



retec
EDF renewables

Inspired by wind –
Powered by people

Rotor Blade Service



A top performer in high winds: The rotor blade

Rotor blades are not necessarily what wind turbine operators focus on. But they are exposed to rain, frost and lightning or even sea air throughout their entire lifespan – so they need care. Our Rotor Blade Services range from inspection, repair and maintenance to cleaning and surface protection. All these measures not only extend the service life but also significantly increase the yields of your wind turbine.





Our repair service portfolio:

We offer reliable, standardised or manufacturer-specified solutions for the repair of rotor blades using rope access technology or rotor blade service platforms. On-site restorations have the great advantage that transport logistics are unnecessary and downtimes minimised at the same time.

What is the added value for you?

- _ Detailed repair reports, including a description of the corrective measures taken
- _ Repair of major damage on the ground locally or under controlled conditions in our fully equipped rotor blade repair hall
- _ Lightning protection system repair



Rotor blade inspections

Our complete package for the inspection of rotor blades combines data acquisition with reconditioning and evaluation in a detailed report. We combine the resulting expert analysis of all damages with suggestions for repair and maintenance measures, which can be carried out by us directly on site or in our own rotor blade repair hall in Emden. Optimised processes and rapid execution – taking into account the highest occupational safety requirements – mean a concrete reduction in plant downtime for you without having to make any safety compromises.

We carry out inspections according to requirements with various systems:

- _ Binoculars as part of regular plant inspections
- _ Motorised, computer-controlled HD camera recording
- _ Rotor blade service platform or rope access technology, supported by camera shots at close range – so we can check the lightning protection system right down to the foundation at the same time
- _ Internal blade inspection with laser-assisted RE-VIS video camera

What is the added value for you?

- _ Reduced production loss due to limited system downtime
- _ Time and cost savings through optimised and speedy execution
- _ Efficient repair proposals, based on our in-house expertise in composite materials
- _ Individual inspection for Due Diligence



External blade inspection – efficiency rules

Our range of services extends from conventional to innovative methods in compliance with the highest safety standards. Depending on requirements or local specifications, we use rotor blade service platforms, rope access technology or alternatively a motorised HD camera.

Rotor blade service platform

- _ Control of lightning protection system right down to the foundation possible
- _ Inspection report with damage patterns and analyses as well as repair recommendations
- _ Rotor blade service platform for blades up to a length of 60 m available

Motorised HD camera from the ground

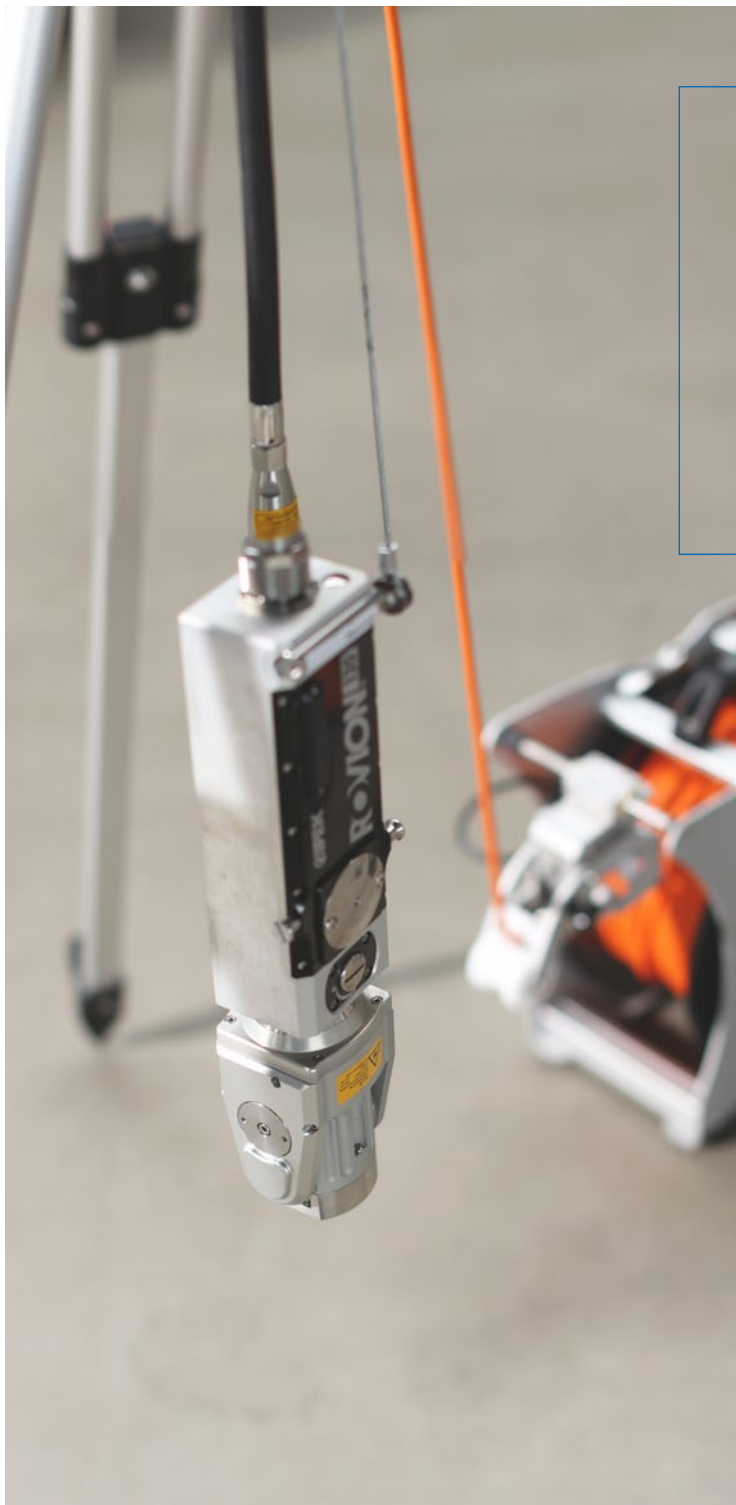
- _ Monitoring of blade damage development
- _ Damage history available via web portal
- _ Inspection report with damage patterns and analyses as well as repair recommendations
- _ Minimised system downtime – ideally less than 2 hours for a complete rotor inspection
- _ No rotor blade service platform or rope access technology required
- _ Occupational safety risks reduced to a minimum

Internal blade inspection – top-notch right to the tip

With our RE-VIS system (REETEC Vertical Inspection System) we developed a safe inspection and assessment method of almost 100 % of the interior all the way to the tip of the rotor blade. Conventional inspection procedures presented challenging working conditions for three service technicians in a confined space – in addition, the blade tip was not

accessible and the process as a whole was very time-consuming.

Here, too, our team of rotor blade experts from the EDF Renewables Group assesses all damage, coupled with suggestions for repair measures.



Laser-assisted video camera

- _ Almost independent of weather influences
- _ Use of a high-resolution video camera with rotatable swivel head and integrated surveying laser
- _ Complete video recording and freeze frames with laser-supported position indication – all within 4 hours per system

What is the added value for you?

- _ Safe inspection without working in a confined space
- _ Occupational safety risks reduced to a minimum
- _ Significantly improved quality of inspection right down to the tip of the blade
- _ Possibility to measure damage dimensions
- _ Highest degree of accuracy in data collection
- _ Smaller team size compared to rope access technology
- _ Minimised production loss due to limited system downtime



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Good to know:

Our integrated quality and environmental management system is certified according to ISO 9001 : 2015 and ISO 14001 : 2015; our occupational health and safety management system according to BS OHSAS 18001 : 2007; our Rotor Blade Services are also certified by DNV·GL.

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