Environmental Impact Assessment (EIA) Report

LT384 Tealing to Westfield Overhead Line (OHL) 400 kV Upgrade

November 2024

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There are no Appendices associated with this chapter.

9. ORNITHOLOGY

9.1 Introduction

9.1.1 This chapter assess the potential impacts and effects of the construction and operation of the Proposed Development on bird species. Where appropriate, it provides details of committed mitigation and/or enhancement measures identified to minimise or compensate for adverse effects on ornithological features.

9.1.2 This chapter relates to ornithological features (i.e., bird species and the sites and habitats that support them) only. Chapter 8: Ecology (Volume 2) relates to other ecological features.

9.1.3 Also relevant to this chapter is the Appendix 8.5 (Volume 4). This describes the assessment conducted to test for adverse effects from the Proposed Development on the qualifying features of European sites, which comprise Special Areas of Conservation (SAC) and Special Protection Areas (SPA), the latter of which are designated for the conservation of bird species. Where appropriate, reference is made in this chapter to analysis presented in the HRA.

9.1.4 Throughout this chapter, species are given their common and scientific names when first referred to and their common names only thereafter. All distances are cited as the shortest distance as the crow flies, unless otherwise specified.

9.1.5 The area encompassed by the Limit of Deviation (LOD), as described in Chapter 3: Project Description (Volume 2) and shown on Figure 3.1 (Volume 3), is referred to throughout as the Site. Where applicable, reference is also made to the proposed widened wayleave corridor which is defined as a 45 m buffer at either side of the OHL route.

9.2 Assessment Methodology and Significance Criteria

Scope of the Assessment

9.2.1 The scope of survey and assessment described in this chapter was informed by the guidance contained in the Guidelines for Ecological Impact Assessment (EcIA) published by the Chartered Institute of Ecology and Environmental Management (CIEEM)[1], on the responses of consultees.

9.2.2 NatureScot has devised 21 NHZ[2] covering the whole of Scotland, which reflect biogeographical differences across the country. Assessment of impacts on birds in this EIA has been carried out in the context of the Eastern Lowlands Natural Heritage Zone (NHZ 16), within which the Proposed Development is located (see Figure 9.1 (Volume 3)). This includes assessment of cumulative effects which has considered the potential for in-combination effects to arise due to other reasonably foreseeable developments and land use changes within NHZ 16.

9.2.3 The CIEEM Guidelines for EcIA recommend that only those features that are important and that could be significantly affected by the Proposed Development require detailed assessment, stating that "*it is not necessary to carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable*".

1 CIEEM (2022). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.2 – Updated April 2022. Chartered Institute of Ecology and Environmental Management, Winchester.
2 Nature Scot (2022) Natural Heritage Future Zones (online) Available at: https://opendata.nature.scot/datasets/2f35e927ca8b4b858e3931c587b4ba48/explore [Accessed: July 2024)

9.2.4 Consequently, for the purposes of the desk study, field survey and assessment described in this chapter, important ornithological features were taken to include:

- the qualifying features of SPAs and Wetlands of International Importance (Ramsar sites) within 10 km (extended to 20 km for sites designated for non-breeding waterbirds, in particular geese species, which are known to forage up to this distance from designated site boundaries) of the Proposed Development;
- all species listed on Annex I of the Birds Directive[3];
- all species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (WCA)[4];
- species listed on the Scottish Biodiversity List (SBL); and,
- all species on the Red List of Birds of Conservation Concern (BoCC) 5[5].

9.2.5 The scope of the Section 37 application is limited to the upgrade and operation of the OHL between Tower 182 (west of Tealing Substation) and the licence boundary with Scottish Power Energy Networks (SPEN) (Westfield / Glenrothes) (mid span Towers 66 and 65). The Proposed Development will not have a fixed operational life, however, it is assumed that it will be operational for 50 years or more. Once the design life of the OHL has been reached, a decision will be taken on whether to decommission and remove the transmission infrastructure or potentially to replace or upgrade it. Consequently, this chapter does not specifically assess potential decommissioning impacts. However, the impacts of decommissioning are likely to be very similar to those associated with the construction of the Proposed Development.

9.2.6 The main components of the Proposed Development comprise the replacement of conductors, insulators, and fittings on the existing steel lattice towers of the existing OHL. Where required, tower condition works including steelwork and tower leg foundation work to strengthen existing steel lattice towers will also be undertaken. Subject to further engineering and design checks, and to mitigate a 132 kV clearance constraint, Towers 155 and 156 may need to be extended in height by using a 2m long body extension. Additionally, due to constraints associated with the conductor type, coupled with an inability to utilise mid-span joints, it may be the case that either Tower 129 or 132 (not both) may need to be replaced. To facilitate these works, a temporary diversion tower (installed for less than one year) would also be required.

9.2.7 Associated works required to facilitate the Proposed Development include vegetation clearance, temporary access track construction and track upgrades, crane pads, Equipotential Zones (EPZs) and temporary measures to protect road, rail and water crossings. EPZ will typically consist of metal trackway panels covering an area of approximately 38.9 m by 26 m, plus an area of up to 15 m to allow for bunding, etc. For a detailed project description, see Chapter 3 (Volume 2).

9.2.8 The principal steps involved in the CIEEM Guidelines for EcIA approach can be summarised as follows:

- determine baseline conditions through targeted desk study and field survey, to identify important features that might be affected;
- evaluate the importance of identified ornithological features on a geographic scale, determining those that need to be considered further;

[3] Council Directive 79/409/EEC on the conservation of wild birds, which is more commonly referred to as the Birds Directive.
[4] The Wildlife and Countryside Act 1981 (as amended), abbreviated in this chapter to the WCA.
[5] Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D. and Win, I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* **144,** pp 723-747.

- describe potential impacts on relevant ornithological features, considering best practice, legislation and embedded design measures;
- assess and quantify (as far as possible) likely effects (adverse or beneficial) on relevant ornithological features;
- develop measures to avoid, reduce or, if necessary, compensate for predicted significant effects, in conjunction with other elements of the design (including mitigation for other environmental disciplines);
- report residual effects taking into account mitigation or compensation; and,
- identify opportunities for biodiversity enhancement.

9.2.9 In line with CIEEM Guidelines, the terminology used in this chapter draws a clear distinction between the terms impact and effect. In this chapter, these terms are defined as follows:

- impact – actions resulting in changes to an ornithological feature (e.g., the removal of nesting habitat); and,
- effect – the outcome resulting from an impact acting upon the conservation status or structure and/or function of an ornithological feature (e.g., the loss of nesting habitat may lead to a decline in the population of an important bird species and result in an adverse effect on the conservation status of the population concerned).

9.2.10 Impacts are assessed in view of the conservation of the bird species under consideration. NatureScot defines the conservation status of a species as "*the sum of the influences acting on it which may affect its long-term distribution and abundance, within the geographical area of interest*"[6]. A species' conservation status is considered to be favourable when:

- population dynamics indicate that the species is maintaining itself on a long-term basis as a viable component of its habitat;
- the natural range of the species is not being reduced, nor is it likely to be reduced for the foreseeable future; and,
- there is (and probably will continue to be) a sufficiently large habitat to maintain its population on a long-term basis.

9.2.11 NatureScot recommends that the concept of the favourable conservation status of a species should be applied at national (Scottish) level in order to determine the level of significance of an effect arising from the impact(s) of a development[7]. However, as highlighted above, this assessment has also been conducted in the context of NHZ 16, within which the Proposed Development is located. Therefore, even where an impact may not affect the conservation status of a species at the national level, the potential for effects on the conservation status of that species within the NHZ has also been considered.

9.2.12 In this assessment, the geographical level of Regional is defined as the area encompassed by NHZ 16, and Local as the area within 10 km of the Proposed Development.

9.2.13 The assessment of impacts on ornithological features follows the industry-standard guidelines for EcIA published by CIEEM[1], and does not follow the matrix-based approach described in Chapter 5: EIA Approach and Methodology (Volume 2), as such a method is not recommended by CIEEM. Therefore, for the purposes of this

[6] SNH (2018). Assessing the Significance of Impacts from Onshore Windfarms on Birds out with Designated Areas. Version 2 – February 2018. (online) Available from: https://www.nature.scot/doc/guidance-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect-protected. [Accessed: July 2024]

[7] SNH (2018). Assessing the Significance of Impacts from Onshore Windfarms on Birds out with Designated Areas. Version 2 – February 2018. (online) Available from: https://www.nature.scot/doc/guidance-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect-protected. [Accessed: July 2024]

EIA chapter, effects predicted to be significant on an ornithological feature at the Regional, National or International geographic levels are considered to be Significant in broader EIA terms, whereas those predicted to be significant only at the Local or Negligible levels are considered to be Not Significant.

Extent of the Study Area

9.2.14 The Zone of Influence (ZoI) of the Proposed Development is the area over which an ecological effect might extend as a result of its construction and operation. This will vary for different ornithological features and effects, depending on their sensitivity to environmental change. It is therefore appropriate to identify different ZoI for different features and effects. As recommended by CIEEM[1], professionally accredited or published studies and guidance, where available, were used to help determine the likely ZoI, as well as professional judgement. However, CIEEM also highlight that establishing the ZoI should be an iterative process informed by both desk study and field survey. Where limited information was available, the Precautionary Principle[8] was adopted and a ZoI estimated on that basis.

9.2.15 The desk study and field survey areas were designed to allow sufficient data to be collected to establish the baseline condition of ornithological features and determine the impacts of the Proposed Development. The ZoI can extend beyond a development and beyond the survey area. However, at a distance from a development its impacts might not result in significant effects (these being the focus of EcIA according to CIEEM guidance[1]), and even where a significant effect might occur over a large distance, this does not necessarily require the field survey to extend to such distances[9]. The field survey areas adopted for this assessment were sufficiently precautionary to allow assessment of potentially significant effects from the Proposed Development on ornithological features, including within the wider ZoI beyond the field survey areas.

Consultation Carried Out to Date

9.2.16 NatureScot was consulted by letter on the proposed scope of ornithology survey on 8th March 2024. On 27th March 2024, NatureScot confirmed agreement with the proposed ornithological survey scope and provided pre-application advice in relation to international designated sites, as set out in Table 9-1.

Table 9-1 NatureScot Pre-application Advice

Designated Site	NatureScot Pre-application Advice
Outer Firth of Forth and St Andrews Bay Complex SPA	It is unlikely that there will be significant activity by herring gull *Larus argentatus* breeding within this site given the distance between the SPA and the Proposed Development. It would be reasonable to conclude that there will be no likely significant effect on this designation.
Firth of Tay and Eden Estuary SPA	Within potential connectivity distance of foraging geese. The Proposed Development will affect a small proportion of the overall goose foraging resource at any time and will be of short duration. NatureScot considered that, based on information available to them at the time, it would be possible to reach a

[8] UNESCO (2005). The Precautionary Principle. United Nations Educational, Scientific and Cultural Organisation, Paris. (online) Available from: https://unesdoc.unesco.org/ark:/48223/pf0000139578. [Accessed: July 2024]

[9] By way of a theoretical example to illustrate this concept: many important bird species hold large home ranges and use the habitat within these for foraging. Construction activities within the home range of a given pair of birds could be said to have ZoI which extends to the full home range, which may extend to several kilometres from a nest site, and cover thousands of hectares. However, these works may only have a significant effect on the impacted birds in their immediate vicinity, for example by preventing them from foraging within a few hundred metres of the activities. The field survey in this case would focus on the area over which significant effects could occur, rather than the potential ZoI, which could encompass the entire home range.

Designated Site	NatureScot Pre-application Advice
	conclusion of no likely significant effects on non-breeding geese. Given the nature and location of work, it is unlikely that breeding marsh harrier *Circus aeruginosus* will be impacted.
South Tayside Goose Roosts SPA and Ramsar site	Within potential connectivity distance of foraging geese, but geese encountered on route are more likely to be more closely associated with the Firth of Tay and Eden Estuary SPA. A conclusion of no likely significant effect would be reasonable.
Loch Leven SPA and Ramsar site	Within potential connectivity distance of foraging geese, but geese encountered on route are more likely to be more closely associated with the Firth of Tay and Eden Estuary SPA. A conclusion of no likely significant effect would be reasonable.

Method of Baseline Data Collation

Guidance and Standards

9.2.17 The following guidance was used when designing the field survey carried out to inform this assessment and to determine the scope and method of the assessment itself:

- *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Coastal, Freshwater and Marine*[10]*;*
- *Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds*[11]*;*
- *Recommended bird survey methods to inform impact assessment of onshore wind farms*[12]*;*
- *Assessing Significance of Impacts from Onshore Wind Farms on Birds out with Designated Areas*[13]*;*
- *Assessing Connectivity with Special Protection Areas (SPAs)*[14]*; and*
- *Assessing the Cumulative Impact of Onshore Wind Energy Developments*[15]*.*

10 CIEEM (2022). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.2 – Updated April 2022. Chartered Institute of Ecology and Environmental Management, Winchester.
11 SNH (2016). Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds. Version 1 – July 2016. (online) Available from: https://www.nature.scot/doc/guidance-assessment-and-mitigation-impacts-power-lines-and-guyed-meteorological-masts-birds. [Accessed: July 2024]
12 SNH (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. Version 2 – March 2017. (online) Available from: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms. [Accessed: July 2024]
13 SNH (2018). Assessing the Significance of Impacts from Onshore Windfarms on Birds out with Designated Areas. Version 2 – February 2018. (online) Available from: https://www.nature.scot/doc/guidance-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect-protected [Accessed: July 2024]
14 SNH (2016) Assessing Connectivity with Special Protection Areas. Version 3 – June 2016. (online) Available from: https://www.nature.scot/doc/assessing-connectivity-special-protection-areas#:~:text=Assessing%20connectivity%20with%20special%20protection%20areas. [Accessed: July 2024]
15 SNH (2018). Assessing the Cumulative Impact of Onshore Wind Energy Developments. August 2018. (online) Available from: https://www.nature.scot/doc/guidance-assessing-cumulative-impacts-onshore-wind-farms-birds. [Accessed: July 2024]

Desk Study

9.2.18 A desk study was carried out to identify nature conservation designations and records of important bird species (as defined in Section 9.2.4) potentially relevant to the Proposed Development. A stratified approach was taken when defining the desk study area, based on the likely ZoI of the Proposed Development on different ornithological features. Accordingly, the desk study sought to identify:

- international nature conservation designations (SPAs and Ramsar sites) within 10 km of the Proposed Development, this being extended to 20 km for sites designated for non-breeding waterbirds, especially geese;
- Sites of Special Scientific Interest (SSSI) within 2 km of the Proposed Development;
- local non-statutory nature conservation designations within 1 km of the Proposed Development; and
- records of important bird species within 1 km of the Proposed Development.

9.2.19 The desk study was carried out using the data sources detailed in Table 9-2.

Table 9-2 Desk Study Data Sources

Data Source	Date Last Accessed	Data Obtained
Angus Local Development Plan website[16]	6th August 2024	Local Development Plan (LDP) policies relevant to nature conservation.
Perth & Kinross Local Development Plan 2 website[17]	6th August 2024	Local Development Plan 2 (LDP2) policies relevant to nature conservation, including supplementary guidance relating to development and biodiversity.
FIFEplan[18]	6th August 2024	LDP policies relevant to nature conservation.
NatureScot SiteLink website[19]	6th August 2024	Information on statutory designated sites.
Tayside Local Biodiversity Action Plan[20]	6th August 2024	Information on locally important ecosystems, habitats and species.
Fife LBAP[21]	14th August 2024	Information on locally important ecosystems, habitats and species.
Angus Local Nature Conservation Sites[22],[23]	1st July 2024	Location and details of Local Nature Conservation Sites (LNCS) in Angus local authority area.
Perth and Kinross Council (PKC) website[24]	1st July 2024	Location of proposed LNCS in Perth and Kinross local authority area.

16 Angus Council (2024) Development Plan (online) https://www.angus.gov.uk/directories/document_category/development_plan. [Accessed: July 2024]
17 Perth and Kinross Council (2019) Perth and Kinross Local Development Plan 2 (online) Available at: https://www.pkc.gov.uk/ldp2 [Accessed: August 2024]
18 Fife Council (2017). FIFEplan. (online) Available at: https://fife-consult.objective.co.uk/kse/event/30240/section/4395822 [Accessed: August 2024]
19 NatureScot (2024) SiteLink. (online) Available at: https://sitelink.nature.scot/home. [Accessed: August 2024]
20 https://www.taysidebiodiversity.co.uk/action-plan/action-plan-new-lbap-2015/.
21 Fife Council (2018). Fife Local Biodiversity Action Plan. (online) Available at: https://www.fife.gov.uk/kb/docs/articles/environment2/biodiversity-in-fife/fife-local-biodiversity-action-plan [Accessed: August 2024]
22 Angus Council (2023). Report No 319/23 - Local Nature Conservation Sites in Angus - Initial Phase of Local Biodiversity Sites – App 1. (online) Available at: https://www.angus.gov.uk/committees/communities_committee/communities_committee_21_november_2023 [Accessed: July 2024]
23 Smith, A. (2023) Report No 319/23 - Local Nature Conservation Sites in Angus - Initial Phase of Local Biodiversity Sites - App 2. Communities Committee – 21 November 2023. (online) Available at: https://www.angus.gov.uk/committees/communities_committee/communities_committee_21_november_2023 [Accessed: July 2024]
24 Perth and Kinross Council (2024). Planning & Biodiversity - Local Nature Conservation Sites. (online) Available at: https://www.pkc.gov.uk/ldp2naturesites [Accessed: July 2024]

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Data Source	Date Last Accessed	Data Obtained
National Biodiversity Network (NBN) Atlas Scotland[25]	3rd June 2023	Commercially available records of protected/important species within 1 km of the Site, made since 2000.
Royal Society for the Protection of Birds (RSPB) website[26]	6th August 2024	Information on potentially relevant RSPB reserves.

Non-breeding Bird Survey

9.2.20 Non-breeding bird surveys were completed in suitable habitat within 500 m of the Proposed Development with a single visit per month in February and March 2024.

9.2.21 Surveys were designed and carried out with cognisance of the *Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds*[11] and *Recommended bird survey methods to inform impact assessment of onshore wind farm*.[12]

9.2.22 Survey for non-breeding birds involved searching for flocks of foraging and roosting waterbirds which are qualifying features of Firth of Tay and Eden Estuary SPA and Outer Firth of Forth and St Andrews Bay Complex SPA. Surveyors followed driven transects, stopping at suitable vantage point locations to scan suitable habitat with binoculars.

9.2.23 Birds encountered were recorded and mapped using standard British Trust Ornithology (BTO) notation, including a description of activity/ behaviour. Where necessary, additional field notes were taken.

9.2.24 The survey area is shown on Figure 9.3 (Volume 3). Survey dates and weather conditions are given in Table 9-3.

Table 9-3 Winter Bird Survey Visit Details

Date	Survey Visit	Start Time/End Time	Weather
28 February 2024	1	10:00-17:00	Overcast with sunny spells, light wind, excellent visibility.
26 March 2024	2	10:00-17:30	4-6^{oC}, partial cloud, light northeasterly breeze, occasional drizzle, excellent visibility.

Limitations and Assumptions

9.2.25 The aim of the desk study was to help characterise the baseline context of the Proposed Development. Information obtained during the desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for particular species does not necessarily mean they do not occur in the study area. Likewise, the presence of records for a particular species does not automatically mean that these still occur within the area of interest or are relevant to the Proposed Development.

9.2.26 There were no other significant limitations to the desk study, field survey or subsequent analysis which could affect the reliability of this impact assessment.

[25] NBN atlas (2023) National Biodiversity Network Atlas Scotland (online) Available at: https://scotland.nbnatlas.org/. [Accessed: July 2023]
[26] RSPB (2024) Reserves (online) Available at: https://www.rspb.org.uk/days-out/reserves. [Accessed: August 2024]

9.3 Baseline Conditions

Designated Sites

Statutory Designated Sites

9.3.1 There are seven statutory sites designated or ornithological features within the possible ZoI of the Proposed Development. These are detailed in Table 9-4 and their locations relative to the Proposed Development are shown on Figure 9.2 (Volume 3).

Table 9-4Statutory Designated Sites for Bird Conservation

Designated Site	Reason for Designation	Relationship to the Proposed Development
Firth of Tay and Eden Estuary SPA and Ramsar site	A large number of non-breeding waterbirds, and the non-breeding waterfowl assemblage.	490 m east of the Site and 560 m from the Works Footprint. The Site is upstream of this SPA/Ramsar site and there are multiple hydrological connections between them, most notably via the River Tay and River Earn. The Site continues almost parallel to the SAC between Towers 91 and 141 remaining within 3 km across this section. Intervening land comprises the River Tay SAC, River Earn, agricultural land, patches of woodland, and scattered settlements including Errol.
Outer Firth of Forth and St Andrews Bay Complex SPA	A large number of breeding and non-breeding seabirds and waterbirds, as well as the non-breeding waterfowl assemblage	Located approximately 6.7 km south of the Proposed Development. There is a direct, though distant, hydrological connection between the SPA and the Proposed Development. Intervening land comprises agricultural fields and the City of Dundee.
Loch Leven SPA and Ramsar site	Non-breeding whooper swan *Cygnus cygnus*, pink-footed geese *Anser brachyrhynchus* and shoveler *Anas clypeata* along with a non-breeding waterfowl assemblage.	Located approximately 13 km southwest of the Proposed Development at closest. Intervening land comprises predominantly agricultural fields with areas of woodland.
South Tayside Goose Roosts SPA and Ramsar site	The following species: • Migratory wigeon *Anas penelope*; • Non-breeding greylag goose *Anser anser*; and • Non-breeding pink-footed goose.	Located approximately 14.8 km east of the Proposed Development at closest. Intervening land comprises predominantly agricultural fields with areas of woodland and the town of Bridge of Earn.

9.3.2 There are no SSSIs designated for ornithological features within 2 km of the Proposed Development.

Non-statutory Designated Sites

9.3.3 Angus Council and Perth & Kinross Council are currently conducting the Local Nature Conservation Sites Project, whereby local biodiversity sites (and local geodiversity sites) will be selected. A selection of sites are proposed, but formal adoption of these is not anticipated to be concluded until mid-2025[24]. Therefore, sites are subject to change and additional sites may be designated which are within or near the LOD. At the time of writing, no proposed LNCS of relevance to ornithology fall within the ZoI of the Proposed Development.

Wintering Birds

9.3.4 The February non-breeding bird survey recorded a total of 170 greylag geese (one flock) and two pink-footed geese (each recorded individually within flocks of other (non-target) waterfowl species). Both species are qualifying features of the Firth of Tay and Eden Estuary SPA and South Tayside Goose Roosts SPA, and pink-footed geese of the Loch Leven SPA. These were recorded in a field near St Madoes alongside 108 whooper swans (a qualifying feature of Loch Leven SPA).

9.3.5 The March visit recorded 133 whooper swans, 16 greylag geese and one pink-footed goose foraging together in a field near St Madoes. Four shelduck *Tadorna tadorna* (a qualifying feature of Firth of Tay and Eden Estuary SPA) in a field south of Inchure, just outside the 500 m buffer. 120 pink-footed geese in a field south of Leoch, just outside the 500 m buffer. 150 pink-footed geese were recorded in a field opposite Tealing Substation, within the Site.

Records from Desk Study

9.3.6 The desk study identified records of a number of farmland breeding bird species, including grey partridge *Perdix perdix,* linnet *Linaria cannabina* and tree sparrow *Passer montanus*. In addition, records of barn owl *Tyto alba*, merlin *Falco columbarius* and marsh harrier were returned. However, no suitable habitat for these raptor species was found in the vicinity of the Proposed Development, and breeding by them is not considered to be likely.

Future Baseline

Baseline at the Time of Construction

9.3.7 Construction of the Proposed Development is expected to commence in 2025/2026 and to take approximately three years to complete.

9.3.8 The Proposed Development will follow the route of the existing Tealing to Westfield OHL, which largely crosses agricultural land. Routine farming practices will continue to cause regular changes to habitat through activities such as ploughing, crop growing, and use of land as pasture. This is consistent with the existing baseline conditions. In the more upland areas, there are not expected to be any major land use changes prior to the commencement of construction.

9.3.9 The Proposed Development does not cross any land which is zoned for development in either Angus LDP, Perth & Kinross LDP2, or FIFEplan.

9.3.10 Minor changes in the distribution of some species (e.g., nesting birds) may occur due to small scale changes in habitat structure as a result of farming activities, ecological succession, or other natural processes. Given the relatively short period of time before construction is expected to start, and that significant changes in land management practices are unlikely in the intervening period, any such changes are likely to be within the range of normal short-term variation in the distribution and abundance of species populations.

9.3.11 It is expected that the current baseline conditions will remain largely unchanged at the time of construction of the Proposed Development.

Baseline in the Absence of the Proposed Development

9.3.12 In the absence of the Proposed Development, and for this purpose taking a point 30 years in the future, there are unlikely to be significant changes from the current baseline. The existing overhead power line would remain in place. Furthermore, current land management practices, in particular farming, are likely to continue as at present, and significant changes of land use are unlikely, especially in the more upland areas. Small changes might occur, for example through spread of invasive non-native species. Some impact from climate change could also occur, however it is difficult to predict the direction of change on habitats and species. In summary, the future baseline in the absence of the Proposed Development is likely to be largely the same as the current baseline.

9.4 Issues Scoped Out

9.4.1 As stated in Section 9.2.4, relevant ornithological features are those that are important and have the potential to be significantly affected by the Proposed Development. In view of the baseline data obtained through desk study and field survey, the features in Table 9-5 have been excluded from further assessment because:

(a) available data indicates that they are likely to be absent from the ZoI of the Proposed Development;

(b) it is clear that no impact from the Proposed Development is likely; and/or,

(c) they are features that, although identified as being important by the criteria given in this chapter, are common and widespread and their conservation status is clearly not threatened by the Proposed Development.

Table 9-5 Ornithological Features Scoped Out of Further Assessment

Ornithological Feature	Rationale for Exclusion from Further Assessment in this Chapter
National statutory designated sites	There are no SSSIs for which bird species are notified features within 2 km of the Proposed Development. Other SSSIs further afield underly SPAs and are thus considered as part of the assessment of impacts on these international sites.
Non-statutory designated sites	There are no locally designated non-statutory designated sites within the likely ZoI of the Proposed Development.
Breeding raptors	The majority of the habitats within the Proposed Development site are not considered suitable for notable raptors. Marsh harriers are known to nest in the Tay reedbed. However, the most suitable area of extensive reed bed for nesting is located in the RSPB Tay Reedbeds reserve, approximately 1 km from the Proposed Development. NatureScot suggests a works exclusion zone of 300-500 m around marsh harrier nests, therefore this area is well beyond the distance at which an impact from construction works could occur. The very thin area of reeds closer to the Proposed Development is unlikely to be suitable for marsh harrier breeding, especially when compared to the considerably more extensive areas elsewhere. Given the distance to suitable habitat, no targeted survey for marsh harrier was considered to be necessary. However, no marsh harriers were recorded incidentally during the course of any other ecological field survey carried out for the Proposed Development (this species is relatively conspicuous, and it is very likely that it would have been recorded during other ecological surveys, if present in the area around the Proposed Development) .

9.5 Assessment of Effects, Mitigation and Residual Effects

Standard Good Practice Mitigation

9.5.1 A range of measures that are standard good practice for development of this type, and which are required to comply with environmental protection legislation, will be implemented. These are well-developed and have been successfully used on infrastructure projects across the country, and there is a high degree of confidence in their success. They can therefore be treated as embedded mitigation. These will include:

- All personnel involved in the construction of the Proposed Development will be made aware of the ornithological features within the ZoI and the mitigation measures and working procedures that must be adopted. This will be achieved as part of the induction process and through the delivery of Toolbox Talks, where required;
- An Environmental Clerk of Works (ECoW) will be appointed for the duration of the construction of the Proposed Development. The remit of the ECoW will include, but may not be limited to:
    - carrying out pre-works checks for important bird species and nesting birds;
    - advising on exact infrastructure placement within micro-siting tolerances;
    - monitoring of, and advising on, storage of materials;
    - advising on habitat reinstatement;
    - monitoring of pollution control measures and advising on placement of mitigation measures to minimise habitat damage; and,
    - sightings of protected and/or important bird species within the site of the Proposed Development during the construction period will be recorded. If any evidence or sightings of specially protected bird species listed on Schedule 1 of the WCA suggest that a nest site may be present within 1 km of active or planned near term works, then works in that area will stop immediately and the ECoW will be contacted for further advice;
- A Construction Environment Management Document (CEMD) will be prepared and submitted for approval to Fife Council, Angus Council and Perth & Kinross Council, in consultation with the Scottish Environment Protection Agency (SEPA), where necessary, prior to the commencement of construction. The CEMD will set out all environmental management measures and the roles and responsibilities of personnel;
- During the construction phase, pollution prevention measures will be adopted, following SEPA Pollution Prevention Guidelines and Guidance on Pollution Prevention, including the following:
    - Controls and contingency measures will be provided to manage run-off from construction areas and to manage sediment;
    - All oils, lubricants or other chemicals will be stored in an appropriate secure container in a suitable storage area, with spill kits provided at the storage location and at places across the Proposed Development site; and,
    - In order to avoid pollution impacts to soils, vegetation and watercourses/ waterbodies during construction, all refuelling and servicing of vehicles and plant will be carried out in a designated area which is bunded and has an impermeable base. This will be situated at least 50 m away from any watercourse.
- Works near or at any retained trees will follow good practice to protect these features, including their roots;
- Any artificial lighting required for construction works will be directional to avoid or minimise light spill beyond the immediate works areas; and,

- All works will follow SSEN's General Environmental Management Plans and the Bird Species Protection Plan.

The Potential Impacts of the Proposed Development

9.5.2 As set out in Chapter 3: Project Description (Volume 2), the Proposed Development involves the reconductoring of the existing OHL between Tealing and Westfield. No new towers will be required, except for the replacement tower which will be needed for either Tower 129 or Tower 132 (alongside the associated temporary diversion tower during construction). The height of all existing towers will also remain unchanged, with the exception of Towers 155 and 156.

9.5.3 The following broad categories of impact could arise during the construction of the Proposed Development and are considered, where potentially relevant, in relation to each of the ornithological features scoped into detailed assessment in the Scoping Report (Appendix 6.2 (Volume 4)):

- Temporary loss of habitat which supports bird species;
- Disturbance to and/or displacement of species during construction;
- Accidental destruction of active bird nests (e.g., in farmland); and,
- Cumulative effects arising in combination with other developments or due to land use changes within NHZ 16.

9.5.4 There are no likely pathways for pollution of surface water, groundwater, soils or vegetation given that industry-standard good practice measures will be implemented to meet legal and regulatory requirements, as described in Section 9.5.1. These measures are considered as embedded and this impact is therefore not considered for any ornithological feature.

9.5.5 There are no significant operational phase impacts of the Proposed Development. The alignment of the existing OHL will remain unchanged, as will the existing tower heights (with the possible exception of Towers 155 and 156 and the new tower at either 129 or 132). There is consequently negligible change to the baseline in terms of the risk of birds colliding with the OHL. Maintenance works during the operational phase would be infrequent and are very unlikely to result in greater levels of disturbance than those caused by existing activities, in particular agriculture.

Importance of Ornithological Features

9.5.6 The assessed importance of those ornithological features identified in the baseline conditions, and which have not been scoped out in Table 9-5, is set out in Table 9-6, together with rationale. Importance has been assessed considering geographic scale, in accordance with the CIEEM Guidelines.

9.5.7 When considering geographic scale, for the purposes of this assessment, the geographical level of Regional is defined as the area encompassed by NHZ 16, and Local as the area within 10 km of the Proposed Development.

Table 9-6 Importance of Ecological Features

Ornithological Feature	Importance	Rationale
Firth of Tay and Eden Estuary SPA and Ramsar site	International	These sites have been selected, and legally protected, for their internationally important bird populations.
Outer Firth of Forth and St Andrews Bay Complex SPA		
Loch Leven SPA and Ramsar site		
South Tayside Goose Roosts SPA and Ramsar site		
Wintering birds	Local	Although notable, the numbers of wintering birds within proximity of the Site are only locally significant.

Construction Phase

Impacts on European Sites and Ramsar Sites

9.5.8 A detailed assessment of the potential impacts and effects of the Proposed Development on European sites, including: Firth of Tay and Eden Estuary SPA; Outer Firth of Forth and St Andrews Bay Complex SPA; Loch Leven SPA; and, South Tayside Goose Roosts SPA, is provided in the Appendix 8.5 (Volume 4). Although not specifically addressed in the latter document, Loch Leven Ramsar site and South Tayside Goose Roosts Ramsar site underly the SPAs of the same name, and the assessment is thus applicable to these designations.

9.5.9 It was concluded in the Appendix 8.5 (Volume 4) that there would be no likely significant effects (LSE) on the qualifying features of the European sites. In EIA terms, it is therefore concluded that there will be **Negligible** effect on European sites, and this is **Not Significant.**

Mitigation for European Sites

9.5.10 No mitigation is required in relation to European sites.

Residual Effects on European Sites

9.5.11 It is concluded in the Appendix 8.5 (Volume 4) that there will be no LSE on the qualifying features of the European sites and therefore no adverse effect on the integrity of any European site as a result of the construction of the Proposed Development. Adopting EcIA terminology, it is concluded that there will be **Negligible** effect on European sites from the construction of the Proposed Development, and this is **Not Significant**.

Impacts on wintering birds

9.5.12 During field survey, a maximum of 270 pink-footed geese, 133 whooper swans, 170 greylag geese and 4 shelduck were recorded within the 500 m survey buffer, at nearest, approximately 300 m from the Site.

9.5.13 These birds may be temporarily disturbed during construction, but there are adequate fields in the surrounding area that they will also use for foraging.

9.5.14 It is therefore concluded that there will be **Negligible** effect on wintering birds from the construction of the Proposed Development, and this is **Not Significant**.

Cumulative Effects

9.5.15 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. The assessment of cumulative effects has been carried out in the context of the Eastern Lowlands NHZ (NHZ 16). However, to assess every development in the whole of NHZ 16 would be impossible due to number of developments this would include and the lack of available data for many. This constraint is recognised by NatureScot[27].

9.5.16 The schemes for cumulative assessment were identified in Chapter 5: EIA Approach and Methodology (Volume 2) and the ornithological cumulative assessment is detailed in Table 9-7 and Table 9-8.

[27] NatureScot (2021) Guidance – Assessing the cumulative landscape and visual impact of onshore wind energy developments. (online) Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments#Assessing+cumulative+impacts [Accessed: July 2024]

Table 9-7 Interactive (intra) cumulative assessment for Associated SSEN Developments

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Alyth – Tealing 275 kV OHL upgrade	A	Alyth-Tealing	Upgrade of approximately 14 km of an existing 275 kV OHL between Alyth Substation and Tower 685 north-west of Tealing Substation to enable operation at 400 kV.	EIA Report in preparation (alongside the EIA Report for the Proposed Development.	No significant residual effects.	No likely significant cumulative effects.	None.
Emmock (Tealing) substation	B	Near Emmock Road, Tealing	Construction of a new 400 kV substation in Tealing.	Scoping Report submitted 2nd July 2024.	Not available.	The Scoping Report determined that effects on ecological receptors within and using the Site are anticipated and have some potential to be significant. However, in terms of cumulative effects, no likely impact pathways have been identified for European Sites as a result of this proposed development. There is potential significant effects from loss of habitat and habitat modification, or disturbance to lapwing as a result of this proposed development, though the habitats present are considered to have lower BTO wader sensitivity ratings. Negligible cumulative effects expected. Therefore, no likely significant cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Kintore- Tealing 400K Connection	C	Kintore - Tealing	Construction of a new 400 kV OHL between Kintore and Tealing.	In Preparation – no screening or scoping submitted.	Not available.	Information not available. However, avoidance and mitigation measures similar to those to be implemented by the Proposed Development will be implemented and no likely residual significant effects. Therefore, no likely significant cumulative effects.	None.
Alyth-Tealing and Tealing-Westfield OHL Tealing (Emmock) substation tie-ins and associated tower dismantling	D	Tealing	Construction of a new OHL originating at some point on the existing OHLfrom the Alyth-Tealing OHL between Tower 680 and Tower 682, as well as the Proposed Development between Tower 180 and Tower 182 (likely Tower 181), connecting to the new proposed Tealing (Emmock) substation. This will enable the removal of approximately 1.5 km of redundant OHL between Towers 680/682 and the existing Tealing Substation.	In Preparation – no screening or scoping submitted.	Not available.	Information not available. However, avoidance and mitigation measures similar to those to be implemented by the Proposed Development will be implemented and no likely residual significant effects. Therefore, no likely significant cumulative effects.	None.

Table 9-8 In-combination (inter) cumulative assessment for Other SSEN and 3rd Party Developments

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Muir of Pert Energy Storage Facility	E	Muir of Pert Farm, Tealing, Dundee DD4 0QL	Energy storage facility up to 50 MW, compound of equipment, access, fencing, security cameras, landscaping, tree planting, demolition of derelict buildings and other associated works.	Proposal of Application (PAN) Approved Subject to Conditions 12th July 2023 and EIA Screening Request submitted and determined EIA Not Required 11th July 2023.	Not available.	No significant effects identified through Screening Request, no likely significant cumulative effects.	None.
Moatmill Bridge Tealing Energy Storage Facility	F	Land at Moatmill Bridge, Tealing	Energy storage facility up to 50 MW, compound of equipment, meter building, fencing, security cameras, new belt of native trees and landscaping.	PAN Approved Subject to Conditions 3rd May 2023.	Not available.	The proposed development site would measure around 3.8 ha and comprises agricultural land. Situated approximately 1.6 km from the Proposed Development. No likely significant cumulative effects.	None.
Tealing Solar Energy Park	G	Near Duntrune, DD4 0PR	Application for Installation of a solar energy park of approximately 100 MW and all associated infrastructure.	Application submitted 17th November 2023. EIA not required.	The ecology documents submitted with this application do not refer to ornithology. However, solar farms generally have limited impacts on bid species, and habitat measures described in the Biodiversity Management Plan for this project are likely to benefit bird species.	No likely significant cumulative effects	None

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Tealing Battery Energy Storage Farm	H	Land to the north-east of Gagie Home Farm, Duntrune, DD4 OPR	Application for Installation of an 80 MW Battery Energy Storage Facility and associated infrastructure	Status: Application Consented 13th December 2023 .	The Preliminary Ecological Appraisal Report for this project states that the site is of low value to birds and is likely to support only common and widespread species. A variety of habitat enhancement measures are proposed that will benefit bird species, including grassland / wildflower establishment, and planting of native shrubs and hedgerow.	No likely significant cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Solar Farm at land 500 m east of Stoneygroves Liff	I	Land 500 m East of Stoneygroves Liff	Solar farm installation with an export capacity of 20 MW (AC) (with peak generation capacity of 24-28 MW) comprising ground-mounted solar photovoltaic arrays together with associated infrastructure and landscaping.	Application Approved Subject to Conditions 13th March 2024.	From the preliminary ecological appraisal, the following is discussed which would be relevant with regards cumulative effects with the Proposed Development: Wintering geese may be impacted by the proposed development. There are local SPAs and SSSIs sites within 20 km of the Site, and as such, geese and wader species observed within the Site over winter are likely to be associated with these designated areas. However, information from NatureScot indicates that the loss of this potential winter goose feeding site would not have a significant impact of the SPA geese. The high tide winter bird surveys recorded a single woodcock feeding in an area within the northwest of the Site boundary. This indicates waders from the local SPA and SSSI sites are using this Site. However, due to only a single individual being recorded and the similar habitat surrounding the Site, it is unlikely the proposed development will impact the populations of the local designated sites.	No likely significant cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Battery Energy Storage at Cordon Farm, Abernethy	J	Land 600 m northeast of Cordon Farm, Abernethy	Formation of 30 MW BESS Facility with associated access and infrastructure.	Proposal of Application submitted 6th December 2022.	Not available.	No EIA screening request or opinion. However, relatively small size of project means that significant cumulative effects is unlikely.	None.
Jamesfield Energy Storage Facility	K	Land 140 m north-east of Jamesfield Organic Centre Newburgh	Formation of a 49 MW Battery Energy Storage Facility comprising battery storage units, ancillary buildings, vehicular access, landscaping and associated works.	Application Consented 28th September 2022. EIA not required.	Based on the desk study data with regards to the known distribution of pink-footed geese within the Site and surrounding area, and the nature and scale of the Proposed Development, it is concluded that significant effects on Natural sites are unlikely. An HRA, or further studies such as wintering bird surveys, should therefore not be required. NatureScot have been consulted and have confirmed that they agree with this assessment. They have advised that mitigation (screening or similar) should be used if construction works are carried out during the winter period (mid-October to March inclusive) to minimise potential disturbance impacts.	No likely significant cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Balnuith Farm BESS (Tealing)	L	Balnuith Farm, Tealing, DD4 0RE	The construction and operation of a BESS for the storage of up to a 249 MW of electricity together with associated infrastructure, substation, security fencing, CCTV, security lighting and landscaping.	Screening Opinion issued 6th September 2023.	Given the agricultural use of the site, the location of the development, and the opportunity to create landscape features, provide landscape buffers and habitat improvements, it is not considered that any impacts would be significant in the context of the EIA regulations.	No likely significant cumulative effects.	None.
Fithie Energy Park BESS	M	Land to the north-west of Tealing Substation	Construction and operation of up to 1400 MW BESS and associated infrastructure.	Screening Report submitted 23 February 2024.	Not available.	. No Screening Opinion available. However, relatively small size of project means that significant cumulative effects are unlikely.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Myreton BESS	N	Land to the south of Tealing Substation.	A proposed BESS with an installed capacity of around 750 MW	Screening Report submitted 22 February 2024.	Not available.	It is not considered that the proposal has the potential to have significant effects on any existing environmental designations in the wider area due separation distance and the relatively small size of the site. Avoidance and mitigation measures similar to those to be implemented by the Proposed Development will be implemented and no likely residual significant effects. Therefore, no likely significant cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
SPEN TKUP Lines (Uprate to 400 kV operation)	O	Tower YS065 (SHET/SPT Border) near Pitmedden Forest to YS001 (Westfield) and YJ084 (Westfield) to YJ001 (Longannet	Increase voltage of approximately 30 km of OHL from 275 kV to 400 kV	No EIA screening or scoping available. Only high-level plan of route available.	Not available.	Information not available. However, avoidance and mitigation measures similar to those to be implemented by the Proposed Development are likely to be implemented, and as a result there would be no likely residual significant effects. Therefore, no likely significant cumulative effects.	None.

9.5.17 During the appraisal process, the results of which are described in this chapter, there were no impacts identified that were considered likely to result in a residual effect of greater than Negligible effect.

9.5.18 All ornithological construction effects are considered likely to be Negligible. There are no likely significant operational effects on ornithological features. As such, the Proposed Development offers essentially no ornithological adverse effects with which there could be cumulative effects, either between aspects of the Proposed Development itself or with other plans or developments as listed in Table 9-7 and Table 9-8.

9.5.19 It is concluded on the basis of the assessment presented above that the Proposed Development will not act either individually or cumulatively with other projects to give rise to significant adverse effects on ornithological features. This relies on the mitigation described in this chapter to avoid or minimise the risk on important ornithological features, and on the other developments which formed part of the cumulative assessment also doing the same (e.g., managed through project-specific CEMDs).

9.6 Enhancement

9.6.1 Planning Policy 3a of National Planning Framework 4 (NPF4) requires that all "*development proposals contribute to the enhancement of biodiversity, including where relevant, restoring degraded habitats and building and strengthening nature networks and the connections between them*".

9.6.2 Furthermore, Policy 3b applies to EIA projects and states that these developments will "*only be supported where it can be demonstrated that the proposal will conserve, restore and* ***enhance*** *biodiversity, including nature networks so that they are in a demonstrably better state than without intervention*" [emphasis added].

9.6.3 NPF4 does not specify or require a particular assessment approach or methodology to be used in order to demonstrate that biodiversity will be in a better state post-development. However, the following criteria must all be met:

(a) The proposal for enhancement must be "*based on an understanding of the existing characteristics of the site and its local, regional and national ecological context prior to development, including the presence of any irreplaceable habitats*;

(b) Wherever feasible, nature-based solutions should be integrated and made best use of;

(c) An assessment of potential negative effects [must be provided] which should be fully mitigated in line with the mitigation hierarchy prior to identifying enhancements;

(d) Significant biodiversity enhancements [must be] provided, in addition to any proposed mitigation. This should include nature networks, linking to and strengthening habitat connectivity within and beyond the development, secured within a reasonable timescale and with reasonable certainty. Management arrangements for their long-term retention and monitoring should be included, where appropriate; and,

(e) *Local community benefits of the biodiversity and / or nature networks have been considered*."

9.6.4 As part of the Applicant's Sustainability Strategy, a commitment was made to deliver Biodiversity Net Gain (BNG) from future projects. To support assessments of BNG, the Applicant has developed their own metric, known as the SSEN Biodiversity Toolkit. An assessment of BNG has therefore been carried out for the Proposed Development using the SSEN Biodiversity Toolkit. This is reported in the BNG Report (Appendix 8.7 (Volume 4)).