Reliability and precision are our strengths. As a leading accredited company (DIN EN ISO/IEC 17025: 2005) Ramboll is a one-stop shop for on- and offshore wind services. For 25 years our experts from different disciplines have been working together combining their experience and innovative ideas.

Whether for wind measurements or modelling, as an accredited company we work according to the most important national and international technical guidelines and standards (TR6, IEC or MEASNET). Through active participation in policy committees, round robin tests and R&D projects, we stay up to date. Thus, our yield reports form a solid basis for investment decisions worldwide.

Our quality management and the employees’ understanding of the requirements of each individual processing stage give our customers’ projects a secure basis for bankable results on the agreed date.

**Wind measurement: LiDAR, SoDAR, mast**

With the help of wind measurements, reliable statements can be made about a location’s wind conditions. We design measurement campaigns that ensure the optimal balance of costs and uncertainties. We deliver accurate and efficient results and offer a one-stop shop solution for our clients by renting our own LiDAR equipment, offering support and monitoring with our own web-based 24/7 monitoring system with subsequent data analysis and bankable wind expertise. We strive to carry out a stable wind measurement without failures, in order to be able to provide a guideline-compliant wind/yield report with small uncertainties. For this purpose, our employees coordinate all necessary work worldwide in order to be able to precisely examine the wind conditions at the site. Based on more than 100 LiDAR projects and hundreds of evaluations of mast measurements we offer our customers unique know-how for demanding and efficient measurement concepts.

**Ramboll database & energy yield report**

Whether simple or highly complex sites, Ramboll creates desktop studies for the initial assessment of site-specific wind conditions and energy yields, wind potential maps for the identification of areas, carries out wind farm optimizations and prepares wind/yield reports based on reference turbines or wind measurements (mast, SoDAR, LiDAR). Via time series-based loss modelling we generate precise loss assumptions. Our services are always provided in accordance with the currently valid specifications of TR6, MEASNET or IEC using WAsP and CFD simulations.

As an alternative to wind reports based on wind measurement, Ramboll offers of site-specific wind reports based on operating results from reference installations in accordance with TR6. The aim is to determine the wind conditions using the wind atlas method. Our Ramboll database “Windpark Deutschland” currently comprises more than 30,000 data records, containing both existing and dismantled wind turbines. In addition to the almost complete plant-specific coordinates, the database contains information on the turbine type, hub height, rotor diameter, commissioning and dismantling (currently 4,111 wind turbines).
Wind & waves
Wind, waves, gauges and currents are the most important environmental factors that are the subject of Metocean studies and the prerequisites for the successful and optimized foundation design of any offshore project. Our expertise in Metocean studies is one of the reasons why Ramboll is a world leader in offshore foundation design. We combine our experience in designing foundations for offshore wind farms with our expertise in wind farm planning, environmental conditions and design issues. This leads to more efficient workflows and provides a common understanding of the database in each design phase, resulting in a smooth and first-class project flow.

Metocean studies
Ramboll carries out Metocean studies ranging from simple site assessments for a preliminary foundation design or feasibility studies to modelling studies and extreme event assessments for a detailed structural design. As field data is rarely available, it is a good compromise to select experienced data providers in combination with modelling and calibration – complemented by local measurements. For data analysis, Ramboll uses the well-known “DHI Mike” package as well as in-house software.

Ramboll has developed its own model for reliable assessment and site selection for foundations, based on global key data calibrated with local field measurements.

Project specific requirements such as geographic location and data resolution are carefully reviewed to select the most appropriate product. Based on the wind, wave and water level time series obtained, analyses are carried out to determine extreme and operational values for the construction of the foundations.

For further information, please visit www.ramboll.com or contact us directly:

CONTACT
Joachim Binotsch
Business Development Manager
Onshore Wind
Tel +49 2091 6725 70
joachim.binotsch@ramboll.com