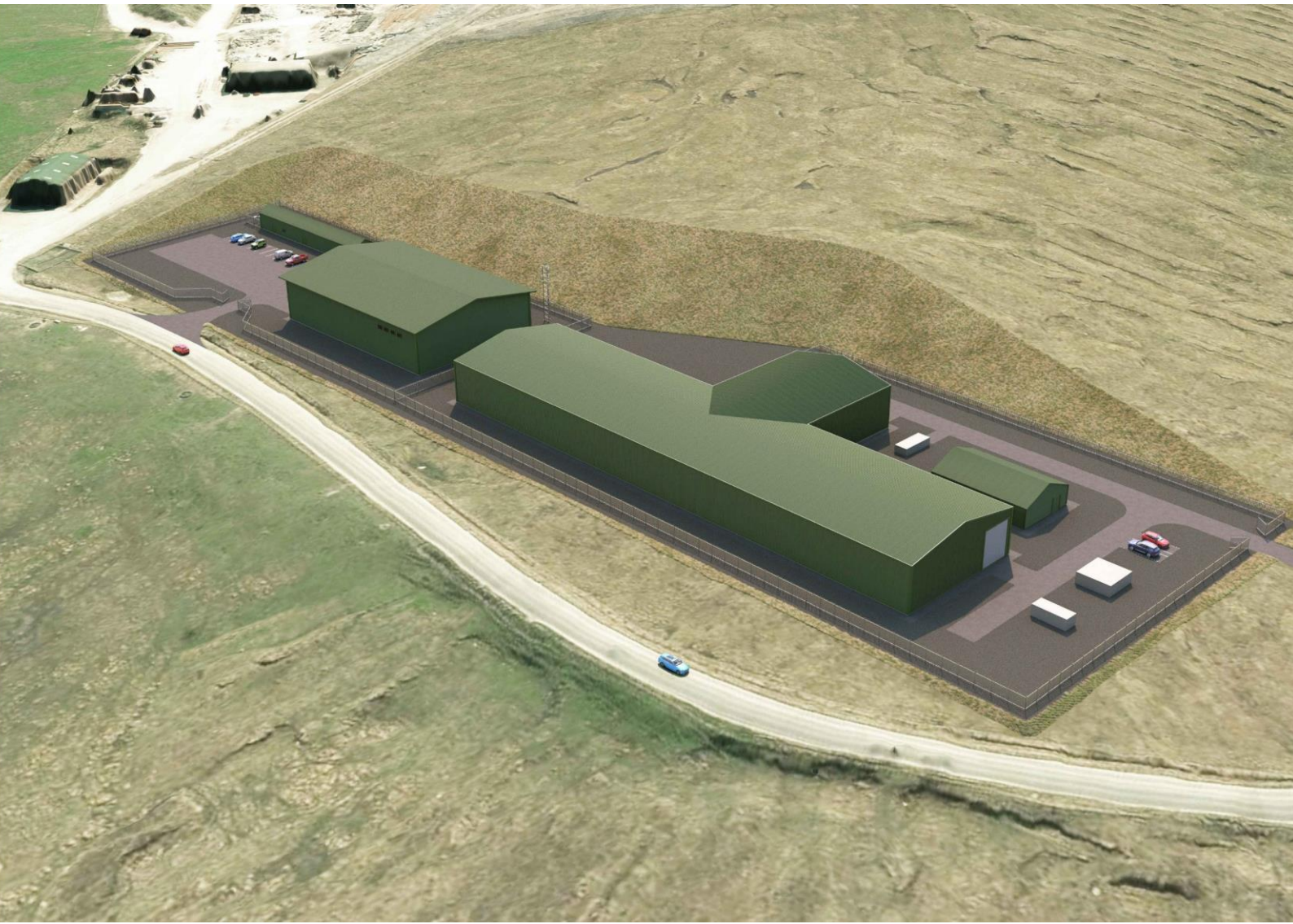
Mossy Hill Wind Farm Substation

Supporting Environmental Information Report

December 2024



Contents

Abbreviations

Term	Definition
ACoW	Archaeological Clerk of Works
AOD	Above Ordnance Datum
BNG	British National Grid
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
DAS	Design and Access Statement
dB	Decibels
EcIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
ESO	Electricity System Operator
EV	Electric Vehicle
FRDA	Flood Risk and Drainage Assessment
GDL	Garden and Designed Landscape
GW	Gigawatt
GWDTEs	Ground Water Dependent Terrestrial Ecosystems
ha	Hectares
HES	Historic Environment Scotland
HGV	Heavy Goods Vehicle
HMP	Habitat Management Plan
km	Kilometre
kV	Kilovolt
LCT	Landscape Character Type
LGV	Light Goods Vehicle
LNCS	Local Nature Conservation Site
LVA	Landscape and Visual Appraisal
m	Metre
NESO	National Energy System Operator
NGESO	National Grid Electricity System Operator
NPF3	National Planning Framework 3
NPF4	National Planning Framework 4
NSR	Noise Sensitive Receptor
PAC	Pre-Application Consultation
PMP	Peat Management Plan
PPA	Power Purchase Agreement
RDP	Restoration and Decommissioning Plan

SAT	Shetland Amenity Trust
SEIR	Supporting Environmental Information Report
SEPA	Scottish Environment Protection Agency
SIC	Shetland Islands Council
SLDP	Shetland Local Development Plan 2014
SPA	Special Protection Area
SPP	Scottish Planning Policy
SSENT	Scottish and Southern Electricity Networks Transmission
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage System
SWMP	Site Waste Management Plan
TWh	Terawatt Hours
ZTV	Zone of Theoretical Visibility

1. Introduction

1.1.1 Mossy Hill Shetland Ltd (hereafter referred to as 'the Applicant') intends to submit a planning application for the proposed construction and operation of a substation (the 'Proposed Development'), together with site access, ancillary works, landscaping and habitat management. The substation would connect the consented Mossy Hill Wind Farm into new electricity grid infrastructure which will pass through the Site, from Kergord to Gremista. This Supporting Environmental Information Report (SEIR) provides an assessment of the potential effects the Proposed Development may have on a range of environmental and technical issues.

2. The Applicant

2.1.1 In 2019, Shetland Islands Council (SIC) granted planning consent to Peel Wind Farms (No 1) Ltd (Peel Energy) for the construction and operation of Mossy Hill Wind Farm (Planning Reference 2018/186/PPF). The consented Mossy Hill Wind Farm comprises 12 turbines, with a maximum tip height of 145m, and associated infrastructure.

2.1.2 In April 2023 Statkraft UK Ltd acquired Peel Wind Farms (No 1) Ltd from Peel Energy and renaming the company Mossy Hill Shetland Ltd meaning they are now the consent holder of Mossy Hill Wind Farm.

2.1.3 The Applicant, Mossy Hill Shetland Limited, is a wholly owned subsidiary of Statkraft UK Limited (Statkraft).

2.1.4 Statkraft is a leading company in hydropower internationally and Europe's largest generator of renewable energy. The Group produces hydropower, wind power, solar power and supplies district heating. Statkraft is a global company in energy market operations and has 7,000 employees in over 20 countries. Statkraft produces hydropower, wind power, solar power and supplies district heating, generating around 62 terawatt hours (TWh) of renewable power.

2.1.5 Statkraft is at the heart of the UK's energy transition. Since 2006, Statkraft has gone from strength to strength in the UK, building experience across wind, solar, hydro, storage, grid stability, Electric Vehicle (EV) charging, green hydrogen and a thriving markets business. Statkraft has invested over £1.4 billion into the UK's renewable energy infrastructure and facilitated over 4.5 gigawatts (GW) of new-build renewable energy generation through Power Purchase Agreements (PPA). Statkraft develops, constructs, owns and operates renewable facilities across the UK and employs over 550 people in offices across Scotland, England and Wales.

2.1.6 Further information about Statkraft can be found at www.statkraft.co.uk.

3. The Need

3.1.1 The Proposed Development would provide the substation facilities required to connect the consented Mossy Hill Wind Farm into new electricity grid infrastructure that Scottish and Southern Electricity Networks Transmission (SSENT) are installing through the Site, from Kergord to Gremista. This cabling infrastructure comprises two 132 kilovolts (kV) underground cables, with the connection for Mossy Hill Wind Farm connecting into one of these cables. The wind farm would operate at 33 kV and the Proposed Development will transform the voltage from 33 kV to 132 kV in order to connect to the SSENT cable.

3.1.2 The Kergord to Gremista cables form a key part of the new electricity network in Shetland and will allow customers to be supplied directly from the Scottish Mainland via a new subsea cable. The Proposed Development will therefore include electrical switchgear and associated protection equipment to ensure both supplies to customers and the wind farm operate reliably.

4. Requirement for Environmental Impact Assessment

4.1.1 The Proposed Development falls under the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) (hereafter referred to as 'the EIA Regulations'). Since it is classified as an industrial installation for energy with an area of development exceeding 0.5 hectares (ha), the Proposed Development falls under Schedule 2 of the EIA Regulations and thus may require an Environmental Impact Assessment (EIA). However, for a development to require a full EIA, there must be potential for significant environmental effects.

4.1.2 A formal EIA Screening Opinion was requested from SIC in May 2024. A Screening Opinion was received from SIC in June 2024 (Planning Ref: 2024/131/SCR) which confirmed that an EIA would not be required to support the planning application. The Screening Opinion is provided in **Appendix 1.**

4.1.3 Although a full EIA is not necessary, it is recognised that an assessment of potential environmental impacts, and identification of appropriate measures to mitigate such impacts, is an important part of the planning process. This SEIR has been prepared to provide sufficient information regarding the potential impacts of the Proposed Development, in order to allow SIC to consider the application in full and with due consideration of planning policy.

5. Site Description

5.1 General Site Description

5.1.1 The Site is situated in the Shetland Islands, approximately 600 metres (m) north-west of the western extent of Lerwick, at British National Grid (BNG) reference HU 44730 42646 **(Figure 1)**. The Site is approximately 25.8 ha in area, and predominantly comprises rough grazing, acid grassland and blanket bog. The Site is bordered to the north by the A970 and to the east by Ladies Drive. The Site is also within the consented Mossy Hill Wind Farm boundary as shown on **Figure 2.**

5.1.2 Elevation rises from approximately 95 m Above Ordnance Datum (AOD) in the north of the Site to approximately 140 m AOD in the south of the Site. There are no watercourses within the Site.

5.1.3 The Site is in a rural setting and is surrounded predominantly by agricultural ground for livestock grazing and industrial developments such as the adjacent quarry, Lerwick Brewery, and Staney Hill Industrial Estate. There is a small historic landfill site within the Site boundary. Access to the Site will be gained via the A970 or Ladies Drive via the consented wind farm access junctions.

5.1.4 There is one residential property within 1 kilometre (km) of the Proposed Development; Shetland Self Catering located approximately 500 m south-east of the Site.

5.2 Environmental Designations

5.2.1 **Figure 3** shows the key environmental designations and sites within 5 km of the Proposed Development. A brief summary of these is provided below with full descriptions provided in the relevant technical chapters of this SEIR.

5.2.2 The following designations are situated within 5 km of the Proposed Development (distances below are from the Site boundary to the designation at it nearest point):

- East Mainland Coast Special Protection Area (SPA) approximately 900 m to the north of the Site:
- Lochs of Tingwall and Asta Site of Special Scientific Interest (SSSI) approximately 2 km to the west of the Site;
- East Rova Head SSSI approximately 3.5 km to the north-east of the Site.

5.2.3 The following Local Nature Conservation Sites (LNCS) are within 5 km of the Site:

- Clickimin Loch LNCS approximately 1.8 km to the south-east of the Site;
- Tingwall Meadow LNCS approximately 2.8 km to the west of the Site;
- South Bight of Rova LNCS approximately 3 km to the north-east of the site; and
- Lang Lochs LNCS approximately 3.8 km south of the Site.

5.2.4 There are 153 listed buildings within 5 km of the Site, 71 of them within 3 km of the Site. The three in closest proximity to the Site are:

- Bod Of Gremista, 1.6 km east of the Site;
- Veensgarth House, 2 km north-west of the Site; and
- Steading, Veensgarth House, 2 km north-west of the Site.

5.2.5 There are 20 Scheduled Monuments within 5 km of the Site, five of them within 3 km of the Site and none within 2 km of the Site. The five Scheduled Monuments within 3 km are:

- Clickimin Broch, 2.2 km south-east of the Site;
- Law Ting Holm, 2.4 km north-west of the Site;
- Tingwall Parish Church, 2.4 km north-west of the Site;
- Fort Charlotte, 2.7 km south-east of the Site; and
- Teind Barn, 2.8 km north of the Site.

5.2.6 Lerwick New Town Conservation area is located approximately 2.4 km south-east of the Site, and Lerwick Central Area Conservation area is approximately 2.6 km south-east of the Site. Gardie House Garden and Designed Landscape (GDL) is located approximately 3.8 km east of the Site.

6. Proposed Development

6.1 Proposed Development Overview

6.1.1 The Proposed Development is an alternative to two smaller substations which were consented as part of Mossy Hill Wind Farm (Planning Reference 2018/186/PPF). As noted above, the Proposed Development includes two new substation buildings to facilitate the connection of the Mossy Hill Wind Farm to the electricity grid by transforming the wind farm's voltage from 33 kV to 132 kV. The wind farm will output electricity at 33 kV, which will first enter the 'Statkraft substation', where the voltage will be stepped up to 132 kV. The electricity will then pass through the adjacent 'SSENT substation' before being transmitted via the new 132 kV underground electricity cable which is being installed by SSENT, linking Kergord to Gremista.

6.1.2 The Proposed Development will feature electrical switchgear and protection equipment to ensure reliable operation of both the wind farm and the power supply to customers. The Applicant, under its grid connection agreement with the National Energy System Operator (NESO, and formerly National Grid Electricity System Operator (NGESO)), must obtain consent for the connection to the grid. The Proposed Development would be jointly built, owned, and maintained by SSENT and Statkraft, with NESO and Statkraft responsible for its operation.

6.1.3 The Proposed Development will comprise two main buildings in the east of the Site: a larger one for SSENT, housing the majority of the electrical switchgear, and a smaller one for Statkraft, containing a transformer to step up the voltage. Two additional smaller buildings will be included: a control and welfare building for SSENT, and a Statkraft building comprising of a 33 kV switchroom, control room and staff welfare facilities.

6.1.4 During construction, the main Statkraft building will be served by a construction compound formed within the fenced area of the substation to the south of the main building. The SSENT building will be served by a separate construction compound, outside the fenced area to the north-west, as shown in **Figure 4**.

6.2 Proposed Development Description

6.2.1 A layout of the Proposed Development is shown in **Figure 4**. The key features of the Proposed Development are:

- A combined substation platform with an area of approximately 1.66 ha. This platform is divided into two compounds one which will be operated by SSENT and the other to be operated by Statkraft.
- SSENT's substation compound (approximately 9,505 m²) comprising;
  - SSENT's 132 kV substation building with an area of approximately 3,115 m² housing electrical switchgear and associated equipment with a height of approximately 11 m;
  - SSENT's control and welfare building with an area of approximately 227 m² and a height of approximately 6 m;
- Statkraft's substation compound (approximately 6,224 m²) comprising;
  - Statkraft's 132 kV substation building with an area of approximately 1,210 m² housing an electrical transformer, electrical switchgear and associated equipment with a height of approximately 12 m;
  - Statkraft's smaller 33 kV switch-room, control and welfare building with an area of approximately 222 m² and a height of approximately 8 m;
  - A construction laydown area of approximately 2,000 m²;
- One temporary construction compound to service SSENT construction with an approximate area of 3,575 m² each;
- Drainage system including an attenuation pond and pipework;
- Associated on-site underground cabling which will run to the Site boundary;
- Mains water connection;
- Wastewater facility (to serve the site welfare provisions);

- Hard surfacing for access tracks, internal service roads, car parking and areas under electrical equipment;
- Site security fencing and gates approximately 2.4 m in height; and
- CCTV and internal motion sensor floodlights mounted on posts measuring approximately 3 m in height.

6.2.2 At this stage, the detailed design of the Proposed Development has not been fully completed. The precise layout and specific technology selection will be refined and determined by the appointed contractor.

6.2.3 An indicative layout of the substation compound and elevations of the buildings are shown in **Figure 6, 7 and 8.**

Construction and Operational Access

6.2.4 The Proposed Development will be accessed from the two consented Mossy Hill Windfarm access junctions, one off the A970 and one off Ladies Drive in the north eastern corner of the Site, and an additional new access junction off Ladies Drive to service the Statkraft substation in the south-east of the Site (all shown on **Figure 4**). The Applicant has been in discussions with SIC roads department to secure a speed limit reduction to this stretch of road on Ladies Drive. This is expected to be secured via a separate agreement or an appropriately worded planning condition.

6.3 Site Selection and Design Iteration

6.3.1 The Site was identified as the appropriate location for the Proposed Development due to a number of environmental and technical considerations. Proximity to the new Kergord to Gremista 132 kV cables was a key factor. As the consented Mossy Hill Wind Farm will connect directly into one of the two new cables which are being installed through the northern part of the Site, and will serve consumer supplies in Shetland, the Proposed Development must be located close to one of these cables and also consider cable routing and bend radius for the connection into the substation. Additionally, one of the smaller consented substations (which the Proposed Development would replace) would have been within the Site boundary, and maintaining proximity to the consented Mossy Hill wind farm's proposed substation was an important objective.

6.3.2 Within the Site boundary, several alternative locations were evaluated before selecting the current position for the substation. The environmental considerations that informed the siting of the substation included:

- Landscape and visual impact;
- Ecology and biodiversity;
- Geology, peat, hydrology and hydrogeology; and
- Transport and access.

6.3.3 The location and layout of the Proposed Development has been carefully selected to safeguard critical infrastructure, minimise visual impacts, and avoid or mitigate environmental impacts as much as possible. The on-site environmental constraints are illustrated in **Figure 5a-c**. The chosen location was selected for the following reasons:

- Avoiding areas of deep and higher quality peat which are mostly along the northern boundary of the site (**Figure 5a**).
- Avoiding Ground Water Dependent Terrestrial Ecosystems (GWDTEs) (**Figure 5c**).
- Avoiding a historic landfill site within the Site boundary (**Figures 5c**).
- Minimising impacts on Blanket Bog habitats (**Figure 5b**).
- Backdropping the substation compound into the hillside to prevent it being visually prominent in the skyline.
- Minimising visibility from residential properties in and around Lerwick.
- Aligning the substation location with existing industrial developments, such as the quarry and the Staneyhill Industrial Estate.
- Ensuring proximity to the consented wind farm access junctions to facilitate efficient construction and operational access to the substation.

6.3.4 Further details on the design iteration process and the consideration of alternative locations are provided in the Design and Access Statement (DAS), which accompanies this planning application. The final design iteration, included in this planning application, is illustrated in **Figure 4** and detailed above.

6.4 Construction

6.4.1 It is estimated that the Proposed Development will be constructed over a period of approximately 42 months, commencing before and overlapping with the wind farm construction programme. The main Proposed Development platform construction is anticipated to commence in Q3 2025 with the platform prepared for handover to SSENT in the summer of 2026.

6.4.2 A detailed construction programme will be developed as part of the detailed design phase and would be provided to SIC within a Construction Environmental Management Plan (CEMP) for approval prior to commencement of construction. An outline CEMP is provided in **Appendix 2**, however one overarching CEMP would be produced for the wind farm and substation construction and would be expected to form a planning condition.

6.4.3 Normal construction hours are expected to be between 07:00 and 19:00 Monday to Friday and 09:00 and 13:00 on Saturdays. These times have been chosen to minimise disturbance to local residents. It must, however, be noted that out of necessity due to weather conditions or health and safety requirements, some generally quiet activities may occur outside the specified hours stated.

6.4.4 The construction access would be via the three site access junctions shown on **Figure 4**.

6.5 Operation and Maintenance

6.5.1 The lifetime of the Proposed Development is envisaged to be 40 years from the final commissioning to commencement of decommissioning.

6.5.2 Once the wind farm and substation is fully operational, expected by the end of 2028, the site will be unmanned but visits will be made for routine and unscheduled maintenance. This will be by Statkraft, NESO and their appointed subcontractors involved in the operation of the substation (and in the case of Statkraft, the adjacent wind farm development).

6.6 Decommissioning

6.6.1 At the end of the Proposed Development's operational lifetime of 40 years, it will be decommissioned, unless further consent is sought to extend the operational lifetime. Decommissioning is a relatively straightforward process and similar to the construction process, with the majority of structures and equipment able to be disassembled and removed in a straightforward manner. In brief, the substation would be dismantled and removed via the same access as will be used for construction.

6.6.2 Prior to decommissioning, a Restoration and Decommissioning Plan (RDP) will be produced to reflect the current legislation and policy at that point in time and will be agreed with the relevant statutory authorities.

6.7 Environmental Management

Construction Environmental Management Plan (CEMP)

6.7.1 A CEMP will be produced as part of the construction contract. The CEMP will set out the appropriate measures to reduce and control the potential environmental impacts associated with the construction phase of the Proposed Development. An Outline CEMP is included in **Appendix 2**.

6.7.2 The CEMP shall be developed in accordance with good practice guidance. It shall describe how the Applicant will ensure suitable management of the following environmental issues during construction of the Proposed Development:

- waste;
- water quality;
- dust and noise;
- surface water drainage and groundwater;
- ecology (including protection of habitats and species);
- peat management plan;
- agriculture (including protection of livestock and land);
- archaeological protection;
- pollution incidence response (for both land and water); and

- site operations (including maintenance of the construction compounds, working hours and safety of the public).

Pre-Construction Surveys

6.7.3 Pre-construction surveys will be undertaken to validate the ecological and ornithological baseline and to perform detailed topographical surveys. Further details of these are provided in the relevant technical assessments appended to this SEIR.

6.7.4 The Applicant will engage an Ecological Clerk of Works (ECoW) onsite during the construction phase. The ECoW will be responsible for pre-construction surveys and will monitor the construction process, providing advice and support to the Contractor on the implementation of the CEMP.

Sustainable Drainage System (SuDS)

6.7.5 A Surface Water Drainage Strategy will be developed which will include hydrological and hydraulic modelling to develop a SuDS to appropriately drain the Site and ensure post development runoff rates do not exceed the pre-development scenario. All necessary mitigation measures would be included in the scheme design e.g. drainage/ SuDS scheme, and any residual potential impacts would likely be sufficiently managed through secondary and tertiary mitigation measures prior to, and during, construction and operation of the Proposed Development.

7. Consultation

7.1 Introduction

7.1.1 Consultation with relevant regulators and stakeholders was undertaken throughout the design and pre-planning process. The sections below summarise the consultation feedback and how it has been taken into account. Additional information on the Pre-Application Consultation (PAC) is detailed in the PAC Report provided with this planning application.

7.2 Shetland Islands Council

7.2.1 Following submission of the EIA Screening Request, SIC provided its Screening Opinion in letter dated 6th June 2024. It concluded that an EIA is not required but that the Applicant should include sufficient information with the planning application to allow the Council to understand the Proposed Development's likely environmental effects and the mitigation measures being proposed to address those effects.

7.2.2 The Applicant has been continuously engaging with SIC since acquisition of the Mossy Hill project and is committed to frequent updates with SIC throughout determination, construction and operation.

7.3 Public Engagement

7.3.1 The Applicant has engaged in the following public consultation events:

- 8th May 2024 at Islesburgh Community Centre, Lerwick;
- 9th May 2024 at Scalloway Public Hall, Scalloway.
- 6th November 2024 at Sound Public Hall, Lerwick; and
- 7th November 2024 at Scalloway Public Hall, Scalloway.

7.3.2 The public consultation events allowed people living near the Site and wider stakeholders to drop in and learn more about, as well as comment on, the Proposed Development. The exhibitions were also held so that the Applicant could engage with the local community to understand any concerns and take onboard any feedback.

7.4 Key Stakeholders

7.4.1 The Project Team has engaged with the following key stakeholders prior to submitting the planning application and feedback has been taken onboard:

- SIC Planning Department;
- SIC Roads Department;
- SIC Natural Heritage Team;
- Shetland Amenity Trust (SAT);
- Lerwick Community Council;

- Scalloway Community Council;
- Tingwall, Whiteness and Weisdale Community Council;
- Historic Environment Scotland (HES);
- NatureScot; and
- Scottish Environment Protection Agency (SEPA).

8. Landscape and Visual

8.1 Introduction

8.1.1 This section considers the potential for landscape and visual effects as a result of the Proposed Development. The full Landscape and Visual Appraisal (LVA), with accompanying figures and visualisations, can be found in **Appendix 3**. The key findings are summarised below.

8.2 Study Area

8.2.1 The Study Area comprises a 5 km radius around the Proposed Development and is presented in **Figure 9**. The Study Area extent has been determined through a combination of analysis of a Zone of Theoretical Visibility (ZTV), as presented in **Figure 9**, and through professional judgement based on experience from previous appraisals.

8.2.2 The 5 km radius Study Area captures most areas that fall within the ZTV of the Proposed Development. Outside of this Study Area, whilst visibility is theoretically possible, the level of visual effect will diminish with distance and is unlikely to be considered material to the decision maker.

8.3 Baseline

8.3.1 The Site is located on the outskirts of Lerwick, approximately 600 m north-west of the western extent of Lerwick. The Site comprises a parcel of sloping moorland. The Site is located across a steeply undulating landform with a high point of approximately 140 m AOD in the southern extent of the Site which then falls to approximately 95 m AOD on the northern site boundary.

8.3.2 The Site is devoid of tree cover and is bound by post and wire fencing, therefore giving it an exposed, open character that is influenced by the adjacent A970 to the north and Ladies Drive to the east. A quarry also cuts into the adjacent side of the slope to the south of the Site.

8.3.3 Notable features of the wider landscape include several industrial sites along Ladies Drive which include a recycling centre, brewery and a larger estate with a variety of warehouses and supply stores. There is one residential property within 1 km of the Proposed Development and two residential estates located either side of Cunningham Way, approximately 1.1 km to the south-east of the Site. Shetland Golf Club is also located further west along the A970, 830 m from the Site. Individual wind turbines are also evident within the study area.

8.4 Landscape Mitigation

8.4.1 Landscape and visual mitigation is embedded in the design to minimise both the short and long-term landscape and visual effects. Mitigation focuses on the design of the Proposed Development which would mainly comprise a set of buildings with an agricultural appearance, set into the adjacent hillside and painted a muted green. The Proposed Development would be set away from any notable vegetation cover, such as trees, and benefits from visual containment by the surrounding landform, particularly to the south and west.

8.5 Appraisal of Effects

Landscape Character Effects

8.5.1 The Proposed Development would introduce an electrical substation development into the Site, mainly comprising a set of buildings with a functional appearance. No mature vegetation would be removed to facilitate construction, such as trees, albeit there would be loss of grass and heather which covers the Site at present. The main change to the landscape fabric of the Site would be landform alterations to create a level pad for the development.

8.5.2 Table 8.1 summaries the landscape character effects on the Landscape Character Types (LCTs) within the 5 km study area.

Table 8.1 Summary of Effects on Landscape Character Types (LCTs)

LCT	Sensitivity	Magnitude of Change	Level of Effect
LCT 349: Major Uplands	Medium	Small	Minor Adverse
LCT 354: Farmed and Settled Voes and Sounds	Low-Medium	Small	Minor Adverse

Visual Effects

8.5.3 A detailed visual appraisal was undertaken for eight representative viewpoints identified within the ZTV and agreed with SIC, as shown in **Figure 9**. **Table 8.1** summarises the visual effects on the represented viewpoints. Baseline views from each representative viewpoints are provided in **Appendix 3** and a photomontage has been prepared for Viewpoint 7 and 8, as agreed with SIC.

Table 8.1 Summary of Effects on Representative Viewpoints

Viewpoint	Sensitivity	Magnitude of Change	Level of Effect
Viewpoint 1 – A970 (West)	Low	Negligible	Negligible
Viewpoint 2 – Ladies Drive	Low	Medium-Large	Moderate Adverse
Viewpoint 3 – Shetland Golf Club	Low-Medium	Negligible	Negligible
Viewpoint 4 – Cunningham Way	Medium	Negligible	Negligible
Viewpoint 5 – Gremista Road	Low	Negligible	Negligible
Viewpoint 6 – Heogan Road (Bressay)	Low-Medium	Small	Minor Adverse
Viewpoint 7 – A970 (East)	Low	Medium	Minor-Moderate Adverse
Viewpoint 8 – Stanley Hill Road	Medium	Negligible	Negligible

8.5.4 There would be some close-range views of the Proposed Development from the roads adjacent to the Site, experienced by car users. However, the overall visual envelope of the Proposed Development would be relatively limited, with only occasional, glimpsed views from more elevated locations, such as North and South Staney Hills, the very northern industrial part of Lerwick, and from the western extent of Bressay. The embedded mitigation within the Proposed Development design would enable the buildings to integrate within views and limit visual change.

8.6 Summary and Conclusion

8.6.1 Overall, despite some localised adverse effects due to the introduction of the Proposed Development, this would be a visually contained development which would give rise to a limited change to existing landscape character and visual amenity.

8.6.2 The full LVA report is presented in **Appendix 3**, including figures and visualisations.

9. Ecology and Ornithology

9.1 Introduction

9.1.1 ITPEnergised was appointed by the Applicant to undertake an Ecology Appraisal in relation to the Proposed Development. This section of the SEIR considers the likely effects on ecology and ornithology from the construction and operation of the Proposed Development. The Ecology Appraisal is provided in **Appendix 4** to the SEIR. An Outline Habitat Management Plan (OHMP) has also been prepared and is provided in **Appendix 5**.

9.2 Baseline

Nature Conservation Designations

9.2.1 The Site does not overlap, or intersect, any sites designated for nature conservation. Nature conservation designations within 2 km of the Proposed Development are shown on **Figure 2, Appendix 4**.

- East Mainland Coast, Shetland SPA (0.9 km north-east of the site): Designated for non-breeding polulations of great northern diver, slavonian grebe and breeding populations of red-throated driver.
- Clickimin Loch Local Nature Conservation Site (LNCS) (1.8 km south-east of the site): Conservation significance due to diversity of aquatic plants, presence of migrant wintering wildfowl, amenity woodland planting, and general biodiversity interest.

Habitats

9.2.2 The Site predominantly comprises moorland habitats, including blanket bog, acid flushes, and unimproved acid grasslands, alongside features like improved grasslands and heathlands. These habitats are of local to regional scale importance, with blanket bog being of the highest conservation priority due to its ecological significance and sensitivity.

Invasive Plant Species

9.2.3 No invasive plant species were recorded during the Site survey and so are likely absent and will not be considered further in this report.

Ground Water Dependent Terrestrial Ecosystems (GWDTEs)

9.2.4 GWDTEs were fully assessed as part of the consented Mossy Hill Wind Farm EIA and so areas considered to have "true" potential groundwater dependency have been avoided as part of the design mitigation process for the Proposed Development. Therefore, no impact on GWDTEs is expected.

Protected Species

Bird Species

9.2.5 Consultation with NatureScot confirmed there was no requirement for an update to the breeding bird survey results from the original wind farm application. The results of the surveys did not identify any target species breeding within the Site. The habitats within the Site are typical for Shetland and may be suitable for breeding waders such as curlew and snipe or seabird species such as great skua. The proximity of the Site to the busy main road is likely the reason none were recorded in this location. Given the lack of target species the Site is likely utilised only by a small number of common and widespread Shetland species such as skylark and meadow pipit.

Otter

9.2.6 The North Burn of Gremista and Burn of Frakkafield were surveyed. Only the headwaters of both burns were present adjacent to the Site and both burns were narrow (0.1 - 0.3 m) and shallow in depth (0.05 - 0.1 m). No evidence of otter was found within either. The habitats within the Site do not provide suitable habitat for holts or other otter resting places though otters are mobile animals and highly seasonal in their use of certain areas. They may pass through the Site whilst foraging or commuting between the North Burn of Gremista and Burn of Frakkafield.

Mountain Hare

9.2.7 Evidence of mountain hare and resting sites were located within 2 km of the Site boundary. The upland grasslands, blanket bogs and heather-dominated moorland habitats support mountain hares as their diet is largely comprised of heather, grasses, rushes and sedges. Mountain hares use resting features (forms, heather seats, peat scrapes, burrows, snow seats and snow scrapes) on an occasional and unpredictable basis. There was sufficient evidence of mountain hares present within proximity to the Site to indicate individual mountain hares may pass through the Site.

9.3 Assessment

Habitat Loss

9.3.1 Of the habitats found within the study area two are anticipated to experience direct and indirect habitat loss as a result of the Proposed Development;

- Approximately 2.29 ha of blanket bog will be impacted by the Proposed Development construction. Given the importance of blanket bog this is considered a significant ecological impact and mitigation is proposed.
- Approximately 2.3 ha acid grassland will be impacted by the Proposed Development construction. This is considered low and not significant ecological impact due to the habitats local value.

Mitigation, Compensation and Enhancement

9.3.2 Measures are required to mitigate the predicted significant effect to blanket bog habitats as a result of the Proposed Development. An Outline Habitat Management Plan (OHMP) has been prepared in support of this Application (Appendix 5) and provides details on the proposed measures which will be delivered as part of the Proposed Development. The OHMP commits to the provision of 25 ha of blanket bog restoration which is sufficient to provide mitigation and enhancement of the loss of 2.29 ha of blanket bog. Further information is provided in the OHMP (Appendix 5) and Section 8 of the Ecological Appraisal (Appendix 4).

Birds

9.3.3 The Site has limited breeding bird activity, but ground-nesting species such as skylark and meadow pipit may utilise small areas affected by the Proposed Development. Alternative habitats in the surrounding area are abundant, so it is likely these birds will relocate during and after construction. However, works carried out during the breeding season (March to August) could disturb active nests and lead to habitat loss.

Mitigation

9.3.4 It is recommended that any vegetation clearance works are undertaken outside the nesting bird season (March to August, inclusive). If works including site preparation/vegetation clearance are scheduled to take place within the breeding bird season, then a nesting bird check within 48 hours of works commencing should be completed by a suitably qualified ecologist. If an active nest is identified then the appropriate protection zone must be installed, within which there can be no works until the nest has fledged. The OHMP includes peatland restoration measures which will improve habitats for species such as skylark and meadow pipit but potentially for ground nesting waders like curlew and snipe.

Otter

9.3.5 The Site contains habitats that could support otters, primarily for commuting to and from nearby waterbodies and watercourses. As it is considered impacts on otter are unlikely, no significant adverse effects are predicted. Given there is however a very small possibility that work may lead to harm/injury to individual otters, in order to ensure this doesn't occur, mitigation during construction is proposed.

Mitigation

9.3.6 To safeguard otters during the construction phase, steep sided excavations over 0.5 m deep must have ramps or a means of escape installed and pipework (over 150 mm diameter) must be capped off or blocked if they are to be left overnight. As a precaution, it is recommended that a pre-commencement check for otter evidence and holts/resting sites be made on the Site and 250 m buffer, where possible.

Mountain Hare

9.3.7 The Site contains habitats that could support mountain hares, and records indicate they are present locally. As it is considered impacts on mountain hare are unlikely, no significant adverse effects are predicted. Given there is however a very small possibility that work may lead to harm/injury to individual mountain hares, in order to ensure this doesn't occur, mitigation during construction is proposed.

Mitigation

9.3.8 To safeguard mountain hares during the construction phase, steep sided excavations over 0.5 m deep must have ramps or a means of escape installed and pipework (over 150 mm diameter) must be capped off or blocked if they are to be left overnight. As a precaution, it is recommended that a pre-commencement check for mountain hares should be made ahead of works.

9.4 Compensation and Biodiversity Enhancement

9.4.1 In line with NPF4's focus on biodiversity enhancement there is potential to provide ecological enhancement as part of the Proposed Development. An OHMP (**Appendix 5**) is provided to support this planning application. This includes measures to deliver biodiversity enhancements (in addition to that of the assessed compensatory areas required due to loss of blanket bog habitat) and enhancement of acidic grassland.

9.4.2 It is intended that the final HMP, which will be delivered post-consent, will bring together the aims and objectives of both the consented Mossy Hill Wind Farm OHMP and the Proposed Development OHMP to be detailed within one stand-alone document with the intention that they will be delivered together. This will ensure the methods used will complement the aims of both OHMPs, will provide efficiencies and altogether will align the biodiversity benefits.

9.5 Residual Effects

9.5.1 With the implementation of the above mitigation measures and restoration and enhancement measures, for all ecological receptors, no residual effects are anticipated to designated sites, habitats or species.

9.6 Conclusion

9.6.1 Before mitigation the Proposed Development is predicted to result in significant adverse effects on blanket bog habitats. Additionally, there is a small possibility of injury to individual protected species during construction.

9.6.2 Based on successful implementation of the mitigation and enhancement measures outlined within the OCEMP and OHMP, no significant adverse effects are predicted, and the scheme is considered to adhere to all relevant nature conservation legislation, as well as national and local planning policy.

9.6.3 The mitigation and enhancement measures set out herein can be secured through appropriately worded planning conditions as part of any planning consents granted, appropriate control of detailed design and/or under legal obligation of wildlife protection law.

10. Peatland

10.1.1 ITPEnergised were commissioned on behalf of the Applicant to undertake a peat depth assessment at the Proposed Development Site. The assessment summarises the findings of the desk study and peat surveys and provides an assessment of the prevailing ground conditions at the Site and is provided in full as **Appendix 6**.

10.2 Baseline

10.2.1 Desk-based mapping indicates extensive peat deposits across the application boundary.

10.2.2 Peat depth surveys, conducted for the consented Mossy Hill Wind Farm (Planning Reference 2018/186/PPF), confirm the presence of peaty soils and peat of varying depths within the Proposed Development boundary. However, the survey's probing density was insufficient to fully assess the Site, and further assessment was required.

10.3 Survey Results

10.3.1 Two phases of peat depth surveys have been conducted to support the application of the Proposed Development, and to inform an iterative design process.

10.3.2 Deep peat (>1 m), exceeding 5 m in places, is concentrated in the western and northern site areas, while the southern and eastern areas contain thin and discontinuous peat (<1 m).

10.3.3 Although extensive peat deposits have been identified at the site, the Proposed Development infrastructure avoids the thickest areas of peat, so far as possible, with the substation footprint generally located on shallow peat (<1 m) and peaty soils (<0.5 m).

10.3.4 The access track crosses deep peat but utilises the existing consented junction for Mossy Hill Wind Farm. The substation platform avoids deep peat, with 98% of probes showing depths <1 m and an average depth of 0.47 m. The temporary construction compound, located on highly modified peatland with historical cutting and erosion, averages 1.04 m in depth, with 50% of probes measuring <1 m.

10.3.5 A detailed peat condition assessment was undertaken as part of the EcIA (see **Appendix 5**) and confirms peat onsite is in poor condition, being extensively modified by historical peat cuttings and characterised by erosion features such as peat hags and exposed bare peat.

10.4 Conclusion

10.4.1 In conclusion, while extensive peat deposits are present across the Site, multiple phases of surveys have confirmed that the Proposed Development infrastructure has been designed to largely avoid areas of deep peat. The substation footprint is primarily located on shallow peat and peaty soils, minimising impacts. Additionally, the Site's peat is in poor condition due to historical modifications and erosion, further reducing its ecological sensitivity. The iterative design process has successfully integrated survey findings to mitigate peat-related impacts.

10.4.2 A Peat Management Plan (PMP) will be produced in line with the planning conditions of the consented wind farm, this PMP will take into account any peat to be excavated and handled to facilitate the Proposed Development construction.

11. Flood Risk and Drainage

11.1 Introduction

11.1.1 Gondolin Land and Water Ltd (Gondolin) was commissioned on behalf of the Applicant to undertake a Flood Risk and Drainage Assessment (FRDA) of the Proposed Development. The full FRDA is provided in **Appendix 7**. The FRDA also provides the relevant design information for the proposed Site surface water drainage / SuDS scheme.

11.2 Summary of Flood Risk and Drainage

11.2.1 In accordance with national planning policy and guidance, all potential sources of flooding to the Site were considered. The Flood Risk Screening confirms that the Site is overall of 'Low Risk' or lower from all sources of flooding.

11.2.2 This report assesses the potential increase in surface water runoff attributed to the Proposed Development and proposes a surface water management strategy to manage this. The strategy is in accordance with sustainable drainage principles and allows the Site to remain free of flooding during

design storm events, whilst ensuring no increase of flood risk to offsite receptors and ensures no deterioration of the water environment.

11.2.3 The proposed drainage / SuDS scheme for the Proposed Development will comprise the management of surface water runoff from the substation development platform and intercepted surface water catchments upgradient of these Proposed Development areas through the implementation of filter drains, cut off ditches and a SuDS attenuation Basin as shown in **Figure 4**.

11.2.4 Taking all of the above into account it is considered there is no impediment to the Proposed Development proposals being granted planning permission on the grounds of flood risk and drainage provision.

12. Cultural Heritage

12.1 Introduction

12.1.1 AOC Archaeology Group was commissioned on behalf of the Applicant to undertake a Cultural Heritage Desk-Based Assessment of the Proposed Development. This assessment report is included in **Appendix 8.**

12.2 Summary of Cultural Heritage Assessment

12.2.1 The assessment has identified three non-designated heritage assets within the Site. These include the former extent of a Royal Observation Corps Observation Post which was demolished between 2000 and 2004 when the adjacent quarry extended over the assets location; a quarry recorded during a walkover survey for the consented Mossy Hill Wind Farm (Planning Reference 2018/186/PPF); and a negative feature identified from LiDAR imagery which may be the location of another quarry. The importance of these non-designated heritage assets has been judged to be Negligible.

12.2.2 Cartographic and bibliographic sources indicate that the Site is located on moorland which, lying between settlements, has been unenclosed for some time. A parish boundary and a trackway have been depicted within the Site, and the A970 and Ladies Drive have been depicted since at least the late 19th century to the north and east of the Site respectively. A walkover survey was undertaken in 2017 and a review of aerial photography identified peat cutting in the vicinity of the Site. This assessment has judged there to be a Low potential for archaeological remains to survive within the Site. It is acknowledged that archaeological remains may survive in areas of deeper peat, in the north-western corner of the Site which has been avoided by the Proposed Development.

12.2.3 Peat has been identified underlying the Site and indeed there is evidence of peat extraction within the vicinity of the Site. A peat core survey identified peat depths between 0 m and 5.5 m within the Site, with the deepest peat recorded within the north and central areas of the Site. Where deeper peat deposits have been identified there is considered to be the potential for paleoenvironmental remains to survive. Peat can also obscure buried archaeological remains.

12.2.4 Conditions 26 and 27 of the consented planning application for Mossy Hill Wind Farm required a programme of archaeological works and the appointment of an Archaeological Clerk of Works (ACoW). In line with these conditions, and in cognisance of the Site within the redline boundary for the consented wind warm, a programme of archaeological investigation works will likely be required prior to construction.

12.2.5 The Proposed Development has been designed to avoid areas of deep peat where possible, however the proposed access track crosses an area of deep peat. Should extensive groundworks be required to facilitate construction of the track a paleoenvironmental sampling strategy may be required to identify and characterise any paleoenvironmental remains which may survive within the deeper peat deposits.

12.2.6 The potential for impacts on the settings of designated heritage assets within the 5 km study area and within the ZTV have been assessed as part of this assessment. Three designated heritage assets were identified within the ZTV; the Scheduled Hill of Cruester, standing stone 570 m north-east of Hiltoun (Asset 19); the Category B Listed Heogan, former fishing station, including house, stores, barrel store, wall and pier (Asset 54); and the Inventory GDL at Gardie House (centred Asset 64). The Proposed Development is anticipated to have a Negligible impact on the setting of the Scheduled Hill of Cruester, standing stone (Asset 19) and Neutral impact on the Category B Listed Building (Asset 54) and Gardie House GDL (Asset 64). No mitigation regarding the setting of the designated heritage assets is proposed beyond that embedded within the Proposed Development design.

13. Transport and Access

13.1 Introduction

13.1.1 This section provides information on the Proposed Development in relation to construction and operational traffic, assesses the anticipated impact of the Proposed Development on the road network within the local area and sets out the proposed mitigation measures for use at the Site.

13.1.2 A combined Transport Statement and Construction Traffic Management Plan (CTMP) has been prepared by Pell Frischmann which is included in **Appendix 9**. Key findings are summarised below.

13.2 Summary of Traffic and Transport

13.2.1 A review of the type and volume of vehicles associated with the construction programme has been provided and the peak of construction activities identified. This peak in traffic has been used to review the likely impact that traffic generated by construction activities would have.

13.2.2 Peak construction activity is predicted to occur during summer 2026, with approximately 100 vehicle movements per day. This includes six two-way heavy goods vehicles (HGV) trips and 94 car/light goods vehicle (LGV) trips by construction staff. Additional traffic on Ladies Drive between the quarry and site access points was also noted when assessing a worst-case scenario. It is proposed to build a link track direct from the Staney Hill quarry to the Site and this will be the preferred route for some construction materials if they are supplied from the quarry thereby reducing the number of vehicles using Ladies Drive.

13.2.3 Baseline data analysis from the Department for Transport confirmed that the impact on the A970 road network is negligible. A sensitivity review, incorporating the consented Mossy Hill Wind Farm, similarly found the combined construction traffic impact to be minimal and not significant.

13.2.4 Traffic management procedures have been proposed to ensure safe access during construction, with final details to be determined by the appointed Balance of Plant contractor and secured through planning conditions.

13.2.5 As the Proposed Development will not be permanently manned, operational traffic will involve minimal use of smaller vehicles, resulting in negligible impact on the wider road network.

14. Noise

14.1 Introduction

14.1.1 This section considers the potential noise impacts with operation of the Proposed Development. The section summarises an assessment of operational noise impacts, fully reported in **Appendix 10**.

14.2 Summary of Noise Assessment

14.2.1 The Noise Impact Assessment identified one representative closest dwelling noise sensitive receptor (NSR) within 1 km of the Proposed Development, namely:

- NRS1 – Self-catering residence located approximately 500 m east of the Site boundary.

14.2.2 The noise impact assessment comprised consultation with SIC, characterisation of the baseline noise environment, prediction of operational noise levels during both the daytime and night-time periods and evaluation against BS4142 criteria.

14.2.3 The predicted operational noise level from the substation is significantly below the "objectively low" threshold outlined in BS4142, with a margin of 13 decibels (dB). Consequently, the impact on the noise environment at NSR1 is considered low.

14.2.4 Given the development context, no adjustment to the level of impact is necessary. There would therefore be no adverse noise effects at the closest residential property.

15. Summary of Mitigation and Enhancement

15.1.1 This section contains a summary of the mitigation measures proposed to address any potential effects identified (**Table 1**). Enhancement measures proposed are also summarised. Individual technical assessments provided within the appendices to this SEIR should be referred to for full details of the potential effects, mitigation and enhancement measures.

Table 1: Summary of Mitigation and Enhancement Measures

Topic Area	Mitigation	Timing
Project Design and Construction		
Site Selection	Embedded (design) mitigation: The location and layout of the Proposed Development has been carefully selected to safeguard critical infrastructure, minimise visual impacts, and avoid or mitigate environmental impacts as much as possible. In addition, the location of the Proposed Development has been chosen to avoid any notable ridgelines or visually prominent sections of skyline. This provides a high degree of visual containment, meaning that potential views of the Proposed Development would be restricted to localised areas. The substation location has been strategically aligned with existing industrial developments, including the quarry and the Staneyhill Industrial Estate, to integrate with the surroundings. Additionally, its proximity to the consented wind farm access junctions supports efficient construction and operational access to the substation compounds. The Site is also located near the new Kergord to Gremista 132 kV cables and maintains close proximity to the consented Mossy Hill Wind Farm, further enhancing operational efficiency.	Pre-application (design)
Construction hours	Normal construction hours are expected to be between 07:00 and 19:00 Monday to Friday and 09:00 and 13:00 on Saturdays	Construction
Construction Environmental Management Plan (CEMP)	The Contractor responsible for undertaking the construction of the Proposed Development shall adhere to a CEMP. The CEMP will be drafted and agreed prior to commencement of construction and shall be amended and updated as required throughout the construction period. The CEMP shall be developed in accordance with good practice guidance. It shall describe how the Applicant will ensure suitable management of the following environmental issues during construction of the Proposed Development: • waste; • water quality; • dust and noise; • surface water drainage and groundwater; • ecology (including protection of habitats and species); • agriculture (including protection of livestock and land); • archaeological protection; • pollution incidence response (for both land and water); and • Site operations (including maintenance of the construction compounds, working hours, transport and access, and safety of the public).	Pre-construction
Landscape and Visual		
Siting and Design	Landscape and visual mitigation is embedded in the design to minimise both the short and long-term landscape and visual effects. Mitigation focuses on the design of the Proposed Development which would mainly comprise a set of buildings with an agricultural appearance, set into the adjacent hillside and painted a muted green. The Proposed Development would be set away from any notable vegetation cover, such as trees, and benefits from visual containment by the surrounding landform, particularly to the south and west.	

Ecology and Ornithology		
Siting and Design	The Proposed Development infrastructure has been sited to avoid impacts on GWDTEs and minimise impacts on Blanket Bog habitats.	
Breeding Birds	It is recommended that any vegetation clearance works are undertaken outside the nesting bird season (March to August, inclusive). If works including site preparation/vegetation clearance are scheduled to take place within the breeding bird season, then a nesting bird check within 48 hours of works commencing should be completed by a suitably qualified ecologist. If an active nest is identified then the appropriate protection zone must be installed, within which there can be no works until the nest has fledged.	
Otter and Mountain Hare	To safeguard otters and mountain hare during the construction phase, steep sided excavations over 0.5 m deep must have ramps or a means of escape installed and pipework (over 150 mm diameter) must be capped off or blocked if they are to be left overnight. As a precaution, it is recommended that a pre-commencement check for otter evidence and mountain hares be made on the Site and 250 m buffer, where possible.	
Habitat Mangement Plan (HMP)	The OHMP presents an area with potential for restoration and enhancement with degraded bog and grassland habitats that are to be put forward for peatland restoration works to account for the required areas to achieve adequate compensation and enhancement.	
Peatland		
Avoidance of Deep Peat	The Proposed Development infrastructure has been sited such that it avoids the thickest areas of peat, so far as possible, with the substation footprint generally located on shallow peat (<1 m) and peaty soils (<0.5 m).	Pre-construction
Flood Risk and Drainage		
Surface Water Drainage Strategy	A Drainage Strategy has been prepared which includes provision of sustainable drainage measures to manage surface water runoff from the development in terms of quantity and quality. The Drainage Strategy ensures no increase in flood risk to off-site receptors as well as meeting the water quality criteria set out in the Sustainable Drainage Systems (SuDS) Manual.	Construction, Operation
Cultural Heritage		
Archaeological Programme of Works	A programme of archaeological works in advance of development will be undertaken. This could take the form of a geophysical survey or trial trench evaluation, or a combination thereof. This would allow for a cursory evaluation to investigate the sub-surface deposits on the Site, and the results could inform further mitigation strategies. Depending on the results of the evaluation, further archaeological works such as archaeological monitoring and post-excavation works may be required.	Pre-construction, Construction
Transport and Access		
Construction Traffic Management Plan (CTMP)	Traffic management procedures and physical improvements works will be detailed in a proposed CTMP which would ensure the safe operation of the approach route to the Site during construction phase: • Contractual requirement in the BoP contract that contractors will only use the agreed access route; • Direction signage signposting traffic on the agreed access route; • Identification numbers of HGV and vans to allow easy recognition; • Providing the public with details of how to report use of unapproved routes or driving issues of concern; • Using GPS trackers to allow the monitoring of bulk delivery vehicle movements; • Setting out site staff disciplinary measures for those who ignore the agreed access route and enforcing these throughout the construction period; • All site vehicles will feature “white noise” reversing warning devices to reduce noise disruption when on site; • All materials delivery lorries (dry materials) will be sheeted to reduce dust and stop spillage on public roads; • Specific training and disciplinary measures will be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway; • Wheel cleaning facilities will be established at the site entrances. A road sweeper would also be provided at site to ensure that the road section in the vicinity of the access junctions are kept clean; and • Site induction for all staff instructing them on what route to site they can use to enter and exit the site and obtaining their acknowledgement that there is only one approved access route. The induction would include:	Construction

	○ A tool box talk safety briefing; ○ The need for appropriate care and speed control; ○ A briefing on driver speed reduction agreements (to slow site traffic at sensitive locations through Lerwick and other sensitive areas).	