

WindTech transforms Vestas V44 wind turbine into V42 for Solvento Energy

The challenge

At the end of 2018, WindTech was contacted by Solvento Energy from Spain. Solvento wanted to refurbish a secondhand Vestas V44-600kw wind turbine, into a V42-600kw model. Along with the transformation from V44 to V42, the work also included the complete refurbishment of the nacelle and its components. The work began mid-January 2019 and lasted throughout February and most of March.

The focus of this project was the transformation from the V44 gearbox into the V42. Besides the parts that had to be replaced, the gearbox also required an extensive refurbishment. The gearbox had been subject to wear and tear and thus needed the refurbishment. Because of this, part of the gears and most of the bearings were either badly damaged or worn down. In addition, Solvento requested detailed documentation and an external certification firm to approve the project at its end.

The project begins

WindTech received the nacelle and its hub in mid-January 2019. According to WindTechs standard procedure, the nacelle was entry-checked for any visual cracks or defects. Afterwards the nacelle was disassembled, and its components cleaned.



This was the condition of the nacelle when we first received it.

After the gearbox was disassembled, it was inspected and measured. WindTech found some extensive wear and tear and damages on the mechanical parts of the gearbox. To rectify this, the parts were either grinded or completely replaced. This included the parts that was needed for the transformation from the V44 gearbox into the V42. While focus was mainly on the gearbox and its

transformation, the rest of the nacelle was also thoroughly inspected. The remaining main components were also disassembled, inspected, and measured.

At the end of the project, all the components were lubricated and painted. With the components completely refurbished, the nacelle was now ready for to be reassembled. After the exit-check, the nacelle was ready for departure for Navarra in northern Spain.



The last touches was put on the nacelle – Now it just needed paint.

What did the project accomplish?

Spain, along with many other countries in the EU, have increased their focus on the green transition in the last few decades. Together with companies like Solvento, WindTech hopes to increase the focus on the older wind turbines. Maintenance and refurbishment of these decades old wind turbines is an important step, in the European goal of a circular economy. By refurbishing, rather than manufacturing a new wind turbine, Solvento has given new life to an otherwise discarded Vestas wind turbine.

In the end, WindTechs complete nacelle refurbishment have added up to 15 additional years of extended lifetime.

Below you can see the refurbished nacelle and when it is prepared for shipment:



The complete refurbishment of both the nacelle and hub is completed.



The finished nacelle is loaded and prepared for shipment for Navarra, Spain.