

- Independent consulting
- Project due diligence for sale and financing
- Project support
- Worldwide activities
- Offshore wind farms
- Management concepts
- Uncertainty analyses
- Wind power prediction

Consulting

As a rule, there is a considerable demand for consulting during the planning and implementation phases of wind energy projects. Overspeed draws on many years of worldwide experience in the fields of expertises, implementation of wind energy projects and wind farm operation. This gives us solid, practical knowledge which is reflected in our consulting services and project management skill. Overspeed is an innovative service provider in the wind energy industry. You benefit from our focus on modern, future-oriented methods applied to our consulting services, products and research activities.

Advice for your wind energy projects

Building on 18 years' experience in wind energy, Overspeed is your ideal consultant when it comes to wind potential studies, wind farm layout, project analysis and management of permit procedures. There is a special focus on projects in "challenging" locations such as offshore and outside Europe. In particular, Overspeed is the main consultant for the "Sandbank24" project, which aims to be one of the world's largest offshore wind farms. Here are the main aspects of our consulting work:

- Project analysis/due diligence
- Wind potential studies
- Support for offshore project planning and development
- Long-term production analyses
- Correlation analyses
- Uncertainty analyses
- Meso-scale model calculations
- Development and supervision of wind measurement methods
- Operating concepts
- Wind power prediction

Offshore

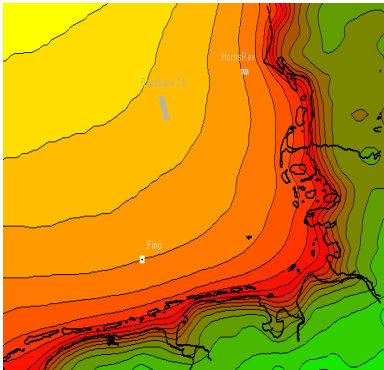
Usually, offshore projects require intensive consulting for their realisation. Included here is advice on planning the cable route, the grid connection technology (AC/DC) or managing permit

application procedures, wind potential studies and yield studies.

The expertise we have gained from taking part in the Sandbank24 project makes Overspeed your effective partner when it comes to planning, developing, financing and selling offshore wind farms.



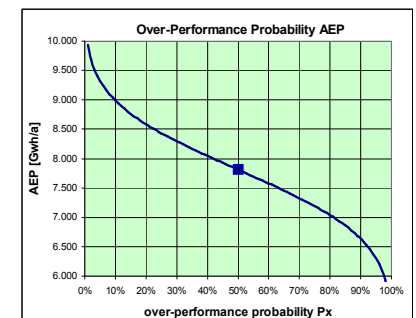
Offshore wind farm



Offshore wind potential calculations

Probability analyses

Probability and uncertainty analyses are key to evaluating wind potential estimations. In-depth analysis of the parameters behind uncertainty factors is essential for reliable yield calculation that defines the probability of exceedance (POE) of a given energy production.



Energy yields for defined over-performance probabilities

Your contacts:

Consulting, Offshore

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References Overspeed

Consulting worldwide

- **Wind speed and energy yield studies** for wind farms and stand-alone turbines (Morocco, Turkey, China, Poland, France, Brazil, Philippines, Portugal)
- **Identification of required infrastructure development** for wind farms (China, Brazil)
- **Analysis of wind farm plans and measuring campaigns** in Pakistan

Offshore wind farm development

- **Sandbank24**
- Management of the permit procedure
- Potential analysis
- Coordination with shipping authority (BSH)
- Preparation for selection of turbine foundations technology
- Wind farm layout
- Selection and optimisation of grid connection technology
- Cable magnetic field calculations
- Support for environmental impact study
- Supervision of external expertises
- Coordination of eon grid connection
- Bird migration surveillance software
- www.sandbank24.de

Software and system development

- "Previento" energy weather forecasting www.previento.de
- Wind farm optimisation programs www.optifarm.de
- Correlation analysis for wind potential
- IT platform for wind power prediction system *Anemos*
- Shadow cast shutdown system *Shadeoff*

R&D projects

- Anemos wind power prediction (EU)
- Anemos.plus wind power prediction and management of uncertain knowledge (EU)
- POWER offshore decision-aid systems(EU)
- CleverFarm wind farm management www.cleverfarm.com (EU)
- Endow offshore wind farm modelling (EU)
- Offshore M&R
Offshore maintenance and repair optimisation (EU)

- HyWindBalance wind-hydrogen systems used as balancing power stations (Lower Saxony state)
- Improvement of FlaP wind farm program for planning, operation monitoring and turbine design in the offshore area (ForWind)

Current further and higher education activities relating to wind energy

- Teaching contract, Uni Oldenburg "Wind Resources" Postgraduate Program Renewable Energies (PPRE)
- Teaching contract, Uni Oldenburg lecture "Wind Energy Applications", Postgraduate Program Renewable Energies (PPRE)
- "Wind Energy Technology and Management" advanced course: member of course management team, curriculum development, conduct of Wind Resources and Operational Management Modules, support for the complementing project work
- Various seminars in Germany and abroad

Anemos wind yield forecasting system

- SONI, Northern Ireland
- Eirgrid, Ireland
- EDF, France
- PPC, Crete
- Acciona, Spain
- Horns Rev, Tunø Knob, offshore wind farm, Denmark
- NEMMCO, all wind farms in south-east Australia
- Hydro Quebec, Canada

Condition monitoring system (CMS) consulting and procurement

- 7 wind farms

"OptiFarm" wind farm remote monitoring and information system

- 8 wind farms
- Uni Oldenburg Meteorological Station (MeteoDat)

Shadow shutdown modules (own development)

- approx. 40 wind farms

Video monitoring systems for wind energy turbines

- 3 wind farms

