

Fanellan Hub 400 kV Substation and Converter Station
Environmental Impact Assessment Report

Habitats Regulations Appraisal Screening Report

February 2025





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1. INTRODUCTION AND BACKGROUND

1.1 Overview

- 1.1.1 This Habitats Regulations Appraisal (HRA) Screening Report has been prepared by WSP UK Limited (hereafter referred to as WSP) on behalf of Scottish Hydro Electric Transmission plc ("the Applicant") who, operating and known as Scottish and Southern Electricity Networks Transmission ("SSEN Transmission"), own, operate and develop the high voltage electricity transmission system in the north of Scotland and remote islands. In this HRA Screening Report the Applicant and SSEN Transmission are used interchangeably unless the context requires otherwise. The HRA Screening Report has been prepared to accompany an application for consent under the Town and Country Planning (Scotland) Act 1997 (as amended) 1.
- 1.1.2 The HRA Screening Report is required to assess potential impacts/effects to European sites from proposals to construct a strategic transmission hub, referred to as the 400 kV Fanellan Substation and Converter Station (and hereafter also referred to interchangeably as the 'Proposed Development' or 'Fanellan Hub'). This would be located on land (hereafter the 'Site') approximately 3.6 km to the south-west of Beauly, Inverness-shire, Scotland (National Grid Reference: NH486430). The Proposed Development Site (which includes both the permanent and temporary construction features) covers an area of approximately 223 hectares (ha).
- 1.1.3 The location of the Site is shown in Annex A, Figure 1: HRA: Relevant European Sites and Site Location.

1.2 Description of the Proposed Development

1.2.1 The key elements of the Proposed Development subject to consent under the Town and Country Planning (Scotland) Act 1997 (as amended) would comprise the following:

Fanellan 400 kV Substation

- 1.2.2 The substation will comprise of the following:
 - A new substation platform, of approximately 305 m x 525 m in size with a 4.2 m security fence installed around the platform;
 - Installation of Air Insulated Switchgear (AIS) AIS switchgear and busbar with a maximum height of 15m, to connect incoming circuits including the HVDC converter station and to facilitate the cable connection from the HVDC converter station;
 - Installation of Step-Down Transformers in order to provide the site with Low Voltage Alternating Current (LVAC) supply;
 - A new control building of 50 m x 26 m, with a maximum height of 7 m.

Fanellan Converter Station

- 1.2.3 The HVDC at Fanellan will include the following requirements:
 - A new converter station platform, approximately 305 m x 285 m, adjacent to the new Fanellan substation:
 - Main HVDC converter station Buildings comprising Valve Hall, DC Hall, Reactor Hall, Transformer Hall
 with adjacent Service and Control Rooms (with the largest building approx. 160 m x 80 m, 26.34 m
 high excluding guard rail; 27.23 m high including guard rail);
 - External AC Filter Yard;
 - · Smaller ancillary and support buildings adjacent to the main converter station building; and
 - A connection to the AC site via overground busbar.

¹ Town and Country Planning (Scotland) Act 1997. [Online] Available at: https://www.legislation.gov.uk/ukpga/1997/8/section/46 [Accessed: February 2004]



1.2.4 Both sites will share common access, security arrangements, site drainage infrastructure SuDS basins and landscaping.

Ancillary Construction Development

- 1.2.5 In addition to the main infrastructure, the following ancillary development is required:
 - Earthworks a cut-fill exercise will be undertaken to achieve a level area to construct infrastructure;
 - A new bellmouth and access road to the Proposed development from the public road (C1106 Fanellan Road) will be constructed which will remain in place permanently following construction for operational use;
 - temporary access tracks to be created for overhead line tie-in construction activities;
 - Temporary construction compounds size and locations to be determined and agreed with landowners;
 - Temporary storage compounds for topsoil and material size and location to be determined an agreed with landowners;
 - Temporary construction drainage arrangements;
 - Demolition of existing agricultural and residential buildings within the immediate proximity to site;
 - · Site clearance activities including some tree felling; and
 - Landscape forms at the front and sides of the platform to help screen the development.

Operational Infrastructure

- 1.2.6 Given the scale of the developments, a need for permanent operational facilities has been identified to support operational requirements.
 - Car parking will be provided;
 - External lighting. Floodlights would be installed but would only be used in the event of a fault during
 the hours of darkness; during the over-run of planned works; or when sensor activated as security
 lighting for night-time access. The access roads would not be lit under normal operation. The
 perimeter fence would use infra-red lighting (this would only switch to white light if the fence alarm
 were activated to allow night-time cameras to work better). A light would also be provided permanently
 at access gates;
 - Site surface water drainage (SuDS) and water management plus foul water drainage treated and discharged to Packaged Treatment Plants on site;
 - Oil pollution control using bunds around oil stores and leak detection alarm system;
 - Underground connectors to the buildings for Low Voltage (LV) and communication cabling.
 - Landscaping mitigation and biodiversity enhancement;
 - Security fencing a 4.2 m high palisade fence would be installed around platforms; in addition, a
 standard post and wire perimeter fence would be installed around the site boundary. This would be a
 stock/deer proof fence to exclude grazing animals and allow establishment of landscaping and screen
 planting; and

1.3 Typical Construction Activities

- 1.3.1 Key tasks during construction of the Proposed Development would relate to:
 - Enabling works and site clearance including earthworks and felling of trees;
 - Creation of a level platform upon which the substation and HVDC converter station will be installed;
- 1.3.2 Potential for rock blasting and rock crushing on site;
 - Installation of security fencing;



- Public road improvements, delivery of materials and vehicle movements;
- Laying of foundations, including construction of site drainage;
- Construction and installation of buildings;
- Installation of electrical plant including busbar to connect the substation and the HVDC converter station;
- Construction of Sustainable Draining System (SuDS) and planting of screening/BNG vegetation;
- Structure demolition;
- · Commissioning; and
- Reinstatement and planting.

1.4 Construction Programme

1.4.1 It is anticipated that construction of the project would take approximately three years, starting in 2025 (with a further two years to commission and reach full energisation), although detailed programming of the works would be the responsibility of the Principal Contractor in agreement with SSEN Transmission. It is anticipated that the project will be operational by 2030. The detailed construction phasing and programme would be subject to change as the detailed design progresses and consents are agreed.

1.5 Habitats Regulations Appraisal

- 1.5.1 The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended the Habitats Regulations)² place a duty upon 'Competent Authorities', to consider the potential for Likely Significant Effects (LSE) upon European sites arising from projects or plans. European sites considered through HRA are Special Areas of Conservation (SAC) and Special Protection Areas (SPAs), as well as those currently proposed for designation. Wetlands of International Importance (Ramsar sites) are also considered through HRA.
- 1.5.2 In accordance with guidance on the interpretation of the Habitats Directive (European Commission, 2000a)³ there are four distinct stages of assessment, collectively known as HRA:
 - Stage 1, Screening: the process which identifies whether effects upon a European site of a plan or project are possible, either alone or in combination with other plans or projects and considers whether these effects are likely to be significant.
 - Stage 2, Appropriate Assessment: the detailed consideration of the effect on the integrity of the European site of the plan or project, either alone or in combination with other plans or projects, with respect to the site's conservation objectives and its structure and function.
 - Stage 3, Assessment of alternative solutions: the process which examines alternative ways of achieving the objectives of the plan or project that avoid adverse effects on the integrity of the European site.
 - Stage 4: Assessment where no alternative solutions exist and where adverse effects remain: an
 assessment of whether the development is necessary for imperative reasons of overriding public interest
 (IROPI) and, if so, of the compensatory measures needed to maintain the overall coherence of the
 European site network.
- 1.5.3 This report represents Stage 1 of the above process: HRA Screening. For the Proposed Development the Competent Authority will be The Highland Council.

² The Conservation (Natural Habitats, &c.) Regulations 1994. [Online] Available at: https://www.legislation.gov.uk/uksi/1994/2716/contents/made [Accessed: June 2024]

³ The Habitats Directive.[Online] Available at: https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive_en [Accessed: June 2024]



2. RELEVANT EUROPEAN SITES AND BASELINE INFORMATION

2.1 European Sites

- 2.1.1 A search for European sites based on the search parameters defined in Section 2.2 identified nine European sites which are listed below (with the approximate distance from the Proposed Development site indicated in brackets):
 - Inner Moray Firth Special Protection Area (SPA) and Ramsar (4.4 km north-east);
 - Moray Firth SPA (6.1 km north-east);
 - Moniack Gorge Special Area of Conservation (SAC) (6.8 km east);
 - Strathglass Complex SAC (9.4 km west);
 - Moray Firth SAC (8.5 km east);
 - Glen Affric to Strathconon SPA (9.1 km west);
 - Conon Islands SAC (9.4 km north);
 - North Inverness Lochs SPA (9.4 km south); and
 - Cromarty Firth SPA and Ramsar (15.1 km north-east).
- 2.1.2 Details of the European sites are provided **Table 2-1** below. The location of the European sites relative to the Site is shown in **Annex A, Figure 1: HRA Screening Relevant European Sites.**

2.2 Potential LSE and Defining Ecological Zone of Influence (EZoI)

- 2.2.1 Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines⁴ define the Ecological Zone of Influence (EZoI) as the area over which ecological features may be subject to significant effects due to the Proposed Development. This could extend beyond the footprint of the Proposed Development.
- 2.2.2 There are several EZoIs to consider depending on the species and the potential LSEs in question. Many of the qualifying species of the European sites and certain LSEs are not considered relevant to the Proposed Development and have been scoped out. The rationale for scoping out is provided in Section 2.4. The following LSEs, species, and respective EZoIs are considered most relevant to the Proposed Development based on habitats within and surrounding the Site:
 - disturbance/displacement of qualifying species from the Site and adjacent areas visual, acoustic and vibrational disturbance from the movement of plant and equipment, operation of plant, and blasting operations. The EZol for this LSE will be:
 - 600 m for greylag goose *Anser anser* based on the predicted maximum disturbance/displacement distance⁵ from foraging for this qualifying species from the relevant European sites;
 - 750 m for osprey *Pandion haliaetus* based on the predicted maximum disturbance/displacement distance^{Error!} Bookmark not defined. from a nest site; and

⁴ CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater and Coastal. CIEEM, Winchester.

⁵ Goodship, N.M. and Furness, R.W. (MacArthur Green) Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283. https://www.nature.scot/doc/naturescot-research-report-1283-disturbance-distances-review-updated-literature-review-disturbance#Black-throated+diver.+Gavia+arctica

reduction in Functionally Linked Land (FLL) that supports qualifying species. The maximum distance
considered over which species may travel to forage within and near the Site is 20 km based on the
predicted maximum foraging range of qualifying species (osprey) for the relevant European sites^{6,7}.

⁶ Mitchell, C. (2012). Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / SNH report, Slimbridge. 108pp.

NH (2016).Assessing Connectivity with Special Protection Areas (SPAs) https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf



Table 2-1 European Site Information

Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
Inner Moray Firth Special Protection Area (SPA)	Qualifies under Article 4.1 by regularly supporting populations of European importance of the Annex 1 species: osprey forage throughout the SPA (2008 to 2012, up to 25 territories within feeding range, 12.5 % of the GB population, with 4 pairs breeding within the site, 4 % of the GB population); common tern Sterna hirundo (310 pairs, 2 % of the GB population); and bar-tailed godwit Limosa lapponica (1992/93 to 1996/97 a winter peak mean of 1,090 individuals, 2 % of the GB population). The Inner Moray Firth SPA further qualifies under Article 4.2 by regularly supporting populations of European importance of the migratory species (1992/93 to 1996/97 winter peak means): greylag goose Anser anser (2,651 individuals, 3 % of the Iceland/UK/Ireland biogeographic population); red-breasted merganser Mergus serrator (1,184 individuals, 1 % of the NW & Central Europe biogeographic population); and redshank Tringa totanus (1,621 individuals, 1 % of the Eastern Atlantic biogeographic population) Inner Moray Firth SPA also qualifies under Article 4.2 by regularly supporting in excess of 20,000 individual waterfowl. Between 1992/93 to 1996/97 a winter peak mean of 26,800 individual waterfowl comprising 16,800 wildfowl and 10,000 waders including nationally important populations of the following species: scaup Aythya marila (118 individuals, 1 % of the GB population); goosander Mergus merganser (325 ndividuals, 4 % of the GB population);	To avoid deterioration of the habitats of the qualifying species (listed below) 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	Osprey- favourable Common tern - unfavourable Bar-tailed godwit - favourable Curlew-favourable Cormorant-unfavourable Curlew-favourable Goldeneye-favourable Goosander-unfavourable Greylag goose- favourable Oystercatcher-favourable Red-breasted merganser- unfavourable Redshank-favourable Scaup-favourable Teal-favourable Waterfowl assemblage- favourable Wigeon- favourable



Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
	goldeneye <i>Bucephala clangula</i> (218 individuals, 1 % of the GB population); teal A. crecca (2,066 individuals, 1 % of the GB population); wigeon <i>Anas penelope</i> (7,310 individuals, 3 % of the GB population); cormorant <i>Phalacrocorax carbo</i> (409 individuals, 3 % of the GB population); redshank (1,621 individuals, 1 % of the GB population); • red-breasted merganser (1,184 individuals, 12% of the GB population); greylag goose (2,651 individuals, 3 % of the GB population) and bartailed godwit (1,090 individuals). In the five-year period 1991/92 to 1995/96, a winter peak mean of 33,148 individual waterfowl was recorded with the assemblage additionally including a nationally important population, greater than 2,000 individuals, of oystercatcher <i>Haematopus ostralegus</i> (3,063 individuals, 0.9 % of the GB population).		
Inner Moray Firth Ramsar	 Qualifies under Ramsar Criterion 1 by virtue of it containing a variety of wetland types: Intertidal mudflats and sandflats supporting areas of saltmarsh are exceptionally well represented throughout the Inner Moray Firth. On the Beauly Firth a large area of saltmarsh covers the mudflats and sandflats. The bays at Munlochy, Longman and Castle Stuart are particularly dominated by extensive mudflats. Of specific importance are the large and dense eelgrass beds. At Whiteness Head, there are sand dunes and a shingle bar. The shingle bar encloses a building intertidal system including, sandflats and associated saltmarsh. Sand dunes and further extensive areas of sandflats, lie to the south west of the bar. 	None listed. For birds the SPA conservation objectives will be used.	None listed. For birds the SPA condition assessment will be used



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Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
	Qualifies under Ramsar Criterion 2 by supporting:		
	osprey forage throughout the Ramsar site (2008 to 2012, up to 25 territories within feeding range, 12.5 % of the GB population, with 4 pairs breeding within the site, 4 % of the GB population); and		
	common tern (310 pairs, 2 % of the GB population).		
	Qualifies under Ramsar Criterion 5 by regularly supporting waterbirds in numbers of 20,000 individuals or more. The site also qualifies under Ramsar Criterion 4 by supporting the following waterbird species at a critical stage in their life cycles:		
	scaup (118 individuals, 1 % of the GB population).		
	curlew (1,262 individuals, 1 % of the GB population).		
	goosander <i>Mergus merganser</i> (325 individuals, 4 % of the GB population).		
	goldeneye <i>Bucephala clangula</i> (218 individuals, 1 % of the GB population).		
	teal A. crecca (2,066 individuals, 1 % of the GB population).		
	wigeon Anas penelope (7,310 individuals, 3 % of the GB population), and		
	cormorant <i>Phalacrocorax carbo</i> (409 individuals, 3 % of the GB population).		
	Qualifies under Ramsar Criterion 6 by regularly supporting 1% or more of the individuals in a population of waterbirds (1992/93 to 1996/97, winter peak means):		
	 bar-tailed godwit (1,090 individuals, 1% of the Western European biogeographic population). 		
	 greylag goose Anser anser (2,651 individuals, 3% of the Iceland/UK/Ireland biogeographic population). 		
	 red-breasted merganser Mergus serrator (1,184 individuals, 1% of the NW & Central Europe biogeographic population), and 		



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Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
	 redshank Tringa totanus (1,621 individuals, 1% of the Eastern Atlantic biogeographic population). 		
Moray Firth SPA	Qualifies under Article 4.1 by regularly supporting a non-breeding population of European importance of the following Annex 1 species: great northern diver <i>Gavia immer</i> (a mean peak annual non-breeding population of 144 individuals (5.8 % of the Great Britain population); red-throated diver <i>Gavia stellata</i> (a mean peak annual non-breeding population of 324 individuals (1.9 % of the Great Britain population); and Slavonian grebe <i>Podiceps auritus</i> (a mean peak annual non-breeding population of 43 individuals (3.9 % of the Great Britain population). The site further qualifies under Article 4.2 by regularly supporting populations of European importance of the following migratory species: greater scaup (a mean peak annual non-breeding population of 930 individuals (17.9 % of the Great Britain population) for the years 2001/02 to 2005/06); common eider <i>Somateria mollissima</i> (a mean peak annual non-breeding population of 1,733 individuals (2.9 % of the Great Britain population) for the years of 2001/02 to 2006/07); long-tailed duck <i>Clangula hyemalis</i> (a mean peak annual non-breeding population of 5,001 individuals (45.5 % of the Great Britain population) for the years of 2001/02 to 2005/6); common scoter <i>Melanitta nigra</i> (a mean peak annual non-breeding population of 5,479 individuals (5.5 % of the Great Britain population of 1,488 individuals (59.5 % of the Great Britain population of 1,488 individuals (59.5 % of the Great Britain population) for the years 2001/02 to 2005/06);	To ensure that the qualifying features of the Moray Firth SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status. To ensure that the integrity of the Moray Firth SPA is restored in the context of environmental changes by meeting the following objectives: • The populations of qualifying features are viable components of the site. • The distribution of the qualifying features is maintained throughout the site by avoiding significant disturbance of the species. • The supporting habitats and processes relevant to qualifying features and their prey resources are maintained, or where appropriate restored, at the Moray Firth SPA.	Great northern diver – favourable Red-throated diver – favourable Slavonian grebe – favourable Common scoter–favourable Eider–favourable Goldeneye–unfavourable Long-tailed duck–favourable Red-breasted merganser– favourable Scaup – unfavourable Shag (breeding)– favourable Shag (non-breeding)–favourable Velvet scoter–unfavourable



Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
	common goldeneye (a mean peak annual non-breeding population of 907 individuals (4.5 % of the Great Britain population) for the years 2001/02 to 2005/06);		
	red-breasted merganser (a mean peak annual non-breeding population of 151 individuals (1.8 % of the Great Britain population) for the years of 2001/02 to 2005/06); and		
	European shag <i>Phalacrocorax aristotelis</i> (at least 6,462 individuals during the non-breeding season (3.2 % of the biogeographic population and 5.9 % of the Great Britain population) and 5,494 individuals during the breeding season ((2.7 % of the biogeographic population & 10.2 % of the Great Britain population) for the years 1980-2006).		
Moniack Gorge Special Area of Conservation (SAC)	Qualifies for presence of an Annex II species, one of only three UK sites where green shield-moss <i>Buxbaumia viridis</i> has been recorded in recent years.	To ensure that the qualifying feature of Moniack Gorge SAC is in favourable condition and makes an appropriate contribution to achieving favourable conservation status.	Green shield-moss– favourable
		 To ensure that the integrity of Moniack Gorge SAC is maintained. 	
		 Maintain the population of the species as a viable component of the site. 	
		 Maintain the distribution of the species throughout the site. 	
		 Maintain the habitats supporting the species within the site. 	



Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
Moray Firth SAC	The Moray Firth SAC has been designated to protect bottlenose dolphin <i>Tursiops truncates</i> and subtidal sandbanks.	 To ensure that the qualifying features of Moray Firth SAC are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status. To ensure that the integrity of Moray Firth SAC is maintained or restored in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature. For subtidal sandbanks: 2a. Extent and distribution of the habitat within the site. 2b. Structure and function of the habitat and the supporting environment on which it relies. 2c. Distribution and viability of typical species of the habitat. For bottlenose dolphin: 2a. The population of bottlenose dolphin is a viable component of the site. 2b. The distribution of bottlenose dolphin throughout the site is maintained by avoiding significant disturbance. 2c. The supporting habitats and processes relevant to bottlenose dolphin and the availability of prey for bottlenose dolphin are maintained. 	Subtidal sandbanks— Favourable Maintained Bottle-nosed dolphin-Favourable Maintained
Glen Affric to Strathconon SPA	Qualifies under Article 4.1 by regularly supporting a population of European importance of the Annex 1 species golden eagle <i>Aquila chrysaetos</i> (10 active territories in 2003, 2.2 % of the GB population).	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and	Golden eagle - favourable



Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
		 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; and No significant disturbance of the species. 	
Conon Islands SAC	Alluvial forests with alder Alnus glutinosa and ash Fraxinus excelsion	 To ensure that the qualifying feature of Conon Islands SAC is in favourable condition and makes an appropriate contribution to achieving favourable conservation status. To ensure that the integrity of Conon Islands SAC is maintained. Maintain the population of the species as a viable component of the site. Maintain the distribution of the species throughout the site. Maintain the habitats supporting the species within the site 	Alder woodland on floodplains- Unfavourable No Change
North Inverness Lochs SPA	Qualifies under Article 4.1 by regularly supporting a population of European Importance of the Annex 1 species: • Slavonian grebe (1991 to 1995, 7 pairs, 12 % of the GB population).	To avoid deterioration of the habitats of the qualifying species (listed below) 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:	Slavonian grebe - favourable



Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
		 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; and No significant disturbance of the species. 	
Strathglass Complex SAC	 Qualifying features include: Three priority habitats: blanket bogs, bog woodland, and Caledonian forest; Alpine and Boreal heaths; Calcareous rocky slopes with chasmophytic vegetation; European dry heaths; Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels; Northern Atlantic wet heaths with <i>Erica tetralix</i>; Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>; Presence of European otter <i>Lutra lutra</i>; Siliceous alpine and boreal grasslands; Siliceous rocky slopes with chasmophytic vegetation; Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>); and Sub-Arctic <i>Salix</i> spp. scrub. 	 To ensure that the qualifying features of Strathglass Complex SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status; and To ensure that the integrity of Strathglass Complex SAC is restored by meeting the following objectives for each qualifying feature: Maintain the extent and distribution of the habitat within the site; Maintain the structure, function and supporting processes of the habitat; and Maintain the distribution and viability of typical species of the habitat. 	Clear-water lakes – Favourable Wet heathland with cross-leaved heath – unfavourable/recovering Dry heaths – unfavourable/recovering Alpine and subalpine heaths – unfavourable/recovering Mountain willow scrub – unfavourable/recovering Montane acid grasslands – favourable Tall herb communities – favourable Blanket bog – unfavourable/recovering Acidic scree – favourable Plants in crevices on acid rocks - favourable Plants in crevices on base-rich rocks – favourable



Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
Cromarty Firth SPA	Qualifies under Article 4.1 by regularly supporting populations of European importance of the Annex 1 species: osprey forage throughout the SPA (2008 to 2012, five-year mean of up to 25 territories within feeding range, 12.5 % of the GB population, with 1 pair breeding within the site, 1 % of the GB population); common tern (1989 to 1993 mean of 294 pairs; 2 % of the GB population); whooper swan <i>Cygnus cygnus</i> (1992/93 to 1996/97 winter peak mean of 64 individuals, 1 % of the GB population); and bar-tailed godwit (1,355 wintering individuals, 3 % of the GB population). Qualifies under Article 4.2 by regularly supporting a population of European importance of the migratory species: greylag goose <i>Anser anser</i> (1992 /93 to 1996/97 winter peak mean of 1,782 individuals; 2% of the Iceland/UK/Ireland biogeographic population).	To avoid deterioration of the habitats of the qualifying species (listed below) 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; and No significant disturbance of the species.	Caledonian forest — unfavourable Bog woodland — favourable Otter - favourable Common tern - unfavourable Whooper swan - favourable Bar-tailed godwit — favourable Greylag goose — unfavourable/recovering Redshank — favourable/recovering Curlew - favourable Knot - unfavourable Red-breasted merganser - unfavourable Scaup — favourable/recovering Pintail - favourable Wigeon — favourable/recovering
	Also qualifies under Article 4.2 by regularly supporting in excess of 20,000 individual waterfowl: redshank <i>Tringa totanus</i> (1,149 individuals, 1 % of the GB		Dunlin - favourable Oystercatcher - favourable
	population); curlew <i>Numenius arquata</i> (1,313 individuals, 1 % of the GB population);		
	knot <i>Calidris canutus</i> (4,312 individuals, 1 % of the GB population); red-breasted merganser <i>Mergus serrator</i> (204 individuals, 2 % of the GB population); scaup <i>Aythya marila</i> (295 individuals, 3 % of the GB population);		



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Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
	pintail <i>Anas acuta</i> (319 individuals, 1 % of the GB population); wigeon <i>Anas penelope</i> (9,204 individuals, 3 % of the GB population); dunlin <i>Calidris alpina alpina</i> (3,384 individuals, 0.6 % of the GB population); and oystercatcher <i>Haematopus ostralegus</i> (2004/5 to 2009/10, 2,702 individuals, 0.8 % of the GB population.		
Cromarty Firth Ramsar	 Qualifies under Ramsar Criterion 1 by virtue of it containing a variety of wetland types: Intertidal mudflats (with extensive eelgrass beds), the largest expanse in the Moray Basin ecosystem. At the mouth of the River Conon, a rare surviving example of a transition from estuarine alder woodland, through open water transition fen and finally, where salinity and tidal influences increase, to saltmarsh. Qualifies under Ramsar Criterion 2 by supporting: Osprey forage throughout the Ramsar site (2008 to 2012, five-year mean of up to 25 territories within feeding range, 12.5 % of the GB population, with 1 pair breeding within the site, 1 % of the GB population); Common tern (1989 to 1993, mean of 294 pairs; 2 % of the GB population); and Whooper swan (1992/93 to 1996/97 winter peak mean of 64 individuals, 1 % of the GB population). Qualifies under Ramsar Criterion 5 by regularly supporting waterbirds in numbers of 20,000 individuals or more: 	None listed. For birds the SPA conservation objectives will be used	None listed. For birds the SPA condition assessment will be used



Site Description	Qualifying Interests	Conservation Objectives	Condition Assessment
	Redshank (1,149 individuals, 1 % of the GB population).		
	Curlew (1,313 individuals, 1 % of the GB population).		
	Knot (4,312 individuals, 1 % of the GB population).		
	Red-breasted merganser (204 individuals, 2 % of the GB population).		
	Scaup (295 individuals, 3 % of the GB population).		
	Pintail (319 individuals, 1 % of the GB population), and		
	Wigeon (9,204 individuals, 3 % of the GB population).		
	Qualifies under Ramsar Criterion 6 by regularly supporting 1 % or more of the individuals in a population of waterbirds:		
	Greylag goose (1992/93 to 1996/97 winter peak mean of 1,782 individuals; 2 % of the Iceland/UK/Ireland biogeographic population); and		
	Bar-tailed godwit (1,355 wintering individuals, 1 % of the Western European biogeographic population).		



2.3 Error! Bookmark not defined. Relevant Field Surveys and Desk Study Information

2.3.1 Data from the baseline surveys and desk study to inform the Environmental Impact Assessment (EIA) for the Proposed Development is provided where it comprises data involving species which are qualifying interests of the relevant European sites.

Foraging Geese.

2.3.2 The main source of desk study data for assessing the distribution of foraging geese relevant to the footprint of the Proposed Development is Mitchell (2012)⁸. A summary of indicative goose foraging distribution for the relevant European sites based on the study is provided below. The qualifying species of goose for all relevant European sites is greylag goose.

Inner Moray Firth Special Protection Area (SPA) and Ramsar

2.3.3 The distribution map in Mitchell for foraging flocks within 20 km of the European site (**Plate 1**) shows dense clusters of foraging goose activity to the east of the Site with only a few outliers nearer to the Site.

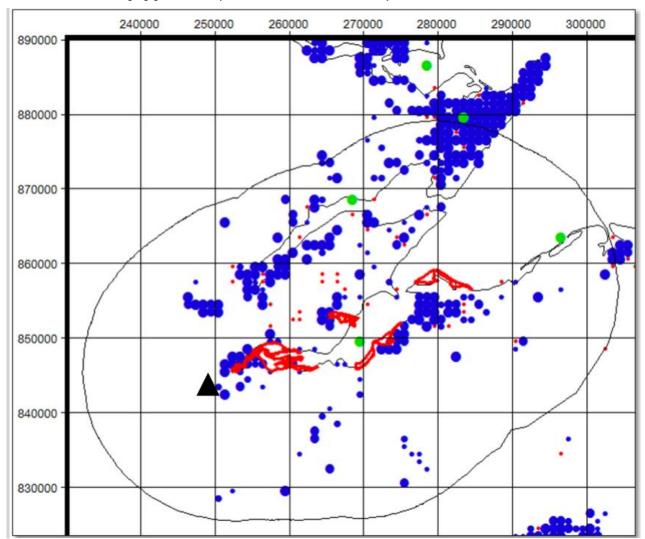


Plate 1: Feeding distribution within 20 km of Inner Moray Firth SPA (1986/87 to 2011/12) of Greylag Geese. Taken from Mitchell (2012).

⁸ Mitchell, C. (2012). Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / Scottish Natural Heritage Report, Slimbridge. 108pp.



Legend:

Red line: SPA boundary. Black line: 20 km buffer.

Black triangle: approximate location of the Site.

Green dots: principal roost sites holding more than 1.0 % of the population (based on count data from 2010/11).

Blue dots: sensitivity index, based on annual peak counts of foraging birds for each 1 km grid square, represented by four graduated dots.

Red dots: 1 km squares for which no quantitative data exists but geese were known to be present.

Cromarty Firth SPA and Ramsar

The distribution map in Mitchell (**Plate 2**) below shows that the dense clusters of foraging activity are to the east and north of the Site with only a few outliers closer to the Site.

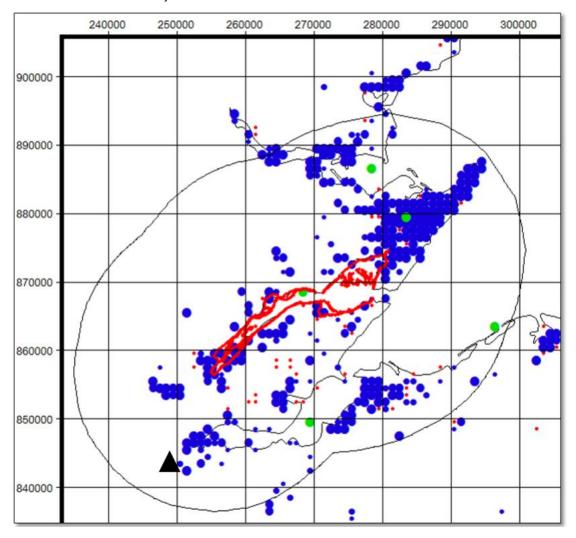


Plate 2: Feeding distribution within 20 km of the Cromarty Firth SPA (1986/87 to 2011/12) of Greylag Geese. Taken from Mitchell (2012).

Legend:

Red line: SPA boundary. Black line: 20 km buffer.

Black triangle: approximate location of the Site.

Green dots: principal roost sites holding more than 1.0 % of the population (based on count data from 2010/11).

Blue dots: sensitivity index, based on annual peak counts of foraging birds for each 1 km grid square, represented by four graduated dots.

Red dots: 1 km squares for which no quantitative data exists but geese were known to be present.



2.3.4 The mapping used to show goose foraging distribution in Mitchell suggests use of the Site is unlikely, albeit the granularity of the mapping is such that this is indicative and not fully conclusive. However, densities of foraging shown are considerably lower in the broad area of the Proposed Development compared to beyond a EZoI of the Proposed Development for both European sites.

Osprey

- 2.3.5 Flight activity surveys to inform the baseline for the associated Beauly Denny OHL diversion recorded 18 osprey flights between April 2023 and August 2023, including numerous flights across the Site. It is presumed that flight activity involved birds from breeding sites in the wider area due to the relative proximity of nest sites to the Site.
- 2.3.6 Scarce Breeding Bird Surveys were conducted for the proposed new Beauly-Peterhead OHL (2023) and proposed new Spittal Loch Buidhe Beauly 400 kV OHL (2024), the survey areas of which overlapped the Site and a 2 km study area. Two osprey nest sites were recorded in 2023 and 2024 within 2 km of the Site. The closest nest site to the Site was approximately 640 m away in 2024, with other nest sites between 700-850 m away.

Otter

- 2.3.7 Otter is considered here as a qualifying interest of the Strathglass Complex SAC. Although the European site is a significant distance from the Site (9.4 km), otter populations potentially linked to the European site could theoretically have home ranges that overlap with the Proposed Developments EZol; otters' territorial range can be as large as 20-30 km of river bank and the species can travel large distances across terrestrial habitat⁹.
- 2.3.8 Two potential otter resting sites and otter signs (spraints) were identified along the River Beauly, during the protected species baseline surveys to inform the EIA for the Proposed Development, the closest potential resting site was approximately 260 m from the Site boundary.

2.4 Potential LSE and European Sites Scoped Out

- 2.4.1 The only potential effect pathway resulting in LSE to habitats would be pollution events that are potentially carried from the Site via hydrological connectivity. The relevant European sites are all a significant distance from the Site (minimum of 4.4 km) and any pollution events would be dissipated across these distances. Given no effect pathway from pollution events, it is considered reasonable to scope out qualifying interests of European sites that involve non-mobile receptors i.e., qualifying habitats.
- 2.4.2 The Site does not form Functionally Linked Habitat (FLL) with the specialised qualifying habitats of the relevant European sites. Therefore, the following European sites are scoped out completely:
 - Moniack Gorge Special Area of Conservation (SAC);
 - · Moray Firth SAC; and
 - Conon Islands SAC.
- 2.4.3 Considering permanent loss of FLL within the Site, this will mainly comprise a relatively small area of arable farmland and grazing pasture. This habitat is wholly unsuitable for many of the qualifying interests of the relevant European sites. Greylag goose could potentially forage within the Site. However, the relatively small area of habitat lost within the footprint of the Proposed Development is not considered an important resource in the context of the widespread availability of this habitat beyond the Site. Theoretically, curlew (a qualifying species of both Inner Moray Firth and Cromarty Firth SPA/Ramsar) could forage on pasture like that found within the Site. However, studies show this species has a relatively small foraging range away from its main estuarine foraging and roost sites. One study showed some birds travelling up to 3.5 km to forage on

⁹ Wild Otter Trust. https://ukwildottertrust.org/otters-101/



- farmland¹⁰. The closest relevant European sites to the Site for this species are the Inner Moray Firth SPA and Ramsar approximately 4.4 km away.
- 2.4.4 Considering Moray Firth SAC, the qualifying features include a mobile species, bottlenose dolphin *Tursiops truncates*, however, this is a specialised marine species for which the Site and surrounding area are wholly unsuitable. The only potential effect pathway resulting in LSE would be pollution events potentially carried from the Site via hydrological connectivity, as discussed above and scoped out.
- 2.4.5 The qualifying interests of Strathglass Complex SAC are scoped out except for Otter. Other qualifying interests of the SAC are non-mobile habitats, and the Site and surrounding area does not form FLL with these qualifying interests.
- 2.4.6 All operational effects are scoped out. Although buildings associated with the Proposed Development are relatively high (max. height of around 27.5 m), these are solid structures which unlike an Overhead Line (OHL) are anticipated to be easily visible to flying birds. Therefore, no collision risk to flying birds is predicted. The associated Beauly Denny OHL diversion project will be subject to a separate HRA screening.
- 2.4.7 Operational activities are predicted to involve occasional maintenance by a small number of personnel and limited use of vehicles which are highly unlikely to result in displacement and disturbance effects to qualifying interests of the relevant European sites.

Fanellan Hub - 400 kV Substation and Converter Station Habitats Regulations Assessment Screening Report

¹⁰ Mander, L., Nicholson, I., Green, R., Dodd, S., Forster, R. & Burton, N. (2022). Individual, sexual and temporal variation in the winter home range sizes of GPS-tagged Eurasian Curlew *Numenius Arquata*. Bird Study.



3. HRA SCREENING

3.1.1 The potential impacts from the Proposed Development and their potential effect on the European sites are detailed in **Table 3-1 to 3-4** below. There is no potential for direct land take of the European sites as the Site does not overlap with them. Inner Moray Firth SPA and Ramsar and Cromarty Firth SPA and Ramsar are assessed together considering their overlapping qualifying interests.

Table 3-1 Inner Moray Firth SPA and Ramsar

Determine.	1
Potential	Impact/Effect

Disturbance/displacement of qualifying species from the footprint of the Proposed Development and adjacent areas forming FLL – visual and acoustic disturbance from the movement of plant and equipment and operation of plant. Additionally, blasting is anticipated to be required to facilitate construction of the Proposed Development.

Screening Assessment

Qualifying interest: waders and wildfowl except greylag goose.

Most of the qualifying species of the European sites are specialist estuarine and marine species. Potential displacement from FLL would not occur for these species due to their specialist ecology, the Site and a relevant EZoI is wholly unsuitable habitat for most of these species. Theoretically, curlew could use pasture like that within and surrounding the Site for foraging, but studies indicate that foraging birds are unlikely to range >4 km from an estuarine site¹⁰. The European site is approximately 4.4 km away.

Taking account of all the above, no effect pathways resulting in LSE to the listed qualifying interests of the European site are predicted.

No Likely Significant Effects

Qualifying interest: greylag goose

This species could potentially forage on farmland within the Site or a relevant EZol. However, the data from Mitchell⁸ discussed above indicates a low likelihood of foraging activity within the Proposed Development's EZol and shows dense clusters of foraging goose activity to the east of the Site with only a few outliers nearer to the Site.

The footprint of the Proposed Development and the predicted maximum EZoI for disturbance/displacement of 600 m are considered highly unlikely to form FLL which is important to populations of foraging greylag geese from the European site.

Taking account of all the above, no effect pathways resulting in LSE to greylag goose are predicted.

No Likely Significant Effects

Qualifying interest: osprey

Ospreys breeding in the wider area surrounding the Site may travel to forage within the European sites based on predicted maximum foraging ranges for osprey of 20 km. Potential consequences (a worst-case scenario) of disturbance to breeding ospreys from construction works to facilitate the Proposed Development could be that up to two pairs of ospreys in the wider area fail to breed on a temporary basis and recruitment into the European site populations is reduced.

However, osprey nest sites identified in 2023 and 2024 were either towards the upper limit of the predicted disturbance distance range for breeding osprey (750 m)^{Error1 Bookmark not defined.} or beyond it. Further to this, potential disturbance and displacement effects will be further reduced by the local topography, the Site is situated on the opposite side of a forested hill to the Osprey nest sites which are further screened due to their locations in the Beauly River gorge. The topography is predicted to eliminate disturbance from visual stimuli and to significantly reduce noise disturbance.

Blasting operations are anticipated to be required to facilitate construction of the Proposed Development. Full details of this activity are not yet known, blasting activities are anticipated to generate louder noise levels than 'typical construction

Potential Impact/Effect	Screening Assessment
	activities.' Given the significant distance from the Site of osprey nests identified in 2023 and 2024 and the topography discussed above, noise levels are likely to be reduced to an acceptable level.
	Although not relating to osprey, studies of reactions to blasting activities by North American prairie falcons (Holthuijzen et al. 1990) ¹¹ experimentally examined the influence of blasting regimes at mines on nesting prairie falcons. Tolerance was tested up to 140 dB, and in response to some blasts found initiation of flight, cessation of incubation and brooding for a short period (average recorded return time to the nest was 1.4 minutes after a blast). There were no observable effects from blasts in the range of 560 m to 1 km.
	In addition to qualifying foraging osprey populations breeding outside the SPA, the qualifying population of osprey also includes those that breed within the SPA/Ramsar boundary. In theory, the Site is within the foraging range of ospreys breeding within the SPA/Rasmar.
	Suitable foraging habitat is absent from the Site and limited in the immediate surrounding area. A potentially suitable small lochan is approximately 300 m from the Site. However far more extensive foraging habitat comprising the Beauly River is further away from the Site (>700 m). Displacement from FLL used for foraging is therefore unlikely.
	Taking account of all the above, no effect pathways resulting in LSE to Osprey at predicted.
	No Likely Significant Effects

Table 3-2 Moray Firth SPA

Potential Impact/Effect	Screening Assessment
Disturbance/displacement of qualifying species from the Proposed Developments EZoI – visual and acoustic disturbance from the movement of plant and equipment and operation of plant.	All qualifying interests All the European sites qualifying interests relate to specialist marine/estuarine species for which the Site and surrounding area are wholly unsuitable. Taking account of all the above, no effect pathways resulting in LSE to qualifying interests of the European site are predicted. No Likely Significant Effects

Table 3--3 Strathglass Complex SAC

Potential Impact/Effect	Screening Assessment
Disturbance/displacement of qualifying species from the Proposed Developments EZoI – visual and acoustic disturbance from the movement of plant and equipment and operation of plant.	Qualifying interest: otter Habitat within the Site mainly comprises gazing pasture and arable farmland of low suitability for otter. Otters may commute across the Site to reach other areas of more suitable habitat. However, this is considered unlikely given the extensive suitable habitat provided by the River Beauly to the north and east of the Site which provides a potential commuting corridor to the European site.
	The Site boundary is approximately 150 m from the closest bank of the River Beauly. At this distance, disturbance is not predicted to occur to otter resting sites which are not breeding sites. The maximum recommended stand off for non-breeding sites is 30 m ¹² . Disturbance could occur to natal holts (breeding sites) as the maximum recommended standoff is 200 m for these types of resting sites ¹² . No natal holts were recorded during otter surveys to inform the EIA for the Proposed

¹¹ Holthuijzen, A.M.A., Eastland, W.G., Ansell, A.R., Kochert, M.N., Williams, R.D. & Young, L.S. (1990). Effects of blasting on behaviour and productivity

nesting Prairie falcons. Wildlife Society Bulletin, 18, 270-281.

12 Standing advice for planning consultations - Otters https://www.nature.scot/doc/standing-advice-planning-consultations-otters



Potential Impact/Effect	Screening Assessment
	Development. Two potential non-breeding resting sites were recorded with the closest approximately 260 m from the Proposed Development. This potential resting site was monitored and found not to be in current use by otters. In addition, the Site is screened from the River Beauly by woodland.
	Taking account of all the above, no effect pathways resulting in LSE to otter are predicted. No Likely Significant Effects

Table 3--4 Glen Affric to Strathconon SPA

Potential Impact/Effect	Screening Assessment
Disturbance/displacement of qualifying species from the footprint of the Proposed Development and adjacent areas forming FLL – visual and acoustic disturbance from the movement of plant and equipment and operation of plant.	Qualifying interest: golden eagle The SPA is a significant distance from the Site (approximately 9.1 km) and therefore no direct disturbance could occur to a golden eagle nest site. The distance of the SPA from the Site is at the maximum limit of the foraging range predicted for golden eagle Errorl Bookmark not defined. making displacement from linked foraging habitat unlikely. Further to this, the Site and surrounding area comprises farmland and woodland of low suitability for foraging golden eagle. Taking account of all the above, no effect pathways resulting in LSE to golden eagle are predicted. No Likely Significant Effects

Table 3--5 North Inverness Lochs SPA

Potential Impact/Effect	Screening Assessment
Disturbance/displacement of qualifying species from the footprint of the Proposed Development and adjacent areas forming FLL – visual and acoustic disturbance from the movement of plant and equipment and operation of plant.	Qualifying interest: Slavonian grebe The SPA is a significant distance from the Site (approximately 9.4 km). The sole qualifying interest, Slavonian grebe, is a specialist aquatic species for which the Site and surrounding area is wholly unsuitable. Taking account of all the above, no effect pathways resulting in LSE to Slavonian grebe are predicted. No Likely Significant Effects

Table 3--6 Cromarty Firth SPA and Ramsar

Potential Impact/Effect	Screening Assessment
Disturbance/displacement of qualifying species from the footprint of the Proposed Development and adjacent areas forming FLL – visual and acoustic disturbance from the movement of plant and equipment and operation of plant.	Qualifying interest: waders and wildfowl except greylag goose. No effect pathways are predicted using the same rationale provided above under Inner Moray Firth SPA and Ramsar No Likely Significant Effects
	Qualifying interest: greylag goose No effect pathways are predicted using the same rationale provided above under Inner Moray Firth SPA and Ramsar No Likely Significant Effects
	Qualifying interest: osprey No effect pathways are predicted using the same rationale provided above under Inner Moray Firth SPA and Ramsar No Likely Significant Effects



4. IN-COMBINATION ASSESSMENT

- 4.1.1 For most qualifying interests of the European sites there is no credible risk of pathways for minor effects that might contribute to a significant effect in-combination with plans and projects. This is because of the various factors considered in Section 3 such as the distance of the European sites from the Proposed Development and a lack of suitable habitat forming FLL.
- 4.1.2 As a precaution, disturbance and displacement to osprey is considered in-combination with other plans and projects. This is because the nearest nest site to the Proposed Development was within the maximum predicted disturbance distance of 750 m for nesting osprey. Theoretically, minor effects through disturbance and displacement to osprey could remain. When considered in- combination with the potential effects from other plans and projects, these minor effects could contribute to a significant in-combination effect.
- 4.1.3 Plans and projects with the potential to act in-combination with the Proposed Development were identified following a review of known existing proposals. The following plans and projects were considered relevant based on their scale and their potential for the same significant effect to osprey comprising disturbance and displacement:
 - The proposed Spittal-Beauly 400 kV OHL adjacent to and connecting into the Proposed Development; and
 - The proposed Beauly-Peterhead 400 kV OHL adjacent to and connecting into the Proposed Development

Spittal-Beauly 400 kV OHL

- 4.1.4 The proposed 400 kV OHL project's point of connection is the Fanellan Hub, the same as the connection point for the Proposed Development. To reach its connection point the proposed 400 kV OHL project requires a crossing of the River Beauly. The nearest tower location to the osprey nests identified in 2023 and 2024 is approximately 190 m and 400 m respectively¹³. Without mitigation, works to facilitate the proposed 400 kV OHL project could result in disturbance to breeding osprey considering the predicted maximum disturbance distance of 750 m.
- 4.1.5 In terms of visual disturbance, there is no in-combination effect because the topography is predicted to screen construction works to facilitate the Proposed Development. I.e., if works for the proposed 400 kV OHL project and Proposed Development occurred simultaneously, only works for the proposed 400 kV OHL project are predicted to be visible to the nearest nesting osprey. While the nearest nesting osprey could be exposed to simultaneous noise disturbance, the extent of the noise propagation contributed by the Proposed Development is not considered to be at a sufficient level to cause an in-combination effect with the proposed 400 kV OHL project.

Beauly-Peterhead 400 kV OHL

4.1.6 The proposed 400 kV project's point of connection is the Fanellan Hub, the same as the connection point for the Proposed Development. However, the proposed 400 kV OHL project's connection is approximately 250 m south of the Proposed Development i.e., further away from osprey nest locations in 2023 and 2024¹⁴. Given that no LSE from disturbance and displacement is predicted for the Proposed Development alone, and the greater distance of the proposed 400 kV OHL project to the osprey nest locations, no in-combination effects are predicted.

 $^{^{13}}$ Based on indicative OHL alignment as of October 2024.

 $^{^{\}rm 14}$ Based on indicative OHL alignment as of October 2024.



5. CONCLUSION

- 5.1.1 This report provides the requisite information to enable the Competent Authority to undertake a HRA Screening in relation to the potential effects of the Proposed Development on the relevant European sites identified above. The assessment undertaken in this Report is advisory only.
- 5.1.2 No LSE were identified from the Proposed Development alone or in-combination with other plans and projects.