

A WindTech case

WindTech refurbishes and transforms a Vestas V44 wind turbine into a V42 for Solvento Energy



WindTech *as*

Date of the project:
January 2019

In 2018, WindTech was enlisted by Solvento Energy to undertake the refurbishment and transformation of a Vestas V44 600kW wind turbine.

Discover the challenges, objectives, and results of this exciting project in our 2018 case study.

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Project background

In the ever-evolving wind energy industry, it's vital not to underestimate the value of refurbishing our aging wind turbines. Turbines constructed twenty years ago or more still hold significant potential, and refurbishing them often proves to be a profitable investment - both ecologically and economically. Solvento Energy recognized this when they acquired the Vestas V44, envisioning its renewal and reintegration in Navarra, Spain.

Transforming a Second-hand Vestas V44

In late 2018, Solvento Energy contacted WindTech for the electrical transformation and refurbishment of this second-hand Vestas V44 wind turbine. By doing this, Solvento Energy would essentially convert the V44 wind turbine into a V42.

Solvento Energy contacted WindTech due to the extensive wear and tear on the V44 and its main components. Particularly, the Valmet gearbox, ABB generator, and yaw system necessitated a full refurbishment and renewal.

The project was slated to span seven weeks, with Solvento Energy requesting detailed documentation and the involvement of an external certification firm for final approval.

All this would culminate in the completed project being shipped off to Navarra, Spain in february of 2019.



The Assignment

The Objective

- Refurbishing and repairing a Vestas V44 wind turbine.
- Transforming the wind turbine from 50Hz to 60Hz.
- Provide extensive and detailed documentation for Solvento Energy throughout the project.
- Preparing the nacelle and hub for transportation to Navarra, Spain.

The Challenges

- The refurbishment of the V44's mechanical components, especially the Valmet gearbox, ABB generator, and yaw system.
- The transformation from the V44's 50Hz electrical components to align with those of a 60Hz V42 model.
- Coordinating with both Solvento Energy and the external certification party.

The Results

One newly refurbished and transformed Vestas V42 600kW wind turbine - completed and approved with with detailed documentation by both Solvento Energy and an external certification firm.

Who is WindTech?

We are a Danish company with a long history dating back to 2008, specializing in the repair and refurbishment of wind turbines. Our core expertise lies in the renewal of older wind turbines, and we are dedicated to offering trust, reliability, and high-quality to all our customers and business partners.

Our services extend far beyond Denmark's borders, with successful operations in Europe, Asia, and the USA. When you choose to collaborate with us, you're not simply refurbishing or repairing a wind turbine; you're forging a partnership with an experienced business partner who shares your commitment to clean energy, sustainability, and a high turnover.

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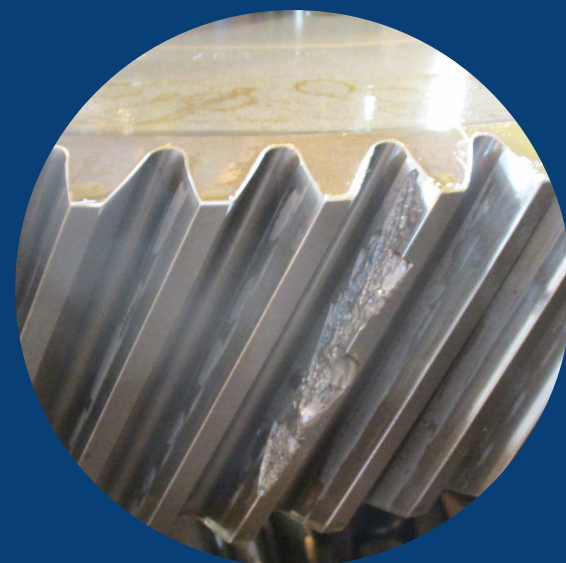
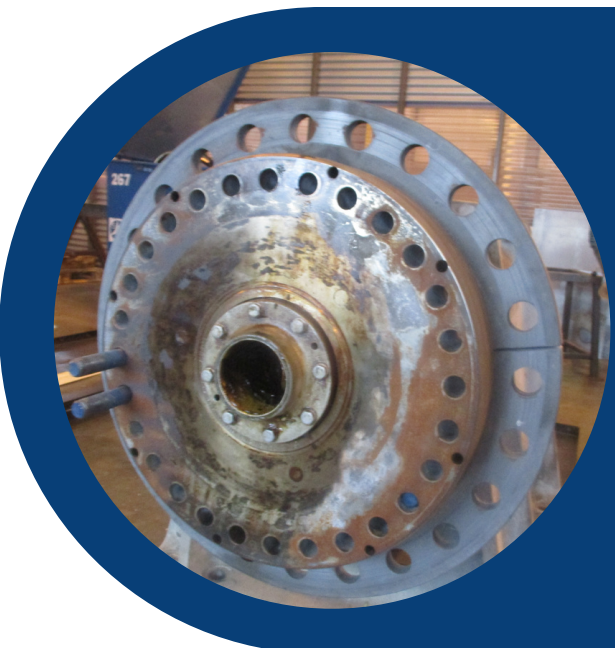


Reviving a V44 Wind Turbine

In mid-January 2019, we received the second-hand V44 nacelle and its hub. We initiated the project with a thorough entry check, scrutinizing every exterior component and the nacelle cover for visual cracks or defects. Following this, we began the comprehensive refurbishment process.

Our team disassembled, degreased, inspected, and measured all the major and minor components of the V44 turbine. A priority was given to the thorough examination of the Valmet gearbox, the ABB generator, and the worn yaw system. Subsequently, we focused on the refurbishment of all other essential main components. Since the V44 wind turbine was second-hand, several of its key components exhibited signs of wear and tear. To ensure a longer operational lifespan for the V44, we subjected the components to a battery of tests and measurements. We finished the refurbishment process by installing a number of new, high-quality bearings.

Post-refurbishment, we carefully regreased the components and began the electrical transformation from the V44 model to the V42. This mainly included switching out a number of electrical components from a V44 model to the V42 model. This included the gearbox, motor and control system. Without any major difficulties, both the refurbishment and transformation of the former V44 wind turbine was completed.





Who is Solvento?

Solvento Energy, now merged into Iver Wind, was a Spanish wind turbine company that specialized in providing comprehensive service and maintenance with a primary goal of optimizing energy output for their clients.

Driven by a mission to foster a sustainable world, Solvento Energy made a deliberate choice to purchase and refurbish an older wind turbine, thereby significantly extending the operational life of their second-hand Vestas V44 wind turbine.

In addition to their core service and maintenance, Solvento Energy also provided a diverse range of services within the wind industry, including the acquisition of second-hand wind turbines tailored for the Spanish market.

By partnering with WindTech, Solvento Energy ensured that their V44 turbine, which might have otherwise faced decommissioning, underwent an extensive refurbishment and transformation into a V42 wind turbine.

Reassembling the New V42 Nacelle

The final stages of the project involved reassembling the V42 wind turbine, installing the nacelle cover, and applying a fresh coat of paint. We concluded the project by completing all remaining documentation and conducting a comprehensive exit-check, which was subsequently approved by a third-party certification firm.

The nacelle, along with its hub, was then prepared for transportation to Navarra, Spain, marking the successful completion of this intricate and exciting project.

The Results of the Solvento Energy Project

In line with Spain and the commitment of many other EU countries to green initiatives, Solvento Energy, in collaboration with partners like WindTech, is at the forefront of revitalizing aging wind turbines. The refurbishment and rejuvenation of these wind turbines play a pivotal role in advancing Europe's circular economy objectives.

By choosing refurbishment over decommissioning, Solvento Energy has breathed new life into a otherwise discarded Vestas wind turbine. Ultimately, WindTech's high-quality nacelle refurbishment has extended the operational lifespan of this turbine by up to 15 years. This underscores the practical, environmentally friendly, and economically sound choice of investing in the refurbishment of aging wind turbines.



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If you're interested in learning more about our nacelle refurbishment services or exploring what we can offer your company and projects, please don't hesitate to reach out to us.

We're here to answer your questions and discuss how we can assist you in achieving your wind energy goals.

Get in touch

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