

Scottish Hydro Electric Transmission plc

LT264 CLASH GOUR WIND FARM
CONNECTION

Environmental Appraisal

July 2022



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1. INTRODUCTION

1.1 Background

- 1.1.1 This Environmental Appraisal (EA) has been prepared by WSP UK Ltd. on behalf of Scottish Hydro Electric Transmission plc (the **Applicant**) who, operating and known as Scottish and Southern Electricity Networks Transmission (**SSEN Transmission**), own, operate and develop the high voltage electricity transmission system in the north of Scotland and remote islands.
- 1.1.2 This EA accompanies the Applicant's application for consent under section 37 of the Electricity Act 1989¹ to construct and install a short section of new 275 kV steel lattice overhead line (OHL), hereafter referred to as the 'Proposed Development'. Deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997² is also sought for ancillary works such as access track formation and the dismantling of existing OHL towers. The Proposed Development is described in full in Section 2 of this document.
- 1.1.3 This new OHL is required in order to connect the proposed Clash Gour Wind Farm 275/132kV substation to the existing 275kV Knocknagael to Blackhillock OHL. A temporary diversion is required to ensure continuity of supply through the existing line whilst facilitating the construction of the new OHL.
- 1.1.4 The developers of Clash Gour Wind Farm have requested a connection to the electricity transmission network. SSEN Transmission have legal duties under Section 9 of the Electricity Act 1989 to develop and maintain an efficient, co-ordinated and economical system of electricity transmission and to facilitate competition in the supply and generation of electricity and the Proposed Development is being delivered in compliance with those obligations.
- 1.1.5 SSEN Transmission sought an Environmental Impact Assessment (EIA) screening opinion from the Scottish Government Energy Consents Unit (ECU) in relation to the Proposed Development and it was determined that it does not constitute an EIA development.
- 1.1.6 SSEN Transmission is therefore voluntarily submitting this EA which evaluates whether any specific environmental effects are likely to occur resulting from the development proposals. The EA and any mitigation recommended to avoid or minimise any associated environmental risks will inform a site-specific commitments register which will be appended to the Contractor's Construction Environmental Management Plan (CEMP).
- 1.1.7 This EA documents SSEN Transmission's adherence to their obligations under Schedule 9 of the Electricity Act 1989.

1.2 Site Location

- 1.2.1 The Proposed Development is located approximately 10 kilometres (km) south of Forres and 22 km south-west of Elgin, Moray as illustrated in **Figure 1.1** and **Figure 1.2**. The "Site" is defined as the area of land which encompasses the extent of both temporary and permanent infrastructure.

1.3 Site Context

- 1.3.1 The Site is located at approximate National Grid Reference 305038, 848469. It is located in a rural area that is comprised of a mix of rough grazing and plantation forestry. The area comprises small hill tops with elevations typically below 300 m Above Ordnance Datum (AOD). The existing OHL runs south-west to north-east through the Site, as shown in **Figure 1.2**.

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

² Scottish Government (1997). 'Town and Country Planning (Scotland) Act 1997'. Office of the Queens Printers for Scotland (OQPS).

1.4 Environmental Context

- 1.4.1 **Figure 1.3** illustrates the statutory and non-statutory designations and other environmental features within 5 km of the Site.
- 1.4.2 The Proposed Development site is not located within any statutory or non-statutory designated sites.
- 1.4.3 The following designated sites are located within 5 km of the Site:
- Moidach More Site of Special Scientific Interest (SSSI), approximately 4.5 km south of the Site;
 - Moidach More Special Area of Conservation (SAC), approximately 4.5 km south of the Site;
 - Lower Findhorn Woods SSSI, approximately 4.5 km west of the Site;
 - Lower Findhorn Woods SAC, approximately 4.5 km west of the Site;
 - Listed Bridge of Bantrach (LB2186) Listed Building, approximately 2.7 km south-east of the Site;
 - Relugas Garden & Designed Landscape (GDL), approximately 4.6 km west of the Site; and
 - DA05: Dava Way - Dunphail to Dava Section Core Path located approximately 3.1 km west of the Site and promoted as one of Scotland's Great Trails.
- 1.4.4 International ecological and ornithological designations within 10 km of the site additionally include the following, which are illustrated in **Figure 1.4**:
- Randolph's Leap SSSI, approximately 5.1 km west of the Site;
 - River Spey SAC, approximately 9 km south-east of the Site;
 - Darnaway and Lethen Forest Special Protection Area (SPA), approximately 5.8 km north-west of the Site; and
 - Darnaway Castle GDL, approximately 5.7 km north-west of the Site.
- 1.4.5 There is one property, Johnstripe, within 2 km of the Proposed Development, located approximately 250 m to the south of the Proposed Development.
- 1.4.6 There are no landscape designations within 5 km of the Proposed Development.

2. PROPOSED DEVELOPMENT

2.1 Design Components

Overhead Line Connection

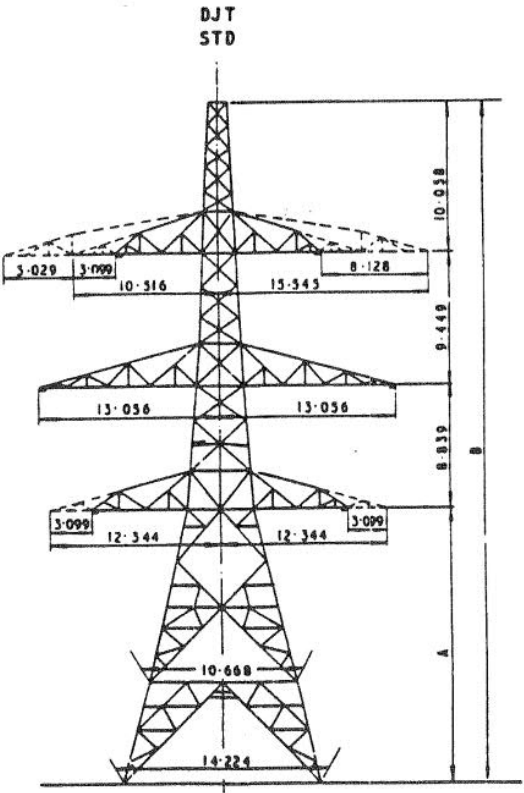
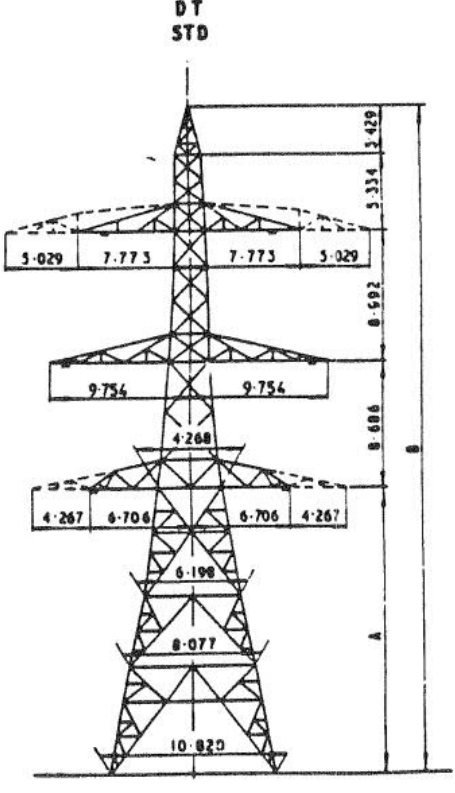
- 2.1.1 The Proposed Development consists of approximately 340 m of new overhead line conductor supported by four new steel lattice towers which will connect the existing 275 kV Knocknagael/Blackhillock circuit to the proposed Clash Gour Wind Farm 275/132kV substation to the existing OHL as illustrated in **Figure 1.2 Site Plan**.
- 2.1.2 Four steel lattice towers are proposed to divert the existing line into the substation via an “In/Out” arrangement. Existing towers numbered 190 and 191 will be removed and two new steel lattice towers will be constructed to replace them in line with the existing OHL. Two further steel lattice towers will be constructed between the existing OHL and the substation. Four gantry connections will be provided from these two steel lattice towers to the proposed 275/132 kV substation. An indicative layout of the Proposed Development and the Site is given in **Figure 1.2 Site Plan** and tower details are provided in **Table 2-1**.

Table 2-1 Tower Specification

Tower Ref	Description	Grid Reference (easting, northing)	Indicative Height (m)	Maximum height	Minimum height
190	Existing tower to be removed	304991, 848391	30.58	n/a	n/a
190R	New permanent angle tower	305025, 848459	56.69	64.01	49.38
190A	New permanent terminal tower with gantry connections	305122, 848449	44.58	51.89	40.92
191	Existing tower to be removed	305106, 848621	32.51	n/a	n/a
191R	New permanent angle tower	305120, 848649	44.50	51.82	37.19
191A	New permanent terminal tower with gantry connections	305150, 848516	44.58	51.89	40.92

- 2.1.3 To strike a balance between providing certainty between the location of the Proposed Development and any environmental impacts, and the need for some flexibility over individual tower locations, Limits of Deviation (LOD) have been defined within which the Proposed Development would be constructed. The final alignment of the Proposed Development will be within a 75 m LOD either side of the proposed OHL, and the towers micrositied to take ground conditions and environmental constraints into account prior to/during construction. No towers or working areas would be located outside the LOD. Tower heights will be in the range as stated in Table 2-1; which takes into consideration two potential 3.7 m body extension increases/decreases. The new access tracks will have a LOD of 50 m.
- 2.1.4 The towers to be used for the Proposed Development will be constructed from fabricated galvanised steel and will be grey in colour. The Proposed Development will use a 'L8C' series of lattice steel tower. Two types of tower are likely to be used within the Proposed Development as shown in **Table 2-1** and are as described below:
- angle/tension towers: These towers are used where there is a need to change the direction of the OHL. In this instance, two angle towers will be required at the junction with the existing OHL; and
 - terminal towers: These will be used where the new OHL connects into the substation gantries. It is currently anticipated that two terminal towers will be required.
- 2.1.5 Access to the two new angle towers in the existing OHL will be facilitated by a new permanent access track.

Table 2-1: Types of Steel Lattice Tower Configuration

Angle Tower: DJT	Terminal Tower: DT
 <p>The diagram shows a steel lattice tower with a wide base and a narrower top section. It has three main horizontal cross-arms. Dimensions are provided for various parts: top arm (5.029, 3.099, 10.316, 15.345, 8.128), middle arm (13.056, 13.056), bottom arm (3.099, 12.344, 12.344, 3.099), and base (10.668, 14.224). Vertical dimensions on the right indicate section heights: 10.038, 9.449, 8.839, and a total height 'A'.</p>	 <p>The diagram shows a steel lattice tower with a narrower base and a wider top section. It has three main horizontal cross-arms. Dimensions are provided for various parts: top arm (5.029, 7.773, 7.773, 5.029), middle arm (9.754, 9.754), bottom arm (4.267, 6.706, 6.706, 4.267), and base (6.198, 8.077, 10.829). Vertical dimensions on the right indicate section heights: 5.334, 3.429, 8.592, 8.686, and a total height 'A'.</p>

2.2 Temporary Infrastructure

Temporary Diversion

- 2.2.1 To facilitate the works to connect the proposed Clash Gour Wind Farm 275/132kV substation to the existing OHL a temporary diversion will be required for a duration of approximately 15 months. The route of the temporary diversion is illustrated within **Figure 1.2**.
- 2.2.2 The temporary diversion requires one circuit to be relocated a safe distance away from the tower to be worked on. The diverted circuit is then re-energised, and the other circuit being worked on is then taken out of service to allow the works to take place. This allows the Applicant to maintain at least one circuit-of the existing OHL in operation and is the planned approach for the Proposed Development.
- 2.2.3 The temporary diversion would use either conventional towers on a temporary basis or temporary masts, conventional towers have been taken forward for the assessment as a worst case situation. This would allow the conductors of one circuit to be moved away from the existing tower upon which works will be carried out. The location, ground conditions and time of year would dictate what method is used, however the temporary diversion will be to the west of the existing OHL due to the location of the proposed 275/132kV substation to the east as generally indicated on **Figure 1.2**. The precise tower locations would be confirmed by the Principal Contractor(s) at the detailed design stage, depending on factors such as ground conditions and constraints such as trees and other potential environmental constraints.
- 2.2.4 The exact height of the temporary tower would also be confirmed by the Principal Contractor(s) at the detailed design stage, however it is anticipated that it would be similar in height to the existing towers but may be up to 20% higher/ lower.

Construction Compound

- 2.2.5 The Applicant's construction compound would be located within the extents of the Clash Gour Wind Farm substation construction compound and therefore would not form part of the Proposed Development footprint.

Access

- 2.2.6 Temporary construction access will be taken from the existing access track adjacent to the Proposed Development, known as the Half Davoch Road, leading east from the A940 to Tomnamoon towards Clash Gour Wind Farm. A permanent access track from this existing access track to the proposed 275/132kV substation site is proposed as part of the Clash Gour Wind Farm application and is therefore not part of the Proposed Development. This new access track will provide access to the Proposed Development.

Permanent access tracks will be constructed to each of the two new angle towers on the existing OHL generally as indicated on **Figure 1.2**. Additional temporary tracks and/or the use of trackway panels, including temporary stone roads on a geo-textile fabric base, will be required during construction of the Proposed Development, notably for dismantling existing towers and for the construction and removal of the temporary diversion works. Temporary floating trackway / bog mats would be used for access should tracks be required to be developed through sensitive habitats and wet/boggy areas, the requirement for which will be determined by the Principal Contractor. Temporary accesses would be in place for the duration of the programme as detailed in **Table 2-2**.

2.3 Construction Methodology

- 2.3.1 The following construction activities will take place:

- Enabling works comprising the establishment of temporary infrastructure such as access tracks and establishment of the main construction compound. However, this compound is located within the Clash Gour Wind Farm substation footprint and therefore no additional area of hardstanding will be required.
- Crane pad/stone piling mats will be constructed adjacent to each new tower location, which will have an area of approximately 25 m².
- Construction of tower foundations. These can be either conventional concrete foundations or piled foundations buried typically 2.5m – 4m below ground level. Concrete is anticipated to be required, once the foundation is cast and set, any excavated material would be sorted into appropriate layers and backfilled to maintain the original soil horizons.
- Erection of steel lattice towers. Tower steelwork would be delivered to each tower construction site either as individual steel members or as prefabricated panels, depending on the method of installation and access constraints.
- Stringing of conductors. The exact method of working would be determined by the Principal Contractor. It is anticipated that steel lattice towers 186 and 195 of the existing OHL, and the angle towers at the proposed 275/132kV substation would be set up with a winch and tensioner equipment and the new conductor would be 'pulled' in from there. The machinery would be set up on an Equipotential Zone (EPZ), approximately 85 m away from the steel lattice towers with dimensions of approximately 40 m x 60 m, to protect works from potential electric shock.
- Dismantling of towers 190 and 191. Conductors and insulators would be removed. The conductors would be collected using winch and cable drum. Tower removal is typically completed by cutting the legs and felling the tower in a controlled manner. The towers are then cut into sections using hydraulic shears and extracted from the site. The tower leg stubs and concrete foundation are

normally decommissioned in situ, pushed into an excavation of approximately 1 m depth with the ground reinstated.

- Reinstatement of tower sites and removal and reinstatement of temporary infrastructure sites.

Material Use

- 2.3.2 Wherever possible, SSEN Transmission will seek opportunities to 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.
- 2.3.3 All scrap metal, conductors and glass insulators from the dismantled towers would be removed from site for recycling.

Water Use and Drainage

- 2.3.4 The construction works will not require any new water abstractions from local sources as it will utilise water sourced for the substation platform construction (permitted under the Clash Gour Wind Farm application). Construction foul water will be collected and removed from site for off-site disposal at a licenced facility.

Employment

- 2.3.5 SSEN Transmission is seeking to create local employment opportunities where possible.

Access and Transport

- 2.3.6 The construction activities will give rise to regular numbers of transport movements, with small work crews travelling to Site. It is anticipated that the Principal Contractor will identify a single safe area within the contractors' compound for parking away from the public road.
- 2.3.7 Vehicle movements will be required in relation to the construction of new or upgraded access roads, for the delivery of the foundation and tower components and conductor materials to site for the delivery and collection of materials and construction plant from the main site compound to individual tower locations.
- 2.3.8 A Construction Traffic Management Plan will be developed by the Principal Contractor, which will be agreed with Moray Council's roads team in advance of construction works commencing.

2.4 Construction Programme and Working Hours

- 2.4.1 The proposed works have a provisional start date of 3 April 2024 and will take approximately 15 months to complete. **Table 2-2** illustrates the programme of construction activities during that time.
- 2.4.2 For the purposes of this EA, it is assumed that construction working hours will be 7.30 am to 6 pm Monday to Friday, and 8.00 am – 4.00 pm on Saturdays and Sundays. Any out of hours working would be agreed in advance with Moray Council.

Table 2-2: Construction Programme (monthly)

Activity Name	2024										2025					
	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
Establish temporary site infrastructure																
Tower foundation works																
Tower erection under outage																
Tower erection (non-outage)																
Substation Construction (separate project)																
Tie in Towers and commissioning																
Reinstatement																
Temporary towers installed and in place															- Oct 2025	

2.5 Mitigation Measures

2.5.1 Mitigation measures are those measures which are identified to prevent, reduce or remedy any potential adverse effects of a proposal. There are different types of mitigation identified and implemented in this report:

- ‘Embedded mitigation’ comprises both design features and construction good practice. These measures are implemented during detailed design, construction and or operation of the Proposed Development.
- ‘Additional mitigation’: Where necessary, the appraisal in Chapters 5-10 has stated additional mitigation measures which will be taken forward by the Applicant in order to minimise potential effects. These measures are included in the individual technical chapters and Chapter 11: Summary of Mitigation Measures.

Embedded Mitigation

Design Mitigation

2.5.2 The design of temporary infrastructure has specifically considered the potential impacts on sensitive receptors and features of the surrounding environment. To minimise the temporary footprint of the Proposed Development, the Clash Gour Wind Farm construction compound will be used by the Applicant instead of them forming a separate construction compound. Access to the Site will also utilise access tracks that have been constructed for the wind farm thus reducing species loss, habitat loss and degradation.

Enhancements - Biodiversity Net Gain

2.5.3 SSEN Transmission is committed to protecting and enhancing the environment by minimising the potential impacts from construction and operational activities. As part of this approach, SSEN Transmission set out a biodiversity ambition within the 2018 Sustainability Strategy to ‘Positively contribute to the UN 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’.

2.5.4 In line with this approach, SSEN Transmission is undertaking a Biodiversity Net Gain Assessment for the Proposed Development. This will entail quantification of the pre- and post-development biodiversity across the Site to determine the actions necessary to work towards a net gain biodiversity target.

Construction Good Practice

2.5.5 Construction Good Practice includes tried and tested mitigation measures which it is reasonable to assume are being implemented. It specifically includes:

- SSEN Transmission's set of General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs) that are applied as a standard requirement to all construction sites and practices. The GEMPs and SPPs considered relevant to this project and are provided in **Appendix B** (GEMPs are listed in **Table 2-3** and SSPs listed in **Section 7.7 Biodiversity Mitigation**).
- Other standard construction practices or legislative requirements including recommended published guidance from statutory bodies.

2.5.6 Table 2-3 lists key construction good practice measures.

Table 2-3: Key Construction Good Practice Measures.

Ref	Title	Description
GE1	General Environmental Management Plans	<ul style="list-style-type: none"> • Oil storage and refuelling; • Soil management; • Working in or near water; • Working in sensitive habitats; • Working with concrete; • Waste management; • Private water supplies; • Forestry; • Dust management; • Biosecurity on land; • Restoration; and • Bad weather.
GE2	Noise Management Plan	The Contractor will be required to produce and implement a Noise Management Plan for their construction activities. The plan will be implemented by the Applicant 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 Moray Council. This will ensure 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.
GE3	Site Water Management Plan	<p>A Site Water Management Plan will be developed to manage potential risks to the water environment including locations for silt mitigation measures, 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 details of the layout of the Proposed Development, as well as any access tracks detailing all locations of water mitigation measures.</p> <p>All relevant activities will be undertaken in compliance with the Controlled Activities Regulations.</p> <p>GEMPs for 'Oil Storage and Refuelling', 'Soil Removal, Storage and Reinstatement', and 'Working with Concrete' will be adhered to.</p>

Ref	Title	Description
GE4	Construction Traffic Management Plan	A Construction Traffic Management Plan will be developed by the Contractor, which will be agreed with Moray Council roads team as part of pre-commencement conditions in advance of construction.
GE5	Soil Management	Soil management will follow the general guidance set out in GEMP - 'Soil Removal, Storage and Reinstatement'. Additionally, reinstatement shall be completed as soon as practicably possible in order to prevent environmental disturbance.
GE6	Peat Management Plan	A Peat Management Plan will be developed to manage potential risks to the peat environment.
GE7	Dust	Dust will be managed through implementation of standard control measures such as management of stock piles to suppress dust and road cleaning in accordance with SSEN Transmission's GEMP – 'Dust Management'.
GE8	Waste	Waste Management will be in accordance with Section 34 (Scotland) of the Environmental Protection Act, GEMP – 'Waste Management' and the waste hierarchy.
GE9	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.
GE10	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.
GE11	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.
GE12	Driver induction	A driver induction will be undertaken to include a safety induction, speed control and the identification of specified access routes.
GE13	Car Sharing	Adoption of car sharing where possible to reduce the number of vehicles arriving and departing from the site.
GE14	Local residents	Local residents will be kept informed of any potentially disruptive activities and actions being taken to mitigate the impact of these activities.
GE15	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 Moray Council.
GE16	Weight restrictions	SSEN Transmission will ensure that HGVs adhere to weight restrictions on roads in the area.
GE17	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.
GE18	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.

Construction Environmental Management Plan

- 2.5.7 A Construction and Environmental Management Plan (CEMP) will be produced by the Contractor and implemented during construction of the Proposed Development which will include measures to manage risks associated with the production of pollution and the potential risks this may pose to water, soils, air and human health. It will be prepared in consultation with appropriate stakeholders and will include the Embedded Mitigation measures discussed above in addition to the Additional Mitigation measures identified through this appraisal and listed in Chapter 11: Summary of Mitigation Measures.

The CEMP will be submitted in advance of commencement of construction activities to SEPA and the Moray Council for approval.

- 2.5.8 The development will be designed and constructed in line with sustainability principles including Biodiversity Net Gain and those that align with the current SSE Sustainability Policy. Wherever practicable, the resources required to construct the Proposed Development will be locally sourced.

2.6 Operation and Maintenance

Life of the Proposed Development

- 2.6.1 The Proposed Development will be designed to have a minimum operational design life of 80 years.

Maintenance Programme

- 2.6.2 SSEN Transmission 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.

3. PLANNING CONTEXT

3.1 Planning Permission

- 3.1.1 The Proposed Development requires section 37 consent from the Scottish Ministers under the Electricity Act 1989. In such cases, the Planning Authority is a statutory consultee in the development management process and procedures. The Applicant is also seeking deemed planning permission under section 57(2) of the Town and Country Planning (Scotland) Act 1997 for certain elements of the Proposed Development, or ancillary works required to facilitate its construction and operation.
- 3.1.2 High voltage electricity transmission network developments of or in excess of 132 kilovolts are listed as a National Development under the National Planning Framework 3³.

3.2 Screening Opinion

- 3.2.1 A Screening Opinion was received from the Scottish Government in March 2022 (Reference ECU00003366). The Opinion confirmed that an EIA is not required for the Proposed Development due to:
- The Proposed Development not constituting a Schedule 1 development under the Regulations; and
 - While the Proposed Development does not fall within the definition of 'Schedule 2 development', having screened it against the selection criteria outlined in Schedule 3 (including cumulative impact, pollution, impact on natural resources/the natural environment, environmental quality and historic environment), impact on the receiving environment, while possible, is not considered to be significant.
- 3.2.2 The purpose of this EA is to acknowledge measures which will be undertaken to mitigate and minimise the potential impact on the environment. However, these effects are not considered to be significant as demonstrated in **Table 4-1** further in the report.

3.3 Planning Policy Context

National Planning Policy

National Planning Framework 3 (NPF3)

- 3.3.1 National Planning Framework 3 (2014) (NPF3) is a long-term development strategy for Scotland. Part of the 'vision' is of Scotland as a low carbon place, where the opportunities arising from the ambition to be a world leader in low carbon energy generation have been seized. NPF3 is informed by, and aims to help achieve, the Scottish Government's climate change and renewable energy targets.
- 3.3.2 NPF3 acknowledges that the energy sector accounts for a significant share of the country's greenhouse gas emissions, and that addressing this requires capitalising on Scotland's outstanding natural advantages, including its significant wind resource. NPF3 makes it clear that renewables including onshore wind will continue to play a significant role in de-carbonising the energy sector and diversifying energy supply.
- 3.3.3 To secure and capitalise on the gains to be found in the renewable sector and to enable a diversifying energy supply, NPF3 supports the maintenance and enhancement of the electricity grid network. Paragraph 3.28 states that:

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

"Electricity grid enhancements will facilitate increased renewable electricity generation across Scotland. An updated national development focusing on enhancing the high voltage transmission network supports this and will help to facilitate offshore renewable energy developments".

Scottish Planning Policy (SPP)⁴

- 3.3.4 Scottish Planning Policy (2014) (SPP) is Scottish Government policy on how nationally important land use planning matters should be addressed. SPP is under review and the new NPF4 will become the single national planning policy document, replacing both NPF3 and SPP and it will have Development Plan status when it comes into force.
- 3.3.5 SPP contains a number of principal policies, one of which expresses *"a presumption in favour of development that contributes to sustainable development"*. Paragraph 28 states that:
- "the planning system should support economically, environmentally and socially sustainable places by enabling development that balances the costs and benefits of a proposal over the longer term. The aim is to achieve the right development in the right place; it is not to allow development at any cost".*
- 3.3.6 Paragraph 29 highlights a series of criteria which should guide decision-making in this regard and the following provisions are considered relevant to the Proposed Development:
- Net economic benefit;
 - Economic issues, challenges and opportunities;
 - Good design and qualities of successful places;
 - Delivery of infrastructure;
 - Climate change mitigation and adaptation;
 - Principles of sustainable land use as set out in the land use strategy;
 - Protecting, enhancing and promoting cultural heritage;
 - Protecting, enhancing and promoting natural heritage and landscape;
 - Reducing waste; and
 - Over-development, amenity and effects on water, soil and air.
- 3.3.7 SPP sets out at paragraph 154 that to support in achieving the outcome of making Scotland a low carbon place, the planning system should support the change to a low carbon economy, including deriving the equivalent of 100% of electricity demand from renewable sources by 2020. It should support the development of electricity generation from a diverse range of renewable sources. It should guide development to appropriate locations and advise on the issues that should be taken into account when specific proposals are being assessed.
- 3.3.8 More generally, SPP advises that the siting and design of development should take account of local landscape character. Decisions should take account of potential effects on landscapes and the natural and water environment, including cumulative effects. Applicants should seek to minimise adverse impacts through careful planning and design. Planning permission should be refused where the nature or scale of a development would have an unacceptable impact on the natural environment.

Development Plan

- 3.3.9 The statutory Development Plan applicable to the Proposed Development comprises the Moray Local Development Plan (MLDP) (adopted on 27th July 2020)⁵.
- 3.3.10 The MLDP is the primary policy document in relation to the Proposed Development. It provides guidance to residents, developers and investors as to how much and where growth is proposed for land

⁴ Scottish Government, (2014). *Scottish Planning Policy*. OQPS

⁵ Moray Council (2020). *Moray Local Development Plan*. Moray Council

uses, such as housing and employment, and sets out a wide range of policies which are used to determine planning applications.

3.3.11 **Table 3-1** highlights policies relevant to this type of development and the region in which it is located.

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

Policy	Key points relevant to this project	Comment
Primary Policy 2 – Sustainable Economic Growth	Development proposals which support the Moray Economic Strategy to deliver sustainable economic growth will be supported where the quality of the natural and built environment is safeguarded, there is a clear locational need and all potential impacts can be satisfactorily mitigated.	The development is required to facilitate low carbon energy supply, which is essential for sustainable economic growth.
Development Policy 1 – Development Principles	<p>The Council will require applicants to provide impact assessments in order to determine the impact of a proposal. Applicants may be asked to determine the impacts upon the environment, transport network, town centres, noise, air quality, landscape, trees, flood risk, protected habitats and species, contaminated land, built heritage and archaeology and provide mitigation to address these impacts.</p> <p>Development proposals will be supported if they conform to the relevant Local Development Plan policies, proposals and additional guidance, meet the following criteria and address their individual and cumulative impacts:</p> <ul style="list-style-type: none"> • Design <ul style="list-style-type: none"> - The scale, density and character must be appropriate to the surrounding area - The development must be integrated into the surrounding landscape which will include safeguarding existing trees and undertaking replacement planting to include native trees for any existing trees that are felled, and safeguarding any notable topographical features (e.g. distinctive knolls), stone walls and existing water features by avoiding channel modifications and culverting. A tree survey and tree protection plan must be provided with planning applications for all proposals where mature trees are present on site or that may impact on trees outwith the site. - Demonstrate how the development will conserve and enhance the natural and built environment and cultural heritage resources, retain original land contours and integrate into the landscape. - Proposals must not adversely impact upon neighbouring properties in terms of privacy, daylight or overbearing loss of amenity. • Transportation <ul style="list-style-type: none"> - Proposals must provide safe entry and exit from the development, including the appropriate number and type of junctions • Water environment, pollution, contamination 	The EA provides assessment of impacts individual and cumulative impacts (natural and built) from the Proposed Development and includes mitigation measures where appropriate, see Sections 5 – 11.

Policy	Key points relevant to this project	Comment
	<ul style="list-style-type: none"> - New development should not be located in areas at flood risk or increase vulnerability to flooding. 	
<p>Development Policy 9 – Renewable Energy</p>	<p>All renewable energy proposals will be considered favourably where they meet the following criteria:</p> <ul style="list-style-type: none"> • They are compliant with policies to safeguard and enhance the built and natural environment; • They do not result in the permanent loss or permanent damage of prime agricultural land; • They avoid or address any unacceptable significant adverse impacts including: <ul style="list-style-type: none"> - Landscape and visual impacts. - Noise impacts. - Air quality impacts. - Electromagnetic disturbance. - Impact on water environment. - Impact on carbon rich soils and peat land hydrology. - Impact on woodland and forestry interests. - Traffic impact -mitigation during both construction and operation. - Ecological Impact. - Impact on tourism and recreational interests <p>In addition to the above criteria, detailed assessment of impact will include consideration of the extent to which the proposal contributes to renewable energy generation targets, its effect on greenhouse gas emissions and net economic impact, including socio-economic benefits such as employment.</p>	<p>Although not generating renewable energy, the Proposed Development is essential to the success of Clash Gour Wind Farm.</p> <p>The EA provides assessment of impacts individual and cumulative impacts (natural and built) from the Proposed Development and includes mitigation measures where appropriate, see Sections 5 – 11.</p>
<p>Environmental Policy 1 – Natural Heritage Designations</p>	<p>European Site designations</p> <p>Development likely to have a significant effect on a European Site and which is not directly connected with or necessary to the conservation management of that site must be subject to an appropriate assessment of the implications for its conservation objectives. Proposals will only be approved where the appropriate assessment has ascertained that there will be no adverse effect on the integrity of the site.</p> <p>National designations</p> <p>Development proposals which will affect a National Park, National Scenic Area (NSA), Site of Special Scientific Interest (SSSI) or National Nature Reserve will only be permitted where:</p> <ul style="list-style-type: none"> • The objectives of designation and the overall integrity of the area will not be compromised; or • Any significant adverse effects on the qualities for which the site has been designated are clearly outweighed by social, environmental or economic benefits of national importance. <p>European Protected Species</p> <p>Proposals that would have an adverse effect on European Protected Species will not be approved unless;</p>	<p>A Biodiversity and a Landscape and visual appraisal are included within this EA, see Sections 5 and 7.</p>

Policy	Key points relevant to this project	Comment
	<ul style="list-style-type: none"> The need for development is one that is possible for SNH to grant a license for under the Regulations (e.g. to preserve public health or public safety). There is no satisfactory alternative to the development. The development will not be detrimental to the maintenance of the favourable conservation status of the species. 	
Environmental Policy 2 – Biodiversity	<p>All development proposals must, where possible, retain, protect and enhance features of biological interest and provide for their appropriate management. Development must safeguard and where physically possible extend or enhance wildlife corridors and green/blue networks and prevent fragmentation of existing habitats.</p> <p>Development should integrate measures to enhance biodiversity as part of multi-functional spaces/ routes.</p>	A Biodiversity appraisal is included within this EA, see Section 7.
Environmental Policy 3 – Special Landscape Areas and Landscape Character	<p>Development proposals within Special Landscape Areas will only be permitted where they do not prejudice the special qualities of the designated area set out in the Moray Local Landscape Designation Review, adopt the highest standards of design in accordance with Policy DP1 and other relevant policies, minimises adverse impacts on the landscape and visual qualities the area is important for.</p> <p>New developments must be designed to reflect the landscape characteristics identified in the Landscape Character Assessment of the area in which they are proposed.</p>	A Landscape and visual appraisal is included within this EA; see Section 5.
Environmental Policy 7 – Forestry, Woodlands And Trees	<p>Proposals must retain healthy trees and incorporate them within the proposal unless it is technically unfeasible to retain these.</p> <p>Where trees or woodland are removed in association with development, developers must provide compensatory planting to be agreed with the planning authority either on site, or an alternative site in Moray which is in the applicant's control or through a commuted payment to the planning authority to deliver compensatory planting and recreational greenspace.</p>	Biodiversity and Forestry appraisals are included within this EA, see Sections 7 and 9.
Environmental Policy 8 – Historic Environment	<p>Development proposals will be refused where they adversely affect the integrity of the setting of Scheduled Monuments and unscheduled archaeological sites of potential national importance unless the developer proves that any significant adverse effects are clearly outweighed by exceptional circumstances, including social or economic benefits of national importance.</p> <p>Development proposals which adversely affect sites of local archaeological importance or the integrity of their settings will be refused unless;</p> <ul style="list-style-type: none"> Local public benefits clearly outweigh the archaeological value of the site, and Consideration has been given to alternative sites for the development and preservation in situ is not possible. Where possible any adverse effects can be satisfactorily mitigated at the developer's expense 	A Cultural Heritage appraisal is included within this EA; see Section 6.

Policy	Key points relevant to this project	Comment
Environmental Policy 9 – Conservation Areas	All development within a conservation area must preserve and enhance the established traditional character or appearance of the area. New development as well as alterations or other redevelopment will be refused if it adversely affects the character and appearance of the conservation area in terms of scale, height, massing, colour, materials and siting.	Landscape and visual, and Cultural Heritage appraisals are included within this EA, see Sections 5 and 6.
Environmental Policy 10 – Listed Buildings	Development proposals will be refused where they would have a detrimental effect on the character, integrity or setting of a listed building. Alterations and extensions to listed buildings or new developments within their curtilage must be of the highest quality, and respect the original structure in terms of setting, scale materials and design.	A Cultural Heritage appraisal is included within this EA, see Section 6.
Environmental Policy 11 – Battlefields, Gardens and Designed Landscapes	Development proposals which adversely affect nationally designated Battlefields or Gardens and Designed Landscapes, or their setting will be refused unless; <ul style="list-style-type: none"> The overall character and reasons for the designation will not be compromised, or Any significant adverse effects can be satisfactorily mitigated and are clearly outweighed by social, environmental, economic or strategic benefits. 	A Cultural Heritage appraisal is included within this EA, see Section 6.
Environmental Policy 12 – Management and Enhancement of the Water Environment	Proposals for development in areas considered to be at risk from flooding will only be permitted where a flood risk assessment to comply with the recommendations of Scottish Planning Policy and to the satisfaction of Scottish Environment Protection Agency and the Council is provided by the applicant. Where development is permitted, measures to protect against or manage flood risk will be required and any loss of flood storage capacity mitigated to achieve a neutral or better outcome. Proposals, including associated construction works, must be designed to avoid adverse impacts upon the water environment including Ground Water Dependent Terrestrial Ecosystems and should seek opportunities for restoration and/or enhancement, if appropriate.	A Hydrology, Hydrogeology and Soils appraisal is included within this EA, see Section 8.
Environmental Policy 14 – Pollution, Contamination & Hazards	Development proposals which may cause significant air, water, soil, light or noise pollution or exacerbate existing issues must be accompanied by a detailed assessment report on the levels, character and transmission of the potential pollution with measures to mitigate impacts. Where significant or unacceptable impacts cannot be mitigated, proposals will be refused.	Pollution from noise and impacts on the water environment and air quality are considered within this EA, see Sections 2 and 4.
Environmental Policy 16 – Geodiversity and Soil Resources	For major developments, minerals and large scale (over 20MW) renewable energy proposals, development will only be permitted where it has been demonstrated that unnecessary disturbance of soils, geological interests, peat and any associated vegetation is avoided. Evidence of the adoption of best practice in the movement, storage, management and reinstatement of soils must be submitted along with any relevant planning application, including, if necessary, measures to prevent the spread of invasive non-native species.	A Hydrology, Hydrogeology and Soils appraisal is included within this EA, see Section 8.

Policy	Key points relevant to this project	Comment
	<p>Major developments, minerals and large scale renewable energy proposals on areas of peat and/or land habitat will only be permitted for these uses where:</p> <p>a) The economic, social and/or environmental benefits of the proposal outweigh any potential detrimental effect on the environment (in particular with regard to the release of carbon dioxide into the atmosphere); and</p> <p>b) It has been clearly demonstrated that there is no viable alternative.</p>	

3.4 Planning History

- 3.4.1 The Site is shown outlined in red on **Figure 10.1**. Its planning history over the past five years is set out below, as disclosed by the Moray Council's planning portal.
- 3.4.2 A request for a scoping opinion was submitted to the Moray Council in November 2018 (reference: 18/01461/SCO), relating to the Berry Burn Wind Farm, Dunphail, Forres, Moray. The boundary of the Berry Burn Wind Farm is shown outlined in pink on **Figure 10.1**. It overlaps with the site very slightly. The scoping opinion for Berry Burn Wind Farm outlined the scope of an EIA for the proposed extension of Berry Burn Wind Farm comprising approximately 10 turbines up to a maximum tip height of 149.9 m with associated transformers and switchgear, foundations, area of hardstanding to erection crane network of onsite tracks including watercourse crossing borrow pits sub-station compound permanent control building network of buried cable and temporary construction compounds storage area and car park. An application for the proposed wind farm extension at Berry Burn Wind Farm, Moray was submitted in August 2020 to the Scottish Minister (Reference: ECU00000718) and was consented in December 2021. The construction of the development will be approximately 15 months in duration.
- 3.4.3 In December 2018 an application for consent under section 36 of the Electricity Act (Reference: ECU00000738) was submitted to The Scottish Ministers to erect 48 wind turbines with blade tip height between 130 and 176 metres with installed capacity in excess of 50MW at Clash Gour Wind Farm. The application has been the subject of a Public Local Inquiry and at the date of preparation of this EA, the Reporter appointed by the Scottish Ministers has submitted his decision to the Scottish Ministers and their decision is awaited.

4. APPRAISAL SCOPE AND METHODOLOGY

4.1 Approach to the 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 effects. 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 mitigations 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 sections where considered relevant.
- 4.1.3 The final section of the report collates the additional mitigation measures recommended in each of the appraisal chapters which will be taken forward for inclusion in the site-specific CEMP.

4.2 Scope of Appraisal

- 4.2.1 An initial review of baseline conditions and sensitive receptors has been undertaken. **Figures 1.3 and 1.4** illustrate the identified environmental considerations located within 5 km of the Site and up to 10km for international designations.
- 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	Scoped in / out of appraisal
Landscape Character & Visual Amenities	Potential for effects on landscape character, and the visual amenity of local residents, and users of the Dava Way Core Path.	In
Cultural Heritage	Potential for construction impacts from the Proposed Development on cultural heritage	In
Biodiversity	Potential for construction impacts from the Proposed Development on biodiversity	In
Hydrology, Hydrogeology and Soils	Potential for construction impacts from the Proposed Development on the water environment and peat	In
Noise and Vibration	The nearest noise sensitive receptor is Johnstripe, located approximately 250 m from the Proposed Development works but this property is owned by EDF, developer of the Clash Gour Windfarm and is not currently occupied. Temporary construction noise and operational noise effects at this distance are not considered to be significant. Therefore, potential impacts from noise are not considered further in this appraisal.	Out
Key Recreation Uses	There is one Core Path, Dava Way, which lies to the west of the Proposed Development, approximately 2 km at its closest point,	Out

Topic	Description	Scoped in / out of appraisal
	<p>and runs north to south. The potential effects on the views from this path is considered in the Visual Assessment. Direct impacts on those users of this path are not anticipated due to the distance from the Proposed Development.</p> <p>No direct impacts on recreational activities are anticipated. Therefore, potential impacts upon recreation are not considered further in this appraisal.</p>	
Land Use	<p>The Land Capability for Agriculture for the Site is Grade 5.1 which is land capable of supporting improved grassland.</p> <p>The Site is currently a mix of rough grazing and plantation forestry. The change of land use resulting from the Proposed Development represents a small proportion of low-quality agricultural land in the wider area, in addition the tower foundations and access tracks are anticipated to be of low magnitude and localised and as such is not considered to be a significant loss in agricultural terms.</p> <p>The Proposed Development does not impact upon other land uses outwith the Site. Therefore, potential impacts upon land use are not considered further in this appraisal.</p>	Out
Traffic and Transport	<p>Any traffic and transport impacts on the local road network as a result of the Proposed Development will occur during the construction period only and will be temporary in nature.</p> <p>Traffic management measures, by way of a detailed Construction Traffic Management Plan (CTMP) will be produced by the main contractor, to reduce the potential effects of the construction traffic on the surrounding road network and will be included within the CEMP.</p> <p>Operational traffic would be limited to maintenance operations and is therefore considered to be so low that its effect would be negligible.</p> <p>Potential impacts upon traffic and transport are not considered to be significant and are therefore not discussed further in this appraisal.</p>	Out
Air Quality and Climate	<p>Johnstripe is located within 250 m of the Proposed Development, which is located in a remote area away from industrial or authorised processes that are likely to have significant influence on air quality or air pollution. Dust and vehicle emissions during construction will be managed through the application of standard good practice mitigation, which will be stated in the CEMP and GEMP for Dust. Operational emissions to air, are anticipated to be negligible.</p> <p>Although there will be greenhouse gas emissions associated with construction activities and embedded in the construction components, operational emissions are anticipated to be minimal. The Proposed Development is facilitating the production of low carbon energy and as such would lead to a beneficial impact on climate change.</p> <p>Air Quality and climate will not be considered further in this appraisal.</p>	Out

Topic	Description	Scoped in / out of appraisal
Major Accidents and Disasters	<p>The potential for the risk of a major accident and disaster affecting the vulnerability of the existing OHL is likely to be limited to those associated with unplanned power outages, due to extreme weather or structural damage.</p> <p>Crisis management and continuity plans are in place across the SSE Group. These are tested regularly and are designed for the management of, and recovery from, significant energy infrastructure failure events.</p> <p>The Proposed Development does not pose a greater risk to a major accident and disaster event than the existing OHL. The new infrastructure may slightly improve the resilience of the OHL to major accidents and disasters by reducing the likelihood of structural damage occurring during an incident.</p> <p>Potential effects are not considered to be significant due to the vulnerability of the Proposed Development to major accidents and disasters and are therefore not discussed further in this appraisal.</p>	Out
Population and Human Health	<p>The Proposed Development is located within a rural landscape. Some isolated residential properties are located in close proximity to the existing OHL. The closest is Johnstripe at 250 m south of the Proposed Development.</p> <p>The existing tower structures and overhead line operate and are maintained in accordance with all relevant health and safety legislation and guidelines.</p> <p>The impacts on population and human health for a development of this nature and scale are limited. There is potentially a benefit to the local economy during the construction phase.</p> <p>Potential effects upon population and human health are not considered to be significant and therefore are not discussed further in this appraisal.</p>	Out
Material Assets and Waste	<p>The Proposed Development concerns the construction of steel lattice towers to support electricity conductors. This would require material consumption for the conductors, insulators, other fittings, the steel lattice towers and foundation works. General construction waste from the construction compound would be generated.</p> <p>The nature and scale of the Proposed Development means material use and waste generation will be limited in type and quantity, and no significant effects are anticipated. The use of recycled materials where it is feasible to do so and minimisation of waste will be advocated and this will be included in the CEMP which would be produced and implemented by the Principal Contractor(s).</p> <p>Potential impacts upon material assets and waste are not considered to be significant and are therefore not discussed further in this appraisal.</p>	Out

4.3 Cumulative Effects

- 4.3.1 There are two planning applications in proximity to the Site that are relevant for consideration as part of the cumulative effects assessment. The principal developments in the area of the Proposed Development include:
- the proposed Clash Gour Wind Farm and 275/132 kV substation extends to the south-east and south-west. The section 36 application for this development is currently subject to determination by the Scottish Ministers; and
 - the proposed Berry Burn Wind Farm extension extends south. This application is consented.
- 4.3.2 The Proposed Development Site overlaps both these application boundaries as illustrated in **Figure 10.1 Cumulative Developments**. There are no other sites or developments within the visual envelope of the Proposed Development that would need to be considered within a separate cumulative assessment.
- 4.3.3 Chapter 10 of this EA presents an overview of the anticipated main design and construction features of these cumulative developments and an appraisal of potential cumulative effects.

5. LANDSCAPE AND VISUAL

5.1 Introduction

- 5.1.1 This section presents the findings of the Landscape and Visual Appraisal (LVA) for the Proposed Development. The purpose of the appraisal is to identify the key landscape and visual related aspects of the Proposed Development and describe the nature of the anticipated change to the landscape and visual environments.
- 5.1.2 Additional information which supports this section is presented in the following figures and technical appendices:
- **Figure 5.1** Zone of Theoretical Visibility and Viewpoint Location
 - **Figure 5.2** Landscape Designations
 - **Figure 5.3** Visual Receptors
 - **Figure 5.4** Viewpoint 1 Public Footpath to Tomnamoon
 - **Appendix C** – Landscape and Visual Methodology

5.2 Information Sources

- 5.2.1 The following sources of information have been used to inform this report:
- Desk study – a desk-based review of existing information and online resources in order to inform the field surveys and subsequent appraisal.
 - Field Survey – undertaken on 22 October 2021 to verify the desk study findings, confirm the extent of visual influence, undertake the appraisal and take photos.

5.3 Methodology

Introduction

- 5.3.1 This LVA has been carried out broadly in accordance with best practice guidance in relation to Landscape and Visual Impact Assessment (LVIA) specifically with reference to the Landscape Institute and Institute of Environmental Management and Assessment (IEMA) Guidelines for Landscape and Visual Impact Assessment (GLVIA3). A full methodology is set out in **Appendix C** with a summary of the key aspects provided below. It is important to note, however, that as the Proposed Development is a non-EIA development, the scope of this LVA is proportionate to the nature and scale of the Proposed Development.
- 5.3.2 For 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.

Nature of Landscape and Visual Effects

- 5.3.3 The appraisal considers distinct but closely related areas: landscape character and visual amenity. These are described below.

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.
- 5.3.10 Effects are defined as beneficial, neutral or adverse. The decision regarding whether an effect is beneficial or adverse and the decision regarding the significance of effect are entirely separate. It is based on professional judgement and is acknowledged as a ‘particularly challenging’ aspect of assessment by GLVIA3 in its paragraph 2.15.
- 5.3.11 Neutral effects are those which overall are neither positive nor negative but may incorporate a combination of both. Beneficial effect would be for example providing enhancement or improvement to the landscape. Adverse effects result in the loss of characteristic elements or degradation of the landscape for example.

Extent of the Study Area

- 5.3.12 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.
- 5.3.13 The extents of the Study Area for this Proposed Development have been informed by desktop research, site work, and experience. This included the production of a Zone of Theoretical Visibility (ZTV) (**Figure 5.1**). The ZTV was produced from four points representing the four towers, at a maximum height of 64 m from existing ground levels to represent a ‘worse case’ scenario. This demonstrates that the main areas of theoretical visibility are to the west and south with topography notably limiting visibility to the north, east and south-east.
- 5.3.14 The type and height of the towers of the Proposed Development can be perceptible up to 10 km based on Perceptibility of Overhead Lattice Transmission Towers: Collected Papers 1993-1 – 2003 (Turnbull and McAulay, 2015)⁶. This does not necessarily mean significant effects would be found at that distance.
- 5.3.15 Taking the above into account, a maximum 10 km radius Study Area is considered appropriate for this appraisal to capture all potential significant effects.

⁶ Perceptibility of Overhead Lattice Transmission Towers: Collected Papers 1993-1 – 2003 (2015), Turnbull and McAulay

Baseline Data Collation

- 5.3.16 Information has been gathered primarily from a site survey and desk study.
- 5.3.17 Relevant publications that have been taken into consideration include:
- NatureScot's Scotland Landscape Character Types⁷;
 - online mapping including Ordnance Survey maps, Google Earth Pro and Google Street View; and
 - Moray Local Development Plan 2019⁸.
- 5.3.18 A site visit was undertaken to corroborate the desk-based study and to capture photography from selected representative viewpoints. The visit was conducted on October 22nd 2021, with conditions being partially cloudy.

Limitations and Assumptions

- 5.3.19 The appraisal has been carried out by assuming the worst case of greatest visibility i.e. on a clear, bright winter's day with no screening from deciduous foliage.
- 5.3.20 The ZTV is based on 'bare ground' and does not take into account the screening effects of built form, forestry, vegetation, distance and visibility (e.g. weather conditions); all of which can prevent or reduce visibility.
- 5.3.21 As the need for the Proposed Development is dependent on The Scottish Ministers granting consent for the Clash Gour Wind Farm, for the purposes of appraisal, the proposed Clash Gour Wind Farm and its substation are assumed to be part of the baseline as constructed and fully operational.
- 5.3.22 The appraisal of visual effects on residential receptors has been undertaken from publicly accessible locations only. Assumptions have therefore been made on the main outlooks and importance of views from these properties.

5.4 Baseline Environment – Landscape

- 5.4.1 The Site is located in an open area of rough grazing surrounded by plantation forestry (**Plate 5.1**). The land gently undulates through a series of broad smooth landforms and small hilltops. The Site sits on the western base of the Hill of Tomechole and is enclosed with the Hill of Glaschyle to the east.
- 5.4.2 As defined by NatureScot's Landscape Character Types of Scotland⁹ and as shown on **Figure 5.2**, the Site lies within Upland Moorland and Forestry Landscape Character Type (LCT). Characteristics of this LCT typical of the Site and surroundings include:
- generally simple, large scale landscape with expansive scale of interior plateau area;
 - large scale commercial forestry blankets much of the mid and upper slopes, many of which are undergoing deforestation and restocking;
 - wind farm development both within the LCT and in adjacent landscapes;
 - small number of built features which are generally visually separated by distance; and
 - central areas away from public roads have relatively strong wild character, due to their remoteness, rugged terrain and perceived naturalness.

⁷ Scottish Landscape Character Types Map and Descriptions 2019, NatureScot <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions>

⁸ Moray Local Development Plan 2019. Moray Council: http://www.moray.gov.uk/moray_standard/page_122817.html

⁹ Scottish Landscape Character Types Map and Descriptions 2019, NatureScot <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions>



Plate 5.1: View west towards Site from public path south of Tomnamoon

- 5.4.3 In terms of local context, the land to the north of the Site comprises felled forestry plantation. To the east the land is a mix of rough grazing, forestry and felled forestry plantation. To the south the land consists of rough grazing. West of the Site lies more rough grazing and forestry plantation. Settlement is sparse. Johnstripe is the closest property, located along a track approximately 250 m to the south of the Proposed Development (as illustrated in Figure 1.2). It should be noted that EDF purchased Johnstripe several years ago during the development process for the Clash Gour wind farm. It is currently unoccupied. The application for the Clash Gour wind farm suggests the possibility of converting the property to a project office for the site. The impact on the property at Johnstripe has therefore not been considered any further in this assessment. Whilst a large part of the Study Area is remote, there are several man-made features including the OHLs running through the Site and Study Area, an existing substation 900 m to the south of the Site, and several wind farms. The Hill of Glaschyle Wind Farm lies 1 km to the west, and Berry Burn Wind Farm 2 km to the south. These have become defining features of this part of the uplands. The proposed Clash Gour Wind Farm will also increase the perception of a wind farm landscape in this area. The Clash Gour Substation will be located immediately adjacent to the Site's eastern boundary.
- 5.4.4 The landscape within the wider Study Area around the Proposed Development includes the Rolling Farmland and Forests to the north, Narrow Wooded Valley to the west, and Open Rolling Upland LCTs to the south. The enclosed and secluded characteristics of the Narrow Wooded Valley limit the potential for any effects from the proposed development and it is not considered further in the assessment.

Landscape and Related Designations

National and Regional Landscape Designations

- 5.4.5 There are no nationally or regionally designated landscapes (e.g. National Scenic Areas or Special Landscape Areas) within the Study Area (**Figure 5.2**).
- 5.4.6 The nearest local landscape designation is Findhorn Valley and the Wooded Estates Special Landscape Area (SLA) approximately 3 km to the south-west. Whilst the Proposed Development may be visible from parts of the SLA, the Proposed Development would be seen in context of the existing pylons and OHL and behind the Glaschyle Wind Farm, clearly separate from the SLA and would not affect the special qualities of the SLA. Therefore, this local designation has not been considered any further in this appraisal.
- 5.4.7 The Pluscarden Valley SLA lies approximately 6.3 km to the north-east. Whilst the Proposed Development may be visible from very limited parts of the SLA, the Proposed Development would be seen in context of the existing pylons and OHL, clearly separate from the SLA and would not affect the

special qualities of the SLA. Therefore, this local designation has not been considered any further in this appraisal.

- 5.4.8 Darnaway Castle and Relugas Gardens and Designed Landscapes are located 5.4 km north-west and 4.4 km west of the Site, respectively. Whilst there will be some theoretical visibility of the Proposed Development from within the Darnaway Castle grounds, taking into account the distance between the Proposed Development, intervening blocks of forestry and the Proposed Development's context of the existing pylons and OHL, and the future baseline of wind turbines, it is considered that the Proposed Development will not create any potential for significant effects on the views available from the Castle. Relugas falls outside of the ZTV, and therefore will not be affected by the Proposed Development.

5.5 Baseline Environment – Visual

- 5.5.1 Visual receptors are "*the different groups of people who may experience views of the development*" (GLVIA3, para 6.3). The baseline desk study, including the use of the ZTV, ground-truthed by a site visit, was used to identify those groups who may be significantly affected.
- 5.5.2 The Proposed Development is relatively enclosed by The Hill of Tomechole and several other hills to the north and east and the Hill of Glaschyle to the west, limiting long distance views from the north and east. Generally, high ground to the west and south allows for more open long-distance views from slopes facing the Site, although intervening blocks of forestry will limit some of these views, particularly from the west.
- 5.5.3 The Study Area is a remote and sparsely populated area with few sensitive visual receptors. Also taking into account the limited visibility of the Proposed Development (**Figure 5.1**), the key visual receptors (**Figure 5.3**) are limited to:
- Users of the Dava Way Core Path;
 - Users of local paths through and adjacent to the Site;
 - Users of the woodland walk at Findhorn valley;
 - Users of the A940; and
 - Knock of Braemoray
- 5.5.4 The settlement of Forres falls on the very edge of the 10 km Study Area and whilst there will be some theoretical visibility of the Proposed Development from along the southern edged of the settlement, taking into account its distance from the Proposed Development, intervening blocks of forestry and the Proposed Development's context of the existing pylons and OHL, and future baseline of wind turbines, it is considered that the Proposed Development will not create any potential for significant effects on the views available from this settlement.
- 5.5.5 The residential properties of Tomnamoon, Swiney Hillock and Wester Greens to the north of the Site and Tomcork and Dallasbraughty to the south all fall within approximately 2 km of the Site. Residential properties along the A940, between Logie and Carnach and between Tomdow Cottage and Tombain, fall within the ZTV at a distance of at least 3 km from the Proposed Development. Whilst there is theoretical visibility from these properties, with intervening blocks of forestry, farm buildings and the context of the existing OHL, and future baseline of wind turbines, it is considered that the Proposed Development will not create any potential for significant effects on the views available from these properties.

5.6 Mitigation

Embedded Mitigation

- 5.6.1 The layout and design of the Proposed Development has specifically considered the potential effects on nearby sensitive receptors and features of the surrounding environment; the shortest alignment/tower arrangement has been used to minimise effects.
- 5.6.2 The use of existing access tracks and the hardstanding for the wind farm substation as a construction compound minimises the extent of disturbance to the landscape and subsequent potential species loss, habitat loss and degradation.
- 5.6.3 The mitigation of effects on the landscape and visual resource during construction are integral to the construction process under the 'Considerate Constructors' scheme that is now routinely followed, such as 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.

5.7 Appraisal

Introduction

- 5.7.1 The construction and operation of the Proposed Development has potential to impact on:
- landscape fabric caused by changes to the physical form of the landscape and its elements;
 - landscape character caused by changes in the key characteristics and qualities of the landscape; and
 - visual amenity which would be caused by the introduction of a potentially discordant feature in the view.
- 5.7.2 This section is an appraisal of the potential effects from these impacts, both during construction and operation. A photomontage (**Figures 5.4**) has been produced to represent the view of the Proposed Development from the Dava Way. The proposed towers shown in the photomontage represent the maximum height, as shown in **Table 2-1** above. These also include a block model of the proposed Clash Gour substation to which the Proposed Development will connect.

Construction Phase

- 5.7.3 During the construction phase of the Proposed Development, a temporary diversion for the OHL will be required for the length of the construction period of approximately 15 months. As described in Section 2 of this EA, this diversion will consist of two conventional steel lattice towers, similar in height to the existing towers but may be up to 20% higher/ lower.

Effects on the Landscape Fabric of the Site

- 5.7.4 The construction of the Proposed Development would remove areas of rough grazing and commercial forestry which would be replaced by foundations for the towers and tracks, as well as the temporary OHL diversion and areas for temporary access. This includes an area of fire damaged commercial forestry (see Section 9 -Forestry). These would be substantial but very localised changes to the landcover, noting removal of commercial forestry would have occurred in the future and also will be required to be removed for the Clash Gour substation. The temporary construction compounds would utilise the Clash Gour substation hardstanding removing the need for any additional groundcover removal. Construction working areas would be reinstated with planting to match existing species loss (see Biodiversity Section 8).

Construction Effects on Landscape Character

- 5.7.5 Effects on landscape character of the Site and immediate surroundings are unavoidable during the construction stage through the change from rough grassland and forestry to a landscape with energy

infrastructure. However, the temporary nature, relatively small scale, and location adjacent to the future baseline of Clash Gour Wind Farm, substation and existing OHL infrastructure combined with screening from surrounding conifer planting limits the potential for significant effects within the wider landscape. It is anticipated that the construction of the Proposed Development would create no more than a minor change to the character of the wider landscape of the Study Area.

Construction Effects on Visual Amenity

- 5.7.6 People notice movement and active change more than they notice fixed objects. Partly because of this, the overall effects on visual amenity during the construction phase would be slightly greater than upon completion of the development. In addition, the presence of large machinery on site, often with hazard lights, tall cranes, and material stockpiles would be noticeable. The general noise and activity associated with construction sites may attract the viewers attention.
- 5.7.7 The construction of the Proposed Development will require the temporary diversion of the OHL, including the erection of two temporary standard lattice towers to the northwest of the towers to be removed, as well as a temporary access track. The Proposed Development would be slightly more noticeable for local visual receptors, such as users of core paths in the local area. However, these changes will only be perceived for limited stretches of these core paths, and in the context of more extensive infrastructure. Therefore during its Construction Phase, the Proposed Development is anticipated to have a minor effect on the visual amenity of the Study Area.

Operational Phase

Landscape Character Effects

- 5.7.8 The Proposed Development lies entirely within the Upland Moorland and Forestry LCT. The Study area also includes the Rolling Farmland and Forests LCT to the north and Open Rolling Upland LCTs to the south which are included within the appraisal.

Upland Moorland and Forestry LCT

- 5.7.9 The key relevant characteristics of the Upland Moorland and Forestry LCT are its large scale with expansive interior plateau area, combined with a simple landcover of extensive, geometric conifer forests and heather moorland. Large scale commercial forestry blankets extend over much of the mid and upper slopes, many of which are undergoing deforestation and restocking. Wind farm development is present both within the LCT and in adjacent landscapes.
- 5.7.10 The Proposed Development would marginally increase the presence of infrastructure within the LCT, in the context of the future baseline of the Clash Gour Wind Farm and substation and the more extensive existing OHL infrastructure network, as illustrated by the photomontages in **Figures 5.4 and 5.5**. There would only be a very localised change, with an intensification of infrastructure in a small area of landscape already characterised by similar features. The Proposed Development's effects on the wider landscape character are therefore predicted to be negligible.

Rolling Farmland and Forests LCT

- 5.7.11 Long distance views across the Moray Firth, to the coasts and mountains of the north, and occasionally to the south, afforded from high points and roads descending from higher ground are key characteristics of the Rolling Farmland and Forests LCT. The Proposed Development lies approximately 1.5 km to the south of this LCT, and therefore it is likely that it will be perceived in some of the views from the LCT. However, due to the relatively small size of the Proposed Development and the fact that it would be perceived in the context of the future baseline of the Clash Gour Wind Farm and substation and the more extensive existing OHL infrastructure network, the Proposed Development's effects on the LCT are predicted to be negligible.

Open Rolling Upland LCT

5.7.12 Key relevant characteristics of Open Rolling Upland LCT are the elevated, open and expansive views across the landscape, and long distance views from the edge of the plateau to the north and south, as well as the general lack of modern structures (electricity transmission towers, wind turbines, masts and houses), particularly in the central area close to roads and the Dava Way, from where most people experience the area. However, due to the openness of this landscape, longer distant views are characterised by wind farms and energy infrastructure, particularly in the neighbouring areas to the east. The Proposed Development lies approximately 2 km to the north of this LCT and therefore it is likely that it will be perceived in some of the views from the LCT, intensifying the presence of infrastructure within a very localised area, in the context of the future baseline Clash Gour Wind Farm, substation and the more extensive existing OHL infrastructure network. It will only be a very minor change in these views, and therefore the Proposed Developments effects on the LCT are predicted to be negligible.

Visual Effects

Residential Receptors

5.7.13 The residential property of Johnstripe lies c.500m from the permanent aspects of the Proposed Development. It is however not occupied, having been purchased by the developer of Clash Gour Wind Farm. It is therefore not considered to be a residential receptor for the purposes of this assessment.

Recreational Receptors

5.7.14 The Dava Way promoted path lies approximately 3 km to the west of the Proposed Development at its closest point. As shown in **Plate 5.2** and the photomontage (**Figure 5.4**), the elevated sections of the Dava Way Core Path near Knock of Braemoray and Cairn Eney, afford elevated views towards the Site. Due to the distance, intervening forestry and topography and the fact that the Proposed Development would be perceived in the context of existing OHL infrastructure and the future baseline of Clash Gour Wind Farm and substation, it is unlikely to be particularly discernible. The change to the view for walkers on this route would be negligible, creating an overall negligible effect.



Plate 5.2: View from the Dava Way east of Know of Braemoray looking north towards the Site along the Divie River valley.

- 5.7.15 Users of local paths through and adjacent to the Site would have direct views of the Proposed Development. Although, due to landform and intervening blocks of forestry the views would be available from only limited sections of these paths. The Proposed Development would not be particularly discernible, perceived in the context of the proposed Clash Gour Wind Farm and substation and existing OHL infrastructure. Therefore, the change to view for walkers along these paths would be minor, with an overall minor adverse effect.
- 5.7.16 The woodland walk at Findhorn valley lies approximately 4.8 km to the north-west of the Site at its closest point. Due to the distance, intervening forestry and topography and the fact that the Proposed Development would not be particularly noticeable, perceived in the context of the proposed Clash Gour Wind Farm and substation and existing OHL infrastructure, the change to the view for walkers along this route would be negligible, with an overall negligible effect.
- 5.7.17 Users of the walk to the summit of Knock of Braemoray, located approximately 8 km to the south-west of the Site, would have distant views of the Proposed Development, as shown in **Plate 5.3**. Due to distance and the fact that the Proposed Development would be perceived in the context of the proposed Clash Gour Wind Farm and substation and existing OHL infrastructure, the change to the view of walkers at this location would be negligible, with an overall negligible effect.



Plate 5.3: view looking north-north-east from Knock of Braemoray towards site and existing windfarm on the southern slopes of Hill of Glaschyle.

Transport & Commercial Receptors

- 5.7.18 Transport receptors are considered to be users of the A940. Running at approximately 3 km to the west of the Proposed Development at its closest point, there are sections of theoretical visibility along the A940 between Logie and Carnach and between Tomdow Cottage and Tombain. Blocks of forestry and landform would limit most of the views from these stretches of road, and the change in the potential views as a result of the Proposed Development would be negligible, with negligible effects.

Summary

- 5.7.19 The Proposed Development would result in only localised landscape and visual effects, through the addition of energy infrastructure within an area already characterised by similar development. It would intensify the presence of electricity transmission towers and OHL within a very small area, recessive in comparison to the future baseline of the Clash Gour substation and wind turbines. The upland moorland and forestry characteristics also help in reducing any effects through the large scale of the landscape and screening nature of the forestry. Overall, except for the changes to the Site itself, no greater than minor adverse effects were identified for the landscape character and visual amenity of the Study Area.
- 5.7.20 Construction effects, particularly noting the temporary tower requirements, would be more noticeable and have potential for slightly greater effects on landscape character and visual amenity than at operational stage. However, significant effects would be limited to the Site and immediate surroundings, with no more than temporary minor adverse effects beyond.

5.8 Recommendations & Mitigation

- 5.8.1 No specific mitigation measures have been identified due to the limited potential for significant landscape and visual effects arising from the Proposed Development. The implementation of a CEMP will ensure that best practice standards are used during the construction and reinstatement periods which will assist in minimising landscape and visual effects.

6. CULTURAL HERITAGE

6.1 Introduction

- 6.1.1 This section presents the results of the archaeology and cultural heritage appraisal which has been undertaken on the Proposed Development. Archaeology and cultural heritage comprise a diverse range of elements that are referred to throughout the voluntary EA as heritage assets.
- 6.1.2 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.
- 6.1.3 Additional information which supports this section is presented in the following figures and technical appendices:
- **Figure 6.1** Heritage Assets
 - **Appendix D** – Cultural Heritage Gazetteer

6.2 Information Sources

- 6.2.1 The appraisal 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 GDLs 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 Moray Council Historic Environment Record (HER), managed by the Aberdeenshire Council Archaeology Service (ACAS).
 - 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 Study Area, available online from the National Library of Scotland (NLS). The relevant maps date in range from the seventeenth to the nineteenth centuries¹⁰.
 - First and subsequent editions of the Ordnance Survey (OS) maps of the area of interest, examined via the NLS¹¹.
 - LIDAR datasets of the general area through the Scottish Remote Sensing Portal maintained by the Scottish Government¹².
 - The solid and drift geology for the Study Area based on that recorded by the British Geological Survey/Geological Survey of Great Britain maps¹³.
- 6.2.2 A walkover survey of the Proposed Development was carried out from 21 to 23 October 2021, in order to:
- 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

¹⁰ <https://maps.nls.uk/>.

¹¹ National Library of Scotland Maps Viewer (2021). Available at: <https://maps.nls.uk/>

¹² <https://remotesensingdata.gov.scot/data#/map>.

¹³ Geology of Britain viewer (2021). Available at: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>.

- identify areas with the potential to contain currently unrecorded buried archaeological remains.

Limitations and Assumptions

- 6.2.3 The technical terminology applied to the appraisal process is based on that contained within Scottish Planning Policy. Professional judgement is applied throughout.
- 6.2.4 The appraisal is based on the Proposed Development as presented at the time of compiling this report. Any comments received on this document from HES or the ACAS may inform on any future appraisal or investigations that may need undertaken.
- 6.2.5 The desk-based assessment on which this appraisal 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.

6.3 Methodology

Study Area

- 6.3.1 To appraise the effect of the Proposed Development on cultural heritage a Study Area of 2 km for undesignated and designated assets extending out from the Site was applied to identify all known and potential below-ground heritage assets.
- 6.3.2 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

- 6.3.3 The technical terminology applied to the appraisal process is based on that contained within the Scottish Planning Policy (SPP) framework. Professional judgement is applied throughout.
- 6.3.4 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.
- 6.3.5 For the purpose of this appraisal, Cultural Heritage features are referred to as heritage assets, and additionally for clarity, a minor distinction is made between standing remains and buried archaeology.
- 6.3.6 Other Cultural Heritage and archaeological sites, not subject to other designations, are recorded within the SNRHE and the local HER, and additional site may 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 based on professional judgement, although the criteria for identifying nationally important sites will often be referred to in making such judgements.

Standards and Guidance

- 6.3.7 All elements of the appraisal have been undertaken in accordance with the following policies and guidelines of the Chartered Institute for Archaeologists (CIfA):
- By-laws: Code of Conduct¹⁴;
 - Standards and Guidance for Historic Environment Desk Based Assessment¹⁵; and
 - Standards and Guidance for commissioning work on, or providing consultancy advice on, archaeology and the historic environment¹⁶.

Appraisal Methodology

- 6.3.8 Cultural significance lies in the value of a heritage asset to current 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.
- 6.3.9 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 Guidance¹⁷ and the Historic Environment Policy for Scotland 2019¹⁸. 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 appraisal, and therefore can be of uncertain value.
- 6.3.10 The determination of "setting" has been undertaken in accordance with guidance provided within the Managing Change Guidance¹⁹ (HES, 2016). A three-stage process was undertaken to assess the impact of the Proposed Development 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.
- 6.3.11 The tables below identify factors which are appropriate to consider during the appraisal 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 6-1** below sets out the criteria for assessing the value of assets.

¹⁴ Chartered Institute for Archaeologists (2010). By-laws: Code of Conduct.

¹⁵ Chartered Institute for Archaeologists (2010). Standards and Guidance for Historic Environment Desk Based Assessment.

¹⁶ Chartered Institute for Archaeologists (2010). Standards and Guidance for commissioning work on, or providing consultancy advice on, archaeology and the historic environment.

¹⁷ Historic Environment Scotland (2019). Designation Policy and Selection Guidance

¹⁸ Historic Environment Scotland (2019). Historic Environment Policy for Scotland

¹⁹ Historic Environment Scotland (2020). Managing Change in the Historic Environment Setting – Historic Environment Scotland's guidance note series.

Table 6-1: 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 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)

6.3.12 The criteria for assessing the magnitude of impact from the Proposed Development on an asset is shown in **Table 6-2** below.

Table 6-2: 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 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.

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

6.3.13 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 6-3**. For the purpose of this appraisal, 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 6-3: Overall Impact

Value	Factors in the assessment of Magnitude of Impacts					
	No Change	Negligible	Minor	Moderate	Major	
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	

6.4 Baseline Environment

Introduction

6.4.1 The location of the assets which lie within the Study Area surrounding the Site, are tabled in **Appendix D: Cultural Heritage Gazetteer** and indicated in **Figure 6.1: Heritage Assets**.

Site Geology

6.4.2 The bedrock geology of the Proposed Development and the surrounding area is dominated by the Nethybridge Psammite Formation formed around 541 to 1000 million years ago and common to the Central Highlands. The superficial geology is made up of Devensian – Diamicton deposits formed up to 2 million years ago in the Quaternary Period. The local environment was previously dominated by ice age conditions²⁰.

²⁰ Geology of Britain Viewer Online. Accessed at: <https://mapapps.bgs.ac.uk/geologyofbritain/home.html>

Designated Assets

- 6.4.3 Currently, there are no designated assets identified within the Site. The nearest designated assets are the listed buildings in Edinkillie, 3.5 km to the south-east of the Site. These are:
- Edinkillie House (LB2188) Category A Listed Building;
 - Edinkillie Parish Church, Watch House and Burial Ground (LB2187) Category B Listed Building;
 - Divie Railway Viaduct (LB2189) Category B Listed Building; and
 - Bridge of Divie (LB2185) Category B Listed Building.

Undesignated Assets

- 6.4.4 There are **36** undesignated assets within the 2 km Study Area, largely post-medieval. Of the assets highlighted by the assessment, 33 are listed within the SNRHE and local HER, with a further three assets discovered through historic map regression and walkover survey.

Baseline Environment

- 6.4.5 The historical background presents a summary of the baseline information provided in **Appendix D: Cultural Heritage Gazetteer** and is focussed on interpreting the information relevant to assessing the potential for encountering as yet unknown archaeological features within the Site.
- 6.4.6 There has been a single previous archaeological assessment and walkover survey conducted within the Study Area:
- Assessment and Walkover Survey (NJ04NW0108) was carried out in July 2012 by Highland Archaeology ahead of a proposed windfarm development to the west of the Site.
- 6.4.7 The principal assets and features within the Study Area are described in the context of a timeline of archaeological periods from Prehistoric through to Modern.
- 6.4.8 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 (12,000 BCE – CE 400)

- 6.4.9 The earliest Prehistoric inhabitants of Scotland only leave ephemeral traces of their lives within the archaeological record. The people of the Palaeolithic and Mesolithic periods were nomadic hunter gatherers and left little evidence for their existence, with most heritage assets encountered related to flint scatters. Within the Study Area there is nothing that can be attributed to specific periods within Prehistory, though, most can be predicted to be a part of the Neolithic and Bronze Age periods.

6.4.10 Much of the area surrounding the Proposed Development is afforested land, which has made many assets inaccessible or may hide the identification of undiscovered assets. Prehistoric assets are particularly at risk as the remains are typically more ruinous and likely to be mistaken as natural features, if found.

Field Systems

6.4.11 Field systems are examples of small prehistoric farming settlements. Through excavation and analysis, these can provide information on prehistoric agriculture, economy, and social organisation. These assets survive as ruined structures, clearance cairns, and boundaries having been robbed of their more substantial stones. Within the 2 km Study Area, two of the assets are field systems (**HA15, HA21**). Field systems are typically associated with other contemporary types of archaeological evidence of settlement in prehistory such as stone boundary walls, turf banks, and lynchets. In the case of this study, both field systems have one or more hut circles and both contain several cairns – most classified as clearance cairns. **HA21** may also contain a grassed over quarry, found during an earlier walkover survey for Berry Burn Windfarm.



Plate 6.1 - Image of HA30, a hut circle on the junction of the road to Tomchork and the main access road. Photo taken on walkover survey on October 22, 2021.

Hut Circles

6.4.12 There are five instances of singular or clusters of hut circles in the Study Area (**HA13, HA15, HA21, HA30, HA31**). The remains of hut circles are typically seen as foundation stones, set in a large circle with space for an entrance. Hut Circles are typically clustered in groups of three to five, found within the Study Boundary clustered alongside clearance cairns and field systems. They survive as foundation stones, packed in a large circular shape, since the superstructure, likely timber, does not preserve. They vary in size but are typically around 15 m in diameter, some with an inner circle or subdivisions. Due to the forested nature of the landscape in this area, many hut circles go unnoticed. All the hut circles are set in agricultural and settlement land, unobscured by forestry. However, when on land used for agricultural activities they become prone to damage from grazing and ploughing. **Plate 6.1** shows **HA30** which has been damaged by grazing, leaving the stones uncovered, but likely moved out of situ.

Medieval (CE 400 – CE 1560)

6.4.13 There are no known assets belonging to this time period within the Study Area and are similarly unlikely to be present as the Study Area encompasses mostly post-medieval farmsteads and activity. However, in the surrounding towns and villages, there are a few extant medieval assets. The remains of Dunphail Castle (LB2170) is a category C listed building 4.3 km west of the Proposed Development. The medieval castle has no known construction date but is known to have been besieged in 1330 by the Earl of Moray.

Post-Medieval (CE 1560 – CE 1900)

6.4.14 Fairy Hillocks (NJO4NW0021) (**HA6**), a natural feature of two hills, is an example of intangible cultural heritage, as the place is colloquially known to house fairies. In this case a post-medieval date has been tentatively applied as the earliest likely date that the current place name was applied, reflecting the earliest probable dates for the associated beliefs about these locations emerging.



Plate 6.2 - Lade dam approximately 5m over a lade extending from Johnstripe farmstead to the south. Identified during walkover survey on October 21, 2021.

6.4.15 At the corner of at least two plots of forested and cleared land, there are two boundary stones, one incised with a rough letter 'D' (NJO4NW0067) (**HA19**). These types of stone markers have been used since the 1790s and mark the extent of authority over an area of land. Similar to boundary stones, milestones were placed between the 18th and 20th centuries, commonly associated with the 18th century military roads. The closest asset to the Proposed Development is a milestone of this type, marking eight miles to Forres (NJO4NW0058) (**HA11**). It is noted on the OS maps of 1846 and 1888. Just 1 mile down the road, another milestone sits at Meikle Corshellach (NJO4NW0100) (**HA26**) notes nine miles to Forres.

6.4.16 The rest of the Post-Medieval assets in this period reflect the dominance of agricultural activity within the wider region, with a croft (NJO4NE0025) (**HA18**) and farmsteads (**HA1, HA2, HA3, HA7, HA9, HA10, HA22**), combining to form over a third of the heritage assets identified within the Site from this period. Although most of the Site is in an upland area, other assets indicate a more diversified rural economy in

the form of two gravel pits (**HA4, HA5**), two kiln barns (**HA10, HA28**), and a mill dam and lade (NJ04NW0063) (**HA14**). During a walkover survey, an additional two dams over a lade (**HA35, HA36**) were identified just north of the Johnstripe farmstead, likely associated (see Plate 6.2). The rest of the assets are the remains of buildings and structures of unspecified type. Some, such as Meikle Corshellach Buildings (Canmore ID 70319) (**HA23**), are located right next to farmsteads and contain multiple buildings and attached enclosures, thereby possibly representing assets belonging to the abandoned farmsteads.

- 6.4.17 To the south west, approximately 700 m from the Proposed Development, a 5 m long scar provides evidence for peat cutting activities in this area (**HA34**). The peat cutting is not recent or no longer active, given the amount of vegetation and undergrowth, as seen in **Plate 6.3**.



Plate 6.3 - Site of peat cutting, as seen by the ridge created where earth was removed. Identified by walkover survey on October 21, 2021.

6.5 Appraisal

- 6.5.1 The historic background has identified that there are a number of archaeological assets within the Study Area surrounding the Site. These have been identified through a combination of the local HER, SNHRE, and walkover survey. The heritage assets present within the Study Area relate to post-medieval activity ranging from farmsteads and agricultural activity, local folklore, and some prehistoric field systems and activity.
- 6.5.2 The construction of the Proposed Development would 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**.

6.6 Recommendations and Mitigation

- 6.6.1 Given the current and historic land use of the Site as an area of unimproved scrub, the likelihood of encountering previously unknown archaeological assets or features during construction of the Proposed Development is deemed to be low.
- 6.6.2 Previous survey work associated with the Berry Burn Wind Farm has indicated the presence of assets outwith the Site and a lack of surviving evidence within the areas to be directly impacted on from works associated with the construction of the Proposed Development.
- 6.6.3 This EA and walkover survey has identified no archaeologically significant features within the Site. Due to the limited potential for as yet undetected buried remains surviving, the probability of encountering hitherto unknown assets of archaeological significance during the course construction work in this area is considered to be low. It is unlikely that construction of the Proposed Development would benefit from any form of archaeological monitoring.

7. BIODIVERSITY

7.1 Introduction

- 7.1.1 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 a direct or indirect effect could occur depending on factors such as hydrological connectivity, territorial and foraging ranges of species.
- 7.1.2 Additional information which supports this section is presented in the following technical appendices:
- **Appendix E** – Habitats and Protected Species Baseline Report
 - **Appendix F** – Ornithology Technical Report

7.2 Information sources

- 7.2.1 A Habitats and Protected Species Baseline Report has been prepared which documents the full baseline through a data review and Site visit (**Appendix E**). The field survey was undertaken in October 2021 to gather Site-specific data to inform this assessment.
- 7.2.2 An Ornithology Technical Report has been prepared which documents the ornithological baseline through a desk study and supplementary field surveys (**Appendix F**).

Relevant Assessments

- 7.2.3 A Biodiversity Net Gain (BNG) Assessment is being undertaken in parallel with this EA; discussions are taking place with the landowner and the BNG report will be available once that process and assessments have been concluded.

7.3 Methodology

- 7.3.1 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 cognisance of guidance from the Chartered Institute of Ecology and Environmental Management²¹ (CIEEM) on Ecological Impact Assessment. For collection of data and assessment pertaining to the ornithological baseline, methodology based on guidance from NatureScot^{22 23} was used.
- 7.3.2 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 NatureScot²⁴) were consulted for information regarding the presence of the following features:
- statutory designated sites of European or international conservation importance²⁵ for non-avian interests occurring within 10 km of the Site (extending to 20 km where ornithological qualifying interests include geese);

²¹ 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.

²² SNH (2016). Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds.

²³ SNH (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms.

²⁴ NatureScot (2021). SNHi Data Service. Available: <https://www.nature.scot/information-hub/snhi-data-services> [Accessed: December 2021].

²⁵ "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).

- statutory designated sites of local and/or national conservation importance²⁶ occurring within 2 km of the Site; and
- non-statutory designated sites of local importance²⁷ occurring within 2 km of the Site.

Other Areas of Conservation Importance

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

- woodland listed on the Ancient Woodland Inventory²⁸ (AWI);
- Native Woodland Survey of Scotland²⁹ (NWSS) database;
- Scottish Wildlife Trust³⁰ (SWT) Reserve; and
- Important Birds and Biodiversity Areas³¹ (IBA).

7.3.4 Up to date Site-specific data was collected in October 2021, by a Principal Ecologist and Consultant Ecologist who are 'capable-accomplished' in habitat identification and evaluation, and species survey design, planning and fieldwork per the CIEEM Competency Framework³². Full details of the field survey methods are included in the Habitats and Protected Species Baseline Report (**Appendix E**). 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 red squirrel *Sciurus vulgaris*, pine marten *Martes martes*, and badger *Meles meles* was also undertaken, plus suitability assessments for other species groups.

7.3.5 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;
- Scottish Biodiversity List (SBL); and
- Birds of Conservation Concern 5 (BoCC 5, Eaton *et al*, 2021)³³.

7.3.6 The main source of the data to inform the ornithology baseline were the results of ornithological surveys to inform the Environmental Impact Assessment (EIA) for the proposed Clash Gour Windfarm³⁴. Taking account of the extensive ornithological data already available, the data's validity³⁵ and the relatively small

²⁶ Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR).

²⁷ e.g. Local Nature Conservation Sites (LNCS), Local Biodiversity Sites (LBS), Sites of Interest for Nature Conservation (SINC).

²⁸ The ancient woodland inventory in Scotland lists areas which are currently wooded and have been continuously wooded since at least 1750.

²⁹ NWSS identified and mapped the location, extent, type and condition of all of Scotland's native woodlands. <https://forestry.gov.scot/forests-environment/biodiversity/native-woodlands/native-woodland-survey-of-scotland-nwss>: Accessed December 2021.

³⁰ <https://scottishwildlifetrust.org.uk/our-work/our-wildlife-reserves/>: Accessed December 2021.

³¹ IBAs are considered by BirdLife International to represent places of international significance for the conservation of birds and other biodiversity. <http://www.birdlife.org/worldwide/programme-additional-info/important-bird-and-biodiversity-areas-ibas>: Accessed December 2021.

³² 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: December 2021].

³³ Eaton *et al* (2021), The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723-747.

³⁴ MacArthur Green (2018). Clash Gour Wind Farm Environmental Statement. Technical Appendix 9.1: Ornithology. Available: Vol 4b Technical Appendices 8.5-9.1 low.pdf (force9energy.com) [Accessed October 2021].

³⁵ NatureScot recommends that the age validity of data should be no greater than five years.

scale of the Proposed Development, a full suite of 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 F**).

- 7.3.7 While seeking agreement with NatureScot on proposals not to undertake a full suite of ornithological surveys, supplementary ornithological field surveys were undertaken once a month from September to November 2021 inclusive. Full details of the supplementary surveys are provided in the Ornithology Technical Report (**Appendix F**).
- 7.3.8 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/reduce potentially significant 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);
 - adverse residual effects of the Proposed Development on the Biodiversity Feature(s) that are not significant;
 - adverse residual effects of the Proposed Development on the Biodiversity Feature(s) that are significant; or
 - beneficial residual effects of the Proposed Development on the Biodiversity Feature(s).

7.4 Scope of Assessment

- 7.4.1 This appraisal assumes that embedded mitigation (design features and construction good practice) will be successfully delivered; this includes successful pollution prevention. Direct and indirect effects that will require additional mitigation measures in order that they be avoided/reduced have been addressed. Specifically, this biodiversity appraisal covers the following potential effects during the construction phase:
- loss and degradation of priority habitats³⁶ and irreplaceable habitats; and
 - degradation of supporting habitat, injury/mortality, and/or disturbance/displacement of protected species.
- 7.4.2 Operational effects have been scoped out. Any future maintenance activities are assumed to be confined to within the wayleave, with access via the permanent tracks to be created along the wayleave. There will be no artificial lighting on the new towers.

7.5 Baseline Conditions

Environmental Designations

- 7.5.1 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. There are two SACs and one Ramsar within 4-10 km of the Site (**Figure 1.2** and **Figure 1.4**).

³⁶ Habitats considered as priorities for conservation action by aligning with descriptions of habitats under EU Annex 1 Habitats and/or Scottish Biodiversity List.

- 7.5.2 Moidach More SAC is designated for its blanket bog, and also supports a number of breeding birds associated with the peatland habitat, including golden plover *Pluvialis apricaria* and dunlin *Calidris alpina*. The SAC is located approximately 4.5 km south of the Site.
- 7.5.3 The Lower Findhorn Woods SAC is designated for its mixed woodland and base-rich soils associated with rocky slopes, and is located approximately 4.5 km west of the Site.
- 7.5.4 The two aforementioned SACs have no hydrological connectivity or continuous connecting or overlapping forestry cover between the designated sites and the Site. There are no effect pathways. These protected areas therefore do not fall within the Proposed Development's EZoI and are not considered further.
- 7.5.5 Located approximately 9 km south-east of the Site, the River Spey SAC qualifies for its population of otter *Lutra lutra*, freshwater pearl mussel *Margaritifera margaritifera*, sea lamprey *Petromyzon marinus* and Atlantic salmon *Atlantic salmon*. There is no hydrological connectivity between the Site and this SAC, as such there are no effect pathways and the qualifying features of the designated site do not fall within Proposed Development's EZoI and are not considered further.
- 7.5.6 Darnaway and Lethen Forest SPA is located approximately 5.8 km north-west of the Site and qualifies by regularly supporting a breeding population of European importance of capercaillie *Tetrao urogallus*.
- 7.5.7 Moray and Nairn Coast SPA/Ramsar is located approximately 12 km north of the Site and is designated for regularly supporting populations of European importance of the migratory species: pink-footed goose *Anser brachyrhynchus* and greylag goose *Anser anser*. In addition to geese, the Moray and Nairn Coast Ramsar/SPA is designated for populations of European importance of osprey *Pandion haliaetus*, redshank *Tringa totanus* and bar-tailed godwit *Limosa lapponica*. Furthermore, the designated site supports more than 20,000 waterfowl in the winter period.
- 7.5.8 Construction and operational effects to wintering birds have been scoped out based on the desk study data in the Ornithology Technical Report (**Appendix F**) which shows a lack of flight activity over the Site from species of elevated conservation importance in the non-breeding season and a lack of foraging flocks using the Site involving species of elevated conservation importance.

Priority Habitats

- 7.5.9 Full details of the habitats mapped from the Site and wider 250 m are included in the Habitats and Protected Species Baseline Report (**Appendix E**). This section presents 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 1 habitat. For clarity, there are no areas of ancient woodland within 250 m of the Site but the Native Woodland Survey of Scotland database returned four parcels of woodland located within the Site described as Caledonian forest, all of which are coniferous plantation or self-seeded upland birchwood. Habitats considered to be Biodiversity Features are as follows (**Figure 1 in Appendix E**).
- **f1a5 Blanket bog (H7130)** - The species abundance distribution fluctuated 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 E**). 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 1 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 peat.
 - **h1b Upland heathland** - Four parcels of land were categorised as upland heathland and were sited on elevated areas of land. Areas within this habitat had been fenced off with deer fencing, reducing the impact of grazing and subsequently allowing heather to mature and become dominant, the lack of grazing had also increased the occurrence of scattered trees. As with interconnecting habitats, the

upland heath showed signs of being recently burnt. However, in damp heaths burning can initiate soil erosion on steep ground and thin soils, and can impoverish the flora of wet heaths and damaging to the rich bryophyte element. Even the most species-poor dwarf shrub heaths are valuable for nature conservation because they are so rare in the world, and the extensive landscapes where almost all of the vegetation is some form of heathland are more common in Scotland than elsewhere in Europe³⁷. As such, this upland heathland represented SBL priority habitat³⁸; “*upland heathland dominated by stands of dwarf shrubs, dry and wet upland heathland including a sparse array of other species such as grasses, sedges and herbs*”. The habitat was characteristic vegetation of free-draining, acid mineral soils and also shallow peat up to 0.5 m deep. This particular example may be important for reptiles such as common lizard *Zootoca vivipara*, slow worm *Anguis fragilis* and adder *Vipera berus*; further protected/notable species considerations are in the following section.

- **h1b5 Dry heaths; upland (H4030)** – This habitat was located within the south-west and north-east aspect of the Site. The area of h1b5 located in the north-east was directly connected to an extensive area of the same habitat leading in an easterly direction, whereas the h1b5 located in the south-west had no defined boundary against the neighbouring upland heathland and blanket bog. The habitat in the south-west had been partially planted with plantation saplings and was not considered to align with SBL priority habitat or Annex 1 quality habitat, whereas the area h1b5 located in the north-east was considered to be ecologically characteristic of SBL priority habitat and Annex 1 quality habitat; being derived from woodland through a long history of grazing and burning³⁹. This particular example may be important for reptiles such as common lizard, slow worm and adder; further protected/notable species considerations are in the following section.
- **h1b6 Wet heathland with cross-leaved heath; upland (H4010)** - This habitat forms part of a wider mosaic habitat due to it being interconnected with a mix of habitat previously discussed. The habitat was noted as showing signs of recent burning, resulting in a heathland lacking age variation and variation in structure. Although this habitat is relatively small in area and isolated, it forms a part of a wider mosaic habitat which is of ecological importance. The h1b6 is comprised of species which represent Annex 1 habitat; vegetation typically dominated by mixtures of cross-leaved heath *Erica tetralix*, heather *Calluna vulgaris*, grasses, sedges and *Sphagnum* bog-mosses. Therefore, it is considered to align with SBL priority habitat and Annex 1 quality habitat.
- **w2b Other Scots pine woodland** – This habitat occurs in the central blocks of woodland on Site, where Scots pine is dominant with some larch. It falls into the SBL habitat native pinewoods. Areas of fire-damage are not included in this category.
- **r1 Standing open water and canals** – There are two ponds within close proximity to the Site and located on adjacent sides of the haulage road. Both ponds were surrounded by rush dominant habitat and the water level in the eastern pond was influenced by an irrigation channel/culvert running beneath the road. The ponds were in close proximity to the aggregate piles and may be subject to sediment pollution. The NatureScot ponds priority habitat definition⁴⁰ is complex and only includes a sub-group of all ponds and it excludes sites that are considered as a functional component of other priority habitat types, such as pools in blanket bog. These ponds are not a functioning part of the surrounding blanket bog and were created to facilitate drainage for the haulage road and aggregate storage area, these two ponds do not fall under the same alignment Annex 1 blanket bog but do represent SBL priority habitat.

³⁷ NatureScot (2018). Upland Heathland (UK BAP Priority Habitat). Available: <https://www.nature.scot/sites/default/files/2018-02/Priority%20Habitat%20-%20Upland%20Heathland.pdf> [Accessed: December 2021].

³⁸ Nature Scot (2020). Priority Habitat – Upland Heathland. Available: <https://www.nature.scot/doc/priority-habitat-upland-heathland> [Accessed: December 2021].

³⁹ JNCC (2021). 4030 European dry heaths. Available: <https://sac.jncc.gov.uk/habitat/H4030/> [Accessed: December 2021].

⁴⁰ NatureScot (2021). Priority Habitat – Ponds. Available: <https://www.nature.scot/sites/default/files/2018-02/Priority%20Habitat%20-%20Ponds.pdf> [Accessed: December 2021].

Terrestrial Protected Species

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

- **Badger**; listed on the SBL Social Criterion as a top 10 species valued by the Scottish public and are a legally protected species. Plantation woodland within and surrounding the Site offers suitable habitat for sett building in areas with drier ground located within the wooded areas, and suitable habitat for badger to forage and commute. There were no badger setts identified within 250 m of the Site however, badgers may forage or pass through the Site.
- **Pine marten**; a legally protected species which is also included on the SBL. No definitive pine marten signs were recorded from within the Site; a potential pine marten/fox scat was recorded within the north of the Site. Nonetheless, plantation woodland within the Site offers suitable sheltered habitat for pine marten to forage within and pass through and suitable habitat for den creation within the Site and surrounding 250 m.
- **Red squirrel**; listed as a priority species on the SBL and a legally protected species. Evidence of red squirrel was recorded within the Site and surrounding 250 m, located in the area of other coniferous woodland. The field signs included feeding stations with multiple eaten pinecones and three potential dreys. The field signs were recorded within woodland connected to the north-east proposed tower location. With exception to the unsuitable habitat located in the fire damaged plantation to the east of the Site, the remaining woodland/plantation within the Site was considered to offer suitable foraging and drey habitat, with reduced opportunities in the upland birchwood to the north of the Site.
- **Bats**; all species found in Scotland are legally protected, and most are included on the SBL. Plantation woodland to the south of the Site is of moderate suitability for roosting; however it is understood that this area of woodland will not be directly impacted by the Proposed Development and there is negligible risk of potential disturbance to roosting bats (if any) as works there would encompass a temporary line diversion leading away from the woodland. The potential exists for bats to forage along this woodland edge and further towards the Site over bog and heath vegetation (attracted by associated aerial invertebrate prey), thus foraging bats are considered within the Proposed Development's EZol (but not roosting bats).
- **Reptiles**; common lizard *Zootoca vivipara*, slow worm *Anguis fragilis* and adder *Vipera berus* are legally protected species and listed on the SBL. Suitable habitat for reptiles was recorded within the areas of recently felled plantation. These provided brush piles, tree stumps, and overturned root plates, and combined with their locality to open ground along the access tracks create optimal habitat for basking and hibernating reptile species.
- **Amphibians**; no field signs for amphibian were recorded during the survey. There are three ponds within the Survey Area of varying quality and isolated from similar habitat in the wider area. It is considered unlikely that great crested newt *Triturus cristatus* (GCN) are present within the ponds. However, the habitats within the Site are considered to be suitable for common amphibian species. Common toad *Bufo bufo* is a priority species on the SBL and therefore considered a Biodiversity Feature.
- **Brown hare** *Lepus europaeus*; at the time of the survey two brown hares were sighted within the Site. Brown hare are listed as a priority species on the SBL.
- **Wood ant**; two wood ant nests were recorded at the time of the survey. Several species of wood ant are listed on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species.

- **Invasive and non-native species;** a large stand of rhododendron *Rhododendron ponticum* was recorded amongst the upland birchwood in the north of the Site. Rhododendron is a non-native and invasive species that can form dense scrub in woodlands and upland habitats, which can then alter the natural structure of habitats. The rhododendron was not located within close proximity to the Proposed Development and it is considered unlikely that the stand would be disturbed/spread.

Ornithology

7.5.11 The Ornithology Technical Report (**Appendix F**) and accompanying **Figures 1-3** present a full review of all species data available. A summary of the results is provided below.

- **Pink-footed Goose.** Only two flights crossed the Site involving two skeins of pink-footed geese (40 and 80 birds respectively) recorded during the supplementary bird surveys in 2021. Both observations related to birds flying above collision risk height (>60m).
- **Breeding Waders.** Desk study data from surveys to inform the Clash Gour Wind Farm EIA showed a cluster of flight activity from wader species immediately south of the Site boundary, mainly associated with breeding activity in this area. This flight activity related to eight flights from lapwing *Vanellus vanellus* involving a total of 29 birds, two flights from curlew *Numenius arquata* involving a total of two birds, and one flight from oystercatcher *Haematopus ostralegus* involving two birds. In addition, a single flight involving a passage flock of 320 golden plover *Pluvialis apricaria* was recorded in the same area. All flights from lapwing, curlew, oystercatcher, and golden plover were in a height band range which could potentially result in collision risk from the Proposed Development. Breeding bird surveys to inform the Clash Gour Windfarm EIA showed a cluster of registrations immediately south of the Site boundary involving three species of waders: lapwing, curlew, and oystercatcher. In addition, single registrations for lapwing and curlew were recorded within the southern end of the Site. Lapwing and curlew are red listed, and oystercatcher is amber listed within Birds of Conservation Concern 5 (BoCC5, Eaton *et al*, 2021)³³.
- **Schedule 1 Raptors.** Desk study data from the Clash Gour Wind Farm EIA showed no evidence of breeding activity for raptors of elevated conservation importance i.e., those species listed on Schedule 1 of the Wildlife and Countryside Act, within the Site or within 2 km of the Site.
- **Grouse.** There were no records of capercaillie or black grouse *Lyrurus tetrix* lek sites within the Site or within 2 km of the Site.

7.6 Appraisal

Designated Sites

- 7.6.1 Designated sites with ecological interest beyond the Site are unlikely to be adversely impacted during construction or operation of the Proposed Development due to the distance of these areas from the Site and lack of associated connectivity.
- 7.6.2 The Darnaway and Lethen Forest SPA, situated approximately 5.8 km from the Site, is potentially within a range where birds from the SPAs qualifying population of capercaillie could commute across the Site or use the Site for foraging/lekking. However, desk study data from the Clash Gour Wind Farm EIA showed there was no evidence of this species within the Site or in proximity to the Site. The only record of capercaillie from survey data collected across the period 2013-2018 inclusive was a single bird recorded in 2013 approximately 2 km from the Site. Therefore, it is unlikely that the qualifying population of capercaillie would be adversely impacted during construction or operation of the Proposed Development.
- 7.6.3 Two observations of pink-footed geese during the supplementary field surveys in 2021 potentially involved birds forming part of the qualifying population of the Moray and Nairn Coast SPA/Ramsar. However, there were no previous records involving pink-footed geese flights across the Site from the

Clash Gour Wind Farm EIA suggesting this is an infrequent occurrence. The dominant habitats within and adjacent to the Site comprised of blanket bog, coniferous plantation, and upland heathland are unlikely to prove attractive to foraging geese. Furthermore, occasional commuting flights of pink-footed geese across the Site are anticipated to be above the height where the Proposed Development would present a collision risk (>60 m).

- 7.6.4 Greylag goose and osprey are additional qualifying interests of the Moray and Nairn Coast SPA/Ramsar, whose known foraging ranges could result in them flying across the Site. However, there were no records of flights from these species across the Site from the Clash Gour Wind Farm EIA data. Therefore, it is unlikely that qualifying populations of these species from the Moray and Nairn Coast SPA/Ramsar would be adversely impacted during construction or operation of the Proposed Development.

Habitats

- 7.6.5 The Proposed Development would result in a direct, permanent loss of priority habitat under the footprint of the proposed permanent OHL towers and permanent access tracks, including f1a5 Blanket bog (H7130), h1b Upland heathland, and h1b6 Wet heathland with cross-leaved heath; upland (H4010). Additionally, as OHL towers with foundations are proposed for the OHL diversion, this should be considered permanent loss. The Proposed Development will also require clearance of 0.7 ha of w2c other Scots pine woodland, an SBL habitat under 'native pinewoods'. This clearance would be essential for the new OHL wayleave and to form a wind firm edge.
- 7.6.6 The total extent of the priority habitat to be lost (1.624 Ha) would be relatively minor compared to its wider coverage across the wider landscape.

Table 4: Areas of priority habitat loss from permanent towers, permanent access track, and temporary diversion towers.

UKHab Primary Habitat (code) – Priority Habitats	Permanent Towers: area of habitat loss (Ha)	Permanent Access Track & Wayleave: area of habitat loss (Ha)	Temporary Diversion Towers: area of habitat loss (Ha)
Other Scot's Pine woodland (w2b)	-	0.7	-
Upland heath (h1b and h1b6)*	-	0.14	-
Blanket bog (f1a and f1a5)	0.018	0.76	0.006
Total	0.018	1.6	0.006

* due to the small area of wet heath with crossed leaved heath present (0.0002ha), h1b and h1b6 are detailed together.

- 7.6.7 Given that the blanket bog is irreplaceable, it is not possible to remove residual effects from permanent loss. Based on the relatively small area of blanket bog that the OHL footprint will cover, habitat loss during the construction phase is anticipated to cause adverse residual effects that are not significant. The embedded mitigation measures, with particular reference to SSEN Transmission's Generic Environmental Management Plan (GEMP) for Soil Management and Restoration, will reduce degradation effects beyond the boundary of the footprint of permanent infrastructure.
- 7.6.8 Temporary access tracks will be required for the OHL diversion and existing OHL in the south of the Site. These are anticipated to follow the temporary OHL through irreplaceable habitat. Temporary tracks and/or the use of trackway panels, including temporary stone roads on a geo-textile fabric base, would be applied generally. Temporary floating trackway / bog mats would be used for access should tracks be required to be developed through sensitive habitats, which will be determined by the Principal Contractor. It is anticipated that temporary floating trackway / bog mats would be used on areas of irreplaceable blanket bog habitat, allowing recovery in under two years.

- 7.6.9 Two priority habitat ponds⁴¹ are located within close proximity to the Proposed Development and as a result of pollution during construction could be subject to indirect effects. Indirect effects for the two ponds and the other Priority Habitats will be mitigated through implementation of a CEMP. The CEMP will detail protocols on pollution prevention in line with the Scottish Environment Protection Agency's (SEPA) Pollution Prevention Guidelines (PPG) series⁴² and the implementation of SSEN Transmission's GEMPs, with particular reference to GE2: Site Water Management Plan in Table 2-3.
- 7.6.10 It is anticipated that good biosecurity practices will be implemented through the CEMP to avoid spread of any newly established stands of rhododendron within the working areas associated with the Proposed Development.

Terrestrial Protected Species

- 7.6.11 During construction works associated with the Proposed Development, there is potential for degradation of supporting habitat, injury/mortality, and/or disturbance/displacement of protected and priority species; however not to significant effects. Permanent and temporary loss of foraging habitat for badger, pine marten, red squirrel, bats, reptiles, amphibians and wood ants will be marginal, relative to the wide spanning landscape of heathland, mires, woodlands and grassland.
- 7.6.12 Implementation of SSEN Transmission's Species Protection Plans (SPPs) and GEMPs, provided in **Appendix B**, will be sufficient to mitigate potential impacts of injury/mortality and disturbance/displacement of the following species:
- badger;
 - pine marten;
 - red squirrel;
 - bats; and
 - wood ants.
- 7.6.13 In the absence of a reptile or amphibian SPP, specific additional measures are included in Section 7.7 for during the construction works phase of the Proposed Development.
- 7.6.14 There will be a loss of larch woodland habitat (w2c) where the potential red squirrel dreys have been recorded; this would have potential impacts to squirrel dreys/ loss of drey habitat/ further displacement in addition to the 2019 wild fires that have reduced the availability of wider suitable habitat. The area of woodland will not require felling to facilitate this Proposed Development, however, it should be noted that felling of this woodland would be required to facilitate the Clash Gour Wind Farm Substation development, which is outwith the scope of this EA. The other Scots pine woodland requiring felling for OHL wayleave and permanent access tracks may remove a minor portion of red squirrel habitat, but as this is on the corner of the woodland, no further habitat fragmentation is anticipated than which the existing OHL may have created. There were no squirrel dreys recorded from the area of other Scots pine woodland to be felled for the Proposed Development.
- 7.6.15 Nevertheless, additional specific mitigation measures are proposed to safeguard wood ant nests and red squirrel dreys from destruction (see Recommendations and Mitigation).

Protected Species (Avian)

Collision Risk

- 7.6.16 Data collected to inform the Clash Gour Wind Farm EIA shows very limited flight activity within the Site. Allowing for observer error in judging the position of flights within the 500 m flight activity buffer surrounding the Site, two lapwing flights potentially encroached on the southern end of the Site. Two

⁴¹ Qualifying for potentially supporting priority species common toad.

⁴² SEPA (2021). Guidance for Pollution Prevention (GPPs). Available: <http://www.sepa.org.uk/regulations/water/guidance/#PPG> [Accessed: January 2021].

flights involving pink-footed geese were recorded crossing the Site during supplementary surveys in 2021, these flights were above a height where the Proposed Development would present a collision risk (>60m).

- 7.6.17 There was a cluster of flights involving curlew, lapwing, and oystercatcher immediately south of the Site, associated with breeding activity from these three species with numerous breeding bird survey registrations recorded in the same area. Additionally, single curlew and lapwing registrations were recorded within the southern end of the Site, therefore it remains a possibility that commuting and display flights from these species may occasionally occur across the Site. Based on the concentrated distribution of wader flight activity shown in the desk study data, occasional wader flights are most likely to occur across the southern end of the Site where flights would potentially cross the existing OHL and during the construction phase, cross proposed temporary diversions of the OHL.
- 7.6.18 Breeding waders are anticipated to show a degree of habituation to the existing OHL. Furthermore, the proposed temporary diversions would be up to approximately 200 m north-west of the current position, resulting in temporary positions that are further from the cluster of wader flight activity previously recorded.
- 7.6.19 The proposed new OHL would be approximately 200 m from the cluster of wader flight activity previously identified. Furthermore, the proposed new OHL is very localised in scale (200 m in length).
- 7.6.20 Taking account of the lack of flight activity across the Site and the localised nature of the Proposed Development it is unlikely that curlew, lapwing, and oystercatcher would be adversely impacted through collision risk during the construction or operation of the Proposed Development.

Disturbance Displacement and Harm

- 7.6.21 Breeding waders are potentially adversely affected through disturbance and displacement from the Proposed Development during the construction phase and potential destruction of nest sites through being run over by construction traffic. Additionally, mobile wader chicks which leave the nest site soon after hatching but are unable to fly, are predisposed to being run over by construction traffic. Previous survey data shows single curlew and lapwing registrations within the Site, three curlew registrations immediately alongside the Site boundary and a cluster of registrations involving curlew, lapwing, and oystercatcher approximately 300 m south-east of the closest point of construction works to facilitate the Proposed Development. This more distant cluster of activity is still within a range where breeding waders could potentially be adversely affected by disturbance and displacement from the Proposed Development, particularly curlew⁴³.
- 7.6.22 Implementation of SHE Transmission's Bird Protection Plan (BPP) provided in **Appendix B** and mitigation specified in **Table 7-1** would be sufficient to mitigate potential impacts of disturbance / displacement to breeding waders.

Habitat Loss/Degradation

- 7.6.23 The Proposed Development would result in the permanent loss of habitat suitable for breeding and foraging waders discussed above. However, taking account of the very localised scale of the Proposed Development and the extensive availability of suitable habitat in the wider area, it is unlikely that breeding and foraging waders would be negatively impacted through habitat loss and degradation during the construction or operation of the Proposed Development. Furthermore, desk study data to inform the Clash Gour EIA showed the main breeding activity from waders to be immediately south of the Site rather than within the Site.

⁴³ <https://www.rspb.org.uk/globalassets/downloads/documents/positions/climate-change/wind-power-publications/guidance-note---distribution-of-breeding-birds-in-relation-to-upland-wind-farms.pdf> [Accessed: January 2021]

7.7 Recommendations and Mitigation

7.7.1 The following specific mitigation, in addition to the above general best practice measures, will be adopted to ensure compliance with nature conservation legislation.

Table 7-5: Additional mitigation measures

Reference	Title	Description
BD1	Pre-Construction Survey	<p>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, such as the wood ant nests and squirrel dreys, are either avoided or appropriate mitigation such as translocations are then implemented.</p> <p>For ornithological receptors, a pre-construction breeding bird survey within the Site and an additional 500m buffer to update the status and distribution of breeding waders is recommended. This will be undertaken by a suitability qualified ornithologist using an adapted Brown and Shepherd⁴⁴ methodology and comprise three visits in the breeding season between April and June.</p>
BD2	Environmental Clerk of Works (ECoW)	<p>Onsite guidance by a capable, suitably experienced EcoW on adherence to construction good practice and 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 the EcoW.</p> <p>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.</p>
BD3	Breeding Waders	<p>It is recommended that construction works to facilitate the Proposed Development are undertaken outside the period of key sensitivity for breeding waders when waders are establishing territories and incubating eggs in the period April to May. The requirement for this mitigation and how it is applied across the Site will be informed by the updated pre-construction breeding bird surveys.</p>
BD4	Woodland compensation	<p>Native scrub habitat should be created where possible in place of other Scots pine woodland required to be cleared for the OHL wayleave and permanent access track.</p>
BD5	Applicable Species Protection Plans	<ul style="list-style-type: none"> • badger; • pine marten; • red squirrel; • bats; and • wood ants.
BD6	Reptiles and amphibians	<p>If a reptile/amphibian is sighted or suspected, the nearby vegetation should be gently disturbed by hand to encourage the reptile/amphibian to move off of its own accord.</p>

⁴⁴ Brown, A.F. & Shepherd, K.B. (1993) A method for censusing upland breeding waders. *Bird Study*, 40: 189-195.

		<p>Reptiles/amphibians incidentally encountered on site should not be handled unless under instruction by the ECoW and by gloved hand, and to transport the reptile/amphibian to a place of safety (e.g., further away from construction works).</p> <p>The appointed ECoW and contractors may also refer to the following for addition advice:</p> <ul style="list-style-type: none"> • Amphibians and Reptiles Group UK Advice Note 10: Reptile Survey and Mitigation Guidance for Peatland Habitats (https://www.arguk.org/info-advice/advice-notes) • NatureScot Standing Advice for Reptiles (www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species)
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7.7.2 Assuming successful implementation of embedded and additional mitigation measures, there would be no significant residual effects of the Proposed Development on the Biodiversity Features.

8. HYDROLOGY, HYDROGEOLOGY AND SOILS

8.1 Introduction

- 8.1.1 This section assesses the likelihood of environmental effects to hydrology, hydrogeology and peat resulting from the Proposed Development. Further, more detailed information regarding the Proposed Development is provided in **Section 2: Proposed Development**.
- 8.1.2 This section focuses on the effects of the construction phase of the Proposed Development upon hydrological, hydrogeological, and peat features and takes a precautionary approach in terms of recommendations and mitigation strategies.
- 8.1.3 During the construction phase of the Proposed Development, there is the potential for the following short-term impacts on the hydrology, hydrogeology, and peat receptors:
- modification of hydrological pathways;
 - modification of groundwater flows and levels;
 - short term increase in flood risk;
 - pollution of surface waters, groundwater and water supplies;
 - soil erosion and sedimentation;
 - loss and compaction of peat and soils; and
 - peat instability.

8.2 Information Sources

- 8.2.1 The following sources of information have been reviewed:
- Ordnance Survey (OS) Map data at 1:10,000, 1:25,000 and 1:50,000 scales;
 - Scottish Environment Protection Agency (SEPA) River Basin Management Plan classification data (Water Classification Hub)⁴⁵;
 - SEPA Flood Maps⁴⁶;
 - Moray Council's Private Water Supplies (PWS) information⁴⁷;
 - James Hutton Institute of Soils Mapping⁵³, and
 - British Geological Survey (BGS) GeoIndex maps for superficial and bedrock geology⁴⁸.

8.3 Methodology

- 8.3.1 The general methodology used to assess the effect of the Proposed Development on the hydrology, hydrogeology and peat of the Study Area is as follows:
- Desktop study to obtain baseline and historical data;
 - Consultation with Moray Council and Scottish Water to identify private and public water supplies, respectively;

⁴⁵ SEPA (2020) Water Classification Hub [online]. Available at: <https://www.sepa.org.uk/data-visualisation/water-classification-hub/> [Accessed: April 2022]

⁴⁶ SEPA (2022) Flood Maps [online]. Available at:

https://scottishepa.maps.arcgis.com/apps/webappviewer/index.html?id=b3cfd390efa44e3b8a72a07cf5767663&showLayers=FloodMapsBasic_5265:FloodMapsBasic_5265_0:FloodMapsBasic_5265_1:FloodMapsBasic_5265_2:FloodMapsBasic_5265_3:FloodMapsBasic_5265_4:FloodMapsBasic_5265_5:FloodMapsBasic_5265_6:FloodMapsBasic_5265_7:FloodMapsBasic_5265_8:FloodMapsBasic_5265_9:FloodMapsBasic_5265_10:FloodMapsBasic_5265_11 [Accessed: April 2022]

⁴⁷ Moray Council (2019) Private Water Supplies Source (Moray) [online]. Available at:

<https://www.arcgis.com/apps/mapviewer/index.html?layers=0e11645746e447f2b8dafabe750f24f2> [Accessed: April 2022]

⁴⁸ BGS (2020) GeoIndex Onshore [online]. Available at: https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.108402308.747036501.1649335188-910263277.1649335188 [Accessed: April 2022].

- Consultation with SEPA to obtain any Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR)⁴⁹ Licensed abstractions data;
- UKHab surveys undertaken by WSP's Ecology Team to obtain habitat data in October 2021 to determine the presence of any potential Groundwater Dependent Terrestrial Ecosystems (GWDTE);
- Identification of the potential effects of the Proposed Development; and
- Identification of options for the mitigation of potential effects, taking account of the Applicant's General Environmental Management Plans (GEMPs).

8.3.2 **Table 8-1** provides a summary of the consultation activities undertaken in support of the preparation of this section

Table 8-1. Consultation responses of relevance to Hydrology, Hydrogeology and Peat

Organisation	Type of consultation	Response	How response has been considered
Moray Council	PWS data request via email; 01 December 2021.	Response received 02 December 2021. Moray Council provided the required PWS data.	PWS data reviewed and incorporated in appraisal and any caveats provided by Moray Council have been noted.
Scottish Water	Public water supply data request via email; 07 April 2022.	Responses received 07 and 08 April 2022. Scottish Water requested that a 'Licence for use & Declaration' online form be completed which will grant access to the relevant PWS data in 10-15 working days.	Completed 'Licence for use & Declaration' form on 11 April 2022 and are awaiting response.
SEPA	CAR Licensed abstractions data requested via SEPA's online request form ⁵⁰ ; 07 April 2022.	Awaiting response.	N/A

8.4 Baseline Environment

- 8.4.1 The Proposed Development is located in a rural area, approximately 10 km south of Forres and 22 km south-west of Elgin, Moray.
- 8.4.2 The Study Area is based on a 1 km buffer of the Site for hydrology, hydrogeology, and peat receptors. It is considered that at distances greater than 1 km, the Proposed Development is unlikely to have a hydrological impact, as attenuation and dilution of substances is likely to occur.

Surface Water Hydrology

- 8.4.3 The southern extent of the Site is drained by the Stripe of Corshellach to the south, which flows south-west to its confluence with the Berry Burn. The Berry Burn is a tributary of the 'Dorback Burn / River Divie' SEPA water body (ID: 23002), which was classified by SEPA under the Water Framework Directive (WFD) as having an overall status of 'Good' in 2020.
- 8.4.4 The northern extent of the Site is drained by tributaries of the 'Mosset Burn – source to Altyre' water body (ID: 23022), which was classified by SEPA under the WFD as having an overall status of 'Poor' in 2020, due to biological elements and barrier to fish.
- 8.4.5 A review of OS 1:10,000 scale mapping indicates there are no watercourses within the Site; however, there are likely to be small/ephemeral surface channels present, draining the slopes of the Hill of Glaschyle and the Hill of Tomechole.

⁴⁹ Scottish Government (2011). Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended). OQPS

⁵⁰ SEPA (2022) Online Request Form – Contact us by email [online]. Available at: <https://www.sepa.org.uk/contact/contact-us-by-email/> [Accessed: April 2022]

Designated Sites

- 8.4.6 According to NatureScot Sitelink⁵¹, there are no designated sites in relation to hydrology, geology or soils which are of regional, national, or international importance within 1 km of the Site.

Geology and Soils

Bedrock geology

- 8.4.7 According to BGS GeoIndex Mapping⁴⁸, the bedrock geology at a 1:50,000 scale is Nethybridge Psammite Formation (thickness 2000-5000 m) underlying the entirety of the Study Area.
- 8.4.8 With regards to lithology, this bedrock is pale / dark grey, has undergone buff weathering, and consists of feldspathic psammite, with subsidiary micaceous psammite, semipelite and quartzite, locally more micaceous in parts, and contains thick quartzite beds⁵².

Superficial geology

- 8.4.9 According to BGS GeoIndex Mapping⁴⁸, superficial deposits at a 1:50,000 scale are predominantly Devensian till (diamicton) with peat deposits also noted at the eastern, south-western, and western extents of the Study Area.
- 8.4.10 Devensian till is a superficial deposit of a glacial origin, created by the action of ice and meltwater and formed up to two million years ago in the Quaternary Period.
- 8.4.11 Peat is defined as a partially decomposed mass of semi-carbonized vegetation which has grown under waterlogged, anaerobic conditions, usually in bogs or swamps⁴⁸.

Soils

- 8.4.12 According to the James Hutton Institute National Soils Map of Scotland⁵³, the Study Area is predominantly underlain by peaty gleys covering approximately 37 % of the Study Area, closely followed by peaty podzols which cover approximately 32 % of the Study Area.
- 8.4.13 The percentage coverage of different soil types within the Study Area is included in **Table 8-2**.

Table 8-2. James Hutton Institute soil type percentage coverage within 1 km radius

Soil Type	% Coverage
Peaty Gleys	36.7
Peaty Podzols	31.9
Peat	21.7
Mineral Podzols	3.5
Mineral Gleys	3.4
Unknown	2.7

Peat

- 8.4.14 According to the NatureScot Carbon and Peatland Map⁵⁴ Class 1 'Areas likely to be of high conservation value' priority peatland is present within the Study Area, including within the Site and the footprint of the Proposed Development. Class 2 'Areas of potentially high conservation value and restoration potential'

⁵¹ NatureScot (2022) SiteLink Map [online]. Available at: <https://sitelink.nature.scot/map> [Accessed: April 2022]

⁵² BGS (2022) The BGS Lexicon of Named Rock Units — Result Details. Available at: <https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=NETH> [Accessed: April 2022]

⁵³ The James Hutton Institute (2021) Soil Survey of Scotland Staff (1970-1987). Soil maps of Scotland (partial coverage) at a scale of 1:25 000. Digital phase 8 release. James Hutton Institute, Aberdeen. DOI 10.5281/zenodo.5159133. Available at: <https://www.hutton.ac.uk/learning/natural-resource-datasets/soilshutton/soils-maps-scotland/download#soilmapdata> [Accessed: March 2022]

⁵⁴ NatureScot (2016) Carbon and Peatland 2016 map [online]. Available: <https://cagmap.snh.gov.uk/natural-spaces/dataset.jsp?code=PEAT> [Accessed: November 2021]

peat is located within the Study Area to the north-west and east of the Site. **Figure 7.1** illustrates peat baseline information across the Site.

- 8.4.15 According to the EIA Report for Clash Gour Wind Farm⁵⁵, peat probing data indicates a range of peat depths including a single record of deep peat (2.5 – 4.0 m) within the footprint of the Proposed Development.

Groundwater

- 8.4.16 SEPA's Water Classification Hub (2020)⁴⁵ classifies groundwater under two conditions: 'Good' or 'Poor'. These classifications are based on the level of chemicals in the water, the volume of water and any groundwater interaction with surface waters⁵⁶.
- 8.4.17 The Study Area is underlain by two groundwater bodies: Findhorn Coastal groundwater body (ID: 150808) and Strathnairn, Speyside and Cairngorms groundwater body (ID: 150709)⁴⁵, with the Site underlain only by the Strathnairn, Speyside and Cairngorms groundwater body. Both groundwater bodies had an overall WFD status of 'Good' in 2020⁴⁵. According to the Scottish Government's Drinking Water Protected Area (DWPA) Maps⁵⁷, the Strathnairn, Speyside and Cairngorms groundwater body is part of a DWPA for groundwater⁵⁷.
- 8.4.18 A review of the BGS Hydrogeology Map at a 1:625,000 scale (2020)⁵⁸ indicates that the Site is underlain by the rock unit, Grampian Group; a low productivity aquifer, with small amounts of groundwater in the near surface weathered zone and secondary fractures.

Water Supplies

- 8.4.19 Data supplied through consultation with Moray Council indicates that there are four PWS within the Study Area; these supplies are detailed in **Table 8-3** and those within 500 m of the Site are illustrated on **Figure 8.1**. Reg 2 (previously known as Category A) are supplies that are commercial (including private lets), or supply more than 50 persons. Category B are non-commercial supplying less than 50 persons. The data provided by Moray Council does not include historic PWS.

⁵⁵ SLR (2018) Clash Gour Wind Farm – EIA Report and associated Technical Appendices. [online] Available at: <https://www.dpea.scotland.gov.uk/CaseDetails.aspx?id=120515&T=1> [Accessed 22nd October 2021]

⁵⁶ SEPA (2020) Classification of the water environment explained [online]. Available at: <https://www.sepa.org.uk/media/333515/classification-overview.pdf> [Accessed: March 2022].

⁵⁷ Scottish Government (2013) DWPA - Scotland RBD - surface water - map 9 of 22. Available at: <https://www.gov.scot/publications/drinking-water-protected-areas-scotland-river-basin-district-maps/> [Accessed: April 2022]

⁵⁸ BGS (2020) GeoIndex Onshore – Hydrogeology Map [online]. Available at: <http://mapapps2.bgs.ac.uk/geoindex/home.html?layer=BGSHydroMap> [Accessed: April 2022]

Table 8-3 PWS within a 1 km radius

Location / Address	PWS ID	PWS Category	PWS Type	Approx. Eastings, Northings	Approximate Distance from the Site (m)	Hydrologically connected to the Proposed Development (Y/N) & Justification
Johnstripe Dunphail, Forres, Moray	PWS 1	B	Borehole	305178, 848177	175 m south-east.	Y – Screened in due to topography. PWS is located downgradient of the Proposed Development.
Johnstripe Dunphail, Forres, Moray	PWS 2	B	Borehole	304936, 847907	150 m south-east.	Y – Screened in due to topography. PWS is located downgradient of the Proposed Development. This location coincides with the Johnstripe property, so is considered unlikely to be an additional source location.
Wester Greens New	PWS 3	REG2	Borehole	304175, 849679	980 m north-west.	N – Screened out due to intervening distance and topography.
Berryburn Substation	PWS 4	REG2	Borehole	304319, 847084	970 m south-west.	N – Screened out due to intervening topography and watercourses.

8.4.20 **Table 8-3** indicates two water supplies, both associated with the Johnstripe property, have been screened into the appraisal due to being located downgradient of the Proposed Development and therefore at potential risk of being impacted.

Groundwater Dependent Terrestrial Ecosystems (GWDTE)

8.4.21 SEPA's guidance on assessing the impacts of developments on GWDTE (LUPS-GU31)⁵⁹ requires assessment of GWDTE located within 250 m of excavations greater than 1 m and within 100 m of excavations less than 1 m.

8.4.22 UKHab surveys within 250 m of the Proposed Development were undertaken in October 2021. The resulting data have been translated to National Vegetation Classification (NVC) communities which have identified potential GWDTE, as shown in **Table 8-4**.

8.4.23 Based on SEPA LUPS-GU31⁵⁹, M23 is the only NVC community present that is indicative of potentially high groundwater dependency. NVC communities present, which are indicative of potentially moderate groundwater dependency include M25, M15 and MG10.

⁵⁹ SEPA (2017) Land Use Planning System SEPA Guidance Note 31 [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]

Table 8-4. NVC Communities present within a 250 m radius of Proposed Development

NVC Community	Potential Groundwater Dependency based on SEPA LUPS-GU31
M23 - <i>Juncus effusus/acutiflorus</i> - <i>Galium palustre</i> rush-pasture	High
M25 - <i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire	Moderate
M15 - <i>Scirpus cespitosus</i> - <i>Erica tetralix</i> wet heath	Moderate
MG10 - <i>Holcus lanatus</i> - <i>Juncus effusus</i> rush-pasture	Moderate

8.4.24 Within the GWDTE Study Area there is only a very small pocket of both M23 and M25 communities, approximately 200 m south-west of the Site. M15 communities are the most predominant potential GWDTE in the Study Area and are located mostly in the southern extents, including within Site and the footprint of the Proposed Development. MG10 communities are present outwith the Site, to the south and south-east.

8.4.25 Most of these communities, where present, are likely to be associated with surface water moving downslope toward the Stripe of Corshellach from the Hill of Glaschyle (west of the Proposed Development) and Hill of Tomechole (east of the Proposed Development). They are associated with a dendritic structure of smaller watercourses (mostly unnamed) on gentle slopes. As detailed in the Groundwater Section, the underlying rock unit is the Grampian Group, which is a low productivity aquifer with small amounts of groundwater in the near surface weathered zone and secondary fractures⁵⁸.

8.4.26 Further details of each community are detailed below:

- M23 *Juncus effusus/acutiflorus-Galium palustre* rush-pasture community occurs over a variety of moist, moderately acid to neutral, peaty, and mineral soils in the cool and rainy lowlands of western Britain. It is a community of gently sloping ground around the margins of soligenous flushes, as a zone around topogenous mires and wet heaths, and especially widespread in ill-drained, comparatively unimproved, or reverted pasture⁶⁰;
- M25 *Molinia caerulea-Potentilla erecta* mire is a community of moist, but well aerated, acid to neutral peats and peaty mineral soils in the wet and cool western lowlands of Britain. It occurs over gently sloping ground, marking out seepage zones and flushed margins of sluggish streams, water-tracks and topogenous mires, but also extends onto the fringes of ombrogenous mires⁶¹;
- M15 *Scirpus cespitosus-Erica tetralix* 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 mire⁶⁰; and
- MG10 *Holcus lanatus - Juncus effusus* rush-pasture is a vegetation type of damp acid to neutral soils in which tussocks of *Juncus effusus* stand out in species-poor swards of *Holcus lanatus*, *Agrostis stolonifera*, *Poa trivialis*, *Ranunculus repens* and *R. acris*. It is most common in flushes among grassland on low-altitude slopes, wet level ground among grassland in valley floors, ditches and along the edges of streams and pools⁶¹.

8.4.27 These communities are unlikely to be critically dependent on groundwater and GWDTE has therefore been scoped out of further appraisal.

⁶⁰ Elkington, T., Dayton, N., Jackson, D.L. & Strachan, I.M. (2002) National Vegetation Classification field guide to mires and heaths, JNCC. [online] Available at: <https://hub.jncc.gov.uk/assets/1d0037bd-6c77-4677-8040-2f6e1d852eb1> [Accessed: March 2022]

⁶¹ Averis, A., Averis, B., Birks, J., Horsfield, D., Thompson, D. & Yeo, M. (2004) An Illustrated Guide to British Upland Vegetation, JNCC. [online]. Available at: <https://hub.jncc.gov.uk/assets/a17ab353-f5be-49ea-98f1-8633229779a1> [Accessed: March 2022]

Flooding

- 8.4.28 According to SEPA Flood Maps⁴⁶, the Site is not located in an area at high or medium risk of surface water or river flooding.
- 8.4.29 The Stripe of Corshellach is located approximately 500 m south of the Site and is identified as being at high risk of localised river flooding immediately adjacent to its banks⁴⁶.
- 8.4.30 There are multiple small pockets of high surface water flood risk within the Study Area; however, the closest proximity to the Site is approximately 500 m.
- 8.4.31 There is no risk of coastal flooding within the Study Area due to its location.

8.5 Appraisal

Effects Scoped Out

- 8.5.1 There are no operational effects to hydrology, hydrogeology and soils receptors anticipated, due to the design and extent of the Proposed Development. Therefore, these long-term effects have been scoped out from the assessment.
- 8.5.2 Effects relating to flood risk have been scoped out on the basis that there are no watercourses within the Site, with the closest being approximately 500 m south of the Site.
- 8.5.3 Effects relating to GWDTE have been scoped out on the basis that the communities identified are unlikely to be critically dependent upon groundwater.

Good practice measures

- 8.5.4 Design mitigation and good practice measures are detailed in **Section 2.5**, including GEMPs and Peat Management Plan in **Table 2-3**.
- 8.5.5 The adoption of the applicable GEMPs and production of a Peat Management Plan would reduce the probability of an incident occurring and further 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.
- 8.5.6 GEMPs applicable to this chapter are:
- Working in or near water;
 - Working in sensitive habitats;
 - Watercourse crossings;
 - Private water supplies;
 - Working with concrete;
 - Soil management; and
 - Bad weather.
- 8.5.7 The following appraisal assumes that good practice measures (detailed in GEMPs and a Construction Environmental Management Plan (CEMP)) are implemented on-site. The conditions to prevent pollution and manage drainage will be addressed within the CEMP.

Construction Phase Effects

Modification of hydrological pathways

- 8.5.8 The proposed works have the potential to act as a temporary conduit for the movement of excess runoff/surface flood waters during construction.

8.5.9 This effect may be relevant to the installation of the towers and access tracks during the construction phase, with the possibility of causing localised disruption and interruption to flow pathways. However, potential effects from this are likely to be minimal as there are no mapped surface watercourses within or directly adjacent to the Proposed Development.

8.5.10 Considering 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 would be managed to reduce the likelihood of any modification of hydrological pathways.

Modification of groundwater flows and levels

8.5.11 Excavations and tower installations could disrupt shallow groundwater systems resulting in the lowering of groundwater levels in the immediate vicinity of the excavations and alterations to flow paths.

8.5.12 Soil water conditions at the Site are likely to be primarily influenced by surface water and direct rainfall, with groundwater having minimal influence due to the type of bedrock and superficial geology present. Therefore, the tower foundations 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 in a short timeframe.

8.5.13 Considering the design mitigation and construction good practice, specifically the working in sensitive habitats, and soil management GEMPs, the effects listed above will be managed to reduce the likelihood of any effects to groundwater flows and levels.

Pollution of surface waters, groundwater and PWS

8.5.14 During the construction phase, oil, fuels, chemicals, unset cement and concrete, and waste and wastewater from construction activities would be present on site. With chemicals and oil being stored and used on-site, there is the potential for an incident. Any pollution incident resulting from the Proposed Development could have a detrimental effect on the water quality of the nearby surface waters, groundwater and / or soils, PWS and GWDTE, thereby also indirectly affecting ecology.

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

8.5.16 The major pathways for cement contaminated water to reach surface water bodies are either overland flow (suspended in surface water runoff into drains and watercourses, especially during periods of high runoff rainfall events) or when areas are subject to 'wash down'. In addition to surface water contamination, pollutants have the potential to infiltrate through soils and to bedrock which therefore can pollute groundwater resources. Thus, potentially impacting the quality of potable water and any GWDTE present.

8.5.17 With the adoption of measures identified in the working in or near water, working in sensitive habitats and Working with Concrete GEMPs, the potential effects associated with contamination from pollution incidents would be reduced.

Soil erosion and sedimentation

8.5.18 Soil erosion, loss of soil, and sediment generation may occur in areas where the ground has been disturbed during construction, including in situations where engineering activities occur close to, or in watercourses, or where higher velocity surface water flows may occur due to local slopes and drainage design.

8.5.19 Furthermore, requirements for soil excavation, transport and storage may lead to additional sedimentation issues at locations where construction activities are necessary.

8.5.20 With the adoption of measures identified in the working in or near water, working in sensitive habitats, soil management and watercourse crossings GEMPs, the potential effects associated with erosion and sedimentation will be reduced.

Water supplies

- 8.5.21 In addition to potential effects discussed above, PWS present could potentially be impacted by changes to hydrological pathways or through damage to their infrastructure.
- 8.5.22 There are two PWS within the Study Area, as indicated by Moray Council data, screened in as part of this appraisal, both of which are associated with the Johnstripe property. It is expected that these records correspond with the supply source and property location however, Moray Council data does not confirm this. Both locations require further investigation prior to construction to verify the infrastructure location, supply type, properties supplied and their uses. As explained previously EDF Energy purchased Johnstripe several years ago and it is currently unoccupied. The application for the wind farm suggests the possibility of converting the property to a project office for the Clash Gour Wind Farm.
- 8.5.23 The Contractor will be required to consider all construction activities to ensure that they are aware of all PWS in the local area. Further mitigation measures advised are noted in **Section 8.6**.
- 8.5.24 Should any PWS be identified which require protection, specific mitigation is advised to be developed in conjunction with the landowner/beneficiary of the PWS and agreed with SEPA. Implementing good practice and measures within the private water supplies GEMP will reduce the chance of PWS being affected. The methods detailed within the Private Water Supplies GEMP will be followed.
- 8.5.25 Scottish Water will be re-consulted at the pre-construction stage to ascertain current abstraction operations and confirm local sources and asset locations. If any assets are deemed likely to be impacted, the Contractor will agree precautions with Scottish Water to protect their assets during the construction of the Proposed Development.

Loss and compaction of peat and soils

- 8.5.26 Developments on peat present the potential for losses of peat and soils through excavation and disturbance. Construction of the Proposed Development will involve losses of peat due to excavations associated with new permanent and temporary tower foundations, and potential disturbance of peat due to tracking of heavy plant machinery.
- 8.5.27 Soil compaction as a result of construction works within the Site may damage the vegetation and result in a reduction in 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.
- 8.5.28 Stockpiled and unvegetated / exposed areas of soils are at risk of desiccation and erosion by wind and water, also potentially causing soil loss.
- 8.5.29 Considering the design mitigation and construction good practice, specifically the soil management GEMP and preparation of a Peat Management Plan, the effects listed above would be managed to reduce the effects related to loss or compaction of soils.

Peat instability

- 8.5.30 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.
- 8.5.31 Furthermore, 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.
- 8.5.32 Due to the presence of peatland within the vicinity of the Proposed Development, 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 would also be routed to not concentrate flows onto slopes, gully heads or into excavations.

8.5.33 With the adoption of measures identified in the Soil Management GEMP, the preparation of a Peat Management Plan combined with appropriate good practice, site monitoring and pre-construction awareness training, the potential effects associated with peat instability can be reduced. This risk would be further reduced by pre-construction peat probing; however, the ability to safely gather such data may be limited due to the presence of the existing overhead line.

8.6 Recommendations and Mitigation

Table 8-5. Additional mitigation measures

Reference	Title	Description
HG1	Pre-construction peat probing	It is recommended that pre-construction peat probing is undertaken within the vicinity of the Proposed Development, where safe to do so, in conjunction with using relevant information identified within the Clash Gour Windfarm Peat Stability Assessment, in addition to adoption of good practice measures specified within the GEMPs. Further peat depth data could be collected for the proposed towers located closest to the substation; however, the ability to safely gather such data may be limited due to the presence of the existing overhead line.
HG2	Minimising peat stability risk	Key measures to minimise peat stability risk include: <ul style="list-style-type: none"> • 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.
HG3	Private Water Supplies	The methods detailed within GEMP Private Water Supplies will be followed in relation to the private water supplie(s) identified at Johnstripe (PWS1 and PWS2). Should any PWS be identified which require protection, specific mitigation is advised to be developed in conjunction with the landowner and agreed with SEPA.

9. FORESTRY

9.1 Introduction

9.1.1 This section identifies the likelihood of environmental risks associated with forestry in the area resulting from the Proposed Development.

9.2 Information Sources

9.2.1 The following sources of information have been reviewed:

- site notes from a meeting with a representative of Altyre Estate;
- Scotland's Environment web mapper; and
- Scottish Forestry web viewer.

9.3 Methodology

Study Area

9.3.1 The study area is defined by the 'Site' plus a 15 m buffer to include trees beyond the Proposed Development which could be potentially affected.

Standards and Guidance

9.3.2 In the UK there is a strong presumption against permanent deforestation unless it addresses other environmental concerns or where it would achieve significant and clearly defined additional public benefits. In Scotland such deforestation is dealt with under the Scottish Government's "*Control of Woodland Removal Policy*" (2009)⁶². The purpose of the policy is to provide direction for decisions on woodland removal in Scotland.

Site Visit

9.3.3 Site notes and photographs, from a meeting with landowner representation, provided background information on the history of the forestry compartments. A further forestry site survey was considered unnecessary.

Appraisal Methodology

9.3.4 Site information, photography, aerial imagery and mapped data were employed to determine the baseline environment. Impacts were assessed by considering tree growth stage and structure. The location of sub-compartment boundaries was determined to inform forestry clearance to a windfirm felling edge to maintain the stability of retained trees.

9.4 Baseline Environment

9.4.1 Compartments of coniferous plantation occur within and close to the Site. The areas of forestry within the Site are differentiated into five compartments as illustrated in **Figure 9.1**.

9.4.2 Compartment 1 is principally of Scots pine with a mixture of broadleaves. It is included in the Native Woodland Survey of Scotland (NWSS)⁶³. The compartment is adjacent to the proposed access, within

⁶² <https://forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal>

⁶³ The *Native Woodland Survey of Scotland* (NWSS) identified and mapped the location, extent, type and condition of all of Scotland's native woodlands. It was launched in 2014, to provide an authoritative inventory of Scotland's native woods.

the buffer zone to the boundary of the Proposed Development but unaffected by proposals. The improved access track adjacent to the compartment will enhance timber extraction opportunities.

- 9.4.3 The landowner has verified that Compartment 2 is a standing fire damaged pine crop of no remaining commercial value. As it is not a live crop then a felling licence is not required for its removal. There is no value to the damaged timber and the material may be chipped to waste on site. Part of this compartment will be used for the route of the temporary diverted OHL and for temporary access.
- 9.4.4 Scottish Forestry records indicate that Compartment 3 is a replanted area, following a wildfire in spring 2019. The area had been in receipt of a Woodland Improvement Grant to restructure the compartment and incorporate an area of broadleaves. The compartment sits within the buffer to the boundary of the Proposed Development and proposals for temporary OHL diversion do not impact this compartment.
- 9.4.5 Scottish Forestry records identify that Compartment 4 also includes 0.7 hectares (ha) of 30-year-old Scots pine stand, established under a Woodland Grant Scheme, approved in 1991. The area is included in the native woodland survey of Scotland. The pine adjoins an area of upland birchwood, within the native woodland survey of Scotland, but it also includes a scattering of conifers.
- 9.4.6 Information from Scottish Forestry records and information from the landowner identifies Compartment 5 is a crop of 30–35-year-old larch, that falls within the Site and adjoins the footprint of the related development of the substation. The Site and surrounding area fall within the *Phytophthora ramorum* Priority Action Zone (PAZ). The disease can cause extensive mortality of larch trees. However, within the local PAZ outbreaks have been limited in scale. Control efforts in the PAZ have been successful at eradicating infections on larch and the disease does not present an immediate risk to the compartment.

9.5 Appraisal

- 9.5.1 The footprint of the substation adjoins the Site and falls within Compartment 5. The substation construction requires forestry clearance (which is outwith the scope of this appraisal). Beyond the immediate footprint, the substation requires additional small-scale clearance of trees within a woodland fringe as these remnant edges would be vulnerable to windthrow. Therefore, the removal of these trees at the woodland fringe is again, outwith the scope of this appraisal. Forestry clearance related to the substation is scoped out of this assessment as it relates only to the connection between the substation and the OHL.
- 9.5.2 The area of Scots pine, within Compartment 4, will be felled to enable connection between the existing OHL and the substation and creation of a permanent access to tower 191. For reasons of crop stability (windfirmness) the sub-compartment should be felled in its entirety, amounting to 0.7 ha. The adjacent sub-compartment of birchwood and scattered conifers provides the windfirm edge and this sub-compartment will be retained. The area of clearance will be lost to commercial forestry but will be compensated for through re-stocking forestry either within the Site or at another location subject to landowner discussions.
- 9.5.3 Temporary diversion of the OHL through Compartment 2 will not impact live trees. It will provide impetus to removal of the fire damaged standing trees. The dismantling of towers which form part of the existing OHL will be accessed via Compartment 2 and that will have no additional impact on forestry.
- 9.5.4 Similarly, the permanent and temporary access routes to the substation and for tower dismantling and for erection of temporary towers will have no additional impact on forestry.

9.6 Recommendations & Mitigation

- 9.6.1 The appraisal has identified the requirement for additional mitigation measures, as listed in **Table 9-1**.

Table 9-1: Additional mitigation measures

Reference	Title	Description
FR1	Compensatory Planting	In order to comply with the Scottish Government's Control of Woodland Policy, compensatory planting will be undertaken to mitigate for the loss or woodland area either within the Site or at another location subject to landowner discussions; if possible this will be tied into Biodiversity Net Gain proposals.

10. CUMULATIVE APPRAISAL

10.1 Cumulative Schemes

10.1.1 There are two current or approved planning applications within 5 km of the Site that are relevant for consideration as part of the cumulative effects assessment, which are illustrated in **Figure 10.1**

Cumulative Development and are as follows:

- the proposed Clash Gour Wind Farm and 275/132 kV substation, the boundary of which is within the Site for the Proposed Development and extends to the south-east and south-west; and
- the proposed Berry Burn Wind Farm extension, the boundary of which is within the Site for the Proposed Development and extends south and east.

10.2 Appraisal

10.2.1 **Table 10-1** presents the cumulative appraisal and control or mitigation measures which will be employed to manage potential cumulative effects. Only topics scoped into this appraisal have been included.

Table 10-1: Cumulative Appraisal

Topic	Potential Cumulative Effects	Mitigation Measures
Landscape Character & Visual Amenity	The main landscape and visual appraisal included the Clash Gour Wind Farm and its substation as part of the future baseline as constructed and fully operational, therefore is not discussed further here. In addition to the Berry Burn Windfarm, the Proposed Development would not be a particularly perceptible change in the landscape or on visual amenity, and there would be no potential for significant landscape and visual cumulative effects.	None required as no significant cumulative effects anticipated.
Cultural Heritage & Archaeology	There would be no cumulative effects to the cultural heritage resource as the Proposed Development would only be a very minor and recessive addition to the more prominent and larger scale of the Clash Gour Wind Farm and substation and the Berry Burn Wind Farm extension. Therefore, significant cumulative effects from the Proposed Development would not occur.	None required as no significant cumulative effects anticipated
Biodiversity	Woodland loss associated with Clash Gour Wind Farm Substation, which is assumed to be suitably mitigated/compensated for as part of the substation development, is not anticipated to cumulatively increase the effects from additional loss of an area of 0.7 ha of woodland specific to the Proposed Development, in terms of habitat loss and loss of species' habitat. It is anticipated that effects of other nearby developments would be mitigated/compensated for as part of such development. Due to the small scale of the Proposed Development, alongside the existing and proposed infrastructure within the vicinity of the Proposed Development, it is considered that any potential cumulative effects are unlikely to be significant.	None required as no significant cumulative effects anticipated
Hydrology, Hydrogeology and Soils	The Proposed Development, the proposed Clash Gour Wind Farm and associated substation, and the proposed Berry Burn Wind Farm, are not expected to be constructed	None required as no significant cumulative effects anticipated

Topic	Potential Cumulative Effects	Mitigation Measures
	<p>concurrently. Should construction take place concurrently, the cumulative effect is considered unlikely to be greater than the effects determined for the individual developments.</p> <p>Even in the event that these other developments present potentially significant effects to the receiving hydrology, hydrogeology, geology and soils environment, given that no significant residual effects have been identified associated with the Proposed Development, significant cumulative effects are not anticipated.</p>	
Forestry	<p>There would be no cumulative development effects to forestry. An area of 0.7 ha will be restocked as scrub woodland edge. The change of species and woodland structure is insignificant in terms of production forestry within a region rich in forestry and woodland.</p>	<p>None required as no significant cumulative effects anticipated</p>

11. SUMMARY OF MITIGATION MEASURES

11.1.1 The sections above highlight the potential environmental risks and present mitigation measures for managing these risks.

11.1.2 Table 11-1 lists the design, general and additional mitigation proposed within this document. The CEMP will include these protection measures.

Table 11-1: Schedule of Mitigation

Reference	Title	Description
GE1	General Environmental Management Plans	<ul style="list-style-type: none"> Oil storage and refuelling; Soil management; Working in or near water; Working in sensitive habitats; Working with concrete; Waste management; Private water supplies; Forestry; Dust management; Biosecurity on land; Restoration; and Bad weather.
GE2	Noise Management Plan	<p>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 Moray 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.</p>
GE3	Site Water Management Plan	<p>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.</p> <p>All relevant activities will be undertaken in compliance with the Controlled Activities Regulations.</p> <p>GEMPs for 'Oil Storage and Refuelling', 'Soil Removal, Storage and Reinstatement', and 'Working with Concrete' will be adhered to.</p>
GE4	Construction Traffic Management Plan	<p>A Construction Traffic Management Plan will be developed by the Contractor, which will be agreed with Moray Council roads team as part of pre-commencement conditions in advance of construction.</p>
GE5	Soil Management	<p>Soil management will follow the general guidance set out in GEMP - 'Soil Removal, Storage and Reinstatement'. Additionally, reinstatement shall be completed as soon as practicably possible in order to prevent environmental disturbance.</p>

Reference	Title	Description
GE6	Peat Management Plan	A Peat Management Plan will be developed to manage potential risks to the peat environment.
GE7	Dust	Dust will be managed through implementation of standard control measures such as management of stock piles to suppress dust and road cleaning in accordance with SSEN Transmission's GEMP – 'Dust Management'.
GE8	Waste	Waste Management will be in accordance with Section 34 (Scotland) of the Environmental Protection Act, GEMP – 'Waste Management' and the waste hierarchy.
GE9	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.
GE10	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.
GE11	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.
GE12	Driver induction	A driver induction will be undertaken to include a safety induction, speed control and the identification of specified access routes.
GE13	Car Sharing	Adoption of car sharing where possible to reduce the number of vehicles arriving and departing from the site.
GE14	Local residents	Local residents will be kept informed of any potentially disruptive activities and actions being taken to mitigate the impact of these activities.
GE15	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 Moray Council.
GE16	Weight restrictions	SSEN Transmission will ensure that HGVs adhere to weight restrictions on roads in the area.
GE17	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.
GE18	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.
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, such as the wood ant nests and squirrel dreys, are either avoided or appropriate mitigation such as translocations are then implemented.

Reference	Title	Description
		For ornithological receptors, a pre-construction breeding bird survey within the Site and an additional 500m buffer to update the status and distribution of breeding waders is recommended. This will be undertaken by a suitability qualified ornithologist using an adapted Brown and Shepherd ⁶⁴ methodology and comprise three visits in the breeding season between April and June.
BD2	Environmental Clerk of Works (ECoW)	<p>Onsite guidance by a capable, suitably experienced ECoW on adherence to construction good practice and 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 the ECoW.</p> <p>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.</p>
BD3	Breeding Waders	It is recommended that construction works to facilitate the Proposed Development are undertaken outside the period of key sensitivity for breeding waders when waders are establishing territories and incubating eggs in the period April to May. The requirement for this mitigation and how it is applied across the Site will be informed by the updated pre-construction breeding bird surveys.
BD4	Woodland compensation	Native scrub habitat should be created where possible in place of other Scots pine woodland required to be cleared for the OHL wayleave and permanent access track.
BD5	Applicable Species Protection Plans	<ul style="list-style-type: none"> • badger; • pine marten; • red squirrel; • bats; and • wood ants.
BD6	Reptiles and amphibians	<p>If a reptile/amphibian is sighted or suspected, the nearby vegetation should be gently disturbed by hand to encourage the reptile/amphibian to move off of its own accord. Reptiles/amphibians incidentally encountered on site should not be handled unless under instruction by the ECoW and by gloved hand, and to transport the reptile/amphibian to a place of safety (e.g., further away from construction works).</p> <p>The appointed ECoW and contractors may also refer to the following for addition advice:</p> <ul style="list-style-type: none"> • Amphibians and Reptiles Group UK Advice Note 10: Reptile Survey and Mitigation Guidance for Peatland Habitats (https://www.arguk.org/info-advice/advice-notes) • NatureScot Standing Advice for Reptiles (www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species)

⁶⁴ Brown, A.F. & Shepherd, K.B. (1993) A method for censusing upland breeding waders. *Bird Study*, 40: 189-195.

Reference	Title	Description
HG1	Pre-construction peat probing	It is recommended that pre-construction peat probing is undertaken within the vicinity of the Proposed Development, where safe to do so, in conjunction with using relevant information identified within the Clash Gour Windfarm Peat Stability Assessment, in addition to adoption of good practice measures specified within the GEMPs. Further peat depth data could be collected for the proposed towers located closest to the substation; however, the ability to safely gather such data may be limited due to the presence of the existing overhead line.
HG2	Minimising peat stability risk	<p>Key measures to minimise peat stability risk include:</p> <ul style="list-style-type: none"> • 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 <p>Creating and managing of geotechnical risk register or similar management system throughout the detailed design and construction phases.</p>
HG3	Private Water Supplies	The methods detailed within GEMP Private Water Supplies will be followed in relation to the private water supply(ies) identified at Johnstripe (PWS1 and PWS2). Should any PWS be identified which require protection, specific mitigation is advised to be developed in conjunction with the landowner and agreed with SEPA.
FR1	Compensatory Planting	In order to comply with the Scottish Government's Control of Woodland Policy, compensatory planting will be undertaken to mitigate for the loss or woodland area either within the Site or at another location subject to landowner discussions, if possible this will be tied into Biodiversity Net Gain proposals

APPENDIX A: FIGURES

APPENDIX B: GEMPS AND SPPS

APPENDIX C: 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.

3 Principles and overview of processes

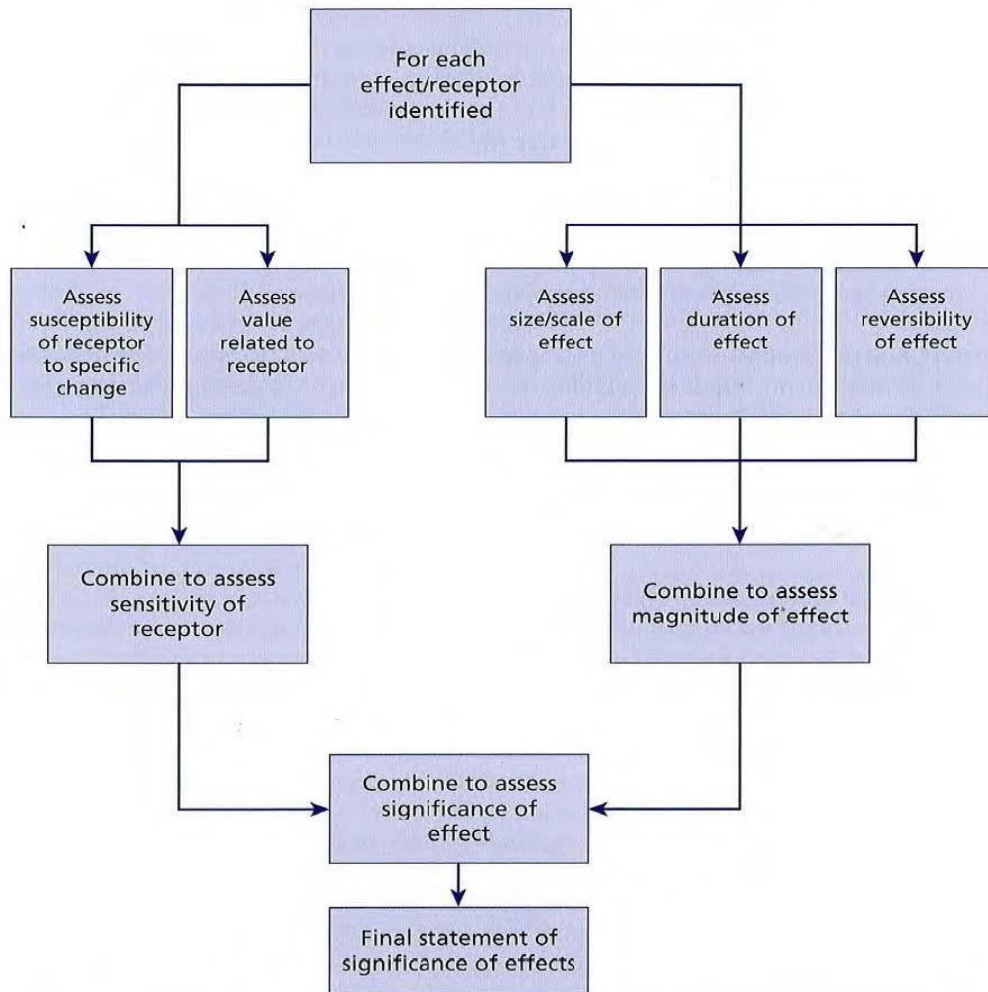


Figure 3.5 Assessing the significance of effects

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.

Value	Recognition
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	<p>Areas of landscape character that are highly valued for their scenic quality (including most statutorily designated landscapes);</p> <p>Elements/features that could be described as unique or are nationally scarce;</p> <p>Mature vegetation with provenance such as ancient woodland or mature parkland trees; and/or</p> <p>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.</p> <p>No or limited scope for substitution or positive enhancement.</p>
Medium	<p>Areas that have a positive landscape character but include some areas of alteration/degradation/or erosion of features;</p> <p>Perceptual/aesthetic aspects has some vulnerability to unsympathetic development; and/or features/elements that are locally commonplace; unusual locally but in moderate/poor condition; or mature vegetation that is in moderate/poor condition or readily replicated.</p> <p>Some scope for substitution or positive enhancement.</p>
Low	<p>Damaged or substantially modified landscapes with few characteristic features of value, Capable of absorbing major change; and</p> <p>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.).</p> <p>Scope for substitution or positive enhancement.</p>
Negligible	<p>Areas that are relatively bland or neutral in character with few/no notable features;</p> <p>A landscape that includes areas of alteration/degradation or erosion of features; and/or</p>

Level of sensitivity	Typical characteristics
	<p>Landscape elements/features that are common place or make little contribution to local distinctiveness.</p> <p>Opportunities for the restoration of landscape through mitigation measures associated with the proposal.</p>

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	<p>Residents at home;</p> <p>Walkers on long distance trails and mountain access routes,</p> <p>Users of footpaths where the attractive nature of the countryside is a significant factor in the enjoyment of the walk,</p> <p>Cyclists on national and local cycle routes designed to provide an attractive experience;</p> <p>Road users on recognised tourist routes;</p> <p>Visitors to landscape and heritage resources and other attractions where views of the surroundings are an important contributor to appreciation, experience and/or enjoyment.</p>
Medium	<p>General road users;</p> <p>Passengers on rail lines where the trains run at low or moderate speeds;</p> <p>Users of public open space and footpaths where the nature of the surroundings is not a significant factor in the enjoyment of the activity;</p>

Susceptibility to proposed change	
	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)
Low	Locally recognised views, usually informal.	Valued view but no formal references, may include informal footpaths that indicate well used routes by locals. Likely to be common where views are typical of the location with little distinctiveness, lacking in attractors or detractors.
Negligible	Little to no recognition	Not known locally for its views, places that lack evidence of people actively seeking use and therefore any associated views.

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	<p>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).</p> <p>A well balanced view containing attractive features and notable for its scenic quality.</p> <p>A view which is experienced by a large number of people and/ or recognised for its scenic qualities.</p>
Medium	<p>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).</p> <p>An otherwise attractive view that includes noticeable discordant features or overall visual amenity where there are noticeable visual detractors.</p>
Low	<p>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).</p> <p>An unattractive view or overall visual amenity where there are many visual detractors.</p>
Negligible	<p>A view or overall visual amenity which is irrelevant to the receptor's experience or reasons for being there.</p>

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	<ul style="list-style-type: none"> 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. A very noticeable change to the character of the landscape. 	<p>Ranging from notable change over extensive area to intensive change over a more limited area.</p>	<p>Long term; permanent / non-reversible or partially reversible.</p>
Medium	<ul style="list-style-type: none"> 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. 	<p>Moderate changes in a localised area.</p>	<p>Medium term; semi-permanent or partially reversible.</p>

Value	Size, Scale and Nature	Extent	Duration and Reversibility
Low	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	Moderate to Minor	Minor	Minor

The cells shaded in dark blue 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 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	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.

Level of Effect	Landscape effect	Visual effect
	overall impression of its character.	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.

APPENDIX D: CULTURAL HERITAGE GAZZETEER

APPENDIX E: HABITATS AND PROTECTED SPECIES BASELINE REPORT

APPENDIX F: ORNITHOLOGY TECHNICAL REPORT