



OWT

**Offshore
Wind
Technology**

| 02

Offshore Wind Technology

The Company – Mission Statement

OWT – Offshore Wind Technologie GmbH is established as an engineering service provider in offshore wind energy, both on the German market as well as internationally. Every day we develop solutions that deliver considerable added value to projects.

Our company has essentially specialised in the design of steel constructions primarily in the fields of

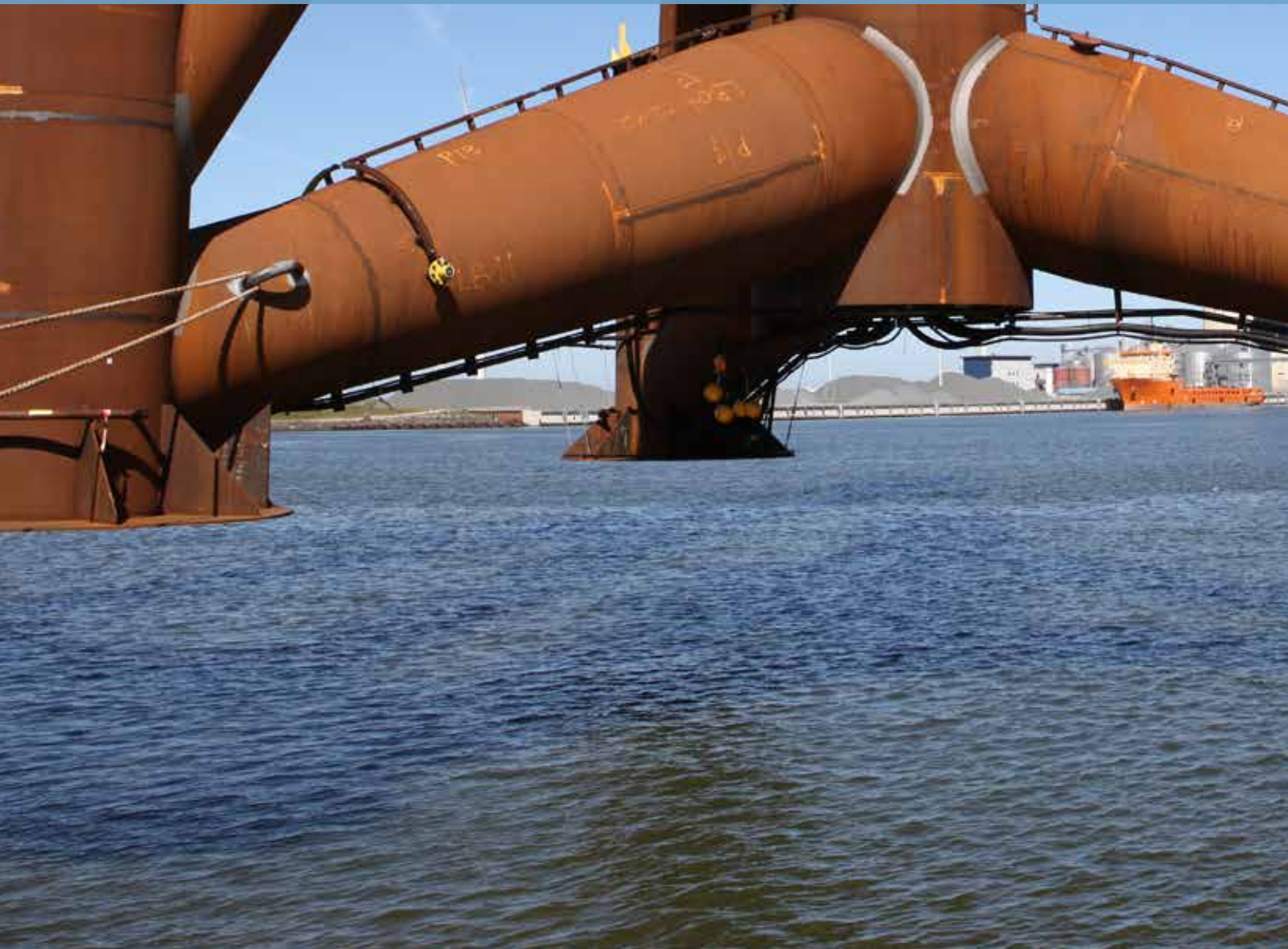
- » Offshore
- » Wind energy
- » Steel construction.

We are also intensively involved in project planning and supervision during operation of the systems.



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We have a responsibility that is understood and embodied by all employees every single working day. The commitment and obligations acknowledged and implemented by the management, senior employees and all staff derive from this.



We regard ourselves as a comprehensive service provider for the offshore wind energy industry. This is based on short response times and extensive experience gained from completed projects, such as Alpha Ventus, Trianel Windpark Borkum (formerly Borkum West 2) and Global Tech I. Moreover, our involvement in current projects in the German North Sea allows us to contribute to the development of the state of the art in a continuous and sustainable way.

We fulfil our own requirements and our customer expectations by active participation in standard committees, research projects and branch organisations.

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Our services



01 Foundation structures

Our services in the design of foundation structures range from monopiles to jackets and tripods, and we can also act as the owner's engineer.

02 Innovation and development

We are systematically involved in further advancing the state of the art in industrial projects and in the development of standards in compliance with DIN.

03 Boat landings

Boat landings are also designed in accordance with the current state of the art, taking into account wave loads, wave run-up, as well as service and maintenance aspects. Our customers have come to appreciate OWT's reliable expertise.

04 Tower design

We support customers with preliminary studies at an early stage in the project phase for the design of offshore towers. OWT offers the entire range of services within the design process, starting with parametric studies on the dynamic behaviour of wind turbines to involvement in the fully integrated load calculation.

05 Project support and supervision

OWT GmbH supports wind park operators, manufacturers businesses and project owners with general strength analysis and with the Exceptional Approval process in conjunction with the design of grouted joints. We are on hand to support our customers during the operational phase as well.

106 Static and dynamic assessments using the Finite Element Method (FEM)

Even away from the offshore wind industry, we provide our clients with static and dynamic calculations using frame models, always in accordance with Finite Element Methods. Our employees rely on their extensive civil and mechanical engineering, and shipbuilding experience. Cooperation is the basis for thorough system analysis in developing a solution to a problem.

107 Fracture mechanical-based safety analysis and steel grade selection

We offer non-standard fracture mechanics-based solutions using traditional verification processes. Linear elastic crack propagation calculations often lead to more accurate results particularly in terms of determining the service life of fatigue loaded components. We also use this methodology for the specific analysis of damaged components or welded joint details and to provide unequivocal evidence of sufficient material toughness to avoid brittle fracture.



108 Project support and interface management

One of our unique strengths is interface management in complex projects and tasks. Our extensive experience in diverse technical disciplines helps us to recognise, assess and manage the needs of the parties involved within an efficient working structure.

109 Installation of foundation structures

We support and advise our customers against the background in terms of the foundation structure and the processes used during installation. Logistic processes are examined from a static and dynamic perspective, with a focus on the safety of the structure and HSE aspects.

110 Rapid prototyping

We provide immediate visualising of new products at an early design stage in the process using 3D printers, rapidly producing structures customers can almost "touch". We have developed a process for production of these models with our partners that quickly produces a finely detailed model for customers from CAD data. Ever-increasing demand motivates us to further develop this field for the benefit of our customers.



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Basic design
Dynamic calculations
Experience Fatigue
Grout joints
Maintenance ISO 9001

Our reference list includes many satisfied customers, with whom we have successfully worked. Below are some of our successfully completed projects:

- » alpha ventus / DOTI / 2006
- » Borkum West II / Trianel / 2010
- » Global Tech I / GT1 / 2010
- » Vallourec/2015

A current overview of our reference projects can be found on our website www.owt.de



Jacket Tripod Monopile

Crack propagation methods
Special solutions
DIN member
Product development

Rapid prototyping

Risk management
Inspector Steelwork
Tower structural engineering

Wind energy

Certification
Consulting
Design review Troubleshooting
Manufacturing supervision
Innovative Offshore

Management of OWT GmbH

Armin Ortmann, Managing Director

✉ a.ortmann@owt.de

☎ 0491-912 18-10

Stefan Dörfeldt

✉ s.doerfeldt@owt.de

☎ 0491-912 18-11

Stefan Bardenhagen

✉ s.bardenhagen@owt.de

☎ 0491-912 18-12

OWT – Offshore Wind Technologie GmbH

Am Nesseufer 32
26789 Leer Germany

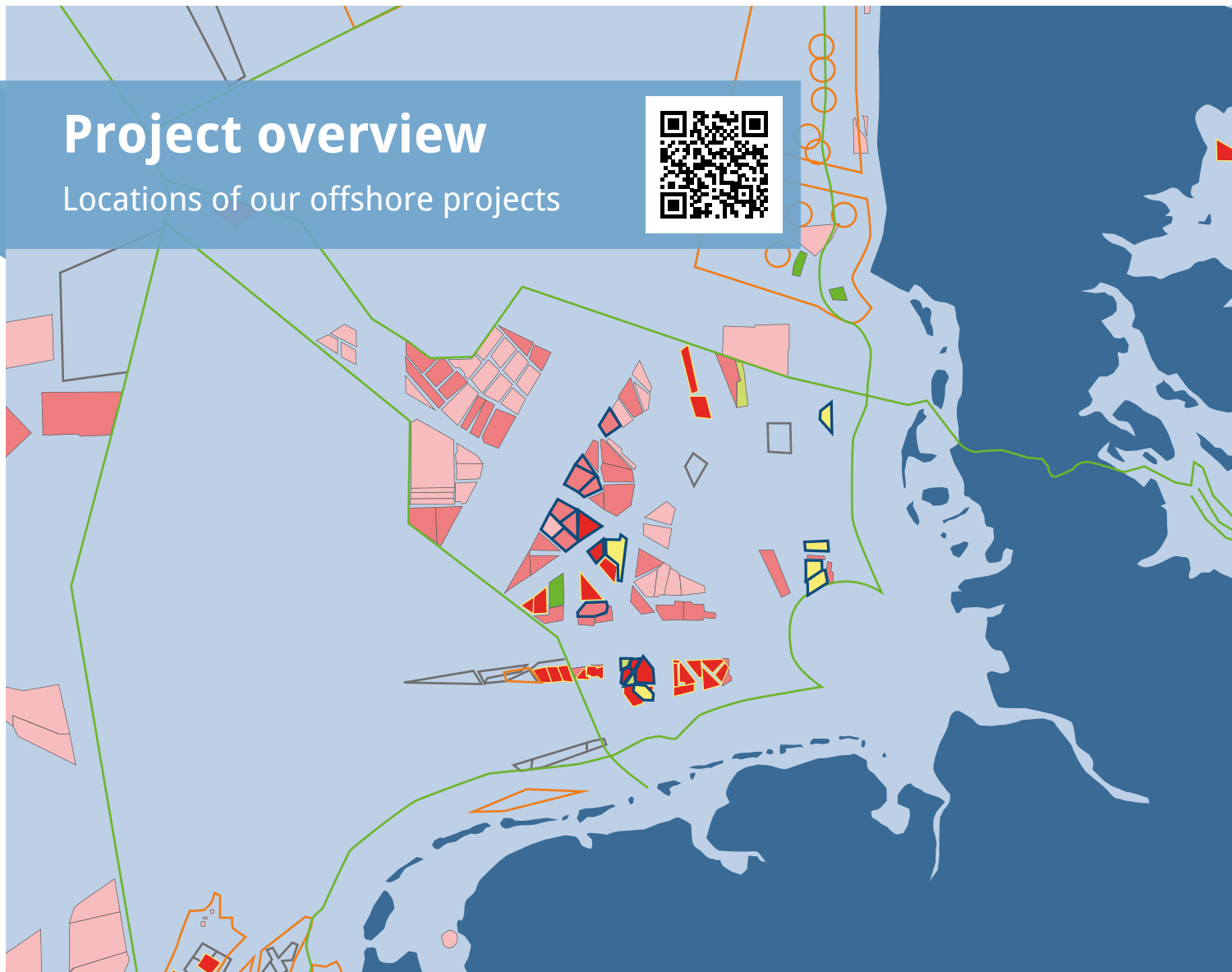
✉ info@owt.de

☎ 0491/912 18-10

www.owt.de

Project overview

Locations of our offshore projects



OWT – Offshore Wind Technologie GmbH

Am Nesseufer 32
26789 Leer Germany

✉ info@owt.de

☎ 0491/9 12 18-10

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OWT provides its services in line with our certified quality management system in compliance with ISO 9001:2008 (Registration DE-515880 QM08).