



GuD GEOTECHNIK und
DYNAMIK CONSULT GmbH

■ Consulting

■ Expertise

■ Planning

■ Supervision



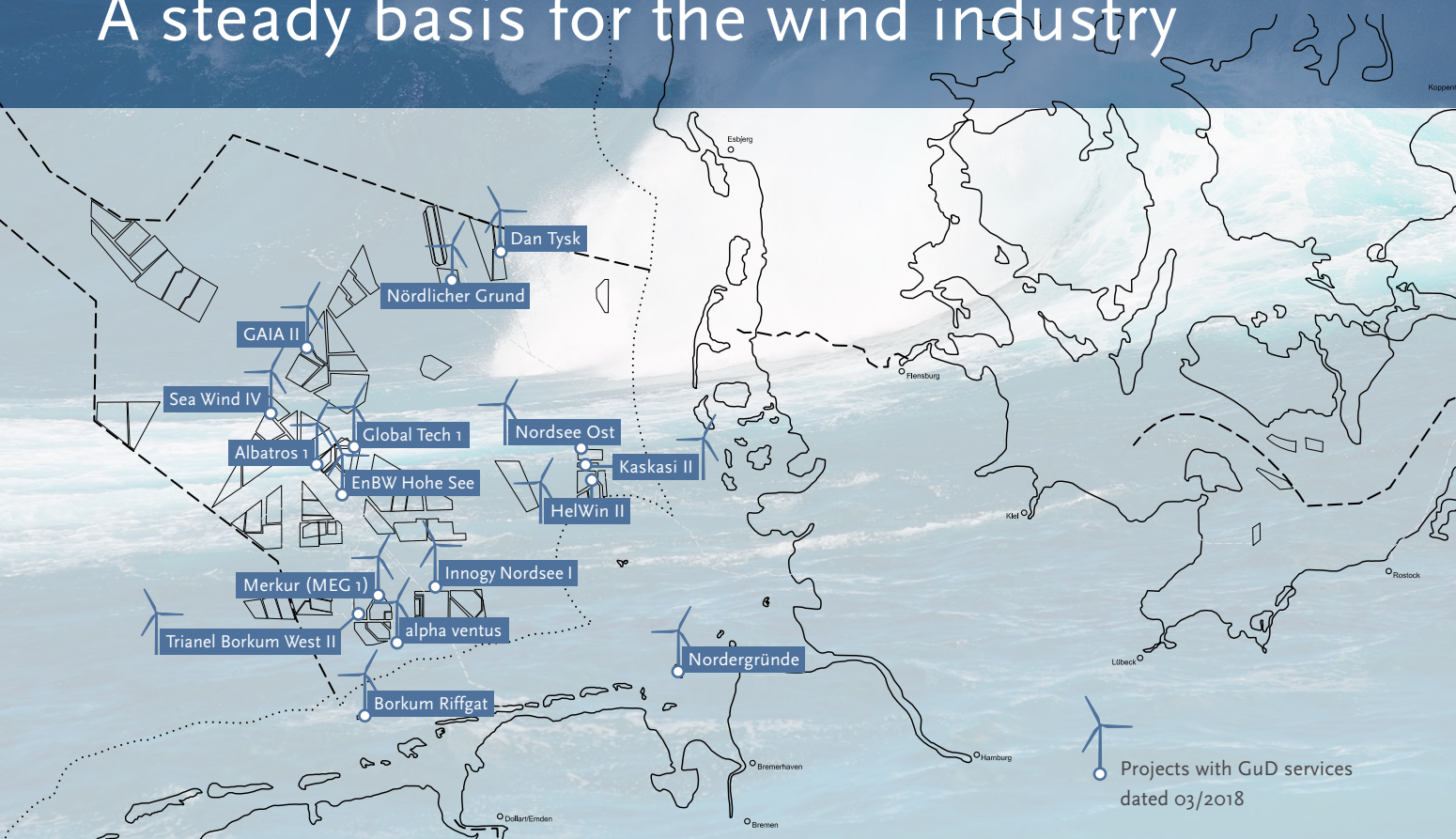
Offshore Wind



Jacket foundations for the Nordsee Ost Windfarm being shipped to the harbour.

Safe-keeping of the cable connectors of an instrumented foundation for later continuation of the measurements.

A steady basis for the wind industry



On safe ground

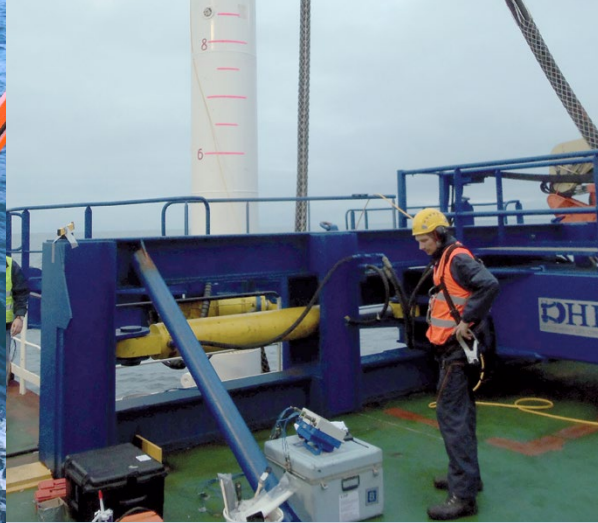
A safe foundation for offshore wind turbines is possible at almost any location. However, this requires a detailed knowledge of the soil and experience also in difficult conditions. As geotechnical experts according to DIN 4020 and BSH Standards we offer full services in all questions related to geotechnical engineering and structural mechanics for the foundations of offshore wind turbines.

- site investigation and laboratory testing
- foundation expertise and consulting
- feasibility and desk top studies
- geotechnical and structural design of foundations
- soil investigation reports
- design of foundation systems
- structural health monitoring (SHM) for foundations

Comprehensively certified

All of our consulting and design follows recognized and accredited computational and measurement methods. With our subsidiary, the certifying organization Hanseatic Power Cert GmbH we undertake project certification of wind farms and offshore projects from planning and design to installation and decommissioning.

- Hanseatic Power Cert GmbH is accredited by the Bundesamt für Seeschifffahrt und Hydrographie (BSH) for the certification of all components of an offshore wind farm: turbines, structure and foundation, offshore substation, inner park cables and residential platform.



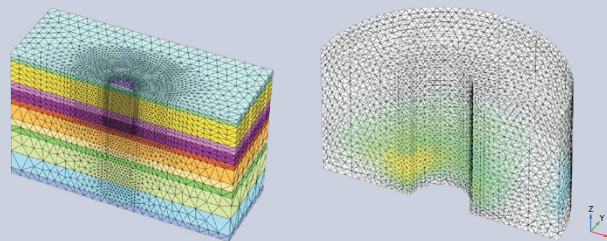
Dynamic pile tests during driving in order to monitor the installation and to determine pile capacity.



Checked for stability

In our quality assurance and consultancy, we undertake all necessary proofs in order to ensure the stability of the wind turbines to prevent unfortunate surprises. We also apply specialized measurement technology and experimental capacity checks by dynamic pile testing.

- drivability studies
- dynamic pile tests
- continuous monitoring of the driving process
- determination of pile driving fatigue
- quality assurance and supervision



Detailed 3-D FE-Analysis of the pore water pressure development adjacent to a Monopile in a maximum storm event.



The analysis of the dynamic behavior of wind turbine, tower substructure and foundation is performed using numerical models.

Cyclically analyzed

The cyclic loading represents a very important issue of offshore foundations. The characteristic wave load accompanied by the loads of the power production of the wind turbine put high demands on the design.

In line with our project involvement we take part in research programs and developed special analysis methods for foundations, which were included in current codes and standards. This ensures an economical and safe foundation design for our clients.

- analysis of deep and shallow as well as special foundations
- in house developed analysis procedures for cyclic loading
- cyclical laboratory testing
- quality assurance concepts

Monopile foundation of a met mast.



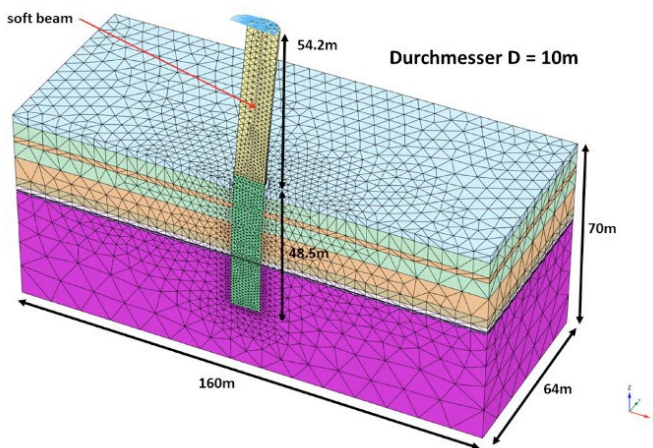


Cable fitting for dynamic pile testing



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www.gudconsult.de/offshore



3-D finite element analysis of large diameter monopiles for advanced design

Selected reference projects

ARKONA-BECKEN SÜDOST Offshore Wind Farm

Client: E.ON Climate & Renewables Central Europe

MERKUR (MEG I) Offshore Wind Farm

Client: Hochtief Infrastructure Offshore GmbH

NORDSEE OST Offshore Wind Farm

Client: RWE Innogy GmbH

INNOGY NORDSEE 1 Offshore Wind Farm

Client: RWE Innogy GmbH

TRIANEL BORKUM WEST II Offshore Wind Farm

Client: Seaway Heavy Lifting

HELWIN 2 Offshore Substation

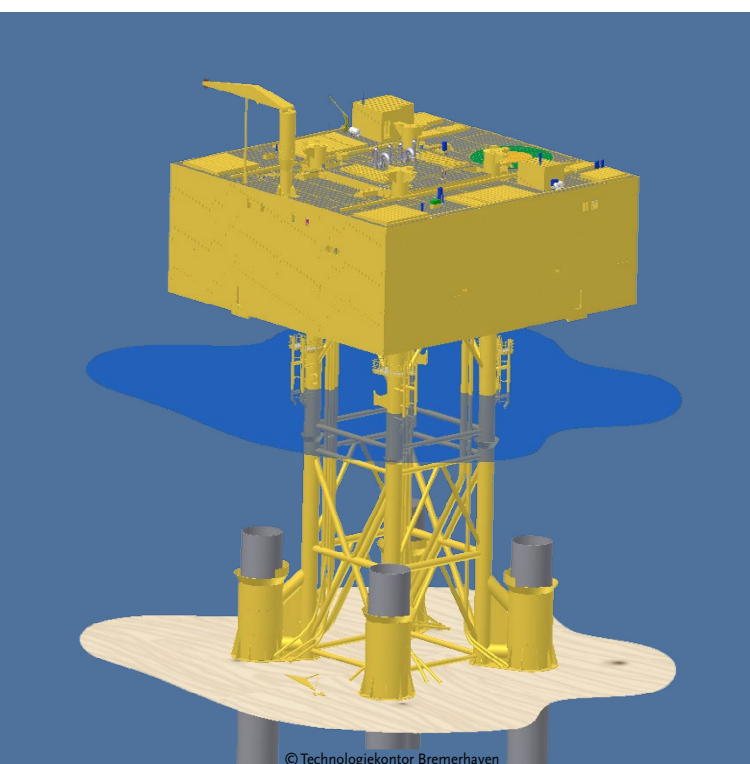
Client: TenneT TSO BV

HOLLANDSE KUST ZUID Offshore Wind Farm

Client: E.ON Climate & Renewables Central Europe

BALTIC EAGLE Offshore Wind Farm

Client: Sea Wind Management GmbH



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We designed the pile foundation for offshore platforms – here the offshore substation at Baltic 2.