Scottish & Southern Electricity Networks
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Corriegarth 2 Windfarm Grid Connection

Environmental Appraisal

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Scottish & Southern Electricity Networks

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LIST OF ABBREVIATIONS

BAP	Biodiversity Action Plan
BGS	British Geological Survey
CAR	Controlled Activity Regulation
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
ECoW	Ecological Clerk of Works
EnvCoW	Environmental Clerk of Works
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPS	European Protected Species
EIA Report	Environmental Impact Assessment Report
EZoI	Ecological Zone of Influence
FRA	Flood Risk Assessment
GDL	Gardens and Designed Landscapes
GIS	Geographic Information System
GVLIA 3	Guidelines for Landscape and Visual Impact Assessment 3rd Edition
GWDTE	Groundwater Dependent Terrestrial Ecosystems
HER	Historic Environment Record
HGV	Heavy Goods Vehicle
HES	Historic Environment Scotland
LCA	Landscape Character Assessment
LCT	Landscape Character Type
LNR	Local Nature Reserve
LVIA	Landscape and Visual Impact Assessment
NNR	National Nature Reserve
NPF3	National Planning Framework 3 (Scotland)
NVC	National Vegetation Classification
OHL	Overhead Line
PPG	Pollution Prevention Guidance
PWS	Private Water Supply
SAC	Special Areas of Conservation
SEC	Sealing End Compound
SEPA	Scottish Environment Protection Agency
SLA	Special Landscape Area
SM	Scheduled Monument
SNRHE	Scottish National Record of the Historic Environment
SPP	Scottish Planning Policy
SpPP	Species Protection Plan
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
WFD	Water Framework Directive

1. INTRODUCTION

1.1 Background

1.1.1 Scottish and Southern Electricity Networks Transmission (SSEN Transmission), operating under licence held by Scottish Hydro Electric Transmission plc, hereafter referred to as 'the Applicant', owns, operates and develops the high voltage electricity transmission system in the north of Scotland and remote islands. The Applicant holds a license under the Electricity Act 1989 to 'develop and maintain an efficient, co-ordinated and economical electricity transmission system in its licensed area'. The Applicant is a wholly owned subsidiary of the SSE PLC group of companies.

1.1.2 The proposed Corriegarth 2 Windfarm is located next to the operational Corriegarth Windfarm, on the Corriegarth Estate, Gorthleck approximately 15 km north-east of Fort Augustus and 10 km south-east of Foyers. The proposed Corriegarth 2 Windfarm will comprise 16 wind turbines, with a maximum tip height of approximately 150 m, windfarm tracks and electrical infrastructure. The Applicant is required to provide the Corriegarth 2 Windfarm with a 132 kilovolts (kV) connection to the National Grid.

1.1.3 To enable this connection a mixture of new 132kV overhead lines (OHL), approximately 70 m in length, and underground cables (UGC), approximately 900 m in length, is proposed ('the Proposed Development'). This connection will connect the Corriegarth 2 Windfarm, from the proposed Corriegarth 2 Windfarm Substation, to the existing 132kV transmission line from Corriegarth Windfarm Substation (see **Figure 1-1**). The Proposed Development is located between the proposed Corriegarth 2 Windfarm Substation and a Connection Point on the existing 132kV transmission line between Corriegarth Windfarm Substation and the wider transmission network.

1.1.4 The Applicant will progress the following project elements, shown on **Figure 1-2**, through the identified consenting routes:

- 70 m of 132kV OHL, with associated permanent access track (approximately 100 m in length), hereafter known as 'the Proposed OHL', under Section 37 of The Electricity Act 1989; and
- 900 m of 132kV UGC, hereafter known as 'the Proposed UGC', under the Town and Country Permitted Development (Scotland) Order 1992 (as amended) with further detail provided below.

1.1.5 The Applicant is applying for consent to the Scottish Government's Energy Consents Unit (ECU) for the construction and operation of the Proposed OHL. The Proposed OHL also includes ancillary works comprising of permanent access track. Deemed planning permission under Section 57 (2) of the Town and Country Planning (Scotland) Act 1997, as amended, is being sought for these ancillary works as part of the Section 37 (s37) application.

1.1.6 The Proposed UGC is considered by the Applicant to benefit from permitted development rights under Class 40 1(a) of The Town and Country Planning (General Permitted Development) (Scotland) Order 1992 (TCP GDPO). The Proposed UGC will require a temporary access track. The Highland Council have confirmed the temporary access track will require a temporary planning permission consent under the Town and Country Planning (Scotland) Act 1997 (as amended).

1.1.7 An Environmental Impact Assessment (EIA) Screening Opinion was sought for the Proposed OHL from the ECU in February 2022 (reference ECU00003427) under Regulation 8 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (hereafter referred to as the 'EIA Regulations'). The Screening Opinion confirmed that an EIA is not required to support the s37 application. The ECU acknowledged that the Proposed OHL falls within the definition of a Schedule 2 development under the EIA Regulations however, having screened it against the selection criteria outlined in Schedule 3, impacts on the receiving environment (whilst possible), were not considered to be significant.

1.1.8 The Applicant is voluntarily submitting this Environmental Appraisal (EA) which evaluates whether any specific environmental effects are likely to occur resulting from the development proposals and to support an application for consent under s37 of the Electricity Act 1989[1]. The EA and any mitigation recommended to avoid or minimise any associated environmental effects will inform a site-specific commitments register which will be appended to the Contractor's Construction Environmental Management Plan (CEMP).

1.1.9 This EA documents the Applicant's adherence to their obligations under Schedule 9 of the Electricity Act 1989 to develop and maintain an efficient, coordinated and economical electrical transmission system in its licensed area. Where there is a requirement to extend, upgrade or reinforce its transmission network, the Applicant's aim is to achieve an environmentally aware, technically feasible and economically viable solution which would cause the least disturbance to the environment and the people who use the area.

1.2 Site Location and Context

1.2.1 The Proposed Development is located south of the operational Corriegarth Windfarm Substation, on the Corriegarth Estate, Gorthleck, approximately 15 km north-east of Fort Augustus and 10 km south-east of Foyers (hereafter referred to as the 'Site'). The region defined by the 'Site' encompasses the extent of both temporary and permanent infrastructure. **Figure 1-1** and **Figure 1-2** illustrate the location of the Proposed Development.

1.2.2 The Proposed Development routes in a generally westerly direction from the proposed Corriegarth 2 Windfarm Substation for approximately 900 m before routeing north, for approximately 70 m, to connect with the existing 132kV transmission line from Corriegarth Windfarm Substation.

1.3 Environmental Context

1.3.1 **Figure 1-3** illustrates the environmental constraints within the area surrounding the Site, these are summarised below.

1.3.2 The key environmental constraints, within 5 km of the Proposed Development, are as follows:

- an area designated as Core Areas of Wild Land - Approximately 4 km south-east of the Site;
- an area of woodland on the Ancient Woodland Inventory (AWI) – approximately 500 m north-west of the Site;
- the River E, classified by the Scottish Environment Protection Agency (SEPA) under the Water Framework Directive (WFD) as having a 'Moderate' overall status in 2020 – approximately 200 m south of the Site; and
- Class 2 and Class 4 peat soil, Class 2 is peat soil with occasional peaty soil, and Class 4 is predominantly mineral soil with some peat soil – within the Site.

[1] UK Government (1989). '*Electricity Act 1989*'. Her Majesty's Stationary Office (HMSO).

2. PROPOSED DEVELOPMENT

2.1 Design Components

Overhead Line Connection

2.1.1 The Proposed OHL consists of a new 70 m 132 kV OHL, to connect the Proposed UGC to the existing 132kV transmission line from Corriegarth Windfarm Substation. Shown on **Figure 1-2**.

2.1.2 The Proposed OHL will include three low profile trident H poles. These wood poles would have a nominal height of approximately 11-17 m (including insulators and support). The span length would be approximately 30 m. The OHL would be composed of one cable sealing end structure, one intermediate suspension structure, and a tie in pole terminal structure.

2.1.3 The final designation of pole type is generally dependant on three main factors: altitude, weather and the topography of the proposed alignment. The size of poles and span lengths will also vary depending on these factors, with poles being closer together at high altitudes to withstand the effects of greater exposure to high winds, ice and other weather events. The pole configuration, height and the distance between poles will therefore only be fully determined after a detailed alignment survey and design.

2.1.4 The cable sealing end structure is used to connect the OHL to the UGC sections of the Proposed Development. The cable sealing end structure will comprise of a five pole trident terminal structure accommodating the sealing end equipment and downleads. Cables would emerge from below ground in a cable ladder and would be affixed to the structures to reach the sealing ends at the platform. The cables would be enclosed in protective boxing and anti-climb measures would be installed on the structures for safety reasons. The exact design of the sealing end structures will be confirmed by the Contractor.

2.1.5 **Plate 1.1** below provides an image of a typical low profile trident H pole; **Plate 1.2** provides an image of a similar t-off with a typical cable sealing end structure.

Plate 1.1 – Typical trident pole configuration

Plate 1.2 – Example t-off configuration and cable sealing end structure.

Underground Cable Connection

2.1.6 The Proposed UGC consists of approximately 900 m of UGC to connect the proposed Corriegarth 2 Windfarm substation to the Proposed OHL. The Proposed UGC will include a buried 132kV cable connection composing of three ducted single phases within a single trench which would be backfilled with thermally stable backfill material such as selected sands and gravels or cement bound sand.

2.1.7 To allow for flexibility in the final siting of the Proposed UGC and allow for potential cable micrositing the assessment has considered a micrositing distance of 30m, i.e., 15 m either side of the Proposed UGC alignment.

2.2 Limits of Deviation

2.2.1 In order to allow flexibility in the final siting of individual poles to reflect localised land, engineering and environmental constraints, a Limit of Deviation (LoD) is proposed. The LoD is the area to either side of the proposed OHL alignment within which micrositing may take place. No element of the Proposed OHL will be located outside the LoD described.

2.2.2 The LoD for the Proposed OHL and the assessment area for the Proposed UGC is illustrated on **Figure 2-1**. The LoD parameters for the Proposed OHL are 50 m (i.e. 25 m to either side of the Proposed OHL alignment) for micrositing of poles.

2.2.3 The proposed LoD, seeks to balance the need for flexibility in micrositing with the desirability of minimising the potential for environmental effect.

2.2.4 Certain associated works will also be required including works associated with establishing access for the construction and maintenance of the Proposed OHL. This will include vegetation clearance; upgrading of existing or establishment of new junction bell-mouths and access tracks; and road and other infrastructure (bridges, culverts etc.) alterations.

Access

2.2.5 The Proposed Development will be initially accessed by construction traffic from the B851 and B862 public roads to the north, connecting from the A9 to the east.

2.2.6 Vehicle access will be required to the Proposed Development, to allow excavation at each pole location and for UGC installation, via the Corriegarth Windfarm access track. Due to proximity of the existing track it is anticipated that the Proposed Development can be accessed directly off this track with no upgrade required to the existing access track entrance off the existing B862 public road. In addition, a temporary access track would be required to facilitate construction of the Proposed UGC; this will be reinstated once construction is complete. Detailed access proposals will be developed by the Contractor with a planning application for temporary planning permission to be submitted for this temporary access road.

2.2.7 In addition to the above, a new access track to facilitate installation, maintenance and operation of the Proposed OHL will be required. The access track would be a minimum of 5 m wide to allow for bidirectional transit of any vehicle types. The access tracks are presented in **Figure 1-2**.

2.2.8 Access tracks are currently assumed to be stone access tracks. Subject to gradients and ground conditions, preference will be given to lower impact access solutions including the use of low pressure tracked excavators and personnel vehicles, and/or temporary access panels (e.g. bogmats, Live Trakway, or Terrafirma Dura-Base) will be used for transport in sensitive habitats and soft ground areas to minimise any damage to, and compaction of, the ground. Journeys will be kept to a minimum to minimise disruption to habitats along the Proposed Development.

Construction Compound

2.2.9 A temporary compound(s) and laydown area(s) would be required to facilitate the construction of the Proposed Development. The locations of these compounds will be determined by the Contractor once they are appointed in conjunction with the Applicant's operation and maintenance team, the landowner and wind farm developer. Once these area(s) have been identified, the Contractor will consult with The Highland Council, and any other relevant statutory authority, to ascertain whether statutory permissions are required. Where statutory permissions are required, the necessary permissions necessary to operate these sites will be sought.

2.3 Construction Methodology

Proposed OHL

2.3.1 To facilitate this connection, the main construction elements of the Proposed OHL are as follows:

- establishment of suitable laydown areas for material and installation of temporary track solutions and welfare as necessary;
- upgrades to existing tracks and new tracks where required;
- delivery of structures and materials to Site;
- assembly and erection of low profile pole structures and stays;
- stringing of conductors using hauling ropes and winches;
- inspection and OHL commissioning; and
- removal of temporary works and site reinstatement (including reinstatement of any temporary access tracks).

2.3.2 Installation of the low profile trident H poles would involve the following tasks:

- Excavation of a suitable area for the poles, and backfilling after installation of the poles (backfilling would generally be carried out the same day as excavation so that no open excavations are left overnight). The exact area would depend on the ground conditions at each pole.
- In some pole locations, it may be necessary to add imported hardcore backfill around the pole foundations to provide additional stability in areas where the natural sub soils have poor compaction qualities.
- In some pole locations where shallow bedrock is present, it may be necessary to break or remove rock to accommodate pole foundations.
- In areas of soft ground and / or very deep peat where firm ground cannot be found 'bog shoes' may be added to the foundations to maximise stability of the structure by floating the structure with wider foundations.
- Conductors would be installed on the poles using full tension stringing to prevent the conductor coming into contact with the ground.
- Remedial works would be carried out to reinstate the immediate vicinity of the structure, and any ground disturbed, to pre-existing use. This would be undertaken using excavated material.

Proposed UGC excavations

2.3.3 A working corridor of approximately 30 m would be required during the installation of the Proposed UGC. The proposed cabling would likely comprise one electrical circuit in a single trench. The trench for the power cables would be approximately 2 m wide and 2 m in depth. In some instances, the trench could be made wider (through benching and battering) for stability and safety of the workforce. Depending on ground and site the cable trench could be reduced in width and depth.

2.3.4 The trench bottom would be uniform and be free from roots, organic debris, clods, rocks, stones, and other materials likely to cause damage to the cable duct.

2.3.5 Trench walls would be supported appropriately where necessary to ensure trench stability. Excavations would be kept free from water by use of mobile pumps, with water pumped to a suitable location as agreed on Site by the Environmental Clerk of Works (EnvCoW) and in accordance with the Applicant's General Environmental Management Plans (GEMPs) [2]. Drainage design measures to ensure the discharge would not result in pollution to surface water will be set out in the CEMP.

2.3.6 All excavated material would be carefully stored a minimum of 10 m away from and downslope of any adjacent watercourse with particular care taken to prevent any risk of runoff or windborne dry sediment being discharged into watercourses.

2.3.7 Engineered backfill would be placed around the cable ducts in appropriate layers to protect the cable from accidental damage, and to ensure the desired cable rating is achieved. A 75 mm minimum bedding layer of stabilised backfill would be laid in the trench to provide bedding for the ducts. Marker boards would then be placed on top of the engineered fill. Excavated material would then be placed on top of the marker board and compacted in place. The exception to the compaction would be peat in which the management will be undertaken in line with the Peat Management Plan (**see Appendix 8.1**).

2.3.8 Reinstatement of the surface layers would be completed by returning the remaining excavated material to the trench in layers, in reverse order with the existing vegetation placed on the trench where possible.

2.3.9 The cables may be required to cross other infrastructure or hazards such as existing access tracks. In these cases, the trench may require modification such as concrete reinforcement or waterproof geotextile wraps.

2.3.10 On the successful installation of the cables all temporary works would be removed and the land reinstated.

Material Use

2.3.11 The Applicant's overall aim for the construction process is to minimise the amount of import and export of material required to the practical minimum.

2.3.12 Wherever possible, the Applicant will seek opportunities to further minimise import and export of materials. Potential measures include reusing any waste arising from the construction into design; for example, topsoil will be utilised in restoring the Site.

Water Use and Drainage

2.3.13 The construction works will not require any new water abstractions from local sources. Construction foul water will be collected and removed from the Site for off-site disposal at a licenced premise.

2.3.14 Silt management measures / silt traps will be employed to prevent sedimentation of watercourses.

2.3.15 Drainage design measures to ensure the discharge will not result in pollution to surface water will be set out in the CEMP.

Employment

2.3.16 The Applicant considers it important to act as a responsible developer with regards to the communities which host the construction works. Employment of construction staff will be the

[2] Scottish & Southern Electricity Networks. (2020) General Environmental Management Plan (GEMP).

responsibility of the Contractor, but the Applicant encourages the Contractor to make use of suitable labour and resources from areas local to the location of the works.

Access and Transport

2.3.17 The construction will give rise to regular numbers of staff transport movements, with small work crews travelling to Site. It is anticipated that the Contractor will identify a single safe area within the contractors compound for parking away from the public highway.

2.3.18 A Construction Traffic Management Plan (CTMP) will be developed by the Contractor, which will be agreed with The Highland Council roads team and Transport Scotland in advance of construction.

2.3.19 Vehicle movements will be required to construct new access tracks; deliver the pole components, conductor materials and UGC components to Site; deliver and collect materials and construction plant from the main site compound and to individual pole locations. Detailed access proposals will be developed by the Contractor. Access arrangements would likely include the following:

- The public road, and existing access tracks would be used during construction wherever possible. Some minor improvements may be required to some of these tracks.
- Low ground pressure tracked excavators and personnel vehicles, and / or temporary access panels (e.g. bogmats, Live Trakway, or Terrafirma Dura-Base) would be used for transport in sensitive habitats and soft ground areas to minimise any damage to, and compaction of, the ground.
- Installation of temporary stone tracks may be required where ground conditions or terrain prevent the use of temporary access panels. These tracks would be constructed using a floating technique, where possible, to minimise damage to, and compaction of, the ground. The tracks would be removed and the ground reinstated upon completion of the works.

2.3.20 Deemed planning permission under section 57 (2) of the Town and Country Planning (Scotland) Act 1997, as amended, is being sought for permanent access tracks and access points as part of the section 37 consent application.

2.4 Construction Programme and Working Hours

2.4.1 It is anticipated that construction of the Proposed Development would take place over a period of approximately 12 months, following the granting of consents, although detailed programming of the works will be the responsibility of the Contractor in agreement with the Applicant. Construction is currently anticipated to start in June 2024 with completion in June 2025.

2.4.2 Construction working is anticipated to be during daytime periods only. Working hours would be between 07:00 to 19:00 Monday to Saturday and 08:00 to 18:00 on Sunday. Any requirement to work outside of the agreed working hours will only occur with prior agreement with The Highland Council. Throughout the construction period the Applicant shall maintain contact with the local community to ensure the Proposed Development will not unduly affect residents, their livelihoods, places of worship or local events.

2.5 Mitigation Measures

2.5.1 Mitigation measures are measures which reduce the potential adverse effects of the Proposed Development.

Embedded Mitigation

2.5.2 Embedded mitigation comprises both design features and construction good practice. These measures are assumed to be in place prior to impact assessment and effectively form part of the Proposed Development.

Design Mitigation

2.5.3 The design of the Proposed Development has specifically considered the potential impacts on sensitive receptors and features of the surrounding environment. The design process has sought to minimise the potential permanent effects of the Proposed Development on landscape, visual, and noise receptors. Access to the Site will also utilise windfarm access tracks thus reducing subsequent habitat loss and degradation.

Construction Good Practice

2.5.4 **Table 2-1** lists key construction good practice measures.

Table 2-1: Key Construction Good Practice Measures

Ref	Title	Description
GE1	Noise Management Plan	The Contractor will be required to produce and implement a Noise Management Plan for the construction phase. The plan will be taken forward by the Contractor for any post construction works of a similar nature that are associated with the Proposed Development e.g. maintenance. The plan will be agreed with the Highland Council. Compliance with the relevant EC Directives and UK Statutory Instruments that limit noise emissions of a variety of construction plant; and guidance set out in BS 5228-1:2009+A1:2014 which covers noise control on construction sites.
GE2	Site Water Management Plan	A Site Water Management Plan will be developed to manage potential risks to the water environment including silt mitigation and its locations, dewatering of excavations inclusive of pump locations, monitoring points, cut off drains, and SuDS (incl. compound). In addition, this plan will show how rivers downstream will be protected from sedimentation or pollution resulting from the project activities. The Site Water Management Plan will include a drawing of the Proposed Development, as well as any access tracks detailing all locations of water mitigation measures. All relevant activities will be undertaken in compliance with the Controlled Activities Regulations (CAR). The Applicant's GEMPs for 'Oil Storage and Refuelling', 'Soil Management', and 'Working with Concrete' will be adhered to.
GE3	Construction Traffic Management Plan	A CTMP will be developed by the Contractor, which will be agreed with Highland Council roads team in advance of construction.
GE4	Soil Management	Soil management will follow the general guidance set out in GEMP - 'Soil Management'. Additionally, reinstatement shall be completed as soon as practicably possible in order to prevent environmental disturbance.
GE5	Dust	Dust will be managed through implementation of standard control measures such as management of stock piles to supress dust and road cleaning in accordance with GEMP – 'Dust Management'.
GE6	Waste	Waste Management will be in accordance with Section 34 (Scotland) of the Environmental Protection Act 1990, GEMP – 'Waste Management' and the waste hierarchy.
GE7	Emergency	An Environmental Emergency Response Plan will be developed by the contractor to deal with, among other things, accidental spills / leaks. Appropriate oil spill kits will be located on Site and in key vehicles. Site staff will be trained in their use and provided with advice on action(s) to be taken and who should be informed in the event of a pollution incident. Emergency response teams and contractors, their locations and response times will be identified in the plan.
GE8	Welfare Facilities	On-site welfare facilities will be adequately designed and maintained to ensure all sewage is disposed of appropriately. This may take the form of an on-site septic tank with soak away, tankering and off-site disposal depending on agreement with SEPA; or discharge to foul sewer.

Ref	Title	Description
GE9	Adverse Weather	The proposed timing of works dictates that work will have to be undertaken during winter months, details will be provided of how the Site will be managed to address this. GEMP – 'Bad weather' will be adhered to.
GE10	Driver Induction	A driver induction will be undertaken to include a safety induction, speed control and the identification of specified access routes.
GE11	Car Sharing	Adoption of car sharing where possible to reduce the number of vehicles arriving and departing from the Site.
GE12	Local Residents	Local residents will be kept informed of any potentially disruptive activities and actions being taken to mitigate the impact of these activities.
GE13	Road Condition	The Contractor may be required to undertake road condition surveys throughout the construction works and carry out any remedial road works (as considered appropriate) resulting from the construction traffic. This is yet to be discussed with the Highland Council. In such a case there will need to be an agreement between the Applicant and the wind farm developer regarding what extent of remedial works (if any) to roads coming into the site will fall within the wind farm developer's responsibility and what will fall within the Applicant's responsibility."
GE14	Weight Restrictions	The Applicant will ensure that Heavy Goods Vehicles (HGV's) adhere to weight restrictions on roads in the area.
GE15	Excavation Cover	No excavations will be left open overnight, unless a ramp with a 45 degree angle is included to allow animals to escape should they fall in. All excavations will be backfilled immediately where possible.
GE16	Validity of Baseline Conditions	Where construction has not commenced within 12 months and conditions for species may have changed, surveys will be repeated in order to provide the most accurate and up to date recommendations for the Site.

2.6 Construction Environmental Management Plan

2.6.1 A CEMP will be produced by the Contractor and implemented during construction of the Proposed Development. The CEMP will set out how the Contractor will manage the Site in accordance with all commitments and mitigation detailed in the EA, statutory consents and authorisations, industry best practise and guidance.

2.6.2 The CEMP will also reference the Applicant's GEMPs (**Appendix 2.1**) and Species Protection Plans (SpPPs) (**Appendix 2.2**). The implementation of the CEMP will be managed on-site by a suitably qualified and experienced Environmental Clerk of Works (EnvCoW), with support from other environmental professionals as required.

2.6.3 A contractual management requirement of the Contractor will be the development and implementation of a CEMP. The CEMP will be submitted in advance of commencement of construction activities to SEPA and The Highland Council for approval.

2.6.4 The Proposed Development will be designed and constructed in line with sustainability principles including Biodiversity Net Gain (BNG) and those that align with the current SSE Sustainability Policy[3]. Wherever practicable, the resources required to construct the Proposed Development will be locally sourced.

2.7 Additional Mitigation and Enhancements

2.7.1 Where necessary, the appraisal in Chapters 5-8 states additional mitigation measures which will be taken forward by the Applicant in order to minimise potential effects. These measures are included in the individual chapters and a full table of mitigation measures is included in Chapter 9: Summary of Mitigation Measures.

[3] Available online at: https://www.sse.com/media/ilrhb2wr/po-grp-016-group-sustainability-policy.pdf

Enhancements – Biodiversity Net Gain (BNG)

2.7.2 The Applicant is committed to protecting and enhancing the environment by minimising the potential impacts from construction and operational activities. As part of this approach, the Applicant set out a biodiversity ambition within the 2018 Sustainability Strategy to 'Positively contribute to the United Nations and Scottish Government Biodiversity strategies by achieving an overall 'No Net Loss' on new infrastructure projects gaining consent in 2020 onwards and achieving Net Gain on projects gaining consent in 2025 onwards'.

2.7.3 The Applicant has previously applied BNG assessments to new developments to enable a full understanding of biodiversity impacts. This has resulted in reduced biodiversity loss and increased biodiversity enhancement, including the creation of habitat to support the Great Yellow Bumblebee, one of the UK's rarest bumblebee species.

2.7.4 In line with this approach, the Applicant has undertaken a BNG assessment (**Appendix 2.3**) for the Proposed Development. This entails quantification of the pre- and post-development biodiversity across the Site to determine the actions necessary to work towards a net gain biodiversity target.

2.7.5 Within the Site, habitat improvement measures have been recommended for regions under the Applicant's ownership which will aim to increase the value of the habitats.

2.8 Operation and Maintenance

Life of the Proposed Development

2.8.1 The Proposed Development will be designed to industry standards. Consent for the Proposed OHL and permanent access track is sought for in perpetuity.

Staff

2.8.2 The Site is not proposed to be manned. Staff attendance on-site will be on an ad hoc basis for maintenance and fault repair purposes only.

Maintenance Programme

2.8.3 The Applicant will have ownership of, and responsibility for, maintenance activities for all elements of the Proposed Development. Appropriate maintenance works will be carried out routinely and as soon as practicable following any unexpected events on-site.

2.8.4 Once snagging is complete, in order to maintain the infrastructure there will be infrequent inspections on foot at approximate five year intervals after a snagging period and immediate post construction inspections. These inspections would involve a single vehicle accessing the area and would be non-intrusive.

Decommissioning

2.8.5 Should the Proposed Development be decommissioned the Site will be restored.

3. PLANNING CONTEXT

3.1 Section 37 Consent

3.1.1 Consent for the construction of the low profile trident H pole overhead line will be sought by way of an application to ECU under s37 of the Electricity Act 1989.

3.1.2 High voltage electricity transmission network of or in excess of 132 kilovolts is listed as a National Development under the National Planning Framework 3[4].

Screening Opinion

3.1.3 As stated in Chapter 1, a Screening Opinion was sought from ECU in February 2022 (Reference ECU00003427). The Opinion confirmed that an Environmental Impact Assessment (EIA) is not required for the Proposed OHL. This EA has been undertaken to evaluate whether any specific environmental risks are likely to occur resulting from the development proposals and to support an application for consent under s37 of the Electricity Act 1989.

3.2 Planning Permission

3.2.1 The Proposed UGC is considered by the Applicant to benefit from permitted development rights under Class 40 1(a) of The Town and Country Planning (General Permitted Development) (Scotland) Order 1992 (TCP GDPO).

3.2.2 The Proposed UGC includes a temporary access track. The Highland Council have confirmed the temporary access track will require a temporary planning permission consent under the Town and Country Planning (Scotland) Act 1997 (as amended).

3.3 Planning Policy Context

3.3.1 This Chapter will provide an overview of the relevant planning policies which are relevant to this s37 proposal for an OHL and associated works.

National Planning Policy

National Planning Framework 3 (NPF3) and National Planning Framework 4 (NPF4)

3.3.2 The need for a high voltage electricity transmission network is also included within the current National Planning Framework 3 (NPF3)[5] as "*new and / or upgraded onshore electricity transmission cabling of or in excess of 132 kilovolts, and supporting pylons*". The NPF3 confirms that the Proposed Development is required to support the delivery of an enhanced high voltage electricity transmission grid which is identified as vital in meeting national targets for electricity generation, statutory climate change targets and the security of energy supply.

3.3.3 The Proposed Development is also supported by the draft National Planning Framework 4 (NPF4)[6] as it recognises that the "*electricity transmission grid will need substantial reinforcement including the addition of new infrastructure to connect and transmit the output from new on and offshore capacity to consumers in Scotland, the rest of the UK and beyond".*

3.3.4 "The planning system should support all forms of renewable energy development and energy storage, together with new and replacement transmission and distribution infrastructure."

[4] The Scottish Government (2014). *National Planning Framework 3*. OQPS

[5] National Planning Framework 3: monitoring report (2019). Available at: https://www.gov.scot/publications/national-planning-framework-3-monitoring-report/pages/3/

[6] Draft National Planning Framework 4 [2021]. Available at https://www.gov.scot/publications/scotland-2045-fourth-national-planning-framework-draft/

3.3.5 *"Development proposals for all forms of renewable energy and low-carbon fuels, together with enabling works such as transmission and distribution infrastructure, and energy storage such as battery storage, should be supported in principle."*

Scottish Planning Policy (SPP) [7]

3.3.6 The SPP was published in 2014 and reflects the Scottish Ministers' priorities for operation of the planning system and for the development and use of land. An update to the SPP was proposed for December 2020. However, following a legal challenge at the Court of Session in August 2021 the December 2020 update to the SPP was removed.

3.3.7 Paragraph 155 states that "*Development plans should seek to ensure an area's full potential for electricity and heat from renewable sources is achieved, in line with national climate change targets, giving due regard to relevant environmental, community and cumulative impact considerations*".

3.3.8 Under paragraph 156, the policy states that strategic development plans should support national priorities of the construction or improvement of strategic energy infrastructure, including "*generation, storage, transmission and distribution networks. They should address cross-boundary issues, promoting an approach to electricity and heat that supports the transition to a low carbon economy*".

3.4 Development Plan

3.4.1 The statutory Development Plan applicable to the Proposed Development comprises The Highland-wide Local Development Plan (HwLDP) (adopted on 5th April 2012) and the Inner Moray Firth Local Development Plan (IMFLDP) (adopted July 2015).

3.4.2 The HwLDP and the IMFLDP are the primary policy documents in relation to the Proposed Development. These documents provides guidance to residents, developers and investors as to how much and where growth is proposed for land uses, such as housing and employment, and sets out a wide range of policies which are used to determine planning applications. The HwLDP identifies the need to encourage new development of good quality that is environmentally sensitive, accessible to all, utilises sustainable design techniques and low carbon or renewable energy technologies.

3.4.3 Sustainable economic growth has to be balanced carefully with the Highlands' outstanding and diverse natural environment, which makes it such a special place to live, work and visit. Within the HwLDP, overarching Policy 28 Sustainable Design ensures that developments are undertaken to ensure any design is not considered to be detrimental to the environment.

3.4.4 **Table 3-1** highlights policies relevant to this type of development.

Table 3-1: Relevant Policies from the Highland-wide Local Development Plan

Policy	Key points relevant to this project
Policy 55 – Peat and Soils	Development proposals should demonstrate how they have avoided unnecessary disturbance, degradation or erosion of peat and soils.
Policy 57 – Natural, Built and Cultural Heritage	All development proposals will be assessed taking into account the level of importance and type of heritage features, the form and scale of the development, and any impact on the feature and its setting, in the context of the policy framework detailed in Appendix 2.
Policy 58 – Protected Species	Where there is good reason to believe that a protected species may be present on Site or may be affected by a proposed development, we will require a survey to be carried out to establish any such presence and if necessary a mitigation plan to avoid or minimise any impacts on the species, before determining the application.
Policy 59 – Other Important Species	The Council will have regard to the presence of and any adverse effects of development proposals, either individually and/or cumulatively, on the Other Important Species which are

[7] Scottish Government, (2014). *Scottish Planning Policy*. OQPS

Policy	Key points relevant to this project
	included in the lists below, if these are not already protected by other legislation or by nature conservation site designations: • Species listed in Annexes II and V of the EC Habitats Directive; • Priority species listed in the UK and Local Biodiversity Action Plans (BAP); • Species included on the Scottish Biodiversity List. We will use conditions and agreements to ensure detrimental effect on these species is avoided.
Policy 60 – Other Important Habitats and Article 10 Features	The Council will seek to safeguard the integrity of features of the landscape which are of major importance because of their linear and continuous structure or combination as habitat "stepping stones" for the movement of wild fauna and flora. (Article 10 Features). The Council will also seek to create new habitats which are supportive of this concept. The Council will have regard to the value of the following Other Important Habitats, where not protected by nature conservation site designations (such as natural water courses), in the assessment of any development proposals which may affect them either individually and/or cumulatively: • Habitats listed in Annex I of the EC Habitats Directive; • Habitats of priority and protected bird species (see Glossary); • Priority habitats listed in the UK and Local Biodiversity Action Plans; • Habitats included on the Scottish Biodiversity List.
Policy 61 – Landscape	New developments should be designed to reflect the landscape characteristics and special qualities identified in the Landscape Character Assessment of the area in which they are proposed.
Policy 62 – Geodiversity	Development proposals that include measures to protect and enhance geodiversity interests of international, national and regional/local importance in the wider countryside, will be supported.
Policy 63 – Water Environment	The Council will support proposals for development that do not compromise the objectives of the Water Framework Directive (2000/60/EC), aimed at the protection and improvement of Scotland's water environment.
Policy 67 – Renewable Energy Developments	Renewable energy development proposals should be well related to the source of the primary renewable resources that are needed for their operation. The Council will also consider: • the contribution of the proposed development towards meeting renewable energy generation targets; and • any positive or negative effects it is likely to have on the local and national economy.
Policy 69 – Electricity Transmission Infrastructure	Proposals for overground, underground or sub-sea electricity transmission infrastructure (including lines and cables, pylons/ poles and vaults, transformers, switches and other plant) will be considered having regard to their level of strategic significance in transmitting electricity from areas of generation to areas of consumption. Subject to balancing with this consideration, and taking into account any proposed mitigation measures, the Council will support proposals which are assessed as not having an unacceptable significant impact on the environment, including natural, built and cultural heritage features.

3.4.5 The HwLDP is in the process of being reviewed by The Highland Council. A Main Issues Report was released for consultation in 2016, however that review process was put on hold in response to the December 2017 Planning Bill published by the Scottish Government which outlines potential changes to the Scottish planning system. The Planning (Scotland) Act 2019 was subsequently made and came into force on 25th July 2019. The Planning (Scotland) Act 2019 introduced a number of changes to development planning in Scotland. The Scottish Government is currently preparing NPF4. Formal work for the review of the HwLDP under the new arrangements for Local Development Plans as a result of The Planning (Scotland) Act 2019 and NPF4 is anticipated to start in spring/summer 2022.

4. APPRAISAL SCOPE AND METHODOLOGY

4.1 Approach to EA

4.1.1 The approach followed in the EA is to initially identify the topics which require a level of assessment to determine the potential for likely direct and indirect environmental risks. This is achieved through a scoping exercise taking into consideration potential sensitive receptors and the nature of the construction and operation of the Proposed Development. 'Scoped out' topics are not considered further in the appraisal.

4.1.2 For the 'scoped-in' topics, this EA provides a concise appraisal of the likely direct and indirect environmental risks that the Proposed Development may pose and makes recommendations for additional mitigation measures as required. The EA has been undertaken based on appropriate methodologies and best practice guidelines. Further details on this are provided in specific topic Chapters where considered relevant.

4.1.3 The final Chapter of the report collates the additional mitigation measures recommended in each of the appraisal chapters; which will be taken forward for inclusion in the CEMP.

4.2 Scope of Appraisal

4.2.1 An initial review of baseline conditions and sensitive receptors was undertaken on environmental constraints located in proximity to the Site at various distances dependent upon the type and nature of potential receptors. Key environmental constraints in proximity to the Site are shown on **Figure 1-3**.

4.2.2 For each topic, the potential for environmental effects on these receptors has been considered and is documented in Table 4-1, which also indicates whether the topic is 'scoped in' or 'scoped out' of further assessment as discussed above.

Table 4-1: Scoping Review

Topic	Description	In/ out of appraisal
Landscape and Visual Impact	The Proposed Development lies over 7 km to the east of the Loch Ness and Duntelchaig Special Landscape Area and is 4 km from a Wild Land Area (WLA). No other designated landscapes are within proximity. The Proposed Development lies within the Rolling Uplands Landscape Character Type (LCT) (NatureScot, 2019) which includes the Monadhliath Mountains. The LCT is characterised by large scale, moorland covered, rounded hills. Windfarms are a frequent feature, with the operational Corriegarth Windfarm in close proximity to the Site. To the west of the Proposed Development, the character of the landscape changes to the Farmed Strath LCT. This includes Stratherrick which is a linear channel, including Loch Mhor, through the upland landscape between the Rolling Uplands to the east and the foothills to the west. Small scale woodland and conifer forest are a characteristic, and overall there is a sense of enclosure with distant views along the strath available. There are no properties or settlements within 2 km of the Proposed Development. The nearest local residents would be at the edge of Loch Mhor, approximately 3.5 km north-west of the Site. Visibility with the Site would be filtered by the topography and vegetation along the River E. Walkers within proximity to the Site include those walking within the surrounding hills and those walking along the Trail of the Seven Lochs which lies along the edge of Loch Mhor, 3.5 km north west at its closest point to the Site. There is potential for views of the Site from along this path where vegetation and topography allows. Other long distance trails	In

Topic	Description	In/ out of appraisal
	lie further north-west with limited opportunities for visibility of the Site due to distance, topography and woodland cover. The Proposed Development is not anticipated to affect any designated landscape and would be a small addition to the landscape within the context of existing energy infrastructure. Therefore, it is anticipated to only create effects on the immediate landscape at a localised scale. There are no residential receptors who would have any significant visibility of the Proposed Development. However, walkers in the surrounding hillsides will have the potential to view the Proposed Development in the context of the existing energy infrastructure; where it is unlikely to be particularly perceptible	
Biodiversity	The Proposed Development does not fall within any designated sites for nature conservation. There are no internationally designated sites within 20 km of the Site with ornithological qualifying interests including more wide-ranging geese or swans. Within 10 km there are the two international statutory designated sites; Ness Woods Special Area of Conservation (SAC) is located approximately 8.7 km to the north-west of the Site; and Loch Knockie and nearby Lochs Special Protected Area (SPA) is located approximately 8.5 km to the west of the Site. There are no non-statutory designated sites listed within 1 km or national statutory designated sites within 2 km. An initial review of recent aerial imagery, topographic maps and 2014 Phase 1 survey data made available from Corriegarth Windfarm Connection identified the habitats in the Site to be dominated by priority habitat and Annex 1 habitats dry and wet acid heath, with blanket bog on the gentler slopes. A preliminary review of data collected in 2014 for Corriegarth Windfarm indicates that bats, wildcat, pine marten, red squirrel, water vole, brown hare, mountain hare, common amphibians and invertebrates are likely to use habitats within the wider landscape, and riparian mammals and badger are likely to use habitats within 200 m of the Site. It is possible that common amphibians are present in the vicinity within wetter areas during the appropriate time of the year (Spring-Autumn). The dry and wet acid heath vegetation may provide suitable resting sites for reptiles. Otter, bats and wildcat, are all European Protected Species and on the Scottish Biodiversity List (SBL). Pine marten, red squirrel and water vole, are all on the SBL, and are Schedule 5 protected species. Badger is an Inverness and Nairn Local Biodiversity Action Plan Priority Species and is listed on the SBL Social Criterion. The results of a preliminary review of ornithology data collected in 2011-2013 for the proposed Corriegarth Windfarm Connection, which has a large and overlapping study area with the Site, identified a total of 67 recorded species although flight activity over or in proximity to the Site was limited. A study focused on the Vantage Point flight activity survey data which encompassed the open moorland adjacent to Corriegarth Windfarm identified flights for the following target species within / intersected 500 m of the Site: • Golden eagle • Fieldfare • Golden plover • Merlin • Peregrine • Red kite • White-tailed eagle Due to the distance of the Proposed Development from designated sites and lack of connectivity, there is unlikely to be any potential effects on designated sites. However, based on the geographical location of the Site and prevailing habitats the Site has the	In

Topic	Description	In/ out of appraisal
	potential to support species groups including mammals, reptiles, amphibians, breeding birds and invertebrates. Many of the habitats identified (particularly hedgerows) and species within these species' groups are protected or otherwise notable in a local/national context.	
Cultural Heritage	There are no designated heritage assets within 3 km of the Proposed Development. The closest Scheduled Monument, Dell Farm, burial mounds (SM4536) is located circa 6 km to the north-west. The nearest Listed Building, the Category B Garthbeg (LB1883) is located circa 4 km to the north-west. A review of the undesignated archaeological baseline surrounding the Proposed Development has identified a further four assets present on the Historic Environment Record and a further three identified during a survey as part of an EA for Corriegarth Windfarm Grid Connection . Due to the presence of material culture recovered from the surrounding area and the proximity of the Site to known archaeological sites, there is an increased potential for hitherto unknown archaeological remains to survive within the Site.	In
Hydrology, Hydrogeology and Geology	The Proposed Development does not cross any watercourses. The River E (ID: 20274), classified by SEPA under the Water Framework Directive (WFD) as having a 'Moderate' overall status in 2020, is located approximately 200 m south-west of the Proposed Development, at it's nearest point. The Proposed Development is underlain by the Northern Highlands Groundwater Body (ID: 150701), classified by the SEPA under the WFD as having 'Good' overall status in 2020. The Proposed Development is not located within an area of high or medium risk of river flooding. However, the River E and its tributaries have small areas adjacent at high risk of river flooding. There are no areas of surface water flood risk within or adjacent to the Proposed Development. The Proposed Development crosses low productivity aquifer from the Grampian Group , in which small amounts of groundwater in near surface weathered zone and secondary fractures. One private water supply has been identified within 500 m of the Proposed Development. This is the Corriegarth Windfarm Substation private water supply. NatureScot's Carbon and Peatland mapping shows the Proposed Development passes through both Class 2 and Class 4. Peat probing has been completed for the Proposed Development and found peat in the vicinity.	In
Noise and Vibration	The area surrounding the Proposed Development is sparsely populated. There are no properties or settlements within 2 km of the Proposed Development. The nearest local residents would be at the edge of Loch Mhor, approximately 3.5 km north-west of the Site. Existing noise sources are predominantly related to agriculture, forestry and from windfarms. Construction activities have the potential to generate noise; such as vehicle movements on access tracks, excavations and movement of soils and stone. Any effects will be temporary. Noise will be managed through implementation of industry best practice and the Applicant's GEMPs (refer to Table 2-1, GE1). All will be detailed in the CEMP. As such, there is no requirement to consider potential noise impacts further. Due to the nature of the Proposed Development, no operational impacts are predicted.	Out
Land Use	The Proposed Development falls within Class 6.3 agricultural land (land capable of use as rough grazings with low quality plants). The Proposed Development does not impact upon	Out

Topic	Description	In/ out of appraisal
	other land uses outwith the Site. Therefore, potential impacts upon land use are not considered further in this appraisal.	
Traffic and Transport	It is proposed that the Site would be accessed from the B851 and B862 public roads to the north, connecting from the A9 to the east. Vehicle access will then follow the existing Corriegarth Windfarm access track. Any traffic and transport impacts as a result of the Proposed Development will occur during the construction period only and will be temporary in nature. Traffic management measures, by way of a detailed CTMP will be produced by the Contractor to reduce the potential effects of the construction traffic on the surrounding road network and will be included within the CEMP. The CTMP will outline the routeing of construction traffic and associated measures to mitigate any temporary effects on existing road users, whether local residents or those visiting in peak tourist season, caused by the construction of the Proposed Development. Once operational, the Proposed Development will not be permanently manned and will be visited infrequently by the operator. Operational traffic would be limited to maintenance operations and is therefore considered to be so low that its effect will be negligible. Potential impacts upon traffic and transport are not considered to be significant and are therefore not discussed further in this appraisal.	Out
Air Quality and Climate	The area surrounding the Proposed Development is a sparsely populated, rural area with no industrial activities in the immediate vicinity. The Site is not located within an Air Quality Management Area and background air quality in the area is assumed to be good. Construction activities have the potential to generate dust and affect air quality; such as vehicle movements on access tracks, excavations and movement of soils and stone. Any effects will be temporary and only likely to arise during dry, windy weather. Although there is the potential for some emissions to air as part of the construction phase, this will be managed through implementation of industry best practice and the Applicant's GEMP – Dust Management. All will be detailed in the CEMP. As such, there is no requirement to consider potential air quality impacts further. Due to the nature of the Proposed Development, no operational impacts are predicted.	Out
Human Health, Material Assets and Major Accidents and Disasters	The area surrounding the Proposed Development is sparsely populated. No residential properties are within 2 km of the Proposed Development. There are no recreational receptors within 2 km of the Proposed Development. Human health factors are covered by topics listed above and the CEMP. Major accidents and disasters would be mitigated through appropriate design and construction standards and specific policies, regulations and guidance related to disasters occurring to ensure surety of energy supply. The Proposed Development is unlikely to increase the potential for major accidents and disasters as it is an extension to an existing substation and will be designed in accordance with industry standards and operation will be carried out complying with health and safety requirements. The surrounding area includes existing electricity distribution and transmission infrastructure and existing windfarm infrastructure. No other material assets have been identified. No significant impacts are anticipated in relation to major accidents and disasters or human health.	Out

4.2.3 Consultation has been undertaken with The Highland Council planning team, Scottish Water, SEPA and NatureScot bodies on matters including water abstractions, flooding, consenting regime,

drainage, and ornithology. The outcomes of the consultation undertaken has been incorporated into this EA.

4.3 Cumulative Effects

4.3.1 The only live or recently approved planning applications in proximity to the Site is for the proposed Corriegarth 2 Windfarm. **Figure 1-1** illustrates the location of the proposed Corriegarth 2 Windfarm and the Proposed Development. Given the nature of the Proposed Development, and considering the distance from the Corriegarth 2 Windfarm and implementation of the CEMP no cumulative effects are anticipated.

5. LANDSCAPE AND VISUAL

5.1 Introduction

5.1.1 This chapter appraises the effect of the Proposed Development on the landscape and on visual amenity. It describes and analyses the existing landscape of the area that may be affected and considers its sensitivity to the development proposed. It defines the extent to which the Proposed Development would be visible and illustrates and analyses a representative sample of views to give a clear indication of the effect the Proposed Development might have on visual amenity.

5.1.2 This Landscape and Visual Appraisal (LVA) has been carried out broadly in accordance with best practice guidance (see Section 5.3 below) in relation to Landscape and Visual Impact Assessment (LVIA) and Environmental Impact Assessment (EIA). It is important to note, however, that the Proposed Development is considered to be a non-EIA development and therefore the scope of this LVA reflects the nature and scale of the Proposed Development.

5.2 Information Sources

5.2.1 Information has been gathered from desk study and field survey findings from other topic surveys. No specific landscape and visual field survey has been undertaken given the type and limited extent of development proposed.

5.3 Methodology

Best Practice Guidance

5.3.1 This appraisal has been carried out broadly in accordance with best practice guidance with reference to the following:

- 'Guidelines for Landscape and Visual Impact Assessment', 3rd Edition (2013), Landscape Institute and Institute of Environmental Management and Assessment (GLVIA3); and
- 'Landscape Character Assessment – Guidance for England and Scotland' (2002), Countryside Agency and Scottish Natural Heritage.

Significance

5.3.2 For both the landscape and visual appraisals, the significance of effect derives from the combination of the magnitude of change and the sensitivity of the landscape or visual receptor. Significance in this appraisal is used in its ordinary English meaning of 'of importance' or 'worthy of attention' to highlight any changes to landscape character or visual amenity of particular note. A full methodology is set out in **Appendix 5.1**.

Nature of Landscape and Visual Effects

5.3.3 The appraisal considered two distinct but closely related areas: landscape character and visual amenity.

Landscape

5.3.4 The character of the landscape derives from a combination of physical factors, natural processes and human intervention.

5.3.5 Landscape effects are a combination of the physical changes to the fabric of the landscape arising from the Proposed Development and perceptual changes – the way these physical changes alter how the landscape is perceived. The landscape appraisal considers the effect of the Proposed Development on the landscape as a whole, effects on significant individual elements of the

landscape, and effects on characteristic combinations or patterns of elements and how these are seen to affect its character and quality.

5.3.6 Landscape character is generally considered to be a resource in its own right, which exists whether or not there are people present to experience it.

Visual

5.3.7 Visual appraisal is concerned with the views that are available to people who may be affected by the Proposed Development, and their perception and responses to changes in these views.

5.3.8 Visual effects arise from changes in the composition and character of views available in the area affected. The appraisal considered the likely change that would be experienced, including the effects both on specific views and on general visual amenity.

5.3.9 For the purposes of appraisal, whilst it is the people living, working, passing through or enjoying recreational activities in the area who actually see the views and enjoy the visual amenity, it is the places they may occupy that are mapped and described as the 'receptors' of the views.

Extent of the Study Area

5.3.10 The area of study for the visual appraisal is the area from which the Proposed Development may be seen (by definition, visual effects can only occur where at least some part of the development is visible). The Study Area for the landscape appraisal is also defined by the area from which the Proposed Development may be seen but the appraisal considers potentially affected landscapes in terms of the character area or unit as a whole, not just the part from which there may be visibility. Research on the perceptibility of wood pole overhead lines[8] of a similar nature to those of the Proposed OHL has shown that they may be visible from up to 6 km but are likely to be noticeably visible from up to about 1.5 km.

5.3.11 Due to the limited extent and type of Proposed Development, based on experience, aforementioned perception study, and desk-based research, a Study Area of 1.5 km radius (see **Plate 5.1** below) from the Proposed Development was considered appropriate for this appraisal in order to focus on any potential significant landscape and visual effects.

Baseline Data Collation

5.3.12 Information has been gathered primarily from desk study.

5.3.13 Relevant publications that have been taken into consideration include:

- NatureScot Landscape Character Assessment[9] database; and
- Online mapping including Ordnance Survey maps, Google Earth Pro and Google Street View.

[8] D Horn, I McAulay and M Turnbull (May 2010) High Voltage Wood Pole Transmission and Distribution Main Interconnector Lines in Rural Landscapes: Perceptibility

[9] https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions

5.4 Baseline Environment

Overview of Study Area

5.4.1 **Plate 5.1** below shows the extent of the 1.5 km Study Area and main landscape and visual elements in proximity of the Site.

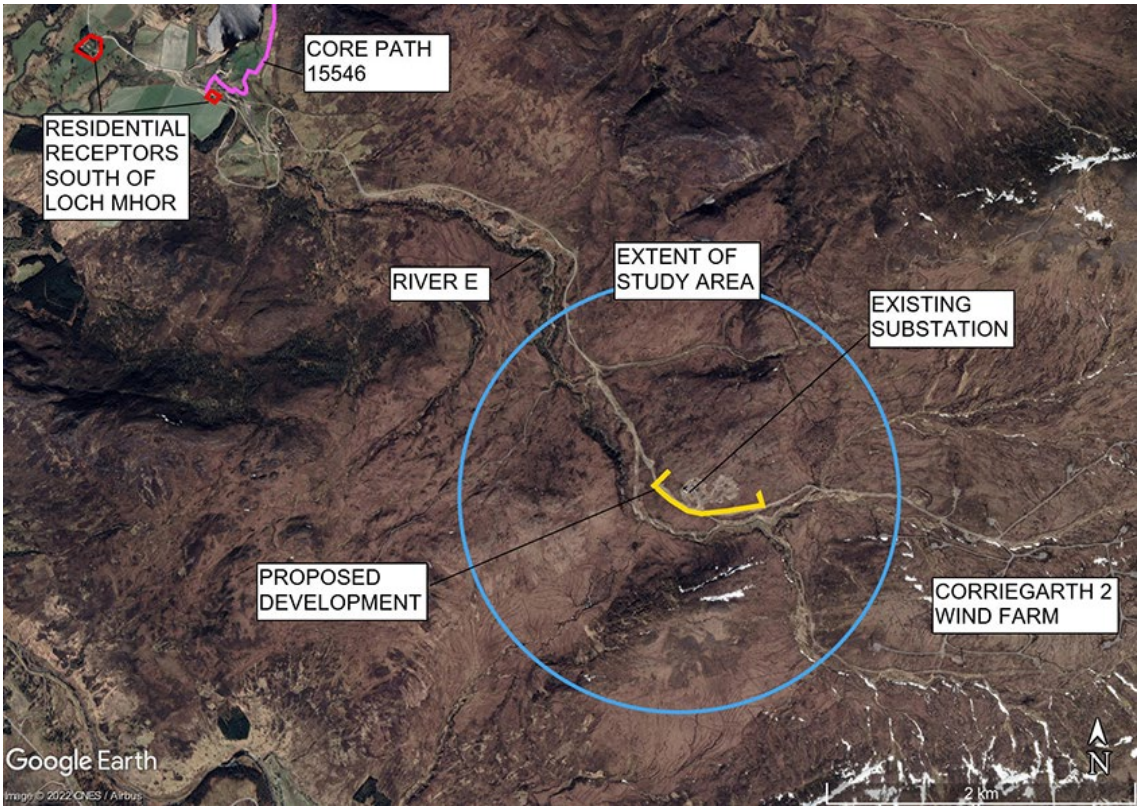

Plate 5.1: Aerial View of Site with Study Area.

5.4.2 The Site lies approximately 5 km to the south-east of Loch Mhòr, on the western slopes of the Monadhliath Mountains and approximately 15 km north-east of Fort Augustus.

5.4.3 Foyers is the closest settlement, 10 km to the northwest by the shore of Loch Ness, and there are some sparse farmsteads and hamlets in lower grounds to the south-west of Loch Mhòr, approximately 4 km from the Site.

5.4.4 The B862 runs approximately 6 km to the northwest of the Site. Linked to the B861 and the A9, it provides the main access to Site via the existing operational Corriegarth Windfarm Track. Forestry tracks are present in the surrounding hills.

5.4.5 To the north, east and south the Site is surrounded by rolling hills which are covered in heather moorland, giving a sense of openness and exposure.

5.4.6 The River E (**Plate 5.2**) broadly runs on a north-west direction through the Study Area, and to the south of the Site. With sections of exposed rock cliffs and patches of ancient woodland on its embankments, the river is a distinctive natural feature within the Study Area.

Plate 5.2: View of River E looking northwest.

5.4.7 The existing Corriegarth Windfarm, together with access tracks and ancillary infrastructure, dominates the surrounding landscape and the turbines are prominent in the views of the nearby hills to the north and east. (**Plate 5.3**)

Plate 5.3: View of the Site, existing substation and wind turbines, looking north from the River E dam, associated with the substation.

Site Character

5.4.8 More locally, the Site is located south of the operational Corriegarth Windfarm Substation, on the Corriegarth Estate, Gorthleck.

5.4.9 The River E tracks along the Site's southern boundary, and the hills of Carn Fliuch-bhaid and Carn na Saobhaidhe rise as an enveloping backdrop north and south of the Site.

5.4.10 The existing Corriegarth Windfarm substation is present on the Site, as well as an existing wood pole overhead line that runs in a north-north-east direction from the substation around the western slope of Carn na Saobhaidhe. (**Plate 5.4**)

Plate 5.1: View of the existing wood pole overhead line to the west of the Site, looking northwest from the River E dam, associated with the existing substation.

Landscape and Related Designations

5.4.11 There are no National or Regional landscape designations within the Study Area. The Proposed Development lies over 7 km to the east of the Loch Ness and Duntelchaig Special Landscape Area and over 4 km from the Wild Land Area (WLA) of Monadhliath Mountains.

5.4.12 The Proposed Development is not anticipated to have any significant effects on landscape designations, therefore these are not considered any further.

Landscape Character

5.4.13 The Site lies entirely within The Rolling Uplands - Inverness Landscape Character Type (LCT) 221[10] as defined by NatureScot in their Landscape Character Types of Scotland Assessment. This is an area of rolling hills to the south-east of the Great Glen that form a backdrop to the eastern part of the Inverness district and extends into the Cairngorms National Park (approximately 18km east), merging into an undulating skyline without clearly identifiable features.

5.4.14 Some of the relevant key characteristics of the LCT to the Study Area are:

- A series of large scale, smooth, rounded hills with summits of similar height forming broad, undulating upland plateaux containing occasional steep-sided straths.
- Open heather moorland dominates, the uniform colour and texture accentuating the landform.
- Straths floors contain inbye pastures, trees and small patches of woodland.
- Expansive views from the hill tops and plateaux create a strong sense of openness and exposure.
- Few signs of active management in the interiors, creating a strong perception of remoteness, although this is affected by a number of large windfarm developments.

Visual Amenity

5.4.15 For the purposes of appraisal, whilst it is the people who live and work in the area, take part in recreational activities or are simply passing through who actually receive the views and enjoy the visual amenity, it is the places they may occupy that are mapped and described as the 'visual receptors.'

5.4.16 The visual receptors can be categorised as follows: residential; recreational; transport; and commercial receptors.

Residential receptors

5.4.17 Residential receptors – people enjoying the view from their home – are usually considered to be highly susceptible to visual change, and thus high sensitivity receptors, even where the actual view enjoyed may not be particularly valued.

5.4.18 There are no properties or settlements within the Study Area. The nearest local residents would be at the edge of Loch Mhor, approximately 4 km north-west of the Site. Visibility of the Proposed Development would be filtered by the topography and vegetation along River E.

Recreational receptors

5.4.19 Recreational receptors may be of low, medium or high sensitivity depending on the context. People enjoying outdoor recreation where the view is important to the experience are normally considered to be of high sensitivity. Where the focus is more on the activity itself the view is less important to the experience so recreational receptors are normally considered to be of medium sensitivity.

[10] NatureScot National Landscape Character Assessment Landscape Character Type 221 ROLLING UPLANDS - INVERNESS

5.4.20 The Trail of the Seven Lochs coincides for some of its length with Core Path 15546, running along the easter edge of Loch Mhor, 4 km north-west at its closest point to the Site (Plate 5.1). Views of the Site would be limited by intervening landform, built form and areas of woodland along the River E.

5.4.21 The Site location; between the hills Carn Fliuch-bhaid to the south and Carn na Saobhaidhe to the north would both provide a backdrop and act as a screen for the views of the Proposed Development from these directions.

5.4.22 The surrounding topography and vegetation along River E would screen most views to the south-east, in the direction of the Site.

Transport receptors

5.4.23 Transport receptors are usually considered to be of medium sensitivity.

5.4.24 The B862 lies 6 km west of the Site and due to distance, topography and existing vegetation, users of this road are unlikely to have any visibility of the Proposed Development.

Commercial receptors

5.4.25 People at work or similar are usually considered to be of low sensitivity.

5.4.26 People working in Corriegarth Windfarm would have views of the Proposed Development in the context of existing infrastructure.

5.5 Mitigation

5.5.1 As stated in Chapter 2 of this report, the Proposed Development included embedded mitigation in its design process, explicitly seeking to minimise the potential permanent effects of the Proposed Development on landscape and visual receptors.

5.5.2 Construction Good Practice measures are listed in Table 2-1 of this report.

5.6 Appraisal

Introduction

5.6.1 The following paragraphs consider primarily the permanent (Operational Phase) effects of the OHL part of the Proposed Development. The Proposed UGC, by its nature, will not be visible following reinstatement and establishment of the landcover. Therefore no permanent effects from the UGC are anticipated and it is not assessed further for the Operational Phase.

5.6.2 The landscape and visual effects of the Proposed Development during construction would be short-term and temporary, and for the Proposed OHL would not be materially different from the permanent effects. Construction phase effects are therefore summarised at the end of this Chapter to avoid repetition.

Landscape Effects (Permanent / Operational Phase) – Proposed OHL

Landscape Character

5.6.3 The lack of active management in the interior of the Rolling Uplands LCT creates a strong perception of exposure and remoteness, however this is affected by a number of large windfarms such as the operational Corriegarth Windfarm, in close proximity to the Site.

5.6.4 The Proposed Development would marginally increase the presence of infrastructure within the LCT, but in the context of more extensive existing infrastructure. In addition to its relatively small size in

comparison with the surrounding landscape and its location on lower slopes, its effects on the wider landscape character are predicted to be negligible.

Visual Effects (Permanent / Operational Phase) – Proposed OHL

Residential Receptors

5.6.5 The nearest local residents to the Proposed Development would be Garthbeg Bungalow, a farmstead by the southern end of Loch Mhor, approximately 4 km north-west of the Site.

5.6.6 Due to the distance between the nearest residential receptor and the Site, intervening topography and woodland patches along the River E that would screen views of the Proposed Development, there are no permanent long-term significant visual effects anticipated for any of the residential receptors in proximity of the Proposed Development.

Recreational Receptors

5.6.7 The Trail of the Seven Lochs lies along the edge of Loch Mhor, 4 km north-west at its closest point to the Site, coinciding for some of its length with Core Path 15546. Views of the Proposed Development from along this path would be screened by topography and intervening vegetation.

5.6.8 Walkers that are roaming off the main paths within the general area have potential to be closer to the Proposed Development. However, it would be a barely noticeable addition in their views due to the relatively small size of the Proposed Development within its surrounding windfarm and energy infrastructure context.

5.6.9 Therefore, no significant visual effects are anticipated for any of the recreational receptors in proximity of the Proposed Development. Visual effects would be negligible.

Transport & Commercial Receptors

5.6.10 The B862 is the closest road to the Site, 6 km to the west. Distance, topography and existing intervening vegetation, would potentially screen views of the Proposed Development for users of this road.

5.6.11 The Proposed Development would be visible for people working in Corriegarth Windfarm, however these views would be perceived in the context of existing infrastructure.

5.6.12 Overall, effects of the Proposed Development are predicted to be negligible on these receptors.

Construction Phase

Proposed OHL

5.6.13 People notice movement and active change more than they notice fixed objects. The changing nature of the Proposed OHL as it is being built and the presence of large on-site machinery often with hazard lights would be noticeable. Also, the general noise and activity associated with construction sites may attract attention and cause viewers to see more than they would otherwise notice. These effects, however, would be temporary and short term in nature.

5.6.14 The mitigation of effects on the landscape and visual resource during construction are those integral to the construction process under the ‘Considerate Principal Contractors’ process that is now routinely followed, such as tidy site management to reduce visual clutter associated with the works; and use of construction lighting in accordance with best practice to minimise lighting intrusion to surrounding sensitive receptors. Such mitigation measures will be included within the CEMP.

5.6.15 The effects will be localised to a relatively small area and it is anticipated that they will only have a negligible to minor adverse effect on the very few visual receptors that may have views in this area. This would include any walkers roaming off the main paths, and people working at Corriegarth and

Corriegarth 2 Windfarms. All other receptors are located at beyond a distance of approximately 4 km and the effects that the Construction Phase of the OHL would have on them is predicted to be negligible.

Proposed UGC

5.6.16 During the Construction Phase, the effects of the Proposed UGC on landscape character and visual receptors will obviously be more noticeable than during the Operational Phase, as the construction of the UGC requires the digging of a trench and building a temporary access track along its length. The ground conditions will be disturbed, and the effects of the Construction Phase will still be noticeable while ground cover grows until fully reinstated to its original condition. As identified in Chapter 2 of this report, the ground will be reinstated using the existing site materials.

5.6.17 The effects will be localised to a relatively small area and it is anticipated that they will only have a negligible to minor adverse effect on the very few visual receptors that may have views in this area. This would include any walkers roaming off the main paths, and people working at Corriegarth and Corriegarth 2 Windfarms. All other receptors are located beyond a distance of approximately 4 km and the effects that the Construction Phase of the UGC would have on them is predicted to be negligible.

Summary

5.6.18 Based on the above considerations, the Proposed Development would not result in any long-term significant effects on the landscape fabric, landscape character, and on visual amenity.

Recommendations and Mitigation

5.6.19 Assuming adequate maintenance, the mitigation embedded in the design of the Proposed Development would, over time, fully mitigate the small number of potentially adverse effects on the landscape and on visual amenity and reduce the effect of the Proposed Development.

5.6.20 There are therefore no recommendations for secondary mitigation.

6. ECOLOGY, NATURE CONSERVATION & ORNITHOLOGY

6.1 Introduction

6.1.1 This biodiversity appraisal identifies and evaluates the biodiversity baseline of the Site and wider Proposed Development's Ecological Zone of Influence (EZoI). The EZoI is the range over which direct or indirect impacts could occur depending on factors such as hydrological connectivity and territorial or foraging ranges of species. There can be multiple/varying extents of EZoI depending on the sensitivity or range of the receptors. It is the influence of construction activities which have impacts on ecological features, and the effects they have on those ecological features which is the focus/outcome of the appraisal.

6.1.2 This appraisal assumes that embedded mitigation (design features and construction good practice) will be successfully delivered; this includes successful pollution prevention and where possible avoidance of sensitive features. Direct and indirect impacts that will require additional mitigation measures in order that their adverse effects on sensitive biodiversity receptors be avoided or reduced have been addressed. Specifically, this biodiversity appraisal covers the following potential impacts during the construction phase:

- Loss and degradation of priority habitats[11] and irreplaceable habitats; and
- Degradation of supporting habitat, injury/mortality, and/or disturbance/displacement of protected species.

6.1.3 Operational effects have been scoped out, except for bird collision risk for the Proposed OHL. Any future maintenance activities are assumed to be confined to within the existing Corriegarth Windfarm access track and the proposed new access track. It is assumed that artificial lighting will only illuminate during the construction phase when site works are taking place (i.e. it will not be continuously lit).

6.2 Information sources

6.2.1 A Habitats and Protected Species Baseline Report has been prepared which documents the full baseline through a data review and Site visit (**Appendix 6.1**). The field survey was undertaken in March 2022 to gather current and Site-specific data to inform this assessment.

6.2.2 An Ornithology Technical Report has been prepared which documents the ornithological baseline obtained through a desk study (**Appendix 6.2**). The main sources of the data to inform the ornithology baseline were the results of post-construction ornithological monitoring surveys for the operational Corriegarth Windfarm undertaken in the years 2015-2016, 2016-2017 and 2017-2018[12] and ornithological surveys to inform the EIA for the proposed Corriegarth 2 Windfarm where data was collected between 2013 and 2018[13].

6.2.3 Taking account of the extensive ornithological data already available, the data's validity and the relatively small scale of the Proposed Development, ornithological surveys were not undertaken. This approach was agreed in consultation with NatureScot. Further details of this approach are provided in the Ornithology Technical Report (**Appendix 6.2**).

6.3 Methodology

6.3.1 The general methodology used to identify and evaluate the baseline biodiversity conditions is as follows, with the appraisal methodology set out further below. The methodology was formulated with

[11] Habitats considered as priorities for conservation action by aligning with descriptions of habitats under Habitats Directive Annex i and/or Scottish Biodiversity List.

[12] Nevis Environmental Ltd (2020). Corriegarth 2. Technical Appendix 8.2: Ornithological Monitoring 2015-2018.

[13] Nevis Environmental Ltd (2020). Corriegarth 2. Technical Appendix 8.1: Breeding Bird Report 2019.

cognisance of guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) on Ecological Impact Assessment[14]. For collection of data and assessment pertaining to the ornithological baseline, methodology based on guidance from NatureScot[15] [16] was used.

6.3.2 A data review exercise was undertaken to identify protected areas, habitats and species which may fall within the Proposed Development's EZoI and provide wider context. Freely downloadable datasets (including those available from NatureScot[17]) were consulted for information regarding the presence of the following features:

- statutorily designated sites of European or international conservation importance[18] for non-avian interests occurring within 10 km of the Site;
- statutorily designated sites of local and/or national conservation importance[19] occurring within 2 km of the Site; and
- non-statutory designated sites of local importance[20] occurring within 2 km of the Site.

Other Areas of Conservation Importance

6.3.3 The following information was gathered from desk study sources, extending 2 km from the Site:

- Woodland listed on the Ancient Woodland Inventory (AWI);
- Native Woodland Survey of Scotland (NWSS) database;
- B-Lines and Important Invertebrate Areas;
- Priority Areas for Red Squirrel Conservation;
- Scottish Wildcat Priority Areas; and
- Scottish Wildlife Trust (SWT) Reserve.

Policy

- UK Post-2010 Biodiversity Framework[21] (2011-2020);
- Scottish Biodiversity Strategy (2004[22] and 2013[23]) which comprises of:
    - Scotland's biodiversity: it's in your hands;
    - 2020 Challenge for Scotland's Biodiversity;

[14] CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.

[15] SNH (2016). Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds.

[16] SNH (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms.

[17] NatureScot (2021). SNHi Data Service. Available: https://www.nature.scot/information-hub/snhi-data-services [Accessed: March 2022].

[18] "European sites" refers to a network of sites across the European Union designated for rare and threatened species, and rare natural habitat types, protected in their own right under the Birds Directive 2009/147/EC (as Special Protection Areas) and the Habitats Directive 92/43/EEC (as Special Areas of Conservation). Previously referred to as "Natura 2000" sites. Ramsar sites; areas designated of international conservation importance under the Convention on Wetlands of International Importance (1971).

[19] Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR).

[20] e.g. Local Nature Conservation Sites (LNCS), Local Biodiversity Sites (LBS), Sites of Interest for Nature Conservation (SINC).

[21] Joint Nature Conservation Committee and Department for Environment, Food and Rural Affairs (2012). The UK Post-2010 Biodiversity Framework (2011-2020). Available at: https://hub.jncc.gov.uk/assets/587024ff-864f-4d1d-a669-f38cb448abdc#UK-Post2010-Biodiversity-Framework-2012.pdf [Accessed: March 2022].

[22] Scottish Government (2004). Scotland's biodiversity: it's in your hands. Available: https://www.gov.scot/publications/scotlands-biodiversity---its-in-your-hands/ [Accessed: March 2022].

[23] Scottish Government (2013). 2020 Challenge for Scotland's Biodiversity. Available: https://www.gov.scot/publications/2020-challenge-scotlands-biodiversity-strategy-conservation-enhancement-biodiversity-scotland/ [Accessed: March 2022].

- Scottish National Planning Framework 3[24], and Draft National Planning Framework 4[25] which is currently under public consultation;
- Scottish Planning Policy[26]; and
- Highland-wide Local Development Plan[27].

6.3.4 Up to date Site-specific data was collected in March 2022, by two WSP Consultant Ecologists who are 'capable' in habitat identification and evaluation, and species survey design, planning and fieldwork (CIEEM[28]). Full details of the field survey methods are included in the Habitats and Protected Species Baseline Report (**Appendix 6.1**). In summary, a UK Habitat Classification (UKHab) and Habitat Condition Assessment was undertaken up to 250 m from the Site. A search for evidence of otter *Lutra lutra* and badger *Meles meles* was also undertaken, plus suitability assessments for other species/groups.

6.3.5 An evaluation of the conservation importance of protected areas, species and habitats identified within the Proposed Development's EZoI (hereafter termed 'Biodiversity Features') with reference to conservation legislation, planning policy and population trends was undertaken. The conservation status of Biodiversity Features was determined based on their presence on at least one of the following legislative/planning frameworks or conservation lists:

- Protected areas designated for nature conservation at European, national and local levels;
- Annex I habitats and Annex II species under the Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora ('Habitats Directive');
- Schedule 1 of the Wildlife and Countryside Act 1981 (as amended);
- Schedule 5 of the Wildlife and Countryside Act 1981 (as amended);
- Protection of Badgers Act 1992 amended by the Wildlife and Natural Environment (Scotland) Act 2011; and
- Scottish Biodiversity List (SBL).

6.3.6 Potential impacts on Biodiversity Features were then identified. Biodiversity Features were appraised in groups due to similarity in ecology, potential impacts from the Proposed Development, and subsequent effects. The effect of the identified impacts from the Proposed Development on Biodiversity Features was considered with cognisance of embedded mitigation. Additional mitigation measures have been identified where required to avoid or reduce potential negative effects. Finally, a conclusion was determined based on any 'residual' effects remaining on Biodiversity Features following the implementation of the additional mitigation measures. This conclusion is determined based on a qualitative assessment that relies on professional experience and judgement. Factors considered to inform the conclusions include the effectiveness of mitigation proposed, nature of the impacts described (e.g. duration, frequency and magnitude) and the susceptibility of the Biodiversity Features to these potential impacts. The appraisal concludes one of the following:

- No effects of the Proposed Development on the Biodiversity Feature(s);
- Negative residual effects of the Proposed Development on the Biodiversity Feature(s) that are not significant;

[24] Scottish Government (2014). National Planning Framework 3. Available: https://www.gov.scot/publications/national-planning-framework-3/ [Accessed: March 2022].
[25] Scottish Government (2014). Draft National Planning Framework 4. Available: https://consult.gov.scot/local-government-and-communities/draft-national-planning-framework-4/ [Accessed: March 2022].
[26] Scottish Government (2020). Scottish Planning Policy. Available: https://www.gov.scot/publications/scottish-planning-policy/ [Accessed: March 2022].
[27] The Highland Council (2012). Highland-wide Local Development Plan. Available: https://www.highland.gov.uk/download/downloads/id/1505/highland-wide_local_development_plan.pdf [Accessed: March 2022].
[28] CIEEM (2019). Advice note on the lifespan of ecological reports and surveys. Available: https://cieem.net/resource/advice-note-on-the-lifespan-of-ecological-reports-and-surveys/ [Accessed: March 2022].

- Negative residual effects of the Proposed Development on the Biodiversity Feature(s) that are significant; or
- Positive residual effects of the Proposed Development on the Biodiversity Feature(s).

6.4 Baseline Conditions

Environmental Designations

6.4.1 The Site is not located within any statutory or non-statutory designated sites, nor is it within 2 km of any statutory or non-statutory designated sites.

6.4.2 There are two SACs designated for their mixed woodland and blanket bog habitat (Ness Woods and Monadhliath), which are located more than 8.4 km from the Site and have no hydrological connectivity or continuous connecting or overlapping forestry cover between the designated sites and the Site. As such, there are no effect pathways to these two SACs.

6.4.3 There is one designated site with ornithological qualifying interests within the 10 km search radius: Loch Knockie and nearby Lochs Special Protection Area (SPA) which is 8.4 km west of the Site. The SPA is designated for regularly supporting a population of European importance of the Annex 1 species Slavonian grebe *Podiceps auritus*. Slavonian grebes require lochs with emergent vegetation for breeding, no such habitat is within the footprint of the Proposed Development or within the Proposed Developments EZoI based on anticipated disturbance ranges given in studies[29].

6.4.4 As such, there are no effect pathways. Protected areas therefore do not fall within the Proposed Development's EZoI and are not considered further.

Priority Habitats

6.4.5 Full details of the habitats mapped from the Site and wider 250 m are included in the Habitats and Protected Species Baseline Report (**Appendix 6.1**). This section presents details of the habitats which occur within the Proposed Development's EZoI, which are Biodiversity Features by virtue of their listing on the SBL or as an Annex I habitat. For clarity, there are no areas of ancient woodland within 250 m of the Site but there are two areas of ancient woodland within 2 km of the Site, with the closest block of unnamed ancient woodland described as long-established (of semi-natural origin), located approximately 300 m to the north-west of the Site. The NWSS database did not return any blocks of woodland located within the Site boundary, but there are two blocks of woodland listed on the NWSS within 2 km of the Site, which are described as birch woodland. The Site does not contain any woodland habitat, as such, there would be no effects of the Proposed Development on these Biodiversity Features.

6.4.6 Habitats considered to be Biodiversity Features are as follows.

- **f1a5 Blanket bog (H7130)** - The species abundance distribution was homogeneous in species richness throughout blanket bog habitat, overlapping with other UKHab types with no distinct boundary, creating an ecologically rich mosaic habitat (full habitat description in **Appendix 6.1**). The blanket bog is considered "active" meaning still supporting a significant area of vegetation such as *Sphagnum palustre* and *Sphagnum capillifolium* that is peat forming, and therefore aligns with Annex I habitat blanket bog (H7130). The habitat also represents an example of SBL priority habitat blanket bog. Blanket bogs are generally considered to be irreplaceable due to the significant time required for these communities to establish and form deep peat, a process which can take thousands of years to develop and hundreds of years to recover.
- **h1b6 Wet heathland with cross-leaved heath; upland (H4010)** - This habitat forms part of a wider mosaic habitat due to it being interconnected with the f1a5 Blanket bog and g1b6 Other

[29] Ruddock, M. Whitfield, D.P (2007). A Review of Disturbance Distances in Selected Bird Species.

upland acid grassland. The h1b6 is comprised of species which represent Annex I habitat; vegetation typically dominated by mixtures of cross-leaved heath *Erica tetralix*, heather *Calluna vulgaris*, grasses, and *Sphagnum* bog-mosses. It is considered to align with SBL priority habitat and Annex I quality habitat.

- **r2a6 Other priority habitat rivers** – The River E runs through the southern aspect of the Site flowing from the east to west. The river terminates at Loch Mhòr approximately 2 km downstream. The water body has been designated under the Water Framework Directive as a heavily modified water body on account of physical alterations for water storage for hydroelectricity generation. Nonetheless, the river habitat is considered to fall under SBL priority habitat but is not an Annex I type habitat.

Terrestrial Protected Species

6.4.7 The Habitats and Protected Species Baseline Report (**Appendix 6.1**) presents a full review of all species data available. This section presents species which have been confirmed to occur, or which could occur (based on suitable habitat at the Site and wider area) within the Proposed Development's EZoI, which are Biodiversity Features by virtue of their legal protection and/or listing on the SBL.

- **Otter;** listed as a priority species on the SBL and a legally protected species (European Protected Species listed on Annex IV of the Habitats Directive). Evidence of otter was recorded at two locations along the River E within the Survey Area. The evidence comprised of two old otter spraints; one located along the River E embankment to the eastern end of the Site and the other located where a burn adjoined the River E toward the western extent of the Site in close proximity to the small hydro-electric scheme. The entirety of the River E was considered to be suitable foraging and commuting habitat for otter.
- **Reptiles**; Common lizard *Zootoca vivipara*, slow worm *Anguis fragilis* and adder *Vipera berus* are legally protected species under the WCA and listed on the SBL. The desk-study returned one record of common lizard within 1 km east of the Site, indicating that habitats similar to those found in the Site are suitable for reptiles. Suitable habitat for reptiles to take refuge was recorded within the areas of heathland habitat and exposed rock outcrops provide suitable habitat for basking, and combined with their locality to open ground along the existing Corriegarth Windfarm access tracks, all create suitable habitat for basking and hibernating reptile species.
- **Mountain hare** *Lepus timidus*; listed as a priority species on the SBL and a protected species under the WCA. At the time of the survey a single sighting of mountain hare was recorded within the Survey Area.

6.4.8 The following other protected and priority species have been considered but were not found to occur within the Proposed Development's EZoI: badger, fish, red squirrel, pine marten, and invasive and non-native species (see Habitats and Protected Species Baseline Report).

Ornithology

6.4.9 The Confidential Ornithology Baseline Report (**Appendix 6.2**) and accompanying **Figure 6-1, Figure 6-2 and Figure 6-3** presents a full review of all relevant species data available. A summary of the results is provided below:

- Golden eagle *Aquila chrysaetos*. Schedule 1, SBL. Six golden eagle nest sites relating to three pairs were identified within 6 km of the Site in 2018 and 2019. The closest nest site to the Site was approximately 2.5 km away. Flight activity data collected during 2015-2018 shows a flight activity hotspot on high ground immediately north of the Site at Carn na Saobhaidhe.
- Red kite *Milvus milvus*. Schedule 1, SBL. There were no records of confirmed breeding within 2 km of the Site. However, this species was the most frequently recorded raptor species during the

post-construction monitoring surveys for Corriegarth Windfarm in 2015-2018. Many of the observations related to foraging birds and included a flight activity hotspot immediately north of the Site at Carn na Saobhaidhe.

- Peregrine *Falco peregrinus*. Schedule 1, SBL. A probable territory was recorded approximately 1.9 km away from the Site in 2019. The observation related to roost site and not a confirmed nest site. Flight activity data collected during 2015-2018 shows a flight activity hotspot on high ground immediately north of the Site at Carn na Saobhaidhe.
- Breeding waders: dunlin *Calidris alpina* SBL, BoCC red listed, and golden plover *Pluvialis apricaria* Annex I of the Birds Directive, SBL. A low number of registrations (two for golden plover and one for dunlin) indicative of breeding behaviour were recorded within 2 km of the Site in 2019. The closest registration to the Site related to golden plover approximately 570 m away.

6.5 Appraisal

Designated Sites (Proposed OHL and Proposed UGC)

6.5.1 Designated sites with ecological interest beyond the Site are unlikely to be negatively impacted during construction or operation of the Proposed OHL and the Proposed UGC due to the distance of these areas from the Site and lack of associated connectivity, designated sites are therefore not considered further.

Habitats (Proposed OHL and Proposed UGC)

6.5.2 The Proposed Development is predicted to result in a direct loss of approximately 0.76ha of SBL priority and Annex I habitat Wet heathland with cross-leaved heath; upland (H4010). A portion of this will be permanent, under the footprint of the Proposed OHL permanent access tracks and the OHL structures. The remainder would be a temporary loss; either short-term (up to two years) where temporary access is required, or medium/long-term where the Proposed UGC will be installed until the habitat cover is re-established. The thermal properties of the Proposed UGC are unknown, therefore degradation by drying out peat may occur beyond the footprint of the Proposed UGC. Overall, however, the extent of priority habitat potentially affected (directly and indirectly), the small footprint of the Proposed Development, and extent of similar habitat in the wider landscape is considered to be negligible.

6.5.3 The embedded mitigation measures, with particular reference to the Applicant's GEMPs for Soil Management and Restoration, will reduce degradation effects beyond the footprint of the Proposed OHL and seek to restore wet heath habitat along the route of the Proposed UGC. Based on the relatively small area of ground the Proposed UGC and Proposed OHL footprint will cover, habitat loss during the construction phase is anticipated to cause negative residual effects that are not significant.

6.5.4 Whilst SBL priority and Annex I habitat Blanket bog (H7130) occurs within the Survey Area (i.e. within 250 m of the Site), it does not overlap with the Proposed Development's footprint and is beyond 100 m from the Site. Although the thermal properties of the Proposed UGC are unknown, effects of drying peat are unlikely to be observed beyond 100 m and the bog would be typically rainwater fed. No effects of the Proposed Development are predicted on this Biodiversity Feature.

6.5.5 A BNG Assessment (**Appendix 2.3**) is being undertaken in parallel to further consider and quantify the effect of habitat loss[30].

6.5.6 The r2a6 Other priority habitat rivers (River E) is located in close proximity to the Proposed Development and during construction could be subject to indirect effects via pollution from

[30] WSP (2022). Corriegarth Extension: Biodiversity Net Gain Assessment.

construction of the Proposed OHL and the Proposed UGC. Indirect effects for the river will be mitigated through implementation of a CEMP. The CEMP will detail protocols on pollution prevention in line with SEPA's Guidance for Pollution Prevention (GPP) series[31], and the implementation of the Applicant's GEMPs, including GE2 (Surface Water Management Plan).

Terrestrial Protected Species (Proposed OHL and Proposed UGC)

6.5.7 During construction works associated with the Proposed OHL and Proposed UGC, there is potential for degradation of supporting habitat, injury/mortality, and/or disturbance/displacement of protected and priority species. However, the nature and extent of these impacts is not anticipated to result in significant adverse effects.

6.5.8 Permanent, as a result of the Proposed OHL, and temporary loss, as a result of both the Proposed OHL and Proposed UGC, of foraging habitat for reptiles and mountain hare would be negligible, relative to the wide spanning landscape of heathland, mires, and grassland.

6.5.9 The protocols outlined in the CEMP above, for the other priority habitat rivers, will provide additional safeguards for otter and their supporting riverine habitat.

6.5.10 Implementation of the Applicant's SpPPs (**Appendix 2.2**), GEMPs, NatureScot standing advice for reptiles[32] and Advice note 10: Reptile Survey and Mitigation Guidance for Peatland Habitats[33] will be sufficient to mitigate potential impacts of injury/mortality and disturbance/displacement of the following species:

- Otter;
- Reptiles; and
- Mountain hare.

6.5.11 Based on the relatively small area of permanent and temporary loss of foraging habitat, for reptiles and mountain hare, habitat loss is anticipated to cause negative residual effects that are not significant.

Ornithology

Collision Risk-Construction and Operation (Proposed OHL only)

6.5.12 Flight activity hotspots were identified for golden eagle, peregrine, and red kite immediately north of the Proposed Development. However, these flight activity hotspots were associated with the slopes and summit of high ground north of the Proposed Development rather than encroaching on the Proposed Development. Furthermore, the element of the Proposed Development, the Proposed OHL, representing a collision risk is very restricted in length (70 m OHL) and relatively low in height (anticipated to be ca11-17 m). The Proposed Development is situated in a valley while the identified flight activity hotspots were over ground above the anticipated height of the Proposed OHL.

6.5.13 Taking account of the above it is unlikely that golden eagle, peregrine, and red kite would be negatively impacted through collision risk during the construction or operation of the Proposed OHL.

Disturbance and Displacement - Construction Only (Proposed OHL and Proposed UGC)

6.5.14 Previous survey data collected in 2018 and 2019 shows nest sites and indicative territory locations for species of elevated conservation importance to be at a significant distance from the Proposed Development where they were unlikely to be negatively affected through disturbance and displacement. The approximate distances of the closest nest sites or indicative territory locations

[31] SEPA (2021). Guidance for Pollution Prevention (GPPs). Available: http://www.sepa.org.uk/regulations/water/guidance/#PPG [Accessed: March 2022].
[32] www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species
[33] https://www.arguk.org/info-advice/advice-notes/414-10-advice-note-10-reptile-survey-and-mitigation-guidance-for-peatland-habitats/file

from the Proposed Development for each species of elevated conservation importance are noted below alongside the upper limit range of distances where negative effects from disturbance are anticipated to occur based on studies[29]:

- Golden eagle. Nearest nest site: 2.5 km. Upper limit of disturbance response based on studies: 750 m-1 km;
- Peregrine. Nearest probable territory: 1.9 km. Upper limit of disturbance response based on studies: 500 m-750 m;
- Breeding waders. Dunlin and golden plover. Nearest indicative territories: 570 m. Upper limit of disturbance response based on studies: Not available for these species but for a similar wader species, wood sandpiper *Tringa glareola*: 150 m-300 m.

6.5.15 For peregrine, dunlin, and golden plover the desk study data related to indicative territory locations rather than exact nest site locations. Furthermore, nest site locations may change from year to year, and it remains possible that nest site locations could be situated closer to the Proposed Development in the future.

6.5.16 Given that golden eagles typically have a small number of favoured nest sites, often used repeatedly over many years, and taking account of the distance from the Proposed Development to those nest sites recorded in 2018-2019, it is unlikely there would be a significant change in a nest site location that would result in a nest site being within the Proposed Developments EZoI.

6.5.17 Implementation of SHE Transmission's SpPPs and mitigation provided in Table 6.1 will be sufficient to mitigate potential impacts from disturbance and displacement.

6.6 Recommendations and Mitigation

6.6.1 The following specific mitigation, in addition to the above general best practice measures and GEMPs, will be adopted to ensure compliance with nature conservation legislation and reduce potential negative effects as far as reasonably possible.

Table 6.2: Additional ecological and ornithological mitigation measures

Reference	Title	Description
BD1	Pre-Construction Survey	It is recommended that a pre-construction walkover survey by a capable ecologist be completed to record any new evidence of protected species prior to commencement of works; and revise Site-specific mitigation measures and licensing requirements as required. These checks would ensure that protected and priority species are either avoided or that appropriate mitigation are implemented. For ornithological receptors, a pre-construction breeding bird survey within the Site and an additional 2 km buffer to update the status and distribution of breeding birds of elevated conservation importance is recommended. This will be undertaken by a suitability qualified ornithologist across four visits during April to July.
BD2	Ecological Clerk of Works (ECoW)	Onsite guidance by a capable, suitably experience ECoW on adherence to construction good practice and to help facilitate other mitigation measures within the CEMP. Any sightings of protected species or environmental observations/incidents during the construction phase will be reported to and acted upon by the ECoW. The appointed ECoW will be suitably experienced with the potential ornithological constraints identified (most likely to be breeding waders). The ECoW will be able to identify suitable

Reference	Title	Description
		protection zones to be placed around any nest sites, if required. In the case of waders, suitable protection zones/measures for dependent chicks which leave the nest site soon after hatching but are unable to fly might also be required.

6.6.2 Assuming successful implementation of embedded and additional mitigation measures, there will be no significant residual effects from the Proposed Development on the Biodiversity Features.

7. CULTURAL HERITAGE

7.1 Introduction

7.1.1 This chapter assesses the potential effects on the cultural heritage features and results of the archaeology and cultural heritage assessment undertaken as part of the voluntary EA for the Proposed Development. This chapter (and its associated Figures and Appendices) is not intended to be read as a standalone assessment and reference should be made to the introductory chapters (**Chapter 1 to 4)** of this voluntary EA.

7.1.2 Archaeology and cultural heritage comprise a diverse range of elements that are referred to throughout the voluntary EA as heritage assets. Heritage assets are features created or that have undergone modification from human agency. This includes a wide range of visible and buried archaeological sites and monuments, as well as other historic features or places. Heritage assets comprise World Heritage Sites, Scheduled Monuments, Listed Buildings, Gardens and Designed Landscapes (GDL), Battlefields, Conservation Areas, Marine Protected Areas, other underwater sites, buried archaeological remains, other historic buildings, and earthworks.

7.1.3 Additional information which supports this chapter is presented in the following figures and technical appendices:

- **Appendix 7.1** – Cultural Heritage Gazetteer
- **Figure 7-1** – Heritage Assets

7.2 Information Sources

7.2.1 The assessment has been informed by a review of all available archaeological records; historical documentary evidence; cartographic evidence and photographic material. This has involved a consultation of the following sources:

- GIS data on Scheduled Monuments, Listed Buildings, and GDL's was obtained from Historic Environment Scotland (HES).
- GIS data on other cultural heritage assets was obtained from the Scottish National Record of the Historic Environment (SNRHE) which is maintained by HES.
- Information from The Highland Council HER.
- Readily accessible primary and secondary historical sources for information relating to the area's historical past, including past land use.
- Pre-Ordnance Survey maps of the Site Boundary, available online from the National Library of Scotland (NLS). The relevant maps date in range from the seventeenth to the nineteenth centuries[34].
- First and subsequent editions of the Ordnance Survey (OS) maps of the area of interest, examined via the NLS[35].
- LIDAR datasets of the general area through the Scottish Remote Sensing Portal maintained by the Scottish Government[36].
- The solid and drift geology for the Site Boundary based on that recorded by the British Geological Survey/Geological Survey of Great Britain maps[37].

7.2.2 A walkover survey of the Proposed Development was carried out between 3rd and 4th February 2022, in order to:

[34] https://maps.nls.uk/.
[35] National Library of Scotland Maps Viewer (2021). Available at: https://maps.nls.uk/
[36] https://remotesensingdata.gov.scot/data#/map.
[37] Geology of Britain viewer (2021). Available at: http://mapapps.bgs.ac.uk/geologyofbritain/home.html.

- assess the baseline condition of the known heritage assets;
- identify any further features of cultural heritage interest not detected through the desk-based assessment that could be affected by construction of the Proposed Development; and
- identify areas with the potential to contain currently unrecorded buried archaeological remains.

Limitations and Assumptions

7.2.3 Professional judgement is applied throughout. The assessment is based on the Proposed Development as presented at the time of compiling this report. Any comments received on this document from HES or HCHET may inform on any future assessment or investigations that may need undertaken.

7.2.4 The desk-based assessment on which this assessment has been based was extensive but not exhaustive, thus there remains the possibility that there may be sites or features of archaeological or historical significance that have not been identified.

7.3 Methodology

Study Area

7.3.1 To assess the effect of the Proposed Development on Cultural Heritage a Study Area of approximately 500 m extending out from the boundary of the Proposed Development was applied to identify all known and potential below-ground heritage assets.

7.3.2 Although the focus of this chapter is on the Proposed Development, a wider, archaeological contextual background is presented for the general area. The study of the surrounding landscape was necessary to establish the local archaeological and historical context, to provide a broader understanding of the historical development of the Proposed Development and the potential for as-yet-unidentified archaeological remains within the boundary of the Site.

Terminology

7.3.3 The technical terminology applied to the assessment process is based on that contained within the Scottish Planning Policy framework. Professional judgement is applied throughout.

7.3.4 Cultural Heritage resources include sites with statutory and non-statutory designations, as defined in SPP. Sites with statutory designations include:

- Listed Buildings;
- Scheduled Monuments;
- Conservation Areas;
- Historic Marine Protected Areas;
- Gardens and Designed Landscapes;
- Historic Battlefields; and
- World Heritage Sites.

7.3.5 For the purpose of this appraisal, Cultural Heritage features are referred to as heritage assets, and additionally for the purpose of clarity, a minor distinction is made between standing remains and buried archaeology.

7.3.6 Other Cultural Heritage and archaeological sites, not subject to other designations, are recorded within the SNRHE and the local HER, and many such sites have not yet been identified or recorded. Such undesignated sites are frequently assigned to regional, local or lesser categories of significance. The regional or local importance of such a site is established on the basis of

professional judgement, although the criteria for identifying nationally important sites will often be referred to in making such judgements.

Standards and Guidance

7.3.7 The following national legislation forms the background against which the assessment has been made:

- The Historic Environment Scotland Act 2014[38];
- The Ancient Monuments and Archaeological Areas Act 1979[39] ; and
- Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997[40].

7.3.8 The following national planning policy relevant to archaeology and cultural heritage that has been considered as part of this assessment includes:

- National Planning Framework for Scotland 3 (NPF3)[41] ;
- SPP Paragraphs 135-151[42];
- Historic Environment Policy for Scotland (HEPS)[43]; and
- Planning Advice Note (PAN) 2/2011: Planning and Archaeology[44].

7.3.9 The following local planning policy relevant to archaeology and cultural heritage that has been considered as part of the assessment includes:

- Highland Wide Local Development Plan (Highland Council, 2012a); and
- Highland Wide Local Development Plan Policy 57 – Natural, Built and Cultural Heritage.

7.3.10 The following guidance has been applied to the assessment process:

- Designation Policy and Selection Guidance[45];
- Managing Change in the Historic Environment Setting[46];
- Supplementary Guidance, Highland Historic Environment Strategy[47]; and
- Standards for Archaeological Work[48].

7.3.11 All elements of the assessment have been undertaken in accordance with the following policies and guidelines of the Chartered Institute for Archaeologists (CIfA):

- By-laws: Code of Conduct[49];
- Standards and Guidance for Historic Environment Desk Based Assessment[50]; and
- Standards and Guidance for commissioning work on, or providing consultancy advice on, archaeology and the historic environment[51].

[38] Scottish Government (2014). The Historic Environment Scotland Act 2014.
[39] UK Government (1979). The Ancient Monuments and Archaeological Areas Act 1979.
[40] UK Government (1997). Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.
[41] Scottish Government (2014). Scotland's Third National Planning Framework
[42] Scottish Government (2014). Scottish Planning Policy.
[43] Historic Environment Scotland (2019). Historic Environment Policy for Scotland.
[44] Scottish Government (2011). Planning Advice Note (PAN) 2/2011: Planning and Archaeology.
[45] Historic Environment Scotland (2019). Designation Policy and Selection Guidance.
[46] Historic Environment Scotland (2020). Managing Change in the Historic Environment Setting – Historic Environment Scotland's guidance note series.
[47] Highland Council (2013). Supplementary Guidance, Highland Historic Environment Strategy.
[48] Highland Council (2012). Standards for Archaeological Work.
[49] Chartered Institute for Archaeologists (2010). By-laws: Code of Conduct.
[50] Chartered Institute for Archaeologists (2010). Standards and Guidance for Historic Environment Desk Based Assessment.
[51] Chartered Institute for Archaeologists (2010). Standards and Guidance for commissioning work on, or providing consultancy advice on, archaeology and the historic environment.

7.3.12 The Proposed Development is located within the local authority area of The Highland Council who are advised on archaeological matters by the HCHET. Input has been sought from the HCHET on areas of archaeological sensitivity. The conclusions from this report, take on board these comments.

Appraisal Methodology

7.3.13 Cultural significance lies in the value of a heritage asset to this and future generations because of its heritage interest; this may be artistic, archaeological, architectural, historic, traditional, aesthetic, scientific or social. Known and potential heritage assets within the Proposed Development and the wider Study Area have been identified from national and local designations, SMR/HER data and professional opinion.

7.3.14 The determination of the cultural significance or value of historic environment assets is based on statutory designation and/or professional judgement against the characteristics and criteria expressed in HES Designation Policy and Selection Guidance[52] and the Historic Environment Policy for Scotland 2019[53]. A degree of professional judgement is necessary, guided by acknowledged standards, designations and priorities when evaluating the importance or significance (and hence the 'value') of Cultural Heritage assets. It is also important to understand that buried archaeological remains may not be well understood at the time of initial assessment, and therefore can be of uncertain value.

7.3.15 The determination of "Setting" has been undertaken in accordance with guidance provided within the Managing Change Guidance[54] (HES, 2016). A three-stage process was undertaken to assess the impact of the Proposed Development options on the setting of heritage assets:

- **Stage 1:** Designated and undesignated heritage assets that might be affected by the Proposed Development were identified. The potential for impacts on the designated assets in the wider landscape due to the potential inter-visibility with the Proposed Development were also determined through the desk based review and a site walk over survey.
- **Stage 2:** The setting of all baseline heritage assets was defined by establishing how the surroundings contribute to the ways in which the asset is understood, appreciated and experienced.
- **Stage 3:** The way in which the Proposed Development would impact upon setting was then assessed for all baseline assets.

7.3.16 The tables below identify factors which are appropriate to consider during the assessment of Cultural Heritage assets, with the adoption of five ratings for value in relation to the heritage assets: very high, high, medium, low, and negligible. **Table 7-1** below sets out the criteria for assessing the value of assets.

Table 7-1: Criteria for Assessing the Value of Archaeological Assets

Value	Example
Very High	World Heritage Sites (including nominated sites) Assets of acknowledged international importance
High	Scheduled Monuments (including proposed sites) Listed Buildings (Category A and B) Battlefields included within the Inventory Marine Protected Areas

[52] Historic Environment Scotland (2019). Designation Policy and Selection Guidance

[53] Historic Environment Scotland (2019). Historic Environment Policy for Scotland

[54] Historic Environment Scotland (2020). Managing Change in the Historic Environment Setting – Historic Environment Scotland's guidance note series.

	Gardens and Designed Landscapes Conservation areas containing nationally important buildings Undesignated assets of scheduled quality and importance Assets of national importance
Medium	Listed Buildings (Category C) Conservation areas containing buildings that contribute significantly to its historic character Assets of regional importance
Low	Assets of local importance Assets compromised by poor preservation and/or poor survival of contextual associations Buildings of modest quality in their fabric or historical association
Negligible	Assets with very little or no surviving archaeological interest Artefact find spots (where the artefacts are no longer in situ and where their provenance is uncertain) Poorly preserved examples of particular types of minor historic landscape features (e.g. quarries and gravel pits, dilapidated sheepfolds, etc)

7.3.17 The criteria for assessing the magnitude of impact from the Proposed Development on an asset is shown in **Table 7-2** below.

Table 7-2: Assessing the Magnitude of Impacts

Factors in the assessment of Magnitude of Impacts		
	Adverse	**Beneficial**
Major	Changes to most or all key archaeological materials or key historic building elements such that the resource is totally altered. Comprehensive changes to setting such as extreme visual effects, gross change of noise or change to sound quality, or fundamental changes to use or access.	Preservation of a Heritage Asset in situ where it would otherwise be completely or almost lost. Changes that appreciably enhance the cultural significance of a Heritage Asset and how it is understood, appreciated and experienced.
Moderate	Changes to many key archaeological materials or key historic building elements, such that the resource is clearly modified. Considerable changes to setting that affect the character of the asset such as visual change to many key aspects or views, noticeable differences in noise or sound quality, or considerable changes to use or access.	Changes to important elements of a Heritage Asset's fabric or Setting, resulting in its cultural significance being preserved (where this would otherwise be lost) or restored. Changes that improve the way in which the heritage asset is understood, appreciated and experienced.
Minor	Changes to key archaeological materials or key historic building elements, such that the asset is slightly altered. Slight changes to setting such as slight visual changes to few key aspects or views, limited changes to noise levels or sound quality, or slight changes to use or access.	Changes that result in elements of a Heritage Asset's fabric or Setting detracting from its cultural significance being removed. Changes that result in a slight improvement in the way a Heritage Asset is understood, appreciated and experienced.
Negligible	Very minor changes to archaeological materials, historic buildings elements, or setting. Very minor changes to setting such as virtually unchanged visual effects, very slight changes	Very minor changes that result in elements of a Heritage Asset's fabric or Setting detracting from its cultural significance being removed. Very minor changes that result in a slight improvement in the way a Heritage Asset is understood, appreciated and experienced.

Factors in the assessment of Magnitude of Impacts		
	Adverse	**Beneficial**
	in noise levels or sound quality, or very slight changes to use or access.	
No Change	No change to fabric or setting.	

7.3.18 The significance of the effect of change – i.e. the overall impact – on an attribute is a function of the importance of the attribute and the scale of change is shown in **Table 7-3** below. For the purpose of this assessment, impacts of Moderate or greater significance are considered potentially material to the planning process and described as significant. Effects found to be 'minor' or less are considered not potentially material and are therefore described as not significant. The word significant is used here in its ordinary English meaning of "worthy of consideration".

Table 7-3: Overall Impact

	Factors in the assessment of Magnitude of Impacts					
		No Change	**Negligible**	**Minor**	**Moderate**	**Major**
Value	**Very high**	Neutral	Slight	**Moderate or Large**	**Large or Very Large**	**Very Large**
	High	Neutral	Slight	**Moderate** or Slight	**Moderate or Large**	**Large or Very Large**
	Medium	Neutral	Neutral or Slight	Slight	**Moderate**	**Moderate or Large**
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or **Moderate**
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

7.4 Baseline Environment

Introduction

7.4.1 The location of the assets which lie within the Study Area surrounding the Proposed Development, are tabled in the Gazetteer (**Appendix 7.1**) and indicated in **Figure 7-1**.

Site Geology

7.4.2 The bedrock geology beneath the Site and the surrounding area is dominated by Garibeinn Pebbly Psammite from the Neoproterozoic Era (1 Ba – 541 Ma) and common to the western part of the Monadliath Mountains of the Central Highlands.

Designated Assets

7.4.3 Currently, there are no designated assets identified within the Site. The nearest Scheduled Monument, Dell Farm, burial mounds 350 m NE of (SM4536), lies 6 km north west of the Site. The nearest Listed building is Garthbeg (LB1883), a Category B house, 4 km to the north west.

Undesignated Assets

7.4.4 There are seven undesignated assets within the 500 m Study Area, largely post-medieval. Of the assets highlighted by the assessment, four are listed within the SNRHE and local HER, with a further three assets discovered through historic map regression and walkover survey.

Baseline Description

7.4.5 The following presents a brief outline of the historical and archaeological background related to the wider area, drawing on information within the assessment buffers. It focusses on the nearby recorded assets and features that may provide information about the potential archaeology that may be encountered within the assessment boundary.

7.4.6 Previous archaeological events have been conducted in the area, documenting a number of archaeological finds. The following walkover surveys and watching briefs have been identified through review of the online HER:

- Desk based assessment and walkover survey for Corriegarth Windfarm with Torness (EHG4561), ASH Design & Assessment, 2012
- Desk based assessment and walkover survey for the proposed Corriegarth Windfarm (EHG4400), CFA Archaeology Ltd., 2007
- Desk based assessment and walkover survey for Dunmaglass Wind Farm, Strathnairn, CFA Archaeology Ltd., 2003
- Desk based assessment and walkover survey for the proposed pipeline of the River E hydro-electric scheme, Stuart Farrell, 2002

7.4.7 The principal sites and features within the Study Area are described in the context of a timeline of archaeological periods from Prehistoric through to Modern.

7.4.8 The time periods discussed can be broadly divided as follows:

- Prehistoric:
  - Palaeolithic 12,000 – 11,000 BCE
  - Mesolithic 11,000 – 4,100 BCE
  - Neolithic 4,100 – 2,500 BCE
  - Bronze Age 2,500 – 800 BCE
  - Iron Age 800 BCE – CE 400
- Roman CE 77 – 211
- Pictish CE 297 - 900
- Medieval CE 400 – 1560
- Post-Medieval CE 1560 – 1900
- Modern CE 1900 – Present

Prehistoric Period

7.4.9 The landscape surrounding the Proposed Development is a vast, peaty moorland where the River E meanders and may have been a favourable location and focus for early Prehistoric activity given the potential resources provided by the river. The river would not have necessarily provided a suitable place for settlement given the propensity for flooding, but the higher elevations of the surrounding plateaus and hills would have been an attractive place to for semi-permanent settlement activity. Despite this, the Proposed Development and the Study Area currently contain no evidence of settlement or activity dating from the Palaeolithic and Mesolithic periods. This is typical of the archaeological record of Scotland, where the nomadic presence through the Palaeolithic and

Mesolithic leaving a lack of tangible evidence, with the few sites encountered relating to lithic scatters.

7.4.10 Towards the later Prehistoric period, there is a marked increase in visibility within the archaeological record across Scotland, with a plethora of settlement sites at the edge of the river floodplain or elevated on plateaus or mounds, some of which are likely to have Bronze Age origins. The most visible aspect of this period in the archaeological record are the ritual monuments such as stone circles, henge monuments, standing stones, burial cairns, and other prominent stone features. The closest known activity from the Neolithic to the Proposed Development is to the southwest on the banks of Loch Killin (ca 3 km south west) where a series of hut circles and burial sites (Tom A' Chu-Thair – Canmore ID 125429 and 12530) indicate Neolithic/Bronze Age activity.

Pictish/Medieval Period

7.4.11 Throughout the Roman period and into the Pictish period, the local population would have continued to inhabit the many settlements in the area, with the Pictish people cited by the Romans being the ancestors of the Iron Age inhabitants occupying the same settlements prior to their occupation. There are no known assets within the Study Area, but the wider area has a notable Pictish evidence. The protected asset of Dell Farm burial mounds (SM4536) presents a significant collection of trapezoidal burial mounds, cists, and low banks of the Pictish period and is approximately 6 km to the northwest of the Proposed Development. The collection of assets is a distinctive field monument as one of a few such barrow and cairn cemeteries known in Scotland.

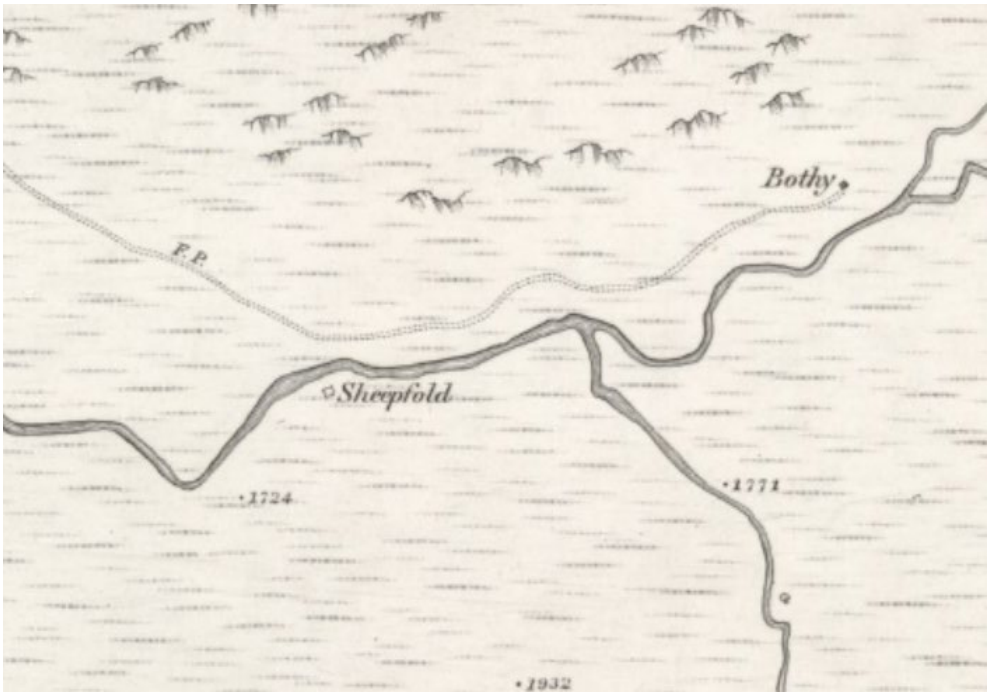

Plate 7.1 – Excerpt from 2nd Edition OS 6-inch map, showing a sheepfold and bothy. Reproduced with kind permission from the trustees of the National Library of Scotland.

Post-Medieval Period

7.4.12 This agricultural landscape persists into the post Medieval period as the maps of the 16th and 17th Century show very few place names other than the settlement of Garthbeg and Corriegarth Lodge to the west. The landscape around the Proposed Development appears to have been largely undeveloped until this period. The post-medieval remains of a group of possible shielings (***HA3***)

have been suggested to be the seasonal dwellings of the inhabitants of Bunkevie by Garthbeg. Various other structures indicate an abandoned township on the southern bank of the River E. The township (***HA6***) was last described to be in a highly disfigured state, roughly indicating possible

Plate 7.2 – Photo taken of the sheepfold (*HA5*) and existing access track from the approximate location of the Proposed Development. February 3rd, 2022.

houses, clearance cairns, and a corn drying kiln. The township is not noted on any other historic maps – perhaps not of notable size or lifespan to be recorded. The township was also not identified during the conducted walkover survey. From the proximity of these assets, including a sheepfold (***HA5***) (see **Plate 7.2**), and semi-circular structure (***HA2***), it may be that these assets were all contemporaneous and a part of a larger seasonal complex. It was noted during survey that (***HA2***) no longer existed (**Plate 7.4**), likely to have been impacted on and removed/buried by an existing track.

7.4.13 The land of the Proposed Development and surrounding area belongs to the Corriegarth estate as identified from Estate Maps of Scotland[55]. The creation of this estate may have been associated with the Clearances, between 1760 and 1840, which may have rendered the pre-existing township (***HA6***), shielings (***HA3***), and the sheepfold (***HA5***) deserted. Ruins of an unknown building survive on the banks of the River E and the edge of the existing track (**Plate 7.3**) (***HA4***), which may have been related to nearby assets. The estate has historically practiced grouse shooting and deer stalking, dramatically increasing its grouse flocks in recent years to accommodate for an increase in participants. The grouse butts are not visible until the current OS map, but is possible that their origin has been in the 19th century. The single, unroofed building (***HA1***) to the east of the Study Area is also likely to be related to estate activity. Labelled as a 'Bothy' on the 1st and 2nd Ordnance Survey 6-inch mapping, the building was built and used during the late 19th century – likely as a shelter for a deer watcher to keep an eye on movements for the benefit of guests during the stalking season. The footpath, marked F.P. on **Plate 7.1**, leads directly to the bothy without continuing. The bothy is no longer upstanding and was not found during walkover survey.

[55] Estate Maps of Scotland, 1730s-1950s. Available at: https://maps.nls.uk/view/190781215

Modern Period

7.4.14 The modern period shows little change in the landscape, with the estate ownership and activities preserving the area. Many of the assets described that had been located through Ordnance Survey mapping have degraded in this time, becoming unable to be identified through walkover survey (***HA1, HA6, HA3***). Sometime during this century, the bothy (***HA1***) fell into disuse, owing to its current state. The Corriegarth Windfarm substation was built in 2014-2015. No other development is identified within the Study Area with only the Corriegarth Windfarm to the east of the Study Area being developed.

Plate 7.3– Photo of Building at River E (HA4). The pictured wall is the only surviving element of the building seen. February 3rd, 2022.

7.5 Appraisal

7.5.1 The historic background has identified that there are a number of archaeological assets on the periphery of the Study Area surrounding the Proposed Development. These have been identified through previous investigations associated with the adjacent Corriegarth Windfarm and River E Hydro-Electric Scheme.

7.5.2 The heritage assets present within the Study Area relate to post-Medieval activity ranging from structures and settlement to recreational and sporting assets associated with the Corriegarth Estate.

7.5.3 The indirect (setting) impacts on heritage assets from the Proposed Development during construction would be short-term and temporary and for the OHL would not be materially different from the permanent effects.

7.5.4 The following appraisal considers primarily the permanent (Operational Phase) effects of the OHL part of the Proposed Development.

7.5.5 The Proposed UGC, by its nature, will not be visible following reinstatement and establishment of the landcover. Therefore no permanent effects from the UGC are anticipated and it is not assessed further for the Operational Phase.

Operational Phase (Proposed OHL only)

7.5.6 The nearest Scheduled Monument, Dell Farm, burial mounds 350 m NE of (SM4536), lies 6 km north west of the Site. The nearest Listed building is Garthbeg (LB1883), a Category B house, 4 km to the north west.

7.5.7 Due to the distance between the nearest designated assets, intervening topography and dispersed woodland along the River E that would screen views of the Proposed Development, there are no permanent long-term significant setting effects anticipated for any of the heritage assets in proximity of the Proposed Development.

7.5.8 All designated assets are located at beyond a distance of approximately 4 km and the effects that the Operational Phase of the OHL would have on them is predicted to be **No Change**.

Construction Phase

Proposed OHL and Proposed UGC

7.5.9 The archaeological walkover survey conducted as part of this assessment could not identify the presence of the Structure ***HA2*** (**Plate 7.4**). It is likely that the construction of access tracks and drainage for the Corriegarth Windfarm will have removed any evidence of these structures if present at the time of construction of the access tracks.

7.5.10 The construction of the Proposed OHL and Proposed UGC will have no direct or indirect impacts on any of the known heritage assets within the Study Area, and is unlikely to have direct impacts on any unknown sub-surface archaeological remains due to the low potential for encountering such remains. As such the significance of effect on any potential sub-surface archaeological remains is assessed as **Neutral**.

Summary

7.5.11 Based on the above considerations, the Proposed Development would not result in any significant effects on the cultural heritage assets.

Plate 7.4– Photo of location of (HA2). No upstanding archaeology could be identified during the site visit. February 3rd, 2022.

7.6 Recommendations and Mitigation

7.6.1 Given the current and historic land use of the Proposed Development as an area of upland estate on ground that is mainly over 300 m above Ordnance Datum, the likelihood of encountering previously unknown archaeological sites or features during construction of the Proposed Development is deemed to be low.

7.6.2 Previous survey work associated with the multiple assessments for the Corriegarth Windfarm and the River E Hydro-Electric Scheme have indicated the presence of assets outwith the Proposed Development and a lack of surviving evidence within the areas to be directly impacted on from works associated with the Proposed Development.

7.6.3 This EA and walkover survey has identified no archaeologically significant features within the Proposed Development. Due to the lack of potential for as yet undetected buried remains surviving, the probability of encountering hitherto unknown sites of archaeological significance during the course of construction work in this area is considered to be low. It is unlikely that the Proposed Development would benefit from any form of archaeological monitoring in this location, therefore there are no recommendations for secondary mitigation.

8. HYDROLOGY, HYDROGEOLOGY AND GEOLOGY

8.1 Introduction

8.1.1 This chapter assesses the likelihood of environmental risks to hydrology, hydrogeology and geology receptors, resulting from the Proposed Development. For each of these topics (listed below) it details a baseline description, identifies, and appraises the effects on each receptor and, where relevant, proposes mitigation:

- Hydrology – changes to drainage regime and associated alteration to surface water runoff rates and volumes, erosion/sedimentation, and water quality characteristics throughout the Proposed Development and the wider catchment, including designated sites. Changes to water resources such as public and private water supplies (PWS) are also considered.
- Hydrogeology – changes to groundwater infiltration and groundwater levels, water quality and wetland characteristics.
- Geomorphology and geology – geomorphological characteristics of the land around the Proposed Development and changes to geological structures or effects on designated sites.
- Soils and peat – changes to soil and peat characteristics related to erosion, compaction, and soil quality.

8.1.2 This chapter should be read in conjunction with the following Chapter, Appendices and Figures:

- Chapters 1 – 4 of this EA;
- **Appendix 8.1**: Soil and Peat Management Plan;
- **Figure 8-1**: Hydrological Constraints; and
- **Figure 8-2**: Soil and Peat Constraints.

8.2 Information Sources

Legislation, Policy and Guidance

Legislation

8.2.1 This appraisal is carried out in accordance with the principles contained within the following legislation:

- The Water Environment and Water Services (Scotland) Act 2003;
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011, as amended;
- The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017;
- Flood Risk Management (Scotland) Act 2009.

Policy

8.2.2 This appraisal is carried out in accordance with the principles contained within the following documents:

- Scottish Planning Policy (SPP) 2014. The Scottish Government[56];
- Scottish Environment Protection Agency (SEPA) Environmental Policy Number 19, Groundwater Protection Policy for Scotland v3[57]; and

[56] Scottish Government (2014) Scottish Planning Policy [online] Available at: https://www.gov.scot/publications/scottish-planning-policy/documents/ [Accessed March 2022]

[57] SEPA (2019) Groundwater Protection Policy for Scotland v3. November 2009. Environmental Policy Number 19 [online] Available at: https://www.sepa.org.uk/media/34371/groundwater-protection-policy-for-scotland-v3-november-2009.pdf [Accessed March 2022]

- Highland-wide Local Development Plan (April 2012)[58].

8.2.3 Four policies from The Highland-wide Local Development Plan are of relevance to this Proposed Development with regards to flood risk and drainage:

- Policy 28 – Sustainable Drainage;
- Policy 63 – Water Environment;
- Policy 64 – Flood Risk; and
- Policy 66 – Surface Water Drainage.

Guidance

8.2.4 This appraisal is carried out in accordance with the principles contained within the following documents:

- Construction Industry Research and Information Association (CIRIA) (2001) Report C532, Control of water pollution from construction sites: Guidance for consultants and contractors[59];
- CIRIA (2006) Report C648, Control of water pollution from linear construction projects: Technical guidance[60];
- CIRIA (2006) Report C649, Control of water pollution from linear construction sites: Site guide[61];
- CIRIA (2018) Report C753, The Sustainable Drainage Systems (SuDS) Manual[62];
- Scottish Executive (2012) River crossings & migratory fish: Design guidance[63];
- Scottish Executive (2017) Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments, 2nd Edition[64];
- NatureScot (2018) Environmental Impact Assessment Handbook, Version 5[65];
- NatureScot (2010) Floating roads on peat[66];
- SEPA (2022) (Controlled Activities) (Scotland) Regulations 2011 (as amended) A Practical Guide[67];
- SEPA (2015) Position Statement WAT-PS-06-02, Culverting of watercourses[68];
- SEPA (2010) WAT-SG-25, Engineering in the water environment: good practice guide[69];

[58] The Highland Council (2012) Highland-wide Local Development Plan [online] Available at: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan [Accessed March 2022]
[59] CIRIA (2001) Control of water pollution from construction sites: Guidance for consultants and contractors [online] Available at: https://www.ciria.org/ItemDetail?iProductCode=C532&Category=BOOK&WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91 [Accessed March 2022]
[60] CIRIA (2006) Report C648, Control of water pollution from linear construction projects: Technical guidance
[61] CIRIA (2006) Report C649, Control of water pollution from linear construction sites: Site guide
[62] CIRIA (2018) Report C753, The Sustainable Drainage Systems (SuDS) Manual [online] Available at: https://www.ciria.org/ItemDetail?iProductCode=C753F&Category=FREEPUBS [Accessed March 2022]
[63] Scottish Executive (2012) River crossings & migratory fish: Design guidance [online] Available at: https://studylib.net/doc/7380716/river-crossings-and-migratory-fish--design-guidance [Accessed March 2022]
[64] Scottish Executive (2017) Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments, 2nd Edition [online] Available at: https://www.gov.scot/publications/peat-landslide-hazard-risk-assessments-best-practice-guide-proposed-electricity/ [Accessed March 2022]
[65] NatureScot (2018) Environmental Impact Assessment Handbook, Version 5 [online] Available at: https://www.nature.scot/sites/default/files/2018-05/Publication%202018%20-%20Environmental%20Impact%20Assessment%20Handbook%20V5.pdf [Accessed March 2022]
[66] NatureScot (2010) Floating roads on peat [online] Available at: http://www.roadex.org/wp-content/uploads/2014/01/FCE-SNH-Floating-Roads-on-Peat-report.pdf [Accessed March 2022]
[67] SEPA (2022) (Controlled Activities) (Scotland) Regulations 2011 (as amended) A Practical Guide [online] Available at: https://www.sepa.org.uk/media/34761/car_a_practical_guide.pdf [Accessed March 2022]
[68] SEPA (2015) Position Statement WAT-PS-06-02, Culverting of watercourses [online] Available at: https://www.sepa.org.uk/media/150919/wat_ps_06_02.pdf [Accessed March 2022]
[69] SEPA (2010) WAT-SG-25, Engineering in the water environment: good practice guide [online] Available at: https://www.sepa.org.uk/media/151036/wat-sg-25.pdf [Accessed March 2022]

- SEPA (2006) WAT-SG-31, Prevention of Pollution from Civil Engineering Contracts: Special Requirements[70];
- SEPA (2010) Regulatory Position Statement – Developments on Peat[71];
- SEPA (2017) Land Use Planning System SEPA Guidance Note 31, Guidance on assessing the impacts of development proposals on groundwater abstractions and groundwater dependent terrestrial ecosystems, Version 3[72]; and
- Scottish Renewables/SEPA (2012) Developments on Peatland: Guidance on the assessment of peat volumes, reuse of excavated peat and the minimisation of waste[73].

8.3 Methodology

8.3.1 The general methodology used to appraise the effect of the Proposed Development on the hydrology, hydrogeology, geology and soil receptors and the surrounding area is as follows:

- desktop study to obtain baseline and historical data;
- consultation with SEPA, Scottish Water and The Highland Council to identify water abstractions and PWS;
- identification of the potential effects of the Proposed Development on sensitive receptors; and
- identification of options for the mitigation of potential effects, taking account of the Applicant's GEMPs.

Information Sources

8.3.2 The following sources of information have been reviewed during the desk-based research:

- Ordnance Survey (OS) (2017) digital mapping[74], 1:10,000, 1:25,000 and 1:50,000 scales;
- SEPA Water Classification Hub (2020) (River Basin Management Plan interactive web map)[75];
- SEPA Flood Maps (2022) (interactive web map)[76];
- British Geological Survey (BGS) Hydrogeological Map of Scotland (2018), 1:625,000 scale[77];
- BGS Geology of Britain viewer (2022): Bedrock and superficial geology. 1:50,000 scale (interactive web map)[78];

[70] SEPA (2006) WAT-SG-31, Prevention of Pollution from Civil Engineering Contracts: Special Requirements [online] Available at: https://www.sepa.org.uk/media/152220/wat_sg_31.pdf [Accessed March 2022]
[71] SEPA (2010) Regulatory Position Statement – Developments on Peat [online] Available at: https://www.sepa.org.uk/media/143822/peat_position_statement.pdf [Accessed March 2022]
[72] SEPA (2017) Land Use Planning System SEPA Guidance Note 31, Guidance on assessing the impacts of development proposals on groundwater abstractions and groundwater dependent terrestrial ecosystems, Version 3 [online] Available at: https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf [Accessed March 2022]
[73] Scottish Renewables/SEPA (2012) Developments on Peatland: Guidance on the assessment of peat volumes, reuse of excavated peat and the minimisation of waste [online] Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2014/07/assessment-of-peat-volumes-reuse-of-excavated-peat-and-minimisation-of-waste-guidance/documents/guidance-on-the-assessment-of-peat-volumes-reuse-of-excavated-peat-and-the-minimisation-of-waste/guidance-on-the-assessment-of-peat-volumes-reuse-of-excavated-peat-and-the-minimisation-of-waste/govscot%3Adocument/Guidance%2Bon%2Bthe%2Bassessment%2Bof%2Bpeat%2Bvolumes%252C%2Breuse%2Bof%2Bexcavated%2Bpeat%252C%2Band%2Bthe%2Bminimisation%2Bof%2Bwaste.pdf [Accessed March 2022]
[74] Ordnance Survey. Online Mapping (2022) [online] Available at: https://osmaps.ordnancesurvey.co.uk/ [Accessed March 2022]
[75] SEPA Water Classification Hub (2020). [online] Available at: https://www.sepa.org.uk/data-visualisation/water-classification-hub/ [Accessed March 2022]
[76] SEPA Flood Maps (2022). [online] Available at: https://map.sepa.org.uk/floodmaps [Accessed March 2022].
[77] BGS Viewer for Hydrogeological map of Scotland (2018). [online] Available at: http://mapapps2.bgs.ac.uk/geoindex/home.html?layer=BGSHydroMap&_ga=2.59199725.1532853921.1644263485-96331536.1635767367 [Accessed March 2022]
[78] BGS (2022) Geology of Britain viewer (classic) [online]. Available at: https://mapapps.bgs.ac.uk/geologyofbritain/home.html [Accessed March 2022]

- BGS Groundwater Vulnerability (Scotland) (2011) User Guide: GIS dataset, Version 2[79];
- NatureScot SiteLink (2019) (interactive web map)[80];
- James Hutton Institute Soil Map (2022)[81];
- NatureScot Carbon and Peatland Map (2016)[82]; and
- Scottish Government, Drinking Water Protection Areas (2014)[83].

Limitations and Assumptions

8.3.3 Baseline conditions have been established from a variety of sources, including historical data, but due to the dynamic nature of certain aspects of the environment, conditions are likely to change during the construction and operation of the Proposed Development.

8.3.4 It is assumed that information received by third parties is complete and up to date.

8.3.5 It is assumed that the design, construction and completed stages of the Proposed Development will satisfy minimum environmental standards, consistent with contemporary legislation, practice, and knowledge.

Extent of Study Area

8.3.6 The assessment is based upon the land within the Study Area (as defined below) and professional judgement and experience of assessing similar developments in similar environments. The following terms are used across this report:

- Site – the Proposed Development, within the Development Envelope (defined by the Site);
- Underground Cable (UGC) micrositing distance –30 m (i.e. 15 m to either side of alignment) for the UGC for which the Proposed Development relates;
- Overhead Line (OHL) Limit of Deviation (LoD) – LoD of 50 m (i.e. 25 m to either side of alignment) for the low profile trident H poles proposed as part of the Proposed Development; and
- Study Area – encompasses sensitive receptors, up to and including 2 km from the UGC micrositing distance and OHL LoD. This radius is considered suitable for the assessment of potential adverse effects resulting from the Proposed Development.

Consultation Undertaken to Date

8.3.7 **Table 8-1** provides a summary of the consultation activities undertaken in support of the preparation of this chapter.

[79] BGS Groundwater Vulnerability (Scotland), User Guide, GIS dataset, Version 2 (2011). [online] Available at: http://nora.nerc.ac.uk/id/eprint/17084/1/OR11064.pdf [accessed March 2022]
[80] NatureScot SiteLink (2019). [online] Available at: https://sitelink.nature.scot/map [accessed March 2022].
[81] James Hutton Institute (2022) Scotland's Soils [online]. Available at: http://map.environment.gov.scot/Soil_maps/?layer=1 [Accessed March 2022]
[82] NatureScot (2016) Carbon and Peatland Map [online]. Available at: https://map.environment.gov.scot/Soil_maps/?layer=10 [Accessed March 2022]
[83] Scottish Government (2014). Drinking water protected areas - Scotland river basin district: map 7 [online]. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/map/2014/03/drinking-water-protected-areas-scotland-river-basin-district-maps/documents/surface-water-maps/eccf44f6-0f7c-495e-a6de-20769417fa28/eccf44f6-0f7c-495e-a6de-20769417fa28/govscot%3Adocument/DWPA%2B-%2BScotland%2BRBD%2B-%2Bsurface%2Bwater%2B-%2Bmap%2B7%2Bof%2B22.pdf [Accessed March 2022]

Table 8-1 Consultation responses of relevance to hydrology, hydrogeology and geology

Organisation	Type of Consultation	Response	How response has been considered
The Highland Council	Online form on 21/02/2022: Requested records of PWS within 10 km of the existing Corriegarth substation.	The Highland Council provided information regarding known abstractions and PWS within 10 km of the existing Corriegarth substation.	This information is considered further within the Water Supplies and Mitigation Chapter of this report.
Scottish Water	Email on 21/02/2022: Requested records of Scottish Water registered assets and public water supply abstractions within 10 km of the existing Corriegarth substation. Additionally, requested records of Drinking Water Protected Areas within 10 km of the Corriegarth Substation.	Scottish Water provided information regarding assets within 10 km of the existing Corriegarth substation.	This information is considered further within the Water Supplies and Mitigation Chapter of this report.
SEPA	Email on 21/02/2022: Requested records of SEPA registered PWS and licensed abstractions located within 10 km of the existing Corriegarth substation. Additionally, requested records of historical flooding in the vicinity of the Corriegarth substation from any source.	Awaiting response.	N/A

8.4 Baseline Environment

8.4.1 **Figure 8-1** demonstrates the baseline conditions associated with the Proposed Development.

8.4.2 **Figure 8-2** demonstrates the baseline conditions of the soil and peat within the Proposed Development Study Area (250m).

Surface Water Hydrology

8.4.3 A review of OS 1:25,000 scale mapping[74] indicates that the Proposed Development is located to the north of the River E. At the closest point, the River E is within 30 m of the UGC micrositing distance, at the eastern section of the route. The River E is approximately 220 m west of the OHL LoD at its closest point. The River E (ID: 20274)[75] measures approximately 11.4 km in length and is located in the River Ness catchment. This water body is designated as a heavily modified water body on account of the physical alterations due to water storage for hydroelectricity generation. The River E was classified by SEPA, under the Water Framework Directive (WFD), as having an overall status of 'Moderate' in 2020.

8.4.4 A SEPA report[84] stated that modifications to the River E were allowed as part of a hydroelectricity scheme development. These modifications resulted in deterioration of the status of the water body and will prevent the water body from achieving good ecological potential in the future. The report stated that modifications were allowed because:

- *The benefits to sustainable development enabled by the new modifications outweighed the benefits of preventing the deterioration of the water body and preventing the water body from achieving good ecological potential.*

[84] SEPA, River E Water Body Status. [online] Available at: http://informatics.sepa.org.uk/SpotfireReferenceData/RBMPPDFS/WB20274.pdf [Accessed March 2022].

- *All practicable steps were taken, and will continue to be taken, to mitigate the adverse impact of the development on the status of the water body.*
- *Other means of delivering equivalent benefits to sustainable development, including siting the development elsewhere or generating the electricity using other renewable technologies, would not have been significantly better environmental options. This is because the adverse impact of the new modifications was limited in terms of its magnitude and environmental importance.*
- *There are no protected areas of a type that the modifications had any potential to affect anywhere in the vicinity of the modifications.*

8.4.5 A site visit was undertaken during March 2022 by the WSP Ecology Team, where the surveyors obtained baseline observations of the hydrological features around the Site.

8.4.6 During the site visit, two culverts were identified on the access road that routes adjacent to the Proposed Development (**Photograph 1-A and 1-B**). One culvert (Culvert A) is located approximately 100 m to the north-west of the OHL LoD. The other culvert (Culvert B) is located adjacent to the UGC route towards the mid-east section (550 m through the UGC route from west to east).

Photograph 1-A – Culvert A, taken at NGR NH 254736 813965.

Photograph 1-B – Culvert B, taken at NGR NH 255202 813641.

8.4.7 Artificial drainage channels were also identified through wet heath habitat (Drain 1), as well as at the side of the road (Drain 2). Images of these channels shared in **Photograph 2-A and 2-B**.

Photograph 2-A – Drain 1, taken at NGR 255196 813621

Photograph 2-B – Drain 2, taken at NGR 255199 813650

Designated Sites

8.4.8 According to NatureScot Sitelink[80], there are no Sites of SSSI, SPA or SAC within the Study Area.

8.4.9 The River E is designated as a Geological Conservation Review (GCR) Site. The GCR selects areas of national and international importance for their geology and geomorphology within Great Britain. No information on this designation was available on NatureScot Sitelink.

Geology

Bedrock Geology

8.4.10 According to BGS Bedrock Geology 1:50,000 scale mapping[78], the bedrock formation underlying the Site predominantly consists of Gairbeinn Pebbly Psammite Member – Psammite, Pebbly. A metamorphic Bedrock formed approximately 541 to 1000 million years ago. This bedrock formation was originally sedimentary rocks but later altered by low-grade metamorphism.

8.4.11 There are small intrusions of the North Britain Siluro-devonian Cal-alkaline Dyke Suite – Felsite. This bedrock formation is magmatic (intrusive) in origin and found where the local environment was previously dominated by intrusions of silica-rich magma. None of these intrusions are located directly under the Site, however, can be found approximately 240 m to the north west, underlying the River E, and 430 m to the north, underlying the Carn na Saobhaidhe summit at the closest points.

Superficial Geology

8.4.12 According to the BGS Superficial Deposits 1:50,000 scale mapping[78] the Site is underlain by an unknown/unclassified entry. This means that there is no interpretation of the superficial deposits, and these rocks are diverse in their origin. Ground Investigation works undertaken for the existing Corriegarth Windfarm substation confirmed the area is underlain by peat superficial deposits and till bedrock.

8.4.13 Three boreholes were installed by ESG within the Study Area, RH6, RH7 and RH8, which showed peat depth records between 0.30 and 0.90 m, underlain by semi-pelite formations. No groundwater

strikes were recorded up to 7.60 m bgl. A large number of trial pits were also carried out within the Study Area, with the same results as the boreholes.

8.4.14 Till – Diamicton is located to the north-west of the Proposed Development, overlapping a very small section of the OHL LoD, and within the area of permanent access for the OHL. This superficial deposit was formed up to three million years ago in the Quaternary Period. This deposit is detrital in origin and created by the action of ice and meltwater when the local environment was dominated by ice age conditions.

8.4.15 To the west of the Site, beyond the River E, there is an area identified as Peat. This superficial deposit was formed up to three million years ago in the Quaternary Period. These deposits are lacustrine and palustrine in origin and comprise of accumulated organic material.

Boreholes

8.4.16 According to the BGS Borehole Scans mapping[78], there are many boreholes within the Study Area. These are all marked as confidential/restricted for the Corriegarth Windfarm. No further details can be obtained from these borehole records unless requested through BGS. It is noted that releasing these records can take a significant amount of time as the process involves third parties and may not always be successful.

8.4.17 As mentioned in the Superficial Geology Section, records from the boreholes and trial pits as part of the existing Corriegarth Windfarm substation confirmed the area is underlain by shallow peat superficial deposits (< 1.00 m depth) and psammite and semi-pelite bedrock formations.

Soils and Peat

8.4.18 Soil and peat were considered within 250 m of the Proposed Development. This maintains consistency with the Soil and Peat Management Plan in **Appendix 8.1.** Soil and peat beyond 250 m of the Proposed Development is unlikely to be impacted by the construction and operation.

8.4.19 The James Hutton Institute National Soil Map of Scotland[81] indicates that the area within 250 m of the Proposed Development is predominantly underlain by Peaty Podzols, underlying the whole Proposed Development. Montane soils dominate the landscape south of the River E. Both Peaty Podzols and Montane soils belong to the Arkaig soil association, derived from schists, gneisses, granulites and quartzites, principally of the Moine Assemblage.

8.4.20 Based on NatureScot mapping[82], Peat Classes 4 and 0 cover the majority of the area (71.0% of the area) within 250 m of the Proposed Development. Classes 4 and 0 are not classified as priority peatland habitat. Class 2 '*nationally important carbon-rich soils, deep peat and priority peatland habitat*' covers 22.6 % of the area. Two small areas of Class 1 '*nationally important carbon-rich soils, deep peat and priority peatland habitat*' are noted to the east and west of the Site, which cover 6.4 % of the area.

8.4.21 A peat depth survey was undertaken on 2nd November 2021, which supersedes the higher-level characterisation from NatureScot Carbon and Peatland Map[82] dataset. Of the 76 records recorded in the peat depth surveys, the average peat depth was 0.51 m. 40.8% of the points probed had a peat depth result of less than 0.50 m (i.e. less than threshold depth to be classified as peat), with 88.2% of the results less than 1.00 m and all less than 1.50 m.

8.4.22 Soil and peat are further discussed in the Soil and Peat Management Plan in **Appendix 8.1**.

Groundwater

8.4.23 There is one groundwater body underlying the Proposed Development; Northern Highlands[75], which was classified by SEPA under the WFD, as having an overall status of 'Good' in 2020.

8.4.24 The Study Area is underlain by the Grampian Group, a low productivity aquifer that is characterised by small amounts of groundwater in near surface weathered zone and secondary fractures[77].

8.4.25 Groundwater vulnerability to pollution is predominantly Class 4[79] which is defined as '*Vulnerable to those pollutants not readily adsorbed or transformed*'.

Public and Private Water Supplies

8.4.26 The Highland Council provided PWS information, confirming that there is only one PWS within the Study Area. This is listed as PWS Corriegarth, located at the existing Corriegarth Windfarm substation and is marked as a commercial business. The source of this PWS is recorded as surface – rainwater.

8.4.27 Scottish Water confirmed that there are no Scottish Water assets within the Study Area, and no assets on the River E Catchment.

8.4.28 According to the Scottish Government website[83], there is one Surface Drinking Water Protected Area (DWPA) within the Study Area. This DWPA is not hydrologically connected to the Site, instead located upstream of Wester Aberchalder beyond the Carn Na Saobhaidhe hill, north of the Proposed Development. A tributary of the River E, Allt na Saobhaidhe flows from the same source as some of the DWPA tributaries but joins the River E downstream of the Proposed Development.

Groundwater Dependent Terrestrial Ecosystems (GWDTE)

8.4.29 SEPA's guidance on assessing the impacts of developments on GWDTE (LUPS-GU31)[85] requires assessment of GWDTE located within 250 m of excavations greater than 1 m and within 100 m of excavations less than 1 m.

8.4.30 A UKHab survey undertaken by a 'capable' ecologist in March 2022 identified a number of habitats within the Study Area consisting of wet heathland, blanket bog and upland acid grassland. Only one type of habitat was deemed to be potential GWDTE, H1b6 Wet Heathland. **Figure 3: UKHab Survey Results** of **Appendix 6.1** shows Wet Heathland as the dominant habitat within the Study Area.

8.4.31 H1b6 Wet Heathland, which is equivalent to NVC M15 *Scirpus cespitosus-Erica tetralix* wet heath, has a potential Moderate groundwater dependency based on SEPA's Guidance[85]. Wet heath is widespread in the north and west of Great Britain. It is most common in the western Highlands. It is a community of shallow, wet, or intermittently waterlogged, acid peat or peaty mineral soils on hillsides, over moraines, and within tracts of blanket mire[86].

8.4.32 This community is present on shallow peat on the base and flanks of the shallow, broad valley of the River E. The flora is likely to have been altered by grazing, burning and drainage, which are clearly apparent on aerial imagery. These practices have probably influenced the widespread presence of the M15 species within the Site.

8.4.33 The topography indicates this habitat is likely to be primarily fed by surface water run-off from adjacent sloping ground, and no groundwater seepage was noted during the surveys undertaken by the 'competent' ecologist.

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[85] SEPA (2017). Land Use Planning System SEPA Guidance Note 31. Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. [online]. Available at: https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf [Accessed March 2022]

[86] Averis, A., Averis, B., Birks, J., Horsfield, D., Thompson, D. & Yeo, M. (2004) An Illustrated Guide to British Upland Vegetation, JNCC, Peterborough, ISBN 1 86107 553 7. [online]. Available at: https://hub.jncc.gov.uk/assets/a17ab353-f5be-49ea-98f1-8633229779a1 [Accessed March 2022]

Flooding

Historic Flooding

8.4.34 Historic flooding records were requested from SEPA to support this chapter. At the time of writing, no data has been received.

Fluvial Flood Risk

8.4.35 The Site lies in an elevated position relative to the nearby River E and are beyond the mapped fluvial flooding extent in accordance with the SEPA fluvial flood risk mapping[76].

8.4.36 The River E flows in a river gully through the Study Area. There is a small section of the UGC micrositing distance that comes within 20 m of high fluvial flood risk, however the position of the UGC route is approximately 8 m higher in elevation.

8.4.37 There are also artificial drains through the heath (**Photograph 2-A**) and adjacent to the road (**Photograph 2-B**), however these do not pose a risk of fluvial flooding.

8.4.38 The River E has been captured in the images below, upstream of the Dam located at NGR 254604 813646 (**Photographs 3-A and 3-B**).

Photographs 3-A - River E looking downstream

Photographs 3-B – River E looking upstream.

Surface Water Flood Risk

8.4.39 A review of SEPA's surface water flood maps[76] indicate that the Proposed Development is not at risk of surface water flooding in any of the three modelled pluvial events (10%, 0.5%, 0.1% Annual Probability).

8.4.40 During the March 2022 site visit, there was no evidence of surface water pooling within the Site.

Groundwater Flood Risk

8.4.41 Groundwater flooding occurs when the water table rises from underlying rocks or from springs and is usually classified as a contributing factor to flooding rather than the primary source.

8.4.42 No ground investigations have been carried out for the Proposed Development at the time of writing, and the local groundwater level is unknown at this stage. There are no publicly available borehole records within or in close vicinity to the development (see Boreholes Section).

8.4.43 During the March 2022 site visit, there was no clear evidence of groundwater emergence within the Site.

Other sources of flooding

8.4.44 Other sources consist of flooding from canals, reservoirs, coasts, and sewer sources. Due to the distance from any of these sources, they have been discounted from further consideration.

Future Baseline

8.4.45 The Met Office[87] projects that the UK will see warmer, wetter winters and hotter, drier summers. This is further discussed in the Independent Assessment of UK Climate Risk (CCRA3)[88] with headline results summarised below:

- Warmer and wetter winters. These wet winter days will be more frequent and have more intense daily rainfall. The Met Office UKCP18 modelling indicates that winters will be more mobile and cyclonic, bringing with them a higher occurrence of strong winds, waves and large volumes of precipitation.
- Hotter and drier summers. Wet days will become less frequent, but on days that it does rain it is projected to be more intense. Higher temperatures are also projected across the UK.

8.4.46 These headlines suggest that there may be greater pressures on water supplies in summer months in the future. The more frequent weather extremes and higher intensities of rainfall will increase peak fluvial flows in volume and velocity, therefore increasing the risk of flooding.

8.4.47 The change in some climate variables will likely take time to become clear, beyond natural variability. However, it is likely that these projected changes in temperature and precipitation will have an impact on future baseline conditions.

8.5 Issues Scoped Out

8.5.1 Operational effects have been scoped out of this appraisal as there are no expected direct or indirect environmental risks from the operation of the Proposed Development, with good design layout, mitigation measures and GEMPs protecting against longer-term effects.

8.5.2 The River Ness is recognised as having the potential to support a healthy juvenile salmon population. Fish populations could also be present in minor watercourses (e.g. River E), tributaries of the noted watercourse. Further details and species information are available in the Ness District Salmon Fishery Board Annual Report (2021)[89].

8.5.3 There are no fisheries crossed or in the vicinity of the Proposed Development. The impact of pollution on fisheries and fish populations is scoped out of the appraisal due to the distance from the Proposed Development to fish farms and the mitigation measures and GEMPs implemented.

8.6 Mitigation

Design Mitigation and Assumptions

Good practice measures

8.6.1 A number of good practice measures are detailed in Chapter 2 including the CEMP and GEMPs (**Appendix 2-1**). A summary of those most relevant to hydrology, hydrogeology and geology of the Proposed Development is provided below.

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[87] Met Office (2020) Climate change in the UK. [online] Available at: https://www.metoffice.gov.uk/weather/climate-change/climate-change-in-the-uk [Accessed April 2022].

[88] Slingo, J. (2021) Latest scientific evidence for observed and projected climate change. In: *The Third UK Climate Change Risk Assessment Technical Report* [Betts, R.A., Haward, A.B. and Peason, K.V. (eds.)]. Prepared for the Climate Change Committee, London. [online] Available at: https://www.ukclimaterisk.org/wp-content/uploads/2021/06/Technical-Report-The-Third-Climate-Change-Risk-Assessment.pdf [Accessed April 2022].

[89] Ness District Salmon Fishery Board (2021) Annual Report. [online] Available at: https://ness.dsfb.org.uk/files/2022/02/2021-Annual-report-draft-cmpressed.pdf [Accessed July 2022].

8.6.2 The adoption of the applicable GEMPs would reduce the probability of an incident occurring and also reduce the magnitude of any incident due to a combination of good site environmental management procedures, including minimised storage soil and peat volumes, soil management, staff training, contingency equipment and emergency plans.

8.6.3 The GEMPs applicable to this chapter are:

- Working in or near water GEMP;
- Working in sensitive habitats GEMP;
- Watercourse crossings GEMP;
- Private water supplies GEMP;
- Working with concrete GEMP;
- Oil storage and refuelling GEMP;
- Waste management GEMP;
- Soil management GEMP; and
- Bad weather GEMP.

8.6.4 Chapter 10: Summary of Mitigation Measures will be provided to the Contractor, who will ensure mitigation measures are implemented. The implementation of the mitigation measures would be managed on-site by a suitably qualified and experienced EnvCoW, with support from other environmental professionals, as required.

8.6.5 The following appraisal of effects assumes that good practice measures, as detailed in Chapter 2, including the CEMP and GEMPs will be implemented.

8.7 Appraisal

8.7.1 The potential effects associated with the construction of the Proposed OHL and Proposed UGC include:

- Release of sediment laden runoff to controlled waters;
- Pollution of controlled surface, coastal and groundwater bodies;
- Changes to hydrological regime; and
- Physical disturbance to watercourses.

8.7.2 The potential effects are relevant to both the Proposed OHL and Proposed UGC and therefore are described together below as the Proposed Development with specific references to elements of the Proposed OHL and Proposed UGC as required.

8.7.3 As previously noted, operational effects have been scoped out of this appraisal.

Construction Phase Effects

8.7.4 During the construction phase of the Proposed Development, there is potential for the following short-term impacts on the hydrology, hydrogeology and geology environment.

8.7.5 The construction will require a temporary compound and laydown area, which will be determined by the Contractor, in conjunction with the Applicant's operation and maintenance team. Vehicle access would be required along the Proposed UGC and to each structure location for the Proposed OHL to allow excavation and creation of foundations and pole installation.

Pollution Incidents

8.7.6 There is potential for contamination of surface water and groundwater bodies from spillage or leaks of hydrocarbons, concrete, and other fluids. Sources of oils and hydrocarbons on construction sites include storage tanks, plant and machinery, spillage and leakage at refuelling areas and vandalism.

8.7.7 Construction of the Proposed Development presents potential pathways for oils and hydrocarbons to enter water bodies. These include direct to water bodies, overland flow (suspended in surface water runoff into drains and watercourses, especially during periods of high runoff rainfall events) and through infiltration, particularly when areas are subject to 'wash down'.

8.7.8 These pollutants can also infiltrate and contaminate soils and bedrock, thereby polluting groundwater resources. This can impact on the quality of both potable water and impact any GWDTE present.

8.7.9 Drainage design measures to ensure the discharge would not result in pollution to surface water will be set out in the CEMP.

8.7.10 Considering the design mitigation and construction good practice, specifically the working in or near watercourses, private water supplies, soil management and oil storage and refuelling GEMPs, the effects listed above will be managed to greatly reduce the probability of occurrence and the severity of any incident that did occur.

Watercourse Sedimentation

8.7.11 Sediment entering the water environment increases turbidity, which can smother aquatic and riparian flora and fauna. It also can block subsurface flows within water dependent habitats and can alter the flood capacity of watercourses.

8.7.12 Sediment laden run-off could be generated through:

- Construction of watercourse crossings and drainage;
- Trench excavation works;
- Construction of permanent access track to the Proposed OHL;
- Temporary track and compound construction works;
- Construction traffic and access track drainage; and
- Dewatering of excavations.

8.7.13 The most direct pathway for sediments to reach surface water bodes on the Site, causing an increase in suspended sediment loadings, is when the Proposed UGC cuts directly through any drains.

8.7.14 Trench excavations are anticipated to require dewatering mainly due to rainfall. This will consist of mobile pumps moving the water to a suitable location as agreed on-site by the EnvCoW and in accordance with the relevant GEMPs. Sediment removal measures (such as silt fences) will be incorporated prior to discharge into reviewing watercourse or, where discharged to land, the locations will be chosen whereby sediment settlement will not adversely impact GWDTE or PWS. Careful siting of discharges will be planned prior to works commencing by the Contractor.

8.7.15 Trenching through the banks of drains to lay the cables could lead to turbid flows from the mobilisation of sediments. Any remedial action with regards to erosion of the affected areas will be carried out as soon as possible upon completion of the works required to lay the cables.

8.7.16 Should flooding on Site occur when trenching is taking place, there is the potential for the mobilisation of sediments.

8.7.17 Excavated material during the trench construction will be stored a minimum of 10 m away and downstream from any adjacent watercourse to mitigate against any risk of runoff or windborne dry sediment being discharged into the watercourses.

8.7.18 Existing access tracks will be utilised where possible; however, the construction of some temporary access tracks will be required. Depending on the design of these temporary access tracks, there is the potential for the generation of sediment laden run-off which will be mitigated through the use of Sustainable Drainage Systems (SuDS), following good practice guidelines.

8.7.19 The location of the temporary construction compound and laydown area is to be determined by the Contractor and thus not known at the time of writing. Drainage for these construction compounds (including during their construction) will follow SuDS principles and will be agreed with SEPA in advance. They should be sited at least 50 m from the watercourses and for any potential GWDTE (H1b6 Wet Heathland) (**Figure 3: UKHab Survey Results, in Appendix 6.1**), a 100 m buffer applies for excavations up to 1 m deep, and 250 m buffer for all excavations deeper than 1 m. H1b6 Wet Heathland has been deemed to be primarily fed by surface water run-off (see **GWDTE within Section 8.4**) and therefore low groundwater dependent.

8.7.20 Considering the design mitigation and construction good practice, specifically the working near water, soil management and watercourse crossing GEMPs, the effects listed above will be managed to greatly reduce the probability of occurrence and the severity of any incident that did occur.

Concrete and Cement Product

8.7.21 Concrete may be used during the construction work therefore the potential for concrete spillages exists in addition to the generation of alkaline leachate in water dependent habitats. Good practice construction techniques will reduce these impacts at the construction stage.

8.7.22 The major pathways for cement contaminated water to reach surface water bodies are either overland flow (suspended in surface water runoff into the drains and River E, especially during periods of high runoff rainfall events) or when areas are subject to ‘wash down’.

8.7.23 Should it be necessary to mix concrete on-site, the measures within GEMP – Working with Concrete, will be adhered to.

8.7.24 With the adoption of such measures, the effects listed above will be managed to greatly reduce the probability of occurrence and the severity of any incident that did occur.

Modification of Hydrological Pathways

8.7.25 Excavations for both Proposed UGC trench and the Proposed OHL could disrupt shallow groundwater systems resulting in the lowering of groundwater levels in the immediate vicinity of the excavations and alterations to flow paths during dewatering activities. The structures for the Proposed OHL are unlikely to permanently alter groundwater flows. Should any alterations occur, it would be expected that natural conditions of groundwater level and flow would recur close to these locations in a short timeframe.

Proposed UGC

8.7.26 The Proposed UGC works have the potential to act as a temporary conduit for the movement of excess runoff/surface flood waters during construction.

8.7.27 Cable trenches can modify preferential drainage pathways to groundwater flows, where a more permeable material is used along its length or contact surfaces. The Proposed UGC trench is to be backfilled with thermally stable backfill material, such as selected sands and gravels, or cement bound sand.

8.7.28 Interruption of groundwater flow would potentially reduce the supply of groundwater to GWDTE, thereby causing an alteration / change in the quality or quantity of and / or the physical or biological characteristics of the GWDTE.

8.7.29 Should evidence of preferential flow paths along the contact surface of the Proposed UGC trench occur, mitigation measures must be in place to address this, which may include impermeable bunds.

8.7.30 Where the Proposed UGC cable has the potential to impede shallow flow paths, a separate assessment should be performed to determine the likelihood, and pragmatic solutions using permeable materials may be used.

8.7.31 Taking into account the design mitigation and construction good practice, specifically the Working In Or Near Water, Working In Sensitive Habitats, Watercourse Crossings and Soil Management GEMPs, the effects listed above will be managed to reduce any modification of hydrological pathways.

Short term increase in flood risk

8.7.32 Short term increase in flood risk has the potential to include impacts to construction workers, third parties, and nearby developments.

8.7.33 Surface flows can be impeded by construction activity in, or adjacent to stream channels. Blockages can be caused by inadequate control of earthmoving plant, sedimentation, and poor waste management, all of which could lead to flooding upstream.

8.7.34 Taking into account the low flood risk sensitivity at the Site, design mitigation and construction good practice, specifically the watercourse crossing GEMP, the probability of the Proposed Development resulting in an increase in flood risk will be reduced.

Public / Private Water Supplies and Abstractions

8.7.35 Scottish Water confirmed that there were no PWS within the Study Area.

8.7.36 Only one PWS was listed in The Highland Council database, however the Contractor will undertake consultation with property owners as part of this process as further unregistered PWS may be established through this consultation.

8.7.37 As no response was obtained from SEPA, the Contractor will undertake consultation with SEPA at the pre-construction stage to ascertain current abstraction operations and confirm local sources and asset locations. The Contractor is then responsible for establishing the potential for impact and agree precautions with SEPA to protect these assets during the construction of the Proposed Development.

8.7.38 The Contractor will be required to consider all construction activities and satisfy themselves that they are aware of all PWS and abstractions in the local area that may be at risk of adverse effects to the supply sources or infrastructure. Should any further PWS or abstractions be identified which require protection, specific mitigation will be developed and agreed with the local property owners and SEPA. If applicable, water quality and/or quantity monitoring before, during and after construction may be required by the Contractor.

8.7.39 With the adoption of such measures and taking into account the PWS GEMP, the probability and severity of the Proposed Development resulting in any adverse effect on public and private water supplies, infrastructure and abstractions will be reduced.

Development Water Supply and Foul Drainage

8.7.40 The construction works will not require any new water abstractions from local sources. Water supply for welfare facilities will be low volume and potable water will be from bottle or bowser supply. There may be potential for non-potable water to be sourced from rainfall collection.

8.7.41 Construction foul water will be collected and removed from Site for off-site disposal at a licenced premises.

8.7.42 Taking account of the Proposed Development and good practice measures, no potential adverse effect is anticipated.

Loss and compaction of soils

8.7.43 Soil compaction as a result of construction works within the Site may damage the vegetation and result in a reduction of soil permeability and rainfall infiltration, particularly on peaty soils, thereby increasing the potential for longer-term erosion from surface water runoff. This would most likely be caused by tracking of heavy plant machinery.

8.7.44 Due to proximity of the existing track, it is anticipated that the Proposed Development can be accessed directly off this track. In addition to the existing track, a new small section of access track to facilitate installation, maintenance and operation of the Proposed OHL is required. Where temporary floating tracks are required for the construction of the Proposed UGC, low pressure tracked excavators and personnel vehicles are preferred and/or the use of temporary access panels (e.g. bogmats, Live Trakway or Terrafirma Dura-base) in areas of soft ground. These options will be proposed where practicable.

8.7.45 Stockpiled and unvegetated / exposed areas of soils are also at risk of desiccation and erosion by wind and water, also potentially causing soil loss.

8.7.46 It is considered that all excavated material could be re-used (i.e. balance) with no material needing to be brought onto Site for restoration. All excavated material will be re-used locally, within the Site or adjacent land, and in as short a timeframe as is feasible during the construction phase. Additionally, locally excavated blanket peat could be used to aid habitat management of the Site.

8.7.47 Considering the design mitigation and construction good practice, specifically the Soil Management GEMP, the effects listed above will be managed to greatly reduce the probability of occurrence and the severity of any effect that did occur.

Peat Instability

8.7.48 Given the excavations likely to be associated with the Proposed Development, further peat probing data in the Study Area should be considered prior to construction commencing.

8.7.49 Peat slides are a natural occurrence that can occur without human interference, but issues such as removal of slope support or increased loading upon slopes can either increase the likelihood of an event occurring or can increase the scale of the failure.

8.7.50 Peat slides affect soil (and associated habitats) and potentially downstream surface water systems where soil inundation can lead to sedimentation reducing water quality and modification in drainage patterns, as assessed within the Watercourse Sedimentation section. The various receptors of a peat stability failure have been separated for this evaluation.

8.7.51 Shallow peat depths were recorded in the Study Area, to avoid exacerbating the potential of peat instability, excavated material or other forms of loading on, or immediately above, breaks of slope or any other potentially unstable slopes will be avoided. Artificial drainage will also be routed to not concentrate flows onto slopes, gully heads or into excavations.

8.7.52 The inherent design principles and adoption of the applicable good practice measures summarised in the CEMP would reduce the effect of peat instability. Key measures identified to minimise peat stability risk include:

- avoidance of removal of slope support;
- avoidance of heavy loading on slopes;

- good drainage practice to ensure flows not concentrated onto slopes or into excavations;
- restricting earthmoving activities during and immediately after intense and prolonged rainfall events; and
- creating and managing of geotechnical risk register or similar management system throughout the detailed design and construction phases.

8.7.53 With the adoption of the CEMP and measures listed above the probability of peat stability failure is low. Furthermore, Section 37 applications need to be assessed for peat landslide risk only where infrastructure is proposed in peatland areas. As shown on **Figure 8-3**, peat depths across the Proposed Development are consistently less than 0.50m. Therefore, no potential adverse effect on peat stability is anticipated.

8.8 Recommendations and Mitigation

8.8.1 Chapter 9 Summary of Mitigation Measures, will be implemented during the construction of the Proposed Development, detailing best practice construction management measures, including measures to manage risks associated with construction of the Proposed Development to the environment and human health, such as those associated with pollution and resource use.

8.8.2 It is recommended that the Contractor will undertake consultation with any property owners to ensure identification of any unregistered PWS is established. If applicable, measures to mitigate for temporary interruption of water supply, or permanent alternative supply to be agreed prior to works commencing.

8.8.3 The Contractor will undertake consultation with SEPA at the pre-construction stage to ascertain current abstraction operations and confirm local sources and asset locations. The Contractor is then responsible for establishing the potential for impact and agree precautions with SEPA to protect these assets during the construction of the Proposed Development.

8.8.4 The Contractor will be required to consider all construction activities and satisfy themselves that they are aware of all PWS and abstractions in the local area that may be at risk of adverse effects to the supply sources or infrastructure. Should any further PWS or abstractions be identified which require protection, specific mitigation will be developed and agreed with the local property owners and SEPA. If applicable, water quality and/or quantity monitoring before, during and after construction may be required by the Contractor.

8.8.5 Potential mitigation measures proposed to ensure that sub-surface flows and groundwater flows are not interrupted by the works may include, micrositing the infrastructure, where possible, to avoid areas of potential GWDTE (h1b6 – Wet Heathland) (see **GWDTE in Section 8.4 and Figure 3: UKHab Survey Results of Appendix 6.1**), and/or use of impermeable bunds.

8.8.6 The Soil and Peat Management Plan (SPMP) (**Appendix 8.1**) lists a number of opportunities to reduce the extent of excavations and/or increase the extent of re-use opportunities. It is recommended that all excavated material is used to ensure no requirement for material to be brought on Site for restoration. This excavated material should be re-used nearby and in a short timeframe during the construction phase. In the event that there is an excess of excavated material, application of additional options at the detailed design and constructed phases will be required to avoid off-Site disposal.

8.8.7 Mitigation measures will be monitored by an Environmental Clerk of Works (EnvCoW) throughout construction.

8.9 Summary

8.9.1 The following sensitive hydrology, hydrogeology and geology receptors along the Proposed Development have been identified:

- Surface water bodies;
- Groundwater bodies;
- Flooding;
- GWDTE;
- PWS; and
- Peat superficial deposits.

8.9.2 The appraisal demonstrated how the Proposed Development would affect the above sensitive receptors. Through successful application of the embedded mitigations, the appraisal has concluded that impacts from the Proposed Development can be mitigated to prevent any likely direct and indirect environmental residual risks on the hydrology, hydrogeology and geology receptors.

9. SUMMARY OF MITIGATION MEASURES

9.1.1 The Chapters above highlight the potential environmental risks and present mitigation measures for managing these risks.

9.1.2 **Table 9-1** lists the design, general and additional mitigation proposed within this document. The CEMP will include these protection measures.

Table 9-1: Schedule of Mitigation

Reference	Title	Description
CEMP	General Mitigation	A CEMP will be produced by the Contractor and implemented during construction of the Proposed Development. The CEMP will also reference the Applicant's GEMPs and SpPPs.
BD1	Pre-Construction Survey	It is recommended that a pre-construction walkover survey by a capable ecologist be completed to record any new evidence of protected species prior to commencement of works; and revise Site-specific mitigation measures and licensing requirements as required. These checks would ensure that protected and priority species are either avoided or that appropriate mitigation are implemented. For ornithological receptors, a pre-construction breeding bird survey within the Site and an additional 2 km buffer to update the status and distribution of breeding birds of elevated conservation importance is recommended. This will be undertaken by a suitability qualified ornithologist across four visits during April to July.
BD2	Ecological Clerk of Works (ECoW)	Onsite guidance by a capable, suitably experience ECoW on adherence to construction good practice and to help facilitate other mitigation measures within the CEMP. Any sightings of protected species or environmental observations/incidents during the construction phase will be reported to and acted upon by the ECoW. The appointed ECoW will be suitably experienced with the potential ornithological constraints identified (most likely to be breeding waders). The ECoW will be able to identify suitable protection zones to be placed around any nest sites, if required. In the case of waders, suitable protection zones/measures for dependent chicks which leave the nest site soon after hatching but are unable to fly might also be required.
HG1	Abstractions	The Contractor will undertake consultation with SEPA at the pre-construction stage to ascertain current abstraction operations and confirm local sources and asset locations, and agree precautions to protect these assets. Where the Proposed UGC cable has the potential to impede shallow flow paths, a separate assessment should be performed to determine the likelihood, and pragmatic solutions using permeable materials may be used.
HG2	Private Water Supply	Undertake consultation with any property owners to ensure identification of any unregistered PWS is established. Should any further PWS or abstractions be identified which require protection, specific mitigation will be developed and agreed with the local property owners and SEPA. If applicable, water quality and/or

Reference	Title	Description
		quantity monitoring before, during and after construction may be required by the Contractor. If applicable, measures to mitigate for temporary interruption of water supply, or permanent alternative supply to be agreed prior to works commencing.
HG3	Soil and Peat Management Plan	Implement opportunities to reduce the extent of excavations and/or increase the extent of re-use opportunities detailed in the SPMP.

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APPENDIX 2.1 – SSEN TRANMISSION GEMPS

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APPENDIX 2.2 - SSEN TRANMISSION SPPPS

APPENDIX 2.3 – BNG ASSESSMENT

APPENDIX 5.1 – LANDSCAPE AND VISUAL METHODOLOGY

GENERAL APPROACH

This Landscape and Visual Appraisal (LVA) was carried out broadly in accordance with best practice guidelines for Landscape and Visual Impact Assessment as set out in the Guidelines for Landscape and Visual Impact Assessment (3rd edition, 2013) (GLVIA3).

The assessment approach and process are summarised in the flow diagram below from GLVIA3.

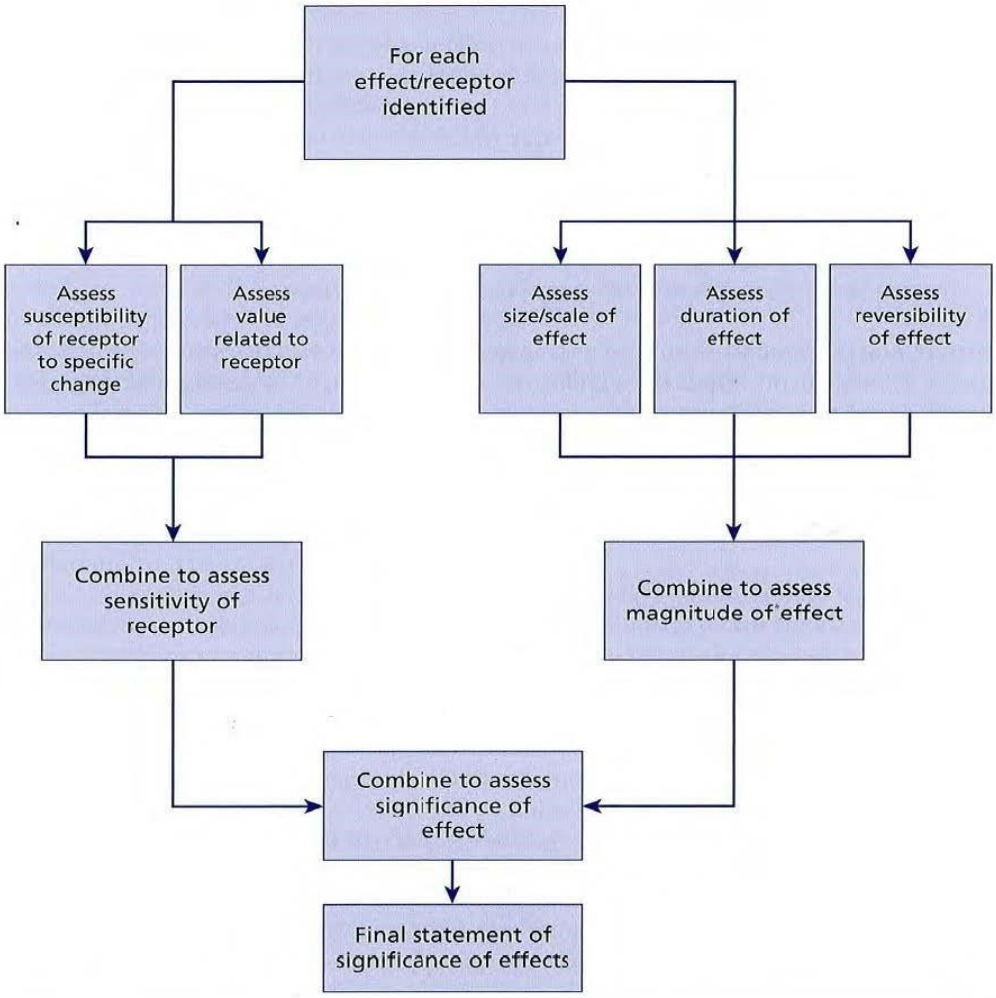

Figure 3.5 Assessing the significance of effects

In the text below there are a number of tables setting out the decision-making framework for assessing sensitivity and magnitude and how these are considered together to reach an assessment of significance.

In all cases these tables are guidelines, not hard and fast rules. Conclusions about the sensitivity of receptors, the magnitude of impacts and the significance of effects are always based on professional judgement.

ASSIGNING VALUE AND SENSITIVITY

LANDSCAPE RECEPTORS

Landscape effects can be defined as the changes in the fabric, character and quality of the landscape as a result of a development, through:

- direct effects upon the landscape fabric (specific features and elements that make up the landscape);
- indirect effects upon the overall patterns of elements and on the perceptual and aesthetic aspects that give rise to landscape character and regional and local distinctiveness; and
- effects upon valued landscapes such as public open space, statutorily designated heritage assets and designated nature conservation sites with public access.

The sensitivity of the landscape receptors has been arrived at by considering the landscape receptor value and the landscape susceptibility of the receptor to the change proposed, generally in accordance with Tables 1 and 2 below.

Reference is normally made to the relevant Landscape Character Assessments

Table 1: Landscape Receptor Value

Value	Recognition	Features	Quality / Condition
High	Typically, a landscape or feature of international or national recognition: World Heritage Sites, National Parks, National Scenic Areas, Gardens and Designed Landscapes.	Typically, a strong sense of place with landscape / features worthy of conservation; Absence of detracting features to occasional detracting features.	A very high-quality landscape / feature; attractive landscape / feature; exceptional / distinctive.
Medium	Regional recognition or undesignated, but locally valued landscape / features: Council landscape designation; Local Landscape Areas, Country Parks, Regional Parks.	Typically, a number of distinguishing features worthy of conservation; evidence of some degradation and some detracting elements.	Ordinary to good quality landscape / feature with some potential for substitution; a reasonably attractive landscape / feature; fairly typical and commonplace.
Low	Typically, an undesignated landscape / feature.	Few landscape features worthy of conservation, evidence of degradation with many detracting features.	Ordinary landscape / feature with high potential for substitution; quality that is typically commonplace and unremarkable; limited variety or distinctiveness.
Negligible	Typically, an undesignated landscape / feature.	No landscape features worthy of conservation; evidence of degradation with many detracting features.	Low quality landscape / feature with very high potential for substitution; limited variety or distinctiveness; commonplace.

Table 2: Susceptibility of the Landscape Receptor to Change

Value	Recognition
High	Low ability to accommodate the specific proposed change; undue consequences for the maintenance of the baseline situation (receptor value) and / or achievement of relevant planning policies / strategies.
Medium	Moderate ability to accommodate the specific proposed change; some undue consequences for the maintenance of the baseline situation (receptor value) and / or achievement of relevant planning policies / strategies.
Low	High ability to accommodate the specific proposed change; little or no undue consequences for the maintenance of the baseline situation (receptor value) and / or achievement of relevant planning policies / strategies.
Negligible	Very high ability to accommodate the specific proposed change; no undue consequences for the maintenance of the baseline situation (receptor value) and/or achievement of relevant planning policies / strategies.

LANDSCAPE SENSITIVITY

Susceptibility and value can be combined in different ways although it is generally accepted that a combination of high susceptibility and high value is likely to result in the highest sensitivity, whereas a low susceptibility and low value is likely to result in the lowest level of sensitivity. As noted in GLVIA3 there can be complex relationships between the value attributed to a landscape and its susceptibility to change, which can be particularly important when considering change in or close to designated landscapes.

Landscapes considered highly susceptible to the proposed change are normally considered to be of high sensitivity unless there are particularly strong reasons associated with the landscape value that lead to a reduction in sensitivity.

Similarly, receptors considered of low or medium susceptibility are usually in the same category of sensitivity, unless there are reasons associated with the landscape value that lead to an increase in sensitivity.

Table 3, below, summarises typical characteristics of the different levels of sensitivity. It should be noted that the levels are indicative and the levels shown are arbitrary divisions of a continuum. Professional judgement is always used to determine the overall level.

Table 3: Landscape sensitivity

Level of sensitivity	Typical characteristics
High	Areas of landscape character that are highly valued for their scenic quality (including most statutorily designated landscapes); Elements/features that could be described as unique or are nationally scarce; Mature vegetation with provenance such as ancient woodland or mature parkland trees; and/or Mature landscape features which are characteristic of and contribute to a sense of place and illustrates time-depth in a landscape and if replaceable, could not be replaced other than in the long term. No or limited scope for substitution or positive enhancement.
Medium	Areas that have a positive landscape character but include some areas of alteration/degradation/or erosion of features; Perceptual/aesthetic aspects has some vulnerability to unsympathetic development; and/or features/elements that are locally commonplace; unusual

Level of sensitivity	Typical characteristics
	locally but in moderate/poor condition; or mature vegetation that is in moderate/poor condition or readily replicated. Some scope for substitution or positive enhancement.
Low	Damaged or substantially modified landscapes with few characteristic features of value, Capable of absorbing major change; and Landscape elements/features that might be considered to detract from landscape character such as obtrusive man-made artefacts (e.g. power lines, large scale developments, etc.). Scope for substitution or positive enhancement.
Negligible	Areas that are relatively bland or neutral in character with few/no notable features; A landscape that includes areas of alteration/degradation or erosion of features; and/or Landscape elements/features that are common place or make little contribution to local distinctiveness. Opportunities for the restoration of landscape through mitigation measures associated with the proposal.

VISUAL RECEPTORS

Visual effects relate to changes in available views and the effect of those changes on people, including:

- the direct effects of the Proposed Development on the content and character of views (e.g. through intrusion or obstruction and / or the change or loss of existing elements in the view); and
- the overall effect on the change on visual amenity.
- The sensitivity of a visual receptor reflects their susceptibility to change and any values which may be associated with the specific view. It varies depending on a number of factors such as the activity of the viewer, their reasons for being there and their expectations and the duration of view.
- Certain views are highly valued for either their cultural or historical associations, which can increase the sensitivity of the viewer. However, whilst a valued view may serve to increase the overall visual receptor sensitivity, a low value will not necessarily reduce sensitivity.
- GLVIA3 advises that it is helpful to consider (but not restricted to) the following:
    - Nature of the view (full, partial or glimpsed);
    - Proportion of the proposed development visible (full, most, part or none);
    - Distance of the viewpoint from the proposed development and whether it would be the focus of the view or only a small element;
    - Whether the view is stationary, transient or sequential; and
    - The nature of the changes to the view.

Additionally, the seasonal effects of vegetation are considered, in particular the varying degree of screening and filtering of views.

The sensitivity of the visual receptors has been arrived at by considering the susceptibility of the visual receptor to the change proposed (guided by Table 4, below) and any values associated with the particular view (guided by Table 5, below).

Table 4: Susceptibility of the visual receptor to change

Susceptibility to proposed change	
High	• Residents at home; • Walkers on long distance trails and mountain access routes, • Users of footpaths where the attractive nature of the countryside is a significant factor in the enjoyment of the walk, • Cyclists on national and local cycle routes designed to provide an attractive experience; • Road users on recognised tourist routes; • Visitors to landscape and heritage resources and other attractions where views of the surroundings are an important contributor to appreciation, experience and/or enjoyment.
Medium	• General road users; • Passengers on rail lines where the trains run at low or moderate speeds; • Users of public open space and footpaths where the nature of the surroundings is not a significant factor in the enjoyment of the activity; • Visitors to landscape and heritage resources and other attractions where views of the surroundings are a minor contributor to appreciation, experience and/or enjoyment.
Low	• People at their place of work or shopping; • Users of high speed roads and passengers in trains running at high speed. • People engaged in recreational activities where the view of the surroundings is secondary to the enjoyment of the activity (such as playing or spectating at outdoor sports facilities) • Users of public open space and footpaths where the nature of the surroundings is irrelevant to the enjoyment of the activity
Negligible	• Users of indoor facilities where the view is irrelevant to their activity

Table 5: Values associated with views (which may raise the receptor sensitivity)

Value	Recognition	Indicators of value
High	Recognised views from nationally or internationally important landscape or heritage resources, Scheduled Monuments; may be identified in planning policies or statutory documents.	High value / celebrated view; referred to in national or international guide books, tourist guides etc.; literary and art references; presence of interpretive facilities (e.g. visitor centre).
Medium	Recognised views from local or regionally important landscape or heritage resource, such as Local Landscape Areas or Conservation Areas; may be identified in local planning policies or supplementary planning documents.	Moderately valued view; referred to in local or regional guide books, tourist maps etc.; local literary and art references; presence of some interpretive facilities (e.g. parking places or sign boards).

Visual Sensitivity

As with landscape, susceptibility and value can be combined in different ways to form a judgement about the sensitivity of a given receptor. It is generally accepted that a combination of high susceptibility and high value is likely to result in the highest sensitivity, whereas a low susceptibility and low value is likely to result in the lowest level of sensitivity.

However, whilst a valued view may serve to increase the overall sensitivity of the visual receptor, a low value will not necessarily reduce sensitivity. Visual receptors considered highly susceptible to

the proposed change are normally considered to be of high sensitivity unless there are particularly strong reasons associated with the value of the view that lead to a reduction in sensitivity.

Similarly, receptors considered of low or medium susceptibility are usually in the same category of sensitivity, unless there are reasons associated with the value of the view that lead to an increase in sensitivity.

Table 6, below, summarises typical characteristics of the different levels of sensitivity. It should be noted that the levels are indicative and the levels shown are arbitrary divisions of a continuum.

Table 6: Visual sensitivity criteria

Level of sensitivity	Typical characteristics
High	A view or overall visual amenity which is an important reason for receptors being there (and therefore most views or overall visual amenity for highly susceptible receptors). A well balanced view containing attractive features and notable for its scenic quality. A view which is experienced by a large number of people and/ or recognised for its scenic qualities.
Medium	A view or overall visual amenity which plays a relatively small part in the reason why a receptor would be there (and therefore most views or overall visual amenity for receptors of medium susceptibility). An otherwise attractive view that includes noticeable discordant features or overall visual amenity where there are noticeable visual detractors.
Low	A view or overall visual amenity which is unlikely to be part of the receptor's experience or reasons for being there (and therefore most views or overall visual amenity for receptors of low susceptibility). An unattractive view or overall visual amenity where there are many visual detractors.
Negligible	A view or overall visual amenity which is irrelevant to the receptor's experience or reasons for being there.

ASSESSING MAGNITUDE OF CHANGE

The magnitude of landscape and visual change depends upon a combination of factors including the size, scale and nature of change in relation to the context; the geographical extent of the area influenced; and its duration and reversibility, as summarised in Table 7 below.

Table 7: Magnitude of Landscape and Visual Change

Value	Size, Scale and Nature	Extent	Duration and Reversibility
High	• Occupies much of the view. • Obstructs a significant portion of the view. • Forms a large or very noticeable or discordant element in the view. • Considerable change to key features or many existing elements of the landscape. • Introduces elements considered totally uncharacteristic to the existing landscape.	Ranging from notable change over extensive area to intensive change over a more limited area.	Long term; permanent / non-reversible or partially reversible.

Value	Size, Scale and Nature	Extent	Duration and Reversibility
	• A very noticeable change to the character of the landscape.		
Medium	• Occupies a noticeable portion of the view. • Obstructs a significant portion of the view. • Forms a large or very noticeable or discordant element in the view. • Some considerable change to existing landscape elements and /or landscape character; discernibly changes the surroundings of a receptor, such that its baseline is partly altered. • Readily noticeable.	Moderate changes in a localised area.	Medium term; semi-permanent or partially reversible.
Low	• Occupies a small portion of the view. • small change to existing landscape elements and / or landscape character. • slight, but detectable impacts that do not alter the baseline of the receptor materially. • Not readily noticeable.	Minor changes in a localised area.	Short term / temporary; partially reversible or reversible.
Negligible	• Occupies little or no portion of the view. • Hardly noticeable. • Limited or no change in existing landscape elements and / or landscape character. • Barely distinguishable change from baseline conditions.	No change discernible.	Short term / temporary reversible.

LEVEL OF EFFECT AND SIGNIFICANCE CRITERIA

The level of landscape and visual effect and whether it is significant or not is assessed based on the sensitivity of the affected receptor, and the magnitude of change caused by the Proposed Development, as set out for each above. The combined sensitivity and magnitude used to determine the level of effect and whether significant or not is summarised in Table 8 below. Note that effects can be either beneficial or adverse and in some cases neutral (neither beneficial nor adverse).

Table 8: Level of Landscape and Visual Effect

Magnitude	Sensitivity		
	High	Medium	Low
High	Major	Major to Moderate	Moderate to Minor
Medium	Major to Moderate	Moderate	Minor
Low	Minor	Minor to Negligible	Negligible

The **Table 8** cells shaded in grey are generally considered to be significant. The light blue shaded cells denote effects which may be significant, or not significant, depending on the project being

assessed and factors relating to the context and the specific landscape or visual receptor in question. Unshaded areas denote effects that would not be considered significant.

It should be noted that this matrix (**Table 8**) is intended as a framework only and that the level of effect will vary depending on the circumstances, the type and scale of development proposed, the baseline context and other factors.

The gradations of magnitude of change and level of effect used in the appraisal represent a continuum; the assessor uses professional judgement when gauging the level of effect and determining whether it is significant or not. Table 9, below, gives typical descriptors of the levels of landscape and visual effects.

Table 9: Level of landscape and visual effect

Level of Effect	Landscape effect	Visual effect
Major	Considerable change over an extensive area of a highly sensitive landscape, fundamentally affecting the key characteristics and the overall impression of its character.	The development would be a prominent feature or a noticeably discordant or enhancing feature substantially affecting overall visual amenity, or would result in a clearly noticeable change to a highly sensitive and well composed existing view. A clearly noticeable or substantial improvement or deterioration of the existing view.
Moderate	Small or noticeable change to a highly sensitive landscape or more intensive change to a landscape of medium or low sensitivity, affecting some key characteristics and the overall impression of its character.	The development would be a noticeable feature or a somewhat discordant or enhancing feature affecting overall visual amenity, or would result in a noticeable change to a highly sensitive and well composed existing view, or would be prominent within a less well composed and less sensitivity view. A noticeable improvement or deterioration of the existing view.
Minor	Small change to a limited area of landscape of high or medium sensitivity or a more widespread area of a less sensitive landscape, affecting few characteristics without altering the overall impression of its character.	The development would be a visible but not particularly noticeable feature or a slightly discordant or enhancing feature affecting overall visual amenity, or would result in a small change to a highly sensitive and well composed existing view, or would be noticeable within a less well composed and less sensitivity view. A small improvement or deterioration of the existing view.
Negligible	No discernible improvement or deterioration to the existing landscape character.	No discernible improvement or deterioration in the existing view.

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APPENDIX 6.1 - HABITAT AND PROTECTED SPECIES BASELINE REPORT

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APPENDIX 6.2 - ORNITHOLOGY TECHNICAL REPORT

APPENDIX 7.1 - CULTURAL HERITAGE GAZETTEER

APPENDIX 8.1 – OUTLINE SOIL AND PEAT MANAGEMENT PLAN