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PROJECT

Eastern Green Link 4

CLIENT

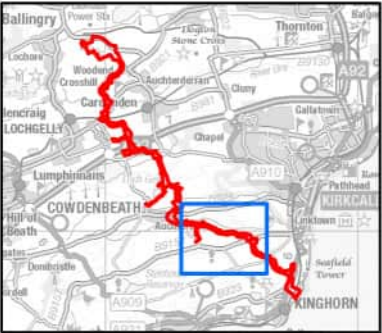
SP Energy Networks

CONSULTANT

AECOM Limited
One Trinity Gardens
Newcastle
NE1 2HF
www.aecom.com

LEGEND

- Planning Application Boundary
- GCN Survey Area (250m buffer of the site boundary as it was understood at the time of survey)
- Indicative Infrastructure Layout
- Temporary Infrastructure
- Horizontal Direction Drilling (HDD) Section
- Habitat Suitability Index (HSI) Category**
 - Average
 - Below average
 - Good / Average
 - Not surveyed
 - Poor
- eDNA Result**
 - Negative
 - Not sampled



NOTES

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ISSUE PURPOSE

EIA Report

PROJECT NUMBER

60707131

FIGURE TITLE

Great Crested Newt Survey Results

FIGURE NUMBER

Figure 7.11 (Page 4 of 5)

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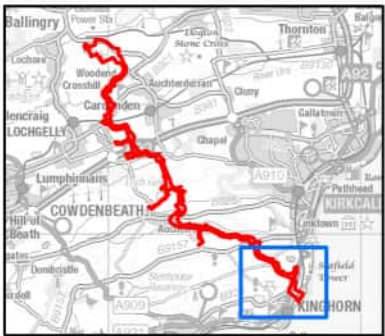
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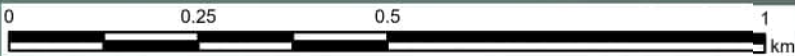
FIGURE TITLE

Great Crested Newt Survey Results

FIGURE NUMBER

Figure 7.11 (Page 5 of 5)

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Reptiles

Common lizard *Zootoca vivipara* and adder *Vipera berus* are present within the hectads overlapping the Application Boundary, as recorded via Record Pool.

Reptiles, including also slow worms *Anguis fragilis*, may be present within suitable habitat within the Application Boundary, including grasslands, woodlands, hedgerows, and in railway embankments. However, intensively farmed arable fields and heavily grazed pastures, occur throughout most of the Application Boundary, are generally unsuitable for these species.

Fish

No records of fish were identified during the desk study; however, Atlantic salmon are likely to be present within the River Ore, downstream of the Application Boundary according to NMPi. The Scottish Onshore Scheme crosses the River Ore approximately 18 km upstream of its confluence with the River Leven. Whilst there are no known impassable barriers to fish migration, several weirs which are passable only under certain circumstances are present along the River Ore which was assessed by SEPA as Poor overall status with poor access for fish migration.

The route crosses several other watercourses, the following of which were assessed by SEPA in 2023 and their status for fish passage classified:

- Den Burn – Poor overall status with poor access for fish migration;
- Dronachy Burn – Moderate overall status with moderate access for fish migration; and
- Tiel Burn – Moderate overall status with high access for fish migration.

No targeted field surveys were carried out for fish species, as desk-based data was considered sufficient to appropriately inform environmental assessment. The use of desk-based data and habitat assessments from walkovers and other species-specific surveys (such as otter/water vole) has been used to identify key sensitive areas where potential crossing points could support protected fish species including brown trout *Salmo trutta* (see **Figure 7.5 Important / Notable Habitats** for priority watercourses).

Terrestrial Invertebrates

Fife Nature Records Centre provided 1,282 recent records of 45 invertebrate species listed on the SBL; 41 of which are moths and butterflies *Lepidoptera*. The remaining four species comprised an earwig, a wasp, and two bees. Most (972) records were from around Cardenden with a further 245 records from Kinghorn Loch. Intensively farmed arable fields and heavily grazed pastures occur throughout most of the Application Boundary are generally unsuitable for supporting a diverse invertebrate assemblage; however, greater diversity may be found within higher value habitats such as woodlands and wetlands which are sparsely scattered throughout the Application Boundary.

Aquatic Macroinvertebrates

No important aquatic macroinvertebrates were identified during the desk study and NatureScot confirmed it holds no records of freshwater pearl mussel within 15 km of watercourses which cross the Application Boundary.

Records of signal crayfish *Pacifastacus leniusculus* were returned during desk study and adults were incidentally recorded during field survey (see Invasive Non-native Species

below). As white-clawed crayfish *Austropotamobius pallipes* are outcompeted by signal crayfish, they are considered absent from the Application Boundary.

The suitability of the following watercourses to support invertebrates was assessed under the WFD as:

- River Ore (Loch Ore to Cardenden) – Good;
- Den Burn (Page 5 of 12) – Moderate;
- Dronachy Burn (Page 7 of 12) – High; and
- Tiel Burn (Page 8 of 12) – Good.

Invasive Non-native Species

Fife Nature Records Centre provided five recent records of signal crayfish, all associated with Tiel Burn and tributaries thereof. Signal crayfish are ferocious predators and can have harmful effects on native flora and fauna; they also form extensive burrows into riverbanks and can cause bank collapse or exacerbate erosion. One adult signal crayfish amongst many burrows was incidentally recorded in Tiel Burn during other field surveys, and crayfish remains were regularly observed in otter spraints.

The desk study did not return any records of American mink; however, individuals have been recorded in the general area as part of the NWVP. Evidence of American mink activity was incidentally recorded on Dronachy Burn and along a tributary of Tiel Burn; the locations of incidentally recorded field signs are displayed on **Figure 7.6 Ground Level Tree Assessment (GLTA) Results**. A likely den site was also recorded on the tributary of Tiel Burn.

Fife Nature Records Centre provided 13 recent records of grey squirrel within 1 km of the Scottish Onshore Scheme. Records are associated with settlements along the coast, and none are from within the Application Boundary. Further records of grey squirrel are available via Saving Scotland's Red Squirrels, those in proximity to the Application Boundary are mainly associated with Kirkcaldy, with occasional additional records in other towns (e.g. Cardenden and Kinghorn). Incidental sightings of grey squirrel were made on three occasions during other surveys; all were south of the A92, and none within the Application Boundary. Locations of incidental sightings are shown on **Figure 7.6 Ground Level Tree Assessment (GLTA) Results**.

The desk study also identified two recent records of orange-tipped sea squirt *Corella eumyota* off the coast, southeast of the Application Boundary, provided by Fife Nature Records Centre. Orange-tipped sea squirt are non-native and may have a negative effect on other sessile suspension feeding shallow-water invertebrates (NatureScot, 2025b).

In addition to the above non-native fauna, invasive non-native flora (classified as such due to their ability to spread rapidly and often outcompete native plants) identified during the desk study, provided by Fife Nature Records Centre, are listed in **Table 7-10 Non-native plant species identified during desk study**

Table 7-10. Non-native plant species identified during desk study

Species	No. of records	Location and distance from the Application Boundary ¹⁶
Alexanders <i>Smyrniolum olusatrum</i>	3	Along the coast near Kinghorn, 250 m from the Application Boundary.
Butterfly-bush <i>Buddleja davidii</i>	9	Lochgelly, Cardenden, Kirkcaldy, and Kinghorn/Pettycur; location precision of 1 km ² but more than 500 m from the Application Boundary.
Cherry laurel <i>Prunus laurocerasus</i>	1	Kinghorn Loch, 1 km from the Application Boundary.
Garden lady's-mantle <i>Alchemilla mollis</i>	1	Kinghorn Loch, 1 km from the Application Boundary.
Green alkanet <i>Pentaglottis sempervirens</i>	3	Kinghorn Loch, 1 km from the Application Boundary.
Japanese knotweed <i>Fallopia japonica</i>	6	Westfield, Cardenden, and Kinghorn; 500 m from the Application Boundary
Japanese rose <i>Rosa rugosa</i>	6	Kirkcaldy, Kinghorn Loch, and along the coast; 500 m from the Application Boundary.
Nuttall's waterweed <i>Elodea nuttallii</i>	1	Kinghorn Loch; 1 km from the Application Boundary
Snowberry <i>Symphoricarpos albus</i>	1	Near Kinghorn/Pettycur; location precision of 1 km ² but more than 500 m from the Application Boundary.
Water fern <i>Azolla filiculoides</i>	2	Kinghorn Loch; 1 km from the Application Boundary
Winter heliotrope <i>Petasites fragrans</i>	2	Near Kinghorn and along the Fife Circle railway line; within the Application Boundary.

Non-native plants, including invasive species, were encountered fairly regularly during field surveys. Occurrences of non-native plants are described below and their locations are shown on **Figure 7.4 Habitat Survey Results** (where given, page numbers relate to this figure).

Japanese knotweed is scattered along the banks of a tributary of Tiel Burn; immediately adjacent to the Application Boundary and 30 m from the cable route corridor. A further two dense stands (approximately 250 and 350 m²) are present along a road verge and within an unmanaged field southeast of Auchtertool. Both are located within the Application Boundary (page 8 of 12) and, at closest, 8 m from the cable route corridor. There was no sign of management for any occurrences of Japanese knotweed at the time of survey.

¹⁶ Where multiple records are available, the closest approximate distance is provided.

Himalayan balsam was recorded scattered along the banks of agricultural drainage ditches in the south of the Application Boundary, east of the A921 (page 11 of 12). Several dead stems of giant hogweed were also recorded in one cluster in the same area. Both invasive species are present within the Application Boundary and within/immediately adjacent to the cable route corridor.

Several butterfly-bush shrubs are scattered around Lochgelly Raceway (pages 4 and 5 of 12) amongst dense scrub and coarse grassland, immediately adjacent to the Application Boundary and 8 m from the nearest above ground infrastructure. Japanese rose and snowberry were also recorded in this area. No management of any of these shrubs was evident.

Multiple American skunk cabbages were recorded along the banks of a tributary of Tiel Burn which flows through Kilrie (page 9 of 12). These plants, three of which are located within the Application Boundary including one within the proposed cable route corridor, were all large and appeared healthy (though they were beginning to die back as occurs seasonally) with no management evident at the time of survey.

Numerous other non-native species, including some regarded as invasive, were present within and around the private estates at Kilrie (page 9 of 12). Rhododendron occurs within woodlands in this area and three large stands of giant rhubarb were recorded around one of the large waterbodies here (EGL18). Other species present in this area include butterfly-bush, cherry laurel, Japanese rose, cotoneaster, giant rhubarb, dogwood, and snowberry. Of these, only rhododendron occurs within the Application Boundary including adjacent to the indicative location of above ground infrastructure.

Japanese rose is found in a further three locations north/west of Auchterderran (pages 2 and 3 of 12); two of which are within the Application Boundary but more than 50 m from the nearest above ground infrastructure. One large and unmanaged cotoneaster shrub is also present along the Fife coastal path in the south of the surveyed area (page 12 of 12); within the Application Boundary but more than 50 m from the nearest above ground infrastructure.

Other non-native species recorded during field surveys comprise Michaelmas daisy, red hot poker, bamboo, spirea, and pheasant berry. Though some of these plants occur within the Application Boundary, most are more than 20 m from proposed above ground works. Where non-native plants are adjacent to a proposed access road east of Auchtertool (page 8 of 12), they are growing in large planters and would not be affected during proposed works.

Future Baseline

Baseline at Time of Construction

Construction of the Scottish Onshore Scheme is anticipated to commence in 2027 and last for approximately 6 years. The DC cable route is expected to be completed within a 2-3 year period, noting that it would be constructed in circa 1 km sections with main construction lasting between circa 3-6 months per section.

Most habitats within the Application Boundary are managed as agricultural land and will continue to be subject to grazing and routine operations, including ploughing, seeding and harvesting. Whilst in the intervening period between preparation of this chapter and commencement of construction it is anticipated that some fields would change seasonally, the land would largely remain agricultural in nature and the ecological value of these habitats

would not change. Management of these habitats will also largely prevent natural succession (e.g. encroachment of scrub into grassland) so whilst other habitats may mature, the extent and value of these habitats is unlikely to change significantly. The sole exception to this is where arable field margins begin or cease to be managed to benefit wildlife. Here, changes in land management would have a direct impact on the value of these habitats.

Where commercial forestry is present associated with the Dundonald Muir Plantation, felling operations may occur (as periodically occurs on an on-going basis at baseline), superficially altering the habitat substantially. However, the land is likely to be re-planted with commercial conifer plantation, hence will have negligible ecological consequence and would not affect the outcomes of this assessment.

With continued non-management, the extent of invasive non-native plants is likely to somewhat increase prior to construction commencing, though considering the short timeframe, changes are likely to be minimal.

Subsequently, the status of most taxa discussed in the baseline would be expected to remain largely similar at the time of construction and no designated nature conservation sites or other nature conservation designations (such as ancient woodland) would be affected by ongoing management. Considering the rapid expansion of beaver across the Forth and Tay catchments, it is possible that beaver may colonise suitable habitat within and around the Application Boundary in future. However, this is unlikely to occur by the time construction commences as watercourses within the Application Boundary are not well connected to those currently known to be occupied, and beaver remain absent in south-east Fife despite being present in the Tay catchment since approximately 2010.

The assessment of impacts on ecological features presented in this chapter has therefore been conducted on the basis that habitats and the status/distribution of species will remain materially unchanged from the baseline conditions identified in this chapter by the time of construction of the Scottish Onshore Scheme. In further support of this conclusion, the Scottish Onshore Scheme does not cross any land zoned for development in the FIFEplan.

Baseline in the Absence of the Scottish Onshore Scheme

For the purposes of considering the baseline in the absence of the Scottish Onshore Scheme for this chapter, a point twenty years in the future has been adopted.

In the absence of the Scottish Onshore Scheme, agricultural management of the arable and pastoral fields which cover most of the land within the Application Boundary would continue. The habitat within the Application Boundary would therefore continue to be of relatively low ecological value. Woodlands and scrub would continue to mature, marginally improving biodiversity, but expansion would be constrained by management of surrounding habitats.

Commercial plantation may be felled but would likely be re-planted hence coniferous plantation would form again. The wayleave through this plantation would continue to be managed to protect the OHL, preventing woodland forming in this area. However, the habitats would undergo natural succession, and scrub is likely to encroach on the grassland which currently occurs.

In the absence of targeted management, wetlands and unmanaged grasslands may be encroached upon by trees and scrub, but this would be slowed (or prevented) by any

mechanical mowing and/or wild herbivore grazing. Additionally, without management invasive non-native species would likely spread, particularly along roads and watercourses.

As noted above, the rapid expansion of beaver across the Forth and Tay catchments indicates that beaver may become present in suitable habitat within and around the Application Boundary in future. Similarly, with their continued expansion in Scotland, pine marten density is expected to increase in the Fife region until it reaches carrying capacity.

Increasing average temperatures and more frequent/intense extreme weather events (e.g. heatwaves, floods, and droughts) that are projected to occur as a result of climate change may alter vulnerable habitats (e.g. wetlands) and are likely to result in a shift in the distribution of animal and plant species. Such changes are unlikely to be notable within the Application for the following reasons:

- the Scottish Onshore Scheme is situated in central Scotland, away from the extreme edges of many species distributions and unlikely to see a noticeable shift in the short-term; and
- the majority of habitats are highly modified agriculturally managed fields, and although management may change in response to changing climate, the land is likely to remain agricultural in nature and of poor ecological value.

Otherwise, the conditions identified by the studies described in this chapter are likely to remain unchanged in the absence of the Scottish Onshore Scheme.

7.6 Embedded Mitigation

Design Mitigation

Embedded mitigation measures incorporated into the design of a development aim to avoid or reduce adverse effects, including those on ecological features. Embedded mitigation can be considered at the impact assessment stage, whereas specific mitigation measures which are not part of the design and are developed after the initial impact assessment, are assessed at a later stage when considering the residual effects.

The Scottish Onshore Scheme has sought to avoid impacts on ecological features through design in the following ways:

- The permanent above ground components of the Scottish Onshore Scheme associated with the converter station are located in agricultural fields which are of limited ecological value.
- All temporary compounds will be situated in agricultural fields of low ecological value.
- The landfall is located in an arable field above the coastline and is separated by an existing railway and scrub; HDD will be used to connect the Scottish Onshore Scheme to the Marine Scheme avoiding direct impacts on coastal habitats and reducing disturbance on protected species.
- Trenchless installation via HDD will be at an appropriate depth to avoid direct (and indirect) impacts on woodlands and major / sensitive watercourses.

- Using an underground cable connection as opposed to an overhead line means that impacts on ecological features will largely be temporary, with all habitats (except at the converter station) being reinstated when works are complete.
- All temporary watercourse crossings will be designed following relevant SEPA guidance as clear span bridges or bottomless or box type culverts with natural substrate within the base and will allow passage of animals including fish and otter equivalent to baseline conditions.
- The working corridor buffer enables micro-siting to be used to avoid ecological features and vulnerable areas around such features where possible. This includes minimising tree loss as far as possible with retention of mature trees prioritised in line with FIFEplan Policy 13 (detailed in **Section 7.2: Legislation and Policy**).

Control and Management Measures

In addition to the design mitigation measures already described, a range of measures that are standard good practice for developments of this type, and which are required to comply with environmental protection legislation, will also be implemented. These are well-developed and have been successfully implemented on infrastructure projects across the country so 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 and operation of the Scottish Onshore Scheme will be made aware of the ecological features within the Zol 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 Ecological/Environmental Clerk of Works (ECoW) will be employed for the duration of the construction of the Scottish Onshore Scheme. The remit of the ECoW will include, but may not be limited to:
 - o carrying out pre-works checks for protected species and other important ecological features (e.g. invasive non-native species);
 - o advising on exact infrastructure placement within micro-siting tolerances;
 - o monitoring of, and advising on, storage of overburden to minimise habitat damage;
 - o monitoring of any vegetated turves that may be stored for later reinstatement;
 - o advising on habitat reinstatement;
 - o monitoring of pollution control measures and advising on placement of ditches, settlement ponds, etc. to minimise habitat damage; and,
 - o monitoring of protected species, and liaising appropriately to resolve any issues that arise, if necessary, including obtaining further derogation licence(s) and developing associated proportionate mitigation.
- To ensure legislative compliance, site preparation including vegetation clearance will take place, as far as possible, outside the general breeding bird season (March to August, inclusive). Where vegetation must be cleared in the breeding season, the appointed

ECoW will carry out nesting bird check(s) in advance of works and establish any exclusion zones as required.

- Where open trenching methods are proposed at watercourse crossing points where salmonids are present, instream works will avoid sensitive migration and spawning windows for salmonids (October-February) and any other species potentially utilising these habitats. Fish habitat surveys can be completed prior to the works commencing to confirm suitability for aquatic species and refine suitable windows for completing works. Furthermore, where any dewatering is to take place, a fish rescue must be carried out prior to dewatering to prevent mortality occurring.
- A Construction Environmental Management Plan (CEMP) will be prepared and submitted for approval by Fife Council, in consultation with SEPA and NatureScot, where necessary, prior to commencement of construction. The CEMP will set out all environmental management measures and the roles and responsibilities of construction personnel.
- Owing to the presence of numerous invasive non-native plant species within the Application Boundary, a Biosecurity Management Plan will be produced by a suitability qualified ecologist to mitigate risks and prevent spread in accordance with legislation. This will include an updated survey to clarify the extent of INNS within three months of construction commencing. The appointed ECoW will oversee implementation of appropriate mitigation which is likely to include exclusion zones. Reference to the BMP, including associated roles and responsibilities, will be clearly detailed in the CEMP.
- During all phases of the Scottish Onshore Scheme, pollution prevention measures will be adopted, following SEPA Pollution Prevention Guidelines (PPG) and Guidance on Pollution Prevention (GPP), including the following:
 - o controls and contingency measures will be provided to manage run-off from construction areas and to manage sediment;
 - o 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 Application Boundary;
 - o preventing air pollution via windblown dust by dampening down areas in dry weather;
 - o in order to avoid pollution impacts to soils, vegetation and waterbodies during construction, all refuelling and servicing of vehicles and plant will be carried out in a designated area which is bunded, has an impermeable base, and will be situated at least 50 m away from any watercourse; and,
 - o where works in or on the banks of watercourses are required, appropriate isolation of the working area will be implemented.
- Works near or at any retained native trees or semi-natural woodland will follow guidance in British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations (British Standards Institution, 2012), or updated BS 5837 Trees in relation to design, demolition and construction – Code of Practice, should this be released prior to works commencing.

- Artificial lighting required for construction works (and for any maintenance works during operation) will be directional to avoid or minimise light spill beyond immediate works areas and will be of a sensitive nature, following Guidance Note GN08/23 Bats and Artificial Lighting At Night (ILP and BCT, 2023).
- Workers will be restricted to circa 4 personnel along the coastal path to observe the HDD and jointing activities. No construction vehicles or activities will occur within this area of the coastline due to sensitive ecological features (seals and wintering birds).
- Measures to prevent the injury or mortality of animals will be adopted, including:
 - o excavations will be provided with a means of escape for animals that may fall in overnight, such as a ramp or battered slope;
 - o except where required to remain open for passage of water, pipes that animals could enter will be capped overnight;
 - o construction traffic will be bound by site safety protocol to travel at low speeds (approximately 10 mph); and,
 - o plant and machinery will be inspected before use each day to check for the presence of animals which may have taken shelter within or beneath.

7.7 Impacts and Effects on Ecological Features

Features Scoped out of Further Assessment

As stated under **Assessment Scope** in **Section 7.4: Methodology**, relevant ecological features are those that are ‘important’ and have the potential to be significantly affected by the Scottish Onshore Scheme (CIEEM, 2024). In view of the baseline data obtained through desk study and field survey, the features in **Table 7-11 Ecological and ornithological features scoped out of further assessment** have been excluded from further assessment because:

- a. available data indicates that they are likely to be absent from the Zol of the Scottish Onshore Scheme;
- b. it is clear that no impact from the Scottish Onshore Scheme is possible; and/or
- c. they are features that, although identified as being ‘important’ by the criteria adopted in this chapter, are common and widespread and their conservation status is clearly not threatened by the Scottish Onshore Scheme.

Table 7-11. Ecological and ornithological features scoped out of further assessment

Feature	Rationale for exclusion from further assessment in this chapter
Inchkeith and Inchmickery and Cow & Calves Seal Haul-out Sites	Protection is afforded to seals at designated haul-out sites from intentional or reckless harassment. These sites are more than 4 km from the Scottish Onshore Scheme and there is no risk of disturbing seals in these locations. Furthermore, embedded pollution prevention controls alongside the volume of water and tidal influence mean there will be no impact of water pollution on the Firth of Forth resulting from the Scottish Onshore Scheme. Any

Feature	Rationale for exclusion from further assessment in this chapter
	receptors below MLWS will be addressed within the Marine Scheme, where relevant.
Camilla Loch SSSI	The nearest proposed infrastructure to this SSSI comprises a haul road following an existing farm track, embedded pollution prevention measures are sufficient to prevent any impact from these works. Other more intrusive proposed works are more than 100 m away and, again with the implementation of embedded pollution prevention controls, there is no possible means of impacting this designated site. Furthermore, the most valuable habitats are located on the western bank, which is furthest away from the cable route.
Local Wildlife Sites	There are no local wildlife sites within or with connectivity to the Application Boundary. Though Auchtertool Linn LWS is in close proximity to the Application Boundary, the nearest proposed works are minor (a haul road that follows an existing farm track) and embedded pollution prevention controls will prevent any impacts. Other LWS's present around the Application Boundary are separated by a large expanse of farmland or are on the opposite side of a moderate sized watercourse; hence there is no possible means of the Scottish Onshore Scheme impacting these sites. Furthermore, embedded pollution prevention controls mean there will be no impact from waterborne pollution on Tiel Burn which could otherwise indirectly affect Balwearie Braes LWS.
Non-groundwater dependent 'Important' habitats outside of the Site or that would be crossed by underground HDD	There is no possible means by which the proposed Scottish Onshore Scheme could impact these habitats, considering controls implemented via embedded mitigation.
Common habitats (those not considered otherwise 'Important')	Proposed works mainly affect arable and pastoral agricultural fields of poor ecological value. Other habitats within the Application Boundary that are not considered 'important' (e.g. other neutral grassland and other broadleaved woodland) are widespread in Scotland including NHZ 16, composed of common species, and/or of limited ecological note. Considering also the temporary nature of works affecting other non-important habitats, the Scottish Onshore Scheme certainly does not threaten their conservation status.
Watercourses	A trenchless crossing technique will be used for all major watercourses meaning only small streams and ditches would be directly impacted. Standard mitigation implemented in adherence with SEPA regulations are sufficient to prevent any impact on minor channels / watercourses.

Feature	Rationale for exclusion from further assessment in this chapter
Beaver	Desk study information indicates that beaver does not occur in this part of the Firth of Forth catchment at present, and no evidence of beaver activity was recorded during field survey. Beavers are, therefore, considered absent from the Application Boundary. It is also highly unlikely that beavers will colonise suitable habitat within the Application Boundary prior to works commencing. Furthermore, impacts on suitable habitat within the Application Boundary which could be colonised by beavers in future are temporary so would not impede future dispersal opportunities, and there is no conceivable operational effect which could affect beavers; therefore, beaver is not considered further in this assessment.
Water vole	No desk study records of water vole were identified, and field survey results indicate they are likely absent from the Zol of the Scottish Onshore Scheme, especially considering the presence of American mink in the area. On the basis that they are extremely likely to be absent from the Application Boundary and, if they were present, impacts would be temporary and highly localised, water vole are scoped out of further assessment.
Pine marten and red squirrel	Tree felling is anticipated to be extremely minimal as most woodlands within the Application Boundary will be crossed via HDD with no direct impact. Furthermore, any limited tree loss would be at the edge of woodland blocks so habitats would not be fragmented. Therefore, any possible impact on pine marten and red squirrel will be extremely localised and certainly not at any level which would affect the survival of either species, particularly considering the standard animal protection measures will be adopted as embedded mitigation. Therefore, these species are not considered further in this assessment.
Brown hare and hedgehog	Observations of brown hare were made within the Application Boundary, in arable fields and woodlands. Although not incidentally recorded, it is also likely that hedgehog occurs in areas of suitable habitat within the Application Boundary: along field edges, and in rough grassland, woodland and scrub. Both species are relatively common and widespread, and any potential impacts upon them will be easily mitigated through embedded standard animal protection measures. Furthermore, alternative habitat in the form of agricultural fields and associated field edges and hedgerows is common in the surrounding landscape and across NHZ 16. They are therefore scoped out of further assessment.
Wildcat and mountain hare	There is no habitat suitable for mountain hare or wildcat within the Application Boundary which lies outside the recognised distribution range of these species in Scotland (JNCC, 2019; Wetherhill et al., 2022). Mountain hare and wildcat are, therefore, considered absent from the Application Boundary and are not considered further.

Feature	Rationale for exclusion from further assessment in this chapter
Breeding birds	The general assemblage of breeding birds is expected to comprise a typical range of species, the majority of which are common and widespread, locally, and across Scotland. The works associated with the Scottish Onshore Scheme will be largely temporary and will take place in habitats of limited value, many of which are already subject to routine disturbance through agricultural activities.
Non-breeding birds not associated with designated sites.	The majority of waterbirds recorded during surveys and desk study are designated as qualifying species of scoped in designated sites and are therefore assessed in relation to these sites. Other species recorded in the baseline include greylag goose, grey heron, great-black backed gull and purple sandpiper. All these species are common and widespread throughout coastal areas of Fife and adjoining counties and were recorded infrequently and in low numbers during surveys. Non-breeding birds not associated with designated sites are thus considered to have less than local importance with respect to the Application Boundary.
Great crested newt	Although the desk study returned one record of great crested newt, ponds within the Zol of the Scottish Onshore Scheme are rated average by the habitat suitability index at best and all ponds surveyed returned a negative eDNA result. Great crested newt are therefore considered absent from the Zol and are subsequently scoped out of further assessment.
Common reptiles and amphibians (not including great crested newts)	Common reptiles and amphibians are unlikely to occur in arable and heavily grazed pastoral fields which dominate the land use within the Application Boundary. Therefore, any possible impact on these species will be highly localised and to a small extent. Considering that these species are relatively common and widespread, any possible impacts from the Scottish Onshore Scheme would not threaten their conservation status.
Terrestrial invertebrates	Although numerous notable invertebrate species were identified by the desk study, most were not recorded within the Application Boundary. Arable and pastoral fields are typically of very poor quality and species diversity, therefore, invertebrates which may occur across most of the Application Boundary are likely to be common and widespread, particularly in similar habitats which occur across the Eastern Lowlands, and any possible impacts from the Scottish Onshore Scheme would not threaten their conservation status. A more diverse invertebrate assemblage may be present within better quality habitats (e.g. woodlands and wetlands) but impacts on such habitats would be highly localised and at a very small extent.
Grey squirrel, American mink, and orange-tipped sea squirt	There is no mechanism by which the construction or operation of the Scottish Onshore Scheme could facilitate the spread of these non-native animal species, which are believed from desk study information to be present around the Application Boundary.

Feature	Rationale for exclusion from further assessment in this chapter
Non-native plants and signal crayfish	In the absence of suitable measures, it would be possible for the Scottish Onshore Scheme to cause the spread of non-native plants and signal crayfish; however, the embedded BMP will stipulate mitigation measures to prevent this and ensure compliance with legal obligations. Subsequently, the Scottish Onshore Scheme will not result in any spread of non-native species.

Important Ecological Features

The assessed importance of those ecological features identified in the baseline conditions, and which have not been scoped out under Features Scoped out of Further Assessment above, is set out in **Table 7-12 Importance of ecological and ornithological features**, together with a rationale. Importance has been assessed considering geographic scale in accordance with CIEEM (2024) guidelines. For the purposes of this assessment, when considering geographic scale, the level of ‘Regional’ is defined as the area encompassed by NHZ 16, ‘County’ as Fife Local Authority Area, and ‘Local’ as the area within 10 km of the Scottish Onshore Scheme.

Table 7-12. Importance of ecological and ornithological features

Feature	Importance	Rationale
Firth of Forth SPA, Ramsar Site, and SSSI	International	This is a nature conservation site designated, at most, at an international level.
Loch Leven SPA, Ramsar site, and SSSI	International	This is a nature conservation site designated, at most, at an international level.
Outer Firth of Forth and St Andrews Bay Complex SPA	International	This is a nature conservation site designated at an international level.
Forth Islands SPA	International	This is a nature conservation site designated at an international level.
Kinghorn Rocks protected seal haul-out site	National	This is a nature conservation site designated at a national level.
<u>LMDW</u>	County	Many <u>LMDW</u> within and around the Application Boundary are also long-established plantation indicating some degree of woodland continuity but that they are not of the quality of ancient semi-natural woodland. Often dominated by mature trees with at least partial cover of native species (oak, ash, and birch); though beech and sycamore frequently occur in these woodlands. Ground flora are reasonably diverse.

Feature	Importance	Rationale
		Long-standing woodlands are not uncommon in NHZ 16 but the extents are small, and they are typically isolated in the wider environment. Considering the small extent of LMDW in the Zol of the Scottish Onshore Scheme, County importance is most appropriate.
Wetlands (Lowland Fen and PMRP)	County	Only a small extent of <u>Lowland Fen</u> and <u>PMRP</u> was recorded during field surveys; however, whilst some occurrences were poor examples of these priority habitats as they lack diversity of wetland herbs, several examples contained species including cuckoo flower, marsh thistle angelica, marsh cinquefoil, and bottle sedge. Wetlands are uncommon in the highly modified landscape of NHZ 16 and tend to be isolated in the environment. With cognisance to the extent of habitat recorded, County importance is considered appropriate.
Wet woodlands	Local	<u>Wet woodlands</u> recorded during field surveys are generally poor examples of this habitat type owing to the abundance of 'weedy' species, immaturity of the canopy, lack of floristic diversity, and/or non-native canopy. The sole exception is a very small extent near Little Gleniston. Considering this, Local importance is considered appropriate.
Hedgerows	Local	<u>Hedgerows</u> recorded during field survey are overwhelmingly species poor and dominated by hawthorn. Whilst hedgerows provide cover in a highly modified agricultural landscape, hawthorn hedgerows are very common across Scotland including NHZ 16. For this reason, they are considered of no more than Local importance.
Bats	Regional	All bat species which occur in Scotland receive legal protection through their listing on Schedule 2 of the Habitats Regulations and Schedule 5 of the WCA. Most habitats within the Application Boundary are of relatively low suitability for bats, comprising improved agricultural land; however, higher quality habitats are scattered throughout. Bats would generally be sparsely distributed in the Application Boundary, although concentrations will occur along key invertebrate foraging habitats (such as rivers and streams, local marshy areas and woodland edges). All activity recorded during field surveys was of soprano pipistrelles (with one pass by a common pipistrelle); however, desk study information indicates that noctule bats may be present within the

Feature	Importance	Rationale
		Application Boundary. Furthermore, a considerable number of potentially suitable roost features were identified during field survey (particularly within Knockbath Wood). As noctule bats are uncommon in the central belt of Scotland, on a precautionary basis, bats are considered important at a Regional level.
Otter	County	Otter receives legal protection through its listing on Schedule 2 of the Habitats Regulations and Schedule 5 of the WCA. Evidence of otter activity was found along watercourses within the Application Boundary, but was most concentrated along Dronachy Burn and Tiel Burn, where all refuges recorded during field surveys are located. Owing to the territorial nature of otter, these closely situated refuges are likely to be utilised by few individuals. Considering the size of the national population (estimated to be around 8,000 individuals), and the widespread distribution across Scotland, including the Eastern Lowlands, the land within the Application Boundary is assumed to support a population of otter of, at most, County importance.
Badger	Local	Badger receives legal protection due to historic human persecution as opposed to concerning conservation status. It is a common and widespread species across lowland Scotland. Although the land within the Application Boundary offers extensive foraging habitat, particularly within woodlands and grasslands, the population of badger which may use the land within the Application Boundary is assessed as being of no more than Local importance.
Fish	Regional	Without targeted survey, this assessment is carried out on a worst-case basis where Atlantic salmon are assumed to be present in all priority watercourses with greater than Poor access to fish per the WFD, and brown trout are assumed to be present in all priority watercourses. Watercourses within the Application Boundary are highly unlikely to support a large fish population so Regional importance is considered appropriate on a precautionary basis.
Aquatic macroinvertebrates	Local	As no notable macroinvertebrates were identified during desk study / consultation, watercourses within the Application Boundary are considered to be of low conservation value for macroinvertebrates.

Potential Impacts from the Scottish Onshore Scheme

The following broad categories of impact could arise during the construction of the Scottish Onshore Scheme and are considered, where potentially relevant, in relation to each of the ecological features scoped in to detailed assessment in **Table 7-12 Importance of ecological and ornithological features**:

- temporary or permanent habitat loss (e.g. excavation of the cable trench, temporary construction compound locations, or the converter station);
- temporary or permanent changes to hydrological conditions which may affect vegetation and habitats (e.g. excavating trenches near GWDTE or across minor watercourse channels);
- loss of habitat which supports protected and/or important species (e.g. hedgerow removal removing potential commuting routes used by bats);
- creation of barriers to animal movements (e.g. watercourse crossings could temporarily inhibit the movement of fish);
- temporary or permanent disturbance and/or displacement of species (e.g. wintering birds displaced from foraging habitat during construction of the converter station or light sensitive species displaced by artificial lighting); and
- potential for direct mortality of species (e.g. as a result of increased vehicular traffic).

Impacts Scoped out of Further Assessment

Pollution

Pollution of surface water, groundwater, soils and vegetation will be avoided through adoption of industry-standard good practice mitigation measures at all stages of the Scottish Onshore Scheme in order to meet legal and regulatory requirements. These measures are normal practice for development of this type and are considered as embedded.

According to the Institute of Air Quality Management (IAQM) guidance (IAQM,2024), dust generated by plant and machinery on construction sites can have a 'medium' impact on habitats located at distances 20-50 m from works areas, and that this impact lessens with increasing distance. However, as stated previously, standard pollution prevention techniques will be implemented during the construction of the Scottish Onshore Scheme, and this will include dust suppression (for example through wetting of access tracks during periods of dry weather) where necessary. This is considered sufficient to mitigate against any negative effect from the impact of dust pollution.

The Design Manual for Roads and Bridges (DMRB) advises that air quality impacts only need to be assessed where a project will increase annual average daily traffic (AADT) of light vehicles (e.g. cars) by more than 1,000 movements and/or heavy-goods vehicles (HGV) by more than 200 movements (Standards for Highways, 2024). As set out in **Chapter 2: Project Description**, the increase in vehicular movements on all affected link roads generated by the construction of the Scottish Onshore Scheme is not predicted to be greater than 160 HGV movements per day at the converter station and 60 HGV movements per day for works associated with the cable route. As this falls below the screening threshold recommended in

the DMRB, there will be no impacts on any designated sites or habitats as a result of airborne pollution generated by emissions from construction traffic.

Operational EMFs

All equipment that generates, distributes or uses electricity produces Electric and Magnetic Fields (EMFs). Exposure limits for EMFs in the UK are set by the Government, and the electricity industry strictly adheres to these limits. The exposure limits for both DC and AC cables originate from the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines, published in 1994 and 1998 respectively and recently updated in March 2020. The Scottish Onshore Scheme will be designed to comply with the guidelines for exposure to EMFs.

Literature review indicates that a range of responses to EMFs have been reported on marine life-stages of European eel *Anguilla anguilla* and Atlantic salmon i.e., migratory species that may be present in the vicinity of the Scottish Onshore Scheme; however, it is difficult to translate the limited knowledge about individual-level EMF effects into assessments of biologically or ecologically significant impacts on populations¹⁷. One study (Taormina, 2019) found that the EMF at the sediment-water interface was reduced to 60 % of cable emission through 1 m of burial, and 25% of cable emission through 2 m burial. The degree of reduction is dependent on a number of factors associated with the type of cable, whether there are multiple cables and their spacing, the voltage and the current.

The precautionary approach is to reduce the exposure to background levels as far as practicable through burial of the cable at the appropriate depth. Typical cable burial depth is 1 m below ground and there are no reports of cables buried at 1 m leading to any adverse effects on freshwater life. Cables installed via open trench methods will be buried at a depth of 1.2 m and those installed via HDD will typically be deeper. As such, there would be no adverse impact on any ecological feature from the level of EMFs emitted during operation.

Cable Heat Emissions During Operation

A review of impacts from underground cables highlights that, under normal operations, temperature at ground level changes by 3-5°C which is within the normal range of daily/seasonal fluctuations (Ahmels *et al.*, 2016). The paper concludes that heat-related emissions are not expected to cause significant effects along the underground cable routes during standard operation and even if cable temperatures exceed 50 °C for a few hours or days, substantial impacts are unlikely. Therefore, this impact is scoped out of further assessment.

Direct Mortality During Operation

The converter station is the only permanent above ground infrastructure associated with the Scottish Onshore Scheme. The converter station will be connected to the new 400kV Westfield Substation via underground cable with no requirement for overhead lines. The structure will be stationary and, as such, collision risk with the converter station is negligible.

Possible means of direct mortality arise from potential collision with operational traffic—of which there will be minimal; a small workforce (four to six people) is expected to be permanently based at the site during ordinary operation of the converter station—or live high

¹⁷ Note that impacts on the marine environment are assessed as part of the Marine Scheme and are not considered here.

voltage overhead lines—the sections of which are very short and localised around existing overhead line infrastructure.

Considering baseline traffic levels using the B9097 and the short access distance from the B9097 to the converter station, the risk of direct mortality via collision with site traffic during operation would be imperceptibly different from baseline conditions.

Similarly, as overhead lines connect to the existing Westfield Substation adjacent to the converter site and there is only a very short length of new overhead line installation, the risk of collision and subsequent possible electrocution is incredible minor and would certainly have no significant impact on vulnerable species.

Operational Noise

Operational noise levels associated with the converter station will comprise a continuous low-frequency noise that can be easily habituated to. This is considered less impactful than acute noise generated by routine farming operations at baseline, which is more likely to be perceived as a threat and cause disturbance. Furthermore, design and landscaping within the converter station site area (a partial 3.5m high earth bund providing noise screening in some places and where practical plant and equipment has been housed within buildings or enclosures to reduce noise emission) will act as a sound barrier, reducing the amount of noise-spill into surrounding habitats. In addition, the development design has been undertaken on the assumption that potential operational sound of a tonal, impulsive or intermittent nature will be designed out of the proposed converter station during the detailed design phase by the selection of appropriate plant, building cladding, louvres and silencers/attenuators as necessary.

Operational Lighting

Lighting during the operation phase will be restricted to use during maintenance works under fault conditions and motion-activated security lighting which will be situated around the converter station footprint. Artificial lighting can negatively affect ecological features, particularly through behavioural alteration. However, effects reduce with increased distance from the lighting source. For example, the behaviour of light-sensitive bats can be disrupted within a radius of up to 50 m from the source (Azam *et al.*, 2018).

Embedded mitigation will ensure that lighting required during maintenance will be directional to avoid light spill and minimise any possible area of impact to within the substation where light sensitive species would not occur.

It is anticipated security lighting will rarely be triggered during operation. This is because the converter station is not readily accessible by the public since it is situated off a main road with no dedicated walkway. Once triggered, lights will remain illuminated for no more than a few minutes. Therefore, any possible impact would be temporary and highly localised and is not anticipated to alter the local distribution of any vulnerable ecological features (e.g. bats).

Visual Disturbance / Displacement During Operation

During ordinary operation of the converter station, only a small workforce (four to six people) is expected to be based at the site permanently and access will be taken via a short road (c. 150 m) to the north which connects to the B9097 and is adjacent to an existing farm track. Furthermore, species are highly likely to habituate to the presence of the new and stationary

structure, and landscape bunding and planting will act as a visual barrier to surrounding habitats to the east, west, and south further reducing any possible impact from visual disturbance.

Assessments of Effects

Construction

Firth of Forth SPA, Ramsar Site, and SSSI

Details of the impacts on the Firth of Forth SPA and Ramsar site are included in **Appendix 7.6: Habitats Regulations Assessment (Volume 4 Appendices)**. In summary the HRA concluded that there would be **no significant effects on the SPA** from impacts including habitat loss and disturbance/displacement of qualifying features.

Impacts on the Firth of Forth SSSI would mirror those detailed for the coincident Firth of Forth SPA and as such **no significant effects are anticipated**.

Loch Leven SPA, Ramsar Site, and SSSI

Details of the impacts on the Loch Leven SPA and Loch Leven Ramsar site are included in **Appendix 7.6: Habitats Regulations Assessment (Volume 4 Appendices)**. In summary the HRA concluded that there would be **no significant effects on the SPA** from impacts including habitat loss and disturbance/displacement of qualifying features.

Impacts on the Loch Leven SSSI would mirror those detailed for the coincident Firth of Forth SPA and as such **no significant effects are anticipated**.

Outer Firth of Forth and St Andrews Bay Complex SPA

Details of the impacts on the Outer Firth of Forth and St Andrews Bay Complex SPA are included in **Appendix 7.6: Habitats Regulations Assessment (Volume 4 Appendices)**. In summary the HRA concluded that there would be **no significant effects on the SPA** from impacts including habitat loss and disturbance/displacement of qualifying features.

Forth Islands SPA

Details of the impacts on the Forth Islands SPA are included in **Appendix 7.6: Habitats Regulations Assessment (Volume 4 Appendices)**. In summary the HRA concluded that there would be **no significant effects on the SPA** from impacts including habitat loss and disturbance/displacement of qualifying features.

Kinghorn Rocks Protected Seal Haul-out Site

Kinghorn Rocks is designated as a key seal haul-out based on August survey counts but is not a breeding seal haul-out. It is located, at closest, approximately 50 m east of the Application Boundary; however, the cable route will be connected to the Marine Scheme via HDD under the coastline from the landfall situated centrally in an adjacent arable field. Therefore, the area of beach/rock where seals may be present nearest to above ground works is greater than 50 m away and there will be no direct impact on this protected area, meaning no suitable habitat will be lost and there is no risk of injury or mortality to seals. Furthermore, embedded standard pollution control measures eliminates any risk of indirect impact via pollution.

The largest potential impact on seals hauled out at Kinghorn Rocks during construction comes from disturbance. Seals hauled out at the site are legally protected from intentional

and reckless harassment (including any action that causes a significant proportion of seals on a haul-out site to leave that site either more than once or repeatedly or, in the worst cases, to abandon it permanently). Both harbour seals and grey seals use this site and, though not designated as a breeding colony seal haul out, it is possible that few grey seal individuals may have pups here. Therefore, seals are most vulnerable to disturbance during the breeding season (October-January inclusive) and when they moult in August.

Whilst the primary site selection criteria for designated seal haul-out sites specifies that combined designated sites and SACs should encompass at least 50% of the local population for each seal species, numbers of harbour seals which haul out along the Angus/Fife/East Lothian coast represent only a small proportion (~2%; Sparling *et al.*, 2012) of the total Scottish population. Nonetheless, Scotland holds around a quarter of all harbour seals found in Europe and is a globally important population centre for both harbour and grey seals.

HDD will be used at an approximate depth of 1.4 to 42.5 m below ground level to cross the coastal area so it is assumed there is no requirement for personnel to access the area where seals may be hauled out, minimizing disturbance at sea level¹⁸. The main source of noise and vibration associated with HDD arises from the entry / exit points during construction, the terrestrial end of which is the landfall area located within an agricultural field topographically higher than the haul-out site. Construction at the landfall area is anticipated to last up to 37 weeks and will involve using a HDD rig to drill a pilot hole, enlarge the hole, then install the duct.

It is possible that loud noise may alert seals on the shore; however, individuals that frequently use this area to haul out will be habituated to a baseline level of noise and vibration at the top of the cliff from frequent trains passing and regular farming operations, and to walkers, sometimes with dogs, using the Fife Coastal Path which passes the seal haul-out. Furthermore, the railway embankment and dense scrub on the steep slopes of coastal topography would effectively shield works from the protected area; both visually and, to some extent, audibly. Without mitigation it is expected that noise level at the coast will be less than 55 dB which is not dissimilar to levels produced by waves on the shore.

Therefore, it is considered there will be, **No Effect** on seals resting at Kinghorn Rocks from disturbance which is **Not Significant**.

LMDW

Direct Loss of Habitat

Excluding where trenchless HDD methods would be used, less than 1 ha of **LMDW** is situated within the Application Boundary, along the proposed cable route and associated infrastructure. This includes the most notable block of woodland contiguous with Spittal Den Wood; however, this will not be impacted according to the proposed cable route and indicative infrastructure layout so will be avoided via micro-siting. All proposed works in proximity to **LMDW** are at the edge or corner of existing blocks meaning no woodland blocks would be fragmented as a result of proposed works.

¹⁸ Note that impacts from the Marine Scheme of EGL4 are considered separately and not discussed here.

Whilst works associated with the cable route are temporary, the long period generally required to reinstate trees means loss of woodland is considered a permanent effect. However, as the works footprint is far smaller than the Application Boundary, only very small areas are at risk of being felled and, in line with embedded mitigation, works will be micro-sited to avoid felling woodland as far as possible. The very small extents of LMDW that may be lost to the Scottish Onshore Scheme are highly localised and at such a scale that the loss would not have a detrimental effect on this habitats' conservation status', especially as no blocks of woodland would be lost in their entirety affecting connectivity.

It is, therefore, concluded that habitat loss will have a **Negligible Effect** on LMDW which is **Not Significant**.

Wetlands (Lowland Fen and PMRP)

Direct Loss of Habitat

Lowland Fen habitat only occurs within the Application Boundary in the far north. Based on the indicative infrastructure layout, this habitat would not be lost during construction and it is separated from the nearest infrastructure components by an existing farm track. Micro-siting will ensure there is no direct loss of Lowland Fen habitat.

Priority PMRP occurs within the Application Boundary in two locations: east of the converter station in the north of the Application Boundary and at the base of a sloping livestock pasture field at Pitcairn. Based on the indicative infrastructure layout, works in proximity to priority PMRP habitat are the excavation of the cable route joining the existing Westfield Substation to the new converter station and excavation of an attenuation basin resulting in the loss of up to 0.3 ha. This loss would be temporary as affected habitats are to be reinstated following completion of works.

Changes to Ground Water Levels

Changes in ground water levels caused by subsurface work activities (for example, open trench cable installation and HDD) may degrade habitats that are groundwater dependent within up to 250 m (depending on the depth of such works). Lowland Fen and PMRP habitats are potential GWDTE.

Groundwater assessment detailed in **Chapter 08: Water Environment and Flood Risk** identified no significant effects on the quality or levels of groundwater, except on one private water supply (PWS02) which is in the south of the Application Boundary where the landscape is dominated by arable fields and no GWDTE were identified. All possible effects on groundwater, including those on PW02, will be temporary. Any subsequent degradation would be slight and/or short-term, with no permanent damage, habitats expected to re-establish once ground water levels return to baseline. With cognisance to the limited extent of Lowland Fen and PMRP present within the ZoI (a landscape which is dominated by highly modified agricultural land), it is considered that changes to groundwater levels from the Scottish Onshore Scheme would have a **Negligible Effect** on Lowland Fen and PMRP and this is **Not Significant**.

Wet woodland

Direct Loss of Habitat

Where Wet woodland habitat occurs within the Application Boundary in the far north, based on the indicative infrastructure layout, this habitat would not be lost during construction, and it is separated from the nearest infrastructure components by an existing farm track. Micro-siting will ensure there is no direct loss of Wet woodland here.

Excluding where trenchless HDD methods would be used, the only other parcel of Wet woodland within the Application Boundary is a very small area near Pitcairn comprising a strip of planted trees on highly disturbed ground flora that has been trampled by livestock. As discussed under LMDW above, works will be micro-sited to avoid felling woodland as far as possible.

It is, therefore, concluded that the loss of a small extent of low-quality Wet woodland habitat would have a **Negligible Effect** and this is **Not Significant**.

Changes to Groundwater Levels

As discussed under Wetlands above, any degradation of GWDTE from changes in groundwater levels would be slight and/or short-term, with no permanent damage to trees anticipated and habitats expected to re-establish once ground water levels return to baseline. Subsequently, the Scottish Onshore Scheme would have a **Negligible Effect** on Wet woodland from changes to groundwater levels and this is **Not Significant**.

Hedgerows

Direct Loss of Habitat

Priority hedgerows within the Application Boundary are almost all species poor and dominated by hawthorn. Such examples are ubiquitous with lowland Scottish landscapes, and a lack of floristic diversity limits their ecological value. A single species rich priority hedgerow crosses the proposed cable route and borders a proposed haul road south-west of Shawsmill Farm. This particular hedgerow is not continuous with many gaps and though there is reasonable species diversity, it too is dominated by hawthorn.

Approximately 4 km of priority Hedgerow habitat is present within the Application Boundary, approximately 1.8 km of which occurs between fields where the converter station is proposed to be built. The proposed footprint of works is far smaller than the Application Boundary so loss will be at a far smaller scale than 4 km. Furthermore, many hedgerows will be reinstated when works are complete with only those within the converter station footprint (approximately 750 m) being permanently lost.

The small extent of loss of a very common habitat would have a **Negligible Effect** and this is **Not Significant**.

Bats

Loss of Bat Roosts

The Scottish Onshore Scheme will require minimal tree loss as the cable would be installed using HDD where the Scottish Onshore Scheme crosses most woodland parcels, avoiding direct impacts. It is possible that trees with potential roost features may be present in the private land associated with Cotter House that was not surveyed; however, the proposed attenuation basin and associated pipes in this area will be micro-sited to avoid tree loss. Subsequently, although 34 trees with potential roost features were identified during field

survey, only two of these are at risk of being felled as a result of the Scottish Onshore Scheme: T27 and T28. Detailed design and micro-siting will seek to retain these trees, however as worst case it has been assessed within this chapter that these trees will be lost.

The trees in question are a mature oak containing features with potential to support multiple bats, including possibly a maternity colony (PRF-M) and a mature ash that has features with potential to support only individual bats (PRF-I). They are both situated within a line of mature trees between arable fields, approximately 275 m south of Tiel Burn. Almost all activity recorded during field surveys was of soprano pipistrelles (with one pass by a common pipistrelle) but records of both soprano pipistrelles and a noctule were identified during the desk study.

No bats were recorded emerging during targeted survey so there are no confirmed roosts in these trees. Considering the activity recorded during surveys and their widespread population in Scotland, it is most likely that, if used by bats, the trees support soprano pipistrelle. However, it remains possible that any of these species (or others whose distribution overlaps the Application Boundary) could use these PRFs; particularly as noctules frequently move maternity roosts between trees. As this impact assessment is carried out on a worst case, precautionary basis, it is assumed the PRF-M tree is used as a maternity site and the PRF-I tree is used as an opportunistic roost, both by the rarer of the likely species; noctule.

Maternity sites are of the highest conservation value, especially for regionally rarer species and loss of such a site could have severe impacts for the associated population and may affect the species' conservation status at a greater scale (Reason and Wray, 2023).

It is therefore concluded, on a precautionary basis, that felling these trees with PRFs would have an **Adverse Effect of Regional Significance** on bats which is **Significant** in the context of this EIA.

Disturbance of Roosting Bats

Works associated with the Scottish Onshore Scheme may cause disturbance to roosting bats; however, it is important to consider the baseline level of disturbance when assessing this impact on bats (Reason and Wray, 2023). Currently, much of the land within the Application Boundary (particularly in the south-east) is subject to routine farming operations including ploughing and harvesting which involve the use of heavy, noisy machinery on an occasional basis.

Trees with potential roost features identified during field survey are concentrated within Knockbathy Wood (T05-T24) which will be crossed via HDD: a technique where the cable route is drilled at an appropriate depth below ground level to avoid tree roots. HDD is considered less intrusive than open cut trenching and it is extremely unlikely that works would disturb roosting bats above when vibration and noise levels would be extremely low at ground level.

Trees T01-T04 are located in the vicinity of an access track north of the A92. The access route is through an arable field where the soil is subject to semi-regular disturbance from ploughing and harvesting. The trees are located along the northern boundary of the Lochgelly Racetrack where vehicular noise is also a frequent occurrence. Furthermore, there is a

public path used by people and dogs which runs between these trees and the proposed access. Subsequently, works associated with the Scottish Onshore Scheme will not cause disturbance to any bats roosting in these trees beyond what is incurred at baseline conditions.

Trees T25 and T26 are adjacent to the Application Boundary, approximately 10 m from a pipe outlet and 25 m from a temporary attenuation basin which is situated within an arable field. Again, this field is subject to semi-regular disturbance from farming machinery, and construction of the temporary basin will not be sufficiently different from baseline levels of disturbance in the area to negatively affect bats roosting in these trees.

Tree T29 is close to the proposed cable route where it crosses a line of mature trees near Kirie but it is assumed that, per Embedded Mitigation, works will be micro-sited to avoid the root protection area. This tree was identified as PRF-I meaning it has features which could support only individual bats. It is most likely that, if used, features offer opportunistic roosts for common species such as soprano pipistrelle (which were most frequently recorded during surveys of the nearby T27). However, it is possible that the tree could be used by rarer species such as noctule, which was identified during the desk study. This assessment is carried out precautionarily assuming the latter. Whilst bats that use these trees opportunistically would be somewhat habituated to noise related to farming of the surrounding arable fields, the extended period of works compared to baseline may disturb roosting individuals.

As per **Section 7.6 Embedded Mitigation**, any lighting used for construction works will be directional to avoid light spill onto ecological features. The use of lighting near trees will be avoided as far as possible and, where needed, will be directed so as not to illuminate any trees with potential to support roosting bats. There will thus be no disturbance from artificial illumination of bat roosts.

It is therefore concluded that works disturbing, at worst, small numbers of bats (including possibly noctules) roosting opportunistically would have a **Temporary Adverse Effect of Local Significance** during the construction phase and this is **Not Significant**.

Loss of Foraging / Commuting Habitat

Habitat loss associated with the Scottish Onshore Scheme would be localised along the temporary 36 m wide cable corridor and at the permanent converter station. This mostly affects agricultural fields of limited value to bats. However, up to 1.2 km of hedgerows would be permanently lost to facilitate construction of the converter station in the north of the Application Boundary and a further four hedgerows will be crossed by the proposed cable route, resulting in a temporary loss of up to 200 m. These linear features may provide commuting / foraging routes for bats in the area, but overall connectivity would not be drastically affected since continuous linear features would remain intact around the eastern boundary of affected fields at the converter station and bats are capable of crossing the 45 m gaps that would be created in hedgerows along the cable route (discussed below).

Furthermore, field surveys indicate that bat activity along linear features within the Application Boundary is limited to moderate levels of soprano pipistrelle activity and very low levels of other common and widespread species (common pipistrelle was the only other

species recorded during field surveys). Agricultural land, as predominantly occurs within the Application Boundary, is generally of limited value for uncommon bats (there is unlikely to be a dense or diverse invertebrate assemblage for bats to feed on within improved pastures or arable fields) and alternative foraging / commuting resource would remain available along unaffected woodland edges and surrounding linear features.

The proposed route corridor passes some other habitats which may be of greater value for commuting / foraging bats than the agricultural land which dominates the land use within the Application Boundary (e.g. wetlands, woodlands, and ponds); however, such habitats are very small and isolated and any habitat loss during excavation of the route corridor would be reinstated following completion of works, so this impact would be temporary. Additionally, most higher quality habitats, including woodlands and notable watercourses, would be crossed using HDD to avoid loss or damage.

It is therefore considered that this extent of loss of foraging / commuting habitat used by mostly common and widespread species would have **Negligible Effect** on bats, which is **Not Significant**, since:

- permanent habitat loss is highly localised and mainly affects habitats of poor quality for less common bat species,
- there is a very small extent of affected habitats which are likely to offer better quality foraging opportunities for bats, and
- any loss of higher quality habitat would be at a very small scale and temporary.

Habitat Fragmentation and Disturbance whilst Foraging / Commuting

On the rare occasion where the Scottish Onshore Scheme would temporarily remove suitable foraging / commuting habitat that is connected to the wider landscape, this could alter movement of bats across the landscape in the short-term. However, the cable corridor is proposed to be 36 m wide, and bats are generally capable of crossing gaps of this size along commuting / foraging routes, particularly in already fragmented landscapes as occur in the Eastern Lowlands (e.g. Hale *et al.*, 2015).

It is possible that bats would avoid areas where active works are taking place due to noise or light pollution, which could obstruct foraging / commuting routes. However, bats are mainly active at night and, since bats hibernate over the winter months, works would largely be completed during daylight hours, when bats are inactive. Furthermore, species identified during desk study and field surveys are relatively light-tolerant and per **Section 7.6 Embedded Mitigation**, where works are required in low light conditions, artificial lighting would be directional and would avoid light spill onto any adjacent foraging / commuting habitats.

Subsequently, considering that any obstruction to commuting routes / disturbance whilst foraging would be temporary and highly localised in the wider environment, there will be **Negligible Effect** on bats and this is **Not Significant**.

Otter

Minimal evidence of otter activity was recorded throughout most of the land within the Application Boundary during field surveys, with activity and resting sites concentrated along

Dronachty Burn, Tiel Burn and a tributary thereof. Otters receive legal protection under the Habitats Regulations; however, the Scottish otter population is estimated at approximately 8,000 individuals and it is believed that the species may now be nearing carrying capacity (Harris and Yalden, 2008). Fish represent between 50-95 % of the diet of otter (Chanin, 2003) but other prey sources can be seasonally important, including spawning amphibians and young waterbirds. Otter territories are generally very large, extending up to 21 km in size for females and 48 km for males (Harris and Yalden, 2008).

Loss of Resting Sites

The only otter refuges identified within the Application Boundary are two layups: OL01 and OL03. However, these are not located within or immediately adjacent to the indicative infrastructure layout of proposed works and, therefore, damage or destruction of these resting sites is not anticipated as a result of the Scottish Onshore Scheme. Furthermore, no holts were recorded within the Application Boundary during field survey. Subsequently, there will be **No Effect** from loss of resting sites on otter.

Disturbance of Resting Otter

It is generally accepted that resting otters may be disturbed by works within 30 m of a resting site, extended to 200 m from natal holts (NatureScot, 2025a). Subsequently, three resting sites are at risk of disturbance by works associated with the Scottish Onshore Scheme: OH01, OL01, and OL03. Although OH02 is within 200 m of proposed works, this feature is not suitable for use as a natal holt since, as it is a plastic culverted pipe, it is quite open and liable to flooding which would leave cubs vulnerable to predation and drowning.

Individual resting sites are generally of limited importance to otter since multiple layups and holts will be used within their territory (Kruuk, 2006). Natal holts are of greater value since they are used whilst cubs are immobile, and disturbance could result in the abandonment of dependent offspring. Holt OH01 has the potential to be used as a natal den; it is highly enclosed, slightly set back from the watercourse, and not obviously scent marked by a spraint. Nonetheless, this feature is located approximately 10 m from the edge of an arable field where routine farming operations, including ploughing and harvesting which involve the use of heavy and loud machinery, are carried out on a semi-regular basis.

Proposed works in proximity to resting sites would all be temporary, comprising works within the cable route and excavation of attenuation basins (lasting 3-6 months per 1 km section of cable route). Furthermore, few individuals are likely to be affected since otters are highly territorial with large ranges and do not share resting sites, and those sites identified during field survey are concentrated within 3 km of each other. Short-term disturbance from one of many resting sites within an otters' territory is unlikely to impact that otter's ability to survive. Though highly unlikely, if survivability of an individual was compromised as a result of being disturbed, or young were abandoned and died as a result, this is unlikely to have any detectable impact on the wider otter population considering their positive conservation status in Scotland.

Considering the above, disturbance in a resting site from construction activities associated with the Scottish Onshore Scheme are anticipated to have, at most, a **Temporary Adverse Effect of Local Significance** on otter which is **Not Significant**.

Nonetheless, a licence would be required from NatureScot where a **30 m** buffer zone around resting sites cannot be maintained, extended to **200 m** if OH01 is confirmed to be used as a natal den.

Loss of Commuting / Foraging Habitat

The cable will be installed via open trench methods across various burns known to be used by otter (Gelly Burn, Tiel Burn, and Dronachy Burn). Works would be highly localised along these watercourses and are to be completed in the order of days. Otter are highly mobile and per **Section 7.6 Embedded Mitigation**, any works within watercourse crossings would be left passable to otter overnight or a means of leaving and re-entering the channel would be provided. Furthermore, only a very small length of watercourse will be temporarily lost at each crossing (45 m at most compared to a 30 km otter territory). Furthermore, as the cable is being installed in 1 km sections, alternative commuting routes would remain available to otter throughout works.

Subsequently, loss of commuting / foraging habitat would have **Negligible Effect** on otter.

Displacement from Commuting / Foraging Habitat and Barriers to Movement

Although only a relatively small length of watercourses would be directly impacted during construction, otter may be displaced from a larger area owing to disturbance from works in proximity to watercourses, including trenchless crossings of major watercourses. This impact is expected to be minor as standard working hours during construction are 07:30-18:00, when it is largely daylight in central Scotland (certainly between April and August inclusive) and otter are least active.

Over the autumn and winter months, up to four standard working hours will be at dawn/dusk/in darkness (when otters are active). Where works are required around dawn/dusk or during hours of darkness, any lighting used will be directed away from watercourses to minimise the potential impact of disturbance on otter (as per **Section 7.6 Embedded Mitigation**).

Furthermore, the cable will be installed in 1 km sections (taking approximately 3-6 months per 1 km section). Otter activity was concentrated along Dronachy Burn and Tiel Burn which are more than 1 km apart and are, therefore, unlikely to be impacted simultaneously. Consequently, in the event individuals were displaced alternative commuting / foraging habitat would remain available for otter to use throughout the duration of works.

Construction of the cable route means that disturbance of intersecting watercourses could temporarily disrupt movement between nearby foraging resources (the Firth of Forth, Loch Gelly, Raith Lake, Camilla Loch, and Kinghorn Loch). This would have a negligible effect on otters considering the vastness of their territories, availability of prey both up- and downstream of the watercourse, that disturbance would be temporary, that nearby watercourses are unlikely to be disturbed simultaneously, and that they are highly mobile and capable of crossing terrestrial habitats if necessary.

Considering the above, if otter commuting and/or foraging within the Application Boundary were to be disturbed by on-going works, this is very unlikely to have a significant effect on the local population for the following reasons:

- the area which could possibly be impacted will be very small relative to the size of an otter territory;
- alternative habitat within the Application Boundary will remain undisturbed owing to the sequential installation program;
- the number of individuals which could possibly be impacted is likely to be small considering the territorial nature of otter; and
- impacts would be temporary due to standard working hours having a 13-hour break overnight and each 1 km section of cable route taking 3-6 months to complete.

Therefore, displacement due to disturbance from construction activities of the Scottish Onshore Scheme will have a **Negligible Effect** on commuting/foraging otter which, in the context of this EIA, is **Not Significant**.

Changes to Prey Resource

Impacts on watercourses which may support salmonid species are temporary, with flow reinstated post-construction. As works will be complete under the CAR Regulations, standard mitigation such as avoiding crucial spawning periods and implementing fish rescue prior to dewatering working areas would be implemented where required, further avoiding impacts on prey availability.

Construction of a new SuDS pond at the converter station may, if suitable, support amphibians and marginally increase the prey resource for otter. This change would have an inconsequential effect on foraging otter considering the larger foraging resource which already exists within an individual's territory and that amphibians are not otters principal prey item.

Subsequently, there would be **No Effect** on otter from changes to prey resource during construction and this is **Not Significant**.

Injury or Mortality

As described above, works will largely take place in daylight, and therefore mostly outside periods when otters are most active. Vehicular traffic volumes will be low, and all vehicles will be bound by standard construction site safety protocol to travel at low speeds. Considering also the motility of otter and that otters in the area are likely to be used to avoiding vehicles associated with regular farming activities, the probability of otter casualties as a result of vehicle collision during construction is extremely low. Standard measures to protect all animals from harm during construction will be implemented, including providing a means of escape from excavations, etc. (see **Section 7.6 Embedded Mitigation** above).

It is therefore concluded that there will be **Negligible effect** on otter from injury/mortality and this is **Not Significant**.

Badger

Although badger receive legal protection from harm and disturbance, this is primarily due to persecution of this species. Badgers are common and widespread through much of mainland Scotland, with between 7,300-11,200 main setts estimated to exist (Rainey *et al.*, 2009).

Destruction of Setts

No identified setts are at risk of being destroyed as a result of the Scottish Onshore Scheme. Although three setts are located within or immediately adjacent to the indicative cable route corridor, associated tunnels are dug into a steep sloping mound so are unlikely to extend far below ground level. Here, the cable will be installed via HDD to cross the associated woodland at a depth appropriate to avoid tree roots and consequently, there is no risk of damage to associated tunnels.

It is possible that setts remain undetected in the private land east of Cotter House; however, following pre-construction surveys positioning of the attenuation basin and pipes proposed for this area will be micro-sited to avoid damage, should there be a sett here. Therefore, loss of setts will have **No Effect** on badgers.

Disturbance of Resting Badger

Works within 30 m of a badger sett have the potential to disturb individuals resting inside, extended to 100 m where particularly disruptive activities occur, such as pile driving. Therefore, based on the indicate cable route alignment and assuming no pile driving or other similarly intense construction activity is required within the cable route, the Scottish Onshore Scheme is at risk of disturbing only one partially used subsidiary sett: BS04.

The additional three setts (two active main setts and one active annexe sett) are situated above the cable route where HDD will be used so are unlikely to be affected by works since underground noise and vibration is minimal when using such methods. The main source of disturbance from HDD arises at the start-point where the drilling rig is set-up. Setts BS08, BS09, and BS10 are all more than 100 m from the nearest drilling rig, hence no impact of disturbance is anticipated.

Badgers are common and widespread in Scotland, including in Fife. Each clan will use multiple setts within their territory so disturbance from a single partially-used subsidiary sett will have no perceivable impact on the local badger population.

Considering the above, it is concluded there would be **No Effect** on badgers from disturbance by construction activities, and this is **Not Significant**.

Nonetheless, a licence would be required from NatureScot where a 30 m buffer zone around sett entrances cannot be maintained. Guidance should be sought from NatureScot about whether a licence is required to enable HDD works below setts BS08, BS09, and BS10.

Loss of Foraging / Commuting Habitat

The land use within the Application Boundary comprises a mix of primary (grazed or mown improved grassland, golf course, and broadleaved woodland) and secondary (arable, rough grassland, scrub, and mixed woodland) foraging habitat for badger (NatureScot, 2018). The Scottish Onshore Scheme would, therefore, result in the permanent loss of up to 9 ha of suitable foraging habitat at the converter station plus the temporary loss of approximately 73.5 ha.

Considering the scale of the Scottish Onshore Scheme, smaller proportions of habitat loss are likely to affect multiple clans, as opposed to one clan losing a large area of their available

foraging resource. Furthermore, per **Section 7.6 Embedded Mitigation**, broadleaved woodland habitat (a primary foraging resource) will largely be retained throughout the Application Boundary via use of HDD installation techniques. Badger territories are wide ranging, with territories spanning 100-300 ha (Kruuk, 1989), and in the context of the wider landscape, the localised loss is unlikely to impact any local clans' ability to survive and would certainly not affect the conservation status of badger.

It is therefore concluded that there will be **Negligible Effect** on badger from loss of commuting / foraging habitat and this is **Not Significant**.

Injury or Mortality

Standard working hours during construction are 07:30-18:00 and for a large part of the year it is daylight in central Scotland during this period, certainly between April and August inclusive. However, over the autumn and winter months, up to four standard working hours will be at dawn/dusk/in darkness (when badgers are active).

There will be an increase in the volumes of vehicular traffic during the construction phase of the Scottish Onshore Scheme, both within the Application Boundary and along approach routes, and most noticeably along typically quiet farm access roads. Badgers are vulnerable to road traffic collisions; however, risk of injury or mortality of badgers from the Scottish Onshore Scheme is relatively low as most works will take place during the day when badgers are securely ensconced in their setts and vehicles will be restricted to low speeds when moving within the Application Boundary. Considering the density of badgers in Fife, any minor increase in mortality relating to road traffic collisions would not affect the conservation status of local populations.

Additionally, standard good practice mitigation measures to reduce the risk of badger injury or mortality from construction activities beyond traffic collision (such as checking equipment before use and providing a means of escape from excavations) will be implemented, as described in **Section 7.6 Embedded Mitigation**.

Consequently, there will be, at most, a **Negligible Effect** on badger from injury or mortality during construction and this is **Not Significant**.

Fish

In-channel works will be highly localised, in each case affecting a short length of watercourse and completed in a relatively short timescale (in the order of days). Considering the Embedded Mitigation of in-channel works being carried out outside of critical spawning periods, fish rescues being implemented during in-channel works, temporary crossings remaining passable to fish, and adherence to SEPA regulations and standard pollution prevention controls, any possible impact on fish during construction will be very minor.

Therefore, there is considered to be **Negligible Effect** on fish during construction and this is **Not Significant**.

Aquatic macroinvertebrates

Desk study results suggest that watercourses within the Application Boundary a lack of any notable species. As discussed under Fish above, in-channel works will be highly localised, in each case affecting a short length of watercourse and completed in a relatively short timescale (in the order of days), and embedded mitigation measures will prevent pollution

and fuel / oil / material run-off. Subsequently, any possible impact on macroinvertebrates during construction will be very minor and temporary in nature.

Therefore, there is considered to be **Negligible Effect** on aquatic macroinvertebrates during construction and this is **Not Significant**.

Operation

Considering also that baseline habitats at the location of the proposed converter station are of poor quality for most light sensitive species, it is anticipated that there will be **No Effect** from disturbance by artificial lighting on any important ecological features during operation.

7.8 Additional Mitigation

For the purposes of this assessment, only effects which are judged as being Regionally, Nationally or Internationally Significant (according to the CIEEM method for Ecological Impact Assessment) were considered to be Significant in EIA terminology. On this basis, the only ecological feature predicted to be Significantly effected by the Scottish Onshore Scheme in the absence of any mitigation is bats.

In this instance, additional mitigation beyond that for bats is only required to ensure compliance with relevant biodiversity and wildlife legislation, and not to minimise the adverse effects on ecological features. Measures to further reduce adverse effects have been included where they are easy to implement.

Mitigation Measures for Bats

There are two trees with PRF that will be felled during construction of the Scottish Onshore Scheme as works cannot be micro-sited to avoid felling either tree. Therefore, to ensure compliance with legislation, pre-construction tree inspections will be carried out prior to felling and, if the feature is not subsequently blocked or removed, ECoW supervision will be required during works.

If, at any point, roosting bats are identified in a tree that is to be subject to direct impacts, a derogation licence must be sought from NatureScot prior to works commencing. As part of the licensing process, suitable mitigation (likely to involve installation of compensatory roost features, e.g. artificial bat boxes) will be devised and agreed with NatureScot. As part of the application for this licence, a method statement will be required to identify the methodology to be followed during works to ensure that no bats are killed or injured. Following consultation with NatureScot, this will be finalised and followed for all specified activities.

Owing to the limitations associated with surveying bat roosts in trees, if no bats are detected during pre-construction survey, loss of trees with PRF would still reduce the available roost resource and should be compensated for appropriately. This is likely to involve recycling the PRF (remove the feature and relocate to a nearby tree), recreating the lost PRF via man-made arboreal feature or veteranisation of nearby trees, or the use of artificial bat boxes (at least one per lost potential roost resource). A suitably experienced ecologist will decide which compensatory measure to implement in collaboration with an arboriculturist if required.

No other specific mitigation is required as no other impacts will have a significant effect on bats.

Compensation and Enhancement Measures

Most of the habitat loss associated with the Scottish Onshore Scheme would be temporary during construction and ultimately reinstated to baseline condition. Such habitats do not, therefore, need compensated for. However, to compensate for the permanent loss of habitat associated with the converter station, habitat creation and enhancement measures proposed within **Appendix 7.7: Biodiversity Net Gain Report (Volume 4 Appendices)** achieve a 66% increase in area habitat units and 422% increase in hedgerow habitat units. This evidences that the Scottish Onshore Scheme will effectively enhance biodiversity, increasing the complexity of habitats present and opportunities for wildlife.

Furthermore, mitigation outlined under Mitigation Measures for Bats above will compensate for the loss of potential roost resource for bats.

Licensing, Additional Surveys for Protected Species, and Species Protection Plan

As described above, although effects on other protected species are predicted to be Not Significant and therefore additional mitigation is not necessary, the refuges of these species, and often the animals themselves, are nevertheless subject to legal protection regardless of the importance of individual refuges or populations. Subsequently, where the Scottish Onshore Scheme risks committing an offence (e.g. disturbing an otter refuge), a license must be applied for from NatureScot to seek permission for the activity to go ahead. Where required, further survey will be carried out to inform any license applications (as described in more detail below).

Construction will not begin until approximately 2027, by which time protected species may have established new refuges and/or the distribution of certain species within the Application Boundary may have changed. Therefore, to ensure legal compliance, pre-commencement surveys will be carried out no longer than three months prior to commencement of works. Survey and/or monitoring of known resting sites for bats, otter and badger may also be required as detailed in the sections below. These surveys will commence within 12 months of construction to allow adequate time for licences to be sought from NatureScot.

The results of the surveys will be detailed in a Species Protection Plan (SPP), which will also include the results of the surveys described in this chapter. The SPP will be submitted to the appointed construction contractor and Fife Council. The SPP will provide detailed information on the measures that must be adopted during construction works to comply with relevant legislation.

Otter Mitigation Measures

Holt OH01 will be monitored for use and to confirm whether it is a natal holt; this should be carried out in sufficient time prior to construction. Works will be micro-sited to maintain a minimum 30 m buffer from this feature if found to not be used as a natal holt or, if it is a natal holt, a license will be sought from NatureScot to enable proposed works within 200 m.

If any new refuges are identified during pre-commencement surveys within distances where they are vulnerable to disturbance or damage from construction works (30 m for a non-breeding holt or layup and 200 m for a natal holt), those works must be carried out under licence with appropriate mitigation in place to permit the potential disturbance of that refuge.

Works within 30 m of watercourses will take place during daylight hours only and no in-channel works will be carried out between 1 hour before sunset and 1 hour after sunrise.

No other specific mitigation is required as no impacts are assessed as having a significant effect on otter.

Beaver, Pine Marten, and Red Squirrel Mitigation Measures

Though scoped out of assessment owing to their current absence from within the Application Boundary, the nature of works, and/or the very limited tree loss required to facilitate the Scottish Onshore Scheme, if any beaver refuges or dams, pine marten dens, and/or red squirrel dreys are identified during pre-commencement surveys within distances where they are vulnerable to disturbance or damage from construction works (NatureScot, 2025a), those works must be carried out under licence with appropriate mitigation in place to permit the potential disturbance of that ecological feature.

No other specific mitigation is required for these species.

Badger Mitigation Measures

If works cannot be micro-sited to maintain a 30 m buffer, any badger sett within disturbance distance (e.g. BS04) will be monitored for use, and if the sett is found to be active, a licence will be sought from NatureScot to permit works within 30 m of sett entrances. Similarly, if any new setts are identified during pre-commencement surveys within distances where they are vulnerable to disturbance or damage from construction works (100 m for pile driving and blasting work and 30 m for all other construction activities), those works must be carried out under licence with appropriate mitigation in place to permit the potential disturbance of that refuge.

NatureScot will be consulted about the requirement for a licence for setts present above (or within 30 m of) the cable route where HDD installation will be used (i.e. BS04, BS08, BS09, and BS10).

No other specific mitigation is required for badger, with all impacts expected to have negligible effect on this species.

7.9 Residual Effects

The only significant effect identified during this impact assessment is the effect of felling two trees with PRFs on roosting bats. Although further mitigation may be required to obtain a derogation licence if bats are found to roost in trees being felled during construction, compensating for the loss of roosting resource through recycling of PRFs or erection of compensatory artificial bat boxes will effectively mitigate this effect. The residual effect is considered to be **Negligible** which is **Not Significant**.

As described in **Section 7.8: Additional Mitigation**, additional mitigation will also be implemented where it is easy to do so and/or is required for legal compliance which may incidentally minimise the adverse effects on ecological features, even where these are not significant without mitigation.

Mitigation to reduce the effect of disturbance on resting otter is not detailed within this impact assessment as further survey is required to inform the approach. This will instead be

prescribed within an agreed licence issued by NatureScot (if required). On the assumption that proportionate mitigation would be implemented (e.g. audible and visual screening between works areas and the feature, or seasonal working restrictions), it is presumed the residual effect will be reduced from **Temporary Adverse Effect of Local Significance** to **Negligible** which is **Not Significant**.

No additional mitigation is proposed to reduce the effect of injury / mortality on badger. The residual effect, therefore, remains an **Adverse Effect of less than Local Significance** which is **Not Significant** in the context of this EIA.

Landscape planting around the converter station will enhance habitats as well as increase suitability for protected species (e.g. bats and badgers) by increasing floristic diversity, and subsequently invertebrate populations. However, this is not sufficient to alter the residual effects of any impacts assessed here.

All other residual effects remain, at most, **Negligible**, hence all effects of the Scottish Onshore Scheme on important ecological features are **Not Significant** in the context of this EIA.

7.10 Summary

The Scottish Onshore Scheme is anticipated to have no Significant residual effects on any ecological features during construction or operation.

A summary of effects from construction of the Scottish Onshore Scheme is provided in **Table 7-13 Summary of Effects: Construction** below.

All possible impacts from operation were scoped out of further assessment.

Table 7-13. Summary of Effects: Construction

Receptor	Description of Impact	Effects	Additional Mitigation / Compensation	Residual Effects	Significance
Firth of Forth SPA, Ramsar site, and SSSI	See HRA	See HRA	See HRA	See HRA	Not Significant
Loch Leven SPA, Ramsar site, and SSSI	See HRA	See HRA	See HRA	See HRA	Not Significant
Outer Firth of Forth SPA, Ramsar site, and SSSI	See HRA	See HRA	See HRA	See HRA	Not Significant
Kinghorn Rocks protected seal haul-out site	Disturbance during construction	Negligible	None	Negligible	Not Significant
<u>LMDW</u>	Direct Loss of Habitat	Negligible	None	Negligible	Not Significant
<u>Wetlands (Lowland Fen and PMRP)</u>	Direct Loss of Habitat	Negligible	None	Negligible	Not Significant
	Changes to Ground Water Levels	Negligible	None	Negligible	Not Significant
<u>Wet woodland</u>	Direct Loss of Habitat	Negligible	None	Negligible	Not Significant
	Changes to Ground Water Levels	Negligible	None	Negligible	Not Significant
<u>Hedgerows</u>	Direct Loss of Habitat	Negligible	None	Negligible	Not Significant
Bats	Loss of bat roosts	Adverse Effect of Regional Significance	Recycling PRFs / compensatory artificial bat boxes	Negligible	Not Significant

Receptor	Description of Impact	Effects	Additional Mitigation / Compensation	Residual Effects	Significance
Otter	Habitat fragmentation and disturbance whilst foraging / commuting	Negligible	None	Negligible	Not Significant
	Disturbance of roosting bats	Temporary Adverse Effect of Local Significance	None, embedded mitigation is sufficient	Temporary Adverse Effect of Local Significance	Not Significant
	Loss of foraging / commuting habitat	Negligible	None	Negligible	Not Significant
	Loss of resting sites	No Effect	None	No Effect	Not Significant
	Disturbance of resting otter	Temporary Adverse Effect of Local Significance	Micro-site to maintain a 30 / 200 m buffer around refuges or obtain a license	Negligible	Not Significant
	Loss of commuting / foraging habitat	No Effect	None	No Effect	Not Significant
	Displacement from commuting / foraging habitat and barriers to movement	Negligible	None	Negligible	Not Significant
	Changes to prey resource	No Effect	None	No Effect	Not Significant
	Injury / mortality	Negligible	None, embedded mitigation is sufficient	Negligible	Not Significant
Badger	Destruction of setts	No Effect	None, design mitigation is sufficient	No Effect	Not Significant

Receptor	Description of Impact	Effects	Additional Mitigation / Compensation	Residual Effects	Significance
	Disturbance of resting badger	No Effect	Micro-site to maintain a 30 / 100 m buffer around setts or obtain a license	No Effect	Not Significant
	Loss of commuting / foraging habitat	Negligible	None	Negligible	Not Significant
	Injury / mortality	Negligible	None, design mitigation is sufficient	Negligible	Not Significant
Fish	Habitat loss / disturbance / injury / mortality	Negligible	None, embedded mitigation is sufficient	Negligible	Not Significant
Aquatic Macroinvertebrates	Habitat loss / disturbance	Negligible	None, embedded mitigation is sufficient	Negligible	Not Significant

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