

# Electrical Systems

Electrical components and systems often need to fulfill additional requirements to those covered by the chosen certification standard. Diverse legislative regulations and stipulations by end users concerning electrical safety, reliability and grid connection usually need to be verified prior to getting the turbines connected.

## **TÜV NORD as one-stop-shop supports you with advice, evaluation, inspection and certification for:**

- Components inside the turbine such as generator, converter, pitch system including emergency power supply e.g. by batteries, etc.
- Components outside the turbine such as transformer station, switch gear installation, electrical connection lines, etc.
- Lightning protection and earthing systems of wind turbines, transformer stations, etc.
- Condition monitoring systems (CMS)

## **In this context TÜV NORD offers a wide field of services like:**

- Verification of the component design according to technical standards, specifications, extreme environmental conditions, etc.
- Evaluation of manufacturer documentation of the electrical components
- Prototype confirmation of wind turbines
- Quality assurance during manufacturing process e.g. by manufacturing evaluations
- Commissioning of wind turbines (on- and offshore)



### **Electrical Safety of Components**

When electrical products are put into operation in the European Union, directives regarding electrical safety are to be fulfilled. Declarations of conformity drawn up by manufacturers' responsibility are required. To ensure correctness and a smooth process, preliminary assessment by TÜV NORD experts is recommended – in particular for imports from countries outside the EU.

### **New Services Under Continuous Development**

With growing challenges TÜV NORD is developing its services to new customer needs. Secure energy and data supply for wind turbines and production facilities, energy storage and energy efficiency management are only some of the additional fields we are active in. Please contact us if there is more we can do for you.

