



## Technical Inspection prior to End of Warranty

With the expiration of the warranty ends the legally required guarantee from the manufacturers. The risk of damages to the WEC and all its consequences pass over to the operator. If defects prior to the end of warranty are not identified and claims for their removal are not made with the manufacturer, the operator loses his/her rightful claim for paid reparations by the manufacturer. The profitability of the project could be enormously impaired by technical problems, repairs or the replacement of entire components during the course of the useful life of the WEC.

Years of hands-on experience and the knowledge of the target performance and of specific weak spots in wind energy converters are major prerequisites, in order to identify existing defects and make expert appraisals. SV-Veltrup have the necessary know-how with over 3500 appraisals and already eighteen years of practical experience with wind energy converters of every manufacturing type.

### Goal

Existing defects should be identified through a qualified inspection by a WEC expert prior to the end of warranty.

The objective is to determine whether:

- defects exist, whose removal by the manufacture can be demanded,
- major defects exist, which could justify or perhaps make necessary the buyer's or operator's objection to the end of the warranty period,
- there are component irregularities and technical flaws, which could lead to technical problems or damages in the course of the operating life, and therefore limit the projects profitability (in the light of the expert's experience),
- any technical-safety considerations exist.

### Scope

A warranty inspection incorporates the entire wind energy converter including the rotor blades; here the costly main components like the gearbox, generator, transformer and rotor blades are inspected, in addition to the structurally-relevant components like the foundation, the tower or the machine mounting.

All operations relevant to WEC safety are also inspected, as a rule.

The standard scope of tests with an end-of-warranty inspection includes:

- a vibration measurement of the drivetrain (condition monitoring CMS) and the evaluation in an analysis report,
- an inspection of the foundation, the tower and the machine mounting, in addition to spotchecks of important screw connections,
- an inspection of all mechanical and electrical components,
- an inspection of the drivetrain and, where appropriate, laser measurements of the generator alignment,
- a detailed inspection of the gearbox, usually with a videoscope,
- a check, or as the case may be, a test of all components relevant to safety and of their functioning,
- a rotor blade inspection – exterior and interior (where accessible) with the aid of a lifting platform or a rope-down technique.



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### Results

An inspection report is made, in which the existing defects are clearly shown and documented. This inspection report serves the client as a document for claiming reparations of possible defects from the manufacturer and can also be used as proof of a periodic inspection with the official building authority.

The client receives a full-length report on the operating condition as an original document and as a PDF ( portable document format ) file, in which all identified defects are named, evaluated and documented – photographically, for the most part. The inspection report is generally in German and, if so desired, can be written in English. Reports in other languages are optional and are done through technical translation offices.



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