

Statement on the Inspection, Servicing, Maintenance and Repair Programme for Farr Wind Farm

Farr Wind Farm is owned by Ventient Energy, one of the largest owners of onshore wind farms across Europe with a portfolio of over 100 wind farms in six countries. To facilitate the safe and enhanced on-going operation of Farr Wind Farm, an enhanced comprehensive Inspection, Servicing, Maintenance and Repair Programme has been developed.

Inspection and Maintenance Improvements

Maintenance improvements are being implemented on Farr Wind Farm, building on the regular servicing and maintenance activities that were specified by the Original Equipment Manufacturer (OEM). The improvements are specific to Farr Wind Farm and include:

- **Blade Monitoring Strategy**

Blade inspections are now completed using state of the art autonomous drone technology, resulting in high-resolution images of all blades on Farr Wind Farm. This method of inspection can help identify potential issues earlier and also mitigates the health and safety risk associated with technicians working from ropes or elevated platforms. All defects found during these inspections are analysed by engineers within Ventient Energy and repaired using specialist blade repair technicians.

- **Drive Train Monitoring Strategy**

All wind turbines at Farr Wind Farm are installed with 'Gram & Juhl TCM' vibration monitoring systems. These monitoring systems provide advance notification of defect formation, and allow proactive monitoring and change out of components before failure. All monitoring trends are analysed by specialist engineers within Ventient Energy and Gram & Juhl. Additional maintenance activities are being introduced to improve the proactive maintenance completed at Farr Wind Farm to reduce the likelihood of defects forming. These improvements include a standardised methodology for lubrication sampling, insulation resistance testing of electrical components and FLIR thermography of heat exchangers.

- **Spares and Supply Chain Strategy**

An annual spares review is undertaken to ensure continuity in the supply of replacement parts for the wind turbines. Also, strategic major components are held as spare parts for Farr Wind Farm to help ensure that turbine components are exchanged as soon as required.

The contracts that are in place for the day to day maintenance of the site mean that the technicians that work on the Farr wind turbines are dedicated to the wind farm and therefore the wind farm benefits from a continuity of experienced and specialist technical engineering support.

Specialist asset managers with significant wind turbine experience manage the implementation of inspection and maintenance activities to ensure they are undertaken in a timely and efficient manner and that requirements for maintenance, repairs or other activities are acted upon swiftly.

On-site monitoring of the performance of the wind turbines is undertaken, together with monthly and annual audits to ensure that the entire programme as set out above is delivered. These activities and strategies ensure appropriate checks are in place which will enable the wind farm to continue to operate efficiently and safely for the proposed life extension period.

Life Extension Assessment

Within their portfolio, Ventient Energy have a number of wind farms that are significantly older than Farr Wind Farm. Over the last three years, Ventient Energy have conducted Engineering Life Extension analysis on a number of wind farms, which provides information on the needs of each individual wind farm but also gives assurance that other wind farms in the portfolio can operate beyond the term of their original planning consent.

Further Assessment

In the coming 12 months, Ventient Energy will complete the Engineering Life Extension analysis process on Farr Wind Farm. This process will help ensure all appropriate actions are implemented to support the safe operation of the assets and support some proposed investments that Ventient are planning to make in 2021 to further improve output from the wind farm, increasing the utilisation of the existing infrastructure.