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8. ORNITHOLOGY

8.1 Introduction

This Chapter provides an appraisal of the potential effect of the Proposed Development on ornithology.

The specific objectives of this Chapter are to:

- Describe the ornithological baseline;
- Describe the potential effects, including direct, indirect and cumulative effects, on ornithological features;
- Describe the mitigation measures proposed to address likely significant effects; and
- Assess the significance of any residual effects remaining following the implementation of mitigation.

8.2 Legislation and Policy

The following key legislation, planning policy, guidance, and information sources have been considered in carrying out this assessment.

Legislation

- Directive 2009/147/EC on the Conservation of Wild Birds ('Birds Directive')¹;
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (The Habitats Regulations)²;
- The Wildlife and Countryside Act 1981 (as amended) (WCA)³;
- The Nature Conservation (Scotland) Act 2004 (as amended)⁴;
- Environmental Impact Assessment Directive 2014/52/EU⁵; and
- Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 as amended⁶.

Planning Policy

- UK Post-2010 Biodiversity Framework (2012)⁷;
- Scottish Biodiversity Strategy: It's in Your Hands (2004)⁸/2020 Challenge for Scotland's Biodiversity (2013)⁹;
- PAN 60: Planning for Natural Heritage (Scottish Government 2000)¹⁰;
- National Planning Framework 4 (2003)¹¹
- Scottish Government (2017). Planning Advice Note 1/2013-Environmental Impact Assessment, Revision 1.0¹²; and

¹ European Parliament (2009) Directive 2009/147/EC [Online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0147&from=EN>

² European Parliament (1994) the Conservation (Natural Habitats, &c.) Regulations 1994 [Online] Available at: <http://www.legislation.gov.uk/uk/si/1994/2716/contents/made>

³ UK Government (1981) The Wildlife and Countryside Act 1981 (as amended) [Online] Available at: <http://www.legislation.gov.uk/ukpga/1981/69>

⁴ UK Government (2004) Nature Conservation (Scotland) Act 2004 [Online] Available at: <http://www.legislation.gov.uk/asp/2004/6/contents>

⁵ European Parliament (2014) Directive 2014/52/EU [Online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0052&from=EN>

⁶ Scottish Government (2017) the Electricity Works (EIA) (Scotland) Regulations 2017 [Online] Available at: <https://www.legislation.gov.uk/ssi/2017/101/contents/made>

⁷ Four Countries' Biodiversity Group (2010) UK Post-2010 Biodiversity Framework [Online] Available at: <http://data.jncc.gov.uk/data/587024ff-864f-4d1d-a669-f38cb448abd/UK-Post2010-Biodiversity-Framework-2012.pdf> (

⁸ Scottish Executive (2004) Scotland's Biodiversity It's in your Hands [Online] Available at:

<https://www.webarchive.org.uk/wayback/archive/20180515152802/http://www.gov.scot/Publications/2004/05/19366/37250>

⁹ Scottish Government (2013) 2020 Challenge for Scotland's Biodiversity [Online] Available at: <https://www2.gov.scot/Resource/0042/00425276.pdf>

¹⁰ Scottish Government (2000) PAN 60: Planning for Natural Heritage [Online] Available at: <https://www2.gov.scot/Publications/2000/08/pan60-root/pan60>

¹¹ Scottish Government (2023) <https://www.gov.scot/publications/national-planning-framework-4/>

¹² Scottish Government (2013) PAN 1/2013: EIA [Online] Available at: <https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impact-assessment/>

- Highland-wide Local Development Plan 2012¹³.

8.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

The ornithological assessment considers the effects of the Proposed Development on sites designated for ornithology (in whole or part), together with effects upon breeding and wintering species afforded additional protection under International and UK legislation and those of nature conservation importance.

Extent of the Study Area

The extent of the Study Area was defined based on published guidance on the potential connectivity distances¹⁴ with statutory, European¹⁵ and international Ramsar sites. Sites located up to a 20 km radius (based on a maximum foraging range of 20 km for pink-footed geese and greylag geese) from the Proposal of Application Notice (PAN) Boundary were identified. Secondly, information was gathered on national statutory and non-statutory designated sites within a minimum of 2 km from the PAN Boundary, in accordance with CIEEM guidelines for Preliminary Ecological Appraisal¹⁶. The search results focused on designated sites with ornithological interests / features only. Relative locations of designated sites to the Proposed Development are shown in **Volume 3a Figure 8.1**.

Within the wider Study Area, surveys were undertaken around the Proposed Development and individual survey areas were defined for each survey, as set out in **Section 8.5** below.

8.4 Consultation Undertaken to Date

Consultation undertaken is outlined in **Volume 2 Chapter 3** of this EIAR. A summary of consultation relevant to ornithology is presented in **Table 8.1**.

¹³ The Highland Council (2012) Highland-wide Local Development Plan [Online] Available at:

https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan

¹⁴ NatureScot (2016). *Assessing Connectivity with Special Protection Areas (SPAs) – Guidance*, Version 3. Bartleby.

¹⁵ European sites are a network of sites across the European Union designated for rare and threatened species, and rare natural habitat types, protected in their own right originally under the Birds Directive 2009/147/EC and the Habitats Directive 92/43/EEC and subsequently under the UK Withdrawal from the European Union (Continuity) (Scotland).

¹⁶ CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal*. Chartered Institute of Ecology and Environmental Management. Hampshire.

Table 8.1 Consultation on Ornithological Features

Consultee	Date of Consultation	Summary and Response
NatureScot (NS)	Response to Scoping: 15 April 2024	<p><u>Protected Areas</u></p> <p>The proposed substation and land identified within the red line boundary falls within Strath Carnaig and Strath Fleet Moors Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) for hen harrier.</p> <p>This protected area is currently in unfavourable condition, mainly due to widescale 'open ground' habitat loss through woodland planting schemes. Our monitoring work also shows that the SPA / SSSI hen harrier population is also in decline. Therefore, the resilience of this protected area to accept further adverse impacts is diminished.</p> <p>The substation development will directly affect habitats within the SSSI / SPA, but they include areas of commercial forestry, standing and clear-felled, which <i>currently</i> are unlikely to offer suitable nesting habitat for hen harriers, but may offer suitable foraging habitat through time if managed as 'open ground'.</p> <p>Within the EIA there will need to be a full assessment of potential impacts against the SPA Conservation Objectives which include, but may not be limited to, the following:</p> <ul style="list-style-type: none"> • Displacement (indirect loss of habitat) and disturbance risks from in-combination impacts with the powerline element of the same project and other projects; • Direct loss of any potential foraging habitat within the protected area; • Displacement (in-direct loss of habitat) from areas used for nesting and foraging; • Poorly conceived biodiversity net gain (BNG) options which further impacts on hen harrier habitat loss, for example new planting on open ground (see comments below); and • Disturbance to breeding harriers from construction related activity on and off site. <p>At this stage its unknown if any of the above impacts could be fully mitigated, however we are working closely with SSEN Transmission and their consultants to identify the best design to avoid significant adverse effects. Survey work continues this year to help inform this.</p> <p>Positive opportunities exist to enhance land management for hen harrier as part of any BNG. For example, the red line boundary for this proposal now includes ground within the SPA where there may be potential to carry out habitat management that could expand open-ground habitats required by hen harrier for foraging.</p> <p>The EIA / HRA process must also consider cumulative effects. Impacts will have to be assessed in combination with other proposals that could affect the SPA, including the new 400 kV overhead line.</p> <p><u>Response</u></p> <p>SSEN Transmission have undertaken a rigorous site selection process in order to minimise impacts on the SPA / SSSI. Further minimisation of impacts will be sought through detailed design and into construction of the Proposed Development. As part of the Proposed Development SSEN Transmission will, where possible, look to improve the status of habitats within</p>

Consultee	Date of Consultation	Summary and Response
		<p>the SPA and increase the area of habitats beneficial to hen harrier within the PAN Boundary, with an emphasis on open ground habitats.</p> <p>SSEN Transmission and their appointed consultants shall assess impacts on the SPA / SSSI and relevant species in cognisance of the Conservation Objectives of the SPA and appropriate survey effort and where appropriate, mitigation. The EIAR will assess the impacts of relevant cumulative developments.</p> <p>A BNG assessment of the Proposed Development has been undertaken in line with SSEN Transmission policy.</p>
The Highland Council (THC)	Response to Scoping: 09 May 2024	<p>THC's response to Scoping is summarised in the following points:</p> <ul style="list-style-type: none"> • An EIAR chapter covering ecology, habitats and ornithology will be required. This must provide a baseline survey of the bird and animal interest on site. It needs to be categorically established which species are present on the site, and where, before a future application is submitted; • The presence of protected species such as Schedule 1 Birds or European Protected Species must be included and considered as part of the application process, not as an issue which can be considered at a later stage. Any consent given without due consideration to these species may breach European Directives with the possibility of consequential delays or the project being halted; • The EIAR should address the likely impacts on the nature conservation interests of all the designated sites in the vicinity of the Proposed Development. It should provide proposals for any mitigation that is required to avoid these impacts or to reduce them to a level where they are not significant. NatureScot can also provide specific advice in respect of the designated site boundaries SPAs and on protected species and habitats within those sites. The potential impact of the development proposals on other designated areas such as SSSI's should be carefully and thoroughly considered and, where possible, appropriate mitigation measures outlined in the EIAR. • The proposed substation and land identified within the red line boundary falls within Strath Carnaig and Strath Fleet Moors SPA and SSSI for hen harrier. The EIAR will need to provide sufficient information to enable the competent authority, Highland Council, to carry out a HRA. • Strath Carnaig and Fleet Moors SPA / SSSI. The protected area is currently in unfavourable condition, mainly due to widescale 'open ground' habitat loss through woodland planting schemes. Monitoring work undertaken by NatureScot also shows that the SPA / SSSI hen harrier population is also in decline. Therefore, the resilience of this protected area to accept further adverse impacts is diminished. The substation development will directly affect habitats within the SSSI / SPA, but they include areas of commercial forestry, standing and clear-felled, which currently are unlikely to offer suitable nesting habitat for hen harriers but may offer suitable foraging habitat through time if managed as 'open ground'. Within the EIA there will need to be a full assessment of potential impacts against the SPA Conservation Objectives which include, but may not be limited to, the following:

Consultee	Date of Consultation	Summary and Response
		<ol style="list-style-type: none"> 1. Displacement (in-direct loss of habitat) and disturbance risks from in-combination impacts with the powerline element of the same project and other projects; 2. Direct loss of any potential foraging habitat within the protected area; 3. Displacement (in-direct loss of habitat) from areas used for nesting and foraging; 4. Poorly conceived BNG options which further impacts on hen harrier habitat loss, for example new planting on open ground (see comments below); and 5. Disturbance to breeding harriers from construction related activity on and off site. <ul style="list-style-type: none"> • Positive opportunities exist to enhance land management for hen harrier as part of any BNG. For example, the red line boundary for this proposal now includes ground within the SPA where there may be potential to carry out habitat management that could expand open-ground habitats required by hen harrier for foraging. This could also have potential to enhance habitats for other open-ground upland birds (also in decline), such as skylark & whinchat, etc. The EIA / HRA process must also consider cumulative effects. Impacts will have to be assessed in combination with other proposals that could affect the SPA, including the new 400 kV overhead line; • To avoid negatively impacting the designation of the SPA, careful consideration must be taken at this site concerning hen harrier. The Lairg and Strath Brora Lochs SPA is less than 9 km from the Proposed Development, this is within foraging distance of the SPA's designated feature, Black-throated Diver. Although it is stated that breeding diver surveys will be conducted, Lairg and Strath Brora SPA is not included in Table 5.1: Designated Sites relevant to the Proposed Development, this must be considered. Due to the Proposed Development's location within Strath Carnaig and Strath Fleet Moors SPA it is clear that there would be likely significant effects on this SPA. From the information available at this stage, it appears that there would also be likely significant effects on Black throated Divers as a qualifying feature of Strath Brora Lochs SPA. Therefore, the EIA Report must include sufficient information to inform an Appropriate Assessment by the competent authority, as required by the Conservation (Natural Habitats, &c.) Regulations 1994. Further comments may be viewed within the full consultation response. <p><u>Response</u></p> <p>SSEN Transmission have commissioned a full EIAR and appropriate baseline surveys on which to base assessments of ecology, habitats and ornithology. The EIAR will assess all appropriate impacts anticipated on protected sites, species and habitats with mitigation applied as appropriate. Where opportunities exist improvements to habitats in line with the conservation objectives of the protected site will be implemented and assessed within the BGN assessment. The EIAR will be accompanied by a report to inform HRA, such that the Competent Authority may make an informed decision over Likely Significant Effects on protected sites.</p>
Royal Society for the Protection of Birds (RSPB)	Response to Scoping: 09 May 2024	RSPB are concerned to see that the Proposed Development site is located entirely within the Strath Carnaig and Strath Fleet Moors SPA and SSSI, as is the existing substation. Therefore, the EIA Report must include sufficient information to inform an

Consultee	Date of Consultation	Summary and Response
		<p>Appropriate Assessment by the competent authority, as required by the Conservation (Natural Habitats, &c.) Regulations 1994.</p> <p>RSPB are generally content with the surveys proposed, however would recommend two years of surveys are undertaken due to the sensitivity of receptors and recommend a commitment to pre-construction surveys is required. RSPB hold historic records of golden eagle and recommend breeding raptor surveys are undertaken.</p> <p>RSPB highlighted the potential use by hen harrier of recently felled forestry areas, and the need to consider this in the assessment of impacts. Restocking of commercial forestry or native woodland should also be carefully considered as this is also highly attractive to Hen Harriers during the early stages of establishment, and such actions will need to be subject to Habitat Regulations Appraisals by the competent authority.</p> <p>RSPB highlighted the need to undertake a robust assessment of cumulative and in-combination impacts.</p> <p>RSPB highlighted the importance of including sufficient information in the EIAR on mitigation, compensation and habitat management, and on biodiversity enhancement plans to meet National Planning Framework 4 (NPF4) requirements. RSPB also highlighted that due to the current pressures on hen harrier within the Strath Carnaig and Strath Fleet Moors SPA / SSSI, consideration should be given to whether compensatory planning is necessary and appropriate in this area.</p> <p><u>Response</u></p> <p>SSEN Transmission have commissioned a full EIAR, Appropriate Assessment and appropriate baseline surveys on which to base the assessments for ornithology. A full suite of baseline surveys including vantage point, breeding bird and raptor surveys have been undertaken as well as targeted species specific surveys. Through the EIAR and HRA an assessment of the baseline (including future baseline) conditions shall be undertaken in order to arrive at a robust assessment. Consideration will be taken of cumulative effects through the EIA and NPF4 will form the policy basis underpinning the assessment where appropriate.</p>

8.5 Method of Baseline Data Collation

Desk-based Study

An initial desk-based Study Area was defined of 20 km around the PAN Boundary, based on potential connectivity of birds to designated sites including SPAs, proposed SPAs, Ramsar sites and SSSIs and 2 km for national and non-statutory sites. Search areas for these designated sites were informed by the connectivity distances of bird species, as defined by NatureScot (NS) (2016). For species not listed in the NS connectivity distance guidance, potential for connectivity was based on published information on the ecology of individual species.

A request for information regarding species records and information on the habitats present was submitted to the Highland Biological Record Centre (HBRC) along the proposed Spittal – Loch Buidhe – Beauly OHL 400 kV, including the Proposed Development location.

Request for information regarding bird species data were submitted to the RSPB and the Highland Raptor Study Group (HRSG) along the proposed Spittal – Loch Buidhe – Beauly OHL 400 kV, including the Proposed Development location. Records of bird species within 2 km, or out to 6 km for golden eagle (*Aquila chrysaetos*) and white-tailed eagle (*Haliaeetus albicilla*) were reviewed as part of the baseline for the Proposed Development.

In addition to the above, desk-based baseline data reviewed included information from freely downloadable datasets which were searched for information on statutory and non-statutory designated sites as well any protected bird species. Only records within the last 25 years have been considered for inclusion in the baseline.

Ornithological Surveys

The following surveys have been undertaken to inform the baseline environment for the Proposed Development. The surveys undertaken will also provide information for the proposed new Spittal – Loch Buidhe – Beauly OHL 400 kV, and so in some cases form part of wider survey effort.

Breeding Bird Surveys

Breeding Bird Survey (BBS) visits were undertaken between May and August 2023. The survey approach was based on a modified Brown and Shepherd¹⁷ (1993) walkover method. Three visits were completed covering the proposed substation location and 500m buffer, as well as a 1 km route corridor for the proposed Spittal – Loch Buidhe – Beauly OHL 400 kV. The approach to the Breeding Bird Surveys was informed by NS guidance on surveys for power lines and onshore wind farm developments (2017)¹⁸. The survey walkover encompassed all habitats, with particular focus on those which may be of potential ornithological importance and of higher bird density. The area surveyed is shown in **Volume 3a Figure 8.2**.

Vantage Point Surveys

Flight activity (Vantage Point (VP)) surveys were conducted to inform the assessment off the Spittal – Loch Buidhe – Beauly OHL 400 kV. Surveys east of the Proposed Development were undertaken between May 2023 and April 2024, and surveys west of the Proposed Development were undertaken between September 2023 and August 2024. Surveys employed standard methodology recommended by NatureScot (2017). Surveyors undertook static watches from fixed locations and recorded flight activity of target species, comprised of species afforded additional conservation designations, and / or species of conservation concern. Watches were spread as evenly as possible across the calendar year, with typically one watch comprising six hours being undertaken each month, in order to capture a sample survey of flight activity over one year. The surveys were primarily

¹⁷ Brown, A. F. and Shepherd, K. B. (1993) *A method for censusing upland breeding waders*. Bird Study, 40, pp. 189-195.

¹⁸ NatureScot (2017). *Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms*. Version 2. Guidance.

undertaken to inform the assessment off the Spittal – Loch Buidhe – Beaully OHL 400 kV but provide useful information on the use of the PAN Boundary and wider area to the north, west and east by birds.

Breeding Raptor Surveys

Breeding raptor surveys were conducted out to a survey limit of 2 km for all species, except for golden eagle, where the search area was extended to 6 km. Surveys were conducted between during April and July 2024, comprising two visits. Surveyors targeted known raptor breeding locations, together with suitable nesting locations, in order to determine breeding by target (WCA Schedule 1 / Birds Directive Annex I) species. The area surveyed is shown in **Volume 3a Figure 8.2**.

Black grouse Surveys

Black grouse surveys were undertaken across the Proposed Development between March and May 2024 out to a limit of 1.5 km. Surveys comprised a walk-over of all suitable habitat that had potential to be used by displaying male birds (leks). The number of displaying males (and any attendant female birds) was recorded, with a follow up visit if required. The area surveyed is shown in **Volume 3a Figure 8.2**.

Breeding Diver Surveys

Surveys were undertaken during the 2023 breeding season at Loch Buidhe to check for the presence of breeding divers. Three diver surveys were completed as part of wider breeding bird surveys, employing standard methodology, Gilbert, G., et al, (1998)¹⁹.

Wintering Raptor Surveys

Hen harrier roost surveys were conducted (as part of the wider surveying of the Spittal – Loch Buidhe – Beaully OHL 400 kV) during the winter of 2023 / 2024. Roost surveys followed standardised techniques, Gilbert, G. et al, (1998), with three watch locations situated in the Loch Buidhe area.

Wintering Goose Roost Surveys

Winter goose surveys were undertaken at Loch Buidhe due to its suitability as an overnight roost for wintering geese and swans. The surveys aimed to identify overnight roosting sites used by geese and swans and commuting flight paths to these sites.

The location was surveyed once per month from November-February, with surveys following best practice methods (Gilbert et al., 1998) and commenced at either dusk or dawn. Dawn observations at each potential roost site started at least 0.5 hours before sunrise and ended 1 hour after sunrise. Dusk observations at each waterbody started at least 1.5 hours before sunset and ended 0.5 hours after sunset.

8.6 Impact Assessment

This ornithology assessment uses the methodology outlined in **Volume 2 Chapter 4** to determine magnitude of change.

This impact assessment follows an approach whereby the sensitivity of an ornithological receptor has been determined and assessed against the magnitude of the effect the activities associated with the Proposed Development may have on that receptor and the subsequent significance. The approach takes into account the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland and refers to ‘not significant’, rather than ‘negligible’ in term of effects.

Mitigation for the Proposed Development is split into categories: design mitigation, embedded mitigation, and additional mitigation (**Section 8.12**). The Proposed Development was selected via an iterative design process as described in **Volume 2 Chapter 3**. This ensured that the mitigation hierarchy was applied and impacts to

¹⁹ Gilbert, G., Gibbons, D.W., & Evans, J. (1998) *Bird Monitoring Methods: A Manual of Techniques for UK Key Species*. The Royal Society for the protection of Birds, Sandy, Bedfordshire, England.

sensitive receptors were avoided where feasible. Embedded mitigation will comprise SSEN's Transmission General Environmental Management Plans (GEMPs) (**Volume 4 Appendix 2.1**), a post-submission Construction Environmental Management Plan (CEMP) (**Volume 4 Appendix 2.2**), Construction Traffic Management Plan (CTMP) (**Volume 4 Appendix 12.1**), and Species Protection Plans (SPPs) (**Volume 4 Appendix 2.1**). Additional mitigation sets out any further mitigation required to reduce the residual impact to not significant.

Limitations and Assumptions

Due to the density of some coniferous woodland plantations, or the presence of areas of wind-blown trees, making them unable to access without causing injury, some areas of coniferous woodland were not surveyed. (refer to **Volume 4 Appendix 8.1** for full details of areas affected).

Flight activity surveys were focussed on the alignment of the associated Spittal – Loch Buidhe – Beaully OHL 400 kV and covered the Proposed Development and the northern half of the PAN Boundary but did not cover the southern half.

Where third party data has been referred to, this is referenced and taken at face value guided by professional judgement.

Due to survey coverage and access being generally good across the Survey Area, and the availability of third party species records over a number of years, good characterisation of likely species presence was possible. These limitations, both individually and in combination, are therefore not considered to be significant and do not undermine the validity of the baseline information presented.

The design of the Proposed Development on which this assessment has been based maybe subject to further detailed design and refinement, however a worst-case approach has been taken, where possible, where there is any uncertainty.

8.7 Significance Criteria

Defining Scale

Relevant European, national and local guidance was referred to in order to determine the importance of ornithological features. Reference was made to NatureScot guidance on determining target species for assessment²⁰. The importance of features was also determined using professional judgement and taking account the results of baseline surveys, desk study information and the importance of features within the context of the region.

The importance of ornithological features is considered within a defined geographical context, from Local to International, as outlined in **Table 8.2**.

Table 8.2 Ornithological Features, Scale of Importance

Importance	Definition
International	An internationally designated site e.g., a Special Protection Area (SPA) and/or Ramsar site. A species present in internationally important numbers (>1 % of its biogeographic population) listed under Annex I of the Birds Directive, or regularly occurring migratory species listed under Annex II of the Birds Directive connected to an internationally designated site for this species.
National	A nationally designated site e.g., a Site of Special Scientific Interest (SSSI).

²⁰ *Assessing Significance of Impact from Onshore Windfarms on Birds Outwith Designated Areas*. 2018 NatureScot, Inverness.

Importance	Definition
	A regularly occurring species present in nationally important numbers (>1 % of its Scottish population), listed as a Scottish Biodiversity List (SBL) priority species Red-listed bird of Conservation Concern (Stanbury <i>et al.</i> , 2021) and listed under Schedule 1 of the Wildlife & Countryside Act or Annex I of the Birds Directive.
Regional	A regularly occurring species present in regionally important numbers i.e., >1 % of its relevant Natural Heritage Zone (NHZ) population, (Wilson <i>et al.</i> , 2015) or appropriate alternative and listed as a UK BAP, SBL priority species Red-listed birds of Conservation Concern (Stanbury <i>et al.</i> , 2021) or listed on Schedule 1 of the Wildlife & Countryside Act or Annex I of the Birds Directive.
Local	All other species that are widespread and common and which are not present in regionally or nationally important numbers, but which do contribute to the local breeding/wintering bird assemblage.

Determining significance

For the purposes of this assessment a 'significant effect' was an effect that either supports or undermines biodiversity conservation objectives for 'important features' or for biodiversity in general.

Significant effects encompass impacts on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species and are identified on the basis of magnitude, professional judgment and best available evidence.

For the purposes of this assessment, significant effects were primarily expressed with reference to the Regional population scale, in line with NatureScot's interests of a species status at wider spatial levels (NatureScot, 2018). The significance of effects at other geographical scales (such as Local or National) was also expressed where appropriate and where sufficient information enabled a meaningful assessment to be made.

In cases of reasonable doubt, where it was not possible to robustly justify a conclusion of no significant effect, a precautionary approach was applied, and a significant effect assumed.

Table 8.3 Ornithological Features, Effect Significance

Importance	Definition
International	An internationally designated site e.g., a Special Protection Area (SPA) and / or Ramsar site. A species present in internationally important numbers (>1 % of its biogeographic population) listed under Annex I of the Birds Directive, or regularly occurring migratory species listed under Annex II of the Birds Directive connected to an internationally designated site for this species.
National	A nationally designated site e.g., a Site of Special Scientific Interest (SSSI). A regularly occurring species present in nationally important numbers (>1 % of its Scottish population), listed on the Scottish Biodiversity List (SBL ²¹), a Red-listed Bird of Conservation Concern (BoCC5) (Stanbury <i>et al.</i> , 2021 ²²) and listed under Schedule 1 of the Wildlife & Countryside Act and / or Annex I of the Birds Directive.
Regional	A regularly occurring species present in regionally important numbers i.e., >1 % of its relevant Natural Heritage Zone (NHZ) population, (Wilson <i>et al.</i> , 2015) or appropriate alternative and listed as a SBL priority species or a Red-listed BoCC5 species (Stanbury

²¹ <https://www.nature.scot/doc/scottish-biodiversity-list>, (2020). NatureScot.

²² Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (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.

Importance	Definition
	<i>et al.</i> , 2021) or listed on Schedule 1 of the Wildlife & Countryside Act or Annex I of the Birds Directive.

8.8 Sensitive Receptors

Designated sites and protected species²³, are sensitive receptors. Assessment of sensitive receptors was undertaken as described in **Section 8.3** using the following distances from the Proposed Development:

- SPA, Ramsar sites and SSSIs up to 20 km away, depending on qualifying interest features;
- Local Nature Conservation Sites (LNCS) within 2 km;
- Protected species, incorporating WCA Schedule 1 species, Scottish Biodiversity List (SBL) species and Birds of Conservation Concern 5 (BoCC5) red-listed species within 2 km (extended to 6 km for golden eagle and reduced to 1.5 km for black grouse, goshawk and short-eared owl and [desk study]) and within the Survey Area as described in **Section 2.1** within **Volume 4 Appendix 8.1**.

8.9 Baseline Conditions

Current Baseline

Designated Sites

The Proposed Development is situated within the Strath Carnaig and Strath Fleet Moors SPA / SSSI. Another five sites designated internationally or nationally for their ornithology conservation importance lie within the 20 km Study Area for the Proposed Development, presented in **Volume 3a Figure 8.1** and **Table 8.4**.

²³ Certain species are afforded specific legal protections, meaning it can be illegal to disturb, harass, capture, or kill, injure animals or birds or to pick or damage certain wild plants. An overview of relevant protected species and the legal framework that applies in Scotland is available at: <https://www.nature.scot/professional-advice/protected-areas-and-species/protected-species>.

Table 8.4 Designated Sites for ornithology within 20 km of the Proposed Development

Note: Designations are listed in order of importance: Special Protection Area (SPA), Ramsar Sites and Sites of Special Scientific Interest (SSSI). Sites with multiple designations within the same footprint have been combined. See, for reference, **Volume 3a Figure 8.1**.

Site Name and Designation	Qualifying Features	Proximity (closest point) to the Proposed Development	Species with potential connectivity to the Proposed Development
Strath Carnaig and Strath Fleet Moors SPA and SSSI	<p>The SPA is designated under Article 4.1 for holding populations of European importance of the following Annex I species:</p> <ul style="list-style-type: none"> Hen harrier, <i>Circus cyaneus</i>, (2002-2004, mean value, 12 pairs, 2.5% of the GB population). 	Within	Hen harrier
Lairg and Strath Brora Lochs SPA and SSSI	<p>The SPA is designated under Article 4.1 for holding populations of European importance of the following Annex I species:</p> <ul style="list-style-type: none"> Black-throated diver, <i>Gavia arctica</i>, (2000, six pairs, 3% of the GB population). 	9.34 km	Black-throated diver
Caithness and Sutherland Peatlands SPA, SAC, Ramsar	<p>The SPA is designated under Article 4.1 for holding populations of European importance of the following Annex I species:</p> <ul style="list-style-type: none"> Golden eagle, <i>Aquila chrysaetos</i>, (1992, five pairs, 1% of the GB population); Hen harrier (1993 to 1997, mean of at least 14 pairs, at least 2.8% of the GB population); Short-eared owl, <i>Asio flammeus</i>, (30 pairs, 2% of the GB population); and Merlin, <i>Falco columbarius</i>, (1993 and 1994, an estimated 54 pairs, 4% of the GB population). <p>Under Article 4.1 the SPA is also designated for holding populations of European importance of the following Annex I species, also covered by Ramsar Criterion 2:</p> <ul style="list-style-type: none"> Red-throated diver, <i>Gavia stellata</i>, (2006, 46 pairs, 3.5% of the GB population); Black-throated diver (1994, 26 pairs, 15% of the GB population); Golden plover, <i>Pluvialis apricaria</i>, (1993 and 1994, 1,064 pairs, 5% of the GB population); Wood sandpiper, <i>Tringa glareola</i>, (up to five pairs, up to 40% of the GB population); and Dunlin, <i>Calidris alpina schinzii</i>, (1993 and 1994, 1,860 pairs, 20% of the GB population). <p>Under both Article 4.2 and Ramsar Criterion 4 the site also qualifies for holding populations of European importance of the following migratory species:</p> <ul style="list-style-type: none"> Wigeon, <i>Anas penelope</i>, (1993/94, at least 43 pairs, at least <0.1% of the western Siberia / north western / north eastern Europe biogeographic population and at least 10.8% of the GB population). 	12.95 km	None

Site Name and Designation	Qualifying Features	Proximity (closest point) to the Proposed Development	Species with potential connectivity to the Proposed Development
	<ul style="list-style-type: none"> Common scoter, <i>Melanitta nigra</i>, (2007, at least 21 pairs, at least <0.1% of the western Siberia / western & northern Europe / north western Africa biogeographic population and at least 40.4% of the GB population); and Greenshank, <i>Tringa nebularia</i>, (2009, at least 653 pairs, at least 0.9% of the Europe / western Africa biogeographic population and at least 59.4% of the GB population). 		
Dornoch Firth and Loch Fleet, SPA, SAC, Ramsar, SSSI	<p>Under both Article 4.1 / Ramsar Criterion 2 the site is designated for holding populations of European importance of the following Annex I species:</p> <ul style="list-style-type: none"> Osprey, <i>Pandion haliaetus</i>, breeding; (2008-2012 mean of six territories, 6% of the GB population forage within the SPA, with one pair / 1 % breeding within the SPA boundary); and Bar-tailed godwit, <i>Limosa lapponica</i>, wintering; (1989/90-1993/4 winter peak mean of 1,184 individuals, 2% of the GB population). <p>Under Article 4.2 for holding populations of European importance of the following migratory species:</p> <ul style="list-style-type: none"> Greylag goose, <i>Anser anser</i>, (1989/90-1993/4 winter peak mean of 1,146 individuals, 1% of the Icelandic / UK / Ireland biogeographic population); and Wigeon, (1989/90-1993/4 winter peak mean of 15,304 individuals, 2% of the western Siberia / north western and north eastern Europe biogeographic population). <p>In addition, under Article 4.2 and Ramsar Criteria 4 & 5 the site also qualifies for holding populations of European importance of the following migratory species:</p> <ul style="list-style-type: none"> Greylag goose, (1989/90-1993/4 winter peak mean of 1,146 individuals, 1% of the Icelandic / UK / Ireland biogeographic population); Wigeon, (1989/90-1993/4 winter peak mean of 15,304 individuals, 2% of the western Siberia / north western and north eastern Europe biogeographic population); Teal, <i>Anas crecca</i>, (1989/90-1993/4 winter peak mean of 1,592 individuals, 1.0% of the GB population); Scaup, <i>Aythya marila</i>, (1989/90-1993/4 winter peak mean of 123 individuals, 1.0% of the GB population); Oystercatcher, <i>Haematopus ostralegus</i>, (2004/5-2009/10 winter peak mean of 2,459 individuals, 0.8% of the GB population); Curlew, <i>Numenius arquata</i>, (1989/90-1993/4 winter peak mean of 1,397 individuals, 1.0% of the GB population); 	8.98 km	Greylag goose, osprey

Site Name and Designation	Qualifying Features	Proximity (closest point) to the Proposed Development	Species with potential connectivity to the Proposed Development
	<ul style="list-style-type: none"> Bar-tailed godwit, <i>Limosa lapponica</i>, (1989/90-1993/4 winter peak mean of 1,184 individuals, 2% of the GB population); Dunlin, <i>Calidris alpina alpina</i>, (2005/6-2009/10 winter peak mean of 4,088 individuals, 2% of the GB population); and Redshank, <i>Tringa totanus</i>, (1989/90-1993/4 winter peak mean of 1,272 individuals, 1.0% of the GB population). <p>Ramsar Criteria 6:</p> <ul style="list-style-type: none"> Bar-tailed godwit, <i>Limosa lapponica</i>, (1989/90-1993/4 winter peak mean of 1,184 individuals, 2% of the GB population); Greylag goose, (1989/90-1993/4 winter peak mean of 1,146 individuals, 1% of the Icelandic / UK / Ireland biogeographic population); and Wigeon, (1989/90-1993/4 winter peak mean of 15,304 individuals, 2% of the western Siberia / north western and north eastern Europe biogeographic population). 		
Morangie Forest, SPA	<p>The SPA is designated for regularly supporting:</p> <p>Under Article 4.1 for holding populations of European importance of the following Annex I species:</p> <ul style="list-style-type: none"> Capercaillie, <i>Tetrao urogallus</i>, (2001, 30 individuals, 2.8% of the GB population). 	15.12 km	None
Moray Firth, SPA	<p>The SPA is designated for regularly supporting:</p> <p>Under Article 4.1 for holding populations of European importance of the following Annex I species:</p> <ul style="list-style-type: none"> Red-throated diver (2001/02-2006/07 mean peak annual non-breeding population of 324 individuals, 1.9% of the GB population); Great northern diver, <i>Gavia immer</i>, (2001/02-2006/07 mean peak annual non-breeding population of 144 individuals, 5.8% of the GB population); and Slavonian grebe, <i>Podiceps auritus</i>, (2001/02-2005/06 mean peak annual non-breeding population of 43 individuals, 3.9% of the GB population). <p>The SPA further qualifies under Article 4.2 by supporting populations of European importance of the following species:</p> <ul style="list-style-type: none"> Scaup, (2001/02 to 2005/06, mean peak annual non-breeding population of 930 individuals, 17.9% of the GB population); 	14.42 km	None

Site Name and Designation	Qualifying Features	Proximity (closest point) to the Proposed Development	Species with potential connectivity to the Proposed Development
	<ul style="list-style-type: none"> • Goldeneye, <i>Bucephala clangula</i>, (2001/02 to 2005/06, mean peak annual non-breeding population of 907 individuals, 4.5% of the GB population); • Eider, <i>Somateria mollissima</i>, (2001/02 to 2005/07, mean peak annual non-breeding population of 1,733 individuals, 2.9% of the GB population); • Common scoter, (2001/02 to 2005/06, mean peak annual non-breeding population of 5,479 individuals, 5.5% of the GB population); • Velvet scoter, <i>Melanitta fusca</i>, (2001/02 to 2005/06, mean peak annual non-breeding population of 1,488 individuals, 59.5% of the GB population); • Long-tailed duck, <i>Clangula hyemalis</i>, (2001/02 to 2005/06, mean peak annual non-breeding population of 5,001 individuals, 45.5% of the GB population); • Red-breasted merganser, <i>Mergus serrator</i>, (2001/02 to 2005/06, mean peak annual non-breeding population of 151 individuals, 1.8% of the GB population); and • Shag, <i>Phalacrocorax aristotelis</i>, (1980-2006, mean peak annual non-breeding population of 6,462 individuals, 5.9% of the GB population, and breeding population of 5,494 individuals, 10.2% of the GB population). 		

Protected Bird Species

Data Received via Data Requests and personal communication

Breeding records within the past five years within 2 km of the Proposed Development by WCA Schedule 1 raptors / owls (extended to 6 km for eagle species) were identified from the HRSG data. In addition, via personal communication²⁴, records of additional breeding locations of WCA Schedule 1 raptors / owls were obtained. In combination, a total of four species are considered to have attempted to breed within 2 km²⁵ of the Proposed Development within the past five years that data is available for. Data comprised of:

- hen harrier (two pairs)²⁶
- barn owl (*Tyto alba*) (one pair);
- merlin (*Falco columbarius*) (one pair); and
- peregrine (*Falco peregrinus*) (one pair).

Locations of breeding attempts for these species, and by year where known, is presented in the **Volume 4 Confidential Appendix 8.2**. None are located within 500 m of the PAN Boundary, with all territories situated to the north and east. No other records were obtained of breeding WCA Schedule 1 / Birds Directive Annex I species within 2 km (6 km for eagles) of the PAN Boundary.

Species records were also obtained from the RSPB for the Proposed Development plus a 2 km (6 km for eagles) buffer. There were no recent records (within five years). Historical records exist of red-throated diver, black-throated diver, hen harrier, black grouse and twite within 2 km of the Proposed Development, although none are more recent than 2016.

Survey Results

Breeding Bird Surveys

A total of 17 species were recorded as confirmed, probable or possible breeding species during site surveys. Results are presented in **Table 8.5** Full details of the Breeding Bird Surveys results are listed in **Volume 4 Appendix 8.1** and presented in **Volume 4 Figure 8.3**.

Breeding by species afforded additional protections (Schedule 1 / Annex I, BoCC5, SBL species).

Within the PAN Boundary and 2 km buffer area breeding was determined for the following protected species:

- Greenshank (*Tringa nebularia*) (WCA Schedule 1) – one possible territory was recorded with one bird recorded loafing on 19/06/23 at edge of Loch Buidhe, outside the PAN Boundary but within the 2 km buffer area, the location is shown on **Volume 3a Confidential Figure 8.1**; and,
- Siskin (*Carduelis spinus*) (SBL) – three possible territories were recorded. Two of the territories were located in the conifer stand immediately adjacent to the Proposed Development footprint of the new substation, with the third territory located near the eastern edge of the 2 km buffer area.

Breeding by Other Species

A total of 15 other species with possible (PO), probable (PR) and / or confirmed (CO) territories within the Survey Area were identified across the two BBS completed between April and July 2023. Of these, none are

²⁴ D. Priddle, personal observation.

²⁵ There were no breeding eagle species located within the wider 6 km search area.

²⁶ Data provided by the Highland Raptor Study Group. Data comprises, 4-figure grid references indicating an approximate territory location, together with 10-figure grid references (where provided), giving details of breeding success. For the purpose of analysis, any nest data recovered from within the generic 4-figure grid reference is assumed to apply to that territory. Whilst only 1 nest is located within the 2 km survey buffer, the remaining 4 nest locations are situated immediately adjacent to it, outside the 2 km limit, and as such were deemed to be needing to be included in the assessment.

afforded Special Protection, two species are on the SBL, three are on the BoCC Red-list, seven species are amber-listed and six species green-listed, see **Table 8.5** for details.

Table 8.5 Breeding Bird Species recorded as confirmed / probable / possible breeders within 2 km of the Proposed Development

Species	Number of territories / years			Conservation Status
	2023			
	CO	PR	PO	
Ringed plover (<i>Charadrius hiaticula</i>)			1	BoCC red list
Mistle thrush (<i>Turdus viscivorus</i>)			1	BoCC red list
Skylark (<i>Alauda arvensis</i>)		2	3	BoCC red list
Mallard (<i>Anas platyrhynchos</i>)	2		2	BoCC amber list
Red-breasted merganser (<i>Mergus serrator</i>)			1	BoCC amber list
Common sandpiper (<i>Actitis hypoleucos</i>)		6	1	BoCC amber list
Snipe (<i>Gallinago gallinago</i>)			1	BoCC amber list
Greenshank			1	WCA Schedule 1
Wren (<i>Troglodytes troglodytes</i>)		2	2	BoCC amber list
Willow warbler (<i>Phylloscopus trochilus</i>)			7	BoCC amber list
Meadow pipit (<i>Anthus pratensis</i>)	3	2	15	BoCC amber list
Carrion crow (<i>Covus corone</i>)			2	BoCC green list
Goldcrest (<i>Regulus regulus</i>)			13	BoCC green list
Coal tit (<i>Periparus ater</i>)			1	BoCC green list
Stonechat (<i>Saxicola torquata</i>)	1	1		BoCC green list
Chaffinch (<i>Fringilla coelebs</i>)		1	13	BoCC green list
Siskin			3	SBL and BOCC green list

An additional 15 non-breeding species were recorded during the BBS visits. Of these, one species, common crossbill (*Loxia curvirostra*) is listed on Schedule 1 of the WCA. Eight and 10 species are red and amber BoCC listed, respectively, and nine are on the SBL.

Flight Activity Surveys

Data from VP surveys recorded flight activity by the following 11 species over at least part of the Proposed Development:

- greylag goose – two flights:
 - On 8th April, 35 birds flew north over the location of the planned substation above collision risk height; and,
 - On 19th April, five birds flew over the location of the planned substation at collision risk height in an easterly direction;
- pink-footed goose – one flight of one bird. On 20/02/24 a single bird flew in a southeasterly direction over the location of the planned substation above collision risk height;
- osprey - three flights, all related to flight activity of individual birds foraging over Loch Buidhe north of the Proposed Development;

- hen harrier, two flights of single birds:
 - On 12/02/24 a single bird flew at collision risk height crossing the northeastern corner of the Proposed Development in a southerly direction; and,
 - On 08/03/24 a single adult male flying below collision risk height flew westwards along the northern edge of the Proposed Development;
- red kite – three flights, all of single birds:
 - On 01/03/24 a bird circled at collision risk height over forestry situated immediately to the north of the planned substation, before climbing above collision risk height and leaving to the west; and,
 - On 19/04/24 two flights of single birds, both at collision risk height, all birds flying at least partially within the Proposed Development, one flight of a bird flying over forestry situated immediately to the north of the planned substation;
- merlin – two flights, each of one bird. On 03/08/23 a single bird flew northwest up the Allt Garbh-airigh water, and on 11/03/24 a bird flew east – west along the northern edge of the Proposed Development.

Extending outwards from the PAN Boundary up to a radius of 2 km, additional flight activity was recorded by the following target species:

- greylag goose²⁷ - two flights, of one and three birds;
- pink-footed goose - three flights of eight, 60 and 810 birds;
- whooper swan – one flight of three birds at south edge of the PAN Boundary;
- black grouse²⁸- one flight of one bird on 15/12/23, short flight to the east of the PAN Boundary, and two (related flights) of one and three birds on 02/02/24 short flights east of the Proposed Development;
- dunlin – one flight of two birds on 25/07/24, pair flying low towards west end of Loch Buidhe;
- woodcock – one flight of one bird flushed on 02/02/24;
- osprey - five flights, of single birds, all flight activity related to birds foraging to / from Loch Buidhe;
- golden eagle – one flight of one juvenile bird, observed towards the eastern edge of the 2 km survey buffer;
- hen harrier - four flights of four birds. Three flights towards the western edge of the survey buffer, with the third flight occurring east of Loch Buidhe; and
- red kite - eighteen flights of between one and four birds. Activity concentrated towards the western edge of the 2 km survey buffer and, secondly, the valley east of Loch Buidhe.

Flight data for target species within 2 km of the PAN Boundary is shown in **Volume 3a Figure 8.4**.

Breeding Raptors

There was no recorded breeding activity by Schedule 1 / Annex I species during surveys completed in 2024.

Breeding Divers

No divers were recorded breeding on Loch Buidhe during the 2023 surveys.

Breeding Black Grouse

Two black grouse leks were recorded during baseline surveys undertaken within 2 km of the PAN Boundary. Both leks were recorded on 19/04/24. The closest was approximately 700 m south west of the PAN Boundary, where a single male was recorded. A second lek where seven males were recorded is approximately 1.4 km

²⁷ Greylag goose and pink-footed goose, whilst neither Schedule 1 nor Annex I species, are included here given the relative collision risk formed by these large birds that can migrate in sizeable flocks

²⁸ Whilst not a Schedule 1 / Annex I species, black grouse is on the Scottish Biodiversity List and is BoCC red-listed.

north west of the PAN Boundary. No other signs or records of breeding black grouse were recorded during baseline surveys. The location of the leks is shown in **Volume 3a Confidential Figure 8.1**.

Winter Raptor Surveys

No hen harrier or short-eared owl roosts were recorded during baseline surveys conducted for the Proposed Development.

Winter goose surveys

Eight flights of one species, greylag goose, were recorded during winter goose roost surveys. One flight was recorded on 23/11/23, with all seven remaining flights recorded on the same dawn watch on 17/04/24. Flight movements were predominantly in an East to West direction, with three of the flights partially flying over the PAN Boundary. No roosting or loafing geese were recorded on Loch Buidhe during any surveys. Flight Activity for wintering geese within the 2 km Survey Area is shown in **Volume 3a Figure 8.5**.

Future Baseline

Under a “do nothing” scenario it is predicted that the future baseline will remain similar to the current baseline providing land-use remains broadly similar. It is predicted that bird species which make use of the area surrounding the Proposed Development will largely remain the same, except for natural population fluctuations and trends and the impact of climate change. Anthropogenic land-use of the Study Area and the ornithological habitats is the primary factor in determining the species present. The key changes are likely to be related to the cycle of growth and felling of commercial plantation forestry across much of the PAN Boundary which will affect the bird assemblage over time.

8.10 Issues Scoped Out

Within the CIEEM EclA Guidelines it is noted that the assessment process does not need to be applied when determining the impacts on ecological or ornithological features which are thought of as below a certain level of conservation importance, as predicted impacts are unlikely to be considerable or arise. Thus, impacts on ornithological features determined to be of ‘Site’ level conservation importance or less, as well as species which are not found to be within the determined Zone of Influence²⁹ of the Proposed Development, have been scoped-out.

The Lairg and Strath Brora Lochs SPA is situated within 10 km (at 9.34 km at its closest point), of the PAN Boundary. The SPA is designated for its breeding population of black-throated divers, which nest at the assemblage of waterbodies within the SPA. As there was no recorded flight activity suggesting connectivity between the location of the Proposed Development and the qualifying species, and furthermore, as the nearest boundary of the SPA is at the edge of the recognised maximum foraging distance for the black-throated diver (stated as likely to be less than 10 km³⁰), it is assessed there would be no impact upon the SPA, and therefore this Designated Site has been scoped out from further assessment.

An assessment of the impacts upon ornithological features during the decommissioning phase of the Proposed Development was not undertaken. The facility is anticipated to have an extended lifespan, and with the needs of supplying power to the grid being unlikely to change in the long-term (c.50 years+), such assessment was scoped out from further analysis.

8.11 Summary of Important Features

A summary of important features ‘scoped-in’ and ‘scoped-out’ of this assessment is provided in **Table 8.6**.

²⁹ The Zol was set at a radius of 20 km out from the boundary of the Proposed Development.

³⁰ Scottish Natural Heritage (SNH). 2016. Assessing connectivity with Special Protection (SPAs). Guidance. Areas <https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf>

Table 8.6: Summary of Features Scoped In and Out of the Assessment

Feature	Nature Conservation Importance	Justification	Scoped IN / OUT
Strath Carnaig and Strath Fleet Moors SPA, SSSI	International	Breeding hen harrier population; (2002-2004 mean value, 12 pairs, 2.5% of the GB population). Location of Proposed Development is within the SPA, which is designated for breeding hen harrier. Unmitigated development has the potential to directly impact upon the qualifying feature of the SPA.	IN
Lairg and Strath Brora Lochs SPA and SSSI	International	Breeding black-throated diver population; (2000, six pairs, 3% of the GB population). Black-throated divers have a core foraging range estimated at < 10 km. The area encompassed by the PAN Boundary is, at its closest point 9.34 km from the closest qualifying waterbody, i.e., at the extreme edge of the species' range and this, combined with the lack of recorded flights within 2 km of the PAN Boundary indicates no connectivity with the SPA.	OUT
Caithness and Sutherland Peatlands SPA, SAC, Ramsar	International	The SPA is designated for supporting populations of European importance of breeding resident and migratory Annex I species. No connectivity between qualifying species of the SPA and the area encompassed by the PAN Boundary, as all species core foraging range is less than the distance between the location of the PAN Boundary and the nearest component of the SPA.	OUT
Dornoch Firth and Loch Fleet, SPA, SAC, Ramsar, SSSI	International	Designated for supporting populations of European importance of the breeding / migratory / wintering bird assemblage. Of the qualifying species, flight activity was recorded for greylag goose, pink-footed goose, dunlin, and osprey. Flight activity for all qualifying species was low. For greylag goose, out of a total of 12 recorded flights, five flights occurred over the Proposed Development. The dunlin flight was a single flight recorded during the breeding season and can therefore be scoped out as the species is a qualifying feature for the SPA in the non-breeding season (only). Osprey flights were confined to occasional foraging flights over Loch Buidhe. Given the distance of the area encompassed by the PAN Boundary from the Dornoch Firth and Loch Fleet SPA, and the abundance of suitable foraging habitat within and immediately surrounding the SPA, ospreys foraging at Loch Buidhe are considered unlikely to originate from the SPA.	OUT
Morangie Forest, SPA	International	The SPA is designated for regularly supporting the Annex I species Capercaillie, (2001, 30 individuals, 2.8% of the GB population). No connectivity between the SPA and the qualifying feature, the foraging	OUT

Feature	Nature Conservation Importance	Justification	Scoped IN / OUT
		range of capercaillie is less than the distance between the two locations and no flight activity was observed.	
Moray Firth, SPA	International	Designated for holding non-breeding populations waterfowl and waders of European importance. No connectivity between qualifying species and the area encompassed by the PAN Boundary.	OUT
Greylag goose	Regional	Estimated peak winter population (native and migratory populations) in Scotland; 110,000 birds, Forrester R. (2007). Twelve flights of between 1 – 84 birds. Activity concentrated to flock movement in mid-April, with flights predominantly overflying Study Area on an east to west axis. Five of the flights crossed the Proposed Development, of which one flight, on 19/04/24 crossed at a height between 5-70 m. All other flights were at a height > 70 m. The Proposed Development supports upland heathland and plantation forestry unsuitable for goose foraging. WCA Schedule 1 (part 2) and BoCC5 Amber-listed species.	OUT
Pink-footed goose	Regional	Estimated peak winter population in Scotland; 200,000 birds, Forrester R. et al., (2007) ³¹ . Four flights of one, eight, 60 and 810 birds; 14th Feb 2024 (one flight) and 19 th Feb 2024 (two flights), all flights overflow the west side of the Proposed Development. On 20 th February a single bird flew northwest to southeast over the planned location of the substation within the Proposed Development. The Proposed Development supports upland heathland and plantation forestry unsuitable for goose foraging. BoCC5 and Amber-listed species.	OUT
Whooper swan	Regional	Estimated wintering population of 4,142 birds (Forrester (2007)). One flight of three birds, towards the south west edge of the 2 km survey buffer. No use of the Proposed Development Area by whooper swans was recorded. The only birds recorded were observed flying over the wider survey area. Given the lack of observations of birds on the Proposed Development site, and the lack of suitable habitats, whooper swan have been scoped out of the assessment.	OUT

³¹ Forrester, R. W., Andrews, I. J., McInerney, C. J., and Scott, H. I., eds. *The Birds of Scotland*. 2007. Scottish Ornithologists' Club, Aberlady.

Feature	Nature Conservation Importance	Justification	Scoped IN / OUT
		WCA Schedule 1, SBL, and Amber-listed species.	
Black grouse	Local	Estimated population in Scotland, 3,550-5,750 lekking males; Forrester (2007). No leks were recorded within area encompassed by the PAN Boundary. Two leks were recorded within the 1.5 km buffer area. Three flights of one (x2) and three birds; on 15/12/2023 (one bird) and on 02/02/24 (one and three birds). SBL, and BoCC5 Red-listed species.	IN
Red-throated diver	Regional	Estimated breeding population in Scotland, 935-1,500 pairs Forrester (2007). No flights / breeding activity recorded. Annex I, WCA Schedule 1, SBL, and BoCC5 Amber-listed species.	OUT
Black-throated diver	International	Estimated breeding population in Scotland, 200 pairs Forrester (2007). No flights / breeding activity recorded. Annex I, WCA Schedule 1, SBL, and BoCC5 Amber-listed species.	OUT
Dunlin	Local	Estimated winter population in Scotland of northern subspecies (<i>Calidris alpina alpina</i>), 37,000-58,000; and a breeding population of 8,000 – 10,000 pairs of the southern subspecies (<i>Calidris alpina schinzii</i>), Forrester, (2007). One flight of two birds within the 2 km buffer from the PAN Boundary, with two birds seen flying low at the western end of Loch Buidhe during July 2023, although no evidence of breeding was recorded during the BBS. SBL and BoCC Red-listed species.	OUT
Greenshank	Local	Estimated population in Scotland 720–1,420 pairs; Forrester, (2007). One point record of a bird, inside the area encompassed by the PAN Boundary, recorded on 19/06/23 loafing at the south west edge of Loch Buidhe. Possible territory. WCA Schedule 1 and BoCC5 Amber-listed species.	IN
Golden eagle	Regional	There are an estimated 508 pairs of golden eagles breeding in Scotland ³² .	OUT

³² Wilson, M.W., Austin, G.E., Gillings S. & Wernham, C.V. (2015). *Natural Heritage Zone Bird Population Estimates*. SWBSG Commissioned report number SWBSG_1504. pp72. Available from: www.swbsg.org

Feature	Nature Conservation Importance	Justification	Scoped IN / OUT
		One flight within the 2 km buffer zone from the PAN Boundary; a juvenile bird circling above Creag Caolsaidh to the north east of Loch Buidhe on 19/12/23. Annex I, WCA Schedule 1A / A1, SBL Red list, BoCC5 Green-listed species.	
Osprey	Regional	There are an estimated 182-200 pairs of ospreys in Scotland, Forrester, (2007). Eight flights recorded, all of individual birds foraging close to / over Loch Buidhe. Annex I, WCA Schedule 1, SBL and BoCC5 Amber-listed species.	IN
Hen harrier	International	The UK breeding population of hen harrier is estimated to be 545 pairs ³³ . Six flights were recorded within the 2 km survey buffer, of which two crossed the PAN Boundary; on 02/12/23, one bird flew at collision risk height (CRH) into the NE edge of the Proposed Development; and on 08/03/24 one adult male briefly crossed the northwest corner of the Proposed Development below CRH, heading southwest. There are two hen harrier territories located just within the 2 km survey buffer area east of Loch Buidhe. Details of nest locations are presented in the Confidential Annex 8.1. Annex I, Schedule 1A, SBL, and BoCC red-listed species.	IN
White-tailed eagle	Regional	There are an estimated 150 pairs of white-tailed eagles across Scotland ³⁴ . No flight activity was recorded within the Survey Area. Annex I, Schedule 1A / A1, SBL and BoCC Amber-listed species.	OUT
Red kite	Regional	There are an estimated 60 pairs breeding in Scotland, Forrester, (2007). Twenty-one flights, of which three occurred within the PAN Boundary. Majority of flight activity over to the west of the survey area. Annex I, WCA Schedule 1, SBL, BoCC5 Green-listed species.	OUT
Barn owl	Local	The breeding population in Scotland is estimated at 500-1,000 pairs; Forrester, (2007). One confirmed nest (BO1, 2020), just outwith the PAN Boundary; no flight activity recorded within the 2 km buffer. WCA Schedule 1, SBL and BoCC5 Green-listed species.	OUT

³³ British Trust for Ornithology. (n.d.). Hen Harrier *Circus cyaneus*. Available at: <https://app.bto.org/birdfacts/results/bob2610.htm>.

³⁴ Royal Society for the Protection of Birds. (n.d.). White Tailed Eagle Population Trends. Available at: <https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/bird-a-z/white-tailed-eagle/population-trends/>

Feature	Nature Conservation Importance	Justification	Scoped IN / OUT
Merlin	Regional	<p>The Scottish breeding population is estimated at c.800 pairs; Forrester (2007).</p> <p>Two flights of one bird each both flew partially within the Proposed Development; on 03/08/23 when a single bird flew northwest up the Allt Garbh-airigh water, and on 11/03/24, one bird at CRH, flew West along the northern edge of the Proposed Boundary.</p> <p>One confirmed nest, (2020, ML1) four young fledged within the 2 km buffer area.</p> <p>Annex I, WCA Schedule 1, SBL, and BoCC5 Red-listed species.</p>	IN
Peregrine	Local	<p>The Scottish population is estimated to be c.600 pairs; (Forrester, 2007).</p> <p>There were no records of peregrine during surveying.</p> <p>There is one identified peregrine territory provided by the HSRG within the 2 km survey buffer (PE1). Given the lack of observations of peregrine on the Proposed Development site, and the distance to the desk-based territory record, peregrine have been scope out of the assessment.</p> <p>Annex I, WCA Schedule 1, SBL and BoCC5 Green-listed species.</p>	OUT
Siskin	Local	<p>The Scottish breeding population is estimated at 0.5 – 3.5 million pairs; Forrester (2007).</p> <p>There were three possible siskin territories identified during breeding bird surveys in 2023. SBL and BoCC Green-listed species.</p> <p>SBL, BoCC Green-listed species.</p>	IN
Other passerine etc., assemblage	Local	<p>Combination of Schedule 1 (crossbill only), SBL and / or BoCC red / amber and green-listed species recorded across the survey area; however, these are all widespread species associated with open upland / upland forestry habitats. The assemblage of passerine species is of local importance.</p>	OUT

8.12 Assessment of Effects, Mitigation and Residual Effects

The impact assessments for designated sites and sensitive bird species have been carried for the Proposed Development in order to determine its potential impact on each of these features and reported accordingly. The assessment considers the potential impacts that could occur from the Proposed Development during design, construction, and operation, for example:

- direct habitat loss due to permanent and temporary facilities;
- direct effects on birds, including their killing and injury and the destruction of their places of shelter; and
- indirect effects on bird species including disturbance / displacement.

Mitigation by Design

The Proposed Development location was selected via an iterative design process as described in **Volume 2 Chapter 3**. This allowed the mitigation hierarchy to be applied and impacts to sensitive receptors were avoided where feasible. Where this was not possible, minimisation, mitigation or compensation of impacts were sought.

A Biodiversity Net Gain

A BNG assessment was undertaken for the Proposed Development during each design stage, with the aim of securing a positive effect for biodiversity through improvements to the condition and quality of baseline habitats present. More details on the BNG assessment are presented in **Volume 2 Chapter 7**.

Embedded Mitigation

Embedded mitigation measures will be implemented during the construction work, including the timing of works and the installation and careful siting of permanent and temporary structures to avoid or minimise interaction with any sensitive receptors.

Compliance with project wide and site-specific environmental management procedures, with reference to SSEN Transmission GEMPs (**Volume 4 Appendix 2.1**), will be implemented through the CEMP (**Volume 4 Appendix 2.2**). This will describe the proposed approach to construction methods and environmental protection during construction of the Proposed Development, including details of ornithological constraints and measures (e.g., limiting night-time working, control of light spill, noise emissions, pollution, avoiding incursion into habitats to be retained), procedures for surface water management and pollution prevention guidelines.

Embedded measures to protect ornithology features will include a pre-construction site walkover survey of the Proposed Development by a suitably qualified ornithologist, focussing on species and their habitats to be directly and indirectly impacted by the Proposed Development. The purpose of the survey would be to confirm presence / absence of protected species, or any changes in use of the site by these species. SSEN's Bird SPP (**Volume 4 Appendix 2.1**) will be included within the CEMP and will be followed during construction of the Proposed Development.

Assessment – Construction Effects - Species

Black grouse

Two black grouse leks were recorded during baseline surveys, one approximately 700 m from the PAN Boundary and one approximately 1.4 km to the north west. Neither lek will be directly affected by the Proposed Development. The further away lek is outside of published NatureScot potential disturbance distance for black grouse leks of 750 m (Goodship, 2022), and no disturbance is predicted. The closer lek located at 700 m away is within the potential disturbance distance. However, the lek is over 1 km from the closest area of Proposed Development, with the intervening topography and forestry blocking line of site to the Proposed Development. As a result, the potential for disturbance to black grouse leks is considered to be **negligible** and is considered to be **Not Significant**.

Greenshank

One possible greenshank territory was recorded during walkover surveys, when a single bird was observed on 19/06/23, foraging at the south western end of Loch Buidhe. The location is situated within the 2 km buffer, at a distance above the maximum recommended disturbance distance for greenshank (300-500 m), Goodship and Furness (2022), from the location of the Proposed Development itself.

No loss of foraging and breeding habitat for greenshank as a result of construction of the Proposed Development is predicted. The habitat to be lost is not suitable for the species, being predominantly plantation forestry. The possible territory was recorded over 500 m from the footprint of the Proposed Development, and so disturbance during construction is considered to be negligible. As a result, the overall impact upon breeding greenshank is expected to be of **negligible magnitude and not significant**.

Osprey

There were a total of eight flights over the site and 2 km survey buffer recorded during baseline surveys, of which three flights partially flew over the PAN Boundary itself. Flights were associated with birds foraging over Loch Buidhe. None of the flights passed over the location of the proposed substation itself. No nesting by osprey was recorded, though given the species' large (up to a maximum of 28 km) foraging range, the location has the potential to fall within foraging distance of several nesting pairs from the wider area. Individual ospreys react differently to disturbance, exhibiting disturbance to people and development between 350 – 750 m from nest sites. The forestry surrounding the Proposed Development, however, is considered sub-optimal as a potential nest habitat for the species, given the age and density of the planting and no osprey nests were recorded during baseline surveys. With embedded mitigation measures in place, overall impact upon breeding ospreys is expected to be of **negligible magnitude and not significant**.

Hen harrier

Hen harrier is the qualifying species of the Strath Carnaig and Strath Fleet Moors SPA and SSSI, with the SPA holding an average of 12 pairs / 2.5% of the GB population.

A total of six flights, all of single birds, were recorded during baseline surveys within the 2 km Survey Area. Two flights crossed the PAN Boundary; on 02/12/23, one bird flew at collision risk height (CRH) into the NE edge of the Proposed Development; and on 08/03/24 one adult male briefly crossed the northwest corner of the Proposed Development below CRH, heading southwest.

Four, further flights were recorded across the wider survey area. On 19/09/23 an adult female flew east to west hunting towards the eastern end of Loch Buidhe at CRH. The remaining three flights all occurred to the north west of the wider survey area; on 28/09/23 there were two flights (by the same bird) at and below CRH at a distance between 1.5 – 2 km from the PAN Boundary, and on 08/03/24 a bird, (age and sex not recorded) was seen flying at CRH c. 800 m from the edge of the PAN Boundary.

Desk-study data identified two hen harrier nest sites, considered to represent different breeding pairs, within 2km of the Proposed Development, situated to the north east / east of the PAN Boundary, respectively. The location of the two nest sites is shown in **Volume 4 Confidential Appendix 8.2** and **Volume 3a Confidential Figure 8.1**. Of the two locations, nest data is only available for one nest (referred to as, HH1) which indicated breeding was successful in 2021, with no data available for 2022. As both nest locations are situated beyond the maximum recommended disturbance distance for the species of 750 m, Goodship (2022), it is considered that they will not be disturbed during the construction phase and the impact of construction works will be **negligible and not significant**.

There is, however, potential for disturbance to hen harriers during the construction phase of the Proposed Development as they forage for prey with which to supply young at the nest. Hen harriers have a core foraging range of 2 km, extending up to 10 km. Therefore the Proposed Development and the land surrounding it falls within this extended range of the two nests within 2 km, as well as other nest locations that may be beyond 2 km from the Proposed Development. Flight activity across PAN Boundary and the 2 km Survey Area is suggestive

that the area is only occasionally frequented by foraging birds. The current coniferous plantation and clear-fell habitats within the PAN Boundary only offer sub-optimal habitats for hunting by the species. Whilst there is potential for young forestry plantation to provide suitable foraging habitat, this is only applicable at the early stages of tree growth (2-5 years), and as such would only be a transient feature of interest for the birds, Madders, M., 2003³⁵. Other favoured hen harrier foraging habitat typically comprises open habitats such as mixed heather and rough grass, including mosaics of these habitat types³⁶. As a result, impacts from disturbance and displacement are considered to be **negligible** and **not significant**.

. The construction of the substation and other project infrastructure will result in the loss of the habitats set out in **Table 8.8**. A full breakdown of habitat loss associated with the Proposed Development is presented in **Table 7.6 (Volume 2 Chapter 7)**.

Table 8.8 Permanent and Temporary Habitat Impacts

Broad Habitat Type	Habitat Classification	Substation – Permanent Habitat Loss (ha)	Substation – Temporary Habitat Loss (ha)
Woodland	Other coniferous woodland	18.34	6.129
Heathland and shrub	Wet heathland with cross-leaved heath; upland	0.044	0.118
Wetland	Blanket bog	0.172	0.169
	Degraded blanket bog	1.196	0.331
	Artificial unvegetated, unsealed surface	0.003	0
Total		19.75	6.747

Construction of the Proposed Development will result in the permanent loss of approximately 19.8 ha and temporary loss of approximately 7 ha of habitat. Of these areas, approximately 17 ha of the permanent habitat loss and 6 ha of the temporary habitat loss will be of coniferous plantation woodland, with the remaining areas comprising more open habitats within fire breaks and on the edge of plantations. These habitats present suboptimal foraging opportunities for hen harrier, providing suitable habitat only when plantations are in the early stages of growth, as noted above.

As part of the Proposed Development, peat storage areas will be required, and peatland restoration is proposed which will result in the creation of approximately 194 ha of peatland, including the conversion of approximately 160 ha of coniferous plantation woodland to peatland with the rest resulting from the conversion of open grassland, heathland or wetland habitats to wet heath (**Volume 2 Chapter 16 O1**). The excavation, transport and deposition of peat, as well as a proposed design for storage areas is detailed in the Peat Management Plan (**Volume 4 Appendix 10.2 Peat Management Plan**). These areas of peatland will be designed to be retained areas of wet peat which will preclude the growth of trees, as well as areas of drier peat on higher ground (**Volume 2 Chapter 16 O2**). As a result of the creation of the peat storage areas and wider habitat creation, the Proposed Development is estimated to result in an overall increase in permanent open habitats of approximately 215 ha. Of this area, approximately 108 ha will be designed to be a mosaic of dry heath and grasslands which will provide additional suitable foraging habitat for hen harrier compared to the existing baseline. As a result of the creation of additional suitable hen harrier foraging (and potentially breeding) habitat, the Proposed Development will have a **low** magnitude positive impact on hen harrier, resulting in a **Minor Significant Positive Effect**.

³⁵ Mike Madders (2003) *Hen Harrier, Circus cyaneus, foraging activity in relation to habitat and prey*, Bird Study, 50:1, 55-60, DOI: 10.1080/00063650309461290

³⁶ Beatriz, A. Arjun, A., Leckie, F., Buchanan, G.M., Wilson, J.D. and Redpath, S. (2009) Hunting habitat selection by hen harriers on moorland: Implications for conservation management. *Biological Conservation*, 142 (3). 586-596.

Merlin

There was one recorded flight on August 3rd, 2023, located at the edge of the PAN Boundary, of one bird, which took off to the west of Loch Buidhe. In addition, there was one reported nest of merlin (2020), situated within the wider 2 km survey area. The location of the nest is shown in **Volume 4 Confidential Appendix 8.2** and **Volume 3a Confidential Figure 8.1**. The nest location is situated approximately 1.9 km from the location of the PAN Boundary and at a distance that exceeds the recognised disturbance distance (300 – 500 m) for the species, and therefore it is concluded that it is at no likelihood of disturbance from construction of the Proposed Development.

Merlin typically forage over open habitats, and the coniferous plantation habitat within the PAN Boundary is not considered to be suitable foraging habitat. As a result, construction of the Proposed Development will result in a **negligible** magnitude impact in relation to disturbance, displacement and loss of supporting habitat and will be **not significant**.

Merlin can nest on both the open ground and in woodland, and whilst there are no records to suggest nesting by the species in the plantation surrounding the Proposed Development, prior to any construction activity, a pre-construction walk-over survey by a suitably trained ornithologist will be required to ensure there is no occupation of the woodland by the species. If birds are found to be nesting in the location, SSEN's Bird SPP³⁷ will be applied, and an exclusion zone set up until the birds have either fledged young or are confirmed to have failed breeding.

Siskin

There were three possible siskin territories identified during breeding bird surveys in 2023, equating to between 0.0006 – 0.00009 % of the total estimated Scottish breeding population.

There is abundant habitat available within the vicinity to provide alternative nest locations for the species, and therefore the impact of the construction phase upon the species at this location will be of a **negligible** magnitude and **not significant**.

Assessment – Construction Effects - Designated Sites

One site of international / national importance, Strath Carnaig and Strath Fleet Moors SPA / SSSI, designated for breeding hen harrier, will be directly affected by the Proposed Development, as the Proposed Development is situated within the designated site boundary. The SPA / SSSI is designated for its breeding hen harrier population, supporting 12 breeding pairs. The site is currently in unfavourable condition, with pressures relating to agricultural operations, burning, development, forestry operation, game / fisheries management and plant pests and diseases.

As set out above, the predicted habitat loss during construction of the Proposed Development is estimated to be approximately 18 ha of permanent habitat loss and approximately 7 ha of temporary habitat loss. All of the habitat loss will be within the SPA / SSSI boundary. However, as a result of the creation of the peat storage areas and wider habitat creation, the Proposed Development is estimated to result in a net gain overall increase in permanent open habitats of approximately 215 ha. Of this area, approximately 108 ha will be designed to be a mosaic of dry heath and grasslands which will provide additional suitable foraging habitat for hen harrier compared to the existing baseline. The area of open habitat created equates to approximately 1% of the total area of the SPA / SSSI.

This habitat could provide additional suitable foraging and potentially breeding habitat for hen harrier within the SPA, contributing to reducing the existing pressures on the SPA / SSSI.

³⁷ <https://www.ssen-transmission.co.uk/globalassets/documents/environmental-appraisal--appendices/annex-b4---bird-species-protection-plan.pdf> (2022).
SSEN

Given the overall increase in suitable habitat for hen harrier within the SPA / SSSI, the Proposed Development will have a **low** magnitude positive impact on hen harrier, result in a **Minor Significant Positive Effect**.

Assessment - Operational Phase - Species

During operation of the Proposed Development, anticipated vehicular traffic and human activity is expected to be low, with monthly maintenance visits expected, largely following the access track for the existing substation. Birds already present in the vicinity of the existing Loch Buidhe Substation or along the access track are expected to be unaffected by the small increase in activity compared to existing levels of traffic. Coupled with the implementation of embedded mitigation, disturbance effects as a result of operational maintenance on the identified bird species that may be present during operation are predicted to be of **negligible** magnitude and therefore **no significant effects** are predicted.

Activities associated with routine habitat maintenance may result in temporary disturbance effects to nesting birds. This will be avoided through adherence to SSEN's Bird SPP (2022). As a result, impacts are predicted to be of **negligible** magnitude and therefore **not significant**.

Assessment - Operational Phase – Designated Sites

During operation of the new substation, no effects are predicted on the qualifying features of Strath Carnaig and Strath Fleet Moors SPA / SSSI. Baseline surveys did not record any hen harrier flights overlapping with the proposed substation location, and the existing habitat is considered to be sub-optimal foraging habitat. Activity associated with monthly maintenance visits is not predicted to result in any disturbance or displacement of the hen harrier. As a result, effects on the SPA / SSSI during operation are considered to be of **negligible** magnitude and **not significant**.

8.13 Cumulative Effects

Cumulative effects include both the total effects resulting from the Proposed Development in combination with other similar developments within a Zone of Influence (Zoi). A 20 km Zoi was applied to identify sites that may result in a cumulative impact. The Zoi includes an area within it of 10 km around Strath Carnaig and Strath Fleet Moors SPA / SSSI to identify other developments within connectivity distance to the SPA / SSSI which could result in cumulative impacts on the hen harrier interest feature.

Relevant current and planned developments within the Zoi are shown in **Table 8.8** below.

Table 8.8 Relevant Current and Planned Developments Situated Within 20 km of the Proposed Development

Development Name and Type	Nearest point to Proposed Development	Application Status	Ornithology Features Identified in neighbouring EIA reports
Spittal to Loch Buidhe to Beaully 400 kV OHL, Grid Infrastructure	Adjacent	Pre-application	Strath Carnaig and Strath Fleet Moors SPA / SSSI, breeding hen harrier; Lairg and Strath Brora Lochs SPA / SSSI, breeding black-throated diver; Caithness and Sutherland Peatlands SPA and Ramsar, breeding black-throated diver; Dornoch Firth and Loch Fleet SPA and Ramsar, breeding osprey.
Communications Mast 22/05825/FUL	Within PAN	Granted	Strath Carnaig and Strath Fleet Moors SPA / SSSI, breeding hen harrier

Development Name and Type	Nearest point to Proposed Development	Application Status	Ornithology Features Identified in neighbouring EIA reports
Carnaig – Loch Buidhe UGC	Within PAN	Permitted	Strath Carnaig and Strath Fleet Moors SPA / SSSI, breeding hen harrier
Acheilidh Wind Farm	1.4 km	Application	Strath Carnaig and Strath Fleet Moors SPA / SSSI, breeding hen harrier; Lairg and Strath Brora Lochs SPA / SSSI, breeding black-throated diver; Caithness and Sutherland Peatlands SPA and Ramsar, breeding black-throated diver only; Dornoch Firth and Loch Fleet SPA and Ramsar, breeding osprey only; golden eagle; red-throated diver.
Balblair Wind Farm	1.51 km	Scoping Opinion issued	(These features were identified in the scoping report): Strath Carnaig and Strath Fleet Moors SPA / SSSI, breeding hen harrier; Lairg and Strath Brora Lochs SPA / SSSI, breeding black-throated diver; Caithness and Sutherland Peatlands SPA and Ramsar, breeding black-throated diver only; Dornoch Firth and Loch Fleet SPA and Ramsar, breeding, osprey only; nonbreeding: bar-tailed godwit, curlew, dunlin, greylag goose, oystercatcher, redshank, scaup, teal, wigeon, and a non-breeding waterfowl assemblage. Morangie Forest SPA - approximately 14.6 km from the Site and designated for breeding capercaillie. Moray Firth SPA - approximately 19 km from the Site and designated for breeding shag, and non-breeding common scoter, eider, goldeneye, great northern diver, long-tailed duck, red-breasted merganser, red-throated diver, scaup, shag, Slavonian grebe and velvet scoter.
Lairg II Wind Farm	3.0 km	Consented	Data not available.
Lairg II Wind Farm UGC connector	4.5 km	Permitted Development	Strath Carnaig and Strath Fleet Moors SPA / SSSI, breeding hen harrier; Caithness and Sutherland Peatlands SPA, SAC, Ramsar.
Chleansaid Wind Farm	20 km	Consented	Caithness and Sutherland Peatlands SPA, SAC, Ramsar, greylag goose, breeding black-throated diver.

Development Name and Type	Nearest point to Proposed Development	Application Status	Ornithology Features Identified in neighbouring EIA reports
			Lairg and Strath Brora Lochs SPA and SSSI, breeding black-throated diver; Strath Carnaig and Strath Fleet Moors SPA / SSSI, breeding hen harrier; Dornoch Firth and Loch Fleet SPA and Ramsar, breeding osprey.
Strath Tirry Wind Farm	16.0 km	Proposed	Lairg and Strath Brora Lochs SPA and SSSI, breeding black-throated diver; Strath Carnaig and Strath Fleet Moors SPA / SSSI, breeding hen harrier.

Spittal to Loch Buidhe to Beauly 400 kV OHL

Referred to as the Spittal to Loch Buidhe to Beauly 400 kV OHL Project and will pass through the local planning authority area of Highland. The development comprises the following elements:

- construction of approximately 95 km of a new 400 kV double circuit steel lattice OHL between the new substation sites proposed at Spittal (Banniskirk 400 kV Substation) and Loch Buidhe (Carnaig 400 kV Substation);
- construction of approximately 75 km of a new 400 kV double circuit steel lattice OHL between the new substation sites proposed at Loch Buidhe (Carnaig 400 kV Substation) and Beauly (Fanellan 400 kV Substation);
- rationalisation and crossings of the existing transmission network; and
- associated ancillary works.

The Beauly to Spittal OHL is not currently known to the planning system, other than through public consultations undertaken by SSEN Transmission. Data is currently being gathered to inform the EIA for this development, including the area of the line within 10 km of the Proposed Development pending full assessment in the Autumn of 2024.

Key impacts that are anticipated to arise for the proposed OHL potentially include bird mortality during construction and through collision impacts, loss of supporting habitat and disturbance and displacement impacts. Loss of habitats are likely to arise within the footprint of the steel lattice towers and a loss of woodland / forestry within the operational corridor of the OHL, assumed to be an 80 m wide corridor. Access to each steel lattice tower will be required whereby a temporary access track with associate loss of habitat will likely be required. Given the presence of the existing Loch Buidhe Road, existing substation access road and associate forestry tracks, the area of habitat lost to access tracks is anticipated to be relatively low in the vicinity of the Proposed Development.

Standard mitigation as applied for the Proposed Development will also apply to the Beauly to Spittal OHL, minimising the potential impacts on birds during construction (through implementation of the Bird SPP) and the effects of more environmentally hazardous construction activities (through implementation of GEMPs).

In the vicinity of the Proposed Development, felling of plantation woodland for access and along the operational corridor of the OHL will result in a cumulative reduction in the area of plantation forestry with the Strath Carnaig and Strath Fleet Moors SPA / SSSI. Woodland cover lost to both schemes will be subject to compensatory planting, where possible in the local area although the opportunity for planting to be undertaken outside of the SPA / SSSI will be investigated.

Given the increase in open habitats associated with the Proposed Development, changes in habitat are likely to have an overall **Minor Positive Cumulative Effect** on supporting habitats for hen harrier and merlin.

The OHL has the potential to result in collision impacts on a number of bird species, including hen harrier as a qualifying interest feature of the Strath Carnaig and Strath Fleet Moors SPA / SSSI. The results of collision impacts will be assessed in the EIAR for the OHL, however given lack of collision impacts associated with the Proposed Development, and the implementation of mitigation to avoid mortality related to construction activity, cumulative mortality effects are not predicted.

Communications Mast 22/05825/FUL

The application seeks planning permission for the installation of a 25 m tall lattice, telecommunications tower and ancillary development including, construction of approximately 230 m of access track, cabinets, gantries, solar arrays and back-up generator, all enclosed within a timber fenced compound. Planning permission was granted in July 2023 with a condition that the development must commence within three years.

Assuming a worst case, where construction of the Proposed Development and the communications mast overlap, it is anticipated the duration of overlap would be limited and likely occur during preparatory works / site setup for the Proposed Development. Construction of the communications mast has a relatively small footprint.

The area of habitat lost to access tracks is anticipated to be relatively low in the vicinity of the Proposed Development at 0.14ha.

Key impacts anticipated to arise are disturbance to breeding and foraging hen harrier (the qualifying feature of the Strath Fleet and Strath Carnaig SPA), during the construction phase. Mitigation will comprise pre-construction surveys for hen harrier, the minimising the potential impacts on birds during construction (through implementation of the Bird SPP) and the effects of more environmentally hazardous construction activities (through implementation of GEMPs).

The felling of plantation woodland in order to create the access track and footprint for the tower mast will in turn be replaced with a mixture of (open) heather moorland and as such, changes in habitat are likely to have an overall **Minor Positive Cumulative Effect** on supporting habitats for hen harrier.

Carnaig – Loch Buidhe UGC

The proposed UGC will be installed under the Applicant's Permitted Development rights and as such is not known to the planning system.

The proposed cable will be approximately 200 m long with an assumed method of installation being cut and fill trench of 0.55 m width. The assumed working width for installation of the cable is 30 m. It is assumed that installation of the cable will be undertaken concurrently with the Proposed Development and as such impacts south of the forestry track will have been accounted for through assessment of the Proposed Development. North of the forestry track mixed woodland planting associated with the existing Loch Buidhe Substation will be lost. Assuming a 30 m working width for construction of the UGC and a 16 m stand off for the operational cable an assumed approximate 0.16 ha permanent loss of mixed woodland will occur as a result of the operational cable, with the remaining area cleared temporarily.

Given the nature of the permitted development, subject to works being conducted in accordance with the guidance on prevention of disturbance to potentially breeding and / or foraging by hen harrier, specifically with works conducted outwith the breeding season and in accordance with the applicant's own Species Protection Plan, the development is assessed as not significant and would lead to **no cumulative impacts**.

Acheilidh Wind Farm

A proposed 12 turbine wind farm located approximately 1.4 km from PAN Boundary at its closest point and immediately adjacent (0.1 km) to the Strath Carnaig and Strath Fleet Moors SPA / SSSI. No significant effects

were identified in the EIAR for Acheilidh Wind Farm on bird receptors. As such, the cumulative impacts upon birds with the Proposed Development are assessed as **not significant**.

Balblair Wind Farm

A proposed wind farm, for up to nine turbines, located approximately 1.5 km west of the PAN Boundary and approximately 1 km to the west of the Strath Carnaig and Strath Fleet Moors SPA / SSSI. The development is at a relatively early stage, and only a scoping opinion has been issued to date. Insufficient information is therefore available on any significant environmental effects. As a result, an assessment of the cumulative effects could not be undertaken.

Lairg II Wind Farm

A consented 10 turbine wind farm located 4.5 km to the north west of the Proposed Development, with proposed additional 12 turbines as part of the Lairg III extension. The EIA states that there will be no likely significant effects (including cumulatively) on bird receptors. As such the cumulative impacts upon birds with the Proposed Development are assessed as **not significant**.

Lairg II Wind Farm UGC Connector

A permitted development of a 500 m underground cable (UGC) and sealing end compound located approximately 4.5 km from the PAN Boundary and located 500 m from the boundary of the Strath Carnaig and Strath Fleet Moors SPA / SSSI. The development did not require formal planning application. NatureScot recommended that the development employ existing survey data from Lairg II Wind Farm and the Dalchork to Loch Buidhe OHL. The development was deemed to have **no impact** on protected bird receptors, and therefore cumulative impacts assessed as **not significant**.

Chleansaid Wind Farm

Chleansaid Wind Farm is a consented wind farm located approximately 20 km north of the closest point of the PAN Boundary and approximately 7.9 km north of the Strath Carnaig and Strath Fleet Moors SPA / SSSI. No significant cumulative effects were identified in the EIAR on identified bird receptors, which were defined in the EIA as greylag goose and black-throated diver. As such, the cumulative impacts upon birds with the Proposed Development are assessed as **not significant**.

Strath Tirry Wind Farm

Strath Tirry Wind Farm is a proposed four turbine wind farm located approximately 16 km north of the PAN Boundary, and approximately 5.23 km north of the edge of the Strath Carnaig and Strath Fleet Moors SPA / SSSI. No significant effects were identified in the EIAR on bird receptors. As such, the cumulative impacts upon birds within the PAN Boundary are assessed as **not significant**.

8.14 Mitigation

The Proposed Development design has sought to locate infrastructure in habitat of less value to ecological features, but nonetheless is situated within the Strath Carnaig and Strath Fleet SPA / SSSI. During the site selection phase of the Proposed Development, environmental, technical and economic constraints were considered so as to ensure that the Proposed Development was the most suitable option. As such, the Proposed Development avoids areas of high sensitivity where possible and mitigates against impacts where avoidance is not possible. Mitigation for the Proposed Development is split into two categories, embedded mitigation and additional mitigation, which are described in the following sections.

Embedded Mitigation

Embedded mitigation measures will be implemented during the both the design and construction phases of the Proposed Development, including the timing of installation and careful siting of permanent and temporary structures to avoid or minimise interaction with sensitive ornithological receptors. Compliance with project wide and site-specific environmental management procedures, with reference to SSEN Transmission's CEMP (**Volume 4 Appendix 2.2** Construction Environmental Management Plan) will also be implemented. This will outline the proposed approach to construction methods and environmental protection during construction of the Proposed Development, including (but not limited to) details of ornithological constraints and measures (e.g., site working hours, control of light spill, noise emissions, pollution, dust management, avoiding incursion into habitats to be retained), procedures for surface water management and, pollution prevention guidelines.

SSEN Transmission have established GEMPs (**Volume 4 Appendix 2.1**), which will be implemented through the CEMP Based on ornithologically sensitive receptors identified in this Impact Assessment, relevant GEMPS include, but are not limited to:

- Working in or Near Water;
- Working in Sensitive Habitats;
- Oil Storage and Refuelling;
- Soil Management;
- Watercourse Crossings;
- Biosecurity (On Land); and
- Restoration.

Measures to protect ornithology will include a pre-construction site walkover survey of the Proposed Development by a suitably qualified ornithologist, focussing on ornithological features to be directly and indirectly impacted by the Proposed Development. The purpose of the survey would be to confirm any changes to and update of the baseline. Should a species be identified, the appropriate species protection plans (SPPs), included within the GEMP (**Volume 4 Appendix 2.1** SSEN Transmission GEMPs and SPPs), would be followed during construction of the Proposed Development.

SSEN Transmission have well-established SPPs for protected species, which have been developed in consultation with NatureScot and are currently being used on other SSEN Transmission projects (**Volume 4 Appendix 2.1**). Each SPP provides details on what actions are required should a species be encountered during construction, specifically identifying minimum distances for disturbance of nesting birds. It is recommended that these SPP's are kept under review to ensure that they are in line with current guidance, and, if appropriate, updated accordingly.

A CTMP (**Volume 4 Appendix 12.1** Construction Traffic Management Plan) for the Proposed Development will also be in place in advance of the start of construction. Whilst it is not a purely ornithology-focused plan it will help to avoid / manage effects on ornithological features in the surrounds of the areas to be directly affected, for example to prevent spillages, discharges, and unnecessary incursion into habitats, as well as implementing speed limits etc. which may avoid direct mortality of species associated with vehicle collisions.

Additional Mitigation

As no significant impacts are predicted, no additional mitigation measures are proposed.

8.15 Summary

This Chapter has considered the potential effects of the Proposed Development on the ornithological receptors. Direct observations and desk-based information confirmed the presence of protected species within 2 km of the

PAN Boundary and the wider area. Pre-construction checks to confirm that no protected species are present prior to construction commencing are recommended.

The Proposed Development has followed the mitigation hierarchy to avoid harm to ornithological features through careful site selection and mitigating effects through embedded and additional mitigation to ensure there are no residual significant effects.

Compensation for the permanent loss of habitat due to the Proposed Development has been identified and offers potential to provide Biodiversity Net Gain; additional habitat creation is proposed which will include the creation of suitable habitat for hen harrier foraging and breeding.

Following the implementation of the proposed mitigation measures outlined throughout this Chapter, **no significant residual effects** are predicted on the majority of sensitive bird receptors. A **Minor Positive Effect** is predicted for hen harrier and on the Strath Carnaig and Strath Fleet Moors SPA / SSSI as a result of the proposed habitat creation measures associated with peatland restoration.