

Wind Turbine Services

Complex Turbine Recovery & Component Salvage

To safely recover and salvage reusable turbine components from a structurally compromised wind turbine and utilise them to restore a second damaged turbine, delivering a complete engineering, lifting, repair, and installation solution while managing significant structural and safety risks.

Our Solution

- Conducted a detailed engineering study using 3D laser scanning and Finite Element Analysis (FEA) to confirm the damaged tower could be safely dismantled under controlled lifting conditions.
- Mobilised specialist crawler cranes and lifting teams to safely dismantle the compromised turbine, recovering the nacelle, rotor, blades, and other reusable components.
- Rebuilt the second turbine by removing the failed blade and damaged nacelle, installing the salvaged nacelle, replacing all pitch bearings, and completing composite repairs to the blades and nacelle before recommissioning.

At a Glance

Challenges

- Assessing and managing the structural integrity of a severely buckled tower before dismantling operations could begin.
- Safely removing a failed blade that had become lodged within the nacelle, creating a significant falling debris risk.
- Identifying suitable weather windows with sufficiently low wind speeds to safely undertake heavy lifting operations.
- Coordinating multiple specialist disciplines, including engineering, heavy lifting, mechanical installation, and composite repairs, within a single project.

Value to client

Aurora delivered a complete turnkey solution, managing every stage of the project from engineering assessment through to lifting operations, component recovery, mechanical repairs, and turbine restoration. By successfully recovering valuable components that would otherwise have been lost, the team significantly reduced replacement costs and accelerated the return of the damaged turbine to service. Despite the project's complexity and the fact that other contractors had declined the work, Aurora provided an innovative engineering solution that safely overcame the technical challenges while maintaining the highest standards of quality, safety, and execution.



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