Expert Reports in the Wind Energy Sector

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
Due Diligence	Laboratory Services	**Expert Reports**
Training / Education	Management System Certification	Grid Connection
Project Planning Services	Coating Inspection Services	CE Marking

In some cases mandatory, but always prudent – independent reports and analyses for wind energy stakeholders

Many countries demand expert reports before a permit to build a wind energy facility is granted. Even when it is not mandatory, the owners, investors, insurers and developers of wind farms often face situations where they benefit from impartial advice and an independent assessment. It is important that all safety and quality aspects are considered to avoid legal disputes.

Our diverse range of services is available everywhere in the world. We are your local contact with the international background and expertise that you need, because we understand the local and global challenges you face in wind energy projects.

Our experience – your benefit

Our experience in providing expert reports includes several for the wind farm projects by global players. As one example, we helped E.ON with planning the installation of 21 turbines across seven sites in Poland. The services we provided included the assessment of plans, improvements to the initial design, geophysical studies of the site and a conceptual design for foundations.

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Our comprehensive service package covers many areas; here we list only the major ones:

1. Site assessment

Our site assessment services can be carried out during the planning, construction, on-site installation and operation phases of wind farms.

- Civil engineering - static and dynamic calculations
- Land utilization and development plans
- Priority plans and noise immission prognosis
- Noise emission and shadow effect calculations
- Wind conditions and energy yield assessment - predictions and prognosis
- Ice throw
- Damage analysis - gearboxes, blades, switch gears, structures and foundations
- Materials analysis - such as for steelwork and concrete
- Fire and lightning protection

2. Noise emission reports

Noise emission reports are needed for the approval of wind turbine generators and wind farms. We can carry out the following services in our accredited laboratories.

- Precise measurement of sound frequencies from wind turbine generators
- Determination of the peak sound pressure
- Noise measurement as a time-correlated function
- Determination of the noise application rate
- Noise immission and emission, with tone incorporation - prediction and determination

3. Risk assessment – offshore wind farms

- Technical safety, health and safety, risk analysis
- Technical design safety engineering
- Inherent safety and minimum facilities design
- Quantitative risk assessment (QRA)
- Safety and verification management such as safety critical elements (SCEs), performance standards, written schemes of examination and verification schemes, safety management system / examination management system (SMS/EMS)
- Health and safety (HSE) and compliance management such as design and construction regulations (DCR), safety case regulations (SCR), prevention of fire and explosion and emergency response regulations (PFEER)
- Functional safety concepts
- Loss prevention management and design:
  - Passive Fire Protection (PFP)
  - Active Fire Protection (AFP)
  - Fire suppression
  - Fire and explosion protection
  - Fire and gas detection
  - Escape routes
  - Life-saving appliances and fire-fighting equipment
- High-level safety assessments as required by the offshore standard DNV-OS-J201
  - Hazard identification (HAZID)
  - Preliminary hazard analysis
  - Hazard and operability analysis (HAZOP)
  - Failure mode and effects analysis (FMEA)
  - Fault tree analysis (FTA)
  - Event tree analysis (ETA)
  - Hazard evaluation

Founded 140 years ago, TÜV Rheinland is a global leader in independent inspection and certification 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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