
Energy Storage Facility at Aikengall Farm

Supporting Statement

September 2023

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Redstone Rig Storage Ltd
 Caledonian Exchange
 19a Canning Street
 Edinburgh
 EH3 8HE



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Author	Reviewed	Approved
Amelia Medland & Behnam Khajeh	Rob Fryer	Wood

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Electricity Measurements

1 kW x 1000 = 1 MW

1 MW x 1000 = 1 GW

1 GW x 1000 = 1 TW

Kilowatt (kW): Kilowatt-hour (kWh)

A kilowatt is a unit of power representing the rate at which energy is used or produced. 1 kilowatt-hour is a unit of energy and represents 1 hour of electricity produced or consumed at a constant rate of 1 kW.

Megawatt (MW): Megawatt-hour (MWh)

A megawatt equals 1000 kW. 1 megawatt-hour represents 1 hour of electricity produced or consumed at a constant rate of 1 MW.

Gigawatt (GW): Gigawatt-hour (GWh)

A gigawatt equals 1000 MW. 1 gigawatt-hour represents 1 hour of electricity produced or consumed at a constant rate of 1 GW.

Terawatt (TW): Terawatt-hour (TWh)

One terawatt equals 1000 GW. 1 terawatt-hour represents 1 hour of electricity produced or consumed at a constant rate of 1 TW.

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1 Introduction

1.1 Purpose of this Report

- 1.1.1 This report has been submitted in order to secure Full Planning Permission from East Lothian Council for a 19.99 MW Battery Energy Storage Facility (BESS), herein referred to as the Proposed Development, at Aikengall Farm.
- 1.1.2 The aim of this Supporting Statement is to present the findings of an environmental appraisal undertaken to assess the potential for adverse environmental effects associated with the proposed Energy Storage Facility only. The environmental information provided in this report should be sufficient for the determination of this application by East Lothian Council.
- 1.1.3 The Proposed Development falls in line with Schedule 2 Category 3(a) of the EIA Regulations as an electricity generating development as the Proposed Development covers only a limited area of 0.36 hectares (ha), less than the 0.5ha threshold. The Proposed Development seeks to utilise an area of land rough grazing which is undeveloped and only supports limited rough grazing.

1.2 The Agent and Applicant

- 1.2.1 This report has been prepared by Community Windpower Ltd (The Agent) on behalf of Redstone Rig Storage Limited (The Applicant). Community Windpower Ltd (CWL) is the owner and developer and operator of the nearby operational Aikengall Community Wind Farm.
- 1.2.2 Redstone Rig Storage Ltd (RRSL) is a company established primarily to pursue the development and construction of co-located battery energy storage developments on established renewable energy sites.
- 1.2.3 RRSL is progressing this Energy Storage Facility as co-locating energy storage and renewable energy generation is an efficient use of existing infrastructure. Renewable energy can therefore be stored at periods of low demand, and then exported at times of peak demand providing greater flexibility and balancing to the electrical grid system.

2 Site and Project Description

2.1 Site Location

- 2.1.1 The Proposed Development is situated in East Lothian, approximately 3 kilometres (km) south of Innerwick and 9.5km south of Dunbar. It is centred on National Grid Reference (NGR) 370046, 670268 as shown in *Figure 1*.
- 2.1.2 The Proposed Development is situated adjacent to an existing substation which serves the nearby Aikengall Wind Farm, as shown in *Figure 3*.

2.2 The Proposed Development

- 2.2.1 The purpose of the Development is to store and balance renewable energy ready for export to the local grid (Distribution network) as and when required, typically at points of peak demand. It will have a capacity of up to 19.9MW.
- 2.2.2 The Proposed Development, a Battery Energy Storage System (BESS) would comprise of the following infrastructure (see *Figure 4*):
- Containerised Battery Units;
 - Containerised Switchgear and Control Rooms;
 - Underground Cabling;
 - Inverters;
 - Transformers;
 - Perimeter Security (Palisade) Fencing, containing a rolled stone compound;
 - CCTV Security System.
- 2.2.3 It is possible the layout and dimensions of the containerised units may change following the tendering process for the supply of the various equipment, although all equipment will remain within the development site boundary.
- 2.2.4 The existing access track which serves the operational wind farms will be utilised for access during the construction phase of the Proposed Development, and for access thereafter by technicians.
- 2.2.5 The Proposed Development will connect into the existing substation that currently serves the nearby operational Wind Farm via underground cables.

2.3 Site Selection

- 2.3.1 The Proposed Development is adjacent an existing electrical substation compound and is deemed to be appropriately sited due to the following characteristics:
- The site does not fall within any international or national designated areas;
 - There will be no loss of prime agricultural land;
 - Excellent proximity to the existing substation and all existing electrical infrastructure as they are located adjacent to each other;
 - It is located adjacent to an existing access track, thus no new access requirements are required;
 - It is located away from residential properties and public transport networks;
 - There is excellent access to the site utilising the existing access route from the A1 used for the nearby wind farms, with no further access requirements or alterations needed.

2.4 Energy Storage Technology

- 2.4.1 Each containerised battery unit will contain multiple arrays of batteries, a ventilation and air conditioning system, and a fire suppression system. *Figures 5 and 6* demonstrate indicative containerised units and include details on elevations for the battery and control room containers respectively.
- 2.4.2 Lithium-ion batteries are the most well-known battery technology, and highly used in consumer electronics, due to their high energy density, high cycle tolerance and flexible discharge time. However, battery technologies are wide-ranging and the exact type of battery technology to be used for this Proposed Development will be decided pending further consultation and the best technology available at the time of installation.
- 2.4.3 The Proposed Development has been designed to respect the existing landscape and infrastructure. The containerised units will be coated with a khaki green finish (BS 12 B 21) to minimise visual impact and match the appearance of the units closely to the existing substation buildings. *Figure 5* shows typical containerised batteries for energy storage installed at other sites in the UK.
- 2.4.4 Inverters for each containerised unit will be housed in external control units. The inverters will convert direct current (DC) power stored within the batteries to alternating current (AC) in order to be exported to the grid.
- 2.4.5 In order to step up the voltage, AC power from the inverters will be transmitted to the transformers. The power will then be transmitted to the nearby substation for onward export to the local distribution electrical network. *Figure 6* illustrates typical transformer dimensions.

2.5 Grid Connection

- 2.5.1 The Proposed Development will have good access to the local electricity distribution network via the adjacent Wind Farm substation.
- 2.5.2 This existing substation will be the Point of Connection (PoC). An underground cable will connect the Proposed Development to the PoC. The PoC proximity and suitability for battery storage facility ensure the project will be economically viable.
- 2.5.3 The Proposed Development is designed to provide real-time grid stabilisation to the National Grid, allowing excess electricity generated from renewables to be stored in the batteries during times of low demand. This stored capacity can then be fed back into the grid during times of peak demand.

2.6 Security

- 2.6.1 Palisade fencing 2.74m high, with a lockable double gate, will be installed to secure the site and protect public and animal safety. This is depicted in *Figure 8*. As well as ensuring protection of the site, the colour of the fencing has been selected with consideration for landscape and visual impact.

- 2.6.2 CCTV cameras will also be installed on 3m high masts to further ensure the security of the site and public safety.

2.7 Site Access and Traffic

- 2.7.1 Access to the site will utilise the existing route used for the nearby operational wind farm, which comes from the east. There are no proposed alterations to the existing access route to the site.
- 2.7.2 During construction of the Proposed Development, it is expected that all components will be delivered to site by standard Heavy Goods Vehicles (HGVs) with personnel travelling to site via lighter vehicles such as a standard car or van. No abnormal loads are required during the construction stage of the Development.
- 2.7.3 Once operational, there will be minimal traffic to site, limited to routine maintenance via technicians or engineers in a standard car or van.

2.8 Installation

- 2.8.1 The construction and installation of a battery energy storage facility is relatively simple and can be completed with minimal disruption to the existing substation. It is expected to be completed within 6 months. The construction of the rolled stone hardstand is carried out prior to small concrete foundations or raft for the containerised units.
- 2.8.2 A small crane and telescopic handler will be utilised to lift and lower the containerised units into position on shallow concrete foundations located on raft at each corner of each unit. A short section of cabling will be laid below ground from containerised units to the adjacent substation compound in order to connect to the wider electrical system.

2.9 Decommissioning

- 2.9.1 Towards the end of the operational period of the Proposed Development, a Decommissioning Strategy will be designed and submitted to the Council for approval.
- 2.9.2 During the decommissioning phase, the equipment and containerised battery units will be removed from site via a similar method as to how they were installed i.e., by using a small crane and telescopic handler to lift the units and load them onto the back of standard HGVs and safely taken off site, using the same access route as used during the construction of the Development. The Development area shall then be reinstated to its pre-construction state.
- 2.9.3 The Decommissioning Strategy would be in line with Good Practice Guidelines at the time of decommissioning and the process should be relatively straightforward and it is envisaged that it would take a similar length of time as when it was built i.e., approximately 6 months.

3 Need for the Development and Planning Policy

3.1 Introduction

- 3.1.1 The UK relies on multiple technologies (onshore wind, offshore wind, solar, gas, nuclear) to generate its electricity. To provide further grid stability and ensure a continuous supply of electricity flowing to the grid, battery energy storage systems can be utilised that store energy generated from peak production periods and releases that stored energy to the grid during periods of lower generation.
- 3.1.2 Reaching the Scottish Government’s ambition of net zero emissions by 2045 will require an acceleration of the deployment of low-carbon electricity generation. To solve the possible intermittency of low-carbon technologies, for example in the winter when demand for heat is high, battery technologies can discharge stored energy. Thus, the stability of supply to the grid is strengthened.

3.2 National planning policy

- 3.2.1 The Planning etc (Scotland) Act 2006 dictates that planning authorities must exercise their functions “*with the objective of contributing to sustainable development*”. This is in accordance with The Climate Change (Scotland) Act 2009 which was amended in 2019 to increase the Scottish Government’s ambition of achieving net zero emissions. The 2019 Act amended the previous target (80% greenhouse gas emissions by 2050) to net zero greenhouse gas emissions by 2045. At the time, this was the most ambitious emissions reductions legislation in the world.

3.3 National Planning Framework 4 (NPF4)

- 3.3.1 NPF4 was approved by Scottish Ministers by 88 votes to 30 in January 2023, following the publication of a Revised Draft in November 2022 and the publication of the draft fourth National Planning Framework in November 2021. Having been approved, it is now part of the statutory development plan, replacing National Planning Framework 3 (NPF3) and Scottish Planning Policy (SPP), and forms the foundation of planning policy in Scotland.
- 3.3.2 Part 1 of NPF4 details the National Spatial Strategy for Scotland 2045. With the world facing “*unprecedented challenges*”, planning can deliver the changes which will be necessary to secure a prosperous future for Scotland, both economically and environmentally. Part 1 states that “*we also need to be clear about the types of infrastructure we will need to build, and the assets that should be protected to ensure they continue to benefit future generations*”.
- 3.3.3 Part 2 of NPF4, National Planning Policy, elaborates on the sustainable, liveable, and productive themes which are included in this NPF4. The policies which are relevant to the Proposed Development are:
- Policy 1: Tackling the climate and nature crises;
 - Policy 2: Climate mitigation and adaptation

- Policy 3: Biodiversity;
- Policy 4: Natural places;
- Policy 7: Historic assets and places;
- Policy 11: Energy;
- Policy 20: Blue and green infrastructure.

- 3.3.4 The Scottish Government’s ambition to improve the security of Scotland’s electricity supply is supported directly by the national developments that underpin the future ‘sustainable places’, most notably the Strategic Renewable Electricity Generation and Transmission Infrastructure national development.
- 3.3.5 Policy 1 (‘Tackling the climate and nature crises’) states that *“when considering all development proposals significant weight will be given to the global climate and nature crises”*. This command, that decision makers must pay heed to the weight of the climate crisis, is a significant progression from previous planning policy. This policy is thus of particular relevance to the proposed development and represents a fundamental change in the planning balance compared to the policy position of the now replaced NPF3 and SPP.
- 3.3.6 Policy 2 (‘Climate mitigation and adaptation’) is connected to all other NPF4 policies, and encourages that new developments minimise emissions as much as possible. Part a) states that *“development proposals will be sited and designed to minimise lifecycle greenhouse gas emissions as far as possible” and proposals which “retrofit measures to existing developments that reduce emissions or support adaptation to climate change will be supported”*. The Proposed Development aims to improve the efficiency of the Wind Farm development which it is sited alongside, balancing the local and national grid network when necessary.
- 3.3.7 Policy 3 (‘Biodiversity’) aims to enhance biodiversity and deliver nature-based solutions to Scotland’s biodiversity issues. NPF4 urges developments to restore and enhance biodiversity, for example through extensive mitigation and subsequent habitat restoration and habitat connectivity. Policy 4 (‘Natural places’) intends to *“protect, restore and enhance natural assets”* whilst also growing their *“essential benefits”*. Due to the small hectareage of the Proposed Development, and the proposed planting plan submitted alongside this Planning Application, the Applicant believes that there is a negligible negative impact on biodiversity.
- 3.3.8 Policy 7 (‘Historic assets and places’) aims to facilitate the protection, enhancement, and regeneration of historic environment assets and places. Due to the small scale of the Proposed Development, and the natural landscape surrounding it, any impact on the surrounding historic environment is considered to be negligible.
- 3.3.9 Policy 11 (‘Energy’) is a fundamental policy in NPF4, and one which relates closely to the Proposed Development. The support for the *“expansion of renewable, low-carbon and zero emissions technologies”* is explicit and unequivocal. Part a) of Policy 11 states that *“development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported”*. This statement specifically includes *“wind farms”, “energy storage, such as battery storage and pumped hydro”* and the *“co-location of these technologies”*.
- 3.3.10 Policy 20 (‘Blue and green infrastructure’) states that *“development proposals for or incorporating new or enhanced blue and/or green infrastructure will be supported”*. The

Proposed Development aims to enhance existing green infrastructure, in this case the infrastructure of Aikengall Community Wind Farm, by improving energy production efficiency and reducing the need of carbon intensive generators in order to meet deficits in energy demand. The operation of the Proposed Development will enhance the green infrastructure currently present, and therefore should be supported.

3.4 The Onshore Wind Policy Statement (OWPS)

- 3.4.1 The OWPS was officially adopted in December 2022 by the Scottish Government, thus replacing the 2017 Onshore Wind Policy Statement. Chapter 8, ‘Onshore Wind, Energy Systems and Regulation’, includes multiple paragraphs relating to the security of electricity supply in Scotland and the potentiality of energy storage technologies. In paragraphs 8.4.3, 8.4.4 and 8.4.5, it is contended that energy co-location and the construction of on-site battery storage facilities will help onshore wind reach its full potential and assist with the operation of the electrical grid system.
- 3.4.2 The OWPS states that, as the inclusion of battery storage facilities alongside renewable energy developments becomes “*more prevalent*”, these co-location proposals will continue to be supported by the Scottish Government which will “*add resilience to the energy system*”.

3.5 Draft Energy Strategy and Just Transition Plan (ESJTP)

- 3.5.1 In January 2023, the Cabinet Secretary for Net Zero, Energy and Transport, Michael Matheson MSP, and the Minister for Just Transition, Fair Work and Employment, Richard Lochhead MSP, published the Draft Energy Strategy and Just Transition Plan (ESJTP) for consultation. The ESJTP aims to facilitate the delivery of a resilient net zero energy system, one powered by clean energy.
- 3.5.2 Energy storage is supported within the document in order to promote “*energy security through development of our own resources and additional energy storage*”. The ESJTP also notes that the investment in electricity networks and flexible response technologies, such as battery storage, will continue the “*rapid decarbonisation of energy use*” and includes an “*expansion in energy demand*”.

3.6 East Lothian Local Development Plan (ELLDP)

- 3.6.1 The ELLDP was adopted in September 2018. It guides development in East Lothian. The next Local Development Plan for East Lothian (LDP2) is currently in the early stages of preparation and research gathering.
- 3.6.2 The vision, aims, objectives and outcomes of the ELLDP revolve around promoting sustainable development, growing the economy, and reducing inequalities. The ELLDP aims to “*ensure that new development, and the locations where and the way in which it is delivered, contributes to climate change and regeneration objectives*”. The ELLDP also aims to “*ensure that the area’s significant international, national and local cultural and natural*

heritage assets, including green network assets, are protected and conserved, and where appropriate enhanced”.

- 3.6.3 In the ‘Energy Generation, Distribution & Transmission’ section, it is stated that *“the LDP helps facilitate the transition to a low carbon economy by supporting means of energy generation that help to reduce greenhouse gas emissions. It seeks to support a diverse range of renewable and low carbon energy generation in appropriate locations as well as the development of heat networks, taking environmental, community and cumulative issues into account”.*

4 Environmental Characteristics

4.1 Overview

- 4.1.1 To support East Lothian Council in making a decision, this report gives a description of the Proposed Development and any potential environmental impacts on the current environmental characteristics of the site location.
- 4.1.2 This report focuses on the potential for environmental impact and seeks to consider the potential noise, telecommunications and cumulative impacts in combination with the existing operational Wind Farm which is nearby.

4.2 Designated Sites

- 4.2.1 To determine what designated sites are in close proximity to the Proposed Development, a 2km study area has been chosen. 2km was chosen due to the facility’s low profile, scale and location. The designated sites identified are shown in *Figure 11*.
- 4.2.2 There is an SSSI located north and south of the Proposed Development. The SSSI is called East Lammermuir Deans. The site is split in two parts covering Sheeppath Glen. Burn Hope, Bladdering Cleugh and Ling Hope (see *Figure 11*). The Lammermuir Deans are steep valleys cut through calcium-rich rock. Sheeppath Glen valley is located 110m north of the Proposed Development, Burn Hope, Bladdering Cleugh and Ling Hope are located 227m, 352m and 860m south, respectively.
- 4.2.3 Reasons are outlined as to why this SSSI will not be impacted by the Proposed Development in the Hydrology chapter.
- 4.2.4 There is a confirmed Geological Conservation Review Site (Oldhamstocks Gullies) located 854m south of the Proposed Development. Similar to the SSSI, reasons as to why this designation won’t be impacted are detailed in the Geology section.
- 4.2.5 Blackcastle Hill is a scheduled monument that is located approximately 1.85km northeast from the Proposed Development. This scheduled monument is a prehistoric domestic and defensive homestead situated on Blackcastle Hill.
- 4.2.6 Core Paths 227 and 323 are situated within a 2km radius of the Proposed Development. These are located 1.53km west and 1.32km northwest from the development, respectively (see *Figure 11*).

- 4.2.7 Reasons as to why these designations will not be impacted by the Proposed Development is outlined in the Cultural Heritage chapter.

4.3 Landscape and Visual

- 4.3.1 The Proposed Development is located on Aikengall Farm, adjacent to an existing substation which is used by the nearby operational wind farm. Therefore, it is expected that any additional impacts on the landscape will be negligible, as the Proposed Development is sited adjacent to an existing mass of buildings and built environment.
- 4.3.2 The topography of the surrounding land means that the Proposed Development will only be visible within sectors of a 2.6km radius, as shown in *Figure 13*. Due to the small size of this development and being in close proximity to an existing and operational wind farm and its infrastructure it is likely that the visual impacts will be negligible. Furthermore, the visual impacts will be further reduced by the proposed landscape screening that will be implemented directly adjacent to the development, as shown in *Figure 4*. The public road to the west of the development (some 1.39km away), will afford occasional glimpses of the proposal. However, the Proposed Development will be seen in conjunction with the existing operational infrastructure/built environment at the site and will form part of the overall infrastructure mass.
- 4.3.3 The Proposed Development will be built upon the Upland Fringes landscape, specifically the Eastern Lammermuir Fringe. It is anticipated that the potential impacts will be negligible, due to the small size of the development and the existing wind farm and infrastructure within this landscape already. Furthermore, the proposal includes planting and enhancement areas both east and west of the compound, as shown in *Figure 4*.
- 4.3.4 In relation to visual potential impact upon residential buildings, there are only 4 properties within 2km, with the closest property some 930m distance away. This property and the next closest at 1.36km, are within the land holding of Aikengall Farm, and are classed as financially involved. However, none of these properties will see the Proposed Development, as indicated on the *Figure 13* 'ZTV (Several Target Points)'.
- 4.3.5 Therefore, it is shown that there is negligible visual impact from the Proposed Development either in terms of landscape, landscape character or residential amenity..

4.4 Ecology

- 4.4.1 Ecological studies and surveys were undertaken for the nearby wind farm and surrounding area. These ecological surveys include habitat and protected species surveys to assess any potential impacts from wind farm development within the area during construction and operation. The status of the surrounding land has not changed since, or following, the construction of the now operational wind farm.
- 4.4.2 The habitat of the proposed site is mainly dominated by a mosaic of heather, bracken, upland grassland and improved pasture. Due to the limited area that the proposed development will cover and its location in relation to the operational wind farm, it is expected that there will not be any significant adverse impacts on habitats.

- 4.4.3 Original surveys found some evidence of otters present in Monymut Water, some distance away from the proposed development. There was no activity of badgers, bats, water voles, reptiles and amphibians. However, Roe Deer, Hare and Fox have been noted within East Lammermuir Deans SSSI.
- 4.4.4 While the proposed development is a small site area, there is limited potential for very minor disruption to the protected species, particularly during construction. However, a walk over of the construction area will ensure that any limited risk of disruption will be very low. During operation, there will be minimal activity on site, and therefore there will be negligible disturbance. Therefore, overall, it is anticipated that the risk of disruption of protected species will be very low due to the scale of the site and lack of habitats within the area.

4.5 Cultural Heritage

- 4.5.1 Survey work and a desk studies were undertaken for the nearby operational wind farm and reviewed again for this application. These determined that there are two cultural heritage assets located within a 2km radius of the Proposed Development.
- 4.5.2 The Proposed Development is sited near to an operational wind farm, and on a site that has been disturbed during the wind farm construction process. The actual construction proposed for the BESS involves limited excavation and only to a relatively shallow depth. Therefore, the risk of damage to any undiscovered archaeological interests both during construction and operation is very low, if not negligible.
- 4.5.3 Within a 2km study area of the Proposed Development, there are no listed buildings, one scheduled monument and core paths; both designations are shown in *Figure 11*.
- 4.5.4 The scheduled monument is a Prehistoric domestic and defensive homestead situated on Blackcastle Hill, approximately 1.85km northeast from the Proposed Development. Due to the nature of the landscape in relation to the location of the Proposed Development there will be no significant visual impact upon the scheduled monument at Blackcastle Hill.
- 4.5.5 Core Paths 227 and 323 are situated within a 2km radius of the Proposed Development. These are located 1.53km west and 1.32km northwest from the development, respectively (*see Figure 11*).
- 4.5.6 The Proposed Development has limited visibility from both cultural heritage assets, Core Path 323 and scheduled monument Blackcastle Hill. However, this will be reduced by the proposed indigenous, ground cover planting of cluster trees and low-level shrubs which will act as screening both west and east of the compound. Any views of the proposed development will be seen in the context of the existing operational wind farm and infrastructure and will significantly limit any visual impacts upon these assets.

4.6 Geology, Hydrology and Hydrogeology

- 4.6.1 A desk based geological, hydrological and hydrogeological study were undertaken for the nearby wind farm and reviewed as part of this application to assess the potential impact of construction and operation effects.

- 4.6.2 Oldhamstocks Gullies is a confirmed Geological Conservation Review Site (GCRS), see *Figure 11*. This GCRS is located a significant distance (850m) south of the Proposed Development. Therefore, given this distance, there will be no adverse impacts to Oldhamstocks Gullies. Similarly the proposed access route (see *Figure 10*) will be entering site from the A1, north of the compound and therefore will, again, have no impact to Oldhamstocks Gullies during the construction phase of the development.
- 4.6.3 The Proposed Development lies above till superficial geology and conglomerate and (subequal/subordinate) sandstone, interbedded bedrock surface. It is predicted that the battery storage facility will impose no significant adverse impacts. This is based on the limited size of the development and construction methods employed. It is worth noting that there were no impacts during the construction of the nearby wind farm and infrastructure.
- 4.6.4 The SEPA Flood Maps reviewed show that there is no risk of flooding at the Proposed Development. Existing and localised field drains and channels will convey any surface water away from the development. Proposed land drainage system (Sustainable Drainage System (SuDs) within the development area will ensure that any surface water will be collected and conveyed in to the surrounding existing field drains and channels. This is shown on *Figure 9*.

4.7 Noise

- 4.7.1 It is acknowledged that to understand and mitigate any potential noise issues in the area, a noise assessment may be undertaken and assessed in accordance with the BS4142:2014+A1:2019 “Methods for Rating and Assessing Industrial and Commercial Sound”. The process of a BS4142 assessment is:
- Measuring the existing background sound levels close to Noise Sensitive Receptors (NSRs) in both day and night;
 - Predict noise levels from the Proposed Development at the NSRs;
 - Add penalties as required to account for the characteristics of the sound source to determine a Rating Level;
 - Compare the rating Level with the measured background noise to assess adverse impacts and determine appropriate mitigation strategies to reduce the Rating Level to be within acceptable levels.
- 4.7.2 Within BS4142, Table 1 shows the noise limits above background and how that this may impact the residential amenities.

Table 1: BS 4142 Guidance on noise impact

Excess of rating over background sound level	Assessment
Around + 10 dB or more	Indication of a significant adverse impact
Around +5 dB	Indication of an adverse impact
<0 dB	Indication of a low impact

- 4.7.3 It is known that the operation of the proposed equipment would produce noise emissions in the region of 60-80 dB, and that this noise is primarily produced by the mechanical

ventilation to cool the battery units. These do not run all the time, and their operation is dependent upon the internal and external temperatures of each unit. Given the climatic conditions expected at the site it is likely these units will run infrequently.

- 4.7.4 However, given the distance to the nearest residential property, some 930m, and the attenuation of the noise emitted over that distance, it is expected that the background noise at this property will not be exceeded, leading to a no concern or low impact on noise, as shown on Table 1 BS4142.

4.8 Access and Transport

Access Routes

- 4.8.1 The BESS components will be delivered on standard HGVs to site via public roadways and the existing access track for the nearby wind farm. A potential route for this is as follows and is illustrated in *Figure 10*:

- From the A1 road, turn off to Thurston;
- Follow the road round to Thurston Manor;
- Turn left at Thurston Mains;
- Follow the road past Bonnetty Knowe;
- Turn right at Wester Aikengall and follow the access track for nearby Wind Farm.

- 4.8.2 Due to the existing infrastructure available in terms of access, and the hardstanding areas at the existing substation, there will be no need for road or track modifications in order to build the BESS.

Traffic Volumes

- 4.8.3 The modular battery units, transformer and switchgear are expected to be built off site and delivered via HGV to the site location over the period of 6 months. Similarly, the cabling and fencing will be delivered by HGV. No abnormal loads are expected for deliveries of components.

- 4.8.4 The construction of the battery storage facility will include the following traffic elements:

- Plant and equipment to remodel/remove material from the site area (excavators, dump trucks, delivered on low loaders);
- Importation of site components and construction and construction equipment (Battery Units, Transformers, cables, small mobile cranes etc.);
- Importation of stone/aggregate for compound hardstand;
- Importation of concrete for shallow foundations/raft;
- Transportation of construction staff;
- Consumables and utilities (food, fuel, etc).

- 4.8.5 It is estimated that construction will take over 6 months with traffic movements of an average of 5 vehicle movements per day. It is likely that in later stages of construction this number will decrease as movements will be limited to installation of the batteries and connection to the grid network.

- 4.8.6 To mitigate any disruption to public road networks, the following mitigation measures will be put in place for the entire construction period of the facility:
- Vehicle movements and deliveries will take place during normal working hours;
 - Scheduling deliveries of large components to times where traffic volumes are low.
- 4.8.7 Overall, it is expected that construction traffic volumes will have a negligible or low impact to traffic conditions due to there being no expected abnormal loads and the capacity of the road network on the proposed route is already suitable for HGVs and construction traffic.
- 4.8.8 It is expected that the volume of traffic generated during the operational phase of the development is negligible due to the site already having full time operational staff.
- 4.8.9 Decommissioning traffic volumes will likely be similar to the construction traffic volume. Decommissioning will also take place over a 6-month period with similar equipment and worker traffic.

4.9 Telecommunications

- 4.9.1 Previous desk-based assessments for the nearby wind farm highlighted the presence of a telecommunication mast 1.51km west from the Proposed Development with a telecommunications line which runs north east away from the site.
- 4.9.2 It is expected that there will be no disruption to telecommunications or reception due to the low height and small scale of the Proposed Development and the distance away from telecommunication links.

5 Conclusion

- 5.1 Redstone Rig Storage Ltd believes that Energy Storage Facility at Aikengall Farm is a small but vital development to help maximise the production of renewable energy and local grid stabilisation. Battery storage is a much-needed resource to avoid the need of using carbon intensive methods of energy production which directly conflicts with Scotland’s Net Zero goals and climate pledges. For Scotland’s commitment to Net Zero to be effective against the ongoing climate crisis, the rapid deployment of renewable energy technologies is vital to meet its ambitious and laudable goals.
- 5.2 There is a clear need for the development; the Proposed Development will help meet and exceed the climate goals and renewable energy policies set out by the Scottish Government and East Lothian’s LDP. In the newly approved and adopted NPF4, heavy weight is placed on the threat which the climate crisis poses to the world and to Scotland. NPF4 explicitly supports the expansion of renewable energy, battery storage and other green infrastructure technologies.
- 5.3 It is clear that East Lothian Council supports and agrees with the importance of the Proposed Development in the local area through the statement in the ‘Energy Generation, Distribution & Transmission’ section of the LDP. It is stated that the LDP *“helps facilitate the transition to*

a low carbon economy by supporting means of energy generation that help to reduce greenhouse gas emissions” and “it seeks to support a diverse range of renewable and low carbon energy generation in appropriate locations as well as the development of heat networks, taking environmental, community and cumulative issues into account”.

- 5.4 The Proposed Development is predicted to have negligible impacts on the surrounding area, due to the small scale and limited size of the facility. The planning boundary encompasses a total of 0.36ha, with a total built area of only 0.19ha. The Proposed Development is in the most ideal location, being close to the operational wind farm and it’s substation. This existing substation and the renewable energy produced can be stored and distributed more efficiently while minimising the potential environmental effects and potential disruption to local communities.
- 5.5 The Proposed Development does not have impacts in terms of landscape and visual amenity, ecology, hydrology, transport, access, noise, telecommunications, as assessed in the Environmental Characteristics section.
- 5.6 Overall, the Energy Storage Facility at Aikengall Farm meets and exceeds the climate and renewable energy targets set out by both local and national governments while being of small scale and having negligible effects to the local environment. Therefore, we believe that the development should be supported.

6 References

1. Draft Energy Strategy and Just Transition Plan (2022). Accessed here: <https://www.gov.scot/publications/draft-energy-strategy-transition-plan/>
2. East Lothian Local Development Plan (2018). Accessed here: https://www.eastlothian.gov.uk/downloads/file/27791/local_development_plan_2018_adopted_270918
3. National Planning Framework 4 (2022). Accessed here: <https://www.gov.scot/publications/national-planning-framework-4/>
4. Onshore Wind Policy Statement (2022). Accessed here: <https://www.gov.scot/publications/onshore-wind-policy-statement-2022/>