

Case Study - Independent Wind Turbine Inspection

- ❖ Location: SW England
- ❖ Turbine: Vestas V47 500kW
- ❖ Client: Confidential



Realise Energy Services were requested by their client to carry out an independent assessment of a Vestas V47 500kW wind turbine which they were considering purchasing.

At Realise Energy Services, our teams of engineers are highly experienced in the supply, installation, operation and maintenance of medium to large scale wind turbines and a range of clients, lenders, insurers and other parties use Realise to provide detailed independent inspections of operational assets.

Our comprehensive turbine assessment is comprised of four key stages:

1. Technical review and assessment of all turbine documentation provided including operational and production data, manufacturer's documentation and service history.
2. Full visual inspection of the overall site and the turbine itself taking into account relevant information within the above documentation provided.
3. Function tests of all main electrical, mechanical and hydraulic and pitch components.
4. Preparation and provision of detailed report including analysis of technical documentation, turbine inspection with photographic evidence, function test report and summary of areas requiring further investigation.

During the course of the inspection, in addition to the turbine itself, we also reviewed site access and security and the condition of the ancillary equipment – substation, metering and transformer.



We also thoroughly inspected the safety equipment installed in the turbine including firefighting equipment, first aid provisions and climbing equipment. It was found that the fire extinguishers were out of date and required re-testing and, although the fall arrest system was in good condition, the ladder itself was missing some brackets. These findings were highlighted in the report as issues that should be addressed prior to any further works taking place in order to ensure the safety of any engineers. There had been no annual statutory inspection carried out and this was logged as a recommendation.



Visual inspection of the tower, nacelle and blades found some evidence of tower corrosion however this was not considered critical to the structural integrity of the turbine. Inspection of the main components in the nacelle found no significant anomalies and the main mechanical, hydraulic and electrical systems such as the pitch mechanism were function tested following manufacturer's test guidelines. All LV and HV electrical components were thoroughly inspected for any signs of wear and tear or overheating and both the top and bottom electrical cabinets were inspected, and connections and terminations tested.

Following the inspection, a detailed report was provided to the client. This included a comprehensive record of the inspection itself, any information previously noted in the turbine documentation, an assessment of the condition of the turbine and areas recommended for further investigation.

This report underpinned the client's subsequent negotiations and acquisition of the turbine.

If you are interested in an independent inspection of a wind turbine whether for the purposes of refinancing, insurance or simply to satisfy yourself of the current condition of your turbine, please get in touch.

To find out more contact us on:

0800 042 0251

enquiries@realise-energy.co.uk