Bladena
A RES company

Structural Blade Course

Course outcome:

- Understand wind turbine blades from a WTO and ISP perspective
- Apprehend the loads on blades under different field operation conditions
- Classify structural blade damages and understand the risk of each damage type
- Basic understanding of blade design and testing philosophy
- Understand different inspection methods leading to big data
- Offered as webinar, in-house or at Bladena

Why this course?

Focus in on larger blades 60+m

Taught by experts

State-of-the-art knowledge

Get in touch to learn more about your blades.

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Course overview

Module 1: Structural overview of wind turbine blades

- Blade design drivers and trends
- Blade regions and structural function
- Blade structural components
- Blade material and manufacturing

Module 2: Structural failure modes

- Peeling in bondlines
- Transverse cracks and skin debonding
- Buckling
- Twisting/Cross sectional shear distortion
- Flutter
- Transition zone failures
- Interlaminar failure

Module 3: Structural understanding of selected blade types

- Failure modes and statistics on the blade
- Possible solutions to eliminate the structural failure/damages

Module 4: Testing of wind turbine blades and standardization

- Current standardization procedure
- Limitations in certification requirements and how to approach it
- IEC and DNV-GL standards status
- Additional requirements: Owner Requirements
- Field testing
- Full-scale testing
- Large-scale and sub-component testing
- Non-destructive testing (NDT) and monitoring

Module 5: Leading edge erosion (LEE)

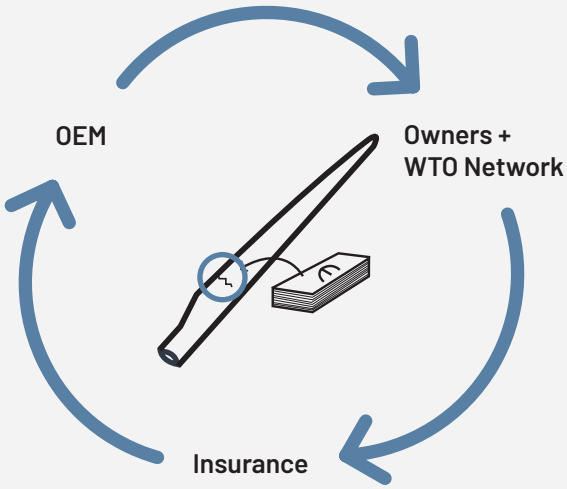
- LEE introduction and potential issues
- Damage categorization
- LEE driving factors
- Leading Edge Protection (LEP) solutions
- Risk analysis

Module 6: Lightning in wind turbine blades

- General information on lightning
- Lightning Protection Systems (LPS)
- Certification of LPS
- Ligthning protection zones concept

Module 7: Operation & Maintenance (O&M)

- Inspection strategies
- End of warranty inspection
- Cost and Risk as decision making considerations
- Risk based maintenance
- Uncertainties



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