



360° Support in all Matters. For Sustainable Investments.

Comprehensive Services for Wind Energy.

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 **TÜVRheinland**[®]
Precisely Right.

Tailwind Right from the Start. TÜV Rheinland Wind Energy Services.

Complex site conditions, the development of more efficient turbines and their integration into the power grid network place high demands on project developers and operators as well as manufacturers and suppliers.

TÜV Rheinland provides comprehensive, individual and independent support to ensure the success of your projects, whether it be the development of a wind turbine or a complete wind farm. We provide you a one-stop service covering all phases of the project including site evaluation, energy yield assessment and design verification as well as surveillance of manufacturing and construction. We lay the foundation for smooth approvals with certification of your wind turbines and wind energy projects.

We are at your side throughout the implementation of your entire project, accompanying you during construction and commissioning, helping you to fulfill permit requirements, and supporting you in meeting your obligations with regard to the safe and sustainable operation of your wind farm.

WHAT SETS US APART:

Our wind experts command extensive interdisciplinary as well as industry-specific experience. Our multidisciplinary team is well versed in the technical conditions and requirements affecting your wind turbines. Our actions are determined by economic considerations in conjunction with the protection of people and the natural environment.

Our customers include small and medium-sized enterprises as well as large corporations. Our technical expertise is widely recognized by investors, developers, manufacturers and operators. Benefit from our comprehensive range of services and the strength of our global network.

TÜV RHEINLAND ACCREDITED CERTIFICATION AND INSPECTION SERVICES FOR THE WIND INDUSTRY

We are authorized by the German Accreditation Body (DAkkS) for the certification of wind turbines in accordance with ISO/IEC 17065 under the IEC 61400-22 series of standards as well as the WSV guideline for the marking of offshore wind turbines.

In addition, we ensure your compliance with national standards and regulations such as the DIBt directive and GL guidelines. We are also recognized as a certification body by the International Electrotechnical Committee Conformity Assessment System for Renewable Energy (IECRE). As an authorized independent testing organization, we are able to issue IECRE certificates and have been placed on the IECRE list of RE Certification Bodies (RECBs).

As proof of our commitment to professional competence and the quality of our work, our inspection facility for wind turbines operates according to DIN EN ISO 17020 specifications. You are in good hands both on- and offshore when it comes to commissioning tests, periodic inspections and warranty expiration tests.





Our services at a glance

Worldwide services covering all project phases. TÜV Rheinland is both a complete and expert provider of a comprehensive range of wind energy services.

1. Our services cover **type and component certification** for wind turbines and are based on the international IEC 61400 standard series as well as valid guidelines and regulations such as DIBt. We are also IECRE accredited.
2. **Certification and marking** of offshore wind farms are issued according to WSV guidelines (e.g. light and radio test)
3. We conduct recurring, **periodic** and **condition-oriented testing** during the commissioning, warranty expiration, or sale of the wind farm.
4. Vibration analyses, drone inspections of rotor blades, and inspections with smart gear systems can be performed for the databased evaluation of your plant safely and within a very short period of time, thanks



to the use of digitally supported [smart services](#). Our integrated data management also covers the analysis of operation data and digital process documentation.

5. [20 Plus Life Time Extension](#) – We follow DIBt guidelines to conduct independent evaluation of continued operation of wind energy equipment after 20 years of service.
6. Our highly specialized facilities perform state-of-the-art analytical and physical [laboratory services](#) and a wide variety of [material testing](#) to ensure compliance with applicable regulations and customer specifications, or to investigate damage.
7. We offer an extensive range of [occupational health and safety](#) services, from regular staff examination

in accordance with international health reporting and management recommendations as well as analyses of accident risk. We provide you risk analysis and assessment as well as complete reporting in both the offshore context and special HSE documentation.

8. We provide comprehensive services for the integration of dispersed power generation units into the power grid. Our services include the verification and testing of [grid code compliance](#) by comparing turbine and wind farm electrical characteristics to the grid network specifications. (SDL wind certification)
9. Our [condition monitoring systems](#) (CMS) and diagnostic centers are certified according to GL 2013 to provide reliable (online) observation of sensitive machine parts and detailed reporting for continuous monitoring.



10. We offer the full range of services that ensure that the operation of offshore wind turbines complies with [approval specifications](#), such as periodic inspections, protection and safety concepts, consultation services regarding approval by the Federal Maritime and Hydrographic Agency (BSH) and fire protection concepts.
11. We evaluate and certify [management systems](#) and [IT processes](#) according to international standards and individual performance requirements.
12. TÜV Rheinland Risktec, our global competence center for [risk and safety management](#), provides you support throughout the entire life cycle of your wind projects. We guide you through risk evaluation, technical areas, project risk assessment, issues affecting the safety of human health and the natural environment, etc.
13. We are your reliable partner supporting you throughout the entire [CE marking](#) process.
14. We have extensive experience in [production monitoring](#) for all components as well as steel, concrete and composite structures. We act as your independent “eyes and ears” so that you can avoid delays or losses and prevent damage.

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