



Report to inform Habitat Regulations Appraisal (HRA) Carnaig 400kV Substation

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ACRONYMS AND ABBREVIATIONS

Acronym	Description
AA	Appropriate Assessment
AOI	Area of Influence
BLN4	Beauly to Loch Buidhe 400 kV reinforcement
cSAC	Candidate Special Area of Conservation
EC	European Commission
ECoW	Ecological Clerk of Works
ERM	Environmental Resources Management
GWDTE	Groundwater Dependent Terrestrial Ecosystems
HBRG	Highland Biological Recording Group
HRA	Habitat Regulations Appraisal
HRSG	Highland Raptor Study Group
IROPI	Imperative Overriding Public Interest
JNCC	Joint Nature Conservation Committee
Km	Kilometre
kV	Kilovolt
LSE	Likely Significant Effect
NVC	National Vegetation Classification
OHL	Overhead Line
RSBP	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SBL	Scottish Biodiversity List
SNH	Scottish National Heritage
SPA	Special Protection Area
SSEN Transmission	Scottish and Southern Electricity Networks Transmission
SSSI	Site of Special Scientific Interest
THC	The Highland Council

Acronym	Description
UGC	Underground Cable
UK	United Kingdom

1. INTRODUCTION

Environmental Resources Management Ltd (ERM) has been commissioned by Scottish & Southern Electricity Networks (SSEN) Transmission to assess the potential impacts associated with the construction of a new 400 kilovolts (kV) substation in proximity to the existing Loch Buidhe 132/275kV Substation site. SSEN Transmission propose to construct a new 400 kV electricity substation (hereafter referred to as 'the Proposed Development') adjacent to the existing 275 kV Loch Buidhe Substation under the Town and Country Planning (Scotland) Act 1997 (as amended)¹.

This document has been produced to inform the Habitats Regulations Appraisal (HRA) process for the Proposed Development. It provides information to enable the screening of the Proposed Development with respect to its potential to have a likely significant effect (LSE) on European and Ramsar sites of nature conservation importance.

¹ UK Government Legislation (1997). Town and Country Planning (Scotland) Act 1997. Available online at:

2. PROJECT DESCRIPTION

2.1 INTRODUCTION

This Chapter provides a description of the physical characteristics of the Proposed Development and the main construction and operational activities for the purpose of identifying and assessing potential environmental effects.

2.2 PROJECT BACKGROUND

Scottish Hydro Electric Transmission plc, operating and known as Scottish and Southern Electricity Networks Transmission (SSEN Transmission), is the electricity transmission licence holder in the north of Scotland and has a duty under Section 9 of the Electricity Act 1989² to 'develop and maintain an efficient, coordinated and economical system of electricity transmission and to facilitate competition in the generation and supply of electricity.' Due to the requirement to connect an increasing volume of renewable energy generation in the north east of Scotland to the electricity network, significant upgrades are required to the transmission network.

Renewable energy generation volumes connecting to the SSEN Transmission licensed area, particularly offshore wind, are expected to increase towards the end of the decade and into the 2030s. Most of this is likely to connect to the far north of the SSEN Transmission network thus requiring additional capacity to the north of Beaully to meet this demand. The Network Options Assessment (NOA) undertaken by the National Grid Electricity System Operator (NGESO) is one of the documents that sit under the Pathway to 2030: A Holistic Network Design (HND)³ to support offshore wind deployment for net zero. The NOA 2021/22 Refresh is an update to the NOA 2021/22 that was published in January 2022 in accordance with standard condition C27 of the NGESO transmission license. It now fully integrates the HND's offshore network and confirms the wider onshore network requirements.

Together, the HND and the NOA 2021/22 Refresh have identified 94 schemes that are required to meet the Government's ambition for 50 GW of offshore wind by 2030. This comprises of 56 schemes that have been identified as HND essential options (options needed for 2030 for delivery of 50 GW offshore wind), and 38 optimal schemes from this NOA 2021/22 Refresh analysis.

NOA Option Beaully to Loch Buidhe 400 kilovolt (kV) reinforcement (BLN4) identifies the requirement to reinforce the electricity transmission network between Beaully Substation and Loch Buidhe Substation. This network reinforcement also triggers the requirement to upgrade the existing substation at Loch Buidhe to be capable of operating at 400 kV.

The scope of this HRA is the new substation proposed at Loch Buidhe, henceforth referred to as Carnaig 400 kV Substation. The new 400 kV overhead line (OHL) connecting Spittal, Loch Buidhe and Beaully, and the proposed substations at Beaully and Spittal are being progressed through separate consents.

² UK Government Legislation (1989). Electricity Act 1989. Available online at: <https://www.legislation.gov.uk/ukpga/1989/29/section/9>

³ National Grid ESO (2022). Pathway to 2030: A holistic network design to support offshore wind deployment for net zero. Available online at: <https://www.nationalgrideso.com/document/262676/download>

2.3 THE PROJECT

As part of the works to reinforce the electricity transmission network, a new 400 kV substation will be required adjacent to the existing 275 kV Loch Buidhe Substation. This is within the Strath Carnaig and Strath Fleet Moors Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI).

2.4 THE PROPOSED DEVELOPMENT

The Proposed Development is located approximately 9.5 km north east of Bonar Bridge. The specific location of the proposed Carnaig 400 kV Substation (hereafter referred to as the 'the Site') is adjacent to the south western boundary of the existing 275 kV Loch Buidhe Substation at central grid reference NH 65053 97458. The Site is located within an area of commercial forestry, which has been partially felled. Lochbuie Road runs to the west of the Site.

The Proposed Development consists of:

- A new bellmouth and access road to the Proposed Development from the public highway;
- A temporary construction compound;
- A drainage and a SuDS retention basin with access track to the west;
- A new level platform (approximately 620 meter (m) by 320 m) to be delivered through cut and fill earthworks upon which a concrete plinth will be formed. An outdoor Air Insulated Switchgear (AIS), 400 kV substation complete with 400 kV double busbar arrangement will be installed upon the concrete plinth;
- Installation of two new Super-grid Transformers (SGTs) and other associated equipment;
- A new substation control building (approximately 20 m by 48 m);
- Installation of underground cable (UGC) to connect the Proposed Development to the existing Loch Buidhe Substation;
- Erection of a 2.4 m high palisade security fencing with a 1.6 m electrified anti-climbing extension security fence around the perimeter of the platform; and
- Post construction mitigation measures including peatland restoration and landscape mitigation planting; and
- Biodiversity enhancement works including native species planting and habitat creation.

2.5 SITE TRAFFIC

The construction phase will give rise to regular numbers of staff transport movements, with work crews travelling to the work site. There will be a single temporary compound area, with a safe area for parking away from the public highway.

Vehicle movements will be required to construct new or upgraded access roads; deliver the foundation materials to site; deliver and collect materials and construction plant from the main site compound.

2.6 SITE ESTABLISHMENT AND LAYDOWN AREA

A temporary construction compound is proposed along an access track which will link to Lochbuie Road. The existing Loch Buidhe Substation also has a large car park which may be used.

2.7 PROGRAM AND HOURS OF WORKING

Subject to planning permission and other required consents and approvals being granted the indicative construction program for the Proposed Development is as follows:

- Tree felling and vegetation clearance: September 2025;
- Construction start: January 2026; and
- Operation: January 2029.

The detailed construction phasing and program are subject to change as the design progresses and necessary consents and wayleaves are agreed.

Construction working is likely to be during daytime periods only. Working hours are currently anticipated between approximately 07.00 to 19.00 in summer and 07.30 to 17.00 (or within daylight hours) in winter and are proposed for seven days a week. Any out of hours working will be agreed in advance with The Highland Council (THC).

2.8 REQUIREMENT FOR HABITATS REGULATION APPRAISAL

Where a development has the potential, either alone or in combination with other plans or projects, to result in likely significant effects (LSEs) on one or more European sites ⁽⁴⁾ ⁽⁵⁾, it is subject to the requirements of The Conservation of Habitats and Species Regulations (2017) (the Habitats Regulations) with regards to Section 37 developments, and the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland)⁶ for Town and Country Planning developments.

If a development is likely to affect a European site and / or a European marine site, a report must be provided with the application showing the site(s) that may be affected together with sufficient information to enable the Competent Authority to undertake a Habitat Regulations Appraisal (HRA). For the Proposed Development, the Competent Authority is THC, advised by NatureScot.

(4) These are Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs). this protection is also extended to proposed SPAs and proposed SACs. Where Ramsar site interests coincide with qualifying interests protected under an SPA or an SAC it is Scottish government policy to extend the same protection to these features.

(5) Scottish Government (2019) Implementation of Scottish Government policy on protecting Ramsar sites. Guidance Document.

⁶ UK Government Legislation (1994). The Conservation (Natural Habitats, &c.) Regulations 1994. Available at: <https://www.legislation.gov.uk/ukxi/1994/2716/contents/made>.

3. METHODOLOGY

The approach to the HRA has followed that set out in the Conservation of Habitats and Species Regulations 2017, as amended ('The Habitats Regulations') and NatureScot guidance on the consideration of plans or projects affecting Special Conservation Areas (SACs) and SPAs ^(7, 8). It has also taken account of a range of other guidance material including that produced by the European Commission (EC) (2018a) ⁽⁹⁾, (2018b) ⁽¹⁰⁾, (2007) ⁽¹¹⁾; (2002) ⁽¹²⁾.

3.1 OVERVIEW OF HRA PROCESS

The HRA process comprises four main stages, these are:

- **Stage 1 Screening** to identify the likely effects of a project on a European site and consider whether the effects are likely to be significant;
- **Stage 2 Appropriate Assessment** to determine whether the integrity of the European site will be adversely affected by the Project;
- **Stage 3 Assessment of Alternative Solutions** to establish if there are any that will result in a lesser effect on the European site; and
- **Stage 4 Imperative Reasons of Overriding Public Interest (IROPI) and Compensatory Measures** to establish whether it is necessary for the project to proceed despite the effects on the European site, and to confirm that necessary compensatory measures are in place to maintain the coherence of the European site network.

Each of the stages is discussed in more detail in the following sections.

3.1.1 STAGE 1 - SCREENING

The purpose of the screening stage is to identify likely impacts upon European sites, as a result of either a project alone or in combination with other plans and projects and consider whether these impacts are likely to be significant.

In order to determine if the Proposed Development is likely to have any significant effects on the designated sites the following issues have been considered:

- could the proposals affect the qualifying interest and are they sensitive / vulnerable to the effect;
- the probability of the effect happening;
- the likely consequences for the site's conservation objectives if the effect occurred; and
- the magnitude, duration and reversibility of the effect.

The objective of the screening stage is to conclude whether;

1. no likely significant effect will occur;

(7) SNH (2014) *Natura 2000 Casework Guidance – How to consider plans and projects affecting Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)*.

(8) SNH (2019) *Guidance Note - The handling of mitigation in Habitats Regulations Appraisal - the People Over Wind CJEU judgement*

(9) European Commission (2018) *Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*. EC

(10) European Commission (2018) *Guidance on Energy Transmission Infrastructure and EU nature legislation*. EC

(11) European Commission (2007) *Guidance Document on Article 6(4) of the Habitats Directive 92/43/EEC*. EC

(12) European Commission (2002) *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites. Methodological Guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. EC

2. a likely significant effect will occur; or
3. it cannot be concluded that there will be no likely significant effect.

If the screening stage concludes the second or third outcome, then an Appropriate Assessment (AA) is triggered. The implications of the identified likely significant effect(s) on the European designated site, in view of its specific conservation objectives and qualifying features and the nature, scale and location of the potential impact should be assessed. The term Habitat Regulations Appraisal encompasses both the initial screening stage and, where required, the follow-on AA stage.

3.1.2 STAGE 2 – APPROPRIATE ASSESSMENT

An AA is required to determine potential effects of a project upon the integrity of European sites. It should provide and analyse sufficient information to allow THC, as the Competent Authority, to determine whether aspects of the project will or will not adversely affect the integrity of European sites. AA should exclusively focus on the qualifying features of the European site and it must consider any impacts on the conservation objectives of those qualifying interests. It should also be based on and supported by evidence that is capable of standing up to scientific scrutiny. EC guidance states that without proper reasoning the assessment does not fulfil its purpose and cannot be considered 'appropriate' and therefore cannot be consented. In terms of what is reasonable, guidance states "*to identify the potential risks, so far as they may be reasonably foreseeable in the light of such information as can be reasonably obtained*" ⁽¹³⁾.

In undertaking an AA, there are two phases;

- a scientific evaluation of all the likely significant effects of the project on the relevant qualifying interests of a European site; and
- a conclusion based on outcomes of the scientific evaluation whether the integrity of a European site will be compromised.

The emphasis for AA is to prove that no adverse impacts due to a project will occur which would undermine a European sites integrity.

Site integrity can be defined as:

"the coherence of its ecological structure and function, across its whole area that enables it to sustain the habitat, complex of habitats and / or the levels of populations of the species for which it was classified" ⁽¹⁴⁾.

The assessment will also take into account any avoidance or mitigation measures which will be implemented to avoid or reduce the level of impact from the project. The Competent Authority may also consider the use of conditions or restrictions to help avoid adverse effects on site integrity.

If the AA concludes that there will be an adverse effect on the integrity of the European site, or that there is uncertainty and a precautionary approach is taken, then consent can only be

(13) Scottish Natural Heritage (SNH) (2001) Natura Casework Guidance: Consideration of Proposals Affecting SPAs and SACs. SNH Guidance Note Series. SNH

(14) Scottish Natural Heritage (SNH) 2014 Natura Casework Guidance: How to consider plans and projects affecting Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). SNH

granted if there are no alternative solutions, IROPI is applicable and compensatory measures have been secured.

3.1.3 STAGE 3 – ASSESSMENT OF ALTERNATIVE SOLUTIONS

All feasible alternatives have to be analysed to ensure that there are none which “*better respect the integrity of the site in question*” and its contribution to the overall coherence of the Natura 2000 network (EC, 2007). Alternatives could include the location of the site, its scale and design, and the way in which it is constructed and operated. The ‘zero’ option also has to be considered.

The comparisons of alternatives should not allow other assessment criteria (e.g., economics) to overrule ecological criteria (EC, 2007). However, the same guidance also refers to the opinion for the case C-239/04 ⁽¹⁵⁾, where the opinion of the Advocate General was that “*the choice does not inevitably have to be determined by which alternative least adversely affects the site concerned. Instead, the choice requires a balance to be struck between the adverse effect on the integrity of the SPA and the relevant reasons of overriding public interest*”.

3.1.4 STAGE 4 - IMPERATIVE REASONS FOR OVERRIDING PUBLIC INTEREST AND COMPENSATION MEASURES

Where a development has an adverse effect on the integrity of a European site and there are no alternative solutions consent can only be granted if there are imperative reasons of overriding public interest, including those of social or economic nature which would require the realisation of a project. A definition of ‘overriding public interest’ does not occur in the directive, however examples considered are:

- human health, public safety or beneficial consequences of primary importance to the environment; or
- any other reasons which are considered by the Competent Authority to be IROPI taking account of the opinion of the EC; and
- if the site does not host a priority habitat or species then IROPI must be demonstrated, and the reasons can include those of a social or economic nature.

If the importance of the project is deemed to outweigh the effects which will result on the European site, and there are no alternatives, compensatory measures must be secured before consent is granted. Compensatory measures are independent of the project and are intended to offset the adverse effects of a project, corresponding specifically to the negative effects on habitats and species concerned.

To be acceptable, compensatory measures should:

- take account of the comparable proportions of habitats and species which are adversely affected;
- be within the same bio-geographical range within which the European site is located;
- provide functions which are comparable to those which justified the selection of the original site; and
- have clearly defined implementation and management objectives so the measures can achieve the aim of maintaining the overall coherence of the network.

(15) Commission of the European Communities V Portuguese Republic [2006] Case C.239/04

4. ENVIRONMENTAL BASELINE

The Proposed Development baseline has been informed by a range of published and publicly available data including:

- NatureScot SiteLink ¹⁶- data on designated sites and notable species in Scotland;
- NatureScot Scottish Biodiversity List (SBL) ¹⁷ - a list of species which are important for Scotland's biodiversity;
- Scotland's Environment Web Map ¹⁸ - an interactive map which shows biodiversity areas across Scotland;
- National Biodiversity Network (NBN) Atlas ¹⁹ - a national interactive map that shows biodiversity areas;
- RSPB Bird Species data, for relevant bird species within a 6 km buffer from the Proposed Development, and proposed LT132 Spittal – Loch Buidhe – Beauly 400 kV Reinforcement Project;
- Highland's Biological Recording Group (HBRG) data on protected species between the proposed Spittal – Loch Buidhe – Beauly OHL 400 kV Reinforcement
- Highlands Raptor Study Group (HRSG) data, containing records of Schedule 1 raptors relevant to the Proposed Development area.

The following site surveys have been undertaken for the Proposed Development:

- UK Hab habitat and protected species surveys were undertaken during June 2024;
- Breeding bird walk over surveys: May – July 2023 and April – July 2024
- Breeding diver surveys: May – July 2023
- Breeding raptor surveys: April – July 2024
- Wintering raptor roost surveys: November 2023 – April 2024
- Vantage Point surveys for the associated LT132 Spittal – Loch Buidhe – Beauly 400 kV Reinforcement Project: May 2023 ongoing, covering the northern part of the Proposed Development; and
- Ecological Clerk of Works (ECoW) walk over check surveys prior to ground investigation (GI) works associated with the Proposed Development.

(16) NatureScot SiteLink. Available at <https://www.nature.scot/information-hub/snhi-data-services>

(17) NatureScot Scottish Biodiversity List. Available at <https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy/scottish-biodiversity-list>

(18) Scotland's Environment Web Map. Available at <https://map.environment.gov.scot/sewebmap/>

(19) National Biodiversity Network Atlas. Available at <https://nbnatlas.org/>

5. SCREENING OF EUROPEAN SITES AND FEATURES

5.1 APPROACH TO INITIAL SCREENING

This stage is essentially a site-identification / selection process which effectively identifies all those designated sites and the relevant features which are at risk of LSE, should those features be sensitive to the relevant effects.

The criteria used in this first stage of selection takes account of the location of the European sites (including Ramsar sites) in relation to the Project, the area of influence (AOI) of potential impacts associated with the Project and the ecology and distribution of qualifying features. These criteria are described in **Table 5.1**.

Due to the nature and location of the Proposed Development, only terrestrial European sites or sites with bird species qualifying interest features have been included in the initial screening – marine SACs have been screened out due to the lack of impact pathway.

TABLE 5.1 CRITERIA USED FOR INITIAL SCREENING OF RELEVANT EUROPEAN SITES

CRITERIA USED FOR SCREENING OF RELEVANT EUROPEAN SITES	
1	European or Ramsar site with physical overlap with the Project location,
2	European or Ramsar site with adjoining 'functionally linked habitat' with physical overlap with the Proposed Development.
3	European or Ramsar site with a qualifying feature located within the potential AOI associated with the Project; the AOI is considered to be a radius of 20 km of the Proposed Development (based on a maximum foraging range of 20 km for pink-footed geese and greylag geese).
4	European or Ramsar site with qualifying mobile species whose range (e.g., foraging, migratory, overwintering, breeding or natural habitat range) may interact with potential effects from the Proposed Development.

Details of European Protected sites initially screened in under one or more of the above criteria are provided in **Table 5.2** and illustrated in **Figure 5.1**. The qualifying features for each site are detailed, using publicly available information obtained from the Magic²⁰, SiteLink²¹ and JNCC²² websites. The most recent SPA citations available on NatureScot SiteLink have been used to inform the HRA.

Connectivity with SPAs has been informed by NatureScot Guidance²³.

(20) The MAGIC website provides geographic information about the natural environment from across government. The information covers rural, urban, coastal and marine environments across Great Britain. It is presented in an interactive map which can be explored at <http://www.magic.gov.uk/>

(21) NatureScot: <https://sitelink.nature.scot/home>

(22) Joint Nature Conservation Committee: <http://jncc.defra.gov.uk/page-4>

(23) Scottish Natural Heritage (2016) Assessing Connectivity with Special Protection Areas (SPAs) Guidance



TABLE 5.2 INITIAL SCREENING OF RELEVANT EUROPEAN SITES

European Site Name (site code)	Area of Site (ha)	Approximate Distance from Project (km)	Consideration of LSE	Screened in/out of Assessment
Special Protection Area (SPA)				
Strath Carnaig and Strath Fleet Moors (UK9020300)	14,703.6	Within Site Boundary	Annex 1 species Breeding hen harrier (<i>Circus cyaneus</i>). This site supports 12 breeding pairs (representing 2.5% of the GB population of 483 pairs).	Screened in – within SPA boundaries.
Dornoch Firth and Loch Fleet (UK9001622)	6,513.27	7.45	Annex 1 species Breeding osprey (<i>Pandion haliaetus</i>). One breeding pair, 1% of the GB population. Non-breeding bar-tailed godwit (<i>Limosa lapponica</i>). 1,184 individuals, 2% of the GB population. Species of Migratory Importance Non-breeding greylag goose (<i>Anser anser</i>) 1,146 individuals, 1% of the Icelandic / UK / Ireland biogeographic population. Non-breeding wigeon (<i>Anas penelope</i>). 15304 individuals, 2% of the W Siberia, NW & NE Europe biogeographic population. An assemblage of over 20,000 wildfowl over winter.	Screened in – within 10 km of designated site, and core ranges of osprey (10 km) and greylag goose (15-20 km).
Lairg and Strath Brora Lochs (UK9001611)	286.14	8.91	Annex 1 species Breeding black-throated diver (<i>Gavia arctica</i>). Six pairs, 3% of the GB population.	Screened in - within core range of black-throated diver (10 km).
Caithness and Sutherland Peatlands (UK9001151)	147,726.55	12.46	Annex 1 species Red-throated diver (<i>Gavia stellata</i>). 46 pairs, 3.5% of the GB population. Black-throated diver. 26 pairs, 15% of the GB population. Hen harrier. 14 pairs, 2.8% of the GB population. Golden eagle (<i>Aquila chrysaetos</i>). Five pairs, 1% of the GB population. Merlin (<i>Falco columbarius</i>) 54 pairs, 4% of the GB population. Golden plover (<i>Pluvialis apricaria</i>). 1,064 pairs, 5% of the GB population.	Screened out due to distance.



Wood sandpiper (*Tringa glareola*). Five pairs, 40% of the GB population.
 Short-eared owl (*Asio flammeus*). 30 pairs, 2% of the GB population.
 Dunlin (*Calidris alpina schinzii*). 1,860 pairs, 20% of the GB population.

Species of migratory importance

Common scoter (*Melanitta nigra*). 21 pairs, <0.1% of the Western Siberia / Western & Northern Europe / North western Africa biogeographic population and 40.4% of the GB population.
 Greenshank (*Tringa nebularia*). 653 pairs, 0.9% of the Europe / Western Africa biogeographic population and at least 59.4% of the GB population.
 Wigeon. 43 pairs, <0.1% of the Western Siberia / North western/ North eastern Europe biogeographic population and 10.8% of the GB population.

Morangie Forest (UK9001791)	3,510.85	13.05	Annex 1 species Breeding capercaillie (<i>Tetrao urogallus</i>) 30 individuals, 2% of the GB population.	Screened out due to distance.
Moray Firth (UK9020313)	176,218.12	14.77	Annex 1 species Great northern diver (<i>Gavia immer</i>). 144 individuals, 5.8% of the GB population Red-throated diver. 324 individuals, 1.9% of the GB population. Slavonian grebe (<i>Podiceps auratus</i>). 43 individuals, 3.9% of the GB population. Species of migratory importance Greater scaup (<i>Aythya marila</i>). 930 individuals, 17.9% of the GB population. Common eider (<i>Somateria mollissima</i>). Non-breeding population of 1,733 individuals, 2.9% of the GB population. Long-tailed duck (<i>Clangula hyemalis</i>). Non-breeding population of 5,001 individuals, 45.5% of the GB population. Common scoter. Non-breeding population of 5,479 individuals, 5.5% of the GB population. Velvet scoter (<i>Melanitta fusca</i>). Non-breeding population of 1,488 individuals, 59.5% of the GB population. Common goldeneye (<i>Bucephala clangula</i>). Non-breeding population of 907 individuals, 4.5% of the GB population. Red-breasted merganser (<i>Mergus serrator</i>). Non-breeding population of 151 individuals, 1.8% of the GB population.	Screened out due to distance.



European shag (*Gulosus aristotelis*). 6,462 individuals during the non-breeding season, 3.2% of the GB population. 5,494 individuals during the breeding season, 2.7% of the biogeographic population & 10.2% of the GB population.

Special Areas of Conservation (SAC)

River Evelix (UK0030254)	23.6	0.20	Qualifying Interests Freshwater pearl mussel (<i>Margaritifera margaritifera</i>).	Screened in due to proximity to the Site.
River Oykel (UK0030261)	921.46	5.52	Qualifying Interests Freshwater pearl mussel. Atlantic salmon (<i>Salmo Sal</i>).	Screened out due to distance and lack of connecting habitats.
Ledmore Wood (UK0030181)	93.15	5.98	Qualifying Interests Old sessile oak woods with holy (<i>Ilex</i>) and hard fern (<i>Blechnum</i>).	Screened out due to distance and lack of connecting habitats.
Dornoch Firth and Morrich More (UK0019806)	8,701.22	6.06	Qualifying Interests Coastal dune heathland (<i>Calluno-Ulicetea</i>). Atlantic salt meadows (<i>Glauco-Puccinellietalia</i>). Dunes with juniper thickets (<i>Juniperus spp.*</i>). Estuaries. Dune grassland. Humid dune slacks. Otter (<i>Lutra lutra</i>). Intertidal mudflats and sandflats. Common seal (<i>Phoca vitulina</i>). Reefs. Glasswort (<i>Salicornia</i>) and other annuals colonising mud and sand. Subtidal sandbanks. Shifting dunes with marram grass (<i>Ammophila arenaria</i>).	Screened out due to distance and lack of connecting habitats.
Mound Alderwoods (UK0013574)	299.52	7.45	Qualifying Interests Alluvial forests with black alder (<i>Alnus glutinosa</i>) and European ash (<i>Fraxinus excelsior</i>).	Screened out due to distance and lack of connecting habitats.



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Moray Firth (UK0019808)	151,273.98	12.29	Qualifying Interests Subtidal sandbanks. Bottlenose dolphin (<i>Tursiops truncatus</i>).	Screened out due to distance and lack of connecting habitats.
Caithness and Sutherlands Peatlands (UK0013602)	143,561.47	12.46	Qualifying Interests Blanket bog. Depressions on peat substrates (<i>Rhynchosporion</i>). Otter. Natural dystrophic lakes and ponds. Northern Atlantic wet heaths with (<i>Erica tetralix</i>). Oligotrophic to mesotrophic standing waters with vegetation of the (<i>Littorelletra uniflorae</i>) and/or of the (<i>Isoëto-Nanojuncetea</i>).	Screened out due to distance and lack of connecting habitats.
Amat Woods (UK0012762)	234.89	18.14	Qualifying Interests Caledonian forest.	Screened out due to distance and lack of connecting habitats.
Ramsar Sites				
Dornoch Firth and Loch Fleet (UK13011)	6,513.27	7.45	Ramsar Criterion 1 Estuarine alder woodland. Ramsar Criterion 2 Osprey, which forage throughout the Ramsar site. Up to six territories within feeding range, 6% of the GB population, with one pair breeding within the site, 1% of the GB population. Harbour seal. Otter. Baltic rush (<i>Juncus balticus</i>). Seaside centaury (<i>Centaureum littorale</i>). Ramsar Criterion 5 Curlew (<i>Numenius arquata</i>). 1,397 individuals, 1.0% of the GB population. Teal (<i>Anas crecca</i>). 1,592 individuals, 1.0% of the GB population. Scaup. 123 individuals, 1% of the GB population. Redshank (<i>Tringa tetanus</i>). 1,272 individuals, 1% of the GB population. Ramsar Criterion 6 Greylag goose. 1,146 individuals, 1% of the Icelandic / UK / Ireland biogeographic population.	Screened in (precaution) – within 10 km of designated site, and core ranges of osprey (10 km) and greylag goose (15-20 km).



Wigeon. 15,304 individuals, 2% of the W Siberia / NW & NE Europe biogeographic population.

Bar-tailed godwit. 1,184 individuals, 1% of the Western European biogeographic population.

Caithness and Sutherland Peatlands (UK13003) 145,960.53 12.46 km

Ramsar Criterion 4:

Goosander (*Mergus merganser*). 325 individuals, 4% of the GB population.

Eurasian Teal. 2,066 individuals, 1% of the GB population.

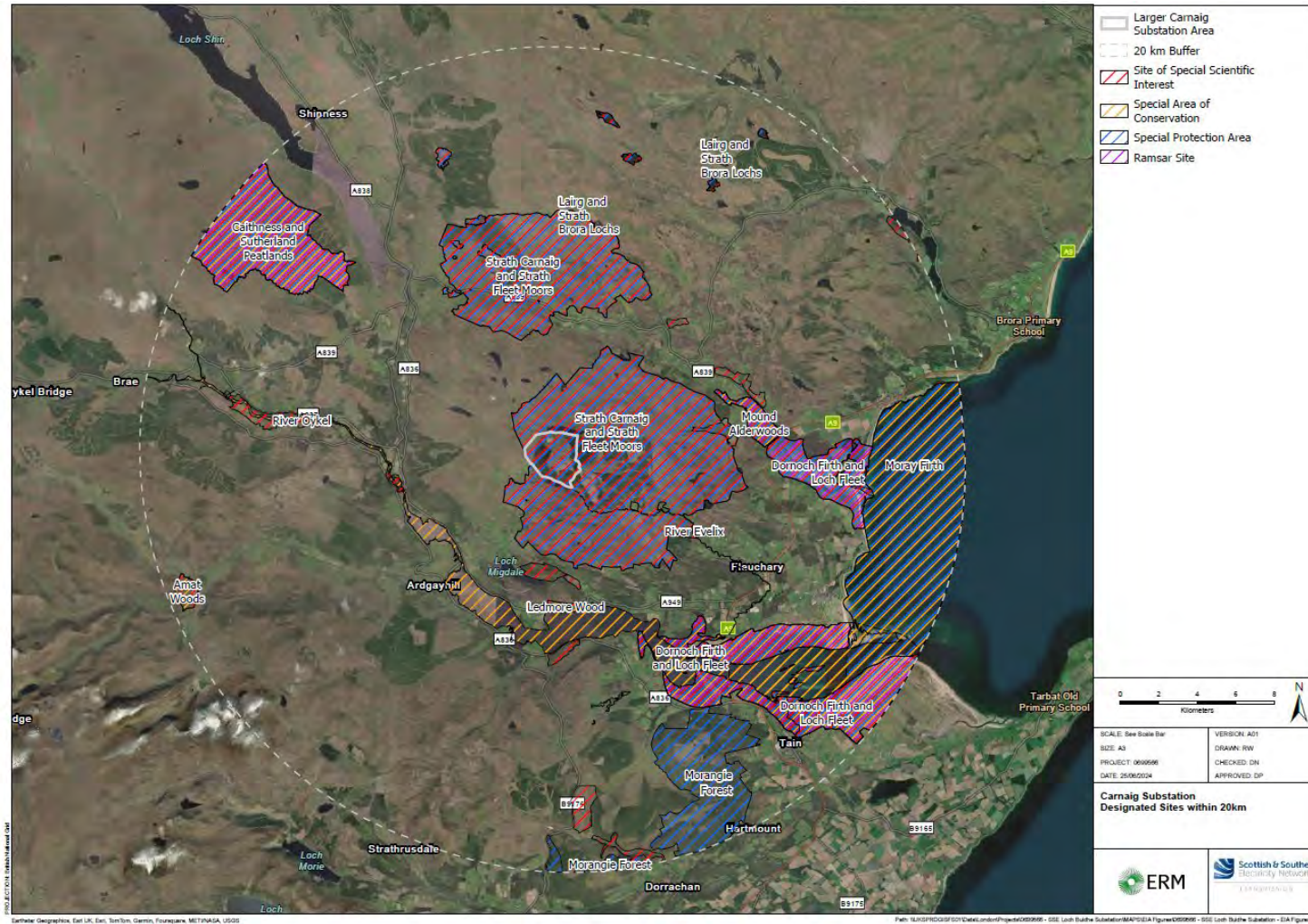
Cormorant (*Phalacrocorax carbo*). 409 individuals, 3% of the GB population.

Ramsar Criterion 6:

Red-breasted merganser. 1,184 individuals, 1% of the NW & Central Europe biogeographic population.

Screened out due to distance and lack of connecting habitats.

FIGURE 5.1 DESIGNATED SITES





5.2 EFFECTS CONSIDERED IN ASSESSMENT

The potential effects upon European site(s) as a result of the Proposed Development that have been considered within this HRA report are listed in the following sections.

Potential effects on ornithology features outside of the European sites are considered to comprise of:

- Temporary displacement of birds (disturbance and / or displacement) by construction works and operation;
- 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,
- Pollution / run off resulting in habitat impacts.

All other impacts arising from the Proposed Development are not likely to have significant effects due to the lack of connectivity and / or distance such that there is no pathway of effect between the European sites and the Proposed Development.



6. DETERMINATION OF LIKELY SIGNIFICANT EFFECTS

6.1 INTRODUCTION

The European sites initially screened in for assessment of likely significant effects (LSE) are documented in **Table 5.2**. These sites were selected for screening using the criteria outlined in **Table 5.2**. There is therefore a need to consider the potential for LSE on these sites in relation to the Project.

In addition, in **Section 5.2**, the likely effects that may result during the construction of the Proposed Development (and are relevant to the receptors being considered here) are identified to enable these to be considered. This section combines that information for the Proposed Development alone and presents the assessment of LSE, thus providing the necessary information for Stage 1 of the Habitats Regulations Appraisal process.

The assessment of LSE is based on the current understanding of the baseline environment and the scope and nature of the proposed project activities, together with the relevant information available for the designated sites. Consultee and advisor responses to this document, and refinements to the Proposed Development may change this assessment.

6.2 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS (LSE)

The assessment and conclusions, with regards to LSEs on the relevant European sites (**Table 5.2**) and the relevant features identified, has been carried out taking account of the AOI of potential impacts, location of the European sites under consideration and (where known) the distribution of qualifying features in relation to the Proposed Development. The information is presented below in **Table 6.1**. The Dornoch Firth and Loch Fleet SPA and Ramsar Site has been jointly assessed as the qualifying features are the same.



TABLE 6.1 ASSESSMENT OF LSE

Designated Site	Features Screened In	Relevant Effect	Consideration of LSE	Conclusion of LSE
Strath Carnaig and Strath Fleet Moors SPA	Breeding hen harrier	Temporary displacement of birds (disturbance and / or displacement) by construction works and operation.	<p>The Proposed Development physically overlap the SPA site. One hen harrier nest was found within 2 km of the Proposed Development. A further four nests 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. As all five nest locations are situated beyond the maximum recommended disturbance distance for the species of 750 m, Goodship (2022)²⁴, it is considered that the nest locations themselves will not be disturbed during the construction phase and the impact of construction works will be not significant.</p> <p>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 upper limit and impacts upon the breeding population would represent a major magnitude and be of high significance. Flight activity over the area of the Proposed Development itself was not observed. Virtually all</p>	LSE predicted
		Direct habitat loss due to permanent and temporary facilities.		

²⁴ Goodship and Furness (2022). NatureScot Research Report 1283 - Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. Available online at: <https://www.nature.scot/doc/naturescot-research-report-1283-disturbance-distances-review-updated-literature-review-disturbance#Hen+harrier,+Circus+cyaneus>



Designated Site	Features Screened In	Relevant Effect	Consideration of LSE	Conclusion of LSE
		<p>Direct effects on birds, including their killing and injury and the destruction of their places of shelter</p>	<p>the habitat affected comprises forestry plantation, and clear-felled forestry plantation.</p> <p>As the Proposed Development is located within the SPA resulting in habitat being lost, and that works are likely to be undertaken during breeding season, there is the potential for LSE to breeding hen harriers at Strath Carnaig and Strath Fleet Moors SPA.</p>	
<p>River Evelix SAC</p>	<p>Freshwater pearl mussel</p>	<p>Pollution / run off resulting in habitat impacts.</p>	<p>The Proposed Development does not physically overlap the SPA site, which is approximately 200 m away.</p> <p>Freshwater pearl mussels are long-lived freshwater molluscs that live in the gravel beds of clear, unpolluted rivers. Freshwater pearl mussel populations are vulnerable to changes to water quality (including pollution), hydrological alterations (including river engineering and abstractions),</p>	<p>LSE predicted</p>



Designated Site	Features Screened In	Relevant Effect	Consideration of LSE	Conclusion of LSE
			<p>habitat degradation of river beds and banks, illegal pearl fishing and availability of host species²⁵.</p> <p>During the construction phase, on Site there will be three areas used for peat storage. One of these locations (storage location D) is located adjacent to a burn that runs through the Site.</p> <p>River Evelix is connected to the Proposed Development via a burn adjacent to peat storage location D.</p> <p>Due to the proximity of the SAC to the Proposed Development, and the connectivity of the SAC to the peat storage locations, LSE is predicted.</p>	

²⁵ NatureScot (2014). River Evelix Special Area of Conservation (SAC); Conservation Package. Available online at: <https://sitelink.nature.scot/site/8358>



Designated Site	Features Screened In	Relevant Effect	Consideration of LSE	Conclusion of LSE
Dornoch Firth and Loch Fleet SPA	Annex 1 Species / Ramsar 2 Breeding osprey Migratory species / Ramsar 6 Non-breeding greylag goose	Temporary displacement of birds (disturbance and / or displacement) by construction works and operation.	<p>The Proposed Development does not physically overlap the SPA site, which is approximately 7.45 km away. The proposed substation site comprises forestry plantation, and clear-felled forestry plantation which is considered unsuitable and highly unlikely to support breeding osprey and non-breeding greylag goose.</p> <p>During surveys flight activity was recorded for greylag goose and osprey. Flight activity was low, with no flights occurring over the location of the Proposed Development, though flights were recorded within the 500 m site buffer.</p>	No LSE
Dornoch Firth and Loch Fleet Ramsar Site		Direct habitat loss due to permanent and temporary facilities.	<p>Greylag goose flights were all fly-over flights, and none involved any interaction with the site survey area. Osprey flights were confined to occasional foraging flights over Loch Buidhe, which is approximately 600 m north of the Proposed Development and are considered to be unaffected by the Proposed Development. There are numerous alternative foraging resources closer to the Dornoch Firth and Loch Fleet SPA and Ramsar site that Loch Buidhe, and no indication that birds from the SPA / Ramsar site are travelling to Loch Buidhe to forage.</p>	
		Direct effects on birds, including their killing and injury and the destruction of their places of shelter	<p>As a result, the proposed construction works will not result in LSE on breeding osprey or non-breeding greylag goose.</p>	
Lairg and Strath Brora Lochs SPA	Black-throated diver	Temporary displacement of birds (disturbance and / or displacement) by construction works and operation.	<p>The Proposed Development does not physically overlap the SPA which is approximately 8.91 km away, which sits at the far reach of the foraging distance for black-throated diver. The proposed substation site comprises coniferous plantation woodland which is considered unsuitable to support black-throated divers.</p>	No LSE



Designated Site	Features Screened In	Relevant Effect	Consideration of LSE	Conclusion of LSE
		<p>Direct habitat loss due to permanent and temporary facilities.</p> <p>Direct effects on birds, including their killing and injury and the destruction of their places of shelter</p>	<p>Black-throated divers have a core foraging range estimated at < 10 km. Black-throated diver exhibit disturbance to people and development between 500 – 750 m during breeding season and ≤1000 m outside of the breeding season. The location of the Proposed Development is 9.34 km from the closest SPA waterbody, i.e., at the extreme edge of the species' foraging range. There were no recorded flights within 2 km of the Proposed Development during baseline surveys, and no sightings of black-throated diver on Loch Buidhe, indicating a lack of connectivity between the Proposed Development area with the SPA.</p> <p>As a result, the Proposed Development will not result in a LSE on breeding black-throated divers.</p>	

6.3 IN COMBINATION ASSESSMENT

The following projects that could potentially result in in-combination effects have been identified.

6.3.1 STRATH CARNAIG AND STRATH FLEET MOORS SPA IN COMBINATION ASSESSMENT

6.3.1.1 SPITTAL TO LOCH BUIDHE TO BEAULY 400 KV OHL REINFORCEMENT

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 interests feature of the Strath Carnaig and Strath Fleet Moors SPA. 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.

6.3.1.2 ACHEILIDH WIND FARM

A proposed 12 turbine wind farm located approximately 1.4 km from the Proposed Development at its closest point, immediately adjacent (0.1 km) to the Strath Carnaig and Strath Fleet Moors SPA. 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**.

6.3.1.3 BALBLAIR WIND FARM

A proposed wind farm, for up to nine turbines, located approximately 1.5 km west of the Proposed Development, and approximately 1 km to the west of the Strath Carnaig and Strath Fleet Moors SPA. 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.

6.3.1.4 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**.

6.3.1.5 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 Proposed Development 500 m from the SPA. 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 bird receptors, and therefore cumulative impacts assessed as **not significant**.

6.3.1.6 CHLEANSOID WIND FARM

Chleansaid Wind Farm is a consented wind farm located approximately 20 km north of the closest point of the Proposed Development and approximately 7.9 km north of the Strath Carnaig and Strath Fleet Moors SPA. 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**.

6.3.1.7 STRATH TIRRY WIND FARM

Strath Tirry Wind Farm is a proposed four turbine wind farm located approximately 16 km north of the Proposed Development, and approximately 5.23 km north of the edge of the

Strath Carnaig and Strath Fleet Moors SPA. No significant effects were identified in the EIAR on bird receptors. As such, the cumulative impacts upon birds with the Proposed Development are assessed as **not significant**.

6.3.2 RIVER EVELIX SAC IN COMBINATION ASSESSMENT

6.3.2.1 BALBLAIR WIND FARM

The Scope of the proposed wind farm's EIAR is to include the following, in common with the Proposed Development;

- Protected Species – Construction, operation and decommissioning: *"Protected species ... cannot be scoped out until the planned infrastructure and activities associated with the proposed development are fully understood. Potential impacts during construction and operation will be fully considered once all the above information is available."*

The proposed Balblair Wind Farm is approximately 4 km upstream of the River Evelix SAC.

Given the distance, it is anticipated that particulate matter / chemical pollutants if they reached the watercourse, would drop out of the water column or become sufficiently dilute before reaching the River Evelix SAC, such that smothering / toxic effects would be unlikely to affect the freshwater pearl mussels.

It is therefore anticipated that the Proposed Development in combination with Balblair Wind will not result in any in-combination effects on the SAC.

6.3.2.2 BEAULY – SPITTAL 400 KV OVERHEAD LINE

The Beauly to Spittal OHL is not currently known to the planning system, other than through public consultations undertaken by SSEN Transmission.

Key impacts that are anticipated to arise for the proposed OHL potentially include impacts on protected species, including loss of habitat. The closest part of the proposed OHL with any hydrological connectivity to the SAC is approximately 5 km upstream of the SAC, where a number of pylon locations could be placed in the upper catchment of the An Uidh which feeds into Loch an Lagain and then the Rive Evelix.

Given the distance, it is anticipated that particulate matter / chemical pollutants if they reached the watercourse, would drop out of the water column or become sufficiently dilute before reaching the River Evelix SAC, such that smothering / toxic effects would be unlikely to affect the freshwater pearl mussels.

It is therefore anticipated that the Proposed Development in combination with the Beauly – Spittal 400 kV Overhead Line will not result in any in-combination effects on the SAC.

6.4 SUMMARY OF LSE

LSE from this Proposed Development have been identified, whether alone or in combination with another project. As such, Stage 2 Appropriate Assessment is required.

TABLE 5.2 SUMMARY OF LSE

Designated Site	Features Screened In	Relevant Effects	Consideration of LSE	Conclusion of LSE
Strath Carnaig and Strath Fleet Moors SPA	Breeding hen harrier	Temporary displacement of birds (disturbance and / or displacement) by construction works and operation.	Due to the proximity of the works to the SPA, it is likely that breeding hen harrier would be disturbed by construction works during their breeding season.	LSE – could not be screened out, requires further assessment
		Direct habitat loss due to permanent and temporary facilities.	As the Proposed Development is located within the SPA, SPA habitat would be lost permanently.	
		Direct effects on birds, including their killing and injury and the destruction of their places of shelter	As the Proposed Development is located within the SPA, if construction works occurred within the hen harrier breeding season then it is possible that places of shelter, feeding grounds, nests and eggs could be destroyed.	
River Evelix SAC	Freshwater pearl mussels	Pollution / run off resulting in habitat impacts.	Due to the proximity of the Proposed Development to the SAC and the connectivity of the peat storage locations to the SAC, it is possible that run off from the works could affect River Evelix.	LSE – could not be screened out, requires further assessment

7. APPROPRIATE ASSESSMENT

7.1 INTRODUCTION

The findings of the Screening Assessment in Section 6 (and summarised in **Table 6.1**) determined that an AA was required as an LSE cannot be ruled out for the qualifying interest features of Strath Carnaig and Strath Fleet Moors SPA, and River Evelix SAC. The likely significant effects result from:

- Temporary displacement of birds (disturbance and / or displacement) by construction works and operation (Strath Carnaig and Strath Fleet Moors SPA);
- Direct habitat loss due to permanent and temporary facilities (Strath Carnaig and Strath Fleet Moors SPA);
- Direct effects on birds, including their killing and injury and the destruction of their places of shelter (Strath Carnaig and Strath Fleet Moors SPA); and
- Pollution / run off resulting in habitat impacts (River Evelix).

This section assesses the impacts of the Proposed Development on the relevant qualifying interest features of Strath Carnaig and Strath Fleet Moors SPA, and River Evelix SAC in relation to the conservation objectives for the sites. The aim is to identify whether no adverse effect on the integrity of the European sites can be concluded as described in Section 3, or whether there will be adverse effects on the integrity of the designated sites.

7.2 CONSERVATION OBJECTIVES

The conservation objectives for the Strath Carnaig and Strath Fleet Moors SPA are:

- To avoid deterioration of the habitats of the qualifying species (breeding hen harrier) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and
- To ensure for the qualifying species that the following are maintained in the long term:
 - Population of the species as a viable component of the site
 - Distribution of the species within site
 - Distribution and extent of habitats supporting the species
 - Structure, function and supporting processes of habitats supporting the species
 - No significant disturbance of the species

The SPA is currently in unfavourable condition, with pressures relating to agricultural operations, burning, development, forestry operation, game / fisheries management and plant pests and diseases.

The River Evelix SAC is also in unfavourable condition, with pressures relating to forestry operations, over grazing, water management, wildlife crime as well as other pressures identified.

The conservation objectives for the River Evelix SAC for are to ensure:

- The qualifying feature of the River Evelix SAC is in favourable condition and makes an appropriate contribution to achieving Favourable Conservation Status;
- To ensure that the integrity of the River Evelix SAC is restored by meeting objectives 2a, 2b, 2c, and 2d for the qualifying feature;
 - 2a – restore the population of the species as a viable component of the site,
 - 2b – restore the distribution of the species throughout the site,
 - 2c – restore the habitats supporting the species within the site and availability of food, and
 - 2d – maintain the distribution and viability of freshwater pearl mussel host species and their supporting habitats.

7.3 ASSESSMENT OF EFFECTS

7.3.1 STRATH CARNAIG AND STRATH FLEET MOORS SPA

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

A total of three flights, all of single birds, were recorded during baseline surveys within the 2 km survey area around the Proposed Development. One flight came within 500 m of the Proposed Development boundary (a bird hunting to the east of Loch Buidhe), whilst the remaining two flights occurring towards the edge of the survey buffer to the north west.

There are five hen harrier nest sites, whose location is shown in Confidential Technical Appendix 8.2 Figure 2.1, of the EIAR, considered to represent different breeding pairs, situated

approximately 1.6 km – 2.3 km to the east side of Loch Buidhe. Of the five nest locations, only one is located within the 2 km survey buffer, with the remaining four nests situated adjacent, but outside this buffer. As all five nest locations are situated beyond the maximum recommended disturbance distance for the species of 750 m, Goodship (2022), it is considered that the nest locations themselves will not be disturbed during the construction phase and the impact of construction works will be negligible.

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 upper limit and impacts upon the breeding population have the potential to occur. Flight activity over the area of the Proposed Development itself was not observed, however, and the overall level of flight activity across 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 Proposed Development 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., 2003. Other favoured hen harrier foraging habitat typically comprises open habitats such as mixed heather and rough grass, including mosaics of these habitat types. As a result, impacts from disturbance and displacement are considered to be negligible.

Hen harrier may also be affected by loss of foraging or nesting habitat as a result of construction of the Proposed Development. Construction of the substation will result in the loss of the habitats set out in Table 7.1. A full breakdown of habitat loss associated with the Project is presented in Table 7.6 in Chapter 7 Ecology and Nature Conservation, within the EIAR.

TABLE 7.1 PERMANENT, TEMPORARY AND PEATLAND HABITAT IMPACTS.

Broad Habitat Type	Habitat Classification	Substation - Permanent Habitat Loss (ha)	Substation – Temporary Habitat Loss (ha)
Woodland	Other coniferous woodland	21.556	1.110
Heathland and shrub	Wet heathland with cross-leaved heath; upland	0.206	0
Wetland	Blanket bog	0.221	0
	Degraded blanket bog	1.531	0.115
Urban	Artificial unvegetated, unsealed surface	0.003	0
Total		23.517	1.225

Construction of the substation will result in the permanent loss of approximately 23.5 ha and temporary loss of approximately 1.25 ha of habitat. Of these areas, approximately 21.5 ha of the permanent habitat loss and 1 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 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. The excavation, transport and deposition of peat, as well as a proposed design for storage areas is detailed in the Peat Management Plan (Technical Appendix 10.2 Peat Management Plan) of the EIAR. These areas of peatland will be designed to be retain areas of wet peat which will preclude the growth of trees, as well as areas of drier peat on higher ground. As a result of the creation of the peat storage areas, the Proposed Development will result in an overall increase in permanent open habitats of approximately 142 ha. Of these approximately 47 ha will be designed and managed to be a mosaic of dry heath and grasslands, which will provide potential breeding habitat for hen harrier, compared to the existing baseline. As a result of the creation of approximately 142 ha of additional suitable hen harrier foraging habitat (open habitats), the Proposed Development will result in an increase in both hen harrier foraging and potential breeding habitat within the Strath Carnaig and Strath Fleet Moors SPA.

As a result, the Proposed Development will not result in an adverse effect on the integrity of the SPA and is likely to result in an improvement in its current status.

7.3.2 RIVER EVELIX SAC

The River Evelix SAC is located approximately 0.2 km to the south east of the Proposed Development boundary. Whilst the Proposed Development boundary is approximately 200 m from the SAC (at closest point) the construction footprint is located over 2 km from the SAC (at closest point).

The closest area of works associated with the Proposed Development will involve peat storage for the purposes of peatland restoration (storage location D). The excavation, transport and deposition of peat, as well as a proposed design for storage areas is detailed in the Peat Management Plan (Technical Appendix 10.2 Peat Management Plan), of the EIAR. A Peat Slide Risk Assessment has been undertaken, including for peat storage locations, and can be found in Technical Appendix 10.1 Peat Slide Risk Assessment, of the EIAR. Peat storage location D is situated approximately 10 m from an unnamed watercourse that has hydrological connectivity to the SAC. On account of the distance between peat storage location D and the SAC (approx. 2 km), with an approximately 10 m buffer to the nearest watercourse, it is anticipated that particulate matter / chemical pollutants if they reached the watercourse, would drop out of the water column or become sufficiently dilute before reaching the River Evelix SAC, such that smothering / toxic effects would be unlikely to affect the freshwater pearl mussels.

Further to the measures detailed, a standoff of 10 m between watercourses and peat storage locations will be implemented and the riparian vegetation retained. Deposition of any peat associated with peatland restoration or peat storage will not encroach within 10 m of a watercourse. Works around watercourses with hydrological connectivity to the River Evelix SAC will be undertaken in line with the freshwater pearl mussel SPP. Best practice pollution prevention controls will be implemented to prevent release of chemical pollutants such as fuel or oil. Best practice will also be applied to prevent runoff from the peat storage area during construction.

Best practice measures shall be maintained until a sustainable layer of vegetation has developed over the peat to prevent erosion, this shall be monitored through routine inspection

to ensure pollution prevention measures are still functional and planting / seeding of the restoration areas is maturing.

With consideration of the deployment of embedded mitigation measures set out in Chapter 7 of the EAIR and summarized below, no adverse effect on the integrity of the SAC will likely occur.

7.4 PROPOSED MITIGATION MEASURES

Proposed mitigation measures will follow the mitigation hierarchy where possible, with measures to avoid impacts considered before measures to reduce, then reinstate and finally offset impacts.

All works will be undertaken according to the SSEN Transmission Bird SPP and Freshwater Pearl Mussel SPP.

An Ecological Clerk of Works (ECoW) will be present during construction works, especially within hen harrier breeding season and when storing peat on site.

Further to any site-specific environmental management measures, there are a range of other general environmental management measures required as standard practice for all SSEN Transmission projects to avoid indirect impacts and habitat degradation. These include the following SSEN General Environmental Management Plans (GEMP):

- Bad Weather;
- Biosecurity (On Land)
- Contaminated Land;
- Dust Management;
- Forestry;
- Oil Storage and Refuelling;
- Private Water Supplies;
- Restoration;
- Soil Management;
- Waste Management;
- Watercourse Crossings;
- Working In or Near Water;
- Working with Concrete and
- Working in Sensitive Habitats.

The GEMPs are generic and not all measures will be applicable to the Proposed Development. The contractor will review the GEMPs and in discussion with the ECoW agree the relevant measures TO BE DEPLOYED THROUGH THE Construction Environmental Management Plan (CEMP).

With these mitigation measures in place, the Proposed Development is not predicted to have an adverse effect on the integrity of the Strath Carnaig and Strath Fleet Moors SPA or River Evelix SAC.

7.5 SUMMARY OF EFFECT ON SITE INTEGRITY

A summary of the European sites features for which LSE has been identified, and the assessment of effects on integrity is presented below in **Table 7.2**.

TABLE 7.2 SUMMARY OF APPROPRIATE ASSESSMENT STAGE

SITE	FEATURE	ADVERSE EFFECT INTEGRITY?
Strath Carnaig and Strath Fleet Moors SPA	Hen harrier	No
River Evelix SAC	Freshwater pearl mussels	No



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