Vestas **LifePlus™** Lifetime Extension Assessment

Turbine lifetime extension assessment determines design life potential and informs asset management strategies

Benefits of Vestas Lifetime Extension assessment

- Ensured safety and compliance
- Informed portfolio planning
- Enhanced business case certainty
- Increased project profitability

Application

- All Vestas platforms and turbines variants
- Multibrand *

*Dependent on specific business case. Contact Vestas for more information.

Extending operational lifetime

Optimising a turbine's performance for the latter part of its operational lifetime includes the assessment of options ranging from lifetime extension or partial repowering to decommissioning. With a design lifetime of 20 years, each ageing wind turbine power plant is unique and requires individual assessment, from which an optimal operational strategy can be determined.

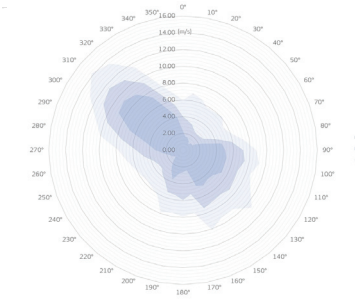
Vestas can conduct Lifetime Assessment for non-Vestas turbines by applying similar methodology to that used on Vestas turbines. The exact methodology used will depend upon Original Equipment Manufacturer technology and turbine type.

Vestas LifePlus™ lifetime extension assessment applies Vestas' experience, technical expertise, and operational insights to determine the remaining design life of your turbines and support asset management decisions. The report is based on two main pillars: theoretical load analysis and physical inspections.

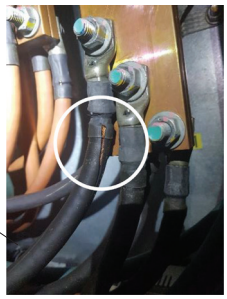
Theoretical load assessment – Design life estimate (years)

Blades	Hub	Nacelle	Tower
30.0	30.0	28.3	30.0
28.6	30.0	30.0	30.0
30.0	29.3	30.0	30.0

Theoretical data behind Load analysis



Physical Wind Turbine Inspection



Theoretical Load Analysis

A project specific assessment of consumed loads is carried out in Vestas SiteCheck®. This is a certified tool which calculates the consumed and remaining design lifetime of the structural components of a wind turbine; these include blades, hub, nacelle, and tower. Using site-specific operational data and climate data from meteorological masts, Vestas SiteCheck® uses turbine-specific load models to calculate the remaining design lifetime.

Physical Wind Turbine Inspections

Vestas LifePlus™ lifetime extension assessment can include physical inspections carried out by skilled service technicians, to determine the fitness of the components of each individual wind turbine for continued operations at the end of design lifetime. The areas of inspection include structural parts of the turbine as well as the safety system. The purpose of these inspections is to verify that the condition of the wind turbines allows for responsible lifetime extensions that adhere to Vestas safety standards.

Customised Report

Based on the findings of the load analysis and inspections, a Vestas LifePlus™ report will give an assessment of the design lifetime remaining at a turbine level. The theoretical load calculations performed by Vestas adhere to international standards, following site assessment criteria stated in IEC61400-1. Vestas offers optional third-party certification or alternatively, can support a customer's certification process by providing input for the certification body. Vestas LifePlus™ assessment seeks to unlock potential value through lifetime extension solutions, tailored to your specific business case and asset management strategy. These solutions include AOM® service contracts & PowerPlus® solutions.

For more information

For more information contact your local Vestas Sales & Service office or visit vestas.com.

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