TÜV®

TÜV NORD

Extended Design Lifetime

Wind turbines are generally designed for a lifetime of 20 years.

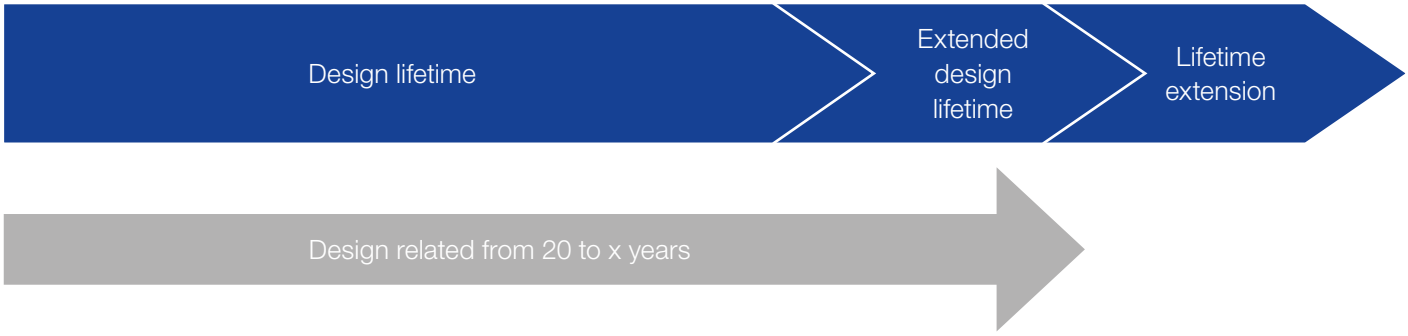
Today´s relevant standards for turbine design still define this number as a minimum for wind turbine design dimensioning.

This paper shall support to introduce to this topic for our customers to present the challenges and opportunities when handling requirements for extended design lifetime.

20 years is just the bottom line. Increasing market requirements on high cost efficient turbines as well as a growing number of site-specific turbine requirements leads to a higher demand of turbines with extended design lifetime.

A typical project certification process with its modules is shown below. Most project certification schemes are based on or similar to IEC 61400-22.

Similar to type certification, each module of project certification can be independently evaluated and concluded with recognized TÜV NORD conformity statements. These can be handled as individual packages which project certifiers can effortlessly integrate to their project certificates due to mutual recognition agreements of certificates between accredited bodies.



For extended design lifetime the certification content focuses on verification of:

- Structural components with respect to increasing fatigue loads. The evidence must show that components have the capability to withstand the loads, or a specific inspection and replacement plan has to present an appropriate solution.
- Non-structural components. For load independent components, the verification shall show evidence on design specification based on the design lifetime equal to turbine design lifetime. Supplier documentation most probably needs to be updated and the maintenance concept shall define respective replacement and inspection activities solutions and supports the certification activities for extended design lifetime on demand. With our approval, your product becomes global market acceptance. Please feel free to contact us to act as your partner in “enhanced certification”

All assessments already generated within the scope of a TÜV NORD type certification will directly flow into the extended lifetime evaluation and reduce the total amount of time and effort towards final approval.

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