vattenfall Europe AG

Execution:

HOCHTIEF Construction AG
Civil Engineering and Marine Works

Technical data:

Soil investigation:

13 dry drillings down to 50 meters and 13 CPTs (cone penetration tests)

Water depth:	27-30 m
Boring depth under ground:	35-50 m
Boring diameter (telescopic):	324/267 mm
CPT depth	up to 50 m

Construction period:

September 2006 to October 2006

Safe platform

A precondition for carrying out the investigation works was the availability of Odin, a jack-up platform from which the offshore works can be carried out safely, even at great water depths. The technical capacity of Odin, named after the Nordic Father God, is illustrated best during the tough offshore works: The jack-up platform has been designed for works in water depths of up to 45

meters. With this product, HOCHTIEF provides the springboard for developing new technologies and for boosting the number of large-scale maritime projects worldwide. The company has also already started working on the design of a second platform with an even greater capacity in order to meet the growing requirements of the offshore market in future, too.

Experience in soil investigation for offshore wind farms

HOCHTIEF Construction Civil Engineering and Marine Works has performed soil investigations for the following projects to date:

- Sky2000
- FINO3
- Borkum Riffgrund West
- Arkona-Becken
- Nordergründe
- Sandbank 24

HOCHTIEF Construction AG

Civil Engineering and Marine Works

Eiffestrasse 585
20537 Hamburg
Germany

Telephone: +49 40 21986-0
Fax: +49 40 21986-200

www.hochtief-construction.com/cem-marine-works@hochtief.de

