Cambushinnie 400 kV Substation Haul Track

Shadow Appropriate Assessment

SSEN Transmission

Project Reference: 60721943

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Quality information

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1. Introduction

1.1 Background

AECOM was appointed by Scottish Hydro Electric Transmission PLC, operating and known as Scottish and Southern Electricity Networks Transmission (SSEN Transmission) to undertake ecological surveys and assessment for the proposed Cambushinnie 400 kV Substation Haul Track, more particularly described below (the 'Proposed Development'),[1] to support a planning application. As part of this commission, AECOM was instructed to undertake a Habitats Regulations Appraisal (HRA) Screening of the Proposed Development to establish whether the project could have likely significant effects on European sites designated for nature conservation which are protected under The Conservation (Natural Habitats, &c.) Regulations 1994 ("Habitats Regulations"). Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are protected by the Habitats Regulations, and any proposals that could significantly affect them will require a HRA.

An Environmental Appraisal[2] has been prepared to accompany an application for planning permission under the Town and Country Planning (Scotland) Act 1997 (as amended). On 18 November 2024, during consultation, NatureScot (and by extension Perth & Kinross Council) indicated that there is a Likely Significant Effect (LSE) for the Proposed Development and that a HRA should progress to an Appropriate Assessment. NatureScot requested that mitigation measures be considered to protect qualifying geese associated with the South Tayside Goose Roosts SPA. The Appropriate Assessment within this statement sets out the opinion of AECOM regarding HRA in respect of the Proposed Development and is referred to as a 'shadow' Appropriate Assessment.

1.2 Summary description of the Proposed Development

The Proposed Development is located approximately 3 km east of the existing Braco West Substation and 50 m south of Braco village. The Proposed Development will route between the A822 and the existing access track to Braco West Substation, to the south of Braco. The Haul Track will be approximately 1.2 km in length and 6.5 m wide. It will comprise a bell mouth junction at the A822, and for approximately 366 m, it will comprise of permanent tarmacadam surfacing. A bridge will span Keir Burn (approximately NN 83401 09083). The bridge deck will be temporary, though the abutments to support the bridge at either side of the burn will be permanent, but no in-channel works will be required.

Landscape and visual mitigation measures, including hedgerow planting for the purposes of noise / visual screening have been proposed. Such measures will also provide biodiversity enhancements.

1.3 Legislative context

Under the Habitats Regulations[3], a network of sites has been designated across Scotland for the purposes of nature conservation. This network comprises sites known as SACs and SPAs. SACs are designated for the protection of habitats and non-avian animal species of conservation concern. SPAs are designated to protect rare or vulnerable species of bird, as well as all regularly occurring migratory bird species.

Prior to the UK's exit from the European Union (EU), Scotland's SACs and SPAs were part of a wider network of such sites known as the 'Natura 2000 network'. They were consequently referred to as 'European sites'. Now that the UK has left the EU, Scotland's SACs and SPAs are no longer part of the Natura 2000 network but form a part of a UK-wide network of designated sites referred to as the 'UK site network'. However, it is current Scottish Government policy to retain the term 'European site' to refer collectively to SACs and SPAs (including any which are designated following the UK's exit from the EU) (Scottish Government, 2020).

[1] The Proposed Development constitutes a 'project' under the Habitats Regulations and, although HRA applies to both plans and projects, hereafter no reference is given to plans, except where necessary (for example when considering in-combination effects).
[2] AECOM, 2025. Cambushinnie 400 kV Substation Haul Track Environmental Appraisal.
[3] The Conservation (Natural Habitats, & c.) Regulations 1994 (as amended), more commonly referred to as the 'Habitats Regulations'.

The Habitats Regulations require that any plan or project which is not directly connected with or necessary to the conservation of a European site, and which is likely to have a significant effect on such a site, either alone or in combination with other plans or projects, must be subject to an 'appropriate assessment' of the implications for the conservation objectives of that site. Generally, such proposals may only be approved if the 'competent authority' has ascertained, by means of an appropriate assessment, that there will be no adverse effect on the integrity of the European site(s), unless the competent authority decides to pursue a derogation under Regulation 49 of the Habitats Regulations. The procedure to be applied is known as 'Habitats Regulations Appraisal'[4].

Note that, although the Habitats Regulations do not define a 'plan', the Proposed Development is considered to be a 'project' rather than a plan. For the remainder of this Habitats Regulations Appraisal Screening Report, therefore, reference is only made to projects, unless it is necessary to describe or refer to relevant plans (for example, when considering possible in-combination effects).

The competent authority responsible for carrying out a HRA is the relevant planning authority for a particular project. The competent authority is required to apply the precautionary principle and can only grant consent once it has been ascertained that there will be no adverse effect on the integrity of the European site(s) concerned. However, the Habitats Regulations provide that, even if adverse effects on European site integrity are predicted, and in the absence of a suitable alternative solution, the project can still be carried out for imperative reasons of over-riding public interest (IROPI). In such cases, compensatory measures must be implemented.

Although the UK is no longer part of the EU, a series of prior rulings of the Court of Justice of the European Union (CJEU) are relevant and must be considered when conducting HRA. Some of the rulings which are of relevance to projects and their implications are summarised in Table A-1, Appendix A. Further details are also provided in NatureScot guidance (SNH, 2014; SNH, 2015; SNH, 2019).

1.4 Overview of the HRA process

As a consequence of the UK's exit from the EU, it was necessary for various amendments to be made to the Habitats Regulations. These changes were required to ensure that Scotland continues to maintain the same standard of protection afforded to European sites. The Habitats Regulations remain in force, including the general provisions for the protection of European sites and the procedural requirements to undertake HRA. The changes made were only those necessary to ensure that they remain operable following the UK's exit from the EU.

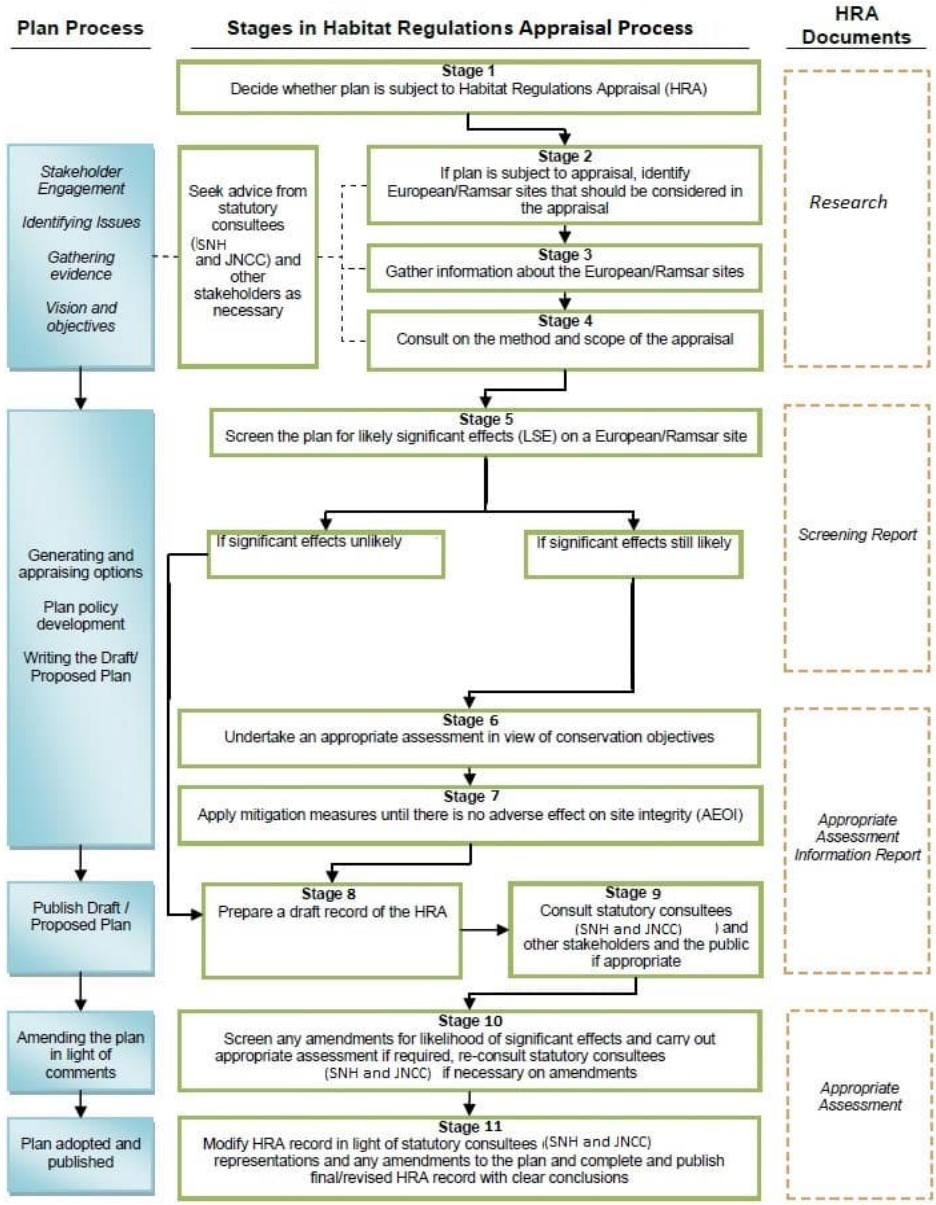
The Habitats Regulations set out a step-by-step sequence of statutory procedures to be followed when conducting an HRA. The steps are designed to test the potential effects of a project on a European site and must be followed in the correct and particular order.

The Habitats Regulations do not prescribe a particular methodology for carrying out an appraisal of projects. However, NatureScot recommend an approach, as described in NatureScot guidance[5], which is outlined as a series of 13 stages. However, taking account of case law (see Table A-1, Appendix A) clarifying when mitigation can be taken into account in the HRA process, AECOM has revised the process to constitute 11 stages. An amended version of the flow chart of the HRA process presented in NatureScot guidance[5] is provided as Diagram 1. It should be noted that this specifically relates to the appraisal of plans, however the principles and broad process are identical for plans and projects. Note also that this diagram refers to 'SNH', which should now be read as 'NatureScot' which is the operating name of SNH.

[4] In the past, the term 'Appropriate Assessment' has been used to describe both the overall process and a particular stage of that process. The term 'Habitat Regulations Appraisal' has come into use in order to refer to the process that leads to an Appropriate Assessment, thus avoiding confusion. Throughout this document, HRA is used to refer to the overall procedure required by the Habitats Regulations.

[5] Habitats Regulations Appraisal of Plans, 2015. Guidance for Plan-making Bodies in Scotland. Version 3, January 2015. Available from: https://www.nature.scot/habitats-regulations-appraisal-plans-guidance-plan-making-bodies-scotland-jan-2015. [Accessed: 29 May 2025].

Diagram 1 Stages of the HRA process (adapted from SNH (2015))



In accordance with the process recommended by NatureScot and relevant case law, the methodology for the HRA of a project can comprise four main activities:

- HRA Activity 1: Screening (including a 'likely significant effect' judgement);
- HRA Activity 2: Appropriate Assessment;
- HRA Activity 3: assessment of alternative solutions; and,
- HRA Activity 4: assessment where no alternative solutions exist and where adverse effects remain (i.e. consideration of imperative reasons of overriding public interest (IROPI)).

1.5 Purpose of this Report

The first activity in the HRA process, as outlined in Section 1.4, is Screening, the purpose of which is to establish whether the project will have likely significant effects on a European site. For this purpose and as a result of case law 'likely' means 'possible' (see Table A-1). Subsequently, during the Appropriate Assessment, identified likely significant effects are examined in more detail, including the implementation of mitigation if required, to determine if the Proposed Development would result in adverse effects on the integrity of the identified European sites.

Whilst the various stages of an HRA must be carried out by a competent authority (in this case, Perth and Kinross Council), the information needed to complete these assessments is typically provided by the applicant or their appointed consultants. This shadow HRA therefore represents the opinion of AECOM as to the potential for effects from the Proposed Development on the qualifying features of any European site. It is designed to allow Perth and Kinross Council, in their capacity as the competent authority for HRA in this case, to make a decision as to whether the Proposed Development can, subject to other requirements, be consented.

1.6 Quality assurance

This Statement to Inform Habitats Regulations Appraisal, and the appraisal described within it, has been completed in accordance with the AECOM Integrated Management System (IMS). Our IMS places emphasis on professionalism, technical excellence, quality, as well as covering health, safety, environment and sustainability management. All AECOM staff members are committed to maintaining our accreditation to those parts of BS EN ISO 9001:2015 and 14001:2015, as well as BS OHSAS 18001:2007 that are relevant to a consultancy service.

The assessment has been carried out by AECOM ecologists with experience in conducting such appraisals. All are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) at the appropriate grade and adhered to their strict Code of Professional Conduct.

2. Identification of relevant European sites and Screening

There is no pre-defined guidance on the scope of an HRA. When seeking to identify relevant European sites, consideration has therefore been given primarily to identified impact pathways and the source-pathway-receptor approach, rather than adopting a purely ‘zones’-based approach. The source-pathway-receptor model is a standard tool in environmental assessment. In order for an impact to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no possibility for an impact to occur. Furthermore, even where an impact is predicted to occur, it may not result in significant effects. It is also important to distinguish between an ‘impact’ and an ‘effect’. An impact is defined as an action resulting in changes to an ecological feature, while an effect is the outcome to an ecological feature arising from an impact[6]. For example, an impact may be the disturbance of a pair of breeding birds as a result of construction activities; the effect would be how the population or conservation status of that species changes as a consequence.

The likely zone of impact (also referred to as the likely ‘zone of influence’) (ZoI) of a project is the geographic extent over which significant ecological effects are likely to occur, as defined in CIEEM guidance[6]. The ZoI of a project will vary depending on the specifics of a particular proposal and must be determined on a case-by-case basis with reference to a variety of criteria, including:

- the nature, size / scale and location of the project;
- the connectivity between the project and European sites, for example through hydrological connections or because of the natural movement of qualifying species;
- the sensitivity of ecological features under consideration; and,
- the potential for in-combination effects.

There is no geographical limit beyond which European sites need not be considered by HRA of a project. However, as a first step in identifying European sites which may be relevant, a search was made for sites within 10 km of the Proposed Development. An overview of the European sites identified within this search area is given in Table 1. The locations of these designated sites are shown on Figure 1.

[6] CIEEM, 2024. Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (Version 1.3, updated September 2024). Chartered Institute of Ecology and Environmental Management, Winchester.

Table 1 European sites within 10 km of the Proposed Development

Site Name	Reason for Designation	Relationship to the Proposed Development
South Tayside Goose Roosts SPA	The qualifying features are: Non-breeding greylag geese *Anser anser* and pink-footed geese *Anser brachyrhynchos*; Breeding wigeon *Anas penelope*; and waterfowl assemblage[7] (i.e. Breeding species include gadwall *Mareca strepera*, shoveler *Anas clypeata*, snipe *Gallinago gallinago*, curlew *Numenius arquata* and redshank *Tringa totanus.* Wintering species include mute swan *Cygnus olor*, whooper swan *Cygnus cygnus*, goosander *Mergus merganser,* tufted duck *Aythya fuligula* and goldeneye *Bucephala clangula).*	Two distinct locations are close to the Proposed Development; Located at closest: • Approximately 1.3 km east of the Proposed Development; and • Approximately 9.2 km north of the Proposed Development. There are several nearby watercourses, but none directly flow from the Proposed Development to the SPA and there is no other hydrological connectivity. There is no hydrological connection between the Proposed Development and the SPA. Intervening land mainly comprises farmland as well as some forestry, Braco village, and associated roads.
Shelforkie Moss SAC	Active raised bog; and, Degraded raised bog.	Located at closest point approximately 1.3 km east of the Proposed Development. No downstream hydrological connectivity of the Proposed Development to Shelforkie Moss SAC. Intervening land mainly comprises farmland and forestry.
River Teith SAC	Atlantic salmon *Salmo salar*; Brook lamprey *Lampetra* planeri; River lamprey *Lampetra fluviatilis*; and, Sea lamprey *Petromyzon marinus.*	Located at closest point: • Approximately 8.6 km southwest of the Proposed Development (‘as the crow flies’). • Approximately 24 km downstream of the Proposed Development (following the watercourse) following a hydrological link of Keir Burn, which joins the Allan Water, which connects to the River Teith SAC. There is a theoretical hydrological link between the Proposed Development and the SAC, but over a considerable distance. Intervening land is mainly commercial forestry and arable / pastoral farmland.
Upper Strathearn Oakwoods SAC	Western acidic oak woodland.	Located at closest point approximately 8.6 km north of the Proposed Development. There is no downstream hydrological link between the Proposed Development and the SAC. Intervening land comprises a mix of arable / pastoral farmland and forestry.
Kippenrait Glen SAC	Mixed woodland on base-rich Soils associated with rocky slopes.	Located at closest approximately 8.8 km south of the Proposed Development (‘as the crow flies’). 20 km downstream following Keir Burn, which joins Allan Water, which connects to Kippenrait Glen SAC. There is a theoretical hydrological link between the Proposed Development and the SAC, but over a considerable distance. Intervening land includes the settlement of Dunblane, major roads and a mix of farmland and commercial forestry.

[7] NatureScot (2025) Carsebreck and Rhynd Lochs SSSI Available at: https://sitelink.nature.scot/site/336 [Accessed: 29 May 2025]

Having identified the European sites within 10 km, consideration was next given to the potential impact sources from the Proposed Development at all stages and pathways to European sites (including those located at distances of more than 10 km) by which effects could arise on relevant receptors[8].
Based on all possible impacts, pathways, and receptors, the zone of influence of the Proposed Development was estimated. A description of this process is given in Table 2.

Table 2 Analysis of impact sources, pathways, and potential effects on qualifying features of European sites

Impact source	Pathway to European designated site(s)	Potential for effect(s) on receptors	European designated sites within the potential ZoI
Construction phase (i.e. construction of haul track, soil storage, installation of bridge abutments, etc.)			
Direct loss of or damage to qualifying or supporting habitat(s)	The Proposed Development is not within or directly adjacent to European sites, therefore there is no pathway for direct harm to them. There will be no direct habitat loss within any SPA or SAC because the Proposed Development is not within or close to any SPA or SAC. The Proposed Development contains habitat that may have importance to notable species of geese (i.e. grazing pastures / agricultural fields for feeding greylag and pink-footed geese), or habitat important for roosting geese near the Proposed Development) therefore the South Tayside Goose Roosts SPA may be affected by the loss of such habitat. According to NatureScot guidance[9], the core foraging range from night roost during winter season for greylag and pink-footed geese is 15-20 km. For all other bird species associated with the SPA (as detailed in Table 2), foraging is expected to be within the SPA and the surrounding area and not within the area of the Proposed Development (with the exception of whooper swan, which has a core range of 5 km). For all other bird species (including whooper swan) there is an abundance of optimal habitat within the SPA and surrounding area of the SPA. For example, the land between the A9 (from Greenloaning eastwards to Blackford) and the A822 (from Greenloaning northwards past Braco to Muir of Orchil). The permanent loss of 2.31 ha of grazing pastures as a result of the Proposed Development is insignificant to whooper swan in this context. Other than the South Tayside Goose Roosts SPA, there is no suitable habitat within the site of the Proposed Development suitable for qualifying features of the European sites identified to be within the ZoI. Therefore, there is no pathway for this impact for these other European sites.	Loss of grazing habitat for qualifying geese.	South Tayside Goose Roosts SPA.
Waterborne pollution of qualifying or supporting habitats	Surface waters from the Proposed Development vicinity do ultimately meet the River Forth section of the River Teith SAC near its downstream end. However, this is following dilution along approximately 20 km of intervening rivers and, given that it is reasonable to expect adherence to standard pollution controls during construction as per Scottish Environment Protection Agency (SEPA) guidance and that the Proposed Development is not a type that could cause significant pollution, there is no likelihood of significant contamination of the River Teith SAC via surface waters, and therefore no likelihood of significant effects on the qualifying fish species. Notable species of fish (Atlantic salmon; brook lamprey; river lamprey; and, sea lamprey) are likely to be present in the Keir Burn (which is a tributary of the Allan Water and hydrologically connected to the River Teith SAC). However, no in-	Waterborne pollution (i.e. water contaminated with, for example, sediment, silt, fuel, oil, chemicals or concrete) originating from the construction of the Proposed Development are unlikely to have an impact on any SAC.	None.

[8] i.e. qualifying habitats or species and/or the ecological features or processes which support them.
[9] NatureScot, 2016. Assessing Connectivity with Special Protection Areas (SPAs). Version 3.

	channel works are proposed, and standard pollution controls will be adequate to protect notable fish. Shelforkie Moss SAC is separated from the Proposed Development by various watercourses including the River Knaik, and the common confluence of surface waters from the Proposed Development and the SAC is downstream on the Allan Water. Therefore, there is no hydrological connectivity between the Proposed Development and Shelforkie Moss SAC with regard to discharges into surface waters. The same applies to Kippenrait Glen SAC (with the common confluence much further south near Dunblane) and to Flanders Mosses SAC (for which the common confluence is many kilometres downstream of the SAC near Stirling). Therefore, there is no possibility of effects on qualifying habitats of these SACs through surface water contamination due to a lack of hydrological connectivity. Moreover, there is no likelihood of significant contamination of surface waters by the Proposed Development in the first instance because: a) it is reasonable to expect adherence to standard pollution controls, and b) the Proposed Development is not a type that could cause significant pollution during construction. Consequently, there is no likely significant effect on any SAC through surface water impacts.		
Airborne pollution of qualifying or supporting habitats	None. Dust from construction activity is not generally significant beyond a short distance, hence construction dust assessment for ecological receptors is only typically considered up to 50 m from the Proposed Development and to 50 m from roads used by construction vehicles (for roads up to 500 m from the Proposed Development Si) (Institute of Air Quality Management (IAQM), 2014)[10]. Even for mineral extraction sites (not proposed for the Proposed Development), which generate far more dust, the assessment is not generally required to extend more than 400 m (IAQM, 2016)[11]. Gaseous vehicle emissions (in this case from construction vehicles, and in particular oxides of nitrogen (NO_X)) are insignificant beyond 200 m and not required to be assessed beyond this distance (IAQM, 2020)[12]. The Proposed Development is sufficiently far from all European Sites that construction airborne pollution is not a possible impact. Since there will be no significant airborne pollution, there is also no possibility of airborne pollution effects on any SAC or SPA.	None.	None.
Hydrological changes (to surface waters or groundwater)	There is a theoretical hydrological link between the Proposed Development and the River Teith SAC (24 km downstream) and the Kippenrait Glen SAC (20 km downstream), but over a considerable distance. Although there is a hydrological link in theory between these two SACs above, there is no pathway for hydrological changes given the distance between the Site and the SACs. There will be no in-channel works or significant permanent modifications to the hydrology of surface waters. There will be no changes to surface water flows within European sites. In terms of groundwater, excavations and any dewatering activities as part of the construction	Given the lack of a conceivable hydrological link to the River Teith SAC and the Kippenrait Glen SAC, a likely significant effect on surface waters is considered highly unlikely.	None.

[10] Guidance on the assessment of dust from demolition and construction v1.1, Update June 2016. Institute of Air Quality Management, London. Available at https://iaqm.co.uk/text/guidance/construction-dust-2014.pdf. [Accessed: 29 May 2025].
[11] IAQM, 2016. Guidance on the Assessment of Mineral Dust Impacts for Planning. Institute of Air Quality Management, London. Available at http://www.iaqm.co.uk/text/guidance/mineralsguidance_2016.pdf. [Accessed: 29 May 2025].
[12] IAQM, 2020. A guide to the assessment of air quality impacts on designated nature conservation sites, v1.1, May 2020. Institute of Air Quality Management, London. Available at https://iaqm.co.uk/text/guidance/air-quality-impacts-on-nature-sites-2020.pdf. [Accessed: 29 May 2025].

	of the Proposed Development, are anticipated to result in only localised effects on the shallow groundwater flow regime, therefore there is no potential for the Proposed Development to affect any European sites given the distance to the nearest such site.		
Disturbance / displacement of qualifying or supporting species (e.g. visually or by noise, vibration or artificial light)	The agricultural fields that are present within and adjacent to the Proposed Development have potential to support qualifying species if geese (greylag and pink-footed geese) of the South Tayside Goose Roosts SPA through provision of foraging opportunities. The Proposed Development could potentially create a barrier to qualifying geese e.g. through disturbance within a commuting route from roosting sites to feeding areas. For wigeon, this species is not known to regularly use agricultural fields as geese do and, given its breeding habitat requirements, breeding wigeon from the SPA are likely to be closely associated with it for the breeding period (i.e. they are unlikely to use habitat in the wider area around the SPA). Qualifying breeding wigeon is likely to be closely associated with the SPA, and is unlikely to use extensive functionally-linked habitat outside the SPA whilst breeding (thus use of agricultural land is mentioned in the Site Management Statement for the underlying Carsebreck Loch and Rhynd Lochs SSSI[17] for geese, but not for breeding wigeon). The SPA is also designated for its waterfowl, which regularly exceeds 20,000 individuals (Condition Not Assessed). The SPA supports the following breeding birds: gadwall; shoveler; snipe; curlew; and, redshank. Wintering species include: mute swan; whooper swan; goosander; tufted duck; and, goldeneye. Of the species above (which can be considered within the waterfowl assemblage of the SPA and therefore constituent parts of this qualifying feature of the SPA), only curlew, snipe, mute swan and whooper swan would be expected to use the area of the Proposed Development. Snipe could possibly feed in marshy areas and curlew could feed in agricultural fields and nest in rough grassland. However, there is plentiful similar habitats (agricultural fields and marshy areas) within and adjacent to the SPA. Curlew, snipe and swans are likely to forage close to winter roosts and at >1.3 km distance from the SPA, these species are unlikely to be present within the area of the Proposed Development on more than an infrequent basis, if at all. Impacts through disturbance to these species associated within the area of the Proposed Development is considered unlikely. Mute and whooper swan could potentially graze within the agricultural fields within the area of the Proposed Development, but similarly for the other waterbirds associated with the SPA, the area of the Proposed Development is not expected to provide particularly important grazing grounds for species of swan, as there is an abundance of foraging grounds within the area of the SPA (as described in more detail above for Direct loss of or damage). The notable fish species of the River Teith SAC are unlikely to be impacted by the Proposed Development, because of the considerable distance between the SAC and the Proposed Development. Supporting fish species functionally-linked with the SAC could occur within the watercourses within the Proposed Development. However, watercourses will be subject to minimal noise and vibration and no in-channel works are proposed. Moreover, standard mitigation measures (such as avoidance of artificial lighting directed to watercourses) would be employed. All other European sites (not mentioned above) are beyond the distance at which construction-related disturbance / displacement of animals within the relevant site boundary could occur (>1.3 km from the Proposed Development).	Disturbance to / displacement of qualifying geese grazing in agricultural fields.	South Tayside Goose Roosts SPA

Injury or mortality of qualifying or supporting species	The construction works do not provide any mechanism for injury of qualifying species. This includes qualifying geese of the South Tayside Goose Roosts SPA, which are considered to be suitably mobile to avoid any collision with the slow-moving site traffic anticipated to be associated with site activities, during construction. Standard pollution control measures are considered to be appropriate to safeguard harm to notable fish species.	None.	None.
Barriers to movement to qualifying species and / or fragmentation of supporting habitat	Other than the South Tayside Goose Roosts SPA, the Proposed Development is not likely to incur a barrier to the movement of notable species (e.g. including qualifying features of the River Teith SAC, for the reasons described above for disturbance / displacement).	Barriers to or displacement of qualifying geese.	South Tayside Goose Roosts SPA
Changes to predator-prey dynamics	None. Construction provides no mechanism by which predator-prey dynamics involving qualifying species could be affected (e.g. by facilitated predation).	None.	None
Spread of invasive non-native species to European sites	None. A field survey was undertaken in March and June 2024[2]. During this survey, giant hogweed *Heracleum mantegazzianum*, dogwood *Cornus sanguinea* and rhododendron *Rhododendron ponticum* were recorded in abundance within the Site (as detailed in the Cambushinnie 400 kV Substation Haul Track EA Ecology Chapter[2]). Therefore, it is likely that machinery / personnel would be in close proximity to the invasive species during construction. However, it is impossible that machinery/personnel would directly enter a European sites during the construction works due to distance from any European designed Site (>1.3 km). Moreover, due to the provision of strict biosecurity measures proposed in the EA[2], it is highly unlikely that any SAC or SPA would be impacted by invasive non-native species.	None.	None.
Operational phase (i.e. infrequent vehicle movements and track maintenance).			
Waterborne pollution of qualifying or supporting habitats	None. Operation of the Proposed Development itself does not entail any significant emissions to water as a result of conceivable operational impacts.	None.	None.
Airborne pollution of qualifying or supporting habitats	None. Operation of the Proposed Development itself does not entail any emissions to air (other than infrequent vehicle movements associated with the Proposed Development) as a result of conceivable operational impacts.	None.	None.
Hydrological changes (to surface waters or groundwater)	None. Operation of the Proposed Development itself does not entail any significant hydrological changes to the water environment.	None.	None.
Disturbance of qualifying species (e.g. visual, noise, vibration or artificial light)	None. The Proposed Development will not entail any significant disturbance as a result of conceivable operational impacts. Therefore, there is no mechanism for disturbance of qualifying species.	None.	None.

On the basis of the above, the following impacts have been screened out of further assessment because there is no potential for them to occur or because such impacts would clearly not result in any significant effects on the qualifying features of any European sites:

- waterborne pollution of qualifying or supporting habitats (during construction and operation);
- waterborne pollution of supporting habitat (during construction and operation);
- airborne pollution of qualifying or supporting habitats (during construction and operation);
- hydrological changes (during construction and operation);
- injury or mortality of qualifying / supporting species (during construction);
- changes to predator-prey dynamics (during construction and operation); and,
- spread of invasive non-native species to European sites (during construction and operation).

The only impacts for which likely significant effects have not been immediately screened out in Table 2 are:

- direct loss of or damage to qualifying or supporting habitat(s);
- disturbance of qualifying / supporting species (during construction); and
- barriers to or displacement of qualifying / supporting species (during construction).

The impacts not screened out are associated with only one European site, the South Tayside Goose Roosts SPA. Therefore, this Appropriate Assessment considers in more detail the potential for likely significant effects from these two possible impacts on the qualifying species of the South Tayside Goose Roosts SPA (i.e. pink-footed goose *Anser brachyrhynchus*, greylag goose *Anser anser*, wigeon *Anas penelope* and the assemblage of waterfowl. In this report, pink-footed goose and greylag goose are referred to collectively as ‘qualifying geese’.

2.7 Scope of assessment

As described above, for four of the European sites (i.e. specifically the SACs) within the potential ZoI of the Proposed Development, no likely significant effects were identified and these were screened out of the Appropriate Assessment stage. However, for the South Tayside Goose Roosts SPA, likely significant effects on qualifying geese could not be excluded at the HRA screening stage.

The scope of the Appropriate Assessment is therefore to further appraise the potential for each ‘screened in’ impact to result in adverse effects on the integrity of the South Tayside Goose Roosts SPA, in view of its conservation objectives.

3. Baseline information

3.1 Terrestrial environment

The majority of the habitats within the Proposed Development site (hereafter ‘the Site’) are species-poor modified / agricultural improved grasslands and species-poor young, coniferous plantation with Nordmann fir *Abies nordmanniana* and neutral grasses. Other broadleaved woodlands bordering the A822 and B8033 roads and the Keir Burn are little more than narrow strips with trees in a line. A strip of dense species-poor grey willow *Salix cinerea* scrub with poor vertical structure is present in the east of the Site, bordered by modified grassland. Mixed woodland are present in the west of the Site. Associated with tributaries of the Allan Water are wetlands of damp grasslands and rush pasture which are considered as potentially groundwater dependent. The Site also possesses species-poor and disturbed areas of neutral grassland and mixed scrub. An existing access track is present in the west. Beyond the Site, the habitats are similar to those within the Site, a mosaic of woodlands and agricultural fields. No ornithological surveys (e.g. water bird surveys) were undertaken as part of the EA[2]. However, during ecology-focussed site surveys (conducted on 18,19 and 20 March and 3 June 2024), qualifying geese were not observed within the area surveyed.

3.2 Consultation relevant to the Appropriate Assessment

Details of consultation conducted for the Proposed Development are provided in the EA[1]. Below is a summary of consultation relevant to European designated sites.

NatureScot commented in regards to the SPA and the Proposed Development "*The Development is located, at its closest point, approximately 1.3 km from South Tayside Goose Roosts SPA. The Development includes access through arable fields which may be used by geese associated with the site. There are historic records of geese using the 1 km squares where the proposed haul track is to be, however the Site is next to the road and near to housing so is unlikely to be important foraging ground. We therefore advise that there is a likely significant effect on the pink-footed and greylag goose qualifying features of the Site but, due to extent of other available foraging habitat, there will be no adverse effect on site integrity as a result of this proposal*."

NatureScot commented in regards to SACs and the Proposed Development "*The proposal has the potential to be hydrologically connected, via the Allan Water and other tributaries, to River Teith Special Area of Conservation (SAC) and Kippenrait Glen SAC. We advise that, due to the considerable distance involved, as well as the intention to adhere to an appropriate construction environment management plan and pollution prevention plan, no likely significant effect on these designated sites are expected as a result of the construction and operation of the Development*."

3.3 South Tayside Goose Roosts SPA

The South Tayside Goose Roosts SPA is a large European site consisting of terrestrial and aquatic habitats important to qualifying geese. The SPA is designated for greylag goose, pink-footed goose, wigeon, and nationally important numbers of nesting ducks, as detailed in Table 2 above.

The conservation objectives for the SPA are:

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.

4. Appropriate assessment

This section sets out the Appropriate Assessment on the qualifying species of South Tayside Goose Roosts SPA. The Appropriate Assessment assesses the disturbance of qualifying / supporting species and barriers to or displacement of qualifying / supporting species. These impacts could potentially lead to a significant effect on the qualifying species of the SPA. In addition, consideration is also given to the potential for other plans or projects to act in-combination with the Proposed Development to give rise to likely significant effects. All other impacts to European sites have been screened out in Section 2 for the reasons given in Table 2.

4.1 South Tayside Goose Roosts SPA

The only SPA within 20 km of the Proposed Development is South Tayside Goose Roosts SPA, for which the qualifying interests are greylag goose (Unfavourable declining, population 186 individuals[13]), pink-footed goose (Unfavourable declining, population 11,725 individuals) and waterfowl assemblage (all non-breeding, Unfavourable - no change), and wigeon (breeding, Unfavourable declining). Negative pressures identified as acting on the geese species are climate change and forestry operations, while recreation / disturbance and under-grazing are identified as acting negatively on breeding wigeon. The component of the SPA encompasses Carsebreck Loch and surrounding waterbodies and wetland habitat (part of which is also designated as Shelforkie Moss SAC). This SPA overlaps Shelforkie Moss SAC at its western end, and is therefore also 1.3 km from the Proposed Development at the closest point. It comprises three widely-separated designated areas. The closest includes the lochs known as Lower Rhynd and Carsebreck Loch.

4.1.1 Loss of functionally-linked supporting habitat

Greylag and pink-footed geese associated with SPAs often use agricultural fields in the region around such SPAs, in particular pasture fields, which could potentially constitute supporting habitat for the relevant geese.

The core foraging range for greylag and pink-footed geese is estimated to extend to 15-20 km from a roost[9]. The Proposed Development, being 1.3 km from the SPA at its closest point, is therefore within the foraging range of geese using all of the waterbodies encompassed by South Tayside Goose Roosts SPA. Foraging pink-footed and greylag geese roost in the SPA and regularly use agricultural fields for foraging, including both arable and pasture fields. According to a NatureScot report[9], greylag geese associated with the Carsebreck Loch and Rhynd Lochs SSSI (the closest component part of the SPA to the Proposed Development) tend to forage locally to the north and west of the waterbody, while pink-footed geese (which roost at the waterbody) generally fly to Strathallan, from Gleneagles to Dunblane (an area through which the Proposed Development passes), north-east into Strathearn (through part of which the Proposed Development also passes) and south-west into the Forth Valley. Maps in the NatureScot report show foraging areas just south-east of Carsebreck Loch, and whilst the map limited to 2007-2012 shows much less activity in this area, this might well be due to under-recording as is suggested in that report for the Strathearn area. The map data is not of a sufficiently fine-scale for an assessment to accurately determine if qualifying geese are within the Proposed Development, but they are certainly within 5 km of the Proposed Development.

The Site Management Statement for the underlying SSSI[7] also indicates that at least pink-footed geese roost at Carsebreck Loch and that numbers had increased since the SPA citation in line with a widespread general increase, but that greylag numbers had dropped, and that a reduction in water level at Carsebreck Loch (as a result of poor quality of the dam) had reduced the open water for roosting geese.

In conclusion, regarding SPA geese distribution, the above information does include some records of foraging greylag and pink-footed geese in OS grid squares potentially close to the Proposed Development, but the foraging range for geese from this SPA appears to be large.

It is clear that the habitat within the Proposed Development and immediate surrounding area is not functionally-linked to the SPA and cannot lead to an adverse effect on site integrity. Qualifying geese may use the pastures around the Site; however this will be infrequently / sporadically and therefore not important enough to be functionally linked. The total permanent loss of pasture amounts to only 2.31 ha (0.0231 km^2). Moreover, there is an abundance of similar or more suitable pasture fields around the SPA. For example, considering only the land between the A9 (from Greenloaning eastwards to Blackford) and the A822 (from Greenloaning northwards past Braco to Muir of Orchil), and considering only brighter-green pasture on current aerial imagery, there are approximately 5.4 km^2 of such pasture, often in larger flat fields that geese prefer (for increased safety from ground predators). The permanent loss amounts to 0.43% of this extent of habitat, with much more suitable habitat further afield (including around the other parts of the SPA and extensively between the different parts).

Other habitat affected by the Proposed Development comprises forestry plantation and therefore of no value to the qualifying birds of South Tayside Roosts SPA.

With specific reference to the conservation objectives of the SPA, the scale of any losses of supporting habitat would not lead to any change in the population or distribution of the qualifying species, or to a significant decline

[13] JNCC, 2016. The Status of UK SPAs in the 200s: the Thord Network Review. Available at: https://data.jncc.gov.uk/data/d1b21876-d5a4-42b9-9505-4c399fe47d7e/ukspa3-status-uk-spas-2000s-web.pdf [Accessed: 04 June 2025]

in the distribution and extent of habitats supporting these species. Consequently, there is no likely significant effect from loss of supporting habitat of geese associated with South Tayside Goose Roosts SPA.

4.1.2 Disturbance of qualifying birds using supporting habitat

Disturbance of birds can occur from both noise and visual stimuli. However, according to Cutts *et al.* (2009)[14], visual stimuli tend to have greater disturbance effects on birds than noise stimuli alone. A single sudden sound will generally cause more disturbance than a constant or regular noise regardless of noise level. Habituation to a stimulus will also usually entail a reduction in the level of reaction, and this applies to both visual and noise related disturbance. Considering these factors, generic guidelines have been adopted based on a buffer of 300 m between construction works and waterbirds, and a noise threshold figure of 55 dB[14].

There are no optimal waterbodies for waterfowl to use (e.g. for roosting) within the Site. Only one waterbody within 1 km of the Site provides potential opportunities for roosting geese. This is a natural lochan 140 x 100 m in area, with marginal vegetation, that lies 480 m to the east of the Site (at the closest point), located between the Site and the South Tayside Goose Roosts SPA. Given that pink-footed goose and greylag goose are considered to be potentially sensitive to disturbance between 500-1000 m and 200-600 m[15], respectively, roosting geese (if present) on this waterbody could potentially be disturbed by the Proposed Development. However, the waterbody is relatively small compared to those of optimal goose roosts. The waterbody is heavily wooded around the edges, which would strongly dissuade geese from roosting, as these species would be vulnerable to predation (e.g. from fox *Vulpes vulpes* hunting roosting geese from the cover). Moreover, in the unlikely event that geese would roost there, the wooded margin of the lochan would likely provide a reasonable level of screening from potential visual and noise impacts and any roosting birds on this lochan would be already habituated (to some degree) to existing vehicle traffic on the A822.

It is possible that greylag and pink-footed geese (and possibly other species, such as waterfowl) associated with South Tayside Goose Roosts SPA could be disturbed during the construction period (e.g. approximately 11 months) if present in or close to the relevant fields during construction. However, similarly to the argument made above in Section 4.1.1, there is such an abundance of similar and often more suitable pasture fields around the nearer part of the SPA, and much more around the two other parts of the SPA, and between the different parts, that there is clearly no likelihood of a significant effect. As explained in detail in Section 4.1.1, qualifying geese from the SPA utilise functionally-linked habitat (i.e. agricultural fields) over a wide area. However, the effect of disturbance of qualifying geese outside the SPA is likely to be insignificant, given: a) the abundant availability of suitable agricultural foraging habitat closer to the SPA; b) the wide distribution of foraging activity of qualifying geese from the SPA; and c) that construction works associated with Proposed Development will be transient, taking place in any one place over a relatively short period of time (e.g. approximately 11 months). Consequently, the construction of the Proposed Development will not cause sufficient disturbance of qualifying geese on supporting habitat and as such the conservation objectives related to distribution and abundance will not be compromised.

4.2 In-combination effects

An in-combination assessment in the HRA was conducted taking into account the planning applications within the ZoI of the Proposed Development. These are summarised below:

- 21/00756/FLM: 49.9 MW battery energy storage system (BESS) facility; and
- 22/02231/FLM: 49.9 MW BESS facility compound.

The BESS developments are considered to be of importance to the in-combination assessment concerning important ecological features as they are developments which are located within the local area to the Proposed Development that could potentially give rise to in-combination effects.

[14] Cutts, N., Hemingway, K. and Spencer, J., 2013. Waterbird Disturbance Mitigation Toolkit. Institute of Estuarine and Coastal Studies, University of Hull.
[15] Goodship, N.M. and Furness, R.W., 2022. NatureScot Research Report 1283 – Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. Available from: https://www.nature.scot/doc/naturescot-research-report-1283-disturbance-distances-review-updated-literature-review-disturbance. [Accessed: 29 May 2025]

During the appraisal process, the results of which are described in this report, there were no impacts identified that could possibly result in a residual effect[16] of greater than Negligible effect. Consideration during this in-combination assessment would only be given to those impacts where a residual effect of significance was concluded for the Proposed Development.

For all impacts for which it was concluded that there would be No Effect or Negligible Effect, it is considered that the effect of that impact from the Proposed Development in isolation would be so minimal, that it is extremely unlikely that there is any possibility of significant in-combination effects arising from the combined impact(s) of projects in the list above. Similarly, the additive (or multiplicative) action of effect interactions are not anticipated, due to the same reasons given above, that all impacts were appraised to be so minimal, they could not possibly give rise to an in-combination effect.

It is concluded on the basis of the assessment presented above that the Proposed Development would not act in-combination. Therefore, the conclusion of the HRA following an assessment of in-combination is that are no significant residual effects on ornithological / ecological features. This relies on the mitigation described in the EA[1] to avoid or minimise the risk on important ecological features, and on the proposals also doing the same (e.g. managed through project-specific CEMPs).

4.3 Summary of effects on SPAs

It is concluded from the above that there would be no adverse effects on site integrity of the South Tayside Goose Roots SPA.

5. Conclusion

There are five European sites within 10 km of the Proposed Development: South Tayside Goose Roosts SPA; Shelforkie Moss SAC; River Teith SAC; Upper Strathearn Oakwoods SAC and, the Kippenrait Glen SAC.

Most possible impacts from the Proposed Development were screened out as having no potential significant effects (owing to lack of an impact pathway or clear absence of possible effect). Only two possible impacts were identified which could have significant effects: disturbance of qualifying geese and barriers to or displacement of qualifying geese (during construction) of South Tayside Goose Roosts SPA. For the two possible impacts and effects not initially screened out, further investigation was conducted as part of the Appropriate Assessment.

Section 4 assessed the above two impacts for likely significant effects in further detail. It was concluded that there was no possibility of significant effects on the qualifying features of South Tayside Goose Roosts SPA from the Proposed Development, without the need for any special mitigation to protect the qualifying features of the SPA. This is due the certainty that there will be no direct loss of habitat in South Tayside Goose Roosts SPA and the likelihood that: a) there are no optimal waterbodies for waterfowl to use (e.g. for roosting) within the Site; b) the agricultural fields within and immediately adjacent to the Proposed Development are not especially important for qualifying geese; c) there is ample suitable similar habitat within the wider area around the SPA and d) the total permanent loss of pasture amounts to only 2.31 ha.

The in-combination assessment concluded that there are no likely significant in-combination effects, owing largely to either a lack of effect from the Proposed Development or lack of other significant developments in the surrounding area that could affect the relevant receptors.

This HRA therefore concludes that there are no adverse effects on the integrity of the South Tayside Goose Roosts SPA, or any other European site, as a result of the Proposed Development, either alone or in-combination with other plans or projects.

[16] As described in CIEEM guidance. 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.

Appendix A

Table A-1 Case law relevant to HRA

Case	Ruling	Relevance to HRA
People Over Wind and Sweetman v Coillte Teoranta (C-323/17)	The ruling of the CJEU in this case requires that any conclusion of 'no likely significant effect' on a European site must be made prior to any consideration of measures to avoid or reduce harm to the European site. The determination of likely significant effects should not, in the opinion of the CJEU, constitute an attempt at detailed technical analyses. This should be conducted as part of the appropriate assessment.	NatureScot has published guidance on the implications of this ruling for HRA (SNH, 2019). It is necessary to distinguish between those measures which are intended to avoid or reduce harmful effects on a European site and those elements of a project that may incidentally provide some degree of mitigation, but which are intrinsic or essential parts of the project itself. NatureScot advises that intrinsic parts of a project can be considered at the screening stage of HRA.
Waddenzee (C-127/02)	The ruling in this case clarified that appropriate assessment must be conducted using best scientific knowledge, and that there must be no reasonable scientific doubt in the conclusions drawn. It also concluded that the requirement for 'appropriate assessment' arises not only when it is likely that there will be an effect on a European site but when there is a "mere probability" of there being such an effect.	Best available scientific knowledge and information should be used at each stage of the HRA process. Where reasonable doubt exists, the precautionary principle should be applied. The term 'likely' should be interpreted as meaning 'possible'. This applies when determining the requirement for HRA and when testing for likely significant effects.
Holohan and Others v An Bord Pleanála (C-461/17)	The conclusions of the Court in this case were that consideration must be given during appropriate assessment to: effects on qualifying habitats and/or species of a SAC or SPA, even when occurring outside of the boundary of a European site, if these are relevant to the site meeting its conservation objectives; and, effects on non-qualifying habitats and/or species on which the qualifying habitats and/or species depend and which could result in adverse effects on the integrity of the European site.	This relates to the concept of 'functionally-linked habitat', i.e. areas outside of the boundary of a European site which supports its qualifying feature(s)[17]. In addition, consideration must be given to non-qualifying features upon which qualifying habitats and/or species rely.
Sweetman v An Bord Pleanála (C-258/11)	The CJEU ruled that the protection afforded by the Habitats Directive[18] applies once a Member State of the EU has notified a candidate European site. Furthermore, the court also concluded that where a plan or project will lead to the permanent loss of a priority habitat (i.e. one which is listed on Annex I of the Habitats Directive) and which is a qualifying feature of a European site, the view should be taken that such a plan or project will adversely affect the integrity of that site.	A candidate SAC / proposed SPA receives the same legal protection as a fully designated site and must be treated as such by HRA. The loss of even a very small area of priority habitat listed on Annex I of the Habitats Directive, where such habitat is a qualifying feature of an SAC, will almost certainly be considered to result in adverse effects on the integrity of that site.
T.C Briels and Others v Minister van Infrastructuur en Milieu (C-521/12)	The ruling of the CJEU in this case determined that compensatory measures cannot be used to support a conclusion of no adverse effect on site integrity.	Compensation can only be considered at the relevant stage of HRA and not during appropriate assessment. Compensation must be delivered when appropriate assessment concludes that there will be adverse effects on site integrity.

[17] For brevity, functionally-linked habitat is referred to as 'supporting habitat' in this Report.
[18] Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, which is more commonly referred to as the 'Habitats Directive'.

Scottish & Southern Electricity Networks
TRANSMISSION

Upper Strathearn Oakwoods SAC
South Tayside Goose Roosts Ramsar
Shelforkie Moss SAC
Carsebreck and Rhynd Lochs SSSI
South Tayside Goose Roosts SPA
Quoigs Meadow SSSI
River Teith SAC
Kippenrait Glen SAC

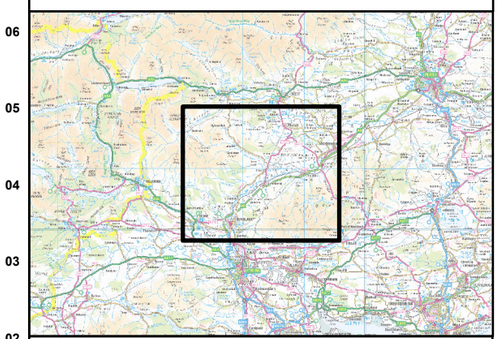
Scale @ A3: 1:80,000
0 0.5 1 2 3 4 5 km

Legend

- Proposed Development Site
- 2km Study Area
- 10km Study Area

Statutory Sites

- Ramsar Site
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Sites of Special Scientific Interest (SSSI)



Project No: LT000520
Project: Cambushinnie 400 kV Substation Haul Track

Title:
Statutory Designated Sites

Drawn by: JBARR Date: 20/06/2025

Drawing: Figure 1