



## Due Diligence for Wind Farms.

To ensure the success of your wind farm project, we provide a range of services to support you at every phase of the project life cycle – from site selection, design and manufacturing, right through to operation.

Product Certification	Project Certification	Manufacturing Surveillance
Health & Safety	Marine Warranty Survey	Periodic Inspections
<b>Due Diligence</b>	Laboratory Services	Expert Reports
Training / Education	Management System Certification	Grid Connection
Project Planning Services	Coating Inspection Services	CE Marking

Investors, purchasers, insurers and owners want to make sure a wind energy project performs successfully and delivers the desired revenue throughout its intended lifetime.

The wind energy market is growing rapidly and more wind farm projects are completed every year. With an expanding market, the need for quality, safety and productivity of wind farms is greater than ever. Investors and purchasers of wind farms want to be sure about the profitability of their investment. Owners need confirmation that their wind farm operates under the correct technical conditions and that the appropriate maintenance work is carried out according to the specifications. In addition, insurers want to understand, assess and minimize possible risks.

Due diligence services protect the investment and assure the quality of the wind farm. It doesn't matter if the wind farm is still in the planning stages or is already operating. We can serve clients in the onshore and offshore business by providing a complete range of due diligence services.

We offer support and security in cases of acquisition, investment or purchase. Our services include audits of the status of the project's progress, from a detailed document review of the design or its requirements to inspection of the technical condition of individual components or entire wind farms.

### Our experience - your benefit

Every client is special and therefore we offer tailored services according to the individual project's requirements. With our experience in independent due diligence services for wind farms, we satisfy customers around the globe and ensure successful project performance and quality. Thanks to our worldwide network of experts, we can support you almost everywhere in the world, no matter if your project is in Europe, Brazil or China.

We offer you an individual due diligence service package that will fit the verification needs of your wind farm project. This might include one of the following:

**Document review:**

It includes a detailed document review of the design basis, an evaluation of the site conditions reports (wind, waves and soil) as well as the wind turbine. The track records of individual wind turbines and the records of inspections, maintenance and repairs are reviewed and checked against the approved maintenance manual and program. The annual energy production is also evaluated and compared with either the actual operation data or the predicted production rate, for an individual turbine or the whole wind farm.

**On-site inspections:**

The on-site inspections have to verify that the wind turbines comply with the certified design, that all inspections, maintenance and repairs have been done according to the corresponding manuals and that no new fault or damage has occurred.

**All main components of a wind turbine are checked including:**

- Nacelle and tower structures including connections
- Rotor including hub assembly and blades
- Transmission systems including gear boxes
- Converters, generators and transformers
- Electrical systems
- Control and protection systems including yaw control
- Lifting equipment
- Safety installations

**The focus is on mechanical damage and other issues:**

- Deformations and dents
- Fatigue cracks
- Corrosion
- Lubrication and cooling media
- Pre-tensions of bolts
- Control systems parameters and settings
- Condition monitoring system (CMS)
- Witness of control and protection systems tests

- Status check of still outstanding issues found by previous inspections
- Additional surveys based on test results and found deviations

A service package will be tailored to fit your needs for a due diligence service for your project. We perform the investigations and inspections according to predefined specifications to determine the state of the wind farm.

**For an operating wind farm, due diligence services can answer many questions:**

- Was all the work performed according to the agreed on standards and specifications?
- In which technical condition are the components in?
- Did the operator follow the maintenance and inspection plans?
- How many repairs were carried out and how?
- What is the predicted remaining lifetime?
- Does the current production meet the predicted values?

Founded 140 years ago, TÜV Rheinland is a global leader in independent inspection services, ensuring quality and safety for people, the environment, and technology in nearly all aspects of life.

**TUVdotCOM. The noticeable difference.**



The Internet platform TUVdotCOM makes the difference visible: with all the products, services, companies, systems and personnel that are tested by TÜV Rheinland, optimally documented and accessible from all over the world.

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