

Battery energy storage systems (BESS)

The need for BESS

The way in which we use, and generate, electricity is changing. We are in a transitional period to manage the complex supply and demands of the 21st Century, and BESS provides an important role in this.

BESS technology at Kinnelhead Wind Farm would support the variable generation of wind technology and would play an important role in balancing and stabilising the grid network.

BESS stores energy at times when generation exceeds demand and releases electricity back to the national grid network when demand exceeds generation.

This is considered the fastest technology for responding to a sudden spike in demand or an abrupt loss of supply.

At RES, safety is of the utmost importance.

Health and safety is woven into every aspect of RES' proposals. The BESS at Kinnelhead Wind Farm will be developed to address and mitigate against the risk of fire ignition and propagation, in a number of ways:

Battery Selection

The proposed system is a containerised scheme, involving proven Lithium Iron Phosphate (LFP). LFP has better stability against thermal runaway at higher temperatures compared to some other battery chemistries. All batteries must be tested and certified to an industry standard (UL9540A), demonstrating resistance to thermal runaway, and which ensures there is no likelihood of explosion, with any fire contained within the affected battery rack.

Monitoring and Remote Access

Unlike electric cars and scooters, for example, RES-managed battery energy storage systems are constantly monitored from our 24/7/365 control centre in Glasgow.

Some controls can also be safely operated remotely from our control centre, such as the shutting down of an individual battery rack or the entire battery energy storage system, if required.

Equipment Spacing

The site will be developed to include adequate spacing between the battery storage enclosures (BSE) to mitigate against the risk of fire spread in the unlikely event of a fire within one BSE.

Protection Systems

Each BSE will have a dedicated fire protection system, comprising flammable gas detection and venting, fire detection and alarm, and an automatic fire suppression system.

Access to Battery Enclosure and for Emergency Services

The fenced compound will have a wide access route through corridors and through the centre, allowing the fire service to access the site in the unlikely event of an incident.



Kinnelhead Wind Farm Proposal

kinnelhead-windfarm.co.uk