



Appendix 4.2 Outline Battery Safety Statement



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Introduction

This Outline Battery Safety Statement has been prepared by Shetland Aerogenerators Ltd. (the Applicant) to accompany the Planning Application for the proposed Battery Energy Storage Scheme (BESS) located at Luggie's Knowe, Lerwick. This Statement outlines the safety provisions that will be included in the design of the proposed BESS facility.

The Proposed Development

The Applicant is proposing revisions to a permitted wind energy development, Gremista Wind Farm (Planning permission granted in 2011), which lies approximately 1.2 km north of Lerwick, Shetland. The revised scheme ('the Proposed Development') comprises one turbine and a Battery Energy Storage System (BESS) with a total installed capacity of 19.9 MW. The Proposed Development will replace two turbines which have planning permission as part of the 2011 Permitted Development, but which have not been built.

The BESS will be situated at the existing Site entrance to minimise ecological, geological and visual impact as well as providing easy access for construction, maintenance and safety purposes.

BESS Safety

The final technology solution has not yet decided for the BESS facility at Luggie's Knowe; however, the Applicant affirms its commitment to implementing a system that is fully compliant with relevant safety standards and in line with the very latest industry best practice. A Fire Safety Management and Response Plan will be developed and agreed with Shetland Islands Council and the Scottish Fire and Rescue Service prior to installation. In the meantime, this Outline Battery Safety Statement describes the principles that the Applicant will adhere to regarding safety.

The safety objectives for the design of the BESS are:

- To minimise the likelihood of an event. This is an overriding priority;
- To minimise the consequences should an event occur;
- To restrict any event to the BESS site and minimise any impact on the surrounding areas;
- To automatically detect and begin to fight a fire as soon as possible;
- To ensure any personnel on Site are able to escape safely away from the Site;
- To ensure that firefighters can operate in reasonable safety where necessary;
- To ensure that fire, smoke, and the spread of gases do not significantly affect occupants in surrounding buildings and areas; and
- To ensure that firewater run-off is contained and treated.

Outline BESS Fire Safety Principles

A summary of the principles that will be followed in the design, installation and operation of the BESS is included below:

- The BESS will be designed, procured, and installed in accordance with international guidance, good practice, and related standards (UL9540A¹ and NFPA855²).
- The Site design will include a safe access route for fire appliances to manoeuvre within the Site.
- Separation distances between the batteries and other equipment will be in accordance with manufacturers' specifications and insurance requirements.
- Batteries are designed with multiple layers of protection to minimise the chances of a fire or thermal runaway.
- The batteries will include integrated and automatic fire detection and suppression systems.
- Equipment will, where possible, be selected to be fire limiting, such as selection of transformer oils with low flammability and the fire resistance of the BESS containers.
- All equipment will be monitored 24/7, with temperatures in each battery storage container monitored and regulated as needed.
- The Site will be maintained and operated in accordance with manufacturer instructions.
- Risk assessments will be carried out for the different elements of the project and the entire system.
- The Scottish Fire and Rescue Service will be consulted on battery technology, and their input will inform the development of the Fire Safety Management and Response Plan prior to installation.
- A copy of the Fire Safety Management and Response Plan will be available in an information box located at the at Site entrance and online.
- Adopting the measures set out above will reduce the risk of a fire occurring and reduce the risk of it spreading to the point where it becomes a major incident.

¹ [UL 9540A Battery Energy Storage System \(ESS\) Test Method | UL Solutions](#)

² [NFPA 855: Standard for the Installation of Stationary Energy Storage Systems](#)