SP Energy Networks

Scoping Document

Kennoxhead Windfarm to Coalburn Substation 132 kV Overhead Line

Project no.661718

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RSK GENERAL NOTES

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Kennoxhead Windfarm to Coalburn Substation 132 kV Overhead Line

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Date:	23/6/20

EXECUTIVE SUMMARY

Scottish Power Energy Networks (SPEN) as agents for Scottish Power Transmission Ltd (SPT) propose to construct a 132 kV continuous overhead line (OHL) between Kennoxhead Windfarm (Grid ref: 277165E 624386N) and Coalburn Substation ~14 km north-north-east (Grid ref: 282510E 637337N). Kennoxhead Windfarm is located south of the A70, near the village of Glespin on the Douglas Estate while Coalburn substation is located west of the M74 near Coalburn (Figure 1.1).

This Scoping Report is provided to support a formal request under regulation 12 of the EIA regulations by the applicant for a Scoping Opinion to determine the information to be provided within the EIAR.

SPEN is inviting consultees to comment on the following:

- What environmental information do you hold or are aware of that will assist with the EIA?
- Do you agree with the proposed approach for baseline collection, prediction and assessment of significance?
- Are there any key issues or possible effects which have been omitted?
- Do you agree with the list of issues to be scoped out, and the rationale behind the decision?

To ensure responses to this Scoping Report are represented within the Scoping Opinion they should be directed to the Scottish Governments Energy Consents Unit (ECU):

Energy Consents Unit

Scottish Government

5 Atlantic Quay

150 Broomielaw

Glasgow, G2 8LU

Email: Econsents_Admin@gov.scot

The applicant would be grateful if you could also send a copy of your response to them:

Kennoxhead Grid Connection Project

Land and Planning Team

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Copies of this document can be found online at:

www.spenergynetworks.co.uk/pages/community_consultation

CONTENTS

GLOSSARY

132 kV	132 Kilovolt capacity of a overhead electricity powerline
AA	Appropriate Assessment
Adit	A horizontal passage leading into a mine for the purposes of access or drainage
AOD	Above Ordnance Datum
AQMA	Air Quality Management Area
ASNW	Ancient Semi-Natural Woodlands
BDS	Background Desktop Study
BGS	British Geological Survey
Bing	A heap, especially of metallic ore or of waste from a mine.
BTO	British Trust for Ornithology
CA	Conservation Area
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CP	Compensatory Planting
CTMP	Construction Traffic Management Plan
EcIA	Ecological Impact Assessment
ECU	Energy Consents Unit (Scottish Government)
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIA Regulations	The Electricity Works (Environmental Impact Assessment (Scotland) Regulations 2017
Electricity Act	The Electricity Act 1989
EMF	Electromagnetic fields
EMP	Environmental Management Plan
GIS	Geographical Information Systems
GPP	Guidelines for Pollution Prevention
GWP	Global Warming Potential
GWDTE	Groundwater Dependent Terrestrial Ecosystem
ha	Hectares
HER	Historic Environment Record
HES	Historic Environment Scotland
Holford Rules	Guidelines developed in 1959 by Lord Holford which define the principles of route selection for overhead lines which continue to inform transmission line routeing in the UK.
HRA	Habitat Regulation Assessment

IBA	Important Bird Areas' includes sites designated or identified for designation as Special. Protection Areas under European Community Directive 79/409 on the Conservation of Wild Birds
JNCC	Joint Nature Conservation Committee
IEMA	Institute of Environmental Management and Assessment
kV	Kilovolt capacity of an overhead line
LCT	Landscape Character Type
LIDAR	**LIDAR**, which stands for Light Detection and Ranging, is a remote sensing method that uses light in the form of a pulsed **laser** to measure ranges (variable distances) to the Earth
LDP	Local Development Plan
LPA	Local Planning Authority
LVIA	Landscape and Visual Impact Assessment
m	Metres
NRHE	National Record of Historic Environment
NGR	National Grid Reference
NGT	National Grid Transmission
NTS	Non-Technical Summary
NVC	National Vegetation Classification
OHL	Overhead line: an electricity powerline above ground level
OS	Ordnance Survey
PAWS	Plantation on Ancient Woodland Sites
PEA	Preliminary Ecological Appraisal
Planning Application	An application for planning permission under The Town and Country Planning (Scotland) Act 1997
Preferred Route	The preferred route identified through the routeing study process, which hasn't been subject to non-statutory consultation. Considered to represent the optimum balance between the various environmental and technical considerations
Proposed Route	The final route within which alternative OHL route alignments will delineated and appraised
PRoW	Public Rights of Way
PWS	Private Water Supply
PZ	Preacautionary Zone
Ramsar Site	A wetland site designated to be of international importance under the Ramsar Convention
Route	Linear area of search within study area, through which a new transmission line could be sited
RCD	Routeing Consultation Document

RSPB	Royal Society for the Protection of Birds
RVAA	Residential Visual Amenity Assessment
SAC	A Special Area of Conservation (SAC) protects one or more special habitats and/or species – terrestrial or marine – listed in the Habitats Directive.
SF	Scottish Forestry
SDP	Strategic Development Plan
Section 37 application	Application for development consent under section 37 of the Electricity Act 1989
SHETL	Scottish Hydro Electric Transmission Ltd
SM	Scheduled Monument
SEPA	Scottish Environment Protection Agency
SLA	Special Landscape Area
SLC	South Lanarkshire Council, the LPA for the proposed development
SNH	Scottish Natural Heritage
SPA	Special Protection Areas (SPAs) are selected to protect one or more rare, threatened or vulnerable bird species listed in Annex I of the Birds Directive, and regularly occurring migratory species.
SPEN	Scottish Power Energy Networks
SPT	Scottish Power Transmission
SSSI	Site of Special Scientific Interest is a statutory designation made by Scottish Natural Heritage under the Nature Conservation (Scotland) Act 2004.
Study Area	The area of land which comprises the area within which route options will be identified and appraised
Trident wood pole	This construction type is nominally known as a “Trident” line due to the appearance of the poles once constructed.
VP	Vantage Point
WHC	Windthrow Hazard Class
WHS	World Heritage Site
WoSAS	The West of Scotland Archaeology Service
ZTV	Zone of Theoretical Visibility

1 INTRODUCTION

1.1 Introduction

SPEN as agents for Scottish Power Transmission Ltd (SPT) propose to construct a 132 kV continuous overhead line (OHL) between Kennoxhead Windfarm (Grid ref: 277165E 624386N) and Coalburn Substation ~14 km north-north-east (Grid ref: 282510E 637337N). Kennoxhead Windfarm is located on land south of the A70, near the village of Glespin on the Douglas Estate while Coalburn substation is located on land west of the M74 near Coalburn (Figure 1.1, Appendix 1).

1.2 Background

SPEN commissioned RSK to undertake an assessment of route options for the proposed OHL. The assessment reviewed economic, technical and environmental constraints to identify a preferred route in accordance with relevant guidelines1. Figure 1.2 presents the constraints that were identified and a heat map that was used to assist in identifying the preferred route is presented in Figure 1.3. It is noted that mitigation by design has been achieved through the routeing process, which has ensured that the proposed development provides the optimum balance of avoiding environmental effects while taking account of technical and economic factors.

The preferred route was presented to consultees in the Routeing Consultation Document (RCD), published in December 2019. The purpose of the consultation exercise was to invite comments on the preferred route of the OHL from statutory and non-statutory consultees and members of the public. The consultation responses to the RCD did not raise any significant concerns (Appendix 2) in relation to the preferred route and therefore this became the proposed route to be taken forward and presented in this Scoping Report. Whilst the consultation responses to the RCD did not raise any significant concerns there were objections raised by individuals and community groups regarding the proposed development. We are comfortable that these issues can be addressed satisfactorily as part of the development process.

1.3 Document Purpose

This Scoping Report is provided by SPEN to the Scottish Ministers under Regulation 12 of the EIA regulations in support of a request for a 'Scoping Opinion'. The Scoping Report seeks to focus the EIA on the impacts likely to give rise to significant effects.

This report is also provided to statutory authorities and other key consultees to facilitate their representations to the Scottish Ministers on the Scoping Opinion.

The applicant invites consultees to comment on the proposed scope of the EIA.

1.4 Project Background and Need

SPEN is legally obliged under the Electricity Act to provide grid connections to new electricity generating developments and has been approached by the developer for

Kennoxhead Windfarm to provide a grid connection to the wider electricity transmission network.

SPT is required under the Electricity Act and under the terms of its Electricity Supply Licence "to develop and maintain an efficient, co-ordinated and economical system of electricity transmission". SPEN's stated view is that wherever practical, an OHL approach is taken when planning and designing new lines.

As a result, SPEN is proposing to construct a new 132 kV OHL between Kennoxhead Windfarm and Coalburn Substation.

SPEN take the view that the project falls within the scope of the EIA Regulations which implement the requirements of the European Parliament and Council Directive No 2014/52/EU.

1.5 Legal and Planning Context

There are several legal provisions which apply to the development of electricity transmission and distribution lines and associated infrastructure. The key provisions are as follows:

- the Electricity Act 1989 is the principal legislation which applies in the UK;
- the Town & Country Planning (Scotland) Act 1997 as amended by The Planning etc. (Scotland) Act 2006; and
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

Scottish Power Transmissions Statutory License Duties

Scottish Power Transmission's licensed businesses are authorised to transmit and distribute electricity within its network areas under the Electricity Act. As such, SPT has a statutory obligation to carry out the duties outlined within the Electricity Act.

A statutory duty is imposed on SPEN by Schedule 9 of the Electricity Act, to ensure that the following factors are accounted for when formulating proposals for the installation of OHLs: "*to have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geographical or physiographical features of special interest and of protecting sites, buildings, and objects of architectural, historical or archaeological interest; and to do what it reasonably can to mitigate any effects which the proposals would have on the natural beauty of the countryside or any such flora, fauna, features, sites, buildings or objects*."

Consenting Requirements

Section 37 of the Electricity Act requires that, with the exception of certain specific examples, all electricity lines exceeding 20 kV will require consent to be granted by the Scottish Ministers. This 'Section 37 consent' gives approval to install, and keep installed, an OHL. Section 57 of the Town & Country Planning (Scotland) Act 1997 as amended by The Planning etc. (Scotland) Act 2006 provides that ''*Planning permission may also be deemed to be granted in the case of development with government authorisation''*. In certain circumstances, deemed planning permission may include works that are 'ancillary' or necessary to the operation of the OHL such as cable sealing end compounds.

In some instances, there may also be the need for separate planning permission where development does not form part of a Section 37 application. For example, separate planning permission may be required for 'ancillary development' such as a substation. Where consent for development is sought, an application must be made to the relevant planning authority, under the Town & Country Planning (Scotland) Act 1997 as amended, before such works are able to be carried out.

Finally, some forms of development, including underground cables, are typically classed as 'permitted development' under the Town and Country Planning (General Permitted Development) (Scotland) Order 1992 (as amended). Developments classified as permitted development may automatically be granted planning permission, by statutory order, and do not require submission of a planning application to the local planning authority.

At the same time as applying for Section 37 consent, SPEN will request deemed planning permission under Section 57 of the Town and Country Planning (Scotland) Act 1997 from South Lanarkshire Council as the planning authority for the OHL and all ancillary elements.

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 require that, before consent is granted for certain developments, an Environmental Impact Assessment (EIA) must be undertaken. The EIA Regulations set out the types of development that are always subject to an EIA (Schedule 1 developments) and other developments which may require an EIA if they exceed certain thresholds and are likely to give rise to significant environmental effects (Schedule 2 developments). The proposed development currently falls under two Schedule 2 definitions:

"(2) an electric line installed above ground -

(a) with a voltage of 132 kilovolts or more

(c) the purpose of which installation is to connect the electric line to a generating station the construction or operation of which requires consent under section 36 of the Electricity Act 1989

As such, SPEN propose to undertake an EIA of this project to support the application for Section 37 Consent and Deemed Planning Permission.

1.6 Scoping Methodology

This report aims to provide sufficient detail to characterise the potential interactions between the proposed development and the environmental receptors identified. In presenting a rationale for the proposed scope of environmental assessment, this report has taken the sensitivity of the current state of the environment into account, based on an understanding of the baseline conditions. The scoping report has also been prepared with reference to the potential magnitude of impacts, considering the typical construction and operational activities, physical characteristic and potential emissions/residues associated with the proposed development.

Where there is sufficient evidence to support scoping a topic out of the EIA process, this is presented. Otherwise, where it is considered that there is the potential for likely significant effects, the scoping report provides details of the proposed scope or detailed impact assessment, including the approach to further baseline data collection and brief details of the proposed methodology for impact assessment which would be employed for each topic.

In accordance with Schedule 4 (paragraph 5) of the EIA Regulations, the scoping report will consider the potential for significant effects associated with:

- the construction and existence of the proposed development (note: there are no relevant demolition works proposed);
- the use of natural resources (in terms of effects on resource sustainability);
- the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;
- the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);
- the cumulation of effects with other existing and/or approved development;
- the impact of the development on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the development to climate change; and
- the technologies and the substances used.

The scoping report will seek to identify, describe and assess significant effects on the factors identified in regulation 4(3).

Environmental topics included for initial assessment in this EIA Scoping Report are:

- Ecology and Ornithology;
- Archaeology and Cultural Heritage;
- Landscape and Visual Amenity;
- Geology, Hydrogeology and Hydrology;
- Mining;
- Forestry;
- Recreation, Tourism and Socio-Economics;
- Land Use and Agriculture;
- Air Quality and Climate Change;
- Amenity and Health; and
- Accidents and Disasters.

Based on the environmental assessment completed as part of the routeing process, the key issues proposed to be taken forward for assessment of significant effects in the EIA Report (EIAR) are Landscape, Visual Amenity and Biodiversity. No likely significant effects have been identified for the remaining factors.

1.7 Structure of the Document

This report is structured as follows:

Chapter 2 provides a description of the main elements of the proposed development;

Chapter 3 describes the proposed scope and methodology for the EIA;

Chapters 4 – 14 provides a scoping stage assessment for each of the identified environmental receptors, summarises existing baseline information relating to the environmental characteristics of the area identified for the proposed development, identifying the potential for significant effects and outlining how the environmental effects will be predicted and assessed in each case. Where it is proposed to scope issues out of further assessment, this is described;

Chapter 15 provides a summary of the proposed scope and Chapter 16 poses a series of questions to focus the scoping exercise and describes the next steps in the EIA process.

Appendix 1 contains figures referenced in the document and Appendix 2 contains the findings from a public exhibition held in February 2020.

1.8 Consultation Process

SPEN is committed to consulting with statutory and non-statutory bodies throughout the development process, not only as a statutory duty within the planning system, but as a measure to involve and gain feedback from as broad a range of consultees and stakeholders as possible.

A Routeing Consultation Strategy Document (RCD) describing the route selection process for the proposed grid connection was published in December 2019, giving interested stakeholders the information required to engage and comment on the project at an early stage. Community consultation events on the preferred route option were held in Coalburn and Douglas in February 2020.

A copy of the routeing consultation report is available to download on the

SPEN website at www.spenergynetworks.co.uk/pages/community_consultation

Scanning the QR code below using your mobile phone or tablet will also

take you to the project website.

While the Routeing Strategy Consultation Document and public exhibitions sought input from key stakeholders regarding the rationale for the proposed OHL route, this Scoping Report seeks input on the content of and approach to the EIA.

2 THE PROPOSED DEVELOPMENT

2.1 Overview

The proposed development, for the purpose of the application for consent, comprises the construction and operation of approximately 14 km of 132 kV OHL. The OHL would be supported by wood poles. Approximately 0.2 km of underground cable is anticipated to make the connection into Coalburn substation and there is an anticipated requirement to underground a short section (less than 2km) to connect into Kennoxhead substation and avoid a proposed wind turbine.

While the s37 consent is concerned only with the installation of the OHL, the applicant will seek deemed planning permission for this development and any ancillary works under s57(2) of the Town and Country Planning (Scotland) Act 1997. Ancillary works for a wood pole line may include minor work to form new or improve existing bellmouths at public road access points, to provide temporary construction access tracks and working areas and construction compounds.

At the application stage, the EIAR will include an alignment with proposed micrositing tolerances to allow specific locations for poles be determined on the basis of site-specific information obtained in the course of ground investigation and construction.

2.2 Overhead Line Design

SPEN's policy is to seek a continuous OHL solution for all transmission connections and only where there are exceptional constraints are underground cables considered an acceptable design option. Such constraints can be found in urban areas and in rural areas of the highest scenic and amenity value. While underground cables have visual benefits, there are associated technical, environmental and economic disadvantages including:

- the physical extent of land required;
- the fault repair time;
- difficulties associated with general maintenance;
- increased cost;
- greater ground disturbance from excavating trenches;
- the restriction of development and planting within the underground transmission cable corridor; and
- requirements for cable sealing end compounds or platforms at each end of each section of underground cable; and the fact that underground cabling is a less efficient means of transporting electricity.

On this basis, the key design assumption is that this will be a continuous OHL connection throughout. Should the appraisal identify any areas where a proposed OHL is likely to give rise to unacceptable effects, alternative options (such as alternative routes and underground cables) will be considered.

If, in certain circumstances, it is determined that an underground cable is required instead of an OHL, the approach is to minimise the length of underground cable necessary to overcome the constraint to OHL routeing, consistent with a balance between technical and economic viability, deliverability and environmental considerations. It is not uncommon for a length of cable to be required to enter or exit a substation.

2.2.1 Wood Poles

The size of poles and span lengths will vary depending on several factors, in line with industry standard ENA Specification 43-50 ISSUE 2. The OHL route is above 200 m AOD and will therefore be likely to require construction using H poles (rather than single poles), with a span length of around 100 m and pole heights ranging from 10 m – 22 m with a typical height of 13 m. This has been used as the basis for identification of the preferred route, however, the precise pole configuration, height and the spans will be determined after a detailed line design following confirmation of the proposed route.

The wood pole will support three conductors (wires) in a horizontal flat formation. Typical trident woodpole specifications are shown in Figure 1.4 a -d, Appendix 1.

Subject to confirmation of the proposed route for the new OHL, detailed survey work will be carried out to inform the proposed positions and heights of each individual wood pole.

2.2.2 Overhead Line Construction and Maintenance

OHL construction typically follows a standard sequence of events as follows:

- prepare access to the pole locations using existing access tracks (farms, windfarms, etc.,) as appropriate;
- erect wood poles;
- string conductors; and
- reinstate pole sites and remove temporary accesses.

Temporary accesses will be constructed, as necessary, and laydown /storage areas established to facilitate development depending on ground conditions, it may be possible to access work locations by tracked/low ground pressure vehicles, however trackway panels or temporary stone roads may be required in some circumstances. Following commissioning of the OHL, all equipment and temporary access of construction areas will be removed with the land being reinstated to the satisfaction of the landowner.

For wood pole line construction, the ‘poles’ are typically erected using normal agricultural machinery such as an excavator with a lifting arm. A tracked excavator and low ground-pressure vehicles, (e.g. tractor, ATV, quad bikes) are used to deliver, assemble and erect each wood pole structure at each location. The erection of the wood poles requires a typical excavation of 3 m^2 x 2 m deep. The excavated material is segregated into appropriate layers and used for backfilling. It is relatively rare for concrete or other backfill to be used in the foundations of wood poles. This would normally only be used where ground conditions are particularly unstable (identified by site investigations). An excavator is typically used to hoist the assembled structure into position and once the structure has been braced in position the trench is backfilled.

Stringing of conductors. The conductors would be winched to/pulled from section poles; these poles therefore require access for heavy vehicles to transport the conductor drums and large winches. Where the OHL crosses a road a scaffold tunnel would be used to protect the vehicles from the works. Existing distribution lines would be either switched off, deviated or protected using ‘live line’ scaffolds.

Reinstatement of pole sites and removal and reinstatement of temporary infrastructure sites. In all cases, every effort is made to cause the least disturbance to landowners and local residents during construction. Following completion all ground disturbance resulting from the construction of the new line is reinstated.

3 ENVIRONMENTAL IMPACT ASSESSMENT SCOPE

3.1 Introduction

The EIAR will be prepared to meet the requirements of Schedule 4 of the EIA regulations and the Institute of Environmental Management and Assessment (IEMA) Quality Mark criteria. The EIAR would also take account of the relevant guidance set out in the Scottish Government Planning Advice Note[1], which emphasises the importance of achieving a proportionate EIA scope, focussed on the likely significant effects. In line with Schedule 4 of the EIA regulations, it is anticipated that the EIAR will provide introductory chapters to provide:

- a description of the proposed development comprising information on the location of the OHL; its physical characteristics, including the conductor selection, voltage and pole design, and the area of land required during construction and operational phases; the main characteristics of the operational phase of the development; and the type and quantity of expected residues and emissions produced during the construction and operation phases; and
- a description of reasonable alternatives studied in terms of the OHL alignment selection and technology (conductor selection, voltage, pole design) and the main reasons for the chosen option, including a comparison of the environmental effects, highlighting how the proposed development delivers 'mitigation by design'.

3.2 Assessment of Likely Significant Environmental Effects

It is proposed that the EIAR will provide assessment chapters for the relevant factors specified in regulation 4(3) of the EIA regulations where they are likely to be significantly affected, taking account of the description of the proposed development and the mitigation by design.

Each assessment chapter will set out:

- a detailed methodology used to establish the relevant aspects of the current state of the environment (the baseline), and the criteria used to identify and assess the likely significant effects;
- a description of the current environment (baseline conditions) and any relevant 'future baseline' scenarios that are used as a basis for the impact assessment;
- a description of the likely significant effects;
- a description of the measures proposed to avoid, prevent, reduce, or, if possible, offset any likely significant effects (mitigation measures); and
- a description of residual effects remaining following the implementation of proposed mitigation measures.

[1] Scottish Government (2013) Planning Advice Note 1/2013: Environmental Impact Assessment (June, 2017)

The description of the likely significant effects will cover direct effects and indirect (including secondary) effects. The description of effects will identify the effect duration (short-term, medium- term and long-term), whether effects are permanent or temporary, and if effects can be categorised as adverse or beneficial.

Consideration will also be given to the potential for cumulative effects, where the assessment will describe the additional effect associated with the proposed development, when considered in combination with other existing projects and reasonably foreseeable projects (defined as those which are the subject of a valid consent or application for consent). The final list of developments to be considered in the cumulative effects assessment will be finalised three months before publication to allow sufficient time to compile the EIAR.

The following committed development proposals will be considered, where appropriate, in assessing the cumulative effects of the proposed development (Figure 3.1):

Operational wind farms and wind turbines

- Hagshaw Hill wind farm – this development is operational with 26 turbines;
- Hagshaw Hill Extension wind farm – this development is operational with 20 turbines;
- Galawhistle wind farm – this development is operational with 22 consented turbines;
- Nutberry wind farm – this development is operational with 6 turbines;
- Broken Cross wind farm – this development is operational with 6 turbines;
- Middlemuir wind farm – this development is operational with 15 turbines;
- Andershaw wind farm – this development is operational with 11 turbines; and
- there are five operational single turbines (Holmhead Farm; Yonderton Farm; Low Whiteside Farm, JJs Farm and Birkhill Commercial Park).

Consented wind farms and wind turbines

- Cumberhead wind farm – this development has been approved with 11 consented turbines;
- Dalquhandy wind farm – this development has been approved with 15 consented turbines;
- Douglas West wind farm – this development has been approved with 15 consented turbines;
- Kennoxhead wind farm – this development has been approved with 19 consented turbines;
- there are three consented single turbines (North Bankend Farm, Low Whiteside Farm and Auldton Heights);
- Stockhill farm – this development has been approved with two consented turbines; and
- Poniel wind farm – this development has been approved with 3 proposed turbines.

Wind farms and wind turbines in planning

- Douglas West Extension – this development is in planning with 13 proposed turbines;
- Kennoxhead wind farm extension – this development is in planning with 8 consented turbines; and
- Glentaggart wind farm – this development is in planning with 5 turbines.

No other committed development proposals have been identified, where there is the potential for cumulative effects in combination with the proposed development.

There would be no potential for transboundary effects associated with the proposed development, and therefore no further assessment of transboundary effects is proposed.

A more detailed overview of the guidance and methodology adopted for each technical study is provided within the respective technical sections of this EIA Scoping Report (Sections 4-14).

4 ECOLOGY AND ORNITHOLOGY

4.1 Introduction

This chapter has been prepared to set out the proposed scope and methodology for the assessment of likely effects arising from the proposed development in relation to ecology and ornithology.

The methodology presented in this chapter builds upon the general assessment methodology summarised in Chapter 3 'Environmental Impact Assessment Scope' of this Scoping Report. It has been developed to identify any likely significant effects on ecology and ornithology arising during the construction and operation phases of the project.

Data used in the assessment will be taken from a desk-based assessment, and detailed ecological and ornithological surveys along the proposed route. The surveys and reports will be provided as technical appendices to the EIAR.

Consideration has been given to the habitats and species which characterise the proposed route and the potential for connectivity with sites subject to a nature conservation designation such as special areas of conservation (SAC), special protection areas (SPAs) and sites of special scientific interest (SSSI).

4.2 Baseline Conditions

RSK undertook a background data search (BDS) in January 2019 which involved using the sources shown in Table 4.1. A search for statutory designated sites and noteworthy species within 2 km of the original study area (as opposed to the preferred route) (Figure 1.1) and for non-statutory designated sites was undertaken.

Table 4.1: Data sources

Information Obtained	Available From
Protected and Noteworthy species-records	Glasgow Museums Biological Records Centre
Designated site locations and citations	SNH 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 https://www.southlanarkshire.gov.uk/downloads/file/1191/biodiversity_strategy_2018_-_2022

4.2.1 Designated Sites

There are several statutory designated sites within 2 km of the study area. The sites which fall within the study area and are designated for ecological or ornithological features are discussed below in Table 4.1. Figure 4.1 shows the location of these sites spatially and

also includes other sites that are designated for other features. This table also provides information on their distance from the preferred route.

Table 4.2: Designated Sites

Designation	Name and characteristics	Distance to preferred route
Special Areas of Conservation (SAC	**Coalburn Moss SAC** This SAC is designated for having the following qualifying interests: active raised bogs and degraded raised bogs still capable of natural regeneration. Coalburn Moss 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 preferred route.	-
Special Protection Area (SPA	**Muirkirk and North Lowther Uplands SPA** This SPA regularly supports breeding populations of European importance of the Annex 1 species: Hen Harrier, Short-eared Owl (*Asio flammeus*), Merlin (*Falco columbarius*), Peregrine (*Falco peregrinus*) and Golden Plover (*Pluvialis apricaria*). The boundaries of the SPA are coincident with those of North Lowther Uplands SSSI and Muirkirk Uplands SSSI and are located within the southwestern corner of the study area.	1.2km
Sites of Special Scientific Interest (SSSI)	**Coalburn Moss SSSI** 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 preferred route.	-
	Muirkirk Uplands SSSI 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.	1.2km
	North Lowther Uplands SSSI This SSSI is situated to the south of the Muirkirk Uplands SSSI. This site supports an assemblage of moorland birds and raptors, including Hen Harrier.	1.5km
	Miller's Wood SSSI This SSSI is an excellent example of *Betula sp*. (Birch) woodland, a type which is rare in South Lanarkshire.	950 m
Important Bird Area (IBA	**North Lowther Hills IBA** North Lowther Hills IBA also lies in the south of the study area. This site comprises moorland and areas of active blanket bog and supports a range of breeding upland species including Hen Harrier and Black Grouse. The southern-most section of the preferred route is within the IBA.	-
	Airds Moss and Muirkirk Uplands IBA A second IBA lies in the south of the study area - Airds Moss and Muirkirk Uplands - includes the largest	1.2km

	remaining continuous block of unforested moorland in South West Scotland. The main habitats include heather and grass moorland and blanket bog.	

There are no non-statutory designated sites within 2 km of the site boundary but there are 42 areas of ancient woodland with 26 of these falling within the study area. Of these, several lie immediately adjacent to the proposed route but not within the route itself (Figure 4.1).

4.2.2 Ecology

The BDS returned records of the following protected species:

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

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

No ecological surveys have been undertaken to date however based on RSK knowledge of the local area and a desktop review, the following habitat types are expected to be located within the study area: marsh/marshy grassland, blanket bog, improved grassland, broadleaved-semi-natural woodland semi-improved/improved and unimproved grassland, acid grassland, mixed woodland and coniferous woodland plantation.

In addition to the sources detailed above, RSK has undertaken a desk-based data review of the following existing projects: Dalquhandy to Coalburn OHL project (2017), Kennoxhead Wind Farm (2012), Douglas West Wind Farm (2015), Poniel Wind Farm (2012),Glentaggart Wind Farm (2010) and Kennoxhead Wind farm Extension (2020).All of the projects referenced above are shown on Figure 4.2, Appendix 1.

A review of this information revealed that the following bat species have been found in the study area: brown long-eared bat (*Plecotus auritus*), common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's Bat (*Myotis daubentonii*), Leisler's (*Nyctalus leisleri*), myotis species, Natterer's Bat (*Myotis nattereri*), nyctalus species and soprano pipistrelle (*Pipistrellus pygmaeus*).

Badger setts were found to be present around Coalburn, Muirburn and Glaikhead during surveys for the Daquhandy to Coalburn OHL in 2017. Two of these setts are within or immediately adjacent to the preferred route therefore there is likely to be an indirect impact on badgers if these setts are still active and micro siting of pole locations to avoid significant effects may be required. Evidence of badgers (latrines and feeding evidence) was also found during the surveys for Kennoxhead Wind Farm extension in 2019 along the Kennoxhead to Hareshaw cable route although no setts were recorded.

Water vole (*Arvicola amphibius*) evidence was recorded within the study area, including around Coalburn, and opencast workings in the southern section of the route, however. no evidence of Water Vole was recorded during the surveys for Kennoxhead Wind Farm extension in 2019. It is also expected that otter (*Lutra lutra*) use water bodies in the area for foraging and commuting and evidence of otter near the opencast workings has previously been found, and near Johnshill in the northern section of the preferred route. No otter holts were found during the surveys for Kennoxhead Wind Farm extension during surveys undertaken in 2019 although two spraints were recorded along watercourses within this study area. Again, the exact locations of the wooden poles will seek to avoid any effects on these ecological receptors.

Common lizard was recorded within the study area during previous ecology surveys and it is expected that adder (*Vipera berus*) and slow worm (*Anguis fragilis*) are also present throughout the area. It is not expected that the project will have a significant effect on these species given the nature of the works and a method statement for reptiles is considered to be sufficient.

Red squirrel were recorded in 2007 (as returned during the RSK background data search) but were not recorded during any of the surveys during the projects listed above. No evidence of red squirrel was found during the 2019 surveys for Kennoxhead Wind Farm extension and the habitat was considered to be sub-optimal for this species. No evidence of pine marten (*Martes martes*) has been recorded during any surveys to date however, the surveys for Kennoxhead Wind Farm extension in 2019 identified suitable habitat for this species throughout the study area and noted that pine marten are re-expanding through South Lanarkshire. No great crested newt (*Triturus cristatus*) have been recorded during presence/absence surveys (including eDNA surveys) in the area and this species is considered to be absent.

Further information regarding protected species can be found in the Ecology Strategy Report produced by RSK (RSK, 2019).

4.2.3 Ornithology

Ornithological surveys have been ongoing by RSK since September 2019. To date (June 8, 2020), these have included vantage point surveys and a single winter walkover survey of the route in February 2020 once the proposed route was chosen. Vantage point surveys were not undertaken in April and May 2020 due to Covid 19 restrictions but will restart in June 2020.

Target bird species recorded during vantage point surveys of the preferred route so far are: bewick's swan (*Cygnus columbianus bewickii*), canada goose (*Branta canadensis*), greylag goose (*Anser anser*), goldeneye (*Bucephala clangula*), golden plover (*Pluvialis apricaria*), hen harrier (*Circus cyaneus*), northern lapwing (*Vanellus vanellus*), pink-footed goose (*Anser brachyrhynchus*), pochard (*Aythya farina*), teal (*Anas crecca*) and wigeon (*Anas penelope*). Secondary species observed to date are buzzard (*Buteo buteo*) and kestrel (*Falco tinnunculus*), mallard (*Anas platyrhynchos*) and raven (*Corvus corax*).

Additional target species recorded during the winter walkover of the preferred route were goosander (*Mergus merganser*), herring gull (*Larus argentatus*) and merlin (*Falco columarius*).

In addition to the target and secondary species above, the following species are known to be present in the study area based on information from the existing projects (listed in Section 4.2.2) and RSK's ornithologist's personal knowledge: barnacle goose (*Branta leucopsis*), barn owl (*Tyto Alba*), black grouse (*Tetrao tetrix*), common crossbill (*Loxia curvirostra*), common sandpiper (*Actitis hypoleucos*), curlew (*Numenius arquata*), dotterel (*Charadrius morinellus*), goshawk (*Accipiter gentilis*), greenshank (*Tringa nebularia*), osprey (*Pandion haliaetus*), oystercatcher (*Haematopus ostralegus*), peregrine falcon, red grouse (*Lagopus lagopus scotica*), redshank (*Tringa totanus*), ringed plover (*Charadrius hiaticula*), short-eared owl (*Asio flammeus*), snipe (*Gallinago gallinago*), sparrowhawk (*Accipiter nisus*), tanwy owl (*Strix aluco*), tufted duck (*Aythya fuligula*), whimbrel (*Numenius phaeopus*) and whooper swan (*Cygnus cygnus*).

In addition to above, field surveys were undertaken between September 2016 and August 2019 of the Kennoxhead Wind Farm extension site. Several target species were recorded during vantage point surveys, these were: black grouse, curlew, golden plover, goshawk, greylag goose (*Anser anser*), hen harrier, herring gull, merlin, pink-footed goose (*Anser brachyrhynchus),* red kite (*Milvus milvus*) and ringed plover. Nine black grouse leks were recorded during surveys with most activity concentrated in two locations – an area of open ground between Auchendaff Hill and Kennox Hill and the area around Flow Moss. These surveys established that there are four potential goshawk territories in the area, three of which may be used for breeding in any one year. There was no evidence that hen harriers were breeding or roosting within the study area. Short-eared owl were discovered breeding at two locations in 2017 close to an access track and no breeding activity by merlin was recorded during the surveys. In regard to waders, curlew were the most frequently recorded species and were seen to be breeding mostly on open ground between Kennox Hill, Auchendaff Hill and Pinkstone Rig and between Flow Moss, Auchensaugh Rig and Mid Rig. Breeding lapwing were recorded along the Mid Rig access track only, mostly around Auhendaff where the land is grazed by sheep. Breeding ringed plover were recorded within previous opencast workings and Glentaggart Cottage. No evidence of breeding golden plover was recorded although this species was recorded using the site over winter.

The Scottish Raptor Group was contacted for records of bird species within the study area. They returned records of breeding peregrine falcon at Spireslack at Glenbuck, just outside the study area, as well as from Mainshill in Douglas (within the study area) with both sites being occupied and breeding as of June 2020. A pair of hen harriers were recorded in 2015 at Weston Hill, Glentaggart but they disappeared in early May that year with no breeding recorded. Goshawk have been recorded breeding at Glentaggart within Andershaw in 2016 and Blackmire Wood in 2018, both outside the study area. A third breeding location for Goshawk was recorded in Long Plantation at Douglas in 2017 although breeding was assumed, it was not confirmed. Short eared owl was also confirmed as breeding in 2016 in Weston Hill, Glentagart but have not been recorded as breeding since then.

RSPB were also contacted, and their data is included above. The greatest sensitivities are predicted to be to black grouse lekking sites, wader nest sites (especially curlew), goose flight lines through the northern section of the route near ponds and raptor nest sites (especially hen harrier, peregrine falcon and goshawk).

Further information on bird species can be found in the Ornithology Strategy Report produced by RSK (RSK, 2020).

4.3 Additional Baseline Information and Collection Methods

To build on the existing known baseline, a preliminary ecological appraisal (PEA) will be undertaken of the preferred route to determine the level of ecological survey required to inform the assessment. The PEA will include the results of the BDS already undertaken and a field survey using the extended phase 1 habitat survey (JNCC 2010) methodology (including assessment of the suitability of habitats for protected species).

The PEA results will provide an ecological description of the preferred route and information about species that may be present there. It will allow the evaluation of the ecological importance of the site, and if insufficient to do so alone then it will indicate what further surveys are needed, and what their scope should be.

Based on existing information and local knowledge, it is proposed that surveys for the following species are also undertaken of the preferred route:

- badger (detailed surveys followed by monitoring of setts if required);
- bat species (ground level tree assessment of any trees within 50 m of the route followed by detailed surveys if required);
- otters ;
- red squirrel (search for squirrel dreys in any trees within 50 m of the route);
- pine marten (search for evidence within woodland within 50 m of the route); and
- water voles .

National vegetation classification (NVC) and groundwater dependent terrestrial ecosystem (GWDTEs) surveys will also be completed.

Great crested newt and reptile surveys will not be undertaken following consultation with SNH.

Ornithology

Vantage point surveys for birds will be continued for 1 year with the exclusion of April and May which were missed due to Covid 19 restrictions.

Moorland breeding bird surveys and raptor nest searches will also be undertaken along sections of the preferred route not covered by the vantage point surveys, as will further winter walkover surveys. The breeding bird surveys in April and May have been missed in 2020 but these will be undertaken in June and July. A single raptor nest search will be undertaken in June 2020 as the first one early in the season was missed due to Covid 19 restrictions. If required, the missed surveys will be undertaken in spring 2021.

Black grouse surveys will be undertaken pre-construction as this species has previously been identified within the study area (see below).

The proposed bird surveys of the preferred route are outlined below, in Table 4.2. These were previously agreed with Scottish Natural Heritage (SNH).

Table 4.2 Summary of proposed ornithological survey effort

Survey type	Method/guidance followed	Survey area	Survey period (inclusive)	survey effort/no of survey hours/visits	Notes
Flight Activity VP Survey (breeding)	SNH Recommended bird survey methods to inform impact assessment of onshore wind farms. Version 2 March 2017; and Scottish Natural Heritage Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds Guidance Version 1 July 2016	VP 180^0 viewsheds extended to 2.0 km from VP location and covers the bottom area (strip of land that OHL has to run through)	March 2019 to August 2019	36 hours	Two VP's required Completed in March 2020, but April and May missed. To restart in June until August 2020 inclusive.
VP Survey (non-breeding)	SNH Recommended bird survey methods to inform impact assessment of onshore wind farms. Version 2 March 2017; and SNH Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds Guidance Version 1 July 2016	VP 180^0 viewsheds extended to 2.0 km from VP location and covers the bottom area (strip of land that OHL has to run through)	September 2019 to February 2020	36 hours	Two VP's required Completed between September 2019 and February 2020.
Schedule 1 and raptor nest search	SNH Recommended bird survey methods to inform impact assessment of onshore wind farms. Version 2 March 2017; and SNH Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds Guidance Version 1 July 2016m Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013). Raptors: a field guide to survey and monitoring (3rd Edition). The	Between sunrise and sunset	April to July	2 survey visits	Early survey missed. One survey to be completed in June 2020.

	Stationery Office, Edinburgh.				
Moorland Breeding bird survey	Intensive version of the Brown and Shepherd (1993) method for upland bird surveys	Walked transect	March to August	4 visits	April and May surveys missed. Surveys to be completed in June and July 2020 of areas not covered by VPs.
Winter Walkover survey		Walked transect	November to March	4 visits	A single walkover of the preferred route was undertaken in February 2019 once this was known. Remaining surveys will be undertaken in winter 2020/21 of areas not covered by VPs.
Black Grouse		Avoidance of historic lek sites including an appropriate standoff for disturbance is considered appropriate rather than undertaking further surveys as part of the EIA submission. 1.5 km either side of line route	April to May		Pre-construction surveys (as a planning condition)

General

All detailed ecology and ornithological surveys will follow industry guidance and survey protocols.

On completion of field surveys, separate Ecology and Ornithological Chapters will be produced for the Environmental Statement. Impacts will be assessed in accordance with the Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018) and other relevant guidance.

In addition to the proposed surveys, information provided by relevant statutory bodies and interested parties during the consultation process for the project will be reviewed and

included in the ecological assessment where appropriate. This will include consultation responses from SNH and Scottish Badgers.

The first stage of an 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 4.3:

Table 4.3: Resource/Receptor Evaluation Criteria

Receptor Value	Example Criteria
International	An internationally designated site i.e. Special area of conservation (SAC) and/or Ramsar site or candidate site (or cSAC). Large areas of priority habitat listed under Annex I of the Habitats Directive, and smaller areas of such a habitat that are essential to maintain the viability of that ecological resource. A regularly occurring, nationally significant population of any internationally important species, listed under Annex II or Annex IV of the Habitats Directive.
National	A nationally designated site e.g. Site of Special Scientific Interest (SSSI), or area meeting criteria for national level designations. Significant extents of a priority habitat identified in the UKBAP / Scottish Biodiversity List, or smaller areas which are essential to maintain the viability of that ecological resource. A regularly occurring, regionally significant population of any nationally important species listed as a UK BAP / Scottish Biodiversity List priority species and Species listed under Schedule 1 or Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive.
Regional	Viable areas of key semi-natural habitat identified in the UKBAP. A regularly occurring, locally significant population of any nationally important species listed as a UK BAP / Scottish Biodiversity List priority species and Species listed under Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive. Sites which exceed the local authority-level designations but fall short of SSSI selection guidelines, including extensive areas of semi-natural woodland.
County	County Council/Unitary Authority designated sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves selected on defined ecological criteria and Wildlife Trust sites. Viable areas of habitat identified in a County BAP. A regularly occurring, locally significant number of a species identified as important on a county basis. Semi-natural woodland greater than 0.5 ha which is considered to be in 'good condition'.

Receptor Value	Example Criteria
Local	Nature conservation sites selected on local authority criteria. Other species of conservation concern, including species listed under the local biodiversity action plan (LBAP). Areas of habitat or species considered to appreciably enrich the ecological resource within the local context e.g. species-rich flushes or hedgerows. Areas of semi-natural ancient woodland smaller than 0.25 ha. All other species and habitats that are widespread and common and which are not present in locally, regionally or nationally important numbers or habitats which are considered to be of poor ecological value.
Site	Features of value to the immediate area only.

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 before recovery 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.

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).

The assessment of potential impacts will be undertaken with consideration given to embedded mitigation in the proposed development. Residual impacts may require additional mitigation measures. 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.

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, that 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 impacted. 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 effect at the local or site level.

4.4 Likely Significant Effects

The potential ecological and ornithological impact will be assessed for the construction and operational phases, as follows:

Construction - Ecology

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 preferred route;
- impacts of ancient woodland given the close proximity to the preferred route although this is likely to be minimal;
- permanent loss of a small amount of habitat (vegetation clearance) and species within the working area due to ground and excavation works, this may include effects on important habitats such as blanket bog and other GWDTEs, however this is expected to be limited due to the small footprint of the wooden poles and the use of existing access routes where possible;
- temporary and potentially permanent displacement of species from within the working area, including badger and water vole;
- fragmentation of habitats or severance of ecological corridors during construction;
- degradation of habitats that cannot easily be recreated, especially blanket bog and GWDTEs;
- disturbance of species within and adjacent to the working area due to construction noise, vibration and site personnel;
- disturbance of species due to access and travel on and off the site during construction;
- environmental incidents and accidents (e.g. spillages, noise, fire and emissions);
- disturbance/displacement of species within and adjacent to the working area by an increase in artificial lighting, although this is considered to be minimal as working at night will be unlikely on a project of this nature;
- impacts on adjacent habitats (and the species that use them), for example through noise and visual disturbance; and
- rainwater runoff from hard-standing or during construction, such as track-way panels or temporary stone access routes.

Longer-term impacts, though more likely to be avoided or reduced through mitigation, may include the following in increasing order of permanence:

- modification of habitats and 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.

Where such impacts occur additional mitigation measures (beyond embedded mitigation) may be adopted to help eliminate or offset impacts. This may include micro siting wood pole locations to avoid badger setts or trees with bat roosts and particular areas of sensitive habitat.

Operation - Ecology

As a result of the project, potential operational environmental effects relating to ecology are expected to be minimal given that land will be reinstated and only a small footprint is required for each wooden pole.

Construction- Ornithology

In addition to the potential effects discussed above, the potential impacts in regard to ornithology specifically are likely to be:

- the potential to displace birds which are qualifying species of the Muirkirk and North Lowther Uplands SPA;
- potential disturbance to black grouse lek sites and disturbance to wader nest sites near to ponds during construction; and
- potential disturbance to other nesting birds including ground-nesting species such as merlin and woodland nesting species such as Goshawk.

Where such impacts occur additional mitigation measures (beyond embedded mitigation) may be adopted to help eliminate or offset impacts. These are likely to include pre-construction surveys for black grouse leks, timing of works and nesting bird checks of suitable habitat.

Operation – Ornithology

There is the potential for bird strike due to the introduction of OHLs, including species which use the nearby SPA.

Where such impacts occur additional mitigation measures (beyond embedded mitigation) may be adopted to help eliminate or offset impacts. These are likely to include use of markers on OHLs to deter birds from colliding with them.

Habitats Regulation Assessment

As part of the ecological assessment process, there may be a requirement for assessment of the project under the Conservation of Habitats and Species Regulations (as amended) 1994 and (depending on the details of the project design) for appropriate assessment. This is due to the close proximity of the proposed route to Coalburn Moss SAC as well as Muirkirk and North Lowther Uplands SPA.

4.5 Issues Scoped Out

As a result of the work completed to date, it is proposed to scope the following ecological and ornithological receptors out from further assessment:

- all designated sites other than Coalburn Moss SAC/SSSI Muirkirk and North Lowther Uplands SPA. This is proposed because no impact pathways have been identified which could lead to any potential effects;
- great crested newt; and
- cumulative assessment - No other developments have been identified that are likely to represent a source of significant cumulative effects on ecological or ornithological receptors.

5 ARCHAEOLOGY AND CULTURAL HERITAGE

5.1 Introduction

An assessment of the likely direct effects of the proposed development on the historic environment (including cultural heritage and archaeology) will be undertaken. This will involve consideration of both direct and indirect effects on known and potential heritage receptors.

Given the nature and scale of the proposed wooden pole OHL, it is considered unlikely that significant effects would arise on the settings of designated heritage assets in the wider landscape. It is therefore proposed that an assessment of the effects of the proposed development on heritage assets be scoped out of the EIA.

Designated cultural heritage assets in the study area, and non-designated effects within 200 m of the proposed route are shown on Figure 5.1.

5.2 Baseline Conditions

5.2.1 Designated Heritage Assets

There are no world heritage sites (WHS), inventory garden and designed landscapes, or inventory historic battlefields within the study area.

5.2.1.1 Scheduled Monuments

There are two scheduled monuments within the study area. Auchensaugh Hill cairn (SM4234) is located 4.5 km south east of the proposed route. St. Bride's Church, Douglas (SM90265) is located 1.3 km south east of the proposed route. St. Bride's Church is also a Category A listed building (LB LB1490) and a property in the care of the Scottish Ministers.

5.2.1.2 Listed Buildings

There are two listed buildings located within 1 km of the proposed route, both of which are Category B. Statue, West Town (LB13402) is located 630 m northeast of the proposed route, and Auchlochan Bridge (LB7688) located 910 m northwest of the proposed route.

There are a further 28 listed buildings within the study area, beyond 1 km from the proposed route: two Category A (including St. Bride's chapel mentioned above), 12 Category B and 14 Category C. These are concentrated primarily within the settlement of Douglas and principally comprise residential and commercial properties.

5.2.1.3 Conservation Areas

There is a single conservation area (CA), Douglas, within the study area. This is located 1.3 km southeast of the proposed route.

5.2.2 Non-Designated Assets

The Historic Environment Record (HER) for South Lanarkshire and the National Record of the Historic Environment (NRHE) contain 326 and 236 individual entries respectively[2] within the study area. Of these, 32 and 12 entries in the HER and NHRE respectively are located within the proposed route.

The known non-designated assets within the proposed route can be broadly categorised. They include assets recording settlement and agricultural land use, including a hut circle or shieling (HER No. 53094), possible house platforms (HER No. 54096 and 54098), structures (NRHE Nos. 13597, 180198, 89296), enclosures (NRHE No. 46526, HER No. 10150), sheepfolds (NRHE No. 58101, HER No. 58089) and a farmstead (HER No. 17333), The majority of these assets are likely to date to the post-medieval and modern periods, with the likely exception of the hut circle or shieling at Kennox Water (HER No. 53094), which may date to the late prehistoric (Bronze or Iron Age).

Also notable are the number of assets associated with extractive industries, processing and transport, including quarries (NRHE No. 13549, 135950), a coal pit (HER No. 22631), mining remains and a railway (HER No. 22648), a mine (HER No. 41012), a mill (NRHE No. 45527), a colliery (NRHE No. 131573), former railways (HER Nos. 58090, 58100) and a tramway (HER No. 58091), lime kilns (HER No. 17331, 58088), ponds and a pump house (HER No. 58087). As with the settlement and agricultural assets identified above, the majority of these are likely to date to the post-medieval and modern periods

In the third group are assets not fitting into either of the above two types, including a possible cairn at Kennox Water (HER No. 22701), a cropmark (NRHE No. 89288), and a rifle range (HER No. 58099).

Based on an appraisal of the HER and NRHE records, these heritage assets are considered to be of up to regional archaeological importance, although many will be less significant.

5.3 Additional Baseline Information and Collection Methods

A historic environment desk-based assessment informed by a field survey will be undertaken. Desk-based data will be gathered for a study area 200 m either side of the proposed route.

In addition to the HES, HER and NRHE data interrogated as part of this scoping study, the following further sources will be examined:

- Historic Land Use Assessment Data for Scotland held by Historic Environment Scotland;
- relevant development plan policies;
- vertical stereo aerial photographic coverage held by HES;

[2] Note that many of the HER and NRHE entries are duplicates of one another, and some entries are for designated assets; therefore the number of non-designated assets in the study area is not 562.

- Ordnance Survey map coverage from 1850 onwards, and any other readily available early cartographic sources held at the National Library of Scotland Map Library online resource;
- Ordnance Survey Name Books;
- LiDAR survey data (if available);
- Old and New Statistical Accounts of Scotland for the parish of Douglas;
- bibliographic references and early parish accounts;
- locally held archives where appropriate; and
- geotechnical records, where appropriate and available, such as engineering boreholes and test pits.

A historic environment field survey will be undertaken to ground-truth the results of the desk-based sources once a refined OHL route has been identified. The field survey will comprise a 30 m wide buffer either side of the refined OHL route (subject to access being permitted).

5.4 Likely Significant Effects

Based on the information available, the proposed development has the potential to impact on the historic environment in the form of direct impacts on known, non-designated assets through construction activities. However, the proposed route as shown in the accompanying figures varies between 70 m and 780 m wide, and it is anticipated that significant impacts to known assets can be avoided through design during the EIA process in most cases.

There is a potential for previously unidentified, buried archaeological remains to be present within the vicinity of the proposed route. On the basis of the evidence collated to date, significant effects are currently unconfirmed. One of the aims of collecting the additional baseline information identified in Section 5.3 above will be to better understand the potential archaeological resource.

5.5 Issues Scoped Out

Consideration of impacts on the setting of designated assets within the wider study area and surroundings has informed the routeing process undertaken to date. On the basis of the nature of the proposed development and the location of designated assets in the wider area, no significant effects on the setting of designated assets is likely. Therefore, as described in Section 5.1, it is proposed that no assessment of setting impact will be undertaken in the EIA.

6 LANDSCAPE AND VISUAL AMENITY

6.1 Introduction

This chapter sets out the proposed scope for assessing the likely landscape and visual amenity effects associated with the proposed development. The chapter outlines the landscape and visual baseline of the study area for the preferred route as detailed in Chapter 2 'The Proposed Development'. The preferred route was identified following a routeing exercise detailed in the Project Routeing Strategy Document.

As well as the scope, this chapter details the proposed methodology and considers the potential for significant effects arising from the proposed development on both landscape character and visual amenity.

A desk-based assessment, and an initial field survey, has been undertaken to identify whether significant effects are likely and the need, extent and scope for further study as part of an EIA.

In accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (the EIA Regulations), the landscape and visual amenity assessment will identify and appraise the potential effects which may arise during the construction and operation phases of the proposed development. As explained in Chapter 3 'Environmental Impact Assessment Scope', as the proposed overhead line is considered by SP Energy Networks to be a permanent installation, decommissioning effects are proposed to be scoped out of the assessment.

This chapter is supported by the following figures and appendices:

- Figure 1.1: Site Location;
- Figure 6.1: Landscape & Visual Study Area;
- Figure 6.2: Landscape Designations;
- Figure 6.3: SNH Landscape Character Areas;
- Figure 6.4: Access Routes;
- Figure 6.5: Topography; and
- Figure 6.6: ZTV and Potential Viewpoint Locations.

Landscape and visual effects are closely linked which means there is some overlap of assessment methodology, although the two topics are assessed separately. Landscape assessment deals with the assessment of effects on the landscape as a resource in its own right, while assessment of visual effects considers the effects on specific views and on the general visual amenity experienced by people (visual receptors).

Scope of Assessment and Definitions

The term 'landscape effects', as defined in GLVIA3 (para 2.21), means effects on 'the landscape as a resource in its own right'. It includes direct effects upon the fabric of the landscape (such as the addition, removal or alteration of structures, woodlands, trees or hedgerows), which may alter the character and perceived quality of the area, or more general effects on landscape character and designated areas of landscape arising from

the introduction of new man-made features. In landscapes designated or valued for their scenic or landscape quality, such changes can affect its perceived value or the purpose of the designation.

An assessment of visual effects deals with the effects of change and development on the composition of views available to people and their visual amenity[3]. The concern is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements. In accordance with GLVIA3, the assessment will focus on public views experienced by those groups of people who are likely to be most sensitive to the effects of the proposed development. This includes local communities where views contribute to the landscape setting enjoyed by residents in the area; tourists and visitors to the area; people using recreational routes, features and attractions; and road users.

Work Undertaken to Date

Initial field survey and assessment work has already been undertaken as part of the ongoing routeing and design of the proposed development. As detailed in the Project Routeing Strategy Document consideration was given to the nature and sensitivity of the landscape within a 12,000 ha study area (broadly 10 km x 16 km) while identifying the preferred route alignment.

The EIA will build on this information through further field and desk survey. This is to provide a full appreciation of the landscape within the study area for the preferred route including its constituent elements and features, its character and the way this varies spatially, its history, condition, the way it is experienced and the value attached to it.

6.2 Baseline Conditions

The landscape baseline forms the basis for the identification and description of the landscape changes that may result from the proposed development. It establishes the character of the area, based on reference to published characterisation studies, such as SNH's 'Landscape Character Assessment in Scotland'. Designated landscapes (national and local) and other sensitive landscape receptors are identified via GIS data sets and other desk-based research.

The visual baseline is informed by the landscape baseline. The visual baseline (existing views and visual amenity) forms the basis for the identification and description of the visual changes that may result from the proposed development. It establishes the areas from where the development may be visible, the different groups of people who may experience views of the proposed development, the locations or viewpoints where they will be affected and the nature of the views at those locations. It also establishes the relative number of receptors within each group of people who are likely to be affected by changes in their views or visual amenity.

[3] GLIVA3 defines visual amenity as 'Meaning the overall pleasantness of the views people enjoy of their surroundings as they live, work, recreate, visit or travel through an area'.

Potential landscape and visual receptors are identified through a review of the baseline studies, by responses from consultees and through site survey to verify the extent of potential visibility

Existing Baseline

Figures 6.2-6.5 illustrate the landscape designations and constraints within the study area.

Overview of Proposed Route

From the south the landscape follows a valley moorland landscape located between Kennox Water and an area of commercial forestry, with limited publicly accessible visual receptors. The route then crosses an area of degraded land (from opencast workings). As the proposed route reaches and passes Carmacoup it would be in the vicinity of a small number of residential properties near and as it crosses the A70. The proposed route continues broadly north-east and enters the Douglas Water valley with the village of Glespin and the A70 to the south, both of which are receptors from where the OHL may be visible on the moorland of the valley slopes.

As the proposed route continues north-east through the Douglas Valley, it will pass through the Douglas Valley Special Landscape Area (SLA), and to the north-west of the village of Douglas. Within the SLA the tree cover associated with the former designed landscape around the village of Douglas increases and the overall landscape becomes more aesthetically pleasing. Within the SLA there are several Core Paths, from which the OHL is likely to be visible. To the north-west of Douglas, the proposed route passes Douglas substation, where there are several existing OHL.

Approximately 1 km after Douglas substation, to the north-north-west of Douglas, the proposed route changes direction, heads north-west and exits the SLA. The proposed route continues north-west across a landscape comprising moorland and large opencast mining areas (including Dalquhandy opencast coal site). The proposed route then loops around the south and south-west of the village of Coalburn, although it is noted that views of the OHL from the village are likely to be filtered by intervening woodland around the periphery of the village. To the west of Coalburn the route briefly runs through a transitional landscape between upland and lowland.

The final northern section of the proposed route runs through a simple moorland landscape, with signs of former and current opencast mine working visible within the landscape. The proposed route runs to the east of Hollandsbush Golf Club and then in close proximity to individual properties such as Glaikhead and Johnshill Farm. In this location the relatively level/only slightly undulating lowland landscape is host to roadside, garden and other vegetation which would provide a reasonable visual filter from receptors, including users of the golf course and local residents.

Landscape Designations

There are no designated landscapes of international or national importance within the study area.

Douglas Valley Special Landscape Area (SLA)

The central section of the proposed route lies within the Douglas Valley SLA for almost 5 km. The SLA extends to the west and east of the proposed route in this location. Policy

15 of The South Lanarkshire Local Development Plan (Adopted June 2015) affords SLA a Category 3 (Local) level of protection, it states "in Category 3 areas, development which would affect these areas following the implementation of any mitigation measures will only be permitted where there is no significant adverse impact on the protected resource". The 'key qualities' of specific SLA are set out in the Local Landscape Designations document (published by South Lanarkshire Council in November 2010).

The SLA is described in the designations document as follows:

> The Douglas Valley is a sheltered valley containing a well preserved designed landscape with significant mature woodland planting. It is centred around the historic village of Douglas and provides an accessible, contained and tranquil landscape in contrast to the open and expansive rolling moorland to both the south and north of the valley.

The SLA is crossed by a 400 kV steel lattice tower OHL and both Hagshaw windfarm and Douglas West windfarm are located within this SLA.

Douglas Conservation Area (CA)

The proposed route passes approximately 1.4 km north-west of the Douglas CA, which is afforded Category 3 (Local) level of protection by Policy 15 of the South Lanarkshire LDP. The Douglas CA is focused on the north of the village of Douglas around Main Street.

Both the Douglas Valley SLA and Douglas CA are considered to have a high value, but only a low susceptibility to a proposed overhead wood pole line and therefore would be considered to have a medium sensitivity to the proposed development.

There are no other designated landscapes within the study area zone.

Landscape Character (2019 SNH update)

The landscape character of the area was classified in the SNH July 2019 mapping of landscape character types within Scotland. The landscape is classified in terms of broad character types and areas referred to as Landscape Character Types (LCT).

Starting at the 'Kennoxhead Windfarm Point of Connection', the southern and central sections of the proposed route are predominantly within LCT 213 Plateau Moorlands – Glasgow and Clyde Valley, although this LCT is dissected by LCT 207 Upland River Valley – Glasgow and Clyde Valley and the proposed route briefly passes through and borders this LCT. The final northern section of the proposed route as it passes to the west and north of Coalburn lies within LCT 201 Plateau Farmland – Glasgow and Clyde Valley. Details of the LCT are provided below.

LCT 213 Plateau Moorlands – Glasgow and Clyde Valley

This area of Plateau Moorland is characterised by individually defined hills, frequently dissected by drainage lines rather than forming a continuous flat plateau. The hills are neatly rounded or have gently sloping ridges – often named 'rigs' – extending from them. The landscape is often covered in blanket bog, heather and grass moorland, with extensive conifer plantations, although areas of these have been felled to accommodate wind farm development.

The wind farms have reduced the perception of undeveloped character although there are still pockets of landscape which feel remote. Where forestry permits, views tend to be relatively open across the surrounding valleys and adjacent hill groups. There are several man-made features visible, particularly road corridors and electrical infrastructure, though few visual foci are present.

Within the July 2019 SNH assessment the key characteristics of the LCT are listed as:

- large scale landform;
- undulating hills and sloping ridges in the western areas; a more even plateau landform in the east;
- distinctive upland character created by the combination of elevation, exposure, smooth plateau landform, moorland vegetation;
- predominant lack of modern development;
- extensive wind turbine development, including one of the largest wind farms in Scotland, Black Law; and
- sense of apparent naturalness and remoteness which contrasts with the farmed and settled lowlands, although this has been reduced in places by wind energy development.

LCT 207 Upland River Valley – Glasgow and Clyde Valley

This LCT is found where found where tributaries of the Clyde have cut shallow valleys into the plateau moorland and farmland between the Clyde Basin and the Ayrshire Basin.

Within the July 2019 SNH assessment the key characteristics of the LCT are listed as:

- A series of valleys formed along faultlines through the Plateau Moorlands and paired with valleys to the south and west in Ayrshire;
- South-west to north-east orientation of the valleys;
- Strong contrast between the wooded and settled character of the valleys and the exposed enclosing uplands; and
- Transition from the exposed upper reaches to more sheltered lowland areas.

LCT 201 Plateau Farmland – Glasgow and Clyde Valley

This LCT occurs on the lower slopes of all the Plateau Moorland areas encircling Glasgow and the conurbation. They are characterised by their transitional location between the sheltered landscapes of the valleys and lowlands, and exposed uplands and moorlands. There are wide views across this open, transitional LCT, but few visual foci. The area appears in the foreground when seen in views from or towards adjacent moorland and hills. The edges of this landscape are visible from within the Clyde Valley, forming the backdrop to the valley lowlands.

Within the July 2019 SNH assessment the key characteristics of the LCT are listed as:

- Extensive, open, flat or gently undulating landform;
- Dominance of pastoral farming, but with some mosses surviving;
- Limited and declining tree cover;

- Visually prominent settlements and activities such as mineral working; and
- Rural character of the Plateau Farmland has reduced as tree cover has declined and the visual influence of settlements, transport infrastructure and mineral working has increased.

Settlements

In the north of the study area, the village of Coalburn, which is associated with local coal mines, is located on the Coal Burn (a tributary of Poniel Water). The village is formed alongside two main streets; north to south directed Coalburn Road and south-west to north-east directed Bellfield Road. Views from the village are enclosed to the west/south-west and south-east by the topography, which ascends in these directions.

The village of Douglas is located to the east of the proposed route and any potential views of the proposed development would likely be from a minimum distance of 1 km. The village is on the Douglas Water and the main A70 transport route runs through the village. The village is located in a wide low valley, with blocks of woodland to all sides, though generally set back from the village by at least 500 m. Views tend to be confined to the valley landscape.

The smaller village of Glespin is located 3 km south-west from Douglas formed along the eastbound carriageway of what is now the A70, with the winding path of the Douglas Water to the south of the transport route. Glespin is not as enclosed as Douglas and longer distance views out of the village are possible to the south, east and west, although the village is still ultimately confined by the higher ground of the surrounding periphery of the Southern Uplands. A higher ridge of land to the immediate north of the village, running parallel with the village and A70 screens views in this direction. The eastern extents of the corridor for the proposed route are along this ridge of landform, meaning the proposed development is only likely to be perceptible from the village if it follows the most easterly path possible within the corridor.

Auchlochan Garden Village lies to the west of Hollandbush Golf Course, between 800 – 1.2 km west of the northern end of the proposed route. It is likely that the OHL would be screened by intervening landform and, in particular, intervening woodland and mature trees.

To the north-west of the proposed route the linear village of New Trows is located along the northbound carriageway of New Trows Road between 1.1 – 1.7 km from the proposed route. These properties are located on higher ground with partially open views, with some intervening vegetation, to the south-east and middle-to-long distance view of the OHL as it approaches Coalburn substation may be possible.

The southern end of Lesmahagow is approximately 900 m north of the northern end of the proposed route, from which the town extends northwards for 3 km. The proposed development is likely to be screened from receptors within the town by intervening landform, vegetation and built form.

In addition to the settlements named above there are a small number of scattered small groupings and individual properties/farms along the proposed route and within its vicinity. Starting from Kennoxhead and heading north, these are located at:

- Carmacoup, to the west of Glespin, where the route crosses the A70;

- Hazelside;
- Station Road, north-west of Douglas;
- West Toun/Westerhouse, 2 km south-east of Coalburn;
- Glaikhead, at the south of Hollandbush Golf Course;
- Coalburn Road, at the north of Hollandbush Golf Course;
- Johnshill Farm, approximately 700 m west of Coalburn substation;
- Property on the B7078, 930 m east of Coalburn substation; and
- Auldtonheights, on the B7078, 630 m north-east of Coalburn substation.

All residential receptors are considered to have a high susceptibility and sensitivity to the potential development. However, this decreases with distance from the development. Overall the study area for the proposed route is sparsely populated and it may be possible to route the potential development with little overall visual impact on residential receptors. Those residential receptors most likely to experience visual effects are at Carmacoup (The Bungalow and Viaduct Cottage), Glaikhead and Johnshill Farm.

Transport Routes

The main transport routes crossed by the proposed route or within the study area are:

- A70, will be crossed 4.3 km north-east of the Kennoxhead connection point and the proposed route will run broadly parallel to the road for a further 4.8 km;
- Shoulderigg Road will be crossed to the west of Coalburn;
- Coalburn Road will be crossed to the north of Coalburn, and the proposed route will run broadly parallel to the road for a further 1.4 km;
- B7078 runs broadly north to south to the east of the proposed route. It is generally further than 2 km from the proposed route and impacts on its users would generally be negligible. Approximately the northern most 1.2 km of the route and Coalburn substation are within 2km of the B7078;
- M74 runs broadly parallel to the B7078 and again any likely impacts on users of the road would be negligible. At the northern end of the proposed route the M74 is a further 450 m east of the route than the B7078; and
- there are other minor local roads within the study area connecting the settlements, such as Coalburn, with the wider highways network and larger towns outside the study area.

Road users within the study area are considered to have a low susceptibility and sensitivity to the proposed development.

Tourism and Recreation

As presented on Figure 6.4 there are several core path networks within the study area particularly around the settlements of Coalburn and Douglas, within the valley of Douglas Water and ascending Common Hill and Hagshaw Hill from Douglas Water.

The proposed route would cross core paths CL/3455/1, CL/3457/1, SL103 (right of way) and CL/3310/1; and would run near or adjacent to other core paths CL/3453/1, CL/3452/1,

CL/3344/1, CL/5735/3, SL117 (right of way), CL/5192/1, CL/5193/2, SL151 (right of way), CL/3311/1 and SL118 (right of way).

Depending on the location and existing visual amenity of individual core paths the sensitivity of walkers to the development would vary e.g. users of footpaths within the centre of Coalburn could be considered to have a low sensitivity to the development, whereas users of footpaths within the Douglas Valley SLA may be considered to have a high sensitivity. This is also further complicated by those core paths (CL/3461/1, CL/3460/2 and CL/3458/1) on the high ground around Common Hill which would usually be considered to have scenic views and a high sensitivity to the proposed development, but the paths are already directly within a wind turbine landscape, thereby reducing the likely sensitivity of the users of these paths. Overall the users of the majority of core paths within the study area are likely to be considered to have a medium susceptibility and medium sensitivity to the development.

National Cycle Route No.74 follows the route of the B7078 and lies within the study area at the northern end of the proposed route. Due to the distance from the proposed route, users of the cycle route are considered to have a low susceptibility and sensitivity to the proposed development.

The proposed route passes the east Hollandbush Golf Club for approximately 1 km. The golf club's official website notes that the golfers can enjoy 'the magnificent scenery and panoramic views of the Southern Uplands dominating to the East, South and West while playing the course and on a clear day, the peaks of Ben More and Ben Vorlich can be seen to the North.' However, it is noted that several wind turbines are visible in all directions from the golf course and lower level views from within the golf course are often filtered by mature vegetation within and adjacent to the course. In addition, a line of mature roadside trees, at the eastern boundary of the course, separate the course from the path of the proposed route. Users of the golf course would be considered to have a low susceptibility to the development and would be considered to have an overall sensitivity of low.

The village of Douglas itself should also be considered as a tourist and recreation location, and tourists/visitors to the village would usually be considered to have a high sensitivity to the proposed development. However, any views of the OHL from the village would be from a distance of at least 1 km and the landscape around Douglas is already host to wind farms, electricity structures and opencast mining works, therefore the susceptibility of tourists in Douglas to the development is reduced to medium and their overall sensitivity is classified as medium.

Visual Baseline

The visual baseline and potential visual envelope for the proposed development is based on the landscape baseline.

A computer generated Zone of Theoretical Visibility (ZTV) map (Figure 6.6) has been produced to help establish the likely area of visibility of the proposed development. However final pole positions and heights are not yet known, therefore the ZTV has been based on all poles having an above ground height of 13 m and an average separation distance of 85 m. The ZTV does not take account of vegetation or built form, and as such is a worst-case scenario which has been used to help establish the baseline and identify likely viewpoints (see below). The EIA will involve extensive field survey work, including

establishing the actual visual envelope of the proposed development and it is likely that a final ZTV will not accompany the EIA.

The study area around the proposed route comprises open moorland, commercial forestry, former and existing areas of opencast mining and the river valley around Douglas Water. Away from the areas of commercial forestry, it is generally an open landscape with hedgerow boundaries limited to the landscape around Douglas and to the north of Coalburn, although there are small pockets of woodland not associated with the commercial forestry. These areas of woodland are focused around the Douglas Valley SLA.

Where forestry exists, primarily at the southern end of the proposed route and on uplands to the south of Coalburn, the forestry will act as a significant screen to long distance views from within these areas, and also when viewing into or past these areas from further afield.

The more uniform and open areas of moorland and opencast mining, to the north of the around Coalburn, and the central regions to the west of the Douglas Valley, create a landscape where long distance views are possible, although very occasional vegetation and tree belts can act as a visual filter within the landscape. When crossing the open moorland type landscape and areas of opencast mining there is the potential for an OHL to be visually prominent, especially as it crosses the crest of a ridge.

The study area is on the north-western edge of the Southern Uplands and this topography heavily influences the visual envelope. The Douglas Valley is particularly enclosed by the surrounding landform and large forestry plantation to its north, with views into and from the valley limited to the landscape within and immediately adjacent to the valley.

The landform of the proposed route generally lies between 220 and 300 m AOD, with areas of higher ground (up to 488 m AOD at Common Hill) to the immediate west of the proposed route. Common Hill and the adjacent Hagshaw Hill are the dominant landscape features of the wider study area as a whole, with views towards the hills, and the windfarm they host, possible from all around the study area. To the east of the proposed route the landform drops to around 200 m AOD around Douglas Water and also at the northern end of the proposed route. To the east of Douglas Valley, the landform rises again to around 388 m AOD at Pagie Hil and 379 m AOD at Parkhead Hill. The high ground enclosing the proposed route will act as a visual screen towards the route from long distances, as well as often being a visual backcloth if the OHL were visible. However, the high ground also affords potentially longer distance views from the high ground towards the proposed development.

The study area includes a mixture of small settlements and scattered individual properties, connected by a small number of roads and lanes. In addition to the roads and lanes, the landscape is crossed by a network of footpaths. While the numbers of people using this lane and footpath network may be relatively few, their attention is likely to be focussed on appreciation of the landscape and views.

Where possible the final routeing process will seek to locate proposed wood pole supports close to forestry or field boundaries or other landscape elements which help to provide screening and/or a backdrop for the overhead line which reduces its visibility in the landscape.

6.3 Additional Baseline Information and Collection Methods

Introduction

The following outlines the proposed guidance, methodology and approach to be used in the assessment of landscape and visual effects. The methodology sets out the criteria and definitions for the assessment of sensitivity, magnitude of change and significance of effects.

The potential landscape and visual effects of the proposed development would be assessed separately.

Landscape effects include direct effects upon the fabric of the landscape, such as the addition, removal or alteration of structures, woodlands, trees or hedgerows, which may alter the character and perceived quality of the area, or more general effects on character and designated areas arising from the introduction of new man-made features.

Visual effects relate to specific changes in the composition of views and the effects of those changes on visual receptors (e.g. residents, business users, users of recreational open space, views to and from valued landscapes).

The EIA will build on the baseline work already undertaken and systematically identify the following groups of sensitive visual receptors:

- settlements and residential properties;
- visitor attractions and tourist routes;
- informal recreational resources including regional and national trails, recreational waterways, cycle ways and public rights of way (PRoW), parks and gardens;
- formal recreational resources including parks and gardens;
- common land and open access areas;
- main roads and routes, including and 'A' and 'B' class roads;
- sensitive sites identified by stakeholders during the ongoing consultation process; and
- the locations of existing electricity infrastructure, including overhead lines, and the potential for combined visual effects.

Guidance and Best Practice

The methods of assessment to be used are based on the broad principles established, and approaches recommended in, the following best practice guidance:

- Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3)[4]:
- An Approach to Landscape Character Assessment[5];

[4] Guidelines for Landscape and Visual Impact Assessment, Third Edition, The Landscape Institute and Institute of Environmental Management and Assessment (2013)

[5] An Approach to Landscape Character Assessment (2014), Natural England

- The State of Environmental Impact Assessment Practice in the UK[6];
- Landscape Institute Technical Guidance Note 02/19 Residential Visual Amenity Assessment (RVAA)[7]; and
- Landscape Institute Technical Guidance Note 06/19 Visual Representation of Development Proposals[8].

Spatial Scope of Study Area

The landscape assessment will focus on those areas which are likely to experience significant effects. The visual assessment will focus on those groups of receptors which are likely to experience significant effects.

The study area for the landscape and visual assessments will extend up to 2 km either side of the proposed route corridor for the proposed development as shown in Figure 6.1. This is because experience of similar projects has shown that it is highly unlikely that a wood Trident pole would give rise to significant effects at distances of 1 km or greater. The study area is extended from 1 km to 2 km to absolutely ensure a worst-case scenario is considered and also to take account of the local topography, where longer distance views may be possible from high ground, and to include potentially sensitive receptors such as those within the village of Douglas which are over 1 km from the proposed route.

The study area will continue to be reviewed in the light of ongoing site surveys and stakeholder consultation as the proposed development develops. This is to ensure that all likely significant landscape and visual effects will be captured by the assessment.

The design and route of the proposed 132 kV overhead line, combined with the screening effects of landform and vegetation, means that its effects on landscape and views and visual amenity would generally be limited. Only those receptors close to the proposed development, would experience a significant change in their view and there is a limited number of such receptors. Although the OHL may be visible in the distance, the effects on views further away would not be significant as it would be perceived as a small feature in the view and would sometimes blend into the background scenery.

Public Views

The assessment of visual effects will address potential changes in people's views or visual amenity caused by the appearance and prominence of the proposed development in those views. In accordance with GLVIA3, the assessment will focus on publicly accessible rather than private viewpoints, and on those receptor groups who are likely to be most sensitive to the effects of an OHL. Receptors groups which will be assessed include communities, where views contribute to the wider landscape setting enjoyed by residents in an area, road users and residents or visitors using recreational routes features and attractions. It will include an assessment of the effects on views from the edges of defined settlements and from aggregated groups of dispersed properties.

[6] The State of Environmental Impact Assessment Practice in the UK (2011), Institute of Environmental Management & Assessment

[7] Landscape Institute Technical Guidance Note 02/19 Residential Visual Amenity Assessment (RVAA) (2019), Landscape Institute

[8] Landscape Institute Technical Guidance Note 06/19 Visual Representation of Development Proposals (2019), Landscape Institute

Residential Visual Amenity

There is no published guidance that sets out the criteria for establishing whether or not the visual presence of a development impacts unacceptably on living conditions although the issue has been considered at several public inquiries. It is acknowledged that there may be a point when, by virtue of the proximity, size and scale of a development, a residential property would be rendered so unattractive a place to live that planning permission should be refused. While the assessment of whether a change in outlook materially harms residential amenity or living conditions is ultimately a planning issue, a judgement on the visual component of residential amenity is often needed from a landscape architect to inform the planning judgement and this is increasingly being undertaken as part of an EIA.

LI TGN 02/19 Residential Visual Amenity Assessment (RVAA) explains that, "The purpose of RVAA is to provide an informed, well-reasoned answer to the question: 'is the effect of the development on Residential Visual Amenity of such nature and/or magnitude that it potentially affects 'living conditions' or Residential Amenity'? In this guidance this is referred to as the Residential Visual Amenity Threshold".

The LI TGN 02/19 explains that, "factors which might contribute to the threshold being reached, or the way in which these are expressed, may be different for different types of development (for example, one might use terms such as 'overwhelming/overbearing' for tall structures, or 'overly intrusive' for a development overlooking a garden or principal room)".

With respect to RVAA and EIA the LI TGN 02/19 confirms that GLVIA 3 is an appropriate starting point and that:

> LVIA findings of significant (adverse) effects on outlook and/or on visual amenity at a residential property do not automatically imply the need for a RVAA. However, for properties in (relatively) close proximity to a development proposal, and which experience a high magnitude of visual change, a RVAA may be appropriate, and may be required by the determining/competent authority. The scope of a RVAA is normally agreed with the determining/competent authority.

For this proposed development it is not considered that the introduction of a Trident wood pole line would impact any residential property to the level that a full RVAA was required, especially as the closest the OHL is likely to be to any property is 100 m. As such a full RVAA, as part of the EIA, is not proposed.

Receptors greater than 100 m from the proposed route will be included where concerns about individual properties have been raised during the consultation. For example, where there would be the potential for the proposed overhead line to be seen on the skyline or where the geographic extent of the effects was likely to be very large.

Temporal Scope

The assessment will take account of the effects of the proposed development at the following points in time:

- Construction – the point at which the construction works would be visible;
- Operation Year 1 – the point at which the proposed development would first be visible in its entirety; and

- Operation Year 15 – the point in time at which the proposed development would be visible, following further growth of any existing or new vegetation within the landscape.

Short-term effects are typically those which would arise during the construction phase of the proposed development. Construction of the proposed development is anticipated to take place during 2023 and 2024.

Medium and long-term effects are typically those which would arise between years 1 and 15 of operation.

Long-term residual effects of the proposed development are typically those which would remain after a minimum fifteen years, once any mitigation planting and existing vegetation has had an opportunity to establish and mature.

Landscape and Visual Assessment Methodology Overview

The key aspects of the proposed development will be considered against the baseline conditions to allow the potential landscape and visual effects to be predicted. Consideration will be given to effects on:

- landscape receptors, including the constituent elements of the landscape, its aesthetic or perceptual qualities and the character around the development; and
- visual receptors or the people who could be affected by changes in views and visual amenity at different locations.

The effects will be identified by establishing and describing the changes resulting from the different components of the development and the predicted effects on individual landscape or visual receptors. This will take account of both the nature and sensitivity of the receptor and the nature and magnitude of the change likely to occur.

Each judgement will be determined by a combination of quantitative and qualitative assessment using professional judgement accompanied by a clearly explained rationale.

Landscape Assessment Methodology

Landscape Sensitivity

The first step in assessing landscape effects is to determine the sensitivity of the landscape to the proposed development. Paragraph 3.24 of GLVIA3 defines the nature of a landscape receptors sensitivity by “combining judgements about its susceptibility to change arising from the specific proposal with judgements about the value attached to the receptor”. Judgements on the value attached to the landscape are unrelated to the nature of a development proposal, while judgements on susceptibility may vary in response to the type of development proposed and the attributes of the area in which it is to be located.

Landscape Value

Value relates to the relative importance of the landscape to different stakeholders and can apply to areas of landscape as a whole, or to individual elements, features and aesthetic or perceptual dimensions which contribute to the character of the place. Paragraph 5.20 and box 5.1 of GLVIA3 lists a range of factors which can be used to identify valued landscapes. The criteria listed are: landscape quality (condition); scenic quality; rarity; representativeness; conservation interests; recreation value; perceptual

characteristics; and associations. If a local planning authority has undertaken a landscape character and/or sensitivity study these can often be a useful resource, in conjunction with field survey work, to establish landscape value based on the listed criteria.

The value of a landscape may reflect communal perception at a local, regional, national or international scale and may be informed by several factors including scenic beauty, tranquillity, wildness, cultural associations or other conservation or recreation interests. Although landscape value or importance is usually determined by reference to statutory or local planning policy designations, an absence of such designation does not automatically imply a lack of value as other factors, such as scarcity, may be considered relevant. The value or importance of landscape elements will also be considered. The European Landscape Convention[9] recognises that ordinary (undesignated) landscapes also have their value to the communities for whom they provide a resource to live, work and spend their leisure.

The degree of landscape value or importance is therefore a matter for reasoned professional judgement and the value of the general landscape will be categorised as very high, high, medium or low, as shown in Table 6.1 below.

Table 6.1 – Landscape Value

Value	Criteria	Examples
Very High	Very attractive and rare landscape of outstanding scenic quality and very distinctive characteristics, features and elements. Existence of national or international landscape designations. Very good condition/very well-managed and intact. High cultural heritage interest which contributes significantly to landscape character with sites of designated national or international importance. Very high recreational value and accessibility which contributes significantly to recreational/visitor experience. Rich and valued cultural associations. Unique sense of place with very positive perceptual responses. No detracting features.	Internationally or nationally recognised including: National Parks, World Heritage Sites, Areas of Outstanding Natural Beauty, Heritage Coasts
High	Attractive landscape with some distinctive characteristics, features	Nationally, regionally or district

[9] European Landscape Convention defines landscape as, *'…an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'*, Council of Europe 2000.

Table 6.1 – Landscape Value		
Value	**Criteria**	**Examples**
	and elements. Presence of national landscape designations. Good condition/well-managed and largely intact. Cultural heritage interest which contributes to landscape character. Recreational value and accessibility which contributes to recreational/visitor experience. Valued cultural associations. Strong sense of place with positive perceptual responses. Occasional detracting features.	recognised including: Areas of Outstanding Natural Beauty, Registered Parks and Gardens, designed landscapes, country parks, conservation areas
Medium	Typical, commonplace and unremarkable landscape, which although scenically pleasing has limited variety or distinctiveness. Average condition with some intactness but scope to improve management for land use. Limited historic interest. Limited recreational value, poor accessibility and few visitors. No or very few recorded cultural associations. Some features worthy of conservation. Unremarkable sense of place with neither particularly positive nor negative perceptual responses. Some dominant detracting features.	Locally recognised Generally undesignated but value expressed through for example cultural associations, local plan designations, conservation areas and demonstrable use. May contain listed buildings, tree preservation orders and sites of county or local importance.
Low	Landscape degraded or in obvious decline, visually unattractive and with poor sense of place. Lack of management has resulted in degradation and poor condition. Limited to no cultural heritage interest. Limited to no recreational value or	District or Locally recognised. Some individual landscape elements or features may be worthy of conservation, landscape either identified for or would benefit from regeneration or restoration, site or area may be valued at a community level.

Table 6.1 – Landscape Value		
Value	**Criteria**	**Examples**
	public accessibility. No recorded cultural associations. Frequent dominant detracting features. Poor sense of place with negative perceptual responses. Disturbed or derelict land requires treatment.	

Landscape Susceptibility

Susceptibility to change is defined as the, "…ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or a particular aesthetic or perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies." (GLVIA 3 para. 5.40).

The landscape's key characteristics will be identified and their susceptibility to change brought about specifically by the proposed development assessed. The assessment of the susceptibility of the landscape to the proposed development may subsequently be modified by consideration of any special value or importance attributed to the landscape. The assessment will seek to identify the ability of the existing landscape to absorb change and the ease with which the proposed development might fit.

The relationship between the value attached to landscape receptors and their susceptibility to change as a result of the proposed development can be complex. An internationally valued landscape does not automatically have a high susceptibility to change as the specific development type proposed may not compromise the particular components of the landscape that it is valued for. In contrast a locally valued landscape may be highly susceptible to a particular development type that detrimentally affects a key element or elements of the landscape resource.

The susceptibility of landscape character to the specific changes likely to be associated with the introduction of the proposed development will be categorised as high, medium or low, as detailed below in Table 6.2.

Table 6.2 – Landscape Susceptibility	
Susceptibility	**Description**
High	The overall character or quality/condition of the landscape receptor has a low ability to accommodate the proposed development and effective mitigation would be difficult to achieve. An individual element and/or feature, or a particular aesthetic and perceptual aspect may be significantly affected.

Table 6.2 – Landscape Susceptibility	
Susceptibility	**Description**
Medium	The overall character or quality/condition of the landscape receptor has a medium ability to accommodate the proposed development and effective mitigation would be achievable. Individual elements and/or features, or a particular aesthetic and perceptual aspect may be affected. There will be some consequences for the maintenance of the baseline situation (landscape receptor value) and/or the achievement of landscape planning policies and strategies.
Low	The overall character or quality/condition of the landscape receptor has a high ability to accommodate the proposed development and effective mitigation would be readily achievable. Only individual elements and/or features, or a particular aesthetic and perceptual aspect may be affected.

The sensitivity of landscape receptors will be based on the judgements regarding the susceptibility of the landscape receptor to change and the value placed on the landscape, as discussed above. The sensitivity of landscape receptors will be assessed as very high, high, medium or low. Table 6.3 indicates general categories of sensitivity based on combining these judgements and serves as a useful guide when making these judgements.

Table 6.3 – Categories of Receptor Sensitivity			
	Susceptibility		
Value	**High**	**Medium**	**Low**
Very High	Very High	High	Medium - High
High	High	Medium - High	Medium - Low
Medium	Medium - High	Medium	Medium - Low
Low	Medium - Low	Low	Low

Depending on the individual circumstance of each receptor, the assessment of sensitivity in Table 6.3 will be adjusted up or down to fully reflect the nature of the development proposed in that location.

Magnitude of Change

Assessment of the magnitude of landscape change brought about by the potential effects of the proposed development will take account of the following criteria, as relevant. Professional judgement will be used to determine the relevance and appropriate weighting to be attributed to each:

- the size and scale of the development taking into consideration:

- the extent of landscape elements that would be lost and the contribution of that element to landscape character;
- the degree to which aesthetic or perceptual aspects of the landscape would be altered either by the removal of existing components of the landscape, or, the addition of new features; and
- whether any change in key characteristics are critical to a distinctive landscape character.

- the geographical extent of the landscape area that would be changed considering the geographical area over which landscape effects would be felt. For example, there may be a moderate loss of landscape elements over a wide area, or a major addition affecting a very localised area;
- the likely duration of the change to the landscape; and
- whether the change to the landscape would be potentially reversible.

For each effect professional judgement will be used to determine the relevance and appropriate weighting to be attributed. The magnitude of landscape change will be assessed as high, medium, low or negligible dependent upon these judgements, with examples provided in Table 6.4.

Table 6.4 – Indicative Criteria for Assessing Likely Magnitude of Landscape Change

Magnitude of Change	Description
High	The proposed development occupies most of the landscape and/or its setting. The proposed development is a new component in the landscape ranging from a notable change in landscape characteristics over a wide area to intensive change over a more limited area. The proposed development would be very noticeable. There would be loss or major alteration to key elements, features, and/or characteristics of the baseline which would fundamentally alter the character of the landscape. The duration of this effect may be permanent and irreversible.
Medium	The proposed development would occupy a large proportion of the landscape and/or its setting. The proposed development is quite different in appearance to the main component of the landscape but similar to other more minor components. The proposed development would be readily noticeable. There would be partial loss of, or alteration to, key elements, features and/or characteristics of the baseline but the character of the landscape would not fundamentally change. The duration of this effect may be semi-permanent and irreversible.
Low	The proposed development would occupy a small proportion of the

Table 6.4 – Indicative Criteria for Assessing Likely Magnitude of Landscape Change	
Magnitude of Change	**Description**
	landscape and/or its setting. The proposed development is similar in appearance to the main component of the landscape. The proposed development would be readily noticeable. There would be minor loss of, or alteration to, key elements, features and/or characteristics of the baseline. The duration of this effect may be temporary and reversible.
Negligible	There would be little discernible change to the landscape and/or its setting.
No Change	There would be no change to the landscape and/or its setting.

Visual Appraisal Methodology

Visual Sensitivity

The first step in assessing visual effects is to determine the sensitivity of the visual receptors to the proposed development. Paragraph 3.24 of GLVIA3 states professionals should assess the nature of a visual receptors sensitivity by "combining judgements about its susceptibility to change arising from the specific proposal with judgements about the value attached to the receptor".

Visual Receptor Value

Paragraph 6.37 of GLVIA3 explains judgement needs to be made about the value attached to the view experienced, taking account of the existing recognition attached to particular views (e.g. through planning designations) and other indicators such as appearance in guidebooks, tourist maps or cultural references. The value of a view will be assessed as very high, high, medium or low by applying professional judgement and the indicative criteria listed in Table 6.5.

Table 6.5 – Visual Receptor Value		
Value	**Criteria**	**Examples**
Very High	Iconic views of national or international importance, which are important in relation to the special qualities of a designated landscape, the cultural associations of which are widely recognised in art, literature or other media.	Identified and recorded view to or from a World Heritage Site.

Table 6.5 – Visual Receptor Value		
Value	**Criteria**	**Examples**
	The view is widely known and well-frequented and often includes interpretation and other facilities.	
High	View of national or international importance; or is associated with nationally designated landscapes or important heritage assets; or is promoted as a visitor designation for its scenic beauty. The view is widely known and well-frequented.	Public open spaces where focus is on views, public rights of way through highly valued landscapes, views from important tourist routes or promoted viewpoints, popular visitor attractions where the view forms a recognised part of the visitor experience, or which have important cultural associations.
Medium	A view identified in a supplementary planning document, conservation area appraisal and/or views of local importance. The view is in an area of ordinary landscape value, or reasonably good landscape value but with detracting elements or features. People are unlikely to visit the viewpoint to experience the view.	Public rights of way through landscapes of moderate value, setting for elements of local and/or regional cultural heritage value or national value whose settings are already compromised.
Low	Viewpoint is within an area of low landscape quality, is extremely common or has little aesthetic appeal. People are unlikely to visit the viewpoint to experience the view.	Standard town centre or suburban location, with little rarity value or aesthetic quality. Industrial estate or busy main road that has very few positive characteristics. A poor-quality rural view with detracting elements in the view.

Visual Receptor Susceptibility

Susceptibility to visual change is determined by the occupation and activity of people experiencing a particular view and the extent to which their attention or interest may be focused on that view in a particular location.

The susceptibility to change of visual receptors will be assessed as high, medium or low by applying professional judgement and the indicative criteria contained in Table 6.6 below.

Table 6.6 – Visual Receptor Susceptibility	
Susceptibility	**Description**
High	Visual receptors with a low ability to accommodate the proposed change. There will be undue consequences for the maintenance of the baseline situation (visual receptor value) and/or the landscape within the view. The viewpoint location may have been specifically created to for its view and/ or is experienced by people, whether residents or visitors, whose attention or interest is likely to be focused on the view. People with a particular interest in their available view or with prolonged viewing opportunities such as: residential locations; tourist destinations providing a specific important and highly valued view; recreational hilltops; ornamental parks/designed landscapes; and national trails.
Medium	Visual receptors with a moderate ability to accommodate the proposed change. There will be some consequences for the maintenance of the baseline situation (visual receptor value) and/or the landscape value within the view. The view may be experienced by people who are drawn to the view yet do not feel compelled to stop and take it in. People with a general interest in their surroundings or with transient viewing opportunities such as users of road, rail or transport routes; and users of general public open spaces.
Low	Visual receptors with a high ability to accommodate the proposed change. There will be limited consequences for the maintenance of the baseline situation (visual receptor value) and/or the landscape value within the view. The viewpoint location may be transient and/or experienced only in passing by people, whether residents or visitors, whose attention or focus is on other activities, not on their surroundings. People with a passing interest in their surroundings such as: recreation grounds and play areas; places of employment; major highways; commercial buildings; and commuters.

The sensitivity of visual receptors will be based on the judgements regarding the susceptibility of the visual receptor to change and the value placed on the landscape and view. The sensitivity of visual receptors will be assessed as very high, high, medium or low. Table 6.3 (above) indicates general categories of sensitivity and serves as a useful guide when making these judgements.

The assessment of the sensitivity of visual receptors to changes in the view may be subsequently modified (either up or down) by consideration of whether any particular value or importance is likely to be attributed by people to their available views. For

example, travellers on a highway may be considered likely to be more sensitive should the road have a scenic context or residents of a particular property may be considered likely to be less sensitive than usual should the property have an existing degraded visual setting.

In formulating sensitivity categories, it is also important to acknowledge the special circumstances where peoples' expectations in relation to the view are particularly enhanced. This could include locations at widely known and promoted viewpoints, the cultural associations of which are typically recognised in art, literature or other media. Here the category of 'very high' sensitivity applies. If this were not the case then all receptors within a National Park would be defined as having 'very high' sensitivity, which would undervalue the primacy of iconic and highly valued viewpoints. Similarly, the rationale behind attributing a 'high' rather than 'very high' sensitivity for residents and people in local communities is because they do not have the highest level of sensitivity unless standing at a particularly valued viewpoint, in which case they are captured under the category of visitor.

Magnitude of Change

The magnitude of a visual effect is about understanding the scale, nature, extent and duration of visual change a new development will have on a view.

The magnitude of change arising from the proposed development at any particular location will be described as high, medium, low, negligible or no change based on the interpretation of a combination of largely quantifiable parameters as discussed below.

Each of the visual effects identified will be evaluated in terms of its size or scale, the geographical extent of the area influenced, and its duration and reversibility, as detailed below:

- the size and scale of visual change that takes place taking account of:
    - the loss or addition of features;
    - changes in composition including the proportion of the view occupied by the proposed development;
    - the degree of contrast or integration of new features with existing landscape elements and characteristics in terms of form, scale, mass, line, height, colour, texture; and
    - the nature of the view of the proposed development in terms of the relative amount of time over which it would be experienced, and, whether views would be full, partial or glimpsed;
- the geographical extent of the change taking account of:
    - the angle of view in relation to the main activity of the receptor;
    - the distance of the viewpoint from the proposed development; and
    - the extent of the area over which the changes would be visible;
- the likely duration of the visual change; and
- whether the visual change is potentially reversible.

With reference to visual impacts caused by OHL reference is also made to skylining and/or backgrounding i.e. whether a development is viewed against the sky or against a solid, such as landform or vegetation, can affect the level of contrast and scale. For

example, wood poles, conductors (wires) and other electricity infrastructure are more difficult to discern when viewed against a textured background than against an open sky background. Any backgrounding minimises the scale of change on the view as is acknowledged in the Holford Rules.

For each effect professional judgement will be used to determine the relevance and appropriate weighting to be attributed. The magnitude of visual change will be assessed as high, medium, low or negligible dependent upon these judgements, with examples provided in Table 6.7 below.

Table 6.7 – Indicative Criteria for Assessing Likely Magnitude of Visual Change

Magnitude of Change	Description
High	The proposed development will occupy most of the view and/or its setting. The proposed development will be a new component in the view which will cause a notable change in the characteristics of the view over an extensive area or an intensive change over a more limited area. The proposed development will be very noticeable and will alter the overall perception of the view. Visual loss of, or major disruption to, key elements, features and/or characteristics of the baseline (value of the view). The duration of this effect may be permanent and non-reversible.
Medium	The proposed development will occupy a significant portion of the view and/or its setting. The proposed development is dissimilar to the main component of the view but similar to other components. The proposed development will be clearly noticeable but will not change the overall perception of the view. Partial visual loss of, or disruption to, one or more key elements, features and/or characteristics of the baseline. The duration of this effect may be temporary and reversible.
Low	The proposed development will occupy a small portion of the view and/or its setting. The proposed development is similar to the main component of the view. The proposed development will not be readily noticeable and to the casual observer there will be no discernible change. Minor visual loss of, or alteration to, one or more key elements, features and/or characteristics of the baseline. The duration of this effect may be temporary and reversible.
Negligible	There will be little discernible change to the view.

Table 6.7 – Indicative Criteria for Assessing Likely Magnitude of Visual Change	
Magnitude of Change	**Description**
No change	There will be no change to the view.

Overall Level of Effects

A final judgement will be made on the overall level of effect upon receptors (both landscape and visual) through a combination of sensitivity and magnitude of change. The level of effect will be assessed by combining all of the considerations and criteria set out above. This is described by GLVIA3 as an 'overall profile' approach to combining judgements and requires that all the judgements, against each of the identified criteria, are used within an informed professional appraisal of the overall level of effect, with reasoning provided in the text as to how the conclusions have been reached. Table 6.8 illustrates the broad criteria which will be used in assessing the levels of effect upon landscape and visual receptors.

The relative weight attributed to each of the considerations is a matter for experienced professional judgement and will vary depending on the specific receptor or effect being assessed.

Level of effects will be identified in the absence of further (i.e. not embedded) mitigation, with the residual effect confirmed once any further mitigation measures, if applicable, have been considered.

It is important to note that effects can be adverse (negative), beneficial (positive) or neutral. Adverse effects would result from development that caused an increase in degradation of the landscape resource or a negative effect on the attributes that contribute to the value of views; an example could be the introduction of a feature which appears discordant within the existing landscape or view. Beneficial effects would result from development that resulted in the overall improvement of elements that contributed to the value of the landscape resource or views; this could include the addition of valued elements or high-quality built form; or the removal of existing detractors. A neutral effect could occur where changes were considered neither positive nor negative within the context of the landscape or view being assessed; this could include the addition of an element within the landscape or view that already exists; such as the accretion of additional units to an existing development that does not result in the degradation or removal of valued aspects of the landscape resource or view.

Overall effects will be described as major, moderate, minor, negligible or neutral.

Table 6.8 – Level of Overall Effect	
Major Beneficial	The proposed development would be in keeping with and would provide a major improvement to the landscape character/value of the existing view.
Moderate Beneficial	The proposed development would be in keeping with and would provide a noticeable improvement to the landscape character/value of the existing view.

Table 6.8 – Level of Overall Effect	
Minor Beneficial	The proposed development would be in keeping with and would provide a perceptible improvement in the landscape character/value of the existing view.
Neutral/No Change	There would be no effect on the landscape character/value of the existing view.
Negligible	The proposed development would be barely perceptible and have very little or no effect on the landscape character/value of the existing view.
Minor Adverse	The proposed development would cause a perceptible deterioration in the value of the landscape character/value of the existing view.
Moderate Adverse	The proposed development would cause a noticeable deterioration in the landscape character/value of the existing view.
Major Adverse	The proposed development would be the dominant feature and cause a major deterioration in the landscape character/value of the existing view.

Determining Overall Significance

Separate judgements about the sensitivity of receptors and the magnitude of likely effect will be combined to allow a final judgement to be made about whether or not the effect is considered significant using guidance presented in Table 6.9 below.

Table 6.9 – Judging Significance of Effect		
Less likely to be significant	⇔	**More likely to be significant**
The development is generally well accommodated within the landscape and does not conflict or undermine its key characteristics. The effects will be small in scale and typically (but not always) limited in their geographical extent. The development is generally well accommodated in views and/or is a small feature(s) within a view that does not have recognised value. The effect is typically small in scale. The development is seen at only a few locations and affects relatively few receptors. The effects are more likely to be short term, temporary and reversible.	⇔	The development conflicts with the character of the landscape, forming an intrusive feature which substantially erodes the valued characteristics. The effects will be large in scale and will typically (but not always) be perceived across a wide geographical area, or continuously along a route. The development is dominant or prominent in views and the effect is typically large in scale, and/or within a view that is promoted or advertised. The development is seen at many locations and affects many receptors. The effects are more likely to be long term, permanent and

Table 6.9 – Judging Significance of Effect		
		irreversible.

The relationship between receptors and effects is not generally a linear one and there are no hard or fast rules about what makes an effect significant. Judgements will therefore be supported by qualitative text to draw out the important issues, describe the effects and explain the underlying decision-making rationale.

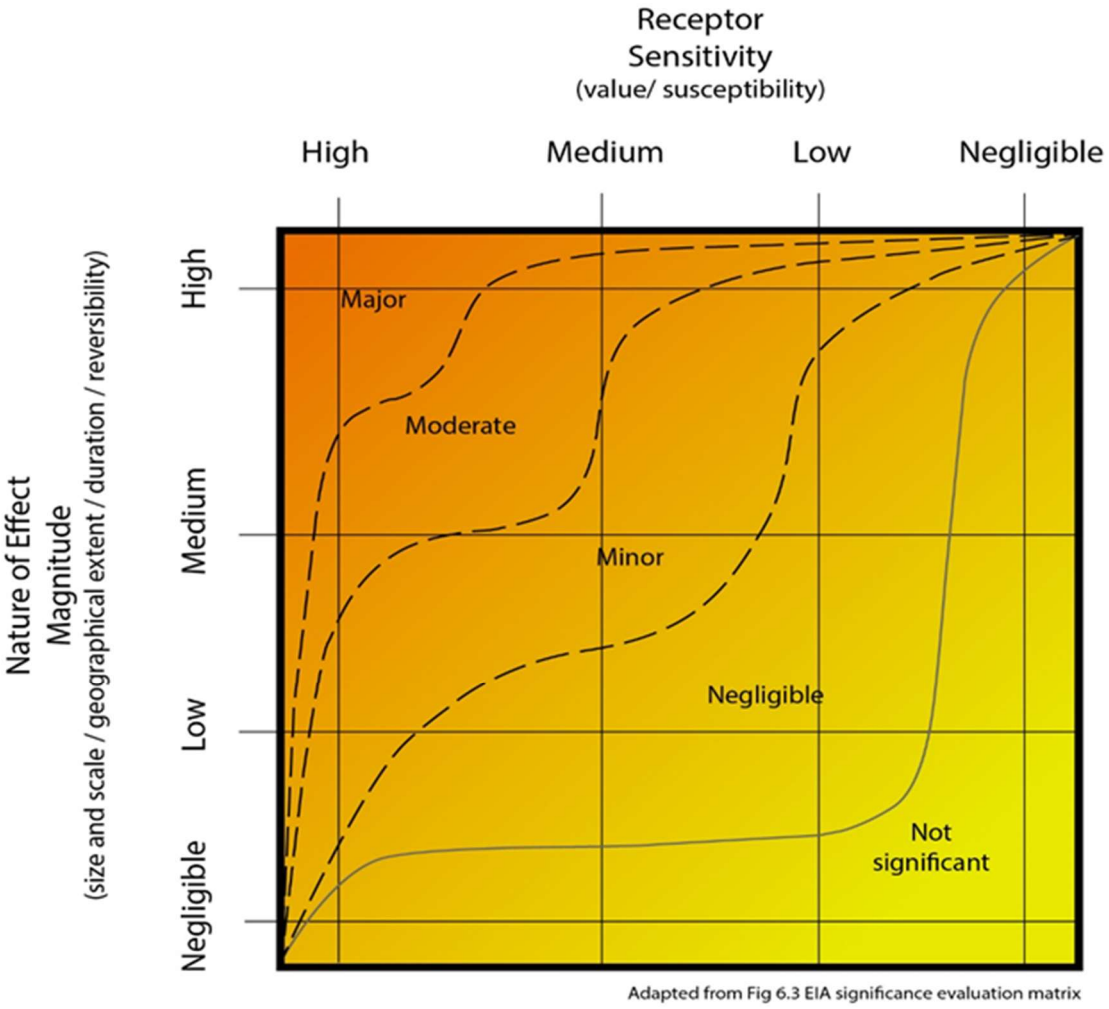
Paragraph 5.54 of GLVIA3 notes that significance of landscape effects is not absolute and "can only be defined in relation to each development and its specific location".

At opposite ends of the spectrum GLVIA3 notes that:

- major loss or irreversible negative effects, over an extensive area, on elements and/or aesthetic and perceptual aspects that are key to the character of nationally valued landscapes are likely to be of the greatest significance;
- reversible negative effects of short duration, over a restricted area, on elements and/or aesthetic and perceptual aspects that contribute to but are not key characteristics of the character of landscapes of community value are likely to be of the least significance and may, depending on the circumstances, be judged as not significant; and
- where assessments of significance place landscape effects between these extremes, judgements will be been made about whether or not they are significant, with explanations of why these conclusions have been reached.

As detailed above in Table 6.8 the level of overall effects are described as major, moderate, minor or negligible. Each of these categories covers a broad range of effects and represents a continuum or sliding scale as illustrated in the diagram below, which is adapted from the significance evaluation matrix in IEMA's report, The State of Environmental Impact Assessment Practice in the UK. Although this diagram is useful in that it demonstrates that there is a gradual transition both within and between the categories, the two axes are not necessarily evenly weighted and the diagram should be only employed as a guide to inform the assessment.

Adapted from Fig 6.3 EIA significance evaluation matrix



Adapted from Fig 6.3 EIA significance evaluation matrix

The final decision on the level of effect and therefore significance ultimately relies on professional judgement which has to be supported through clear and transparently explained text. Within the EIA, effects described as moderate or above will be classified as significant.

Residual Effects

Residual effects are those effects which will persist after any further mitigation measures (i.e. not embedded) have taken effect. Long-term residual effects of the proposed development are typically those which would remain after a minimum fifteen years. When assessing landscape and visual effects this includes the establishment of any planting within the design and mitigation proposals and further growth of existing vegetation.

Viewpoints and Photography

To illustrate the nature and extent of the potential landscape and visual effects arising from the proposed development, a series of viewpoint locations will be selected to demonstrate the visual context of the site and study area from a range of publicly accessible receptors within the study area of 2 km from the proposed route. In addition, viewpoints may be selected from outside the study area if they are from a particularly sensitive location or higher ground where the development may be perceptible. Each viewpoint will be visited and a photographic record taken.

As explained in GLVIA3 (para 6.19), viewpoints are selected to be either representative of the view experienced by different groups of people, to be specific to a particular location, or to demonstrate a particular effect. The selection will take account of several factors, including:

- the accessibility to the public;
- the potential type, relative number and sensitivity of the viewers who may be affected;
- the viewing direction and distance (short, medium and long distance);
- whether the view is static or part of a sequential view along a route;
- the view types (glimpsed, framed or panoramic); and
- the potential for cumulative views of the proposed development in conjunction with other similar proposed developments.

It should be noted that the selected viewpoints are not intended to be representative sample of all the visual receptors but are deliberately biased to be representative of the most sensitive visual receptor groups – namely residential areas and valued landscapes or sites.

No access to private land will be sought and the assessment will therefore be based on a best assumption from publicly accessible locations.

Wherever possible, viewpoints will be selected in places where they represent several different receptor groups (e.g. on the edge of a settlement where a footpath leaves the village; at a car park or picnic site on promoted footpath, or at a trig point in an area of Open Access Land).

As wood pole overhead lines do not require any artificial lighting, and construction is anticipated to take place during normal working hours, no significant effects arising from lighting are anticipated. Therefore, a night-time visual assessment and photography will not be undertaken or included in the EIA.

The viewpoints will be agreed in conjunction with planning officers at South Lanarkshire Council and other stakeholders as required.

All viewpoint photographs will be taken in accordance with the Landscape Institute's (LI) Advice Note 06/19 ‘Visual Representation of Development Proposals’.

In some locations the assessment of visual effects will be supported by the production of wirelines or verifiable photomontages. These will help to illustrate the scale of the proposals within the view and to assist the assessment process. Wirelines and photomontages will not form the basis of the assessment but will be illustrative, with locations chosen to illustrate the proposed scheme to the public and stakeholders and highlight specific issues.

Likely locations for viewpoints to be included in the EIA are presented on Figure 6.6 and listed below:

VP1: SL174 (right of way), approximately 1.8 km south of the proposed Kennoxhead connection point;

VP2: A70 / CL/3455/1, near Carmacoup Farm. In addition to the A70 and core path, the viewpoint should be representative of residential receptors Viaduct Cottage and The Bungalow;

VP3; Local road approaching Glespin (location afford long-distance panoramic views);

VP4: A70 / Glespin;

VP5: CL/3451/1, Hazelside (residential property);

VP6; Common Hill, CL/3461/1 (although on core path accessibility needs checking as within Hagshaw Hill Windfarm);

VP7: Arkney Hill, CL/3457/1;

VP8: Station Road, near Douglas substation (residential receptors);

VP9: Douglas (south);

VP10: Douglas (north), Earl of Angus Statue, CL/3331/1;

VP11: CL/5735/3, West Toun/Westerhouse (residential properties);

VP12: Bankend, CL/5192/4;

VP13: Coalburn (south);

VP14: Bellfield;

VP15: CL/3310/1 (west of Coalburn);

VP16: Coalburn (north);

VP17: local road leading to Coalburn;

VP18: Coalburn Road, Glaikhead (residential property);

VP19: Coalburn Road, Johnshill Farm (residential property);

VP20: Auchlochan;

VP21: New Trows Road;

VP22: southern end of Lesmahagow (visibility of OHL is unlikely);

VP23: B7078, Auldtonheights (visibility of OHL is unlikely); and

VP24: B7078 (east of Coalburn substation).

Cumulative Impact Assessment

Cumulative landscape and visual effects are the likely additional landscape and visual effects to arise from the proposed development when considered in conjunction with other relevant development proposals.

Paragraph 7.2 of GLVIA3 identifies cumulative landscape and visual effects as those that, "…result from additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other development (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the reasonable future".

Paragraph 7.5 of GLVIA3 acknowledges that cumulative landscape assessment is complex and approaches to it are evolving, noting also that the "challenge is to keep the task reasonable and in proportion to the nature of the project under consideration……It is always important to remember that the emphasis in EIA is on likely significant effects rather than on comprehensive cataloguing of every conceivable effect that might occur…".

The assessment of cumulative landscape and visual effects will follow a similar methodology to that described above for the main assessment, in that the degree of effect is determined by combining an evaluation of the sensitivity of the landscape/visual receptor and the magnitude of change. The resulting effect will be described in the ES as major, moderate, minor or negligible. The difference from the main landscape and visual assessment is that the cumulative assessment considers the magnitude of change which would potentially arise from multiple developments.

Defining a Study Area

The study area for the cumulative assessment will take account of other proposed developments, which are either consented or under construction. If necessary, the zones of visual influence for each development within the cumulative assessment will be overlaid to produce a composite map showing areas from where multiple developments are likely to be seen. Where sufficient information is not available for the other developments then reasonable assumptions and judgments will be made. Theoretically, the areas where the effects of the different developments overlap are those which would potentially experience cumulative landscape and/or visual effects. The larger the extent of the overlap, the greater the degree of cumulative effect likely to be experienced.

6.4 Likely Significant Effects

Construction

The most immediate effects arising from construction of the proposed development would be those associated with access and clearance of the line corridor. Landscape pattern can be affected by the felling of individual mature trees, woodland, shelterbelts or screen planting as these often provide the landscape with a distinctive character or local identity, however outside of small areas of commercial forestry the open moorland landscape allows for potential tree loss to be minimised. Wayleave corridors are required when a line passes through a wooded area and the straight and linear nature of these can be visually intrusive.

Construction of the proposed overhead line would take approximately 12 months, but this is likely to be phased across the length of the route, with works in any one pole location taking approximately 1 – 2 days. The potential effect of constructing the proposed OHL would be almost immediate.

Removal of trees is normally regarded as a long-term effect. Creation of new access tracks, construction compounds and storage areas, and hardstandings may affect local landscape character, although in most instances such effects would be temporary as tracks and compounds would be reinstated upon completion of the works.

Due to the temporary nature of the construction works, and the anticipated limited tree loss outside areas of commercial forestry, it is not anticipated that any construction effects would be assessed as being significant.

Operation

The main effects of the proposed overhead line during its operational life would be the presence of additional wood pole structures within the countryside. Once constructed, however, there would be no moving parts or lighting and the line would only require very occasional visits by SP Energy Networks for maintenance and repair.

The main features of the overhead line which would give rise to landscape and visual effects would be the wood poles, their appearance, height and spacing. As with any external material, wood poles are susceptible to weathering and consequent colour variations. The colour of the poles at the time of construction would be dark brown but this would fade over time to a noticeably lighter silver-grey. The rate of colour change would depend on the prevailing weather conditions and to some degree on the type of timber and timber treatment that were used. Over time these changes would tend to reduce the perceptibility of elements viewed above the skyline but may increase the visibility of structures when viewed against a dark background such as coniferous plantation. The metal bracing and the conductors would be constructed from aluminium, which is initially shiny but tends to dull over time to dark matt silver.

With respect to likely visual effects the routeing process has sought to avoid likely significant effects on visual receptors and has avoided the main residential settlements such as Douglas and Coalburn as far as possible.

The findings of the surveys undertaken to date have led to the identification of the following locations, which are considered sensitive and will require particular consideration in the ongoing iterative detailed design and assessment process:

- the Douglas Valley SLA, with potential for landscape effects on the character of the former designed landscape, in particular concerns about adding to, or creating, a ‘wirescape’ close to Douglas substation;
- localised areas of open moorland which could potentially afford long distance views of the OHL;
- residential properties at Carmacoup, in particular Viaduct Cottage and The Bungalow;
- residential properties on Coalburn Road, in particular Glaikhead and Johnshill Farm;
- core paths CL/3455/1, CL/3457/1, SL103 (right of way) and CL/3310/1, which the proposed route crosses; and
- core paths CL/3453/1, CL/3452/1, CL/3344/1, CL/5735/3, SL117 (right of way), CL/5192/1, CL/5193/2, SL151 (right of way), CL/3311/1 and SL118 (right of way), to which the proposed route is in close proximity and/or runs adjacent to.

Summary

The assessment of landscape and visual effects will take into account the construction, operation and decommissioning phases. Effects would be likely to arise from the

appearance, height and spacing of the poles, and the any subsequent landscape losses and intrusion on visual amenity. It is likely that any direct effects on the landscape in terms of tree or vegetation loss would occur as part of the construction phase, though these losses would be minimal and locally contained within the construction corridor, access areas and construction compounds. Careful routeing and subsequent micrositing of poles will assist in further limiting these potential losses.

The landscape assessment will consider both the localised effects on the landscapes immediately adjacent to the proposed development, and to the wider landscape context. Consideration will be given to the sensitivity of the local landscape through a sensitivity analysis based on Landscape Character Types identified in the SNH Landscape Character Assessment. Landscapes and features that add value and character to the landscape and/or the experience of the landscape, including locally valued landscapes such as Douglas Valley SLA will also be considered.

Visual effects deals with the effects of change and development on the composition of views available to people, and their visual amenity. Receptors includes local communities where views contribute to the landscape setting enjoyed by residents in the area, road users and people using recreational routes, features and attractions.

Particular consideration will be given to residential properties within 200 m of the proposed route as part of the overall visual impact assessment, however a separate residential visual amenity will not be undertaken for the reasons detailed in paragraphs 6.3.12 – 6.3.17.

The assessment of visual effects will consider the construction and operation phases. Visual effects would be likely to arise from the appearance, height and spacing of the poles, and any subsequent landscape losses.

Proximity to the proposed development, the extent of the view of the proposed development and the presence of any intervening screening all affect the likely significance of effect on visual amenity. As such, receptors close to the line, those with a wide, or a sky-lined view or with a view of multiple poles, etc., are most likely to experience significant effects. A viewpoint analysis, conducted from publicly accessible viewpoints representative of views from a variety of different receptors, will be used to inform the assessment.

Consideration will also be given to cumulative effects resulting from landscape changes arising from the proposed development and other similar proposed developments, which could result in an overall change to the key characteristics and overall character of the landscape.

Consideration will also be given to cumulative visual effects which can occur when the visual effects resulting from other developments combine with the effects from the proposed development, with an overall greater effect on receptors.

At this stage the likelihood of significant landscape or visual amenity effects cannot be ruled out and assessment of landscape and visual amenity effects should be included within the EIA.

6.5 Issues Scoped Out

During construction there may be temporary and minor alterations to the landform associated with cabling works, pole excavations, access tracks (if required) and establishment of temporary construction compounds. There may be temporary damage to vegetation during the construction phase which could affect landscape pattern and land cover. However, these impacts are considered to be negligible with no potential for significant effects on landscape character or visual amenity. Therefore, the assessment would not propose to address construction impacts in detail.

7 GEOLOGY, HYDROGEOLOGY AND HYDROLOGY

7.1 Introduction

This section considers the potential effects the proposed development could have on the geology, hydrogeology, hydrology and soil receptors during construction and operation.

7.2 Baseline Conditions

Important features of relevance to geology, hydrogeology, hydrology and soils within and adjacent to the proposed route are shown in Figures 7.1 to 7.4.

7.2.1 Geology

7.2.1.1 Bedrock geology

The bedrock geology is dominated by Carboniferous strata. The geology of the area is complex, consisting mainly of rocks from the Scottish Coal Measures, the Clackmannanshire Group, the Strathclyde Group and the Inverclyde Group. The main rock formations are characterised by cyclic sequences of sandstones, siltstones and mudstones with interbeds of ironstone, seatearth, limestone and coal.

The area shows considerable faulting and formation of basin fold structures.

The area has a long history of mining activity. This will be addressed in Section 8.

7.2.1.2 Superficial geology

The superficial geology is dominated by Quaternary diamicton till, consisting of mixed clays, silts, sands and gravels. Some minor glaciofluvial and alluvium deposits are present within the area. Some areas of discontinuous peat deposits are recorded across hill slopes and in isolated lowland areas.

7.2.2 Soils

The National Soil Map of Scotland identifies the main soil types as gleys, podzols, brown forest soils, and blanket and basin peats. Gleys form the dominant soil type across much of the preferred route corridor. Some podzols are identified, notably near the southern end and in the northern half of the corridor. Brown forest soils mainly occupy the lower-lying areas in river valleys. Basin and blanket peats are limited in area, with some presence in the northern part of the corridor and a small section towards the southern end.

Areas of carbon-rich soil, deep peat and peatland habitats are mapped by SNH (Scotland's Soils, 2016). The top two classes, 1 and 2, taken together identify the nationally-important resource. The classes are defined as follows:

- **Class 1**: Nationally important carbon-rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value.

- **Class 2**: Nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential.

Two areas of Class 1 peat are located within or immediately adjacent to the preferred route corridor. These are Coalburn Moss, immediately east of the route at the northernmost end, and an area of peatland immediately north-west of Coalburn village. This peatland is located across the route corridor.

Peat deposits are indicated on Figure 7.1.

7.2.3 Hydrogeology

The bedrock underlying the preferred route corridor is largely classed as a Moderate productivity aquifer with fracture and intergranular flow. Two small areas are identified as High productivity, relating to former mine workings, and two areas as Low productivity.

Where present, superficial deposits around the preferred route corridor are classed as Low productivity aquifers. The two main rivers, the Douglas Water and the River Nethan, both have High productivity aquifers associated with alluvial deposits in their main channel areas but these do not intersect the identified route option.

The Groundwater Vulnerability (Scotland) map produced by BGS classifies the site to be Class 3-4. Vulnerability Class 4 is described as 'Vulnerable to those pollutants not readily adsorbed or transformed', and Class 3 is described as 'Vulnerable to some pollutants; many others significantly attenuated'. This indicates that the groundwater present within the project area has a moderate to high level of vulnerability to individual events where potentially contaminating substances are involved.

SEPA's water environment hub (2014) identifies three groundwater bodies associated with the preferred route corridor. Details are provided in **Table 7.1**.

Table 7.1 Summary of groundwater body status

WATERBODY NAME & ID	STATUS	IDENTIFIED PRESSURES
150673 Lesmahagow	Overall: Good Water flows and levels: Good Water quality: Good	None
150477 Douglas Coalfield South	Overall: Poor Water flows and levels: Good Water quality: Poor	Legacy pollution from mining or quarrying
150545 Douglas Coalfield North	Overall: Poor Water flows and levels: Good Water quality: Poor	Legacy pollution from mining or quarrying

7.2.4 Hydrology

The main watercourses in relation to the preferred route corridor are the Douglas Water in the southern part of the area, the Poniel Water in the centre and the Nethan Water in the northern part. Some of the watercourse channels are distinctly incised; this is notable particularly for the Nethan Water and Poniel Water channels and for some of the tributaries to the Douglas Water.

SEPA's water environment hub (2014) identifies key details in relation to these three waterbodies. Details are provided in Table 7.2, and key surface water features are shown on Figure 7.3.

Table 7.2 Summary of surface waterbody status

WATERBODY NAME & ID	STATUS	IDENTIFIED PRESSURES
10094 Douglas Water u/s Parkhall Burn	Overall: Good Access for fish migration: High Water flows and levels: High Physical condition: Good Freedom from invasive species: High Water quality: High	None
10097 Poniel Water	Overall: Moderate Access for fish migration: High Water flows and levels: High Physical condition: Good Freedom from invasive species: High Water quality: Moderate	Unknown pressure on water quality
10080 Nethan Water	Overall: Moderate Access for fish migration: High Water flows and levels: High Physical condition: High Freedom from invasive species: High Water quality: Moderate	Rural source diffuse pollution Waste water disposal

7.2.4.1 Private water supplies

Several private water supplies (PWS) have been identified, notably in the southern half of the area. One PWS is located at Kennoxhead and lies within the preferred route corridor. A further ten PWS are located within 1 km of the route corridor. All identified PWS will need to be inspected and a risk assessment undertaken. Key PWS are shown on Figure 7.4

7.2.4.2 Flood risk

SEPA's Flood Map (2020) indicates that there is limited flood risk within the route corridor 1 km buffer. Flood risk is largely restricted to watercourse channels, notably the flood plain around the lower Douglas Water. Some localised areas of surface water flooding are noted, mainly within the restored opencast coal workings south of Coalburn.

7.2.5 Designated Sites

There are seven areas designated for features related to geology, hydrogeology and hydrology within 5 km of the preferred route corridor. Details are provided in Table 7.3 and are shown on Figure 7.2.

Table 7.3 Sites designated for features of geological, hydrogeological or hydrological importance

NAME & DESIGNATION	QUALIFYING FEATURES	CLOSEST DISTANCE FROM PROPOSED ROUTE
Kennox Water SSSI & GCR	Dinantian of Scotland	Adjacent, south-east
Coalburn Moss SAC & SSSI	Lowland active raised bog, degraded raised bog	Adjacent, north-east
Muirkirk Uplands SSSI	Moorland, acid grassland and blanket bog, fossil-bearing rocks	1.2 km, west
North Lowther Uplands SSSI	Mineralogy of Scotland	1.8 km, south-east
Ree Burn & Glenbuck Loch SSSI & GCR	Silurian stratigraphy	2.1 km, west
Shiel Burn SSSI & GCR	Silurian to Devonian chordate fossils	2.1 km, west
Birkenhead Burn SSSI & GCR	Silurian to Devonian chordate fossils	3.7 km west

7.3 Additional Baseline Information and Collection Methods

A walkover survey to groundtruth baseline data is planned. This will collect visual summary information relating to the preferred route corridor. Some targeted peat depth surveying is likely to be needed for those areas of the route corridor identified as crossing areas of peatland.

7.4 Likely Significant Effects

The proposed development has limited potential to give rise to effects on the geology, hydrogeology or hydrology, with effects limited to localised and temporary construction-related impacts. The key effects are as follows:

- excavation, temporary storage, backfilling and compaction of soils during wood pole installation works;
- temporary alteration or obstruction to natural surface drainage patterns resulting from excavations and creation of temporary tracks and hardstanding areas;
- temporary disturbance to natural groundwater flow, including effects on peatland hydrology, through excavation works and creation of temporary tracks and hardstanding areas.
- physical damage to watercourse bed or banks resulting from use of machinery in close proximity to watercourses;
- pollution of surface watercourses from sediment release during excavation works and creation of temporary tracks and hardstandings; and
- pollution of surface or groundwater from spills or plant breakdown.

Please note that effects on groundwater-dependent terrestrial ecosystems will be considered with the ecology assessment.

The potential effects on water environment features during construction will be strictly controlled in accordance with a detailed CEMP and SEPAs Guidelines for Pollution Prevention (GPPs). SPEN aims to locate wood poles at a sufficient distance from watercourses and other key sensitive water environment receptors to avoid, or minimise, impacts on water quality.

7.5 Issues Scoped Out

Foundation works for wooden poles have a small footprint. Should temporary tracks be required these would be constructed to standard good practice working methods and would comply with legislation in the form of the general binding rules set out in The Water Environment (Controlled Activities) (Scotland) Regulations 2011. Given the short length of any track required, it is assessed that there would be no likely significant effects on water quality associated with the construction stage. No significant long term, or permanent effects on the water environment have been identified.

8 MINING

8.1 Introduction

This section considers the potential effects the proposed development could have on former mine workings along the proposed route and in the surrounding area. Baseline Conditions

8.2 Baseline Conditions

8.2.1 Mining and Mineral Rights

The proposed development is located in an area with a long history of mining and mineral extraction in relation to coal, peat, sands and gravels, limestone, fireclay and ironstone. Evidence of mining includes restored and unrestored former opencast mines, shafts and adits from deep mining, and spoil bings in various localities. The main areas of mineral extraction are shown on Figure 8.1, with the known mine entry locations on Figure 8.2.

The following sites are known to have had extensive workings within the 1 km route buffer:

- Dalquhandy opencast site, which occupies much of the land to the south and west of Coalburn. The site occupies an area of approximately 10 km^2 and was operated for extraction of coal. The site is no longer active and has been fully restored. The preferred route corridor crosses the site footprint.
- Glentaggart opencast site, which occupies the land between the Douglas Water and Kennoxhead. The site was operated to target coal within the Scottish Coal Measures. It has recently been restored and is entering the final stages of aftercare. The preferred route corridor crosses the site footprint.
- Former underground coal workings in the southern part of the site, around Glespin, have left considerable numbers of shafts and adits in this area. Part of the route corridor near Glespin may be affected.
- Former underground coal workings in the northern part of the site, around Coalburn, have left considerable numbers of shafts and adits in this area. Part of the route corridor near Coalburn may be affected.
- Auchlochan No 9 Bing, just north of Coalburn, has been identified as having potential for reclamation and is considered to be an active site. Auchlochan No 9 Bing lies partly within the preferred route corridor.

Bellfield Bing, immediately east of Coalburn, has planning consent for reclamation and redevelopment as residential housing. This bing is located outwith the preferred route corridor.

8.3 Additional Baseline Information and Collection Methods

A walkover survey to groundtruth baseline data is planned. This will collect visual summary information relating to the preferred route corridor, including up-to-date information regarding restoration of various former mine workings and coal bings.

8.4 Likely Significant Effects

Careful design of the final route would minimise the potential effect of former mine workings on the development. This would require to be confirmed before construction by targeted ground investigation, particularly in areas of restored opencast workings, to ensure that wood pole foundations are sufficiently robust. It is anticipated that shafts and adits can be avoided by careful positioning of infrastructure.

9 FORESTRY

9.1 Introduction

This section considers the potential effects the proposed development could have on forestry along the proposed route and in the surrounding area.

9.1.1 Overview of SPEN's Route Requirements

The swathe required for the proposed 132 kV overhead line is 30 m on either side of the line i.e. a total swathe width of 60 m.

This swathe width is required to provide permanent protection of the conductors from falling trees. The reason why this distance is necessary, is that the 'top height' (average height of the 100 largest girth trees per ha) at the age when a plantation reaches financial maturity (53yrs) is around 28 m. This is based on Yield Class 18[10], which confirms that the plantation is capable of producing 18 m^3 of timber per annum on average (until it reaches the point of maximum mean annual increment), which is the highest Yield Class of the conifers along this route.

9.1.2 Overview of the Preferred Route from a Forestry Perspective

The preferred route avoids all the major woodland blocks and so the amount of tree felling will be very minimal. However, the route will still run through two sections of commercial forestry plantations and one small area of scrub. It will also cross a few hedgerows in the most northerly section where several individual trees will need to be felled. In the northern section (to the North of Coalburn), there are also quite a few smallish blocks of very young trees; however, it is expected that the powerline can be sited in the open areas between or beside the plantings and therefore avoid any clearance of these trees.

9.2 Baseline Conditions

9.2.1 Baseline Assessment Methodology

The data for the desk-based baseline assessment was collected from:

- Forestry Commission National Forest Inventory Woodland;
- Scottish Forestry Map Viewer;
- Ancient Woodland Inventory Scotland; and
- aerial photographs.

An analysis of the initial target area was carried out from the Forestry Commission National Forest Inventory Woodland and this showed that the area was comprised of the following:

[10] Forestry Commission (1981) *Yield Models for Forest Management*

Category	Area (ha)	%
Assumed woodland	341.84	11.14
Broadleaved	148.93	4.86
Conifer	1953.50	63.69
Felled	274.50	8.95
Grassland	33.90	1.11
Ground prep	72.89	2.38
Low density	11.91	0.39
Mixed mainly broadleaved	6.65	0.22
Mixed mainly conifer	17.93	0.58
Road	7.85	0.26
Shrub	1.16	0.04
Windblow	15.11	0.49
Young trees	181.15	5.91
Total	3067.32	100

This confirmed that commercial conifer plantations made up just under 64% of the woodlands within the target area and the information from the Scottish Map viewer conformed that they were all being managed under formal forestry management plans.

The ancient woodland inventory of Scotland confirmed that that there was a significant area of Plantations on Ancient Woodland Sites (PAWS) but only two separate ancient semi-natural woodlands (ASNW).

The larger of the two ASNW's was Windrow Wood, which is 37.3ha and situated to the SW of Douglas

The other was Millers Wood, which is 12.33ha and is located immediately to the south of Windrow Wood. This wood is also an SSSI.

9.3 Additional Baseline Information and Collection Methods

Following on from the initial desk study, additional baseline information was obtained from:

- a field survey;
- mensuration data;
- discussions with Scottish Forestry; and
- the Carmacoup Forestry Plan.

A full site assessment of the woodlands was carried out in June 2019 to establish the effect on the woodlands of the various route options that were being considered at the time. The information from the desk study and gained from the site visit enabled an assessment to be made of the best route to minimize the effect on the woodlands. Reports were produced and included in the Routeing Consultation Document Baseline

Environmental Assessment, covering both the study area and the Buffer Zone and Section 8.

Two meetings with Scottish Forestry have been held. The first took place on 18 June 2019 to discuss the pros and cons of the various route options and to obtain their views from a Scottish Forestry perspective. The second meeting took place on 15 January 2020 to discuss the preferred route.

In a letter to RSK dated 17 March 2020, Sasha Laing detailed Scottish Forestry's policy in relation to Development Planning and stated the following:

> Scottish Forestry has very much welcomed the ongoing discussions with SPEN and RSK on the Kennoxhead to Coalburn routing study and potential route options, since June 2019. We were pleased to note that the final route proposed is the same as that discussed at our most recent meeting and avoids as much woodland loss as possible. With this in mind Scottish Forestry have no further comments to add at this time.

The preferred route avoids all the major woodland blocks and so the amount of tree felling will be very minimal. However, the route will still run through two sections of commercial forestry plantations, one of which is a fully stocked and productive plantation and the other is of variably stocking and productivity. It will also run through a small area of scrub and across a few hedgerows towards the northern end where several individual trees will need to be felled.

9.3.1 Plantation at Northern End of Section A1 (see Figure 9.1, Appendix 1)

This section is part of Carmacoup Forest, which is managed on a commercial basis. The total area of the forest is 310.39ha, but only 3 of the 17 Forest Plan compartments (15, 16 and 17) in the NE corner of the woodland will be affected.

The SW half of the preferred route is comprised of 32 year old Sitka Spruce and the NE half is mostly comprised of 7 year old Sitka spruce. There is also a significant area of mineral workings in the eastern corner comprised of bare land, low vegetation (mainly heather) and no trees.

The Carmacoup Forest Plan includes the planned felling of the 32yr old Sitka spruce in 2030. So this means that any trees felled before 2030 to make way for the power line will be felled prematurely. The average yield class of the Sitka spruce is estimated to be 18 provided it is managed properly.

The Windthrow Hazard Class (WHC) of Carmacoup Forest averages WHC 4 and there has been windblow in the past in compartments 1 & 2. The felling needed for the power line is however on the other side of the woodland and although this will create a new woodland edge, it will be protected from the prevailing south westerly winds, so it is not thought that it will be particularly vulnerable to windblow.

The route is also likely to include a section of the 7 year old Sitka Spruce but there are no trees on the area of mineral working in the eastern corner.

The area of Carmacoup Forest through which the preferred route will pass is made up as follows:

Land Use	Area (ha)
32yr old Sitka spruce	26.976
7yr old Sikta spruce	7.592
Mined area	4.757
Total	39.325

The actual route of the electricity line is not known at this stage, but if a 60 m swathe is needed, the area affected will amount to approximately 4.32 hectares. If the route runs close to the edge of the woodland, then the area required would reduce by up to 50%.

As the actual route is not known, it is not possible at this stage to carry out a detailed analysis of the trees affected. It is however assumed that the route will need to run through the 32yr old Sitka spruce plantation and this will involve the felling of around 300 m^3 of timber per hectare.

9.3.2 Plantation to the West of Coalburn (Figure 9.2, Appendix 1)

Although this is a conifer plantation, the trees are of variable quality, as the site is old opencast workings. Because of this, there are areas of stunted trees and some large open areas. The tree species is a mixture of Sitka spruce and Japanese larch and some small areas of broadleaves. The Japanese larch are doing better than the Sitka spruce on this site. The site was planted in 1999 and so the trees are 20 years old.

The area of young trees within the preferred route is 16.43ha. Once the actual route of the powerline is known, it will be possible to calculate the exact area of trees that will need to be removed; however, it is likely to be somewhere in the region of 3ha. Once the exact route is known, we will also be able to calculate the total timber volume that will need to be removed, which is likely to be around 134 m^3 per hectare.

Due to the risk of windblow, this plantation is being managed on a no thin policy. The felling of the trees for the powerline is therefore expected to increase the risk of windblow, so it will be especially important to select a route that will minimize the amount of tree felled. With the amount of open space within the woodland, it should also be possible to align the route to take advantage of edge trees where possible and minimize the creation of new woodland edges.

9.3.3 Section to the North West of Coalburn (See Figure 9.3, Appendix 1)

The powerline will be situated to the West of the young plantations shown in the NE corner of the plan. There should be no need to clear any of the trees.

9.3.4 Section Leading Up to the Disused Dip (see Figure 9.4, Appendix 1)

The actual powerline needs to run between the two young plantations shown at the bottom of the plan and keep at least 30 m from the other young plantations as it

progresses towards the disused tip. This should avoid having to clear any of the young trees.

9.3.5 Disused Tip (Area of Scrub) (See Figures 9.5 and 9.6, Appendix 1)

To the north of Coalburn the preferred route passes between two young plantations and then through a disused tip to the east of Glaikhead. The Scottish Forestry map viewer categorises the trees present as upland birch native woodland (shown in green on Figure 9.5 below). However, it has established via natural regeneration and is not a planted and managed plantation. Due to the poor soil the trees are very variable and there is a considerable area of open space intermixed with the trees.

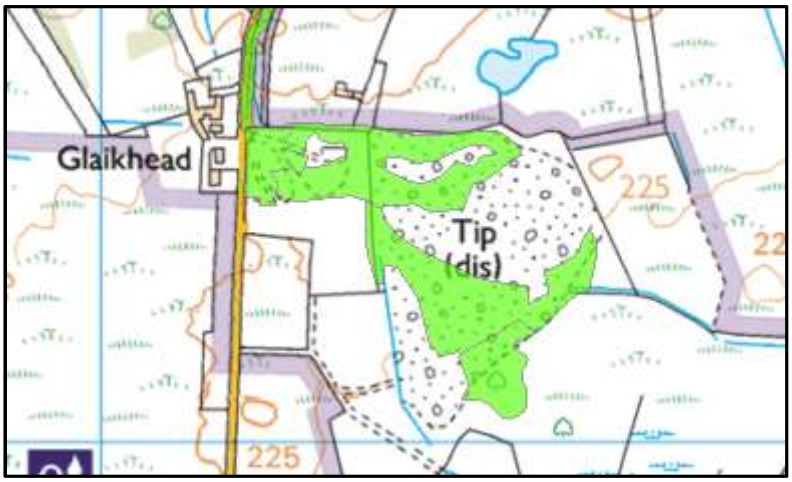


Figure 9.5 Disused tip (screenshot from the Scottish Forestry Map Viewer)

As can be seen in Figure 9.6, Appendix 1 this is effectively an area of scrub and it is debatable as to whether the area should count towards the compensatory planting (CP) requirement. The total area of scrub within the preferred route as it stands is 1.68ha, but the actual area that will need to be removed is c. 0.8ha

9.3.6 Section to the North of the Disused Tip (See Figure 9.7, Appendix 1)

This shows the preferred route running between two young plantations. There should be no need to clear any of the young trees

9.3.7 Most Northerly Section (Figure 9.8, Appendix 1)

North of the disused tip, the route passes between some young woodlands but none of this is likely to need removal as there is sufficient open space between them.

Towards the end of the previous section and in this most northerly section, however, there are about 6 rows of trees that the route will have to cross and this will require the removal of individual trees within the 60 m section. The exact number of trees can only be ascertained after the position of the powerline has been decided. After the required trees in this section are felled, it will be important to ensure that no works are carried out within the Precautionary Zone (PZ) of any retained trees. The PZ (i.e. the distance from the tree

that needs to be avoided) is calculated by measuring the circumference of the tree at 1.5 m above the ground and multiplying this by 4[11].

There are also two groups of young trees adjacent to the substation as shown on Figure 9.8 Appendix 1. The powerline route should avoid these if possible.

9.4 Likely Significant Effects

9.4.1 Compensatory Planting

The Scottish Government's policy on control of woodland removal: implementation guidance[12] states the following in relation to overhead powerlines:

> Mitigation measures must be fully assessed in the EIA Report and both on-site and off-site compensatory planting (CP) must form part of the assessment. All areas of woodland that need to be removed to directly accommodate the overhead line and associated structures (pylons, access tracks, roads, and ancilliary structures) will always be counted toward the net area of CP required.

Based on a swathe width of 60 m, and assuming that the scrub area needs to be included, the area of CP required is a follows:

Woodland	Area (ha)
Carmacoup Forest	4.32
Area west of Coalburn	3.00
Disused tip (scrub)	0.80
Total	8.12

If, however, the route runs along the edge of Carmacoup Forest, the area will reduce to around 6ha

These are rough figures only and will be amended once the exact route of the powerline is known.

9.4.2 Environmental Impact

The felling of the conifer trees could result in natural regeneration of some native birch trees in the cleared swathes. Natural regeneration would be considered a positive environmental effect[13] As they grow taller, they may need to be managed by SPEN, but taller trees along the outer edges of the swathes will not be a threat to network resilience as they are not expected to exceed 30 m in height.

[11] National Joint Utilities Group (2007) *NJUG Guidelines for the Planning, Installation and Maintenance, of Utility Apparatus in Proximity to Trees. Volume 4 Issue 2*

[12] Scottish Government (2019) *Policy on Control of Woodland Removal: Implementation Guidance*

[13] Forestry Commission (2017) *The UK Forestry Standard – The Government's Approach to Sustainable Forestry*

The main adverse environmental impact that needs to be considered is windblow. However, all new edges will be sheltered to some extent from the south westerly winds and wherever possible existing edge trees will be retained.

All broadleaved trees (mainly the individual trees in the northern section) will need to be checked for bat roosts before they are felled. The ecologists will be able to provide full support in this respect. If possible all felling should be carried out outside the bird nesting season (which is March to August). Again the ecologists will provide any required support in relation to this.

9.4.3 Mitigation

- The route through Carmacoup Forest will be chosen to minimize the amount of trees that need to be felled/cleared and if possible it will be located along the edge of the woodland so that the swathe only needs to be 30 m on one side of the powerline.
- The route through the woodland area to the west of Coalburn will be chosen to minimize the amount of woodland that needs to be felled. Due to the risk of windblow it is hoped that the route can also be aligned to retain as many edge trees as possible and minimize the amount of new woodland edge created.
- The impact on new plantations will be minimised as far as practicable.
- In all cases where the route runs close to retained individual trees (e.g. the rows of trees in the northern section), there will be no works within the PZ of any retained trees. It shouldn't be necessary to erect protective fencing, although the PZ should be marked in some way (e.g. with wooden stakes) before the works are started.
- The area of CP that will need to be created is likely to be around 6ha – 8ha depending on the final route plans. A suitable site will need to be sourced for this new woodland establishment.

9.4.4 Forest Management Implications

Early discussions will need to be held with the landowners to discuss the proposed felling and establish any opportunities for new planting within their land ownerships. Their forest management plans will need to be adjusted accordingly.

9.5 Issues Scoped Out

The assessment of effects on ecological and ornithological receptors as a result of woodland removal will be considered in the EIA as part of the Ecology and Ornithology assessments. Likely effects on landscape resource or visual amenity as a result of woodland removal will be considered as part of the LVIA.

10 RECREATION, TOURISM AND SOCIO-ECONOMICS

10.1 Introduction

This section considers the potential effects the proposed development could have on the recreation, amenity and tourism receptors during construction and operation of the OHL.

10.2 Baseline Conditions

10.2.1 Recreation

There are several Core Paths and Rights of Way in the central and north sections of the Study Area. These link Glespin, Coalburn and Douglas and pass through areas of plantation and forestry at several locations. Hollandbush golf club is adjacent to the OHL on the section of the preferred route between Coalburn and Coalburn substation. The recreation features in the study area are shown on Figure 10.1.

10.2.2 Tourism

Tourist facilities within the Study Area include:

- Hollanbush Golf Club;
- Coalburn Leisure Centre;
- Netherfield Alpacas;
- Earl of Angus Monument;
- Douglas Victoria Bowling Club;
- The Cross Keys Inn;
- The Scrib Tree; and
- Douglas West Community Woodland.

10.3 Likely Significant Effects

The potential for significant effects on the visual amenity of recreational and tourist receptors will be considered through the LVIA. The nature of the proposed development is such that, with the exception of very localised and short-term events during the construction phase, there would be no direct effects on recreation or tourism. Therefore, no further assessment is proposed as part of the EIA.

The proposed development would result in some local revenue generation through demand for accommodation providers, spend in local shops and material supplies. These socio-economic effects are likely to be negligible to minor on a local and regional scale so not considered to be significant. There could be individual secondary effects of displacement on local employers, i.e. the number of jobs accounted for by the loss of jobs elsewhere in the locality. These effects, should they occur, would be highly localised and

on an individual basis. As such there are not considered to be any significant effects on socio-economic conditions and these will no considered further within the EIA.

10.4 Issues Scoped Out

For the reasons outlined above, it is proposed that recreation, tourism and socio-economics are scoped out of the EIA.

11 LAND USE AND AGRICULTURE

11.1 Introduction

This section considers the potential effects the proposed development could have on land use and infrastructure receptors during construction and operation.

11.2 Baseline Conditions

11.2.1 Agricultural Land Use

In terms of its agricultural classification, the study area comprises:

4.1 – Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal.

4.2 – Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops.

5.1 – Land capable of use as improved grassland. Few problems with pasture establishment and maintenance and potential high yields.

5.2 - Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain.

5.3 – Land capable of use as improved grassland. Pasture deteriorates quickly.

6.1 - Land capable of use as rough grazings with a high proportion of palatable plants.

6.2 – Land capable of use as rough grazings with moderate quality plants.

6.3 – Land capable of use as rough grazings with low quality plants.

Urban – Urban.

Figure 11.1 shows the land capability classification for agriculture (published by the Scottish Government) across the study area.

11.2.2 Windfarms

The boundaries of several windfarms in the study area which are either in planning, consented or built are shown on Figure 3.1 and referenced in Section 3.2.

11.2.3 Cables and Overhead Lines

Several high voltage (HV), extra high voltage (HV), low voltage (LV) and transmission overhead lines are located within the study area. These include:

- EHV Cable (33 kV);
- EHV OHL(33 kV);
- HV Cable (11 kV);
- HV OHL (11 kV);
- LV Cable (230 V);

- LV Overhead Line (230 V);
- Transmission Cable (400 kV); and
- Transmission OHL (400 kV)

The EHV, HV and LV cables typically transmit 'distribution' voltages, which supply energy from the grid to an endpoint, such as commercial or industrial building. This should not be confused with the higher 'transmission' voltage that would be supplied by the proposed Kennoxhead OHL, which would move energy from a generating site to a substation.

11.2.4 Roads

The primary road within the Study Area is the A70 which traverses the west boundary of the Study Area from west to northeast. The A70 road is a major road which runs a total of 13 km through the study area from Glenbuck through Glespin and Douglas. A network of B Class, unnamed roads and tracks provide access throughout Coalburn, Douglas, Glespin Windfarms and other small settlements located throughout the Study Area.

The network of roads and tracks located throughout the Study Area are shown on Figure 1.1.

11.2.5 Housing Allocations, Planning Designations and Settlement Distribution

Residential properties are concentrated around Glespin in the south, Douglas in the southeast and Coalburn in the north. Further properties are located along the minor roads and tracks located throughout the Study Area.

A review of South Lanarkshire Local Development Plan 2 (approved May 2018) identified the following within the Study Area:

- A Strategic Economic Investment Area surrounding the John Dewar & Sons warehouse facility, Poniel.
- A Residential Masterplan site located to the southeast of Douglas.
- A Development Framework Area located to the east of Coalburn. This area should be used for the development of recreation, and amenity and residential use, to include the reclamation of Bellfield Bing.
- Glaikhead, Coalburn Road, planning permission in principle was granted in April 2017 for residential development on a site along the east side of Coalburn Road, at Glaikhead. The land was previously occupied by offices and industrial buildings associated with mining activities at the rear of the site at Auchlochan (planning reference CL/16/0468). An application by Hargreaves in April 2019 to renew this planning permission (planning reference: P/19/0454) was refused in May 2020. At the time of writing it wasn't clear whether an appeal would be lodged.

11.3 Likely Significant Effects

The proposed route crosses areas of rough grazing and some areas of forestry and woodland to the west of Coalburn and to the east of Glaikhead. The proposed wood pole line would have a small footprint is not anticipated to have a significant effect on land use

or agriculture. It is noted that there is a need to provide further detail with the application on tree felling proposals. Woodland impacts will be considered through the provision of a technical report to detail to areas of woodland removal proposed, and the potential effects on existing forest design plans. The information provided will take account of The Scottish Government's Policy on Control of Woodland Removal[14].

11.4 Issues Scoped Out

Overall, the proposed development would not impinge on land owner choice over the type or intensity level of land operations, and would not require any significant management changes. As such, no further assessment of land use or infrastructure is proposed as part of the EIA. The assessment of effects on ecological and ornithological receptors as a result of woodland removal (e.g. Carmacoup Forest) will be considered in the EIA as part of the Ecology and Ornithology assessments. Likely effects on landscape resource or visual amenity as a result of woodland removal will be considered as part of the LVIA.

[14] Forestry Commission Scotland (2009) The Scottish Government's Policy on Control of Woodland Removal, http://scotland.forestry.gov.uk/images/corporate/pdf/control-of-woodland-removal.pdf

12 AIR QUALITY AND CLIMATE CHANGE

12.1 Introduction

This section considers the potential effects the proposed development could have on air quality and climate change during construction and operation.

12.2 Baseline Conditions

There are no Air Quality Management Areas (AQMAs) in the study area. Residential properties in within the study area (Figure 1.1.) represent air quality receptors. The majority of residential properties are concentrated within the villages of Glespin, Coalburn, Douglas, and Auchlochan. However, there are also isolated dwellings and farm buildings within the study area.

12.3 Potentially Significant Effects

12.3.1 Air Quality

The proposed development has limited potential to impact the Air Quality; there is a potential to give rise to some localised and temporary construction related air quality impacts associated with dust (e.g. passage of vehicles along access tracks) and construction plant and traffic exhaust emissions. However, the nature of the construction activities is that impacts on air quality would be relatively short term (i.e. limited to the construction period) and intermittent, and unlikely to give rise to potentially significant adverse effects.

The potential for nuisance effects on residential or recreational amenity would be limited and would be controlled in through implementation of a CEMP.

There is no potential for significant operational air quality impacts.

It is unlikely that the impacts described above would have a significant effect on local air quality

The potential for nuisance effects on residential or recreational amenity would be limited and would be controlled in through implementation of a CEMP.

12.3.2 Climate Change

In the context of the EIA process climate change is considered both in relation to the contribution of the proposed development to increasing or decreasing gaseous emissions with global warming potential (GWP), and in relation to climate change adaptation.

Adverse impacts associated with the proposed development will be limited to temporary and short-term emissions of exhaust gases from vehicles and construction plant, the potential for the release of carbon dioxide as a result of dewatering and exposing peat and peat soils during the construction stage, and the reduced absorption of carbon dioxide from the atmosphere due to tree felling. None of these sources are considered likely to be significant in terms of GWP.

With regard to climate adaptation, consideration will be given to the potential implications of climate change on the OHL design and the design of support structures (e.g. design for increased extreme adverse weather); however, no potential significant effects have been identified.

12.4 Issues Scoped Out

The proposed development would not result in significant adverse effects on air quality or climate change during the construction or operational phases. The proposed development would contribute to connecting renewable electricity generation capacity to the transmission network and potentially enhancing electricity security, in turn displacing emissions associated with fossil fuel-based electricity generation elsewhere. As such, this issue is scoped out of the EIA and no assessment of air quality and climate change is proposed as part of the EIA Report.

13 AMENITY AND HEALTH

13.1 Introduction

This section of the scoping report is included to consider factors considered to fall under the heading of population and human health, as referenced under regulation 4(3) of the EIA regulations. Given the nature of the proposed development, the potential and perceived effects on population and health include:

- nuisance related to noise and vibration during construction and operation;
- nuisance related to construction traffic;
- health effects related to electric and magnetic fields (EMFs) during operation; and
- residential visual amenity effects on residential properties during operation.

13.2 Baseline Conditions

The proposed development would be located within a largely rural area. The main settlements in the area are the villages of Glespin, Douglas and Coalburn. Individual dwellings are also spread along the length of Coalburn Road, which creates the potential for interaction with the proposed development. Given the small scale of infrastructure involved the magnitude it is considered unlikely that there will be any impacts.

13.2.1 Noise and Vibration

For the purpose of a worst-case assessment, a conservative estimate of 20 dB(A) in dry conditions has been used to represent the current background noise levels. Properties along the preferred route corridor are considered to be receptors. No significant vibration sources have been identified.

13.2.2 EMF

EMFs are produced by electric charges. Exposure guidelines have been developed by the International Commission on Non-Ionising Radiation Protection (ICNIRP) to ensure the protection of human health from dangerous levels of occupational exposure and public exposure. These guidelines have been adopted by Public Health England (PHE) who the Scottish Government take their lead from on matters regarding EMFs. The calculated field strengths for a 132 kV overhead line are always within the safe limits outlined in ICNIRP exposure guidelines.

13.3 Likely Significant Effects

13.3.1 Noise

13.3.1.1 Construction Noise

Construction noise will be short term and intermittent and can be controlled through the implementation of an appropriate Construction Environmental Management Plan (CEMP), which would include working hours agreed with South Lanarkshire Council.

Therefore, there is not expected to be any significant residual effects associated with construction noise after implementation of the CEMP as mitigation. It is the opinion of SPEN and RSK that construction noise should be scoped out of the EIA.

13.3.1.2 Operational Noise

Previous noise assessments have demonstrated that the noise directly under a 132 kV trident wood pole overhead line is imperceptible in normal conditions. In wet conditions there would be no impact at a distance greater than 50 m from the overhead line[15].

The routes proposed do not come within 50 m of any industrial or residential properties, therefore, it can be surmised that there are no sensitive receptors. It Therefore it is not proposed to carry out an assessment of operational noise impacts.

13.3.1 TV and Radio Reception

Potential effects from OHLs on TV signals arise from physical obstruction of the signal. The proposed wood poles would not represent a significant obstruction and it is not anticipated that any adverse effects on TV reception would be experienced. Therefore, this issue will not be considered in the EIA.

It is possible for radio receivers in the vicinity to experience interference from such electromagnetic fields from OHLs. In practice little radio and television interference would arise, except when directly beneath the overhead line. The route proposed would avoid sensitive receptors, indicating that significant adverse effects on radio receivers are not anticipated. Therefore, this issue will not be addressed in the EIA.

13.3.2 Residential Visual Amenity

Given the nature and scale of the proposed development it is considered that there is not for significant and possibly ‘overbearing’ effects on residential visual amenity, therefore no further consideration is proposed as part of the EIA report.

13.3.2.1 Traffic

Construction traffic impacts would be short term and intermittent and would be controlled through the implementation of a Construction Traffic Management Plan (TMP), to be agreed with South Lanarkshire Council. An outline TMP would be presented as a Technical Appendix to the EIAR. The potential for the proposed development to give rise to traffic impacts would be limited to during the construction phase when HGV movements

[15] Based on the criteria for noise likely to be result in complaint in BS4142:1997, Method of Rating industrial noise affecting mixed industrial and residential areas.

on local roads would increase to deliver construction materials and plant. No impacts are anticipated during the operational phase as the proposed development would not generate any new traffic.

No separate traffic assessment is proposed for inclusion in the EIA.

13.3.3 EMF

The typical field strengths for a 132 kV OHL (shown in Table 10.1) are well below the ICNIRP limits for safe levels of exposure. Therefore, there is no potential significant effect from the proposed development on population or human health associated with EMFs.

Table 12.1 Typical EMF and UK exposure guidelines:

Source	Electric field (kV/m)			Magnetic field (µT)		
	Maximum Beneath OHL	Typical field beneath line	Typical field 25 m from line	Maximum Beneath OHL	Typical field beneath line	Typical field 25 m from line
ICNRIP public exposure guideline	9			360		
Typical Field 132 kV OHL	4	1-2	0.1 - 0.2	40	0.5 – 0.2	0.05 – 0.2

13.4 Issues Scoped Out

Based on the assessments above there are no potential significant effects of the proposed development on any element of population and human health. It is recommended that amenity and health be scoped out of the EIA entirely.

14 ACCIDENTS AND DISASTERS

14.1 Introduction

The EIA regulations require the consideration of the potential risks to human health, cultural heritage or the environment associated with the vulnerability of the proposed development to accidents and disasters. This requirement is interpreted as requiring the consideration of low likelihood/ high consequence events which would result in serious harm or damage to environmental receptors.

14.2 Baseline Conditions

Given the nature of the proposed development, the potential for effects related to the vulnerability to accidents and disasters are likely to be limited to those associated with unplanned power outages, due to extreme weather or structural damage.

Crisis management and continuity plans are in place across SP Energy Networks. These are tested regularly and are designed for the management of, and recovery from, significant energy infrastructure failure events. Where there are material changes in infrastructure (or the management of it) additional plans are developed.

14.3 Likely Significant Effects

Relevant types of accident/disaster, given the predominantly rural context of the proposed development, include:

- severe weather events, including high winds, high rainfall leading to flooding, or extreme cold leading to heavy snow and ice loading;
- wild fire;
- traffic related accidents; and
- mass movement associated with ground instability.

Severe weather resilience is a core component to the network design, and includes consideration of flooding resilience, overhead line design and vegetation management to reduce the risk of unplanned power cuts.

In the event of an unplanned power cut, significant effects are considered unlikely. Effects are likely to be short term and essential services e.g. medical facilities, are likely to have some form of backup generation.

14.4 Issues Scoped Out

Vulnerability of the development to risks of major accidents and/or disasters will be scoped out of the EIA on the basis that there are no associated potential significant effects to human health, cultural heritage and the environment.

15 SUMMARY OF EIA SCOPE

This scoping report has considered the potential for likely significant effects with reference to the factors set out in Regulation 4(3) and Schedule 4 of the EIA Regulations. Based on a review of the baseline environmental sensitivity and the nature /scale of the proposed development, there are several topics that are considered to be not significant, and will be scoped out from further consideration within the EIA process. Table 15.1 lists each topic and the elements scoped in and out from further assessment.

Table 15.1 Scoping Summary

TOPIC	IN	OUT	COMMENTS
Ecology and Ornithology	X		See Section 4.5 for proposed issues to be scoped out.
Archaeology and Cultural heritage	X		See Section 5.5 for proposed issues to be scoped out.
Landscape and Visual Amenity	X		See Section 6.5 for proposed issues to be scoped out.
Geology, Hydrogeology and Hydrology	X		See Section 6.5 for proposed issues to be scoped out.
Mining	X		Mining to be addressed in Other Issues Chapter of EIAR. Supporting technical appendix on mining to be provided.
Forestry	X		Forestry to be addressed in Other Issues Chapter of EIAR. Supporting technical appendix on forestry to be provided.
Recreation, Tourism and Socio-Economics		X	
Land Use and Agriculture		X	
Air Quality and Climate Change		X	
Amenity and Health			Supporting technical appendix on traffic management to be provided. Traffic management to be addressed in Other Issues Chapter of EIAR.
Accident and Disasters		X	

16 NEXT STEPS

SPEN invites consultees to comment on the following:

- What environmental information do you hold or are aware of that will assist in the EIA described here?
- Do you agree with the proposed approach for baseline collection, prediction and significance assessment?
- Are there any key issues or possible effects which have been omitted?
- Do you agree with the list of issues to be scoped out, and the rationale behind the decision?

Reponses to this document, and from ECU, will be used to finalise the terms of the EIA and the specific approach to the individual assessments.

All responses should be addressed to:

Energy Consents Unit

Scottish Government

4th Floor

5 Atlantic Quay

150 Broomielaw

Glasgow

G2 8LU

Econsents_Admin@gov.scot

All comments received will be placed on public record unless consultees request otherwise.

APPENDIX 1 – FIGURES

APPENDIX 2 – CONSULTATION

Routeing consultation for the Kennoxhead Wind Farm to Coalburn Substation 132 kV OHL project was carried out in line with the established SPEN approach to routeing major electrical infrastructure projects. SPEN attaches great importance to the effect that its works may have on the environment and on local communities. In seeking to achieve 'least disturbance', SPEN is keen to engage with key stakeholders including local communities and others who may have an interest in the project.

Consultation Methods

For this project, several methods have been used in consultation, as set out below:

- Routeing Consultation Document
- Consultation Leaflet
- Feedback form
- SPEN project webpage
- Public exhibitions were undertaken on Wednesday the 5th February 2020 at Coalburn Miners Welfare One Stop Shop and on Thursday 6th February at Douglas St Brides Hall
- Posters displayed in the following locations:

  Coalburn - One Stop Shop / U Save Bellfield Road / Post Office / Leisure Complex

  Douglas – Post Office / Service Station / McColls / St Brides Community Centre
- Advert placed in the Lanark and Carluke Gazette (local paper) on the 22nd and 29th January 2020.
- Consultation Leaflet delivered to all Glespin residents.
- Letters sent to known landowners and Community Councils

Copies of consultation materials were issued (in hard copy or electronically, as appropriate to the list of consultees provided in the Table 1 on the following page.

A copy of the routeing consultation report is available to download on the

SPEN website at www.spenergynetworks.co.uk/pages/community_consultation

Scanning the QR code below using your mobile phone or tablet will also

take you to the project website.

The website offers the opportunity to respond directly to the consultation via email, as well as by downloading information booklet/feedback form or in writing to postal address. Public Exhibitions

were held at Coalburn One Stop Shop on Wednesday 5 February 2020 and Douglas St Brides Hall on Thursday 6 February 2020 from 13.00 – 20.00.

Pre-application Consultee List

A consultation meeting was offered to those who would be statutory consultees in the subsequent EIA process, to introduce the project and inform any responses at this stage. A series of meetings/calls were undertaken with attended by South Lanarkshire Council, SEPA, SNH and the Scottish Government Energy Consents Unit.

The pre-application consultee list for the OHL project is presented in Table 1 below. It is expected that these consultees will be formally consulted by ECU as part of the scoping process.

Table 1: Consultee List

Statutory Consultees	Non-Statutory Consultees			
Scottish Government ECU	Scottish Rights of Way and Access Society (ScotWays)	The Crown Estate	Health and Safety Executive	National Trust for Scotland
South Lanarkshire Council	Civil Aviation Authority	National Air Traffic Services Safeguarding	BT	Sustrans Scotland
SNH	Visit Scotland	BAA (Glasgow Airport)	Glasgow Prestwick Airport	Fisheries Management Scotland
Historic Environment Scotland	Clyde River Foundation	Scottish Wildlife Tust	The Coal Authority	British Horse Society
SEPA	Defence Infrastructure Organisation (MoD)	Association for the Protection of Rural Scotland (APRS)	RSPB	West of Scotland Archaeology Service (WoSAS)
	Scottish Forestry	Marine Scotland	Transport Scotland	Scottish Water
	British Trust for Ornithology Scotland (BTO)	JNCC (for Geological Conservation Review)	John Muir Trust	Mountaineering Scotland
	National Farmers Union	The Woodland Trust	Ramblers Association (Scotland)	Scottish Badgers
	Scotia Gas Networks	Coalburn Community Council	Douglas Community Council	Lesmahagow Community Council

Public exhibitions – Preferred Route

The number of attendees present at each exhibition is illustrated in Chart 1 below:

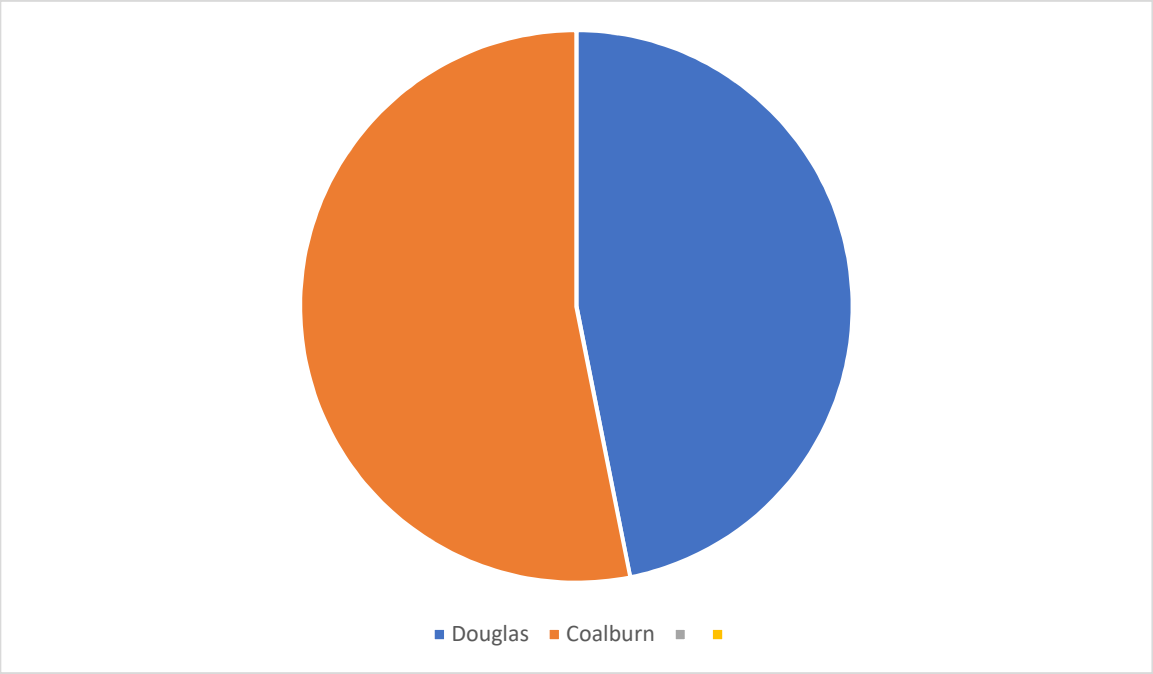


Chart 1: No of attendees recorded at the Public Exhibitions for the Preferred Route.

Public Exhibitions – Public Comments

All attendees to the exhibitions were encouraged to complete a feedback form.

- 32 registered attendees at events (17 Coalburn and 15 Douglas)
- 10 feedback forms received
- 16% of those who attended an exhibition submitted a feedback form.

Question 1 on feedback form:

'If you would like us to keep in touch regarding this project, please provide your contact details below. If you would rather remain anonymous, please move to the next question.'

Everyone that submitted a feedback form provided contact details.

Question 2 on feedback form:

'Do you have any comments regarding the rationale for the project?'

A summary of the main comments received is provided below:

Three respondents asked why the OHL couldn't be undergrounded.

One respondent commented that the information laid out in the exhibition was well laid out and easy to explain while another described it as straight forward.

One respondent stated that they agreed with the view from Coalburn Community Council.

One respondent stated that the days of overhead cables are long gone.

Another respondent confirmed that they object to overhead cables.

A single respondent stated that they understood why we need to pursue more efficiemt and cleaner ways of providing electricity.

A further respondent stated that it seems a good idea to go overhead rather than underground with cabling.

Question 3 on feedback form:

'Do you have any other comments regarding our proposed preferred route?'

A summary of the main comments received is provided below:

Two respondents commented that the OHL should be undergrounded for landscape and visual reasons as the OHL would be an eyesore.

Another respondent commented that they did not want an OHL and that the cable should be undergrounded.

One respondent stated that they where unhappy to have overhead cables and that all new developments should be undergrounded.

One respondent noted several concerns over having an OHL. These related to ruining arable ground, gales not being condusive to having OHIs and landscape impact.

Another respondent stated that the route seemed logical and that the OHL was relatively inoffensive when compared to a Wind Farm.

Question 4 on feedback form:

'How did you hear about the exhibition?'

Responses were as follows:

Coalburn Community Council

Douglas Community Council

Local Councillor

Letter

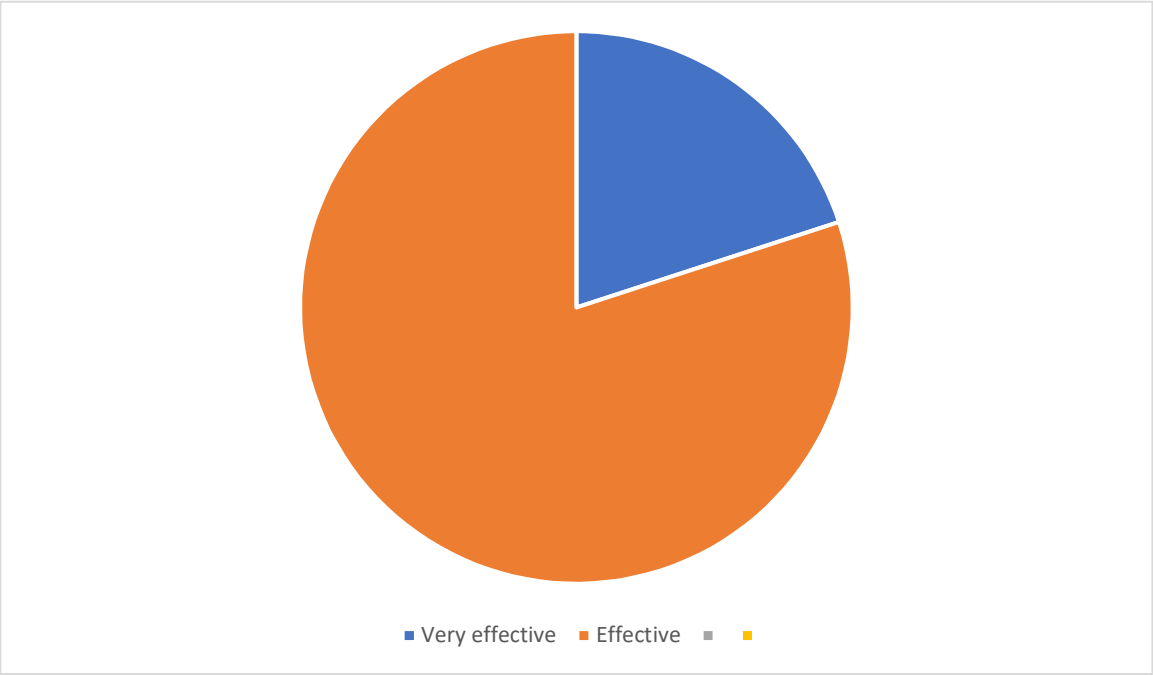
Douglas Community Council Facebook

St Brides Hall Facebook

No response

Question 5 on feedback form:

'How effective was the exhibition in helping you gain an understanding of the selection of the preferrred route?'



Question 6 on feedback form:

'Is there any other information that you would find helpful?'

One comment received related to suggestions that a representative from Wind Farm developer should have attended the exhibition and that the developer must be clerer about their proposals/message.

Two respondents asked that they be informed when a decision had been made to put the cables underground.

Other

An email was received from a Coalburn resident who couldn't attend the exhibition. This resident felt that the OHL would spoil the area and that with weather conditions experienced in the area there would be a danger that the lines would be brought down in high winds.

An email was received from a Douglas resident who couldn't attend the exhibition. This stated the followingt: '*I would just like to say how informative we found tonight [6/2/2020] exhibition. I found the people helpful and knowledgeable .Able to handle all my concerns'.*

Coalburn – responses to questions raised

2 feedback forms were received from attendees to the Coalburn exhibition.

Summary of query	Response by SPEN
OHL should be undergrounded	Response provided in Table 2.

Douglas – responses to questions raised

3 feedback forms were received from attendees to the Douglas exhibition.

Summary of query	Response by SPEN
No queries received.	Not required

On 5 February 2020 there were 17 attendees, and on the 6thFebruary 2020 there were 15 attendees. Attendees were given the opportunity to comment on proposals via feedback form either at the time or to return by 15 March 2020.

Consultation Responses

Of the 38 consultees contacted, responses were obtained from 11. Additionally one response was received from a member of the public. Responses received from interested parties are summarised in Table 2 along with a reply on each point.

Key points which have been raised across consultees are:

- Consideration should be
- given to undergrounding the OHL to avoid visual impact.
- The need to avoid/consider carefully the potential impact on the Coalburn Moss SAC and SSSI
- Habitat Regulations Appraisal may be required given proximity to Coalburn Moss SAC and SSSI and the Muirkirk & North Lowther Uplands SPA
- Black grouse leks are known to be present in the vicinity of the route and further assessment will be required to establish any impact.

- The effect that deforestation might have on ecology and landscape.

Each point is considered in reply provided to relevant consultees. Of the points identified above, SPEN is committed to considering these carefully in the development and assessment of proposed route.

Next Steps

This Scoping Report has been provided to support a formal request under regulation 12 of the Environmental Impact Assessment (EIA) regulations by SPEN for a Scoping Opinion to determine the information to be provided within the EIA Report.

Reponses to this document from all consultees, and from ECU, will be used to finalise the terms of the EIA and the specific approach to the individual assessments.

It is expected that the consultees listed in Table 1 (pre-application consultees) will be formally consulted by ECU as part of the scoping process.

Table 2: Summary of consultee comments

Consultee and Date	Comments	Response/Action taken
Crown Estate (06/02/20)	Requested shapefiles for preferred route alignment. No further comment received.	Shapefiles provided.
Coalburn Community Council (11/02/20)	Coalburn Community Council stated that they have no wish to stand in the way of progress, but they don't want to see the area being blighted with poles and overhead cables being classed as progress. They would like the OHL undergrounded.	As the transmission license holder SPEN is obliged to provide connections for new customers looking to connect to our network. When making a connection offer to these customers, SPEN will offer a connection based on the most efficient and economically viable option, as per our statutory transmission license requirements. In this project the connection is based on an overhead line solution and has been accepted by the customer. Through the routeing process and assessment of overhead line route options and the subsequent proposed route, the suitability of each option to accommodate a continuous overhead line has been appraised. It is considered that an overhead line could be accommodated within the proposed route. This will be subject to further detailed consideration as proposed within the scope of the Environmental Impact Assessment, in particular through the Landscape & Visual Amenity assessment.
Douglas Community Council	Douglas Community Council requested a figure showing the indicative route of the OHL and the proposed configuration so that it could be shown to members of the community council. No further comment received.	Figure provided.

Consultee and Date	Comments	Response/Action taken
(05/02/20)		
Historic Environment Scotland (19/02/20)	HES stated that as the three Route options presented are located in corridors away from sites for their historic environment interests they would therefore have no preference on these options.	Noted
JNCC (18/02/20)	JNCC stated that as this development proposal is not located within the offshore area, does not have any potential offshore nature conservation issues and is not concerned with nature conservation at a UK-level, they do not have any comments to make on the consultation.	Noted
MOD Safeguarding (25/02/20)	MOD confirmed that they had no safeguarding objections to the proposal. However while they have no safeguarding objections to this application, the height of the development will necessitate that aeronautical charts and mapping records are amended. Defence Infrastructure Organisation (DIO) Safeguarding therefore requested that, as a condition of any planning permission granted, the developer must notify UK DVOF & Powerlines at the Defence Geographic Centre with the following information before development commencing: a. Precise location of development. b. Date of commencement of construction. c. Date of completion of construction. d. The height above ground level of the tallest structure. e. The maximum extension height of any construction equipment. f. Details of aviation warning lighting fitted to the structure(s)	Noted.
RSPB (09/03/20)	RSPB stated that until they have access to the full ornithological survey results and relevant environmental impact assessment (EIA) documents, they reserve judgement on the proposed route of the development. However, there are a few sections that they can provide comment on. They welcome the proposal to route the powerline around Coalburn Moss SSSI and SAC (section C1b on map 2). Ideally, they would like to see the line pass as far away as possible from the site to minimise the impacts on the birds that will be using the area.	Noted.

Consultee and Date	Comments	Response/Action taken
	As the habitat management area (HMA) designated as part of the Kennoxhead Wind Farm development is impacted by this proposal, their preferred option for the most southerly section is marked A1 on map 2 of the leaflet and is the preferred route as per map 3 on the leaflet. This route will be furthest from the known black grouse leks and will have the least impact on the HMA from their current understanding, but as mentioned before they reserve full judgement until we have consulted the full EIA.	
Scottish Forestry (17/03/20)	Scottish Forestry stated that the main issue of concern to in relation to Development Planning is that of development deforestation and the potential effects it could have on the ecology and landscape of local and wider environs. Scottish Planning Policy paragraph 218, issued by the Scottish Government, refers to the Control of Woodland Removal Policy which seeks to protect the existing forest resource in Scotland, and supports woodland removal only where it would achieve significant and clearly defined additional public benefits. Scottish Forestry also stated that they have very much welcomed the ongoing discussions with SPEN and RSK on the Kennoxhead to Coalburn routing study and potential route options, since June 2019. We were pleased to note that the final route proposed is the same as that discussed at our most recent meeting and avoids as much woodland loss as possible. With this in mind Scottish Forestry have no further comments to add at this time.	Noted.
SEPA (18/02/20)	At this stage given the design of the poles proposed SEPA didn't raise any route specific comments. Our standard comments would apply at this stage and the construction of the poles and OHL will probably be of most interest to us for the project going forward.	Noted.
SNH (25/02/20)	SNH highlighted a couple of things in the Ecology Baseline Review (March 2019) and Ornithology Baseline Review (April 2019) that RSK sent them in late January that they wanted to pick up on in terms of the subsequent assessment of the proposed route: Firstly, the Ecology Baseline Review (March 2019) says that "If there will be no direct effect on the moss [Coalburn Moss SAC], SNH have previously said that an HRA would not be required". I'd just clarify that an HRA may also be needed if there are any indirect	Issues raised by SNH taken into consideration and have been discussed with ornithologist and SNH to ensure compliance. Further discussions have been undertaken with SNH regarding Covid-19 situation and to agree approach if any surveys have to be postponed.

Consultee and Date	Comments	Response/Action taken
	effects on the SAC. It may well be that any such effects will be avoided through the choice of exact location for the proposed route. Secondly, given that the route i) lies partly between two sections of the Muirkirk & North Lowther Uplands SPA, ii) it lies within the core foraging ranges of the SPAs breeding bird interests, and iii) there is some evidence from the flight activity surveys for the Kennoxhead Wind Farm ES of activity by SPA qualifying species in the area of the OHL, I'd be minded to suggest that there would be a 'likely significant effect' (in HRA terms) from the proposal on the SPA at this stage - i.e. that there is a connection between the proposal and the site's qualifying interests. While this is something we'd be happy to revisit once the results of your more recent survey work is available (the Kennoxhead data now being 8/9 years old and possibly not a reflection of current activity), it may mean that there will be a need to undertake an HRA in respect of the SPA too and thus, that the EIA Report will need to have sufficient information to allow this to be undertaken.	
The Coal Authority (25/02/20)	I can confirm however, that based on Map 3: Preferred route, parts of the site fall within the Coal Authority's defined Development High Risk Area. Accordingly, the planning authority will consult the Coal Authority on the planning application (in our role as statutory consultee). That is when the Planning team will become involved as we will need to assess the proposed development and the Coal Mining Risk Assessment that will also be required to be submitted with it.	Noted
Other		
Member of the Public – Coalburn Resident	Unfortunately I was unable to attend the presentation regarding the running of cables from the Kennoxhead Windfarm to the Coalburn Sub Station. Firstly I would like to say that whilst I understand the need to use the most cost effective way to do this I feel strongly that the feelings of the people who will be affected by this need to be seriously considered. I am a regular walker in the area you are proposing as a route for these cables and I for one do not want the area spoiled by the work required to do this and of course the method you plan to use. In my opinion the erecting of the poles will spoil the area and of course with the weather conditions experienced in the area there is the danger of the lines being brought down in the high winds. If there is no alternative but to use the proposed route	As the transmission license holder SP Energy Networks is obliged to provide connections for new customers looking to connect to our network. When making a connection offer to these customers, SPEN will offer a connection based on the most efficient and economically viable option, as per our statutory transmission license requirements. In this project the connection is based on an overhead line solution and has been accepted by the customer.

Consultee and Date	Comments	Response/Action taken
	then I feel the cables should be run underground. This would take the risk of damage due to weather and the route of the channel used would quickly regenerate therefore minimising any change to the area. When this work is done the planners walk away and leave the local people to live with the consequences of the work done, I like many others who use this area do not want it spoiled by lines of poles going across it.	The design proposed for the connection takes into account a range of technical and environmental considerations. These include anticipated wind and ice loadings which the structure may be subject to, informed by local context, primarily altitude of proposed development. SPEN believes the design is suitable for use in the weather conditions typical in this area. Through the routeing process and assessment of overhead line route options and the subsequent proposed route, the suitability of each option to accommodate a continuous overhead line has been appraised. It is considered that an overhead line could be accommodated within the proposed route. This will be subject to further detailed consideration as proposed within the scope of the Environmental Impact Assessment, in particular through the Landscape & Visual Amenity assessment.