Your challenges
Modern wind turbines are approaching the limits of technology and logistics. They must be lightweight yet robust, profitable and reliable, which presents technical challenges during design. Manufacturers need to implement rigorous quality standards throughout the global supply chain to ensure that turbines can function in locations with high winds and extreme climatic conditions. An increasing number of manufacturers are competing in the global wind sector. To export wind turbines and components internationally, manufacturers, investors and operators must understand the different certification processes and the types of certifications available.

What is wind turbine certification and why is it important for your business?
It is the process of certifying that a wind turbine is designed, tested and manufactured for a defined wind class and meets the requirements of international certification standards as well as all other applicable standards and regulations. This applies likewise to the component certificate. Certification from an independent third-party service provider is a key factor in maximising cost effectiveness and managing risks. It establishes a relationship of trust between project partners, investors, operators and insurers.

Our services
Our wind energy experts review and assess the overall design of your wind turbine generator system and its key components.

- **Wind Turbine Type Certification (onshore/offshore)**
  TÜV SÜD performs design basis evaluation, design evaluation, type testing, manufacturing evaluation, final evaluation, foundation design evaluation, foundation manufacturing evaluation and type characteristics measurements.

- **Component certification**
  To certify your wind turbine components, we offer design basis evaluation, design evaluation, type testing, manufacturing evaluation and final evaluation services.
Wind turbine technical risk assessment
Our experts apply our advanced TÜV SÜD risk assessment procedure for the technical risk assessment of the overall wind turbine system or its subsystems/components. This includes risk analysis (hazard identification, risk identification, estimation of potential consequences), risk treatment (identification of measures, assessment of measures) and evaluation of risk reduction (evaluation of measures, evaluation of residual risks).

Failure analysis
TÜV SÜD identifies cause of failure and performs process analysis. We also offer identification and assessment of failure effects, witnessing and support of tests and measurements, as well as fracture-mechanics assessment of existing defects in components and assessment of the remaining service life. Our experts provide support in developing technical solutions, evaluation of measures and solutions, assessment of technical and organisational measures in the continued operation of damaged components, endoscopy and non-destructive testing (NDT) on site or in our testing laboratories. We help you present complex technological connections and cause of failure to a non-technical audience.

CE marking
We provide the compliance plan, validation of risk assessment, verification of CE conformity of subsystems and components, evaluation of relevant tests and measurements (EMC/LVD), as well as manufacturing site inspection.

UL/CSA Certification
TÜV SÜD offers design evaluation, compliance plan, component evaluation according to UL/CSA or SPE-1000 standards and field labelling.

DIBt Type Approval
We provide type approval according to the German national regulation (DIBt-guideline) for tower and foundation.

Wind Turbine Test Site
From our test site in Scotland, United Kingdom, we can undertake a range of certification testing on small to medium wind turbines including testing to support the UK RICS, and SWCC Certifications (North America).

Your business benefits

- Benefit from an expert partnership – with our deep technical understanding of wind turbine systems and components.
- Strengthen your asset value – by partnering with a globally respected third-party service provider.
- Gain certainty – by ensuring conformity to the latest international and national standards and directives.
- Access up-to-date knowledge – through our cooperation with universities and research facilities.

Why choose TÜV SÜD?
With over 30 years of experience in the wind industry, TÜV SÜD offers integrated solutions backed by best-practice case scenarios. These are based on our certification of more than 100 turbine and component manufacturers worldwide, as well as 600 tower and foundation approvals of wind energy projects. We are widely known as an independent third-party specialist capable of delivering reliable and realistic reports to guide decision-making.

TÜV SÜD is accredited as a Wind Energy Certification Body for onshore and offshore wind turbines, components and projects in accordance with all relevant international standards such as IEC 61400-series, GL- and DNV-standards. We also hold approvals for country-specific standards such as BSH (German Maritime and Hydrographic Agency) standard “Design of Offshore Wind Turbines”, the Danish Executive Order DEO 551, and the Provisional Type Certification Scheme for Wind Turbine Generator Systems in India (TAPS-2000). With our presence in key locations worldwide, we provide local knowledge coupled with global expertise.

Choose certainty. Add value.
TÜV SÜD is a premium quality, safety and sustainability solutions provider that specialises in testing, inspection, auditing, certification, training and knowledge services. Represented in over 800 locations worldwide, we hold accreditations in Europe, the Americas, the Middle East, Asia and Africa. By delivering objective solutions to our customers, we add tangible value to businesses, consumers and the environment.

Related services

TÜV SÜD provides the following related services:
- Resource analysis for wind farms
- Project certification for onshore and offshore wind farms
- QHSE services for renewable energy
- Failure analysis