ENERGY

CONTINUED OPERATION OF WIND TURBINES

Extend the lifetime of your turbines and drive down the costs of energy

Assuming a design lifetime of 20 years as standard practice when designing new wind turbines, some turbines will soon be reaching the end of their design lives. This means their owners need to determine whether and for how long these wind turbines can continue to operate beyond their originally assumed lifespan. Should they replace these turbines or seek to extend their operational lives?

Technical guidance
In order to find suitable solutions from a technical point of view, DNV GL offers certification services to extend the lifetime of turbines. The assessment of a wind turbine for continued operation is a complex engineering task that must be executed with due regard for the special features of each individual installation.

Our certification process offers two pathways gathering the information neccessary to make a decision on the extension of a turbine's operational life. In addition, a combination of both pathways is possilbe and often applied in practice.

1) Assessment through renewed calculation
With this method, the remaining service life of the wind turbine is calculated after the actual damage has been established. New or additional calculations for the wind turbine are made, taking into account site-specific parameters, such as wind loads at the particular location. The manufacturer or operator verifies the structural integrity of the turbine for extreme and fatigue loads. DNV GL then reviews and assesses the documentation. Both the technical feasibility and economic viability of continued operation must be questioned.

We enable you to maximise the lifetime of your turbines and their continuous operation

2) Assessment through inspection
This practical method can be used as an alternative to the assessment through renewed calculation. The objective of the inspection is to assess the wind turbine's suitability for continued operation and covers examination of the machinery, including the drive train and gearbox, the rotor blades, the safety system, the tower and the foundation. The inspection looks at the condition of the entire turbine. In contrast to the analytical method, it is not possible to make a statement on the entire service life of the turbine. But our technical expert will define an interval until another inspection is required. This interval depends on the overall condition of the turbine – one year is a reasonable period of time between inspections for continued operation.

Tailored certification approach
Using the latest commercial and in-house tools for simulation and analysis in the fields of load case definitions, load assumptions, rotor blades, machinery and mechanical structures, we tailor our certification services to the project specifics and requirements of the customers.

ADDING VALUE

We help you to maximise the lifetime of your turbines and optimise their continuous operation. Over the last 30 years, we have delivered high quality assurance in wind turbine certification.

We are an accredited Certification Body whose competence is audited every year by internationally recognized accreditation bodies.