

Spirebush Renewable Energy Project Grid Connection

Routeing and Consultation Document

Quality information

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Table of Contents

1.	Introduction	1
1.1	Spirebush Renewable Energy Project – Grid Connection	1
1.2	Need for the Grid Connection	1
1.3	The Development and Consenting of the Grid Connection	1
1.4	Stakeholder Engagement	1
1.5	Purpose and Structure of the Routeing and Consultation Document	2
2.	Description of the Grid Connection	4
2.1	Introduction	4
2.2	Overhead Line	4
3.	Approach to Routeing	8
3.1	Approach to Overhead Line Routeing	8
3.2	Routeing Methodology	10
4.	The Study Area	12
4.1	Overview	12
4.2	Description of the Study Area	12
4.3	Key Routeing Considerations	16
5.	Routeing Strategy	18
5.1	Overview	18
5.2	Grid Connection Routeing Strategy	18
6.	Route Options	19
6.1	Identification of Route Options	19
6.2	Route Section 1	19
6.3	Route Section 2	19
6.4	Route Section 3	20
6.5	Route Section 4	20
6.6	Route Section 5	20
6.7	Summary of Assessment	22
7.	Preferred Route Option	39
7.1	Overview	39
7.2	The Preferred Route Option	39
8.	Next Steps	42
8.1	Approach to Consultation	42
8.2	Confirmation of the Proposed Route and EIA	43
	Appendix A Holford Rules	44
	Appendix B Horlock Rules	48
	Appendix C Project-Specific Routeing Considerations	51
	Appendix D Routeing Consideration Figures	55

Figures

Figure 1.	Location of the grid connection	1
Figure 2.	Typical Trident Wood Pole	4
Figure 3.	Routeing Methodology	11
Figure 4.	Study Area	15
Figure 5.	Key Routeing Considerations	17
Figure 6.	Route Options	21
Figure 7.	Preferred Route Option	41

Tables

Table 1. Structure of the Routeing and Consultation Document.....	3
Table 2. Summary of Assessment: Route Option 1	22
Table 3 Summary of Assessment: Route Option 2	24
Table 4 Summary of Assessment: Route Option 3	31
Table 5 Summary of Assessment: Route Option 4	34
Table 6 Summary of Assessment: Route Option 5	37

1. Introduction

1.1 Spirebush Renewable Energy Project – Grid Connection

This Routeing and Consultation Document (RCD) Update has been prepared by AECOM on behalf of SP Energy Networks (SPEN)¹ as part of the identification of a preferred route option for the grid connection required for the Spirebush Renewable Energy Project being proposed by Spirebush Limited. The RCD was initially produced in February 2024 and sent to key consultees, this update reflects the changes made to the route options following further design assessment and will be released for consultation.

The grid connection, comprising a new double circuit 132 kilovolt (kV) overhead line (OHL) will connect the Spirebush Renewable Energy Project to the electricity transmission system at the proposed Redshaw Substation. The Spirebush Renewable Energy Project is proposed to be developed in the Douglas Valley to the north-east of the settlement of Muirkirk, East Ayrshire, with the grid connection extending to the east to the proposed Redshaw Substation between the M74 and the B7078 in South Lanarkshire. **Figure 1** illustrates the location of the proposed Spirebush Renewable Energy Project and the transmission system.

The RCD explains the background to the grid connection and describes the approach to and results of the first stage of development of the grid connection, the routeing study which has been undertaken to identify a preferred route option for a new OHL between Spirebush Renewable Energy Project and the proposed Redshaw Substation, also shown in **Figure 1**. The proposed Redshaw Substation is being developed separately to the grid connection by SPEN.

1.2 Need for the Grid Connection

1.2.1 Background

As part of their commitments to tackling climate change, the Scottish and UK Governments have set legally binding targets to reach net zero in their greenhouse gas emissions by 2045 in Scotland and 2050 in the UK. In delivering net zero, the electricity system - how electricity is generated, transmitted, distributed and used - is undergoing transformational change.

The grid connection is needed to connect the 400 megawatt (MW) Spirebush Renewable Energy Project to the transmission network. As Transmission Licence Holder, SP Transmission (represented by SPEN) is legally obliged under the Electricity Act 1989, as amended, to provide a grid connection.

1.2.2 SP Transmission's Statutory Duties and Licence Obligations

SP Transmission plc (SPT), the Transmission Owner (TO) and Licence Holder under the Electricity Act 1989, as amended ('the Act'), is responsible for the electricity transmission network in central and southern Scotland, including throughout East Ayrshire and South Lanarkshire where the Spirebush

¹ SP Energy Networks (SPEN) is the trading name for Scottish Power Energy Network Holdings Limited. SPEN owns and operates the electricity transmission and distribution networks in central and southern Scotland through its wholly-owned subsidiaries SP Transmission plc and SP Distribution plc. These businesses are 'asset-owner companies' holding the regulated assets and Electricity Transmission and Distribution Licenses. SP Transmission plc is the holder of a transmission licensee. The references within this RCD to SPEN in the context of statutory and licence duties and the application for Section 37 consent below should be read as applying to SP Transmission plc.

Renewable Energy Project and the grid connection are located. As the holder of a transmission licence under the Act, SPT is subject to a number of statutory duties and licence obligations.

These include a requirement “*to develop and maintain an efficient, coordinated and economical system of electricity transmission*” and “*to facilitate competition in the supply and generation of electricity*”. This requires SPT to provide for new electricity generators wishing to connect to the transmission system in its licence area; to make its transmission system available for these purposes; and to ensure that the system is fit for purpose through appropriate reinforcements to accommodate the contracted capacity.

In addition, in formulating proposals for network reinforcements or grid connections such as that proposed for the Spirebush Renewable Energy Project, SPT is subject to duties under Schedule 9 of the Act: “*(a) to have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and, (b) to do what it reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.*”

SPEN acting on behalf of SPT, is undertaking further studies including this routeing study to connect the Spirebush Renewable Energy Project to the transmission network. This work is undertaken in accordance with SPT’s statutory duties and licence obligations with the objective of ensuring that the grid connection is technically feasible, economically viable and on balance, causes the least disturbance to both the environment and the people who live, work and enjoy recreation within it.

Figure 1. Location of the grid connection

1.3 The Development and Consenting of the Grid Connection

The development of the grid connection will comprise the following key phases:

- **Phase 1. Routeing and Consultation.** Phase 1 comprises a routeing study in which alternative route options for the grid connection are identified and assessed taking into account a range of environmental, technical and economic considerations. It concludes with the identification of a preferred route option for the OHL which is then subject to consultation. SPEN is committed to ongoing consultation with interested parties, including statutory and non-statutory consultees and local communities. Responses to the consultation will be evaluated and inform confirmation of a proposed route to be taken forward to Phase 2.
- **Phase 2. Detailed Route Design and Environmental Impact Assessment (EIA).** The grid connection will require to be subject to an EIA under the Electricity Works (EIA) (Scotland) Regulations 2017. Through Phase 2 the EIA process seeks to identify, assess and mitigate the likely significant adverse effects of the grid connection on the environment. The EIA process comprises several steps starting with scoping and concluding with the production of an EIA Report which will accompany the application for consent. During this phase SPEN will also undertake a second round of public consultation (referred to Phase 2 Consultation) on the detailed design of the grid connection.
- **Phase 3. Application for Consent.** SPEN will be applying to the Scottish Ministers for consent under Section 37 of the Electricity Act 1989, as amended, to install, and keep installed, the grid connection. The EIA Report will accompany the application for Section 37 consent. At the same time, SPEN will also apply to Scottish Ministers for deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997, as amended, for the grid connection including ancillary development. While the Scottish Ministers will be responsible for the decision to approve the grid connection or not, in reaching their decision they will consult with statutory stakeholders and members of the public.

1.4 Stakeholder Engagement

Stakeholder engagement, including public involvement, is an important component of the Scottish planning and consenting system. Legislation and government guidance aim to ensure that the public, local communities, statutory and other consultees and interested parties have an opportunity to have their views taken into account throughout the planning process.

SPEN recognises the importance of consulting effectively on proposals and is keen to engage with key stakeholders, including local communities and others who may have an interest in the grid connection. This engagement process continues through to the construction of SPEN projects.

SPEN's approach to stakeholder engagement for major electrical infrastructure projects is outlined in Chapter 2 of the SPEN document 'Approach to Routeing and Environmental Impact Assessment'². SPEN aims to ensure effective, inclusive and meaningful engagement with the public, local communities statutory and other consultees and interested parties through four key engagement steps:

- **Pre-project notification and engagement:** Discussions are undertaken with consenting bodies, including planning authorities and statutory consultees such as NatureScot, and non-statutory consultees such as Scottish Forestry. Early and proactive engagement enables the views of these consultees to inform project design, assessment methodologies and further engagement. It also

² Available at: https://www.spenergynetworks.co.uk/userfiles/file/SPEN_Approach_to_Routeing_Document_2nd_version.pdf

provides consultees with an early understanding of the likely programme to submission of the application for consent.

- **Information gathering:** To inform the routeing stage, information on relevant environmental and planning considerations and proposed data gathering techniques (e.g. for seasonal ecological surveys) is requested from statutory consultees and other relevant organisations.
- **Obtaining feedback on emerging route options:** This RCD has been prepared to gather feedback on the emerging project details. The RCD was first issued to statutory consultees in February 2024. This update will be available at upcoming in-person public consultation events, as well as through a virtual consultation room to seek feedback and broaden the accessibility of public consultation.
- **The EIA stage:** The results of stakeholder engagement are taken into consideration and used to confirm the 'proposed route' for progression to EIA. The main purpose of the EIA is to identify the significant effects arising from a project. Further consultation is carried out during the EIA stage, including additional information gathering and the preparation of a publicly available Scoping Report, which accompanies a 'Request for a Scoping Opinion' to the consenting authority as to the information to be provided in the EIA Report.

In addition, and as noted above, SPEN as a holder of a transmission licence, has a duty under section 38 and Schedule 9 of the Electricity Act 1989, as amended, when formulating proposals for the new electricity lines and other transmission development, to have regard to the effect of work on communities, in addition to the desirability of the preservation of amenity, the natural environment, cultural heritage, landscape and visual quality.

1.5 Purpose and Structure of the Routeing and Consultation Document

The primary purpose of this RCD is to report on Phase 1 of the grid connection; the routeing study which has been undertaken; and the preferred Route Option which has been identified for the grid connection. Feedback was sought on the RCD in February 2024 and this update will be available for upcoming public consultation on the grid connection. The objective of this is to seek feedback on the preferred Route Option from statutory and non-statutory consultees, as well as local communities, and use this feedback to inform subsequent stages of the grid connection.

The structure of the RCD is set out in **Table 1**. It describes the approach taken to identifying and assessing alternative route options in a clear, systematic manner in accordance with SPEN's statutory duties and licence obligations and taking into account industry-recognised approaches to the routeing of OHLs.

Table 1. Structure of the Routeing and Consultation Document

Section	Description of Contents
1. Introduction	Provides an introduction to the grid connection, SPEN's statutory obligations and an outline of the purpose and structure of the RCD.
2. Description of the Grid Connection	Provides an overview of the grid connection and its key physical components, including details of construction requirements.
3. Approach to Routeing	Describes SPEN's general approach to the routeing following established practices and sets out the approach to the grid connection.
4. The Study Area	Identifies and describes the Study Area in which the routeing study is undertaken, as well as key constraints or features within it.
5. Routeing Strategy	Describes the Routeing Strategy applied specifically to the Spirebush Renewable Energy Project grid connection for the identification and assessment of alternative route options.
6. Route Options	Describes the identification and assessment of alternative route options within the Study Area.
7. Preferred Route Option	Identifies and describes the preferred route option including the reasons for its selection.
8. Next Steps	Describes the key next steps in the grid connection, including consultation on the preferred route option and how to provide feedback.

2. Description of the Grid Connection

2.1 Introduction

This section provides a brief description of the infrastructure which would be required for the grid connection. The grid connection comprises a new 132 kV double circuit OHL which is required between the proposed Spirebush Renewable Energy Project and the proposed Redshaw Substation (which will be subject to a separate planning application under the Town and Country Planning (Scotland) Act 1997, to South Lanarkshire Council). The double circuit will be carried on twin wood pole lines, one per circuit. No substation works are to be consented or assessed as part of the grid connection for the Spirebush Renewable Energy Project.

It should be noted that given the early stage in the grid connection's development, this information is not confirmation of a final design, however, it is considered appropriate for the purposes of the routeing study and to inform the first round of consultation.

2.2 Overhead Line

2.2.1 General Description

OHLs transmit electricity by conductors (or wires) which are suspended at a specified height above ground and supported by wood poles, spaced at intervals.

The conductors can be made of aluminium or steel strands. This grid connection will include a double circuit at 132 kV and is proposed to be carried on twin Trident wood poles (i.e. one wood pole line per circuit). A typical Trident wood pole is shown in **Figure 2** and the proposed design is described below.



Figure 2. Typical Trident Wood Pole

The selection of the twin wood pole has been on account of the scale of infrastructure and the nature of the existing landscape. The landscape character of the Spirebush Study Area (see Section 4) is defined by an upland valley landscape centred along the Douglas Water, surrounded by plateau moorland which is often dominated by wind farm developments. The valley of the Douglas Water, west of Douglas is relatively tightly enclosed between the steeply rising slopes leading to the high ground to the north and south. The valley slopes comprise a mixture of rough moorland, improved pasture and coniferous woodland with pockets of native woodland planting where the valley widens and is associated with the designed landscape at Douglas. Vertical elements within the landscape are limited to the network of transmission and distribution wood pole OHLs, other utilities such as telecommunications lines within and crossing the valley, and wind turbines which are concentrated within the plateau moorland landscape, appearing on skylines in views from within the valley.

The premise of Rule 6 of the Holford Rules³ is to avoid a concentration or 'wirescape' and in particular avoid a convergence of routes, distributions poles and other masts, wire and cables. The use of wood pole lines will ensure a consistency in infrastructure which will read more logically within the landscape, providing better opportunities for integration and avoidance or limiting of 'wirescape'.

The use of a double circuit twin wood pole OHL is therefore considered to be the most suitable infrastructure given the landscape context, adherence to the principles embedded in the Holford Rules and providing the best landscape and visual fit.

2.2.2 Wood Pole Types

The OHL will be supported on Trident wood poles with galvanised steelwork cross-arms supporting aluminium conductors on insulators. These are suitable for supporting single circuit lines operating at 132 kV. The grid connection will therefore require two wood pole lines to carry the two circuits proposed.

Wood poles are fabricated from pressure impregnated softwood, treated with a preservation to prevent damage to structural integrity.

There are three types of wood pole structure, in terms of appearance:

- Suspension or Line: Where the pole structure forms part of a straight section of line and no change in direction is required. Straight sections of wood poles include section poles where segmentation is required to contain any failure in the OHL.
- Tension or Angle: Where there is a horizontal or vertical deviation in line direction. The maximum allowable angle deviations on single wood pole designs is 30 degrees, with deviations up to 75 degrees being permitted. All angle structures require to be back stayed.
- Terminal: Where the OHL terminates before entry into a substation or on to an underground cable section via a cable sealing end compound or platform.

2.2.3 Wood Pole Heights and Span Lengths

The standard height of trident poles (including steel work and insulators) varies from 11 m to 16 m. Whilst wood poles have a standard height above ground of 14 m, these can be extended or reduced in height, as circumstances dictate, for example over elevated land, structures or features.

The section of OHL between wood poles is known as the 'span', with the distance between them known as the 'span length'. Span lengths between wood poles average between 80 m to 100 m, but can be

³ see Section 3.1.2 and Appendix A for more information on the Holford Rules

increased if there is a requirement to span a larger distance due to the presence of a feature in the landscape, such as a river or loch.

Wood poles are used to regulate the statutory clearances required for conductor height, which is determined by the voltage of the OHLs (the higher the voltage, the greater the safety clearance that is required) and the span length between wood poles.

2.2.4 Wood Pole Appearance

Wood poles are fabricated from pressure impregnated softwood which are treated with a preservative to prevent damage to structural integrity. New wood poles are dark brown in colour and weather over time to a light grey. The wood pole top cross-arms are galvanised steel and support the aluminium conductors on stacks of grey insulator discs. Both the steelwork and aluminium will weather and darken after a few years.

2.2.5 Typical Construction Requirements

The construction of OHLs follows a well-established process. As well as the OHL it also requires additional temporary land-take and infrastructure, for example temporary accesses and temporary construction compounds to store materials.

2.2.5.1 Construction

Key phases of construction comprise the following activities:

- Tree felling or lopping (where required);
- Construction of temporary construction compounds;
- Preparation of accesses (where required);
- Excavation and construction of foundations;
- Assembly and erection of poles;
- Insulator and conductor erection and tensioning; and
- Clearance and reinstatement.

Construction of a wood pole takes place in one single operation, i.e., the hole is dug and the pole erected within the same day depending on ground conditions and location. Angle poles can take longer due to the need for “stay wires” to stabilise the pole in the ground.

Prior to constructing the OHL, temporary accesses will be constructed, as necessary, and laydown/storage areas established, usually mid-way along the route. Any trees which may impact on safety clearances will be removed or lopped. Following commissioning of the OHL, all equipment and temporary access of construction areas will be removed with the land being reinstated to its former use/condition.

The construction programme for the grid connection will be confirmed at detailed design stage and prior to project start, following the granting of statutory consents and after all necessary land purchase/wayleave arrangements have been concluded. At this stage it is considered that construction of the

proposed connection would be approximately 18 months, with works scheduled to be complete by late Summer 2028.

2.2.5.2 Operation and Maintenance

OHLs require minimal maintenance. The condition of the wood poles will be inspected regularly for early identification of any unacceptable deterioration and to ensure action can be taken to maintain the security and safety of all components of the OHL. Poles which have deteriorated significantly may be removed and replaced. Access arrangements for maintenance will be agreed in advance with landowners and will be undertaken within the agreed wayleave. There is also an ongoing requirement to ensure that any vegetation within proximity to the OHL does not impact on safety clearances.

2.2.5.3 Decommissioning

If an OHL line is to be decommissioned, wood poles will be removed with components re-used where possible. Foundations/supports are removed to a minimum depth of 1 m below ground level and the ground reinstated to the satisfaction of the landowner.

3. Approach to Routeing

3.1 Approach to Overhead Line Routeing

3.1.1 SPEN's Approach to Routeing

In 2015, as part of a wider industry review involving Government and the Office of Gas and Electricity Markets (Ofgem), SPEN reviewed its approach to routeing. This review concluded that the requirement to balance statutory duties and licence obligations comprising economic, technical and environmental factors continues to support the development of an OHL in most circumstances. However, SPEN also concluded that there are certain circumstances in which development of an underground cable (UGC) should be considered.

SPEN undertook a further review of their approach in 2020 as part of preparing their RIIO-T2⁴ Business Plan which reaffirmed these conclusions. As part of the review, SPEN consulted on and published an updated version of '*Approach to Routeing and Environmental Impact Assessment*'⁵ which describes their general approach to routeing new electricity transmission infrastructure.

The basic premise of the approach set out by SPEN is that the main effect of an OHL is visual and that the degree of visual impact can be reduced by careful routeing. For example this can be done by using topography and trees to provide screening and/or background to the OHL and by routeing the OHL at a distance from settlements and roads. In addition, OHL routeing takes into account other environmental and technical considerations and will avoid, wherever possible, the most sensitive and valued natural and man-made features.

3.1.2 Established Practice for Overhead Line Routeing

In 1959, Lord Holford, then advisor to the Central Electricity Generating Board (CEGB), developed a series of guidelines with regard to the routeing of high voltage OHLs which have subsequently become known as the "Holford Rules" ('the Rules'). It is generally accepted across the industry that the Rules should continue to inform the routeing of high voltage OHLs. The Rules were reviewed in the early 1990s by the National Grid Company (NGC) Plc. (now National Grid Electricity Transmission (NGET)) with notes of clarification added to update them and reflect up to date circumstances. A subsequent review of the Rules, including the NGC clarification notes, was undertaken by Scottish Hydro Electric Transmission Limited (SHETL) (now SHE Transmission plc) in 2003 to reflect Scottish circumstances. A copy of the Rules, as well including notes added through subsequent reviews by NGC, SHETL and most recently by SPEN, is contained in Appendix A.

The basic premise of SPEN's general approach outlined above draws on the Rules, including avoidance of areas of highest or high amenity value where possible, as well as consideration of landform, topography and vegetation in order to reduce landscape and visual effects.

⁴ RIIO-T2 is the current price control and runs from April 2021 to March 2026. RIIO stands for 'Revenue = Incentives + Innovation + Outputs'. It's a framework used by Ofgem to ensure that network companies, like SPEN, provide a safe and reliable service, value for money, maximise performance, operate efficiently, innovate and ensure the resilience of their networks for current and future customers.

⁵https://www.spenergynetworks.co.uk/userfiles/file/SPEN_Approach_to_Routeing_Document_2nd_version.pdf

3.1.3 General Routeing Considerations

In line with SPT's statutory duties and licence obligations and drawing upon established practice, routeing considerations comprise environmental, technical and economic factors. The routeing considerations inform the identification and assessment of route options ensuring that it is robust and transparent.

Routeing considerations also take account of the guidance contained in the Holford Rules and relevant notes or clarifications. In identifying routeing considerations which are relevant to the grid connection and Study Area (defined in Section 4), the Rules and relevant notes or clarifications have been interpreted and applied to the routeing study.

The Rules are broadly hierarchical, with Rules 1 and 2 placing considerable emphasis on avoiding areas of the highest or high amenity value. Rule 1 advises that routes should avoid major areas of the highest amenity value where possible and Rule 2 that routes should avoid smaller areas of high amenity value by deviation. The term "amenity" has generally been interpreted as designated areas or sites of scenic, landscape, nature conservation, scientific, architectural or historical interest. This is consistent with SPT's duties under Schedule 9 of the Electricity Act 1989, as amended. For the purposes of this routeing study, the term 'amenity' has been replaced by 'environmental' to more appropriately reflect the intrinsic environmental, social and cultural value of such designated areas.

The review undertaken by SHETL in 2003 provides examples of areas "highest" or "high" amenity or environmental value and states that such areas "*require to be established on a project-by-project basis considering Schedule 9 of the Electricity Act 1989*". For the purposes of this study, such areas are considered to include international and national designations, such as sites designated for nature conservation or heritage designations.

The Rules do not identify what constitutes "major areas" or "smaller areas" but indicate that consideration should also be given to the spatial extent of areas of highest or high amenity or environmental value. Value is not considered to be related to the size of an area, so for the purposes of this study, this has been interpreted as the extent to which areas of the highest or high amenity or environmental value are avoidable in routeing.

The notes and clarifications provide guidance with regard to areas of moderate or low amenity or environmental value, noting that regional or local areas or sites should be identified from development plans. For the purposes of this study, such areas are considered to comprise detailed routeing considerations and include local wildlife sites or reserves, woodland and outdoor recreational areas, such as country parks.

While the Rules do not address residential areas, the subsequent notes and clarifications provide guidance stating "*avoid routeing close to residential areas as far as possible on grounds of general amenity*". For the purposes of this study, settlements have been defined as areas of the highest amenity or environmental value. Smaller clusters or individual properties are considered to be a deviation issue and while of similar importance, are considered to be a detailed routeing consideration that may be more appropriate addressed through the identification of a detailed alignment.

Rules 3, 4, 5 and 6 highlight the importance of considering landscape and visual matters in routeing, including giving consideration to landscape character including sensitivity to OHLs, the use of landform and woodland to reduce visual intrusion or prevent skylining and the presence of other OHLs and the potential to create 'wirescapes'. The Rules recognise existing woodland and forestry as features of value, as well as presenting opportunities for minimising amenity impacts from new OHLs, noting that where possible routeing should follow open space and run alongside, not through woodland or

commercial forestry, and consider opportunities for skirting edges of copses and woods. In circumstances where there is no reasonable alternative to cutting through woodland or commercial forestry, discussions should be undertaken with the relevant forestry regulator.

Further to the Rules, the UK Forestry Standard (UKFS) was published in 2017 and provides the national reference standard for managing forests in the UK to meet current needs without hindering future generations requirements. The UKFS sets guidelines for sustainable forest management and recognises Scotland's forests have a range of environmental, economic and social objectives. The Scottish Government is committed to maintaining and increasing Scotland's woodland cover and has developed supporting policy guidance to strictly control removal and where felled, the requirement for compensatory replanting.

In summary and recognising the UKFS and Scottish Government commitments, the routeing of OHLs for SPEN projects seeks to keep woodland removal at a minimum and only where it would achieve significant and clearly defined public benefits. For the purposes of this study, landscape and visual considerations, and the potential impact on forestry, have informed the identification of route options taking account of considerations described above as far as possible.

Specific technical or economic considerations are not identified in the Rules or notes and clarifications, however, these form part of SPT's statutory duties. For the purposes of this study, this includes the directness of route options, as well as matters affecting SPEN's ability to build, operate and maintain an OHL within the route options identified. Example considerations include taking account of existing electricity transmission or distribution infrastructure, topography, side slope gradients, altitude, ground conditions and accessibility.

3.2 Routeing Methodology

3.2.1 Overview of Approach to Routeing

The approach to identifying and assessing alternative route options for the grid connection is illustrated below in **Figure 3**. It follows SPEN's approach and draws upon established practice ensuring that it is robust and transparent. It is a systematic and iterative approach in which an increasing level of detail is applied at each step, concluding with the identification of a preferred route option to be subject to consultation.

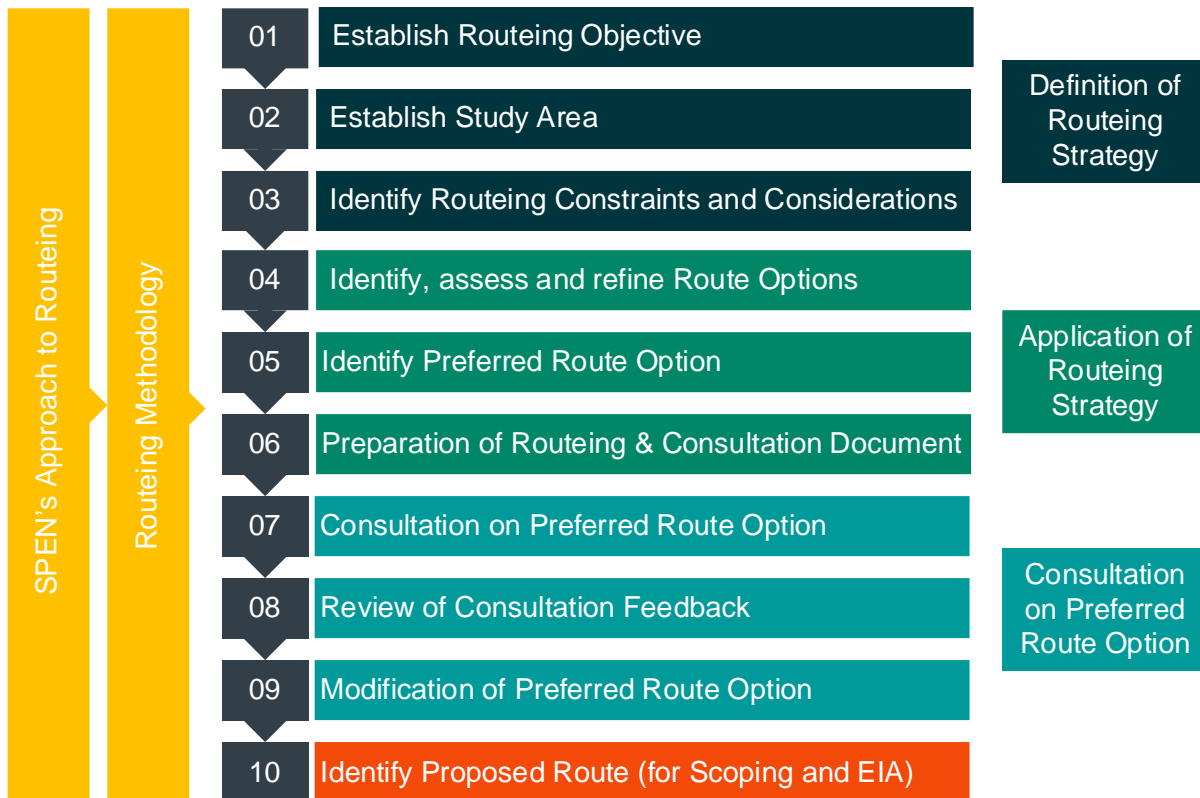


Figure 3. Routeing Methodology

There are broadly three key activities: firstly, informed by Steps 1 to 3, the definition of a routeing strategy specific to the grid connection; secondly in Steps 4 to 6, the identification and assessment of route options based on the strategy, concluding with a preferred route option; and finally, consultation on the preferred route option through Steps 7 to 9. Steps 4 to 7 ensure that route options are tested and refined taking into account the routeing strategy, as well as feedback received from consultation with key statutory stakeholders.

3.2.2 Grid Connection Routeing Objective

The first step in the approach has been to identify a grid connection routeing objective which takes account of SPT's statutory duties and licence obligations. In accordance with SPEN's overall approach to routeing, the routeing objective for the grid connection is *"To identify a technically feasible and economically viable double circuit 132 kV overhead line route, supported on wood poles, between the proposed Spirebush Renewable Energy Project and the proposed Redshaw Substation which causes, on balance, least disturbance to the environment of the Study Area and the people who live, work and enjoy recreation within it."*

4. The Study Area

4.1 Overview

This section describes the identification of the Study Area and routeing considerations within it, as set out in Steps 2 and 3 of the routeing methodology illustrated in **Figure 3**. This takes into account established approaches to OHL routeing described in the previous section, including SPEN's approach to routeing, as well as the guidance contained in the Rules.

4.2 Description of the Study Area

4.2.1 Overview

The extents of the Study Area, illustrated in **Figure 4**, have been informed by a combination of desk and field-based analysis coupled with an understanding of the need to balance potential adverse environmental effects with technical feasibility and economic viability.

The Study Area has largely been defined by the location of the proposed Spirebush Renewable Energy Project in the west and an approximate 22 km long section to the proposed Redshaw Substation to the east. The Study Area lies within East Ayrshire to the west and South Lanarkshire to the east. The highest elevations across the route range from approximately 300 m to 400 m. The A70 runs through the central portion of the Study Area from the west to the north-east. Settlements are scattered along the A70 road corridor which is influenced by prior industrial works. Larger settlements include the villages of Muirkirk (which lies just outside the western boundary of the Study Area) and Douglas, otherwise single and clustered settlements are dispersed resulting in a sparsely distributed population.

Existing infrastructure includes a number of operational wind farms and OHLs associated with the distribution network (carried on wood poles) present throughout the Study Area which is expanded upon in Section 4.2.3 and Section 4.2.5.

4.2.2 Areas or Sites of Highest or High Amenity or Environmental Value

The Muirkirk Uplands Site of Special Scientific Interest (SSSI) and the Muirkirk and North Lowther Uplands Special Protection Area (SPA), covers a large portion of the Study Area in the south-west. The Muirkirk SSSI and SPA also enters the Study Area at two additional points at the Study Area's north-western boundary. The SPA is designated as the site hosts breeding Golden Plovers (*Pluvialis apricaria*) and Hen Harriers (*Circus cyaneus*). Additional ecological sites include the Red Moss Special Area of Conservation (SAC) and SSSI, Shiel Burn SSSI, Ree Burn and Glenbuck Loch SSSI, Miller's Wood SSSI, North Lowther Uplands SSSI and Kennox's Water SSSI. These additional sites are typically more discrete in their extent and/ or located on the boundary of the Study Area. The location of statutory designated ecological sites in relation to the study area are shown on **Figure D2** in **Appendix D**.

Ancient woodland is present in areas within the eastern portion of the study area, particularly focused around Douglas as shown on **Figure D2** in **Appendix D**.

There are three scheduled monuments present at Glenbuck, Auchensaugh Hill and Douglas 'Glenbuck Ironworks, 470 m NW of Glenbuck Home Farm', 'Auchensaugh Hill, cairn' and 'St Brides Church' respectively.

Within Douglas there is the Douglas Conservation Area and a number of Category B and C listed buildings, as well as two category A listed buildings.

4.2.3 Other Constraints and Areas or Sites of Local Amenity or Environmental Value

There are other constraints within the Study Area, including scattered individual properties and sites or areas of local amenity or environmental value, including core paths as shown on **Figure 5** as well as **Figure D4, Appendix D**.

The Douglas Valley Special Landscape Area (SLA) is present in the eastern portion of the Study Area, covering Douglas and Hazelside and the surrounding hills. To the east of the Study Area lies the East Ayrshire Council locally designated Sensitive Landscape Area, which shares the same boundary as the Muirkirk SPA.

Within the Study Area, the River Ayr Way runs from Muirkirk to Glenbuck and forms the initial section of this source to sea long distance path which starts at the source of the River Ayr at Glenbuck Loch.

A former opencast mining site is present to the north and west of Glenbuck, which is currently undergoing phased reinstatement, and also around Lees Hill south of Glespin.

Existing infrastructure, including the Galawhistle Wind Farm, the Kennoxhead Extension, Douglas West Wind Farm and its extension, Bodinglee Wind Farm, Andershaw Wind Farm and Middle Muir Wind Farm, are notable constraints within the northern and southern portions of the Study Area. A number of existing wood pole lines carrying the distribution network also exist within Douglas Valley. The existing infrastructure is illustrated on **Figure D5, Appendix D**.

As identified in the South Lanarkshire Development Plan at the boundary of the Study Area to the north of Douglas, an area is earmarked as a Strategic Economic Investment Location. There are no other allocations identified within the Study Area beyond the settlement of Douglas.

4.2.4 Planning Policy

4.2.4.1 National Planning Policy

National Planning Framework 4 (NPF4) sets out the priorities for the planning system up to 2045 with an emphasis on the transition to a net zero sustainable Scotland by 2045.

NPF4 sets out a number of priorities to guide the planning system. The need for increased renewable energy generation and the associate grid infrastructure is highlighted within Annex B – National Developments Statement of Need, noting:

“Additional electricity generation from renewables and electricity transmission capacity of scale is fundamental to achieving a net zero economy and supports improved network resilience in rural and island areas.” Pg. 103.,.

The aim of the grid connection supports Scotland’s renewable energy targets by facilitating the connection of the Spirebush Renewable Energy Project.

4.2.4.2 Local Planning Policy

The grid connection Study Area includes East Ayrshire and South Lanarkshire Council areas. In East Ayrshire, local planning policy is set out within the East Ayrshire Local Development Plan 2 (EALDP2) which was adopted in April 2024. The EALDP2 sets out the vision and objectives of East Ayrshire, along with the policies to drive this development for the next 10 to 20 years. The EADLP assists in delivering the Scottish Government’s renewable energy target, with Policy RE1 stating that *“Proposals for the generation, storage and utilisation of renewable energy, including proposals for the co-location of these*

technologies, in the form of new build development, infrastructure or retrofit projects are encouraged and will be supported in standalone locations and as integral parts of new and existing developments...".

In South Lanarkshire planning policy is set out within the South Lanarkshire Local Development Plan 2 (SLLDP2) which was adopted in April 2021. The SLLDP2 sets out the vision, objectives and strategy for the Council to guide future development to improve the quality of life for everyone within South Lanarkshire. SLLDP2 supports renewable energy infrastructure with Policy 18 stating that “ *Applications for renewable energy infrastructure developments will be supported...".*

4.2.5 Landscape Character

Landscape character within the Study Area is predominantly defined by plateau moorland which is intersected by the upland river valleys of the River Ayr to the west and Douglas Water to the east. It comprises the following Landscape Character Types (LCTs) as defined by the digital map-based national Landscape Character Assessment published by NatureScot (2019) which are presented in **Figure D1, Appendix D**.

- LCT 213 Plateau Moorlands (Glasgow & Clyde Valley) and LCT 79 Plateau Moorland (Ayrshire); and
- LCT 207 Upland River Valley (Glasgow & Clyde Valley) and LCT 69 Upland River Valleys (Ayrshire).

The plateau moorland comprises an extensive area of upland landscape with large scale landform, undulating hills and sloping ridges. The combination of elevation and exposure limits the vegetation to one dominated by blanket bog, heather and grass moorland. This is interrupted in places by extensive areas of coniferous plantation. Settlement is limited across the plateau moorland with a sparse network of roads, occasional properties and extensive wind farm development. The sense of naturalness and remoteness is diminished in these areas by the presence of turbines which also appear on skylines when viewed from within the valley below. The upland river valley of the Douglas Water creates a narrow valley floor enclosed by steeply rising slopes. The valley comprises a mixture of rough moorland, improved pasture and coniferous woodland with pockets of native woodland planting where the valley widens and associated with the designed landscape at Douglas.

The A70 broadly follows the valley floor, with settlement concentrated along it notably at Muirkirk, Glespin and Douglas. Scattered properties and farmsteads are evident within the valley and occasionally within the plateau moorland. Core paths are dispersed across the study area along with the River Ayr Way, which is a long-distance path starting at Glenbuck Loch and follows the River Ayr west out of the study area. Glenbuck heritage site lies to the north of the loch and is a visitor attraction with memorial, interpretation boards and a network of paths.

Existing electrical infrastructure is limited to the distribution network of wood pole lines which cross the Study Area, becoming more apparent where they converge and cross the valley floor and the 400 kV overhead line which fringes the eastern edge of the Study Area.

Figure 4. Study Area

4.3 Key Routeing Considerations

In line with Step 3 of the routeing methodology illustrated in **Figure 3** and described in Section 3, routeing considerations within the Study Area have been identified to help inform the routeing strategy and the identification and assessment of route options.

Full details of the key routeing considerations within and adjacent to the Study Area and how they relate to the Rules and subsequent notes are contained in **Appendix C**.

Key routeing considerations are those that have been identified in Section 4 that have informed the development of route options. These typically comprise large designated sites of international or national importance, as well as larger settlements or areas of existing development which are considered to be areas of the highest or high environmental value within the Study Area, or areas where routeing is not technically feasible.

Within the Spirebush Study Area this includes:

- The Muirkirk and North Lowther Uplands SPA and Muirkirk Uplands SSSI, which is located through most of the southwestern corner of the Study Area, south of the A70 from Parish Holme,
- The eastern Douglas Valley, including the settlements of Douglas and Glespin, Douglas Water and the ancient woodlands of Townhead Wood and Windrow Wood on either side of the valley. The settlement of Douglas includes a conservation area and a number of listed buildings, and
- The extensive coverage of existing wind farms present on the northern and southern side of the Douglas Valley corridor, including Galawhistle Wind Farm, the Kennoxhead Extension, Douglas West Wind Farm and its extension, Bodinglee Wind Farm, Andershaw Wind Farm and Middle Muir Wind Farm.

In addition to the above, there are a number of other designated sites which are considered to be of highest or high environmental value within the Study Area, however, these tend to be smaller in size and more widely dispersed. This does not diminish their importance within the routeing study but does mean when developing larger route options they may not be avoidable. Such constraints have been identified and are also illustrated on **Figure 5**, however, given their scale they will be considered in more detail in the assessment of route options and through the progression of detailed routeing, as necessary.

Figure 5. Key Routeing Considerations

5. Routeing Strategy

5.1 Overview

The purpose of the Routeing Strategy is to ensure a consistent approach to identifying and assessing route options leading to a preferred route option, while ensuring that appropriate thought is given to balancing the routeing considerations which have been identified.

The Routeing Strategy has been developed taking into account the routeing objective identified in Section 3 and the routeing considerations identified in Section 4. Given the nature of OHLs, the key environmental effects are likely to be landscape and visual effects. To limit adverse effects on the landscape and visual amenity, careful routeing is undertaken, led by experienced landscape architects based on experience and informed by fieldwork.

5.2 Grid Connection Routeing Strategy

Route options will be developed such that they:

- Are as direct as possible between the proposed Spirebush Renewable Energy Project and the proposed Redshaw Substation,
- Minimise as far as possible potentially adverse effects on residential and visual amenity by taking account of the pattern and distribution of settlement and individual/clustered properties,
- Minimise potential direct and indirect effects on:
 - All other statutory and non-statutory sites within the Study Area,
 - Habitats and protected species,
 - Recreational and access routes.
- Take account of existing and planned land use and infrastructure as far as possible, including extension of settlements, proximity to existing OHLs and wind farms.

6. Route Options

6.1 Identification of Route Options

The Study Area was determined around the proposed Spirebush Renewable Energy Project to the west and the proposed Redshaw Substation to the east. A number of route options were identified within the Study Area, which take into account technical feasibility and the effect on the environment, amenity and people. The route options are identified on **Figure 6**, which should be considered in review of the descriptions in the sub-sections below.

Due to the key routeing considerations identified on the upper slopes of the Douglas Valley, including the Muirkirk and North Lowther Uplands SPA and Muirkirk Uplands SSSI, and the various wind farms, either in operation or development, the options identified have formed broadly around the A70 corridor at the foot of the valley. Options are located either north or south of the A70. The options expand or contract in width around or accounting for areas of highest amenity value, whilst also taking due consideration of the topography of the areas, which in places is very steep, making constructability too challenging or exposing the OHL within the landscape.

As highlighted in Section 4 of this report, the nature of some constraints, including the Townhead Wood ancient woodland and the Douglas Valley Special Landscape Area, means that areas of high or highest environmental value are located within the route options. This is not because their importance is reduced, but takes account of opportunities to avoid or minimise impacts through construction options or detailed route development.

Site visits have been undertaken to further ground-truth the results of desk-top analysis to determine the suitability for an OHL at various locations and to confirm that initial options were sound. Following site visits, a number of amendments were made to offer greater flexibility in some options to better allow for the avoidance of sensitive receptors within the options during more detailed routeing. Due to sensitive receptors in both the west of the study area and the east of the study area, there is only one viable route option for route sections 1 and 5.

6.2 Route Section 1

6.2.1 Description of Route Section 1

Route Section 1-A starts to the south of Muirkirk and North Lowther Uplands SPA and SSSI and travels in a south easterly direction crossing the B743 and Greenock Water, a river flowing out of Dippal Burn, before terminating to the east of Black Hill. The route section is approximately 2.3 km moving from west to east.

6.3 Route Section 2

6.3.1 Description of Route Section 2

Route Section 2 starts to the east of Black Hill. Overall, the route section comprises approximately 4.7 km moving from west to east. The route section is divided into five route options:

- 2-A and 2-B both meet Route Section 1. Route option 2-A then runs to the north of Glenbuck and directly joins route option 3-A,
- 2-B.1 and 2-B.2 start to the east of 2-B and were proposed as route options to avoid the properties, heritage village and ironworks Scheduled Monument at Glenbuck, and

- 2-B.3, which starts to the south of 2-B and runs adjacent to the A70 on its southern side. As detailed in the routeing assessment in **Table 2**, much of Route Option 2-B.3 comprises an SSSI and SPA of the Muirkirk and North Lowther Uplands. Route Option 2-B.3 further presents an option for taking a route south of Glenbuck Loch, ending at Glenbuck Loch's south-eastern extent.

6.4 Route Section 3

6.4.1 Description of Route Section 3

Route Section 3 starts in the west at Glenbuck and Glenbuck Loch and travels in a broadly eastward direction terminating to the west of Monks Water, a watercourse that runs from north to south of the Study Area. There are two route options at this route section which are delineated by the A70. Route Option 3-A runs to the north of Glenbuck Loch before routeing directly north of the A70. Route Option 3-B follows the A70 to its south.

6.5 Route Section 4

6.5.1 Description of Route Section 4

The two route options at Route Section 4 start to the west of Monksfoot, approximately where Monks Water meets Douglas Water. The options deviate north and south largely to avoid the settlement of Glespin where there are a number of properties, as well as areas of woodland. Route Option 4-A takes a northern approach and Route Option 4-B takes a southern approach.

6.6 Route Section 5

6.6.1 Description of Route Section 5

Route Section 5-A is approximately 7.5 km in length moving from west to east. The route starts north of Weston Wood and initially follows the A70 towards the Village of Douglas, crossing a tributary of Douglas Water. In order to avoid Douglas, the route then leaves the A70 and follows the treeline of Townhead Wood, south of Douglas, crossing a core path and a small area of ancient woodland. The route then travels south broadly following a segment of the B7078, approaching the proposed Redshaw Substation which is currently indicated to be located to the south of a small area of woodland.

Figure 6. Route Options

6.7 Summary of Assessment

Table 2 to Table 6 summarise the assessment of route options 1 to 5 taking into account key environmental factors.

Table 2. Summary of Assessment: Route Option 1

Topic	Route Option 1-A
Landscape	<p>The route option lies predominantly within the Plateau Moorland LCT, except for a short section which crosses into the Upland River Valley LCT to join up with route option 2-B. The landscape character features a comparatively level topography with gentle rising slopes covered by blanket bog, heather and grass moorland. The route option does climb the gentle slope of Black Hill, reaching 350 m at its highest point before sloping back down to link up with route option 2-B.</p> <p>An 11kV OHL distribution wood pole line runs almost parallel to the B743, both vertically crossing the route option, as well as connecting to the isolated properties to the north of this route option. Greenock Water, a river flowing out of Dippal Burn, crosses the route option following a narrow, winding course, before joining the River Ayr about 4 miles west of the small town of Muirkirk.</p> <p>Route option 1-A has the potential to accommodate an OHL, however due to sloping over Black Hill, the wood pole line may have an impact on the local landscape.</p>
Visual Amenity	<p>There are no settlements within this route option, however there is an isolated property and a farm (Blackside Farm) situated on the northern boundary of the route option which would be impacted by routeing in this option. Views will be impacted by users of the B743 because the route option crosses this road.</p> <p>Careful routeing of an OHL avoiding proximity to the property would help to minimise the visual impacts from the residents of the property.</p>
Cultural Heritage	<p>There are no cultural heritage designations within or adjacent to this route option.</p>
Ecology	<p>The route option passes within close proximity (approximately 5 m) to the Muirkirk and North Lowther Uplands SPA and SSSI, following the designated boundary for a length of approximately 920 m. As such, further assessment is required on the impact of the route on protected species found in the Muirkirk and North Lowther Uplands SPA and SSSI which will be conducted as part of the EIA.</p>
Woodland	<p>There are no areas of ancient woodland within the route option, however it does route within close proximity (approximately <5 m away) to an area of native woodland.</p>
Tourism and Recreation	<p>There are no recreational paths within this route option, though the option does route around the north eastern side of Black Hill which may attract recreational users.</p>

Routeing and Consultation Document Update:

Spirebush Renewable Energy Project Grid Connection

Land Use and Other Infrastructure	<p>The western section of the route option is located within an area with a land capability for agriculture of 4.2 (not prime agricultural land, indicating this area is capable of producing a narrow range of crops. As the route option moves east, the land becomes less capable of producing crops with the area having a land capability for agriculture of 5.2 and 5.3).</p> <p>An 11 kV OHL and the B743 intersect the eastern section of this route.</p>
Physical Environment	<p>Route Option 1-A crosses Greenock Water, a river that flows out of the Dippal Burn, which has a high likelihood of flooding every year according to Scottish Environment Protection Agency (SEPA) data.</p> <p>The topography of this route option is relatively level with a slight gradient due to sloping up and down Black Hill.</p> <p>The Carbon and Peatland Map⁶ indicates that most of route option 1-A is underlain by mineral soils, with a small area of the route option, when it slopes around Black Hill, underlain by predominantly peaty soil with some peat soil.</p>
Conclusions	<p>Route 1-A provides an opportunity to integrate an OHL into the landscape and views given the relatively remote, sparsely populated landscape. Careful routeing to the south of the two properties located on the northern boundary will be necessary to ensure visual impacts on the properties are kept minimal. Other key constraints that need to be considered when routeing through this option is the crossing of the B743 and Greenock Water, and proximity to natural woodlands and to the Muirkirk and North Lowther Uplands SPA and SSSI.</p>

⁶ [Carbon and peatland 2016 map | Scotland's soils \(environment.gov.scot\)](#)

Table 3 Summary of Assessment: Route Option 2

Topic	Route Option 2-A	Route Option 2-B	Route Option 2-B.1	Route Option 2-B.2	Route Option 2-B.3
Landscape	<p>This route option lies predominantly within the Upland River Valley LCT with the north eastern section falling within the Plateau Moorland LCT. Whilst largely within the River Ayr valley, this route option follows the upper slopes of the valley which are more characteristic of the plateau moorland. The majority of this area was formerly mined and is undergoing extensive restoration as part of the Ponesk-Spireslack works, with a mix of productive mixed conifer woodland planting alongside native broadleaf and riparian woodland. The Glenbuck Heritage Site is a visitor attraction and forms part of an important historic landscape. Restoration works are seeking to enhance the visitor experience with woodland planting along the Stottencleugh Burn and improved access routes to heritage features. The adjacent Galawhistle Wind Farm influences the character of the plateau</p>	<p>This route option lies entirely within the Upland River Valley LCT and encompasses the lower valley sides to the north of the A70. Some of this area contains the restoration associated with the Ponesk-Spireslack works. It is a relatively broad and open valley landscape with rough grassland extending along the valley slopes to the boundary of the restored landscape to the north. An 11 kV distribution wood pole line follows the A70 road corridor and the turbines at Galawhistle Wind Farm are prominent on the higher plateau in views to the east. Woodland is sparse, with pockets associated with the narrow watercourses which dissect the route option, although the restoration proposals will provide extensive woodland cover, both native and coniferous across this upland valley landscape in the future. This route option provides an opportunity to integrate an OHL using future planting proposals and topography to</p>	<p>This short section of connecting route option lies within both the Upland River Valley and Plateau Moorland LCTs. It contains complex topography which steeply rises from the Stottencleugh and Hareshaw Burns and the access road to Glenbuck Heritage Site. Mixed woodland planting is prominent to the east of the road and further provides containment, in addition to the steep topography. To the immediate north of this route option lies the Glenbuck Iron Works Scheduled Monument, which forms a key part of this historic landscape. An 11 kV distribution wood pole line follows the upper valley slopes to the west. The northern part of this route option could accommodate an OHL without removal of woodland planting, but has the potential to impact the historic landscape setting associated with the iron works.</p>	<p>This short section of connecting route option lies entirely within the Upland River Valley LCT. It contains a band of native woodland planting which extends from Glenbuck loch along the Stottencleugh Burn. It is a small scale intimate landscape in which the combination of woodland planting set against the rising slopes beyond the loch creates an attractive scenic quality. Routeing an OHL through this section of landscape would result in substantial removal of woodland impacting the character and the setting of the loch.</p>	<p>This route option lies within the Upland River Valley LCT and contains the A70 road corridor the broad valley landscape to the south. It contains the locally designated Sensitive Landscape Area which follows the same boundary as the SPA. An 11 kV distribution wood pole line follows the southern side of the A70, as well as connecting to the isolated properties to the south. The River Ayr flows from its source at Glenbuck Loch through this route option, following a narrow and meandering course. The topography steepens adjacent to the loch which, along with the native woodland planting, creates an attractive composition of elements. Routeing an OHL through this route option would directly impact the Sensitive Landscape Area and result in the removal of native woodland planting impacting the character and setting of the loch.</p>

Topic	Route Option 2-A	Route Option 2-B	Route Option 2-B.1	Route Option 2-B.2	Route Option 2-B.3
	<p>moorland, reducing the sensitivity to vertical structures. This is a relatively remote, large scale landscape in which wood pole lines, whilst not currently present, could be reasonably well accommodated, making use of topography and existing and future woodland blocks to reduce the prominence of the OHL.</p>	<p>sensitively integrate within the valley landscape, noting the potential cumulative wirescape associated with multiple wood pole lines within the valley.</p>			
Visual Amenity	<p>There is no settlement or isolated properties within this route option. Recreational access is limited by the ongoing restoration of the mine workings, although future proposals allow for access across the wider area. Local walking routes currently exist around the Glenbuck Heritage Site. This is tourist destination with a network of paths extending across the restored mine workings. Views are focussed on the Heritage Site as well as north along the Stottencleugh Burn towards the viaduct and south across the upland valley landscape. Careful routeing of an OHL to avoid impacting the visual setting</p>	<p>There is no settlement or isolated properties within this route option, although Newmains Farm lies to the immediate east of the route option. The A70 runs along the valley floor and is a strategic route connecting East Ayrshire with South Lanarkshire. Views are largely focussed along the upland valley landscape to the east and west. Following the River Ayr lies the River Ayr Way which is a long distance path. The A70 road corridor which lies along the southern edge of this route option has a strong bearing on the scenic quality of the option. There are limited visual receptors within this route option providing an</p>	<p>There is no settlement or properties within this route option, although a cluster of properties lie adjacent, including Newmains Farm and three properties to the immediate south enclosed by woodland. The road which runs through this route option provides access to Glenbuck Heritage Site and provides an attractive journey from the A70, past the scheduled iron works to the memorial site.</p>	<p>There is no settlement or properties within this route option, although a cluster of properties lie adjacent, including Newmains Farm and three properties to the immediate north enclosed by woodland. Views from Newmains Farm are orientated towards the loch and the existing 11 kV distribution wood pole line runs behind the property and farm. The road to Glenbuck Heritage Site runs through this route option.</p>	<p>Whilst no settlement exists within this route option, a number of isolated properties lie adjacent to it with views extending across the valley landscape. The A70 runs along the valley floor and is a strategic route connecting East Ayrshire with South Lanarkshire. Views are largely focussed along the upland valley landscape to the east and west. The River Ayr Way long distance path runs through this route option from the source of the River at Glenbuck Loch, broadly parallel to the A70 road corridor and River Ayr. Whilst there are relatively few visual receptors within this route option, careful routeing of an OHL would be</p>

Topic	Route Option 2-A	Route Option 2-B	Route Option 2-B.1	Route Option 2-B.2	Route Option 2-B.3
	of the Glenbuck Heritage Site using topography and woodland would help to limit impacts on these recreational views.	opportunity to route an OHL with limited impact on visual amenity.			required to limit the cumulative wirescape, given the existing wood pole infrastructure along the valley floor.
Cultural Heritage	Whilst not in this route option, the route option passes in close proximity to the scheduled monument Glenbuck ironworks (SM2931). Adjacent to this heritage site, and itself within the route option, Glenbuck Heritage Site has seen restoration efforts with woodland adjacent and up the Stottencleugh Burn designed to enhance the visitor experience. Sightlines and access routes to the heritage features are proposed to be retained and complimented. Adjacent to the northern boundary, an area has been earmarked around the Spirelack mining void to establish the area as an educational study site as part of the wider reinstatement.	There are no cultural heritage designations within or adjacent to this route option.	Whilst not in this route option, the route option passes in close proximity (immediately south) to the scheduled monument Glenbuck ironworks (SM2931).	There are no cultural heritage designations within or adjacent to this route option.	There are no cultural heritage designations within or adjacent to this route option.
Ecology	There are no national or local ecological designations within this route option. The Muirkirk and North Lowther Uplands SPA and Muirkirk	There are no national or local ecological designations within this route option. The Muirkirk and North Lowther Uplands SPA and Muirkirk	There are no national or local ecological designations within this route option.	There are no national or local ecological designations within this route option. There is an area of wet woodland recorded as part of	The route option crosses the SPA and SSSI Muirkirk and North Lowther Uplands which is designated for the presence of blanket bog,

Topic	Route Option 2-A	Route Option 2-B	Route Option 2-B.1	Route Option 2-B.2	Route Option 2-B.3
	Uplands SSSI boundary is approximately 375 m north of the route option. The route option runs parallel to this for approximately 1 km.	Uplands SSSI boundary is approximately 375 m north of the route option.		the Native Woodland Survey on the western bank of Glenbuck Loch which extends across the route option and is not avoidable.	both breeding and non-breeding hen harrier, and a breeding bird assemblage. The area also shares additional designations as an Important Bird Area and an RSPB reserve. The SPA and SSSI spans the majority of this route option, with the exception of the land area taken up by the A70 trunk road. Given the presence of the SPA and SSSI and other physical constraints, there are limited opportunities to avoid this designated area at this route option.
Woodland	There is a small isolated patch of woodland displayed on satellite imagery within this route option, however the woodland has not been identified as either native or ancient.	There is no woodland displayed within the route option.	There are areas of woodland displayed on satellite imagery within the route option, however the woodland has not been identified as either native or ancient. These areas are potentially discrete with options to route to avoid direct impacts.	There is an area of wet woodland as classified by the Native Woodland Survey of Scotland. This area spans the route option. According to satellite imagery there is additional woodland in this area which has not been identified as native or ancient woodland.	There is an area of Lowland mixed deciduous woodland as classified by the Native Woodland Survey of Scotland on the shore of Glenbuck Loch, which lies to the east of this route option which could potentially be avoided during detailed routeing.
Tourism and Recreation	The proposed Ponesk-Spireslack concept areas being reinstated includes a number of areas focused on attracting tourism around the Glenbuck Heritage Site which lie within the route option.	Though there are no recreational paths within this route option, the River Ayr Way sits immediately adjacent. There are potential indirect impacts to path users.	Though there are no recreational paths within this route option, the River Ayr Way is located adjacent to the route option. There are potential indirect impacts to path users.	The River Ayr Way also established as an East Ayrshire core path (9562) crosses at two points along the route option.	The River Ayr Way, also established as an East Ayrshire core path (9562) runs through the length of this option as it follows the length of the River Ayr from its source at Glensbuck Loch.

Topic	Route Option 2-A	Route Option 2-B	Route Option 2-B.1	Route Option 2-B.2	Route Option 2-B.3
Land Use and Other Infrastructure	<p>The route option is located within an area with a land capability for agriculture of Class 5.2 and 5.3 (not prime agricultural land).</p> <p>There is an area of active opencast workings that takes up a large area of this route option.</p>	<p>The route option is located within an area with a land capability for agriculture of Class 5.2, 5.3 (not prime agricultural land).</p> <p>An area of opencast workings is present within this route option as well as an 11 kV line which crosses the route option.</p>	<p>The route option is located within an area with a land capability for agriculture of Class 5.2 and 5.1 (not prime agricultural land).</p> <p>An 11 kV line crosses route option 1-B.1 at multiple points.</p> <p>According to AddressBase⁷ data there are a number of properties within or within 150 m of the route option.</p>	<p>The route option is located within an area with a land capability for agriculture of Class 5.2 and 5.1 (not prime agricultural land).</p> <p>According to AddressBase data there are a number of properties within 150 m of the route option.</p>	<p>The route option is located within an area with a land capability for agriculture of Class 5.2, 5.3 and 4.2 (not prime agricultural land).</p> <p>An 11 kV line belonging to the distribution network runs throughout this route option, mostly paralleling the A70 before separating out to cross the route option.</p> <p>There are a number of isolated properties within or within 150 m of the route option, as indicated on AddressBase data.</p>
Physical Environment	<p>There is an area at risk of flooding adjacent to Ponesk Burn. There also areas of surface water flooding in small pockets located at the opencast workings at Glenbuck.</p> <p>The topography is largely defined by the presence of opencast workings which are currently subject to phased reinstatement. As part of the opencast workings there is a viaduct within this route option. Outside the areas undergoing opencast</p>	<p>There is a flood risk associated with Ponesk Burn which crosses this route option.</p> <p>The topography at this route option is mainly characterised by the presence of opencast workings which are currently subject to phased reinstatement contained to the lower slopes of the hills to the north.</p> <p>The Carbon and Peatland Map indicates that peat or peaty soils are present in the</p>	<p>There is an area at risk of flooding adjacent to Stottencleugh Burn. This route option is relatively level, with a slight gradient.</p> <p>The Carbon and Peatland Map indicates that Route Option 2-B.1 is entirely underlain by mineral soils.</p>	<p>There are areas at risk of flooding are adjacent to Stottencleugh Burn and Glenbuck Loch. This route option is relatively level, with a slight gradient at the slopes north of Glenbuck Loch.</p> <p>The Carbon and Peatland Map indicates that Route Option 2-B.2 is entirely underlain by mineral soils.</p>	<p>There is an area at risk of flooding adjacent to the River Ayr which runs throughout the course of this route option. The topography of this route option is relatively level with a slight gradient to the south of Glenbuck Loch.</p> <p>The Carbon and Peatland Map indicates that Route Option 2-B.3 is entirely underlain by mineral soils.</p>

⁷ Address data source: OS Address Base Plus - Residential Class (RD) only

Topic	Route Option 2-A	Route Option 2-B	Route Option 2-B.1	Route Option 2-B.2	Route Option 2-B.3
	<p>workings the topography is undulating with irregular hill patterns.</p> <p>The Carbon and Peatland Map⁸ indicates that peat or peaty soils are present in the most western extent of the Route Option 2-A and the rest of the route option is underlain by mineral soils.</p>	<p>most western extent of the Route Option 2-B and the rest of the route option is underlain by mineral soils.</p>			
Conclusions	<p>Route Option 2-A provides the best opportunity to integrate an OHL into the landscape and views given the relatively remote, large scale, restored landscape in which topography and existing and future woodland blocks could be used to reduce the prominence of the OHL. Sensitive routeing to the north of Glenbuck Heritage Site will be an important consideration in limiting the potential impacts on the historic landscape setting and visual amenity of visitors.</p> <p>Section 2-A provides an opportunity to avoid the Muirkirk and North Lowther</p>	<p>Route Option 2-B provides an opportunity to integrate an OHL using future planting proposals and topography to sensitively integrate within the valley landscape, noting the potential cumulative wirescape along the valley floor.</p> <p>Route Option 2-B provides an opportunity to avoid the Muirkirk and North Lowther Upland SPA and Muirkirk Uplands SSSI.</p> <p>The route will need to consider the Ponesk-Spireslack concept area which will involve planting new native broadleaf riparian woodland – detailed routeing could align with these plans to avoid any area of tree</p>	<p>Whilst the northern part of Route Option 2-B.1 could accommodate an OHL without removal of woodland planting and could accommodate maintaining a suitable distance from the cluster of properties to the south, it has the potential to impact the historic landscape setting associated with the iron works and visual amenity of visitors to the site. There are not considered to be any areas of the highest amenity value for landscape, ecological or historical constraints.</p>	<p>Routeing an OHL through Route Option 2-B.2 would result in substantial removal of woodland impacting the character and the setting of the loch as well as encroaching in residential views.</p> <p>Route Option 2-B.2 creates a considerable pinch point at which maintaining a distance from the residential properties and avoiding the native woodland present in the route option would be unachievable. Additional constraints, though not of the same value include the flooding associated with Stottencleugh Burn and Glenbuck Loch and the River Ayr Way.</p>	<p>Route Option 2-B.3 would directly impact the locally designated Sensitive Landscape Area and result in the removal of native woodland planting impacting the character and setting of the loch. There is also the potential for cumulative wirescape due to the infrastructure present in the valley floor.</p> <p>Due to the extent of the SPA within the route option, the route option would directly impact the Muirkirk and North Lowther Upland SPA and Muirkirk Uplands SSSI. There is the potential for further ecological effects were the route to require clearance of the native</p>

⁸ Peatland data source: NatureScot. Class 1 and 2 from the Carbon and Peatland 2016 map as per Nature Scot guidance.
<https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/soils/carbon-and-peatland-2016-map>
<https://cagmap.snh.gov.uk/natural-spaces/dataset.jsp?code=PEAT>

Routeing and Consultation Document Update:
 Spirebush Renewable Energy Project Grid Connection

Topic	Route Option 2-A	Route Option 2-B	Route Option 2-B.1	Route Option 2-B.2	Route Option 2-B.3
	<p>Upland SPA and Muirkirk Uplands SSSI.</p> <p>There are a number of constraints within this route option that will need considering during the route alignment stage these include: areas identified as peatland, any surface water flood risk associated with Ponesk Burn and a number of constraints arising from the opencast workings present at Glenbuck these include topography, cultural heritage, and tourism constraints.</p>	<p>planting. The route will also need to consider any technical issues arising from the interface with reinstatement of the opencast workings.</p>			<p>woodland planting present to the south of the loch.</p> <p>Additional constraints in the route option include the presence of the River Ayr Way, the distribution network and flooding adjacent to the River Ayr.</p>

Table 4 Summary of Assessment: Route Option 3

Topic	Route Option 3-A	Route Option 3-B
Landscape	<p>This route option lies within the Upland River Valley LCT and is a narrow and enclosed valley landscape with steeply rising slopes leading to higher ground to the north, much of which is occupied by wind farms. The valley slopes comprise rough moorland grazed by sheep with stone wall boundaries. An 11 kV distribution wood pole OHL traverses the lower valley slopes along with a telegraph line which follows parts of the A70 road corridor which forms the southern edge of the route option. Pockets of native woodland planting are present along the valley slopes within fenced or walled enclosures. The landscape comprises a simple form within which an OHL could be carefully routed, avoiding skylines, ridgelines and limiting the cumulative wirescape.</p>	<p>The landscape character of this route option is similar to Route Option 3-A, as it forms the southern part of the Douglas Water upland river valley landscape. It is similarly narrow and enclosed, with steeply rising slopes which lead to the higher ground to the south. The Douglas Water follows a tightly meandering form along the valley floor. The valley slopes to the south comprise rough moorland grazed by sheep along with large sections of commercial forestry, parts of which have been clear felled. As with Route Option 3-A, the landscape comprises a simple form within which an OHL could be carefully routed particularly using the commercial forestry as a backdrop to the line and using future planting regimes to provide additional screening.</p>
Visual Amenity	<p>Visual receptors are limited within this route option with two properties located on the lower valley slopes with views orientated south across the valley to the Douglas Water. Views experienced by travellers using the A70 are focussed along the narrow and relatively enclosed valley floor. Routeing an OHL within this route option could be achieved without impacting the principal views from the properties or road users.</p>	<p>As with Route Option 3-A, visual receptors are limited within this route option, with a property at Parish Holm in the far western section overlooking the Douglas Water and users of the A70. Views experienced by travellers using the A70 are focussed along the narrow and relatively enclosed valley floor. Routeing an OHL within this route option could be achieved without impacting the principal view from the property or road users.</p>
Cultural Heritage	<p>There are no cultural heritage designations within or adjacent to this route option.</p>	<p>There are no cultural heritage designations within or adjacent to this route option.</p>
Ecology	<p>There are no national or local ecological designations within or adjacent to this route option.</p>	<p>The route option crosses the SPA and SSSI Muirkirk and North Lowther Uplands. The area shares additional designations as an Important Bird Area and an RSPB reserve. Direct impacts to the designated site and its cited features could potentially be avoided through detailed routeing.</p>
Woodland	<p>There are two small, avoidable patches of woodland, in which no areas have been identified as native or ancient woodland.</p>	<p>The southern side of the Douglas Water contains a large area of plantation woodland which can be avoided during routeing, and used as a backdrop for the OHL subject to the felling/replanting regime.</p>
Tourism and Recreation	<p>There are no recreational routes located within this route option.</p>	<p>There are no recreational routes located within this route option.</p>

Topic	Route Option 3-A	Route Option 3-B
Land Use and Other Infrastructure	<p>The route option is located within an area with a land capability for agriculture of Class 5.1 and 5.2 (not prime agricultural land).</p> <p>There is an existing 11kV OHL belonging to the distribution network within this route option.</p>	<p>The route option is located within an area with a land capability for agriculture of Class 5.2 (not prime agricultural land).</p> <p>Route Option 2-B is within 150 m of a couple of isolated properties, as indicated on AddressBase data.</p>
Physical Environment	<p>This route option encounters steep gradients of the large landform Shiel Hill which inclines to the north. The OHL could be routed along the contour lines of this route option.</p> <p>The SSSI Ree Burn and Glenbuck Loch is a small area located at the edge of Glenbuck Loch which is geologically designated due to the presence of Wenlock deposits.</p> <p>The Carbon and Peatland Map indicates that Route Option 3-A is mostly underlain by mineral soils with a small area of peat or peaty soils.</p>	<p>This route options encounters steep gradients associated with the valley sides of the Douglas Water. The OHL could be routed along the contour lines of this route option.</p> <p>Areas at risk of flooding are adjacent to Douglas Water which runs the length of the route option.</p> <p>The Carbon and Peatland Map indicates that Route Option 3-B is entirely underlain by mineral soils.</p>
Conclusions	<p>The landscape of Route Option 3-A along the north side of the upland valley provides an opportunity to route an OHL. However, there remains the potential for cumulative wirescape due to the presence of existing wood pole infrastructure. Consideration of this and avoiding ridgelines and skylining will be important aspects of detailed routeing.</p> <p>The SSSI, designated for geological assets lies at the southern boundary where Route Option 3-A meets Glenbuck Loch, and is considered to be avoidable given the limited extent of the designation within the route option.</p> <p>There are not considered to be the any other high amenity constraints at this option, and Route Option 3-A would entirely avoid the Muirkirk Uplands and North Lowther Uplands SPA and SSSI.</p> <p>Further design of the route alignment will need to consider the presence of peatland, areas of flood risk, the distribution network, a cluster of properties and using the topography to avoid any steep areas which are more technically challenging.</p>	<p>Route Option 3-B contains more steeply rising valley sides on the southern side of the narrow upland valley in which an OHL could be routed using topography as a backdrop and future planting regimes to provide additional screening. Whilst cumulative wirescape could be avoided with this option, it would introduce wood pole lines within both sides of the upland valley landscape and potentially within views from the residential property to the north of the A70.</p> <p>The SPA and SSSI Muirkirk and North Lowther Uplands overlaps with this option to varying extents. At the furthest point to the west, where Route Option 3-B connects with Route Option 2-B.3 the combination of the SPA and a single property limit routing opportunities as there would be a direct impact to the SPA. Moving further east the impacts on the SPA could be avoided by restricting routeing to the north of the route option. In the eastern portion the SPA gives way to plantation woodland which can be avoided, and as discussed above there are benefits to using this portion of the route option as subject to the felling planting regime the woodland can act as a backdrop.</p> <p>If Route Option 2-B.3 were to be combined with Route Option 3-B, there would be considerable direct impacts on the SPA due to the constraints present at the point where the two options connect. It is considered unlikely that benefits of this route option to the east could compensate for these direct impacts.</p>

Topic	Route Option 3-A	Route Option 3-B
		As with Route Option 3-A, further route alignment will need to consider areas of flood risk, and using the topography to avoid any steep areas which are more technically challenging.

Table 5 Summary of Assessment: Route Option 4

Topic	Route Option 4-A	Route Option 4-B
Landscape	<p>This route option lies predominantly in the Upland River Valley LCT associated with the Douglas Water, other than a short section which lies within the Plateau Moorland LCT. The eastern half of the route option lies within the locally designated Special Landscape Area of the Douglas Valley. The route option contains sections of the higher valley slopes and rolling landform which comprise of rough moorland with limited vegetation. The areas of higher elevation exhibit characteristics of the larger scale, more open and exposed plateau moorland where wind farm development predominates. A block of native woodland to the west of Longhouse Hill is a distinctive feature within the route option along with Windrow Wood (immediately adjacent to the route option) north-east of Glespin. A number of wood pole lines, all 11 kV associated with the distribution network, cross the route option, several of which parallel the dismantled railway as it rises along the north side of the valley.</p> <p>The relatively large scale nature of the landscape, combined with the simple form of rolling rough moorland, has the potential to accommodate a wood pole OHL. The existing blocks of woodland provide an opportunity to both backdrop and partially screen an OHL, although there is the potential for cumulative wirescape with the concentration of existing wood pole lines and in particular where the route option crosses the Douglas Water and A70.</p>	<p>Similar to Route Option 4-A, this route option lies predominantly in the Upland River Valley LCT associated with the southern side of the Douglas Valley. The section of the route option to the east of the minor road leading from Glespin to Glentaggart lies within the locally designated Special Landscape Area of the Douglas Valley. The southern side of the Douglas Valley is characterised by a wider valley comprising a mixture of improved pasture and coniferous woodland. Areas of restored opencast mine workings are concentrated along the western sections of the route option and are characterised by undulating landform overlain by rough grazing and woodland planting. Properties are clustered along the minor roads which dissect the route option along with some associated wood pole OHLs (all 11 kV associated with the distribution network).</p> <p>The majority of this route option comprises a restored landscape which due to its larger scale, open rolling landform has the potential to accommodate an OHL. Blocks of shelterbelt planting could be used along with woodland blocks and topography to provide some screening and to backdrop sections of the OHL. The section of route option within the Special Landscape Area is more sensitive particularly along the Glespin Burn and associated native woodland planting. The majority of this area could be largely avoided by using the steeper valley slopes of Bodinglee Wind Farm (scoping stage) to route the OHL.</p>
Visual Amenity	<p>There is no settlement within the route option with Glespin located to the south comprising a linear concentration of properties along the A70, generally orientated with views south across the Douglas Water. An isolated property exists at Low Broomerside along with a cluster of properties either end of the route option at Monksfoot and in the east at Hazelside. Two core paths cross the route option from which recreational users experience views across the valley landscape. Views experienced from the A70 to the south of the route option are generally focussed along the relatively narrow valley floor, with additional views experienced by local road users on the southern side of the valley.</p>	<p>As with Route Option 4-A, there is no settlement within the route option, although Glespin is located on the A70 to the north and many of the properties are orientated with views across the Douglas valley to the south incorporating the route option. Scattered properties are present along the minor road network which dissect the route option along with views experienced from the roads including the A70 to the north.</p> <p>Sensitive routeing of an OHL using woodland planting and topography to provide some screening and to provide a backdrop to the OHL would limit its potential prominence in views, particularly from the concentration of receptors in Glespin.</p>

Topic	Route Option 4-A	Route Option 4-B
	Routeing an OHL within this route option would limit views from the main settlement at Glespin although it would become more prominent in views from properties at Monksfoot and in particular the properties at Hazelside.	
Cultural Heritage	There are no cultural heritage designations within this route option.	There are no cultural heritage designations within the route option.
Ecology	There are no national or local designated sites located within this route option. Directly adjacent to the southern boundary of the route option is Miller's Wood SSSI.	There are no national or local designated sites located within this route option. Directly adjacent to the northern boundary of the route option is Miller's Wood SSSI.
Woodland	Within this route option there is an area of upland birchwood recorded as part of the Native Woodland Survey. Opportunities likely exist to avoid this area during detailed routeing. There are no national ecological designations within this route option.	There is an area of wet woodland identified in the Native Woodland Survey that spans the route option and direct impacts cannot be avoided by routeing. The Miller's Wood SSSI sits adjacent to the route option's northern boundary to the east of Glespin.
Tourism and Recreation	The route option is crossed by two core paths as identified in the South Lanarkshire's core path plan namely core path 29753 and core path 28454.	No recreational routes have been identified within this route option.
Land Use and Other Infrastructure	The route option is located within an area with a land capability for agriculture of Class 5.2 and 5.3 (not prime agricultural land) in its western extent. In its eastern extent it is mostly classified as Class 4.2 and 4.1 (not prime agricultural land). There are a number of existing 11 kV OHL belonging to the distribution network which cross this route option at various points. Crossing route option 4-A, there is a proposed connection route as part of Kennoxhead Wind Farm which is under construction. According to AddressBase data there are a number of properties within or within 150 m of the route option.	The route option is located within an area with a land capability for agriculture of Class 5.2 and 5.3 (not prime agricultural land) with an area of Class 4.1 and 4.2 (not prime agricultural land) contained within the central to eastern section. There is an existing 11 kV OHL belonging to the distribution network crossing this route option at various points. Crossing Route Option 3-B there is a proposed connection route as part of Kennoxhead Wind Farm which is under construction. There are a number of properties within or within 150m of the route option, as indicated on AddressBase data.
Physical Environment	There are areas of fluvial flood risk adjacent to Monks Water and Podowrin Burn, as well as small areas of surface water risk associated with Windrow Burn. The route crosses two large landforms with smooth slopes namely the lower slopes of Strawberry Hill and Longhouse Hill. The Carbon and Peatland Map indicates there is an area peat or peaty soils within Route Option 4-A to the west of Windrow Wood, with mineral soils outside of this area.	There are areas of flood risk adjacent to Douglas Water, Kennox Water and Glespin Water. The route at this route option crosses an area of undulating topography. The Carbon and Peatland Map indicates that Route Option 4-B is entirely underlain by mineral soils.

Topic	Route Option 4-A	Route Option 4-B
Conclusions	<p>It is not possible to avoid directly impacting the SLA due to its spatial extents which encompass the Douglas Valley as far west as Glespin and the surrounding valley slopes. Whilst the scale and simple form of the landscape can reasonably accommodate a wood pole OHL, the concentration of existing wood pole infrastructure could result in a cumulative wirescape which would be difficult to avoid. This would be particularly apparent within the SLA where the route option crosses the A70 and Douglas Water to the east of Hazelside where visual impacts would also be concentrated.</p> <p>Both Route Options 4-A and 4-B avoid the Miller's Wood is SSSI which is located, respectively, at the southern and northern boundaries of these route options.</p> <p>There is woodland identified as part of the Native Woodland Survey within the route option. Combined with the presence of a property to the north, routeing opportunities within Route Option 4-A which entirely avoid the woodland are limited.</p> <p>There is an additional cluster of properties within the route option, though this can be avoided by restricting routeing to the north of the route option.</p> <p>Further route alignment will need to consider the presence of peatland, areas of flood risk, the distribution network as well as the proposed connection route from Kennoxhead Wind Farm.</p>	<p>As with Route Option 4-A, it is not possible to avoid directly impacting the SLA due to its spatial extents which encompass the Douglas Valley as far west as Glespin and the surrounding valley slopes. The southern side of the upland valley exhibits a relatively large scale of restored, rolling landform which can reasonably accommodate a wood pole OHL. Sensitive routeing using woodland planting and topography to provide some screening and to provide a backdrop to the OHL would limit its potential prominence in views from scattered properties and views from Glespin south across the valley.</p> <p>Both Route Options 4-A and 4-B avoid the Miller's Wood is SSSI which is located, respectively, at the southern and northern boundaries of these route options.</p> <p>Woodland in the route option identified as native would likely be directly impacted due its area and wayleave requirements. Routeing will need to consider a number of properties which create pinch points.</p> <p>Further route alignment will need to consider areas of flood risk and the distribution network.</p>

Table 6 Summary of Assessment: Route Option 5

Topic	Route Option 5-A
Landscape	<p>The first more westerly half of this route option is located within the Upland River Valley Glasgow & Clyde Valley LCT, a predominantly agricultural landscape scattered with pockets of woodland and small conifer plantations. The eastern half of this route option is located within Plateau Moorlands Glasgow & Clyde Valley LCT, consisting of vast moorland and neatly rounded hills. The route follows the treeline of Townhead Wood and crosses a small section of ancient woodland. The A70 runs through the western section of this route, connecting Douglas to the smaller settlements within the valley. The B7078 passes in a north-south direction through the eastern extent of the route option, with a core path running parallel to it.</p> <p>Following the tree line of Townhead Wood provides an opportunity for the wood pole OHL to blend into this landscape. The 400 kV OHL and associated pylons, whilst outside the route option, are prominent elements within the wider landscape, as is the M74 and adjacent wind farm development at Middle Muir and Andershaw. These developments reduce the sensitivity of the landscape to the introduction of an OHL.</p>
Visual Amenity	<p>The settlement of Douglas lies to the north and north east of the route option, with some of the properties within the southern extents experiencing views towards the forested slopes of Townhead Wood where the route option is proposed. A core path also crosses the route option, providing access to Pagie Hill and the surrounding moorland. An isolated property at Redshaw is orientated towards the B7078 road corridor, which is used by local road users and forms part of National Cycle Route 74.</p> <p>Following the treeline of Townhead Wood provides an opportunity for the wood pole to blend into the landscape, therefore minimising the visual impact experienced from the settlement of Douglas. Paired with the sensitive routeing of the OHL using topography to provide a backdrop to views, avoiding proximity to the property and limiting the extent to which the OHL parallels the road corridor, will limit impacts on the visual amenity in the western extent of the route option.</p>
Cultural Heritage	<p>There are no cultural heritage designations within this route option. However, the route option runs approximately 235 m south east at its closest point to the village of Douglas, where there is a conservation area, a scheduled monument and numerous listed buildings.</p> <p>Careful routeing of the OHL keeping close to the tree line to the south and south east of this route option ensures the OHL is further away from Douglas and the wood pole line blends into the setting.</p>
Ecology	<p>There are no national or local ecological designations within this route option.</p>
Woodland	<p>Route option 5-A routes closely to the northern boundary of Townhead Wood following the tree line for approximately 2.4 km. The route does cross an area of ancient woodland; however, satellite imagery shows this area is sparsely populated by trees, therefore it may be possible to route through this area with minimal impacts on woodland. There is also a small patch of ancient woodland situated immediately west of the proposed Redshaw Substation location.</p>
Tourism and Recreation	<p>This route option crosses two core paths; one which links the village of Douglas to Townhead Wood, and another which runs parallel along the B7078 road.</p>
Land Use and Other Infrastructure	<p>The majority of route Option 5-A is located within an area with land capability for agriculture of class 5.2 and 5.3 (not prime agricultural land). Though the eastern extent of this route is located on an area with a land capability for agriculture of class 4.2 (not prime agricultural land).</p>

Routeing and Consultation Document Update:

Spirebush Renewable Energy Project Grid Connection

The Physical Environment	<p>Route option 5-A crosses a tributary of Douglas Water, which has a high likelihood of flooding every year according to SEPA data.</p> <p>The Carbon and Peatland Map indicates that the majority of route option 5-A is underlain by mineral soils, with areas of peat or peaty soils contained to the south where the proposed Redshaw Substation is situated.</p> <p>A 400kV OHL (steel tower) runs parallel to the eastern section of the route option. Several 11 kV distribution network OHL (wood pole) intersect the route option.</p> <p>There is a single property within this route option (identified via AddressBase data).</p>
Conclusions	<p>Route 5-A provides an opportunity to integrate an OHL into the landscape by blending into the treeline of Townhead Wood, thereby minimising visual impacts of the OHL from properties in Douglas.</p>

7. Preferred Route Option

7.1 Overview

This section describes the preferred route option and why it has been selected as set out in Step 5 of the routeing methodology illustrated in **Figure 3**. The preferred route option for the grid connection, taking account of the Routeing Objective and Strategy, is shown on **Figure 7**. The preferred route option comprises the following route options:

- 1-A,
- 2-B,
- 2-B.1,
- 3-A,
- 3-B,
- 4-B, and
- 5-A.

The preferred route option for the new-build double circuit, twin wood pole OHL is subject to consultation (referred to as Phase 1 Consultation). Responses to the consultation will then be evaluated and inform confirmation of a proposed route to be subject to detailed design and EIA.

7.2 The Preferred Route Option

The Routeing Objective was, in summary, to identify a technically feasible and economically viable route while minimising the impact on people and the environment as far as possible. The preferred route option is technically feasible and economically viable and, relative to other route options, avoids or reduces impacts on the environment and people who live, work and undertake recreational activities in the area as far as possible.

The preferred route option has been developed and assessed taking account of the routeing strategy, detailed in Section 5. The reasons for selecting the preferred route option are summarised in the following sections.

7.2.1 Route Section 1

The preferred route option follows a south easterly direction from Spirebush Wind Farm point of connection, crossing the B743 and Greenock Water before routeing along the south western boundary of Muirkirk and North Lowther Uplands SPA. The route option passes over Black Hill avoiding the more exposed south western side of the hill, minimising visual impacts of users of the B743.

7.2.2 Route Section 2

The preferred route option takes a southern alignment across the area of the historic Spireslack opencast workings, routeing along the northern boundary of the A70. Routeing here takes advantage of the existing bunding along the northern side of the A70 which will restrict views of the OHL from road users and also recreational users of the River Ayr Way. Where views are present of the OHL these will

include a backdrop of the planted areas and the rising hillside. The option also limits the the potential impact to proposed reinstatement and planting works in the area.

Further to the east, the preferred route option balances the potential impacts to the setting and visual amenity of the Glenbuck heritage village and direct impacts to native woodland surrounding residential properties in Glenbuck. Route option 2-B.1 presents a narrow section due to constraints to the north (ironworks scheduled monument) and to the south (woodland and properties), but benefits from the existing landform and backdrop of the Galawhistle and Hagshaw Hill Wind Farms to minimise the potential impacts from views from adjacent sensitive receptors.

7.2.3 Route Section 3

Route options 3-A and 3-B are both proposed to be utilised as part of the preferred route option. The preferred route option would begin in route option 3-A and cross the A70 to 3-B to maximise the routeing opportunities in the Douglas Water valley utilising the woodland edge on the boundary of the Muirkirk and North Lowther Uplands SPA/ Muirkirk Uplands SSSI as a backdrop to the OHL, and conversely avoiding the more exposed hillside on the northern side of the A70 and potential 'skylining' (where the OHL will be seen with a sky background).

7.2.4 Route Section 4

Route option 4-B offers greater flexibility in the routeing away from sensitive receptors and utilising the undulating moorland and existing forestry and woodland pockets to screen views from receptors in Glespin and along the A70 corridor. In contrast, route option 4-A includes a number of exposed hillsides, as well as a pinch point at the eastern end of the option where the alignment would cross the A70. In this area, a number of existing OHLs are present between Windrow Wood and Miller's Wood (ancient woodland and the Miller's Wood SSSI) which would increase wirescape within the valley.

7.2.5 Route Section 5

Route option 5-A follows the A70 north east towards Douglas. The route option provides an opportunity to integrate an OHL into the landscape by blending into the treeline of Townhead Wood, thereby minimising visual impacts of the OHL from properties in Douglas. Route option 5-A crosses an area of ancient woodland, before travelling south following the B7078 corridor to the point of connection at Redshaw Substation. Options however exist within route option 5-A to either stand off from the B7078 to limit visual impacts to road and core path users, or route the grid connection to parallel the road and existing OHLs along the road corridor before turning into the proposed Redshaw Substation.

The final alignment of the OHL in this section, as with the rest of the preferred route option, will be subject to further consultation, including with landowners, and further environmental and technical survey and assessment.

Figure 7. Preferred Route Option

8. Next Steps

8.1 Approach to Consultation

As set out in Section 1.3, SPEN will be required to apply to Scottish Ministers for consent under Section 37 of the Electricity Act 1989, as amended, to install, and keep installed, the proposed OHL. At the same time, SPEN will also apply for deemed planning permission for the proposed OHL and associated works under Section 57(2) of the Town and Country Planning (Scotland) Act 1997, as amended.

As stated in Section 1.4, SPEN is embracing best practice as promoted by the Scottish Government Energy Consents Unit, which expects applicants to engage with stakeholders and the public in order to develop their proposals in advance of an application being made. SPEN has also embraced Scottish Government Planning Advice Note 3/2010 on Community Engagement. This guidance describes engagement as:

“...giving people a genuine opportunity to have a say on a development plan or proposal which affects them; listening to what they say and reaching a decision in an open and transparent way taking account of all views expressed.”

Therefore, prior to the submission of the application for Section 37 consent, SPEN will carry out two rounds of consultation with stakeholders and the public. The two rounds are:

- Round One: Public consultation on the preferred route option, as detailed in this RCD Update.
- Round Two: Public consultation on the detailed route alignment of the OHL.

Following the submission of the application for Section 37 consent, the Scottish Government Energy Consents Unit will, on behalf of Scottish Ministers, carry out further statutory consultation with the public and stakeholders, including East Ayrshire and South Lanarkshire Councils.

The overall objective of the consultation process is to ensure that all parties with an interest in the grid connection have access to accurate and up to date information and are given clear and easy ways in which to shape and inform SPEN's proposals at the pre-application stage. In addition, it is intended that the key issues identified through this process can be recorded and presented to decision makers to assist the consents process.

8.1.1 Available Consultation Material

8.1.1.1 Grid Connection Website

The website will act as a single source of truth for up-to-date information regarding the grid connection. This will host publicly available consultation documents for viewing or download, and an online feedback form. The feedback form will be available from Tuesday 4th June 2024 until the deadline for receipt of feedback at midnight on Wednesday 3rd July 2024.

8.1.1.2 How people can make a comment

There will be a number of ways for people to make comments:

- At one of our consultation events,
- Online, using the feedback form on the website,

- By post, using a paper feedback form or by letter,
- By emailing the feedback form or in the body of an email, or
- By phone to the SPEN Project Consultation Contact Centre.

8.1.1.3 In person

A number of in-person consultation events will be held within the Study Area. Details of these events will be publicised in local newspapers and on the grid connection website (see below) prior to the events being held.

These events will include a number of information boards, similar to the information provided on the grid connection website. They will also be attended by members of the grid connection team who will be able to introduce the grid connection and will be available to answer questions on grid connection, the routeing approach and the preferred route option.

8.1.1.4 Online

People will also be able to make comments online via a virtual consultation room at: <https://spirebush.consultation.ai/>

On this website there will be an interactive online version of the in-person event consultation boards. A feedback form will be available to raise comments and will be available throughout the whole consultation period until midnight on Wednesday 3rd July 2024.

8.2 Confirmation of the Proposed Route and EIA

The responses received from the consultation process will be considered in combination with the findings of this RCD and will inform the identification of the proposed route to be taken to next the phase. The proposed route option will then progress to a more detailed review to identify an OHL alignment, including tower positions and transformer compound design. This will be informed by the EIA, detailed engineering ground surveys and discussions with landowners. The alignment, including all ancillary development, will be included in the application for Section 37 consent and deemed planning permission. Ancillary development will include all development necessary to construct and operate the grid connection. SPEN will consult fully with affected landowners and occupiers on all aspects of the grid connection and will give them an opportunity to comment on proposals as they progress.

Appendix A Holford Rules

Rule 1

Avoid altogether, if possible, the major areas of highest amenity value, by so planning the general route of the line in the first place, even if the total mileage is somewhat increased in consequence.

Note on Rule 1

(a) Investigate the possibility of alternative routes, avoiding altogether, if possible major areas of highest amenity value. The consideration of alternative routes must be an integral feature of environmental statements. If there is an existing transmission line through a major area of highest amenity value and the surrounding land use has to some extent adjusted to its presence, particularly in the case of commercial forestry, then effect of remaining on this route must be considered in terms of the effect of a new route avoiding the area.

(b) Areas of highest amenity value require to be established on a project-by-project basis considering Schedule 9 to The Electricity Act 1989 (as amended), National Planning Framework 4, National Planning Policy Guidelines, Circulars and Planning Advice Notes and the spatial extent of areas identified.

Examples of areas of highest amenity value which should be considered are:

- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Ramsar Site
- National Scenic Areas (NSA)
- National Parks
- National Nature Reserves (NNR)
- Protected Coastal Zone Designations
- Sites of Special Scientific Interest (SSSI)
- Schedule of Ancient Monuments
- Listed Buildings
- Conservation Areas
- World Heritage Sites
- Historic Gardens and Designed Landscapes

Rule 2

Avoid smaller areas of high amenity value or scientific interest, by deviation; provided that this can be done without using too many angle towers (i.e. the more massive structures which are used when lines change direction).

Note on Rule 2

- a) Small areas of highest amenity value not included in Rule 1 as a result of their spatial extent should be identified along with other areas of regional or local high amenity value identified from development plans.
- b) Impacts on the setting of historic buildings and other cultural heritage features should be minimised.
- c) If there is an existing transmission line through an area of high amenity value and the surrounding land uses.

Rule 3

Other things being equal, choose the most direct line, with no sharp changes of direction and thus fewer angle towers.

Note on Rule 3

- a) Where possible choose inconspicuous locations for angle towers, terminal towers and sealing end compounds.
- b) Too few angles on flat landscape can also lead to visual intrusion through very long straight lines of towers, particularly when seen nearly along the line.

Rule 4

Choose tree and hill backgrounds in preference to sky background wherever possible and when the line has to cross a ridge, secure this opaque background as long as possible and cross obliquely when a dip in the ridge provides an opportunity. Where it does not, cross directly, preferably between belts of trees.

Rule 5

Prefer moderately open valleys with woods, where the apparent height of the towers will be reduced and views of the line will be broken by trees.

Notes on Rules 4 and 5

- a) Utilise background and foreground features to reduce the apparent height and domination of towers from main viewpoints.
- b) Minimise the exposure of numbers of towers on prominent ridges and skylines.
- c) Where possible follow open space and run alongside, not through woodland or commercial forestry, and consider opportunities for skirting edges of copses and woods. Where there is no reasonable alternative to cutting through woodland or commercial forestry, the Forestry Commission Guidelines

should be followed (Forest Landscape Design Guidelines, second edition, The Forestry Commission 1994 and Forest Design Planning – A Guide to Good Practice, Simon Bell/The Forest Authority 1998).

- d) Protect existing vegetation, including woodland and hedgerows, and safeguard visual and ecological links with the surrounding landscape.

Rule 6

In country which is flat and sparsely planted, keep the higher voltage lines as far as possible independent of smaller lines, converging routes, distribution lines and other masts, wires and cables so as to avoid a concatenation or 'wirescape'.

Note on Rule 6

- a) In all locations minimise confusing appearance.
- b) Arrange wherever practicable that parallel or closely related routes are planned with tower types, spans and conductors forming a coherent appearance. Where routes need to diverge allow, where practicable, sufficient separation to limit the impacts on properties and features between lines.

Rule 7

Approach urban areas through industrial zones where they exist and where pleasant residential and recreational land intervenes between the approach line and substation, go carefully into the costs of undergrounding, for lines other than those of the highest voltage.

Note on Rule 7

- a) When a line needs to pass through a development area, route it so as to minimise as far as possible the effect on development.
- b) Alignments should be chosen after consideration of impacts on the amenity of existing development and on proposals for new development.
- c) When siting substations take account of the impacts of the terminal towers and line connections that will need to be made and take advantage of screening features such as ground form and vegetation.

Supplementary Notes

- a) Residential Areas: Avoid routeing close to residential areas as far as possible on grounds of general amenity.
- b) Designations of Regional and Local Importance: Where possible choose routes which cause the least disturbance to Areas of Great Landscape Value and other similar designations of Regional or Local Importance.
- c) Alternative Lattice Steel Tower Designs: In addition to adopting appropriate routeing, evaluate where appropriate the use of alternative lattice steel tower designs available where these would be advantageous visually, and where the extra cost can be justified.

- d) [Note: SHETL have reviewed the visual and landscape arguments for the use of lattice steel towers in Scotland and summarised these in a document entitled Overhead Transmission Line Tower Study 2004].

Further Notes on Clarification to The Holford Rules

Line Routeing and People

The Holford Rules focused on landscape amenity issues for the most part. However, line routeing practice has given greater importance to people, residential areas etc. The following notes are intended to reflect this.

- a) Avoid routeing close to residential areas as far as possible on grounds of general amenity.
- b) In rural areas avoid as far as possible dominating isolated house, farms or other small-scale settlements.
- c) Minimise the visual effect perceived by users of roads, and public rights of way, paying particular attention to the effects of recreational, tourist and other well used routes.

Appendix B Horlock Rules

Overall System Options and Site Selection

1. In the development of system options including new substations, consideration must be given to environmental issues from the earliest stage to balance the technical benefits and capital cost requirements for new developments against the consequential environmental effects in order to keep adverse effects to a reasonably practicable minimum.

Amenity, Cultural or Scientific Value of Sites

2. The siting of new NGC substations, sealing end compounds and line entries should as far as reasonably practicable seek to avoid altogether internationally and nationally designated areas of the highest amenity, cultural or scientific value by the overall planning of the system connections.

Notes:

1. Internationally and nationally designated areas of highest amenity, cultural or scientific value are:
 - National Parks;
 - Areas of Outstanding Natural Beauty;
 - Heritage Coasts;
 - World Heritage Sites;
 - Ramsar Sites;
 - Sites of Special Scientific Interest;
 - National Nature Reserves;
 - Special Protection Areas;
 - Special Areas of Conservation.
 2. Care should be taken in relation to all historic sites with statutory protection e.g. Ancient Monuments, Battlefields and Listed Buildings.
 3. Account should be taken of Government Planning Policy Guidance and established codes of practice.
 4. Account should be taken of any development plan policies relevant to the siting or design of substations.
3. Areas of local amenity value, important existing habitats and landscape features including ancient woodland, historic hedgerows, surface and ground water sources and nature conservation areas should be protected as far as reasonably practicable.

Local Context, Land Use and Site Planning

4. The siting of substations, extensions and associated proposals should take advantage of the screening provided by land form and existing features and the potential use of site layout and levels to keep intrusion into surrounding areas to a reasonably practicable minimum.

Notes:

1. A preliminary study should be undertaken to identify the extent of land required to meet both operational and environmental needs.
 2. In some instances it may be possible to site a substation partially or fully enclosed by existing woodlands.
 3. Topographical information should be obtained at an early stage. In some cases a geotechnical survey may be required.
5. The proposals should keep the visual, noise and other environmental effects to a reasonably practicable minimum.

Notes:

1. Allow sufficient space for screening of views by mounding or planting.
 2. Consider appropriate noise attenuation measures where necessary.
 3. Use security measures which minimise visual intrusion from lighting.
 4. Consider appropriate on-site water pollution prevention measures.
 5. Consider adjoining uses and the amenity of local inhabitants.
6. The land use effects of the proposal should be considered when planning the siting of substations or extensions.

Notes:

1. Issues for consideration include potential sterilisation of nationally important land, e.g. Grade 1 agricultural land and sites of nationally scarce minerals.
2. Effects on land drainage.

Design

7. In the design of new substations or line entries, early consideration should be given to the options available for terminal towers, equipment, buildings and ancillary development appropriate to individual locations, seeking to keep effects to a reasonably practicable minimum.

Notes:

1. With outdoor equipment, a preference should be given normally to a low profile design with low height structures and silhouettes appropriate to the background.
2. Use lightweight narrow section materials for taller structures especially for gantries over about 6 metres in height.
3. Commission exterior design and colours appropriate to the surroundings.
4. Materials and colours for buildings, equipment and fencing should be chosen to harmonise with local surroundings.
5. Where possible avoid the use of prominent insulators by consideration of available colours appropriate to the background.
6. Where possible site buildings to act as visual screens for switchgear.
7. Ensure that the design of high voltage and low voltage substations is co-ordinated by early consultation between NGC and its customers.
8. Where there are particular technical or environmental constraints, it may be appropriate to consider the use of Gas Insulated Switchgear (GIS) equipment which occupies less space and is usually enclosed within a building.
9. Early consideration should be given to the routeing of utility service connections.
8. Space should be used effectively to limit the area required for development consistent with appropriate mitigation measures and to minimise the adverse effects on existing land use and rights of way, whilst also having regard to future extension of the substation.

Notes:

1. Assess the benefit of removing redundant substation equipment from existing sites where this would improve their appearance.
9. The design of access roads, perimeter fencing, earthshaping, planting and ancillary development should form an integral part of the site layout and design to fit in with the surroundings.

Line Entries

10. In open landscape especially, high voltage line entries should be kept, as far as possible, visually separate from low voltage lines and other overhead lines so as to avoid a confusing appearance.
11. The inter-relationship between towers and substation structures and background and foreground features should be studied to reduce the prominence of structures from main viewpoints. Where practicable the exposure of terminal towers on prominent ridges should be minimised by siting towers against a background of trees rather than open skylines.

Appendix C Project-Specific Routeing Considerations

Topic	Identified Constraint or Feature	Holford Rule	Routeing Consideration
Landscape and Visual Amenity	Douglas Valley Special Landscape Area	Rule 2 and Supplementary Notes	Route options should avoid or reduce potentially adverse effects on the special qualities of the SLA as far as possible.
	Visual amenity (settlements)	Rule 4 and Supplementary Notes	Route options should be located away from settlement and residential properties as far as possible or make use of landform and woodland to minimise visual intrusion and reduce potentially adverse effects.
	Visual amenity scattered individual properties inc. 150m 'trigger' zone)	Rule 4 and Supplementary Notes	
	Landscape character (inc. sensitivity to or capacity for overhead lines)	Rules 4, 5 and 6	Route options should avoid more sensitive landscapes as far as possible and respond to the character and grain of the landscape. Route options should avoid crossing high points and ridgelines where possible and consider opportunities to make use of landform and woodland as a backdrop.
	Existing transmission and distribution network	Rule 6	Route options should maintain a suitable separation distance from existing overhead lines in order to minimise the potential for adverse effects to occur as a result of a wirescape.
Cultural Heritage	Glenbuck Ironworks, 470 m NW of Glenbuck Home Farm Scheduled Monument	Rule 1	Route options should avoid or reduce as far as possible potentially adverse effects on designated archaeology and heritage sites including scheduled monuments, listed buildings and historic battlefields as well as their settings.
	Auchensaugh Hill, cairn Scheduled Monument	Rule 1	
	St Brides Church Scheduled Monument	Rule 1	
	Listed buildings	Rule 1	
	Non-designated archaeology (Historic Environment Record)	Rule 2	
	Douglas Conservation Area	Rule 2	

Topic	Identified Constraint or Feature	Holford Rule	Routeing Consideration
Ecology (inc. Woodland)	Muirkirk and North Lowther Uplands Special Protection Area (SPA)	Rule 1	Route options should avoid crossing the Muirkirk and North Lowther Uplands SPA and where possible take account of functionally linked habitat and flight lines of the site's qualifying species in order to avoid or reduce potentially adverse effects on the site and its qualifying bird species.
	Red Moss Special Area of Conservation (SAC)	Rule 1	Route options should avoid crossing the Red Moss SAC in order to avoid potentially adverse effects on the sites qualifying features.
	Muirkirk Uplands Site of Special Scientific Interest (SSSI)	Rule 1	Route options should take account of and avoid crossing the SSSIs which are present throughout the Study Area in order to avoid or reduce potentially adverse effects on them.
	Red Moss SSSI	Rule 1	
	Shiel Burn SSSI	Rule 1	
	Ree Burn and Glenbuck Loch SSSI	Rule 1	
	Miller's Wood SSSI	Rule 1	
	North Lowther Uplands SSSI	Rule 1	
	Kennox's Water SSSI	Rule 1	
	Ancient Woodland Inventory Sites	Rule 2	Route options should avoid areas of ancient and native woodland sites in order to avoid or reduce potentially adverse effects on woodland areas.
Native Woodland for Scotland	Rules 4 & 5		
Tourism and Recreation	Recreational Walking/ Cycling Routes	Supplementary Notes	Route options should avoid recognised walking or cycling routes where possible in order to avoid or reduce potentially adverse effects on users of them.
Land Use and Other Infrastruct-ure	Settlements (including individual properties)	Supplementary Notes	Route options should avoid routeing close to settlements or residential properties where possible in order to avoid or reduce potentially adverse effects on general amenity.
	Wind Farms	Rule 7	Where route options cross or are in the vicinity of existing or planned wind farms they should take account of a minimum separation distance from wind turbines of at least three times rotor diameter or the turbine

Topic	Identified Constraint or Feature	Holford Rule	Routeing Consideration
			height to blade tip plus ten percent in order to avoid any technical conflicts.
	Mineral extraction / opencast sites	Rule 7	Route options should avoid operational mineral extraction sites, however, restored sites may provide feasible routeing opportunities.
	Other committed development	Rule 7	Route options should consider other committed development in order to avoid or reduce potentially adverse effects or technical conflicts.
	Land Capability for Agriculture	n/a	Route options should avoid best and most versatile (prime agricultural land) agricultural land where possible in order to avoid or reduce potentially adverse effects on agriculture.
	Commercial forestry	Rules 4 & 5	Route options should avoid directly crossing commercial forestry where possible. Where avoidance is not possible consideration should be given to utilising existing wayleaves and reducing the amount of felling required.
Physical Environment	Watercourses/ bodies	n/a	Route options should adhere to a 50 m separation zone from watercourses and bodies other than where they may require to be crossed.
	Flood zones	n/a	Route options should in the first instance avoid flood zones. Where this is not possible, route options should cross flood zones where they are at their narrowest.
	Carbon and Peatland Mapping	Rule 2	Route options should avoid areas identified as class 1 priority peatland habitat where possible in order to reduce potentially adverse effects as far as possible. Where such areas cannot be avoided route options should follow the shortest and most direct route where possible.
	Overhead lines route length	Rule 3	Route options should follow the shortest and most direct route possible whilst taking account of other environmental and technical constraints or impacts.
	Existing transmission and distribution network	Rule 6	Route options should take account of existing transmission and distribution network infrastructure in order to avoid any technical conflicts.

Routeing and Consultation Document Update:
Spirebush Renewable Energy Project Grid Connection

Topic	Identified Constraint or Feature	Holford Rule	Routeing Consideration
	Topography, elevation and side slopes	n/a	Route options should take account of topography, elevation and side slopes avoiding areas which could affect constructability and/or operability.

Appendix D Routeing Consideration Figures

Routeing and Consultation Document Update:
Spirebush Renewable Energy Project Grid Connection

Landscape & Visual Considerations

Routeing and Consultation Document Update:
Spirebush Renewable Energy Project Grid Connection

Ecology and Forestry Considerations

Routeing and Consultation Document Update:
Spirebush Renewable Energy Project Grid Connection

Cultural Heritage Considerations

Routeing and Consultation Document Update:
Spirebush Renewable Energy Project Grid Connection

Tourism and Recreation Considerations

Routeing and Consultation Document Update:
Spirebush Renewable Energy Project Grid Connection

Land Use and Other Infrastructure Considerations

Routeing and Consultation Document Update:
Spirebush Renewable Energy Project Grid Connection

Physical Environment Considerations

