# Chapter 8

## Ecology and Biodiversity

SP ENERGY NETWORKS

# Table of contents

# 8.1 Introduction

1. This Chapter of the EIAR considers the potential effects on ecology and biodiversity that may arise from the proposed development. It presents the findings of the assessment of the likely significant effects associated with the construction and operation of the proposed development as described in **Chapter 4: Development Description**. The objectives of this Chapter are to:

- Describe the ecological baseline;
- Describe the assessment methodology and significance criteria used in completing the impact assessment;
- Describe the potential effects, including direct, indirect and cumulative;
- Describe the mitigation measures proposed to address any likely significant effects; and
- Assess the residual effects remaining following the implementation of mitigation.

2. Effects on avian fauna are addressed separately in **Chapter 9: Ornithology**.

3. A summary of designated sites, habitats and species within 2 km of the Study Area is provided. The potential impacts on ecological features are assessed, including direct and indirect impacts, impacts arising during construction, impacts during operation, and cumulative impacts with other developments in the local area. Mitigation and compensation measures are outlined, and a summary of residual effects is provided.

4. Planning policies of relevance to this assessment are provided in **Chapter 5: Planning Policy**.

5. This Chapter should be considered in conjunction with the following chapters, which inform, or have been informed by, this assessment:

- **Chapter 7: Hydrology, Hydrogeology, Geology and Soils**

6. It is suggested that this Chapter is also read in conjunction with the information provided in **Appendix 8**. This information comprises:

- **Appendix 8.1 Preliminary Ecological Appraisal** (comprising a background data search, extended phase 1 habitat survey (undertaken in 2020);
- **Appendix 8.2 National Vegetation Classification (NVC) and Ground Water Dependent Terrtestrial Ecosystems Report** (undertaken in 2020); and
- **Appendix 8.3 Protected Species Report** (undertaken in 2020).

7. Due to the proximity of the proposed development to a number of internationally designated sites (refer to **Section 8.4.1** below), a Habitats Regulations Appraisal (HRA) Screening Report and Statement to inform an Appropriate Assessment has also been prepared for the proposed development. These are provided in **Appendix 8.4** and **8.5.**

# 8.2 Scope of the Assessment

### 8.2.1 General

8. This Chapter considers the effects of both the construction and operation of the proposed development upon those ecological features identified during the review of desk-based information and field survey data (the extents of the Study Areas are set out in **Section 8.4** of this Chapter**.**

9. The Chapter also assesses the potential for additional cumulative effects when considered in addition to other consented or proposed developments which are subject to EIA.

10. The assessment is based on the proposed development as described in **Chapter 4: Development Description**.

### 8.2.2 Effects Assessed in Full

11. The following effects in relation to the construction are assessed:

- The potential to affect on Coalburn Moss Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) and other designated sites;
- Temporary degradation of important habitats along the route, such as ground water dependent terrestrial ecosystems (GWDTE) and blanket bog; and
- Potential disturbance and or incidental mortality of legally protected species within and adjacent to the working area.

The following long-term effects are also assessed:

- Introduction of undesirable species (such as injurious weeds or invasive alien species) as a result of traffic movements, reinstatement works and landscaping; and
- Long-term recovery of important habitats which cannot easily be recreated, especially GWDTEs.

### 8.2.3 Effects Scoped Out

12. Impacts on ecological features associated with site preparation and construction are likely to be insignificant for the following:

- Impacts on Muirkirk Uplands SSSI and North Lowther Uplands SSSI in regards to habitats given the distance of these sites from the proposed works;
- Impacts on Miller's Wood SSSI given the distance of this site from the proposed works;
- Impacts on great crested newt which are considered absent from the area;
- Impacts on red squirrel and pine marten as no evidence of these species was found during surveys; and
- Impacts on foarging bats given that no Annex II species on the EC Habitats Directive are identified as present in the geographical area and that minimal roosting or commuting habitat will be removed or directly affected.

13. As a result of the proposed development, potential operational environmental effects relating to ecology are expected to be minimal given that any compounds and haulage roads will be reinstated and restored and that only a small footprint is required for each wooden pole.

# 8.3 Assessment Methodology

### 8.3.1 Legislation and Policy

14. This assessment is carried out in accordance with the principles in the following legislation and policy:

- Habitats Directive in relation to Natura 2000 sites;
- The Conservation of Habitats and Species Regulations 2017);
- The Wildlife and Countryside Act 1981 (as amended);
- The Nature Conservation (Scotland) Act 2004;
- Wildlife and Natural Environment (Scotland) Act 2011; and
- Protection of Badgers Act 1992.

### 8.3.2 Guidance

15. This assessment is carried out in accordance with the principles contained in the following:

- Planning Advice Note 1/2013: Environmental Impact Assessment (Scottish Government 2013);
- Planning Circular 1/2017 – Environmental Impact Assessment (Scottish Government 2017); and
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, 3rd edition. CIEEM, Winchester.

16. The current framework for biodiversity action planning in Scotland is provided in the 2020 Challenge for Scotland's Biodiversity - a strategy for the conservation and enhancement of biodiversity in Scotland (Scottish Government 2014) and Scottish Biodiversity List (SBL) which together help the Scottish Government meet their statutory duty to 'further the conservation of

biodiversity' committed through the Nature Conservation (Scotland) Act 2004. As such, biodiversity features (including the presence of protected species) are a 'material consideration' to the consenting process.

17. The SBL comprises habitats and species that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland.

18. Local biodiversity action plans (LBAPs) are implemented through planning policy, identifying habitats and species of particular value or endangerment at the local or regional level. As such, LBAPs have no statutory status, but provide a framework for implementing conservation requirements. Within this EcIA, the South Lanarkshire BAP is considered.

19. The National Planning Framework 4 will set out the Scottish Governments priorities and policies for the planning system up to 2045 and how our approach to planning and development will help to achieve a net zero, sustainable Scotland by 2045. Please see **Chapter 5: Planning Policy** for more detail as to how the draft NPF4 has been considered in this assessment.

### 8.3.3 Consultation Undertaken

20. In undertaking the assessment, consideration has been given to the scoping responses and other consultation as undertaken as detailed in

| Consultee | Date and format | Consultation/ issues raised and response |
|---|---|---|
| NatureScot (formerly SNH) | Face to face meeting on 24 January 2019 between SNH, RSK and SPEN. | The purpose of this meeting was to allow a formal introduction of the 132kV OHL project and discuss ecological and ornithological surveys in relation to the project.<br>The SNH officer at that time (Graeme Walker) confirmed that no great crested newt surveys will be required in relation to this project given the nature of the works and the fact that previous surveys in the area returned negative results for this species. As such, this species is not discussed further in this Chapter. |
| NatureScot (formerly SNH) | Online meeting on 17 April 2020 between RSK and SNH. | The main purpose of this meeting was to discuss the impacts of Covid 19 on ornithological surveys however ecological surveys were briefly discussed. It was confirmed that surveys for great crested newt and reptiles would not be undertaken and that given the likely presence of reptiles means any potential impacts would be addressed by means of a method statement. |
| South Lanarkshire Council | Response received via email on 4 December 2020 | No comment regarding ecology. |
| NatureScot (formerly SNH) | Letter received September 2020 | In specific relation to ecology, Nature Scot highlighted the likely requirement for a Habitats Regulation Appraisal (HRA) in regard to Coalburn Moss Special Area of Conservation given its close proximity to the proposed development and that the application should include sufficient information to facilitate this. An HRA screening report has been prepared and it concluded that a likely significant effect could not be ruled out. A Statement to inform an Appropriate Assessment has been prepared. It concluded that subject to the implementation of mitigation measures that there should be no adverse effect on site integrity.<br>Nature Scot made reference to the presence of peat in the area and the requirement for undertaking peat depth surveys to avoid areas of deep peat. They welcomed the proposal to undertake NVC and GWDTE surveys and stated that these should focus on Annex I habitats. The GWDTE and NVC survey was undertaken in 2020. The potential impacts that may be caused by the proposed development on peat is discussed further in **Chapter 7: Geology, Hydrogeology and Hydrology**. |
| Scottish Environmental Protection Agency (SEPA) | Letter received September 2020 | SEPA require that GWDTEs are taken into consideration and that a map and assessment of impacts must be provided. In addition, they require that a peat depth survey is undertaken and that a site-specific peat management plan is provided. GWDTE surveys have been undertaken with an assessment of impacts undertaken within this Chapter and a site-specific peat management plan will be produced. |

22. Table **Error! No text of specified style in document.**.1. Reference should also be made to **Chapter 2: Approach to EIA** and **Appendix 2.1 Summary of Scoping Responses**.

| Consultee | Date and format | Consultation/ issues raised and response |
|---|---|---|
| NatureScot (formerly SNH) | Face to face meeting on 24 January 2019 between SNH, RSK and SPEN. | The purpose of this meeting was to allow a formal introduction of the 132kV OHL project and discuss ecological and ornithological surveys in relation to the project.<br>The SNH officer at that time (Graeme Walker) confirmed that no great crested newt surveys will be required in relation to this project given the nature of the works and the fact that previous surveys in the area returned negative results for this species. As such, this species is not discussed further in this Chapter. |
| NatureScot (formerly SNH) | Online meeting on 17 April 2020 between RSK and SNH. | The main purpose of this meeting was to discuss the impacts of Covid 19 on ornithological surveys however ecological surveys were briefly discussed. It was confirmed that surveys for great crested newt and reptiles would not be undertaken and that given the likely presence of reptiles means any potential impacts would be addressed by means of a method statement. |
| South Lanarkshire Council | Response received via email on 4 December 2020 | No comment regarding ecology. |

| Consultee | Date and format | Consultation/ issues raised and response |
|---|---|---|
| NatureScot (formerly SNH) | Letter received September 2020 | In specific relation to ecology, Nature Scot highlighted the likely requirement for a Habitats Regulation Appraisal (HRA) in regard to Coalburn Moss Special Area of Conservation given its close proximity to the proposed development and that the application should include sufficient information to facilitate this. An HRA screening report has been prepared and it concluded that a likely significant effect could not be ruled out. A Statement to inform an Appropriate Assessment has been prepared. It concluded that subject to the implementation of mitigation measures that there should be no adverse effect on site integrity.<br><br>Nature Scot made reference to the presence of peat in the area and the requirement for undertaking peat depth surveys to avoid areas of deep peat. They welcomed the proposal to undertake NVC and GWDTE surveys and stated that these should focus on Annex I habitats. The GWDTE and NVC survey was undertaken in 2020. The potential impacts that may be caused by the proposed development on peat is discussed further in **Chapter 7: Geology, Hydrogeology and Hydrology**. |
| Scottish Environmental Protection Agency (SEPA) | Letter received September 2020 | SEPA require that GWDTEs are taken into consideration and that a map and assessment of impacts must be provided. In addition, they require that a peat depth survey is undertaken and that a site-specific peat management plan is provided. GWDTE surveys have been undertaken with an assessment of impacts undertaken within this Chapter and a site-specific peat management plan will be produced. |

Table **Error! No text of specified style in document.**.1: Consultation undertaken

### 8.3.4 Study Area

23. A range of surveys were employed to accurately record baseline ecological conditions within the application boundary of the Proposed Development and appropriate survey buffers. Terms referred to are as follows:

- 'Survey Area' is defined as the area covered by each survey type at the time of survey; and
- 'Study Area' is defined as the area of consideration of effects on each species at the time of assessment.

24. Details of the spatial extent of each Survey Area are described in **Section 8.4** of this Chapter and are detailed within the technical reports within **Appendix 8**.

### 8.3.5 Desk Study

25. Existing information relating to statutory and non-statutory nature conservation sites, priority habitats and species, and legally protected species was gathered from various sources. A background data search (BDS) was undertaken in January 2019 which involved using the sources shown in **Table Error! No text of specified style in document.**.2. A search for statutory designated sites, for non-statutory designated sites and noteworthy species within 2 km of a much larger original study area (as opposed to the proposed route) was undertaken. The information on designated sites was then updated once the proposed route was finalised to determine which sites fell within the 2 km of the proposed route (**Figure 8.1**).

| Information Obtained | Available From |
|---|---|
| Protected and Noteworthy species-records | Glasgow Museums Biological Records Centre |
| Designated site locations and citations | Scottish Natural Heritage website |
| Designated site locations and citations | Glasgow Museums Biological Records Centre |
| Ancient Woodland Inventory | Forestry Commission Website |
| Designations and legal protection of noteworthy species | Joint Nature Conservation Committee (JNCC) website |
| Details of species and habitats listed on the West Lothian LBAP | Local BAP website[1] |

Table **Error! No text of specified style in document.**.2: Sources of background information

26. In addition to the sources detailed above, RSK undertook a desk-based data review which involved reviewing data from the Environmental Statements produced for the following existing nearby projects:

- Dalquhandy to Coalburn OHL project (2017);
- Kennoxhead Wind Farm (2012);
- Douglas West Wind Farm (2015);
- Poniel Wind Farm (2012); and
- Glentaggart Wind Farm (2010).

### 8.3.6 Field Surveys

27. To build on the existing baseline, a suite of ecological surveys was undertaken. These comprised of an extended phase 1 habitat survey, NVC and GWDTE surveys and surveys for the following protected species:

- Ground level tree assemssments for bat roosting potential of trees;
- Ground level assessment of structures such as bridges and culverts for roosting bats; and
- Surveys for badgers (*Meles meles*), pine marten (*Martes martes*), red squirrel (*Sciurus vulgaris*), otter (*Lutra lutra*) and water vole (*Arvicola amphibius*).

28. Surveys for protected species were undertaken along the proposed route and up to 50 m from the proposed route. The NVC and GWDTE surveys were undertaken along the proposed route and up to 250 m from the proposed route.

29. Since the 2020 surveys were undertaken, the proposed route has been refined, and some areas have therefore not been surveyed for NVC and protected species. A phase 1 habitat survey of these areas was however undertaken to inform a biodiversity net gain assessment and no new habitat types were recorded compared with those recorded during the 2020 surveys. This phase 1 survey included the proposed underground cable sections which were not part of the previous assessment in 2020. Given that the geographical area has been subject to extensive surveys and development, coupled with the planned preconstruction surveys of the entire proposed route, the lack of survey information for some areas is not considered a constraint here.

### 8.3.7 Assessing Ecological Importance, Potential Effects and Significance

30. The first stage of an ecological impact assessment (EcIA) is 'determining value' of ecological features or 'receptors'. CIEEM places the emphasis on identifying different aspects of ecological value including designations, biodiversity value, potential value, secondary or supporting value, social value, economic value, legal protection and multi-functional features. These values are applied to the receptors within a defined geographical context and examples can be seen in **Table Error! No text of specified style in document.**.3.

[1] https://www.southlanarkshire.gov.uk/downloads/file/1191/biodiversity_strategy_2018_-_2022

| Ecological Importance | Qualifying Criteria | Relevant Significance |
|---|---|---|
| International | A study area is considered of international ecological importance when it supports:<br>• An internationally designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site, Biogenetic Reserve) or an area which SNH has determined meets the published selection criteria for such designations, irrespective of whether or not it has yet been notified.<br>• A viable area of a habitat type listed in Annex 1 of the Habitats Directive, or smaller areas of such habitat which are essential to maintain the viability of that ecological resource at an international scale.<br>• >1% of the European resource of an internationally important species, i.e. those listed in Annex 1, 2 or 4 of the Habitats Directive. | Europe |
| UK/National | A study area is considered of national ecological importance when it supports:<br>• A nationally designated site (SSSI, NNR, Marine Nature Reserve) or a discrete area which SNH has determined meets the published selection criteria for national designation irrespective of whether or not it has yet been notified.<br>• A viable area of a priority habitat referenced in the UK Post-2010 Biodiversity Framework or Scottish Biodiversity List, or smaller areas of such habitat which are essential to maintain the viability of that ecological resource at a national scale.<br>• >1% of the National Resource of a regularly occurring population of a nationally important species, i.e. a priority species listed in the Scottish Biodiversity List and/or Schedules 1, 5 (S9 (1, 4a, 4b)) or 8 of the Wildlife and Countryside Act. | UK/Scotland |
| Regional | A study area is considered of regional ecological importance when it supports:<br>• Non-statutory designated sites that represent a scale, or habitat/species assemblage, of importance across a number of counties within a recognised regional context. Non-designated sites that the designating authority has determined meet the published ecological selection criteria for designation, particularly large or represent habitat or species assemblages of importance at a regional level.<br>• Viable and extensive areas of legally protected habitat/habitat identified in Regional BAP or County BAP, or smaller areas of such habitats that are essential to maintaining the viability of the resource at a regional scale.<br>• Any regularly occurring population of an internationally/nationally important species or a species in a relevant policy which is important for the maintenance of the regional meta-population.<br>• Semi-natural ancient woodland greater than 0.5 ha. | Southern Scotland |
| County | A study area is considered of county ecological value when it supports:<br>• County sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, e.g. local nature conservation cites.<br>• Viable areas of legally protected habitat/habitat identified in Council BAP, or smaller areas of such habitats that are essential to maintaining the viability of the resource at a county scale.<br>• Any regularly occurring population of an internationally/nationally important species or a species in a relevant County BAP which is important for the maintenance of the county meta-population.<br>• Semi-natural ancient woodland greater than 1 ha.<br>• Networks of species-rich hedgerows. | South Lanarkshire |
| Local | A study area is considered of local ecological value when it supports:<br>• Commonplace and widespread semi-natural habitats, e.g., scrub, poor semi-improved grassland, coniferous plantation woodland, intensive arable farmland, which, despite their ubiquity, contribute to the ecological function of the local area (habitat networks, etc.);<br>• Very small, but viable, populations of internationally/nationally important species or habitats, or a species or habitat in a relevant UK/Council BAP which is important for the maintenance of the local meta-population.<br>• Networks of linear features, including species-poor hedgerows. | Study Area plus a 5 km radius. |
| Study Area | A study area is considered of study area ecological value when it supports:<br>• Habitats of limited ecological value, e.g. amenity grassland, but which contribute to the overall function of the application site's ecological functions.<br>• Very small, but viable, populations of internationally/nationally important species or habitats, or a species or habitat in a relevant UK/Council BAP which is not important for the maintenance of the local meta-population. | Study Area |

Table **Error! No text of specified style in document.**.3 Resource/Receptor Evaluation Criteria

31. The next stage of an EcIA is to predict and characterise the likely change and impact on the ecological receptors identified. It is necessary to consider all of the following parameters.

- Whether the change is positive or negative;
- The magnitude or severity of the change;
- The extent of the area subject to a predicted impact;
- The duration the impact is expected to last prior to recover or replacement of the resource or feature;
- Whether the impacts are reversible, with recovery through natural or spontaneous regeneration, or through the implementation of mitigation measures or irreversible, when no recovery is possible within a reasonable timescale or there is no intention to reverse the impact; and
- The timing and frequency of the impact, i.e. conflicting with critical seasons or increasing impact through repetition.

32. The CIEEM Guidelines also stress consideration of the likelihood that 'a change/activity will occur and also the degree of confidence in the assessment of the impact on ecological structure and function'. Likelihood is then specified using the following terms;

- Certain (95% probability or higher);
- Probable (50-94% probability);
- Unlikely (5-49% probability); or

- Extremely unlikely (less than 5% probability).

33. The assessment of potential impacts has been undertaken with the inclusion of embedded mitigation for the proposed development. Residual impacts include any additional mitigation measures required. An assessment will be made of the significance of residual effects, i.e. the significance of the effects that are predicted to remain after the implementation of all committed mitigation measures.

34. Significance will be assessed solely on an ecological basis. There are two key aspects to this. Firstly, what constitutes a significant ecological impact is determined in relation to the concept of 'integrity'. Integrity is defined as 'the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified'. Secondly, it is always stated in relation to a geographical context. Thus, an impact is described as significant at the level at which the integrity of the ecological receptor is affected. An impact may still be significant at some geographical level below that at which the receptor was deemed to be valuable, e.g. loss of common plant species may not affect the integrity of an SSSI valued at national level, but it may still be a significant impact at the local or study area level.

35. Direct and indirect impacts are considered.

36. CIEEM best practice guidance does not recommend that significance is defined as 'Major', 'Moderate' or 'Minor' due to the complexities of ecological processes. Therefore, for the purposes of EcIA, all 'significant' effects are considered significant within the context of the EIA Regulations.

37. However, to allow the potential effects identified in this EcIA to be considered alongside those addressed in other topic chapters, a 'conversion' has been undertaken as set out in **Table Error! No text of specified style in document.**.4. Converted effects of Major and Moderate are considered 'significant' in the context of the EIA Regulations.

| EcIA Significance | Conversion |
|---|---|
| Site | Minor |
| Local | Minor |
| County | Moderate |
| Regional | Moderate |
| UK/National | Major |
| International | Major |

Table **Error! No text of specified style in document.**.4: Effects Significance Conversion

### 8.3.8 Identifying Mitigation and Assessing Residual Significance

38. The terms mitigation, compensation and enhancement are defined here as follows:

- Mitigation is used to refer to measures to avoid, reduce or remedy a specific negative impact in situ;
- Compensation is used to refer to measures proposed in relation to specific negative impacts but where it is not possible to fully mitigate for negative impacts in situ; and
- Enhancement is used to refer to measures that do not remedy the significant negative impacts but redress the overall balance of negative impact by creating other positive ecological impacts.

### 8.3.9 Likely Significant Effects

39. Potential impacts on ecological features associated with site preparation and construction include:

- Impacts on Coalburn Moss SAC/SSSI given the close proximity of this site to the proposed route;
- Potential loss of ancient woodland habitat although this is likely to be minimal;
- Permanent loss of a small amount of habitat within the working area due to vegetation clearance to accomodate ground and excavation works, this may include important habitats such as blanket bog and other GWDTEs;
- Environmental incidents and accidents (e.g. spillages,) which may affect habitats;
- Temporary degradation of habitats from haul routes and siting of compounds;
- Disturbance and incidental mortality of legally protected species within and adjacent to the working area due to construction noise, vibration, lighting and site personnel; and
- Temporary displacement of legally protected species from within the working area.

### 8.3.10 Assessment Limitations

40. Archived data do not provide comprehensive lists of species present within a Zone of Influence (ZOI); and a lack of records for a species in a given area does not necessarily indicate its absence.

41. Surveys were undertaken at the appropriate time of year. However, all ecological surveys can only provide a snapshot of presence or activity in a given area. Based on the findings of the surveys, and the habitats present, the data collected during the field surveys are considered sufficient (and robust enough) to inform this EcIA.

42. Surveys were not undertaken of any additional access routes or laydown areas as the location of these was not known at the time of survey. In addition, the proposed route has been refined slightly following completion of the surveys which revealed some areas which were not surveyed for protected species or NVC. The results within this Chapter therefore refer to the proposed route as it stood when the surveys were undertaken. There is confidence that there are not considered to be any likely significant environmental effects arising from development within the land not surveyed. Any areas which were not surveyed at that time will be surveyed as part of pre-construction surveys of the entire proposed route.

43. Specific limitations on the assessment of ecological features are given in the respective technical appendices in **Appendix 8**.

## 8.4 Existing (Baseline) Conditions

44. The sections below provide information on statutory designations, and a summary of the survey results undertaken. For each species recorded, it is also determined (based on desk study and field data) if they can be reasonably scoped out of the assessment at this stage due to a lack of likely significant effects.

45. Full details of habitat types and protected species can be found in the accompanying Preliminary Ecological Appraisal Report, NVC and GWDTE Report and Protected Species Report in **Appendix 8**.

### 8.4.1 Designated Sites

46. There are a number of statutory designated sites within 2 km of the proposed development. The sites which are designated for ecological reasons are discussed below in **Table Error! No text of specified style in document.**.5 and shown in **Figure 8.1**, in relation to the confirmed route. Sites designated soley for ornithological interests are dealt with in **Chapter 9: Ornithology**, and not discussed here.

| Designation | Name and characteristics | Distance to proposed route |
|---|---|---|
| Special Areas of Conservation (SAC) | **Coalburn Moss SAC**<br>This SAC is designated for having the following qualifying interests: active raised bogs and degraded raised bogs still capable of natural regeneration. The site lies immediately to the east of the northern section of the proposed route. | 0 m |

| Designation | Name and characteristics | Distance to proposed route |
|---|---|---|
| Sites of Special Scientific Interest (SSSI) | **Coalburn Moss SSSI**<br>This SSSI is one of the best examples of lowland raised bog in the UK for its actively-growing Sphagnum-rich vegetation. The site lies immediately to the east of the northern section of the proposed route. | 0 m |
| | **Muirkirk Uplands SSSI**<br>This SSSI includes two upland areas situated to the north and south of the town of Muirkirk and Airds Moss, a low-lying blanket bog. The mosaic of habitats within the Muirkirk Uplands supports a diverse upland breeding bird community which is of national importance, including hen harrier and short-eared owl. | 1190 m |
| | **Miller's Wood SSSI**<br>This SSSI is an excellent example of *Betula sp*. (Birch) woodland, a type which is rare in South Lanarkshire. | 1035 m |

Table **Error! No text of specified style in document.**.5: Statutory Designated Sites

47. There are no non-statutory designated sites within 2 km of the proposed route, but there are 39 Ancient woodlands within 2 km, 2 of which are within 50 m of the proposed route. The locations of these wodlands are shown on **Figure 8.1.**

48. There is a fourth SSSI located 335 m from the proposed route, known as Kennox Water, however this is designated for its geological interets and is therefore not included in this assessment (**Figure 8.1**).

### 8.4.2 Biodiversity Action Plans

49. Habitats wihtin the Survey Area which qualify as priority habitat types under the Scottish Biodiversity List (SBL) are:

- ponds;
- rivers;
- blanket bog;
- upland flushes, fens and swamps;
- upland heathland;
- upland birchwoods; and
- wet woodland.

50. The South Lanarkshire Biodiversity Strategy (2018 – 2022) does not contain habitat action plans (HAP) and species action plans (SAP), but instead focuses on six ecosystems which are of greatest importance within South Lanarkshire. The local ecosystems that are relevant to the Proposed Development are:

- freshwater;
- lowland and farmland;
- peatland;
- upland;
- urban; and
- woodland.

### 8.4.3 Protected Species Records

51. Records of notable species returned during the background data search are provided in detail in **Appendix 8.1 Preliminary Ecological Appraisal Report**. A summary of species records returned from within 2 km of the original background data study area is provided below:

- badger – 33 records from within 2 km, exact locations were not disclosed by the local records centre.
- bats - 51 records, including from within 100 m, species not specified.
- common lizard (*Zootoca vivipara*) – two records from 2007 from within 100 m.
- red squirrel – one record from 2007 from within 2 km.

52. In addition, records of several Scottish Biodiversity List species were returned including common toad (*Bufo bufo*) and 18 species of invertebrate. Records of common frog (*Rana temporaria*) were also returned.

53. A review of ecology reports compiled for nearby developments revealed that the following bat species have been found within the Study Area: brown long-eared bat (*Plecotus auritus*), common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's bat (*Myotis daubentonii*), Leisler's bat (*Nyctalus leisleri*), Myotis species, Natterer's bat (*Myotis nattereri*), Nyctalus species and soprano pipistrelle (*Pipistrellus pygmaeus*).

54. The review of these reports also revealed the following:

- badger - setts were found to be present around Coalburn, Muirburn and Glaikhead during surveys for the Daquhandy to Coalburn OHL in 2017. One of these setts is within or immediately adjacent to the proposed route;
- water vole - evidence was recorded within the area, including around Coalburn and opencast workings, in the southern section of the route;
- it is expected that otter use water bodies in the area for foraging and commuting and evidence of otter near the opencast workings has previously been found, as well as near Johnshill in the northern section of the preferred route;
- common lizard - one was recorded within the area during previous ecology surveys and it is expected that adder (*Vipera berus*) and slow worm (*Anguis fragilis*) are also present throughout the Study Area;
- red squirrel was recorded in 2007 (as returned during the RSK background data search) but was not recorded during any of the surveys for previous projects; and
- no great crested newts (*Triturus cristatus*) have been recorded during presence/absence surveys (including eDNA surveys) previously undertaken in the area.

### 8.4.4 Habitats

55. The Survey Area (i.e. the proposed route at the time of survey and 250 m buffer) comprises the following habitat types; woodland and scrub, grassland and rush dominated vegetation, tall herb and fern, ephemeral, dry and wet heath, mire and flush, ponds, rivers, ditches and swamps, residential, hardstanding and substation associated structures. Field boundaries were typically formed by fences, dry stone walls and occasional hedgerows.

56. A phase 1 habitat map of the confirmed route is provided in **Figure 8.2**. Detailed descriptions of habitats is provided within the Preliminary Ecological Appraisal report in **Appendix 8.1 Preliminary Ecological Appraisal Report**.

57. There are no plant species from the habitats recorded on the site that are critically endangered, endangered or vulnerable on the IUCN Red list.

### 8.4.5 National Vegetation Classification/Groundwater Dependent Terrestrial Ecosystems

58. A total of forty-five NVC vegetation communities were found in the Study Area.

59. The NVC surveys revealed the presence of a number of potential GWDTE habitats, as well as Annex I and Scottish Biodiversity List Priority Habitats. The condition of these habitats varies as there has been a degree of modification throughout the site and therefore not all instances of community types will constitute an Annex 1 habitat.

60. Of the NVC types, several are identified by the Scottish Environment Protection Agency (SEPA) as being GWDTE, these are as follows:

| NVC Code and Description | GWDTE Score (1, 2 or 3) |
|---|---|
| M6 *Carex echinata-Sphagnum recurvum/auriculatum* mire | 1 |
| W7 *Alnus glutinosa-Fraxinus excelsior-Lysimachia nemorum* woodland | 1 |

| NVC Code and Description | GWDTE Score (1, 2 or 3) |
|---|---|
| M23 *Juncus effusus/acutiflorus-Galium palustre* rush-pasture | 2(*1) |
| M15 *Trichophorum cespitosum-Erica tetralix* wet heath | 2 |
| M27 *Filipendula ulmaria-Angelica sylvestris* mire | 2 |
| U6 *Juncus squarrosus – Festuca ovina* grassland | 2 |
| MG9 *Holcus lanatus – Deschampsia cespitosa* grassland | 2 |
| MG10 *Holcus lanatus – Juncus effusus* rush-pasture | 2 |
| M25 *Molinia caerulea-Potentilla erecta* mire | 3(*2) |
| M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire | 3 |
| M18 *Erica tetralix-Sphagnum papillosum* raised and blanket mire | 3 |
| M19 *Calluna vulgaris-Eriophorum vaginatum* blanket mire | 3 |
| M20 *Eriophorum vaginatum* blanket and raised mire | 3 |
| H9 *Calluna vulgaris-Deschampsia flexuosa* heath | 3 |
| H10 *Calluna vulgaris – Erica cinerea* heath | 3 |
| H12 *Calluna vulgaris – Vaccinium myrtillus* heath | 3 |
| U2 *Deschampsia flexuosa* grassland | 3 |
| U4 *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland | 3 |
| U5 *Nardus stricta – Galium saxatile* grassland | 3 |
| S9 *Carex rostrata* swamp | 3 |
| S10 *Equisetum fluviatile* swamp | 3 |
| S12 *Typha latifolia* swamp | 3 |
| **** GWDTE Score Scotland or may vary for different hydroecological settings*** | |
| **GWDTE Code (LUPS -GU31, SEPA 2017); Colour Code** | |
| **High=Red** **Moderate=Yellow** | |
| **Explanation of GWDTE scores:** | |
| 1 – Strong dependency upon groundwater discharge. | |
| 2 – Likely to be some dependency on groundwater discharge. | |
| 3 – Groundwater discharge usually irrelevant: site fed by other water sources. | |

Table **Error! No text of specified style in document.**.6: NVC communities and their GWDTE score

61. The NVC communities identified within the Survey Area which constitute Annex I habitat are illustrated in **Table Error! No text of specified style in document.**.7**Error! Reference source not found.**.

| NVC Type | Description | Annex 1 Code | Annex 1 Title |
|---|---|---|---|
| M15, M15b, M15d | *Trichophorum cespitosum-Erica tetralix* wet heath | 4010 | Northern Atlantic wet heaths with *Erica tetralix* |
| M17 | *Trichophorum germanicum – Eriophorum vaginatum* blanket mire | 7130 | Blanket bog |
| M18 | *Erica tetralix-Sphagnum papillosum* raised and blanket mire | 7130 | Blanket bog |
| M19, M19a | *Calluna vulgaris-Eriophorum vaginatum* blanket mire | 7130 | Blanket bog |
| M20 | *Eriophorum vaginatum* blanket and raised mire | 7130 | Blanket bog |
| M20a | *Eriophorum vaginatum* blanket and raised mire, species-poor sub-community | 7130 | Blanket bog |
| M25, M25a, M25b | *Molinia caerulea-Potentilla erecta* mire | 7130 (where peat depth > 0.5m | Blanket bog |
| H9 | *Calluna vulgaris-Deschampsia flexuosa* heath | 4030 | European dry heaths |
| H10 | *Calluna vulgaris – Erica cinerea heath* | 4030 | European dry heaths |
| H12 | *Calluna vulgaris – Vaccinium myrtillus heath* | 4030 | European dry heaths |

Table **Error! No text of specified style in document.**.7: National Vegetation Classification types recorded at the corresponding Annex 1 habitat types.

62. The NVC types and their associated habitat sensitivities, as described above, and their corresponding categories for Annex 1 and the Scottish Biodiversity List are summarised in **Table Error! No text of specified style in document.**.8.

| NVC code | GWDTE Code (LUPS -GU31, SEPA 2017)<br>Colour Code<br>High=Red<br>Moderate=Yellow | Scottish Biodiversity List (SBL) | Annex 1 Code | Annex 1 Title |
|---|---|---|---|---|
| M6 | High | Upland flushes, fens, swamps | / | / |
| W7 | High | Wet woodland | / | / |
| M23 | High | Upland flushes, fens, swamps (applies to M23a only) | / | / |
| M15 | Moderate | Upland heathland | 4010 | Northern Atlantic wet heaths with *Erica tetralix* |
| M27 | Moderate | Upland flushes, fens, swamps | / | / |

| NVC code | GWDTE Code (LUPS -GU31, SEPA 2017)<br>Colour Code<br>High=Red<br>Moderate=Yellow | Scottish Biodiversity List (SBL) | Annex 1 Code | Annex 1 Title |
|---|---|---|---|---|
| U6 | Moderate | | / | / |
| MG9 | Moderate | Coastal and floodplain grazing marsh | / | / |
| MG10 | Moderate | Coastal and floodplain grazing marsh | / | / |
| M25 | Moderate | / | 7130 (where peat depth > 0.5m) | Blanket bog |
| M17 | / | Lowland raised bog | 7130 | Blanket bog |
| M18 | / | Lowland raised bog | 7130 | Blanket bog |
| M19 | / | Lowland raised bog | 7130 | Blanket bog |
| M20 | / | Lowland raised bog | 7130 | Blanket bog |
| H9 | / | Upland heathland | 4030 | European dry heaths |
| H10 | / | Upland heathland | 4030 | European dry heaths |
| H12 | / | Upland heathland | 4030 | European dry heaths |
| S9 | / | Upland flushes, fens, swamps | / | / |
| S10 | / | Upland flushes, fens, swamps | / | / |
| W11 | / | Upland birchwoods | / | / |

Table **Error! No text of specified style in document.**.8: National Vegetation Classification types recorded within Study Area and their corresponding sensitivities for GWDTE, Annex 1 and SBL

63. Full details of these surveys are provided in the NVC and GWDTE Report, in **Appendix 8.1 Preliminary Ecological Appraisal Report**.

### 8.4.6 Invasive Species

64. Japanese knotweed (*Reynoutria japonica*) and Japanese rose (*Rosa rugosa*) were recorded during surveys. These were located along a small watercourse south of Coalburn.

### 8.4.7 Protected Species

#### Badger

65. A well-used main sett with nine holes was found in woodland west of the disused tip located north of Coalburn, as well as a single hole outlier nearby. Both of these setts were within 30 m of the proposed route at the time of surveying. Fresh bedding materials were present at the entrances of the main sett, indicating recent use by badgers and that the sett is a breeding sett (**Figure 1, Appendix 8.3 Protected Species Report**).

66. A single hole outlier sett was found located on the western side of a raised disused railway but is more than 50 m away from the proposed route at the time of survey (**Figure 1, Appendix 8.3 Protected Species Report**).

#### Bats

67. Trees and structures along the proposed route provide potential roosting locations for bats. The survey was undertaken based on the propopsed route at the time of the survey. As this has changed slightly since the surveys were undertaken, we will undertake detailed pre-construction surveys to ensure that no potential roosting locations have been missed although it is expected that the original survey buffer captured the majority of trees and structures.

68. 18 trees within 50 m of the proposed route were identified as having potential to support roosting bats. Of these, 11 have low potential, 6 have medium potential and 1 has high potential. There were 3 bridges, 2 culverts and 1 building within 50 m of the Survey Area, of which one of the bridges and both culverts have low potential, 2 bridges have medium potential and the building has high potential. A full list, descriptions and photos of these trees and structures can be found within the Protected Species Report in **Appendix 8.3 Protected Species Report**.

69. The scrub, woodland, and woodland edge habitats and watercourses wihtihn the Survey Area provide good foraging habitat for bats.

#### Otter

70. There are several ponds and burns along the proposed route as well as the Douglas Water, which are suitable for otter.

71. No evidence of otter was found during the protected species walkover survey.

#### Pine Marten

72. Areas of woodland along the proosed route provide suitable habitat for pine marten, including forestry plantations and the areas of woodland.

73. No evidence of pine marten was found during the protected species walkover survey.

#### Red Squirrel

74. Areas of woodland along the proposed route provide suitable habitat for red squirrel, including the forestry plantations at NS788268 and NS805345 and the areas of woodland at NS804282 and NS813363.

75. No evidence of red squirrel was found during the protected species walkover survey.

#### Reptiles

76. Almost all of the area within 50 m of the proposed route provides suitable habitat for common reptiles, for both foraging and hibernation.

77. A single common lizard was observed within the Survey Area during the protected species walkover survey.

#### Water Vole

78. A large proportion of the Survey Area provides suitable habitat for water voles. This includes the watercourses between Kennoxhead and Carmacoup and the waterbodies and mire between Glespin and Johnshill.

79. Evidence of water vole was found at several points along the proposed route, including burrows and feeding remains. Full details are provided within the Protected Species Report in **Appendix 8.3 Protected Species Report**.

### Other species of principle importance

80. There is suitable habitat for multiple invertebrate species along the propopsed route given the presence of a variety of habitats including woodland, mire, grassland and scrub.

81. Brown hares (*Lepus europaeus*) were observed during the protected species survey and large parts of the Survey Area provide suitable habitat for this species, including areas of grassland, mire and farmland. Areas of woodland, ruderal vegetation and scrub along the proposed route provide suitable habitat for European hedgehog (*Erinaceus europaeus*).

82. Common toads were observed during the protected species survey. Almost all of the proposed route provides suitable habitat for common toad.

83. Smooth newt (*Lissotriton vulgaris*) were observed in puddles along the disused railway north of Glespin during the protected species walkover.

### Implications of Climate Change

84. The predicted effects of climate change are likely to influence the future ecological status of the Study Area. Drawing on the UK Climate Projections CP18, which generally predict hotter, drier summers and milder, wetter winters, it is likely that ecological features will be subject to:

- An increase in invasive species diversity and range;
- Changes to vegetation assemblages; and
- Range contraction/expansion of faunal species.

85. These predicted changes to the climate are unlikely to significantly affect the findings of this assessment, if they occur.

### 8.4.8 The 'Do Nothing' Scenario

86. Ecological features are rarely static in their extent, distribution and condition. Habitats and species populations are dynamic and so the prediction of future baseline is complex.

87. In the absence of the propopsed development it is likely that existing land uses will persist and habitat structure, function and protected species assemblages will broadly reflect their current condition. This will also depend however on changes in agricutural practices along the route of the proposed route which may result in changes to habitat and in particular vegetation length and species diversity in grazed fields.

### 8.4.9 Micrositing

88. Whilst each topic assessment has assessed the effects of the proposed development, it has been necessary to also consider the way in which an Infrastructure Location Allowance (ILA) (or micrositing allowance) of 25 m of each proposed development component may change the significance of effects predicted.

89. The proposed development layout has been designed to avoid effects on ecology as far as possible, but it is possible that micrositing of wooden pole locations may be necessary to avoid impacts on sensitive GWDTE and areas where water voles are present. A micrositing allowance of 25 m has been applied.

### 8.4.10 Design Considerations and Good Practice Measures

90. Where possible, the design process has sought to retain existing vegetation, including mature trees and woodland as far as possible. Areas of peat will also be avoided as far as possible. The proposed development has been designed to minimise the number of watercourse crossings; however, where a new temporary access track is required to cross a watercourse, a temporary 'bridge' or culvert will be utilised. No works will take place within the watercourse. Where the proposed underground cable is required to cross a watercourse, construction works will be undertaken in accordance with the Construction Environmental Management Plan (CEMP) in compliance with the conditions of the General Binding Rules (GBRs).

91. A CEMP will be produced prior to works commencing, as well as a Peat Management Plan, this will also include the restoration and remediation of habitats following the construction phase. An Ecological Management and Mitigation Plan will also be produced.

92. Existing access routes will be used as far as possible. In areas of dry pasture and level moorland, use will be made of low ground pressure vehicles (e.g. tractor, Argo cat and/or quad bikes where possible), which do not require a track.

93. Bog mats and temporary track mats will be used when tracking over soft ground and areas of sensitive habitat such as GWDTE where existing tracks are not available.

94. For compounds and constrution haul routes aggregate will be placed on a geotextile base to allow its removal following construction.

95. Poles will be stored in defined bunded areas, away from watercourses. The storage will take into consdieration that the poles are treated with a preservative and as such, will be stored on a hard standing area where possible with a non permaeble membrane to prevent leaching.

96. Digging of drainage ditches will, where possible, be avoided to minimise impacts on GWDTE.

97. All materials will be stored in bunded containers well away from GWDTE.

98. Full design and constrcution methods are discussed in **Chapter 4: Development Description**.

# 8.5 Assessment of Effects

99. The assessment of effects is based on the description of the proposed development as outlined in **Chapter 4: Development Description**.

### 8.5.1 Identification of Ecological Importance

100. **Table Error! No text of specified style in document.**.9 lists the nature conservation importance assigned to the valued ecological receptors scoped into this assessment.

| Ecological receptor | | Intrinsic Value of the Feature in the Context of the Proposed Development | Justification of Intrinsic Value of Feature in the Context of the Proposed Development in Reference to Baseline |
|---|---|---|---|
| Coalburn Moss SAC | | International | The Coalburn Moss SAC is designated for its active raised bogs and degraded raised bogs still capable of natural regeneration, annex I habitats of international importance and the SAC is immediately adjacent to the proposed development. Given this, the SAC is considered to be of International importance. |
| Coalburn Moss SSSI | | National | The Coalburn Moss SSSI is one of the best examples of lowland raised bog in the United Kingdom growing Sphagnum-rich vegetation. The SSSI is adjacent to the proposed development and is therefore considered to be Nationally important. |
| Habitats of conservation concern | Dry heath | Regional | Dry heath is an Annex I habitat type. Small areas of this habitat are present along the proposed route and may be temporarily affected. As a habitat of conservation concern its considered to be of Regional value. |

| Ecological receptor | | Intrinsic Value of the Feature in the Context of the Proposed Development | Justification of Intrinsic Value of Feature in the Context of the Proposed Development in Reference to Baseline |
|---|---|---|---|
| | Active bog | Regional | Active bogs are an Annex I habitat type. Small areas of this habitat may be temporarily affected. As a habitat of conservation concern it is considered to be of Regional value. |
| | Other – wet woodland, ponds, rivers, upland birchwoods | Local | These habitats are UK BAP Priority Habitats and Scottish Biodiversity List habitats. Small areas of these habitat may be affected. As habitats of conservation concern, they are considered to be of Local value. |
| GWDTEs | | Regional | GWDTEs are important habitats which can be easily affected by changes to land use and construction activities. Small areas of these habitat types may be temporarily affected. As habitats of conservation concern, they are considered to be of Regional value. |
| Bats | | Study Area | There is suitable foraging habitat along the proposed route but the proposed OHL is unlikely to fragment this foraging habitat. Roosting features for bats are also present along the proposed route. However, given that removal of trees will be minimal and the fact that no Annex II species are present in this geographical area, the site is considered to be of Study Area value only for roosting and foraging bats. |
| Badgers | | Study Area | Evidence of badgers was found along the proposed route, including setts. Given that this species is widespread in the geographical region and throughout Scotland, the site is considered to be of Study Area value for badgers. |
| Otter | | Study Area | No evidence of otter was found during surveys however, they are known to be present in the wider area. Given that this species is widespread in the geographical region and throughout Scotland, the site is considered to be of Study Area value for otters. |
| Reptiles | | Study Area | Common reptiles are known to be present along the proposed route, however, given the abundance of suitable habitat in the wider area and small footprint of the works, the site is considered to be of Study Area value only. |
| Water vole | | County | Watercourses and wetland areas within the Study Area offered suitable habitat for the species and evidence of the species was found in several locations. Given that this species in declining in number throughout the UK, this site is considered to be at least County importance for water voles. |

Table **Error! No text of specified style in document.**.9: Ecological Importance Assessment

### 8.5.2 Identification of Potential Effects

101. In **Table Error! No text of specified style in document.**.10 below, the description of the proposed development set out in **Chapter 4: Development Description** is used to identify construction activities, pathways to effects and subsequent broad effect types.

| Ecological receptor | Development Activity | Potential Effect Pathway | Potential Effect |
|---|---|---|---|
| Coalburn Moss SAC and Coalburn Moss SSSI | Construction works. | Polluted runoff from works entering watercourses and groundwater, ground excavations. | Indirect pollution effects and alteration to local hydrological regime affecting plant species composition of raised bog habitats. within SAC/SSSI. |
| Habitats of conservation concern | Removal of vegetation to facilitate the poles and construction activities.<br>Creation of access and haulage roads and site compounds. | Vegetation removal.<br>Covering of vegetation surface with aggregate.<br>Ground excavation. | Temporary loss of vegetation due to erection of poles and installation of the proposed underground cables.<br>Temporary loss of habitat due to dieback of vegetation under compounds and haulage roads.<br>Alteration of local hydrological conditions changing vegetation composition. |
| GWDTE | Creation of access and haulage roads and site compounds. | Vegetation removal.<br>Covering of vegetation surface with aggregate.<br>Ground excavation and drainage. | Temporary loss of vegetation due to erection of poles and installation of the proposed underground cables.<br>Temporary loss of habitat due to dieback of vegetation under compounds and haulage roads.<br>Alteration of local hydrological conditions changing vegetation composition. |
| Badger | Construction, including the use of plant, equipment and presence of site staff. | Disturbance due to noise, vibration and lighting.<br>Excavations<br>Site traffic movements. | Mortality from vehicle collisions and falling in open excavations and potentially sett tunnel collapse. |
| | | | Disturbance causing temporary displacement from setts. |
| Bats | Creation of access and haulage roads and site compounds.<br>Tree removal to facilitate enabling works and erection of wooden poles. | Loss of tree features used for roosting.<br>Accidental disturbance due to noise and lighting. | Mortality if present in roost features removed. |
| | | | Disturbance especially lighting casing temporary displacement from foraging habitat. |
| Otter | Surface water runoff and spillages. | Accidental disturbance due to noise and lighting.<br>Accidental pollution of water courses. | Disturbance causing displacement from foraging habitat and pollution of watercourses reducing availability of fish prey items. |

| Ecological receptor | Development Activity | Potential Effect Pathway | Potential Effect |
|---|---|---|---|
| Reptiles | Creation of access and haulage roads and site compounds. | Vegetation removal and vehicle and plant traffic. | Mortality due to removal of vegetation in hibernation season and foraging vegetation in active season. Being crushed by vehicle and plant movements.<br>Direct habitat loss. |
| Water vole | Creation of access and haulage roads and site compounds in particular new watercourse crossings. | Damage to watercourse banks from plant and bridge construction. | Mortality due to damage to burrows. |
| | | | Temporary habitat loss in vicinity of watercourse crossings. |

Table Error! No text of specified style in document..10: Potential Effect Identification

### 8.5.3 Potential Effect Significance

102. Having identified the ecological importance of the Study Area, and potential effects, for scoped-in ecological features, the sections below consider significance.

#### Designated Sites

103. The European designated sites in the Study Area are considered to be of International importance, whilst the nationally designated sites are of National importance, as determined in **Table 8.10. Table Error! No text of specified style in document.**.11 assessess the significance of potential effects.

| Parameter | Potential effect |
|---|---|
| | Indirect pollution effects and alteration of local hydrological regime |
| Extent | There will be no direct loss of any designated sites. Due to the discrete nature of the proposed development the extent of any effect is likely to be limited to the areas of Coalburn Moss SAC and SSSI directly adjacent to the construction footprint. |
| Magnitude | With embedded mitigation measures in place any potential effect is likely to be of low magnitude, but with no mitigation measures of pollution controls potential impacts could be of a high magnitude. |
| Duration | With embedded mitigation in place any potential pollution effects duration will be limited to the spillage event. |
| Frequency | Infrequent |
| Reversibility | Dependent upon type of pollution incident but likely to reversible over time. Any alteration to local hydrological regime also likely to be reversible over time. |
| Likelihood | Possible but unlikely with mitigation measures such as pollution prevention control measures in place. |
| **Significance (EclA)** | **Significant at International or National level depending on interest features affected** |
| **Conversion (EIA Regs)** | **Major** |

Table Error! No text of specified style in document..11: Assessment of potential effects – Designated sites

#### Habitats of Conservation Concern

104. The Study Area is considered to be of 'Regional' ecological importance for habitats of conservation concern, as determined in **Table 8.10**. **Table Error! No text of specified style in document.**.12 assessess the significance of potential effects.

| Parameter | Potential effect | |
|---|---|---|
| | Temporary loss of habitat | Alteration of local hydrological regime |
| Extent | Restricted to immediate footprint of compounds, access roads and haul routes. | Likely to be highly localised restricted to footprint of compounds, access roads and haul routes. |
| Magnitude | Given large extent of similar habitat in local vicinity and discrete nature of the proposed development footprint low magnitude. | Given large extent of similar habitat in local vicinity and discrete nature of the proposed development footprint low magnitude. |
| Duration | Temporary as vegetation will recover and restoration and remediation measures will be put in place. | Temporary as vegetation will recover and restoration and remediation measures will be put in place. |
| Frequency | Will only occur once for the duration of construction activities. | Will only occur once for the duration of construction activities. |
| Reversibility | Reversible | Reversible |
| Likelihood | Certain | Possible |
| **Significance (EclA)** | **Not significant** | **Not significant** |
| **Conversion (EIA Regs)** | **None** | **None** |

Table Error! No text of specified style in document..12: Assessment of potential effects – Habitats of conservation concern

#### GWDTE

105. The Study Area is considered to be of 'Regional' ecological importance for GWDTEs, as determined in **Table 8.10**. **Table Error! No text of specified style in document.**.13 assessess the significance of potential effects.

| Parameter | Potential effect | |
|---|---|---|
| | Temporary loss of habitat | Alteration of local hydrological regime |
| Extent | Restricted to immediate footprint of compounds, access roads and haul routes. | Likely to be highly localised restricted to footprint of compounds, access roads and haul routes. |
| Magnitude | Given large extent of similar habitat in local vicinity and discrete nature of the proposed development footprint low magnitude. | Given large extent of similar habitat in local vicinity and discrete nature of the proposed development footprint low magnitude. |
| Duration | Temporary as vegetation will recover and restoration and remediation measures will be put in place. | Temporary as vegetation will recover and restoration and remediation measures will be put in place. |
| Frequency | Will only occur once for the duration of construction activities. | Will only occur once for the duration of construction activities. |
| Reversibility | Reversible | Reversible |

| Parameter | Potential effect | |
|---|---|---|
| | Temporary loss of habitat | Alteration of local hydrological regime |
| Likelihood | Certain | Possible |
| **Significance (EclA)** | Not significant | Not significant |
| **Conversion (EIA Regs)** | **None** | **None** |

Table **Error! No text of specified style in document.**.13: Assessment of potential effects – GWDTEs

### Badger

106. The Study Area is considered to be of 'Study Area' ecological importance for badger, as determined in **Table 8.10**. **Table Error! No text of specified style in document.**.14 assessess the significance of potential effects.

| Parameter | Potential effect | |
|---|---|---|
| | Incidental Mortality | Disturbance or displacement |
| Extent | Limited works unlikely to occur at night and haul route in operation for short period. Effects most likely in close proximity to known setts. | Limited to one area where active sett identified close to the proposed route. |
| Magnitude | Low - loss of one badger in the area unlikely to have large impact on wider population. | Low – works will not result in closure of any setts. |
| Duration | Temporary during construction works. | Temporary during construction works. |
| Frequency | Duration of construction works in areas where badger may be present. | Infrequent |
| Reversibility | Reversible – local badger population unlikely to suffer extinction as a result of incidental mortality. | Reversible – badgers have abundant additional habitat to forage in and any disturbance will be temporary during works. |
| Likelihood | Unlikely as works will be during the day when badgers are not active. | Unlikely as works will be during the day. |
| **Significance (EclA)** | **Not significant** | **Not significant** |
| **Conversion (EIA Regs)** | **None** | **None** |

Table **Error! No text of specified style in document.**.14: Assessment of potential effects – Badgers

### Bats

107. The Study Area is considered to be of 'Study Area' ecological importance for roosting bats, as determined in **Table 8.10. Table Error! No text of specified style in document.**.15 assessess the significance of potential effects.

| Parameter | Potential effect | | |
|---|---|---|---|
| | Direct loss of roost structures | Incidental Mortality | Disturbance |
| Extent | Limited number of trees to be removed to facilitate the proposed development. | Limited number of trees to be removed to facilitate the proposed development. If these trees do contain roosts, mortality is possible. | Limited to works in close proximity to trees which may contain bat roosts or along woodland edges used for foraging and commuting. |
| Magnitude | Low - Limited to a small number of trees along the proposed route, unlikely to contain maternity given low potential of roosting features that have been identified. | Low - loss of small bat roosts unlikely to have impact on local bat population. | Limited as only when works are in close proximity to trees with potential roosting features or along foraging/commuting habitats which are limited along the proposed route. |
| Duration | Short term – construction period only. | Limited to felling of trees only. | Temporary |
| Frequency | Infrequent – removal of trees (if any) will only occur once. | One off event during felling. | Duration of construction in areas containing trees or foraging/commuting habitat. |
| Reversibility | Reversible – additional roost resource will be provided in form of bat boxes if required. | Reversible – local bat population unlikely to go extinct as a result of the proposed works. | Reversible |
| Likelihood | Possible (trees are to be avoided as much as possible). | Possible (trees are to be avoided as much as possible). | Likely, if trees do contain roosts but unlikely for foraging/commuting bats as works will be in daylight hours. |
| **Significance (EclA)** | **Significant (Study Area)** | **Significant (Study Area)** | **Not significant** |
| **Conversion (EIA Regs)** | **Minor** | **Minor** | **None** |

Table **Error! No text of specified style in document.**.15: Assessment of potential effects – Bats

### Otters

108. The Study Area is considered to be of 'Study Area' ecological importance for otters, as determined in **Table 8.10**. **Table Error! No text of specified style in document.**.16 assessess the significance of potential effects.

| Parameter | Potential effect | |
|---|---|---|
| | Pollution affecting fish prey | Disturbance |
| Extent | Dependent on pollution incident but with mitigation measures in place likely to be limited. | No otter evidence identified but known to use area for foraging and commuting. |
| Magnitude | Low - with mitigation measures in place likely to be limited. | Small number of watercourses along the proposed route, likely to be small numbers of otters using them given no evidence found. |

| Parameter | Potential effect | |
|---|---|---|
| | Pollution affecting fish prey | Disturbance |
| Duration | Temporary | Temporary |
| Frequency | Duration of pollution incident (if any) in areas where otter may be present. | Duration of construction works in areas where otter may be present. |
| Reversibility | Reversible | Reversible as otters will easily adapt and can move elsewhere to forage. |
| Likelihood | Unlikely as watercourses will be avoided as far as possible and pollution prevention control measures will be in place. | Unlikely, no active holts identified and as watercourses will be avoided as far as possible and otters are active at night when works won't be taking place. |
| **Significance (EclA)** | **Not significant** | **Not significant** |
| **Conversion (EIA Regs)** | **None** | **None** |

Table **Error! No text of specified style in document.**.16: Assessment of potential effects – Otters

### Reptiles

109. The Study Area is considered to be of 'Study Area' ecological importance for reptiles, as determined in **Table 8.10**. **Table Error! No text of specified style in document.**.17 assessess the significance of potential effects.

| Parameter | Potential effect | | |
|---|---|---|---|
| | Mortality | Direct habitat loss | Disturbance |
| Extent | Whole proposed route as suitable habitat along its length. | Whole proposed route as suitable habitat along its length. | Whole proposed route as suitable habitat along its length. |
| Magnitude | Loss of a few individuals unlikely to have implications for wider population given the abundance of suitable habitat. | Low as footprint of wooden poles small and abundance of suitable habitat in the area. | Low as limited to effect on individual reptiles. |
| Duration | Permanent for individuals but short duration for population as a whole. | Temporary for construction period. | Temporary |
| Frequency | Duration of construction works in areas where reptiles may be present. | Duration of construction works. | Duration of construction works in areas where reptiles may be present. |
| Reversibility | Reversible as reptiles will move out of the way and return and populations increase. | Reversible as habitats will be restored and reinstated and reptiles will re colonise. | Reversible as reptiles will move out of the way and return. |
| Likelihood | Possible given reptiles known to be present in area. | Likely but small areas to be lost. | Likely |
| **Significance (EclA)** | **Not significant** | **Not significant** | **Not significant** |
| **Conversion (EIA Regs)** | **None** | **None** | **None** |

Table **Error! No text of specified style in document.**.17: Assessment of potential effects – Reptiles

### Water Vole

110. The Study Area is considered to be of 'County' ecological importance for water vole, as determined in **Table 8.10. Table Error! No text of specified style in document.**.18 assessess the significance of potential effects.

| Parameter | Potential effect | | |
|---|---|---|---|
| | Mortality | Direct habitat loss | Disturbance |
| Extent | Limited to watercourse crossing points. | Limited to watercourse crossing points. | Limited to watercourse crossing points. |
| Magnitude | Medium Loss of a small number of water voles could have implications for the local population given the decline of this species within the UK. | Medium Loss of a small number of water voles could have implications for the local population given the decline of this species within the UK. | Low – water voles can occur in busy noisy areas so not likely to be particularly affected by disturbance. |
| Duration | Short term for duration of construction. | Short term for duration of construction. | Short term for duration of construction. |
| Frequency | Duration of construction works in water course crossings. | Duration of construction works in water course crossings. | Duration of construction works in water course crossings. |
| Reversibility | Irreversible | Irreversible | Reversible |
| Likelihood | Possible | Possible | Possible |
| **Significance (EclA)** | **Significant (County)** | **Significant (County)** | **Significant (County)** |
| **Conversion (EIA Regs)** | **Minor** | **Minor** | **Minor** |

Table **Error! No text of specified style in document.**.18: Assessment of potential effects – Water vole

### 8.5.4 Proposed Mitigation

111. Mitigation measures are set out below for potential negative significant (EclA) effects identified in **Table Error! No text of specified style in document.**.11 to **Table Error! No text of specified style in document.**.18**.** Specific mitigation is designed to reduce the significance of effects, while general site-wide mitigation provides a mechanism for measures that will support compliance with wildlife legislation, irrespective of the significance of effects.

| Ecological feature | Potential effect | Specific mitigation | General site-wide mitigation |
|---|---|---|---|
| Designated sites | Indirect effects on hydrology of the site. | Production of a comprehensive CEMP detailing how pollution and run-off etc will be prevented. | Diesel and other materials should be stored in bunded containers and spill kilts and spill remediation procedures should be developed. |
| Habitats of conservation concern | Temporary habitat loss.<br>Indirect effect – degradation of habitat. | Production of a comprehensive CEMP and Peat Management Plan detailing how sensitive habitat will be protected.<br>Avoidance of sensitive habitats by micro-siting pole locations as far as possible.<br>Avoidance of sensitive habitats when constructing access tracks.<br>Use of bog mats when areas of sensitive habitats cannot be avoided.<br>If any aggregate or substrate is used to construct a track, it must be laid over a geotextile to allow removal of the substrate on completion of the works. | No materials should be stored on sensitive habitat types and all compounds and storage areas should not be located on sensitive habitat types.<br>Diesel and other materials should be stored in bunded containers and spill kilts and spill remediation procedures should be developed.<br>Clean water should not be diverted into the same areas as dirty runoff from construction surfaces.<br>Pollution prevention control measures such as the use of silt fencing, silt traps and other suitable filtration methods can be employed. These mechanisms are intended to reduce the speed of flow, filter runoff and allow suspended silts and particulates to settle out naturally. |
| GWDTE | Temporary habitat loss | Production of a comprehensive CEMP and Peat Management Plan detailing how sensitive habitat will be protected.<br>Avoidance of GWDTE by micro-siting pole locations as far as possible.<br>Avoidance of sensitive habitats when constructing access tracks.<br>Use of bog mats when areas of sensitive habitats cannot be avoided.<br>If any aggregate or substrate is used to construct a track, it must be laid over a geotextile to allow removal of the substrate on completion of the works.<br>Drainage ditches should be constructed on both the upslope and downslope, if necessary, to control the routing of water and prevent it from getting onto the construction area. | As above for habitats |
| | Indirect effect – degradation of habitat | Drains or ditches carrying natural clean water must be prevented from being contaminated by dirty runoff from open construction surfaces.<br>Upon completion of works any drainage ditches would be filled in to prevent alteration local hydrological regime. | |
| Bats | Habitat loss<br>Disturbance<br>Mortality | Avoidance of trees with bat roost potential as far as possible.<br>Pre-construction surveys of any trees which must be removed to determine the presence of bat roosts, to include ground level tree assessments, climbing surveys and emergence/re-entry surveys as required.<br>Toolbox talks for all site contractors. | Lighting strategy to limit light spill onto foraging habitat and if possible, avoid lighting when works not occurring. |
| Badger | Mortality<br>Disturbance | Pre-construction badger surveys of all suitable habitat to be affected to locate any new setts.<br>Microsite works to avoid sett locations.<br>Toolbox talks for all site contractors. | No trenches to be left open overnight. |
| Otter | Pollution affecting fish prey<br>Disturbance | Pre-construction otter surveys of all watercourse crossings to be affected to locate any holt or lying up sites.<br>Toolbox talks for all site contractors. | No trenches to be left open overnight.<br>Pollution prevention control measures. |
| Reptiles | Mortality<br>Disturbance<br>Direct habitat loss | Watching brief in areas of suitable reptile habitat and vegetation clearance works to be carried out in accordance with a precautionary method of working.<br>Toolbox talks for all site contractors. | |
| Water vole | Mortality<br>Direct habitat loss<br>Disturbance | Pre-construction water vole surveys of all water course crossing points to be affected.<br>Avoiding areas where water vole burrows are present by micro-siting pole locations and water course crossing locations.<br>Toolbox talks for all site contractors. | Pollution prevention control measures. |

Table **Error! No text of specified style in document.**.19: Proposed mitigation

### 8.5.5 Residual Construction Effects

112. On the assumption that mitigation measures are successfully and correctly applied, there are no likely significant residual effects.

### 8.5.6 Cumulative Effects

113. There are several wind farms being constructed or going through the consenting process including several within the proposed development Study Area. The proposed development is not expected to have any cumulative effects in regard to these additional developments given the small land update of the wooden poles however there may be a cumulative impact in terms of disturbance to protected species during the construction activities. This would however be temporary and short-term.

## 8.6 Summary of Effects

114. **Table Error! No text of specified style in document.**..20 below summarises the predicted effects of the proposed development on ecology, including 'not significant effects' which do not require mitigation measures. General site-wide mitigation is as detailed in **Table Error! No text of specified style in document.**..19.

| Ecological feature | Potential effect | Significant | Specific mitigation | Significance of residual effect |
|---|---|---|---|---|
| Designated sites | Indirect effect | Major | Production of a comprehensive CEMP detailing how pollution and run-off etc will be prevented.<br>Diesel and other materials should be stored in bunded containers and spill kilts and spill remediation procedures should be developed. | **None** |
| Habitats of conservation concern | Direct habitat loss | None | Production of a comprehensive CEMP and Peat Management Plan detailing how sensitive habitat will be protected.<br>Avoidance of sensitive habitats by micro-siting pole locations as far as possible.<br>Avoidance of sensitive habitats when constructing access tracks.<br>Use of bog mats when areas of sensitive habitats cannot be avoided.<br>If any aggregate or substrate is used to construct a track, it must be laid over a geotextile to allow removal of the substrate on completion of the works. | **None** |
| | Indirect effect | | | |
| GWDTE | Direct habitat loss | | | **None** |
| | Indirect effect | | Production of a comprehensive CEMP and Peat Management Plan detailing how sensitive habitat will be protected.<br>Avoidance of GWDTE by micro-siting pole locations as far as possible.<br>Avoidance of sensitive habitats when constructing access tracks.<br>Use of bog mats when areas of sensitive habitats cannot be avoided.<br>If any aggregate or substrate is used to construct a track, it must be laid over a geotextile to allow removal of the substrate on completion of the works.<br>Drainage ditches should be constructed on both the upslope and downslope, if necessary, to control the routing of water and prevent it from getting onto the construction area.<br>Drains or ditches carrying natural clean water must be prevented from being contaminated by dirty runoff from open construction surfaces.<br>Upon completion of works any drainage ditches would be filled in to prevent alteration local hydrological regime. | |
| Bats | Indirect effect | Minor | Avoidance of trees with bat roost potential as far as possible.<br>Pre-construction surveys of any trees which must be removed to determine the presence of bat roosts, to include ground level tree assessments, climbing surveys and emergence/re-entry surveys as required.<br>Toolbox talks for all site contractors. | **None** |
| | Disturbance | None | | |
| | Mortality | Minor | | |
| Badger | Mortality | None | Pre-construction badger surveys of all suitable habitat to be affected.<br>Toolbox talks for all site contractors.<br>No trenches to be left uncovered overnight. | **None** |
| | Disturbance | None | | |
| Otter | Pollution affecting fish prey | None | Pre-construction otter surveys of all suitable habitat to be affected.<br>Toolbox talks for all site contractors.<br>No trenches to be left uncovered overnight.<br>Pollution prevention control measures. | **None** |
| | Disturbance | | | |

| Ecological feature | Potential effect | Significant | Specific mitigation | Significance of residual effect |
|---|---|---|---|---|
| Reptiles | Mortality | None | Watching brief in areas of suitable reptile habitat.<br>Toolbox talks for all site contractors. | **None** |
| | Direct habitat loss | None | | |
| | Disturbance | None | | |
| Water Vole | Mortality | Minor | Pre-construction water vole surveys of all suitable habitat to be affected.<br>Avoiding areas where water vole burrows are present by micro-siting pole locations.<br>Toolbox talks for all site contractors.<br>Pollution prevention control measures. | **None** |
| | Direct habitat loss | Minor | | |
| | Disturbance | Minor | | |

Table **Error! No text of specified style in document.**.20: Summary of effects

# 8.7 References

Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, 3rd edition. Chartered Institute of Ecology and Environmental Management: CIEEM, Winchester: 2018.

Dalquhandy Wind Farm to Coalburn Substation 132kv Overhead Line Ecological Baseline Report: Ramboll: 2017.

Douglas West and Dalquhandy DP Renewable Energy Project: MacArthur Green: 2015.

Glentaggart Wind Farm EIAR:  SLR Consulting Ltd: 2010.

Kennoxhead Wind Farm Environmental Statement: PNE Wind: 2013.

Planning Advice Note 1/2013: Environmental Impact Assessment Available at:

https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impact-assessment/

Planning Circular 1/2017 – Environmental Impact Assessment.Available at: https://www.gov.scot/publications/planning-circular-1-2017-environmental-impact-assessment-regulations-2017/ (accessed January 2021).

Proposed Wind Farm Development at Poniel, South Lanarkshire - Environmental Statement: WSP Environment & Energy & WYG Planning & Environment: 2012.

RSK (2022). Kennoxhead OHL. Habitats Regulations Assessment Screening Report.