# Cloich Forest Wind Farm Connection Project

## Routeing and Consultation Report

10 May 2024

Land & Planning

**SP Energy Networks**

# Cloich Forest Wind Farm Connection Project
## Routeing and Consultation Report

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# Chapter 1
# Introduction

## Purpose of this Report

**1.1** This document has been prepared by LUC on behalf of SP Energy Networks (SPEN). It relates to the identification and appraisal of route options for a new 132 kilovolt (kV) overhead line (OHL) supported on trident wood poles from the proposed Cloich Forest Wind Farm to the Currie substation.

**1.2** The construction and operation of the new 132kV OHL between Cloich Forest Wind Farm and Currie substation will be hereafter referred to as the '*Cloich Forest WF Connection Project*'. The location of the study area for the Cloich Forest WF Connection Project is shown in **Figure 1.1**.

**1.3** This report presents the methodology adopted for routeing the new OHL, concluding with the description of the 'Preferred Route'. This report also sets out the process for the consultation which will be undertaken on the Preferred Route. This process is designed to gather feedback from stakeholders, including the public, to inform the subsequent stages of the Cloich Forest WF Connection Project.

## The Need for the Cloich Forest WF Connection Project

**1.1** There is substantial interest for renewable energy generation development (primarily wind and hydropower) and SPEN continues to receive associated grid connection requests from developers wishing to develop such renewable energy schemes.

**1.2** An application was received from the Cloich Forest Wind Farm developer requesting a 67.2 megawatt (MW) connection from the wind farm substation to a nearby substation, via an 132kV OHL. The nearest appropriate substation is the Currie substation.

## SPEN's Statutory and Licence Duties

**1.4** As a transmission licence holder for southern Scotland, SPEN[1] is required under Section 9(2) of the Electricity Act 1989 to:

[1] SPEN owns and operates the electricity transmission and distribution networks in central and southern Scotland through its wholly-owned subsidiaries SP Transmission plc (SPT) and SP Distribution plc (SPD). SP Transmission plc is the holder of a transmission licence. The references within this report 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.

- Develop and maintain an efficient, co-ordinated and economical system of electricity transmission; and
- Facilitate competition in the supply and generation of electricity.

**1.5** SPEN is required in terms of its statutory and licence obligations to provide for new electricity generators wishing to connect to the transmission system in its licence area. SPEN is also obliged 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.

**1.6** Schedule 9 of the Electricity Act 1989 imposes a further statutory duty on SPEN to take account of the following factors in formulating proposals for the installation of overhead transmission lines.

- *"(a) to have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features or 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 effects which the proposals would have on the natural beauty of the countryside or any such flora, fauna, features, sites, buildings or objects."*

**1.7** SPEN's '*Schedule 9 Statement*' sets out how it will meet the duty placed upon it under Schedule 9. The Statement also refers to the application of best practice methods to assess the environmental impacts of proposals and to identify appropriate mitigation measures.

**1.8** As a result of the above, SPEN is required to identify electrical connections that meet the technical requirements of the electricity system, which are economically viable, and cause on balance, the least disturbance to both the environment and the people who live, work and enjoy recreation within it.

## The Development and Consenting Process

**1.9** The Cloich Forest WF Connection Project comprises three key phases:

- Phase One: Routeing and Consultation;
- Phase Two: Environmental Impact Assessment (EIA); and
- Phase Three: Application for Consent.

### Phase One: Routeing and Consultation

**1.3** This report relates to Phase One, which comprises a review of environmental, technical and economic considerations and the application of established step-by-step routeing principles to identify and appraise potential route options to establish a 'preferred' route for the OHL.

**1.4** SPEN is committed to ongoing consultation with interested parties, including statutory and non-statutory consultees and local communities. Whilst there is no statutory requirement to consult during the early routeing stages, SPEN nonetheless considers it good practice to introduce consultation at this stage.

**1.10** Responses to the consultation process will be evaluated and the 'proposed' route confirmed for progression to the next stage.

### Phase Two: Environmental Impact Assessment (EIA)

**1.11** As the project comprises an '*electric line installed above ground with a voltage of 132 kilovolts or more*', the Cloich Forest WF Connection Project may be considered an '*EIA development*' under Schedule 2 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the EIA Regulations').

**1.12** Due to the length and location of the route, SPEN considers that the application for consent should be accompanied by an EIA Report and will therefore progress with the consenting process on the basis that the Cloich Forest WF Connection Project is EIA development.

**1.13** Following consultation, SPEN will submit a request for an EIA Scoping Opinion to the Scottish Ministers in accordance with Regulation 17(1) of the EIA Regulations. The request will be accompanied by the relevant information in accordance with Regulation 17(2) and 17(3) and will take into account the selection criteria in Schedule 3 and the findings of the work undertaken as part of the routeing process. Topics requiring further consideration will also be agreed with consultees through the EIA Scoping process.

**1.14** SPEN will then prepare an EIA Report to accompany the Section 37 application.

### Phase Three: Application for Consent

**1.5** SPEN will apply to the Scottish Ministers for consent under Section 37 of the Electricity Act 1989 ('the Electricity Act'), as amended, to install and operate the Cloich Forest WF Connection Project.

**1.6** In conjunction with the Section 37 application, SPEN will apply for deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997, as amended, for any ancillary development such as access

tracks or substation facilitation works. The EIA Report will accompany the application as relevant.

### Stakeholder Engagement

**1.7** 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.

**1.15** Striking the right balance can be challenging, and in seeking to achieve this, SPEN recognises the importance of consulting effectively on proposals and of being transparent about the decisions reached. SPEN is keen to engage with key stakeholders including local communities and others who may have an interest in the Cloich Forest WF Connection Project. This engagement process begins at the early stages of development of a project and continues into construction once consent has been granted.

**1.16** 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, planning authorities, and statutory consultees such as NatureScot, Scottish Forestry and the Scottish Environment Protection Agency (SEPA) as appropriate. Early and proactive engagement enables the views of these consultees to inform project design, assessment methodologies and further engagement. It also 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 Routeing and Consultation document has been prepared to gather feedback on the emerging project details. It will be issued to statutory consultees, and made available on SPEN's website, at Council offices and in public libraries, with its availability advertised in the press.
- **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.

**1.17** 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, 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.

## The Structure of the Report

**1.8** This report comprises the following chapters:

- **Chapter 1:** Introduction;
- **Chapter 2:** Project Description;
- **Chapter 3:** Approach to Routeing;
- **Chapter 4:** Identification of Route Options;
- **Chapter 5:** Appraisal of Route Options;
- **Chapter 6:** Appraisal Findings; and
- **Chapter 7:** The Consultation Process and Next Steps.

**1.9** This report is also supported by figures and appendices, as listed in the contents page above.

[2] SP Energy Networks (2021) Approach to Routeing and Environmental Impact Assessment. Available [online] at: https://www.spenergynetworks.co.uk/userfiles/file/SPEN_Approach_to_Routeing_Document_2nd_version.pdf

# Chapter 2
# Project Description

## Connection Requirements

**2.1** Cloich Forest Wind Farm was consented by the Scottish Government's Energy Consents Unit in 2016, for 18 turbines. A new application for 12 turbines was submitted on the 30th June 2021 and is still awaiting determination (ECU00003288).

**2.2** A separate application for consent is now being progressed to connect the consented Cloich Forest Wind Farm into Currie substation.

## Overhead Line Infrastructure

**2.3** With an OHL of this nature, conductors (or 'wires') will be suspended at a specified height above ground and supported by wooden poles, spaced at 80-100m intervals.

**2.4** Conductors will be made either of aluminium or steel strands. This connection will include one three-phase circuit with no earth wire and one of the phase conductors will incorporate a fibre optic cable for communication purposes.

**2.5** Conductors are strung from insulators attached to the steelwork at the top of the poles and prevent the electric current from crossing to the relevant support.

### Wood Pole Structure

**2.6** The OHL will be supported on trident wood poles (double H poles) with galvanised steelwork cross-arms supporting aluminium conductors on insulators. These are suitable for supporting single circuit lines operating at 132kV.

**2.7** The proposed design is described below, and examples of trident pole designs are shown on **Figure 2.1**.

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

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

- *Intermediate:* Where the pole structure is part of a straight-line section;
- *Angle*: where there is a horizontal or vertical deviation in line direction of a specified number of degrees; and

- *Terminal*: where the overhead line terminates into a substation or on to an underground cable section via a separate cable sealing end compound or platform.

### Wood Pole Heights and Span Lengths

**2.10** The standard height of trident poles (including steel work and insulators) varies from 11m to 16m. Whilst wood poles have a standard height above ground of 13m, these can be extended or reduced in height, as required. Pole heights may require to be increased where circumstances dictate, e.g. over elevated land, structures or features.

**2.11** 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 80m to 100m but can be 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 reservoir.

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

### Wood Pole Colouring

**2.13** Wood poles are dark brown in colour when first erected and weather to a silver/grey after a period of about five years.

**2.14** 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.

### Underground Cable Construction

**2.15** The undergrounding of certain sections of the 132kV line may also be considered as a technical solution to otherwise constrained areas for OHL.

**2.16** Undergrounding works commonly consist of the use of low ground pressure vehicles or trackway, the excavation of the cable trench by mechanical excavators, cable laying, the backfilling of the trench with sand and native material and surface reinstatement. **Figure 2.2** shows a typical section of an underground trench.

## Construction Process

**2.17** The construction of OHLs requires additional temporary infrastructure such as temporary accesses to pole locations. All have limited maintenance requirements, and all are subject to well-established procedures for dismantling/ decommissioning.

### Wood Pole Construction / Steel Tower Construction

**2.18** The construction of the OHL will follow a well-established sequence of methods as outlined below:

- Preparation of accesses;
- Excavation of foundations;
- Delivery of poles;
- Erection of poles;
- Delivery of conductor drums and stringing equipment;
- Insulators and conductor erection and tensioning; and
- Clearance and reinstatement.

**2.19** Prior to constructing the OHL, temporary working areas around each pole location will be required for foundation excavation and pole erection. Any vegetation that requires removal will be removed or pruned / lopped.

**2.20** The erection of the wood poles will require a small excavation to allow the pole brace block and/or steel foundation braces to be positioned in place. A typical pole excavation will be 3m² by 2m deep. The excavated material will be sorted and stored and used for backfilling purposes. No concrete is required.

**2.21** Poles are erected in sections, i.e. between angle support poles and/or terminal support pole. The insulator fittings, and wood poles forming the pole support, will be assembled local to the pole site and lifted into position utilising a tracked excavator which excavates the foundations. The pole foundation holes will then be backfilled, and the pole stay wire supports attached to the ground in preparation for conductor stringing, erection and tensioning.

### Access

**2.22** Temporary accesses to all pole locations will be taken from the existing main road network wherever feasible, with the use of selected unclassified roads also likely to be required. The use of existing tracks and watercourse crossings will be maximised, with the upgrading of these where necessary.

**2.23** The initial preference when taking temporary access is to use low ground pressure vehicles and plant. Where access is required to be taken through any sensitive areas identified during the EIA process, other less intrusive methods such as temporary steel matting, or timber roadways may be employed.

**2.24** The use of temporary stone tracks is normally minimal for wood pole connections. All temporary tracks will be removed after commissioning with land being restored to its former condition.

### Temporary Working

**2.25** Temporary working areas will be required for the duration of the construction works. Temporary vehicular access is required to every pole location. Wood pole locations will have a working area of approximately 30m x 15m and could also extend to accommodate conductor pulling if required.

**2.26** In some cases, the shape or size of the working area will be determined by nearby environmental or land use constraints, identified during the EIA process / prior to construction. Each working area will be taped off to delineate the area for environmental protection reasons.

**2.27** Following the completion of the construction works, the temporary working areas will be reinstated and restored to former conditions.

### Construction Timescales

**2.28** Construction and erection of a standard single pole generally takes approximately half a day depending on ground conditions and location, i.e., it may take more hours if the ground is softer. Angle poles can also take longer due to the need for 'stay wires' to stabilise the pole in the ground.

## Operation and Maintenance

**2.29** Whilst most OHL components are maintenance free, exposed elements which suffer from corrosion, wear, deterioration and fatigue may require inspection and periodic maintenance. OHL cables generally require refurbishment after approximately 40 years. Wooden pole damage could lead to potential bird nesting and bat roosting sites within the operational period of the OHL. Inspections of the poles would be carried out prior to any refurbishment works to identify any nesting/roosting potential.

**2.30** Any felled wayleave areas will also have to be managed to maintain the required clearances whilst the connection remains in service. Walkover surveys or flyovers will identify where there is a requirement to clear wayleaves of new growth. Line marking should be considered to avoid avian collisions in sensitive areas (as identified during appropriate vantage point surveys).

## Decommissioning

**2.31** When the operational life of the proposed Cloich Forest WF Connection Project comes to an end, it is possible that the line may be re-equipped with new conductors and insulators and refurbished. Alternatively, the OHL may be decommissioned fully.

**2.32** Upon decommissioning of the Cloich Forest Wind Farm, the wood poles will be removed in their entirety, with components re-used where possible. All ground disturbance will be fully reinstated.

# Chapter 3
# Approach to Routeing

## SPEN's Overall Approach to Routeing an Overhead Line

**3.1** In June 2021, SPEN published the second version of their Approach to Routeing and Environmental Impact Assessment document outlining the approach taken to routeing transmission infrastructure[3]. The Approach to Routeing guidance has formed the basis for the methodology used for the Cloich Forest WF Connection Project as summarised in **Figure 3.1** below.

**3.2** The routeing process is iterative, and the steps outlined below may be re-visited several times. The outcome of each step is subject to a technical and, where relevant, consultation, 'check' with key stakeholders including the public, prior to commencing the next step. Professional judgement is used to establish explicitly the balance between technical, economic viability and environmental factors.

**3.3** As such, a well-routed line takes into account other environmental and technical considerations and will avoid, wherever possible, areas of high amenity value.

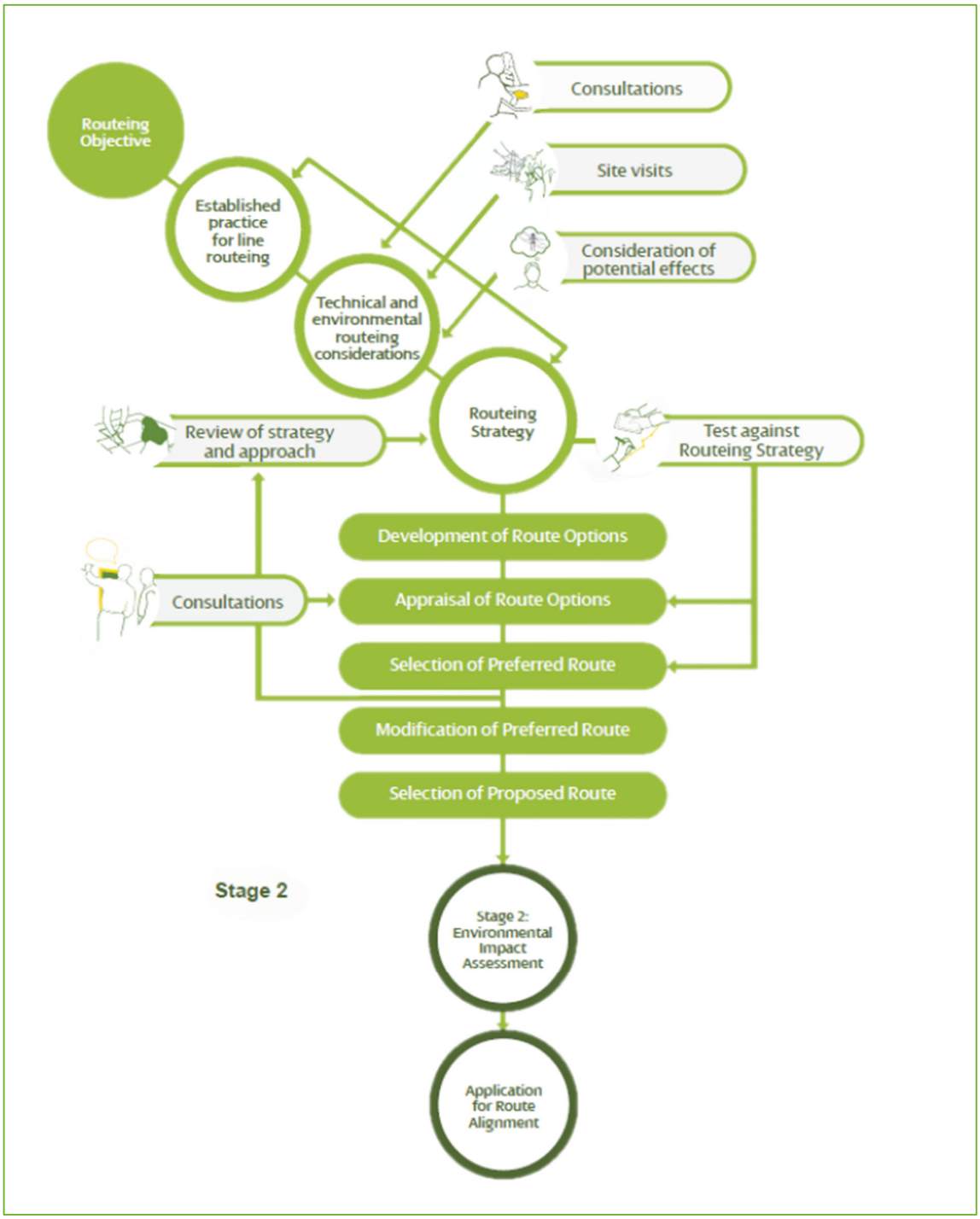
## The Routeing Objective

**3.4** In accordance with SPEN's approach to routeing, the Routeing Objective for the Cloich Forest WF Connection Project is:

*"To identify a technically feasible and economically viable route for a continuous 132kV overhead line connection, supported on wood poles from the proposed point of connection from the Cloich Forest Wind Farm substation to the existing Currie substation. This route should, on balance, cause the least disturbance to the environment and the people who live, work and enjoy recreation within it"*

[3] SP Energy Networks (2021) Approach to Routeing and Environmental Impact Assessment Document, Version 2. Available [online] at: https://www.spenergynetworks.co.uk/userfiles/file/SPEN_Approach_to_Routeing_Document_2nd_version.pdf

Figure 3.1: Routeing Methodology



## Established Practice for Overhead Line Routeing

**3.5** The methodology for identifying the preferred route for the overhead line is based on the Holford Rules 1959, with subsequent amendment); **Appendix A**.

**3.6** The methodology is also informed by the following:

- SPEN and LUC experience of routeing overhead lines;
- Relevant national and local planning policy and guidance; and
- Consultation with relevant stakeholders.

### The Holford Rules

**3.7** It is generally accepted across the electricity industry that the guidelines developed by the late Lord Holford in 1959 for routeing OHLs, 'The Holford Rules', should continue to be employed as the basis for routeing high voltage OHLs. The Holford Rules were reviewed circa 1992 by the National Grid Company (NGC) Plc. (now National Grid Electricity Transmission Plc (NGT)) as owner and operator of the electricity transmission network in England and Wales, with notes of clarification added to update the Rules. A subsequent review of the Holford Rules (and NGC clarification notes) was undertaken by Scottish Hydro Electric Transmission Limited (SHETL) in 2003 to reflect Scottish circumstances.

**3.8** These guidelines for the routeing of new high voltage overhead transmission lines form the basis for routeing the Cloich Forest WF Connection Project. Key principles of the Holford Rules include avoiding prominent ridges and skylines, following broad wooded valleys, avoiding settlements and residential properties and maximising opportunities for 'backclothing' infrastructure.

## Planning Policy Context

### The Development Plan

**3.9** The Planning (Scotland) Act 2019 (the Act) states that the National Planning Framework, as well as any strategic development plan for the time being applicable to the area(s), and any local development plan for the time being applicable to the area(s), comprise 'the development plan'.

**3.10** In this instance, National Planning Framework 4 (adopted in February 2023) and the local development plans for each planning authority are the development plan.

### National Planning Framework 4

**3.11** National Planning Framework 4 (NPF4) was adopted on 13th February 2023. The Act sets out the planning purpose for the preparation of the NPF, which is "*to manage the development and use of land in the long-term public interest*".

**3.12** The Act also states that *"in the event of any incompatibility between a provision of the National Planning Framework and a provision of a local development plan, whichever of them is the later in date is to prevail"*.

**3.13** Part 1 of NPF4 sets out an overarching spatial strategy for Scotland to 2045. Page 3 states that "the global climate emergency means that we need to reduce greenhouse gas emissions and adapt to the future impacts of climate change". The NPF4 Policy on Energy (Policy 11) emphasises the Scottish Government's commitment "*to encourage, promote and facilitate all forms of renewable energy development onshore and offshore. This includes energy generation, storage, new and replacement transmission and distribution infrastructure…."* (page 53).

**3.14** Policy 11(a)(ii) further notes that grid transmission and distribution infrastructure will be supported.

**3.15** Policy 11(e) provides details of which impacts are expected to be considered through project design and mitigation, including impacts on residential amenity, landscape and visual impacts, public access, historic environment, etc. Furthermore, Policy 11(e) notes that "in the case of proposals for grid infrastructure, consideration should be given to underground connections where possible".

**3.16** NPF4 identifies transmission infrastructure as a national development where there is support for *"electricity generation and associated grid infrastructure throughout Scotland…helping to reduce emissions and improve security of supply"* (page 7).

**3.17** National Development 3: Strategic Renewable Electricity Generation and Transmission Infrastructure *"supports renewable electricity generation, repowering and expansion of the electricity grid"* (page 103).

**3.18** NPF4 acknowledges that *"the electricity transmission grid will need substantial reinforcement including the addition of new infrastructure to connect and transmit the output from new on and offshore capacity to customers in Scotland, the rest of the UK and beyond"* (page 103).

**3.19** There is further acknowledgement at page 103 that "*additional electricity generation from renewables and electricity transmission capacity of scale is fundamental to achieving a net zero economy…"*

**3.20** Developments for new and/or replacement upgraded on and offshore high voltage electricity transmission lines, cables and interconnectors of 132kV or more are now classified as national developments. As the Cloich Forest WF Connection Project comprises a new 132kv OHL, the proposals will be classed as national development.

### Local Development Plans

**3.21** The study area transects five local planning authorities. All the local development plans for these areas were approved prior to the adoption of NPF4.

#### The City of Edinburgh Council (CoEC)

**3.22** The Edinburgh Local Development Plan (LDP) (adopted in November 2016) is the statutory Local Development Plan for the CoEC.

#### West Lothian Council (WLC)

**3.23** WLC has the West Lothian Local Development Plan 2018 (LDP 1) adopted in September 2018.

#### Scottish Borders Council (SBC)

**3.24** The Scottish Borders Local Development Plan was adopted in May 2016.

**3.25** It is noted that a Proposed LDP (which was modified following Examination) was submitted to Scottish Ministers on 13th December 2023, and has received direction letters requiring minor changes. Should the Proposed LDP be adopted by the time of submitting the application for consent, the proposed LDP policies will be taken into consideration in the planning assessment.

#### South Lanarkshire Council (SLC)

**3.26** The current extant Local Plan for South Lanarkshire is the South Lanarkshire Local Development Plan '2' (adopted on the 9th April 2021).

#### Midlothian Council (MC)

**3.27** The Midlothian Local Development Plan was adopted on 7th November 2017.

## Overview of Routeing Process

### Study Area

**3.28** A study area is first defined, which is large enough to accommodate all likely route options, taking account of the technical requirements (i.e. connection points) and factors such as topography. Baseline mapping of the routeing considerations outlined below then enables routeing constraints and opportunities to be identified.

### Environmental Considerations

**3.29** Statutory duties imposed by Section 38 and Schedule 9 of the Electricity Act 1989 require licence holders to seek to preserve features of natural and cultural heritage interest, and to mitigate where possible, any effects which their proposals may have on such features. The construction and operation of an overhead transmission line will have potential effects on people and the environment, including potential effects on:

- Landscape and visual amenity (including recreation and tourism);
- Biodiversity (including ecology and ornithology designations);
- Cultural heritage including archaeology;
- Forestry and woodland (including areas of ancient woodland and native woodland);
- Hydrology, hydrogeology, and peat (such as watercourses, flood risk, carbon rich soils and deep peat); and
- Planning and land uses (including agricultural uses).

**3.30** In addition to effects on visual amenity, a number of other effects can best be avoided or limited through careful routeing.

**3.31** Other effects are best mitigated through local deviations of the route, the refining of wood pole locations and/or specific construction practices. These are reviewed as part of the environmental assessment process.

### Technical Considerations

**3.32** Technical considerations which can influence routeing also require to be taken account of alongside environmental considerations. Technical considerations include the existing electricity transmission network, access requirements, slope gradient, altitude, waterbodies, peat and the presence of wind turbines.

### Economic Considerations

**3.33** In compliance with the duties imposed on SPEN in terms of Section 9 of the Electricity Act 1989, the proposed route must be 'economically viable'. This is interpreted by SPEN as meaning that as far as is reasonably practicable, and all other concerns being equal, the line should be as direct as possible, and the route should avoid areas where technical difficulty or compensatory requirements would render the scheme unviable on economic grounds.

### Biodiversity Net Gain

**3.34** SPEN is committed to achieving No Net Loss (NNL) of biodiversity across all its projects.

**3.35** The Scottish Government has not adopted a formal definition of Biodiversity Net Gain (BNG). However, in recognition of their commitment to NNL, SPEN has proactively adopted an assessment toolkit based on DEFRA's BNG

metric (version 2.0[4]). The toolkit has been developed in parity with Scottish and Southern Energy Networks' (SSEN) Biodiversity Toolkit[5] for consistency in assessments. The tools have been specifically adapted to reflect the unique nature of Scottish vegetation communities.

**3.36** The adopted assessment tool will allow detailed analysis of biodiversity gains and losses as a consequence of development. However, following a period of testing, SPEN has determined that the assessment tool offers limited value at routeing stage, as detailed habitat and vegetation data is rarely available for all route options.

**3.37** Consequently, a qualitative assessment of BNG opportunities is undertaken. Using data collected to inform the biodiversity appraisal detailed in later chapters of this report, professional ecological judgement is applied to determine the potential for development within each route to achieve NNL. The presence of designated sites and likely presence of habitats of particular conservation importance, along with the potential for site-based biodiversity enhancement interventions are considered.

**3.38** Individual route options that are likely to have greater potential to achieve NNL are preferred.

### Forestry Guidelines

**3.39** SPEN recognises the vital role which trees and forestry play in terms of our response to climate change, climate adaptation, biodiversity, landscape and habitat enhancement.

**3.40** Wherever possible, OHLs should be routed to follow open space and to run alongside, not through, woodland areas. This is particularly important for areas of ancient and native broadleaf woodland. Routes should seek to avoid coupes where felling would lead to potential wind-throw of the coupe. Where there is no alternative route; an OHL through a woodland/forested area should:

- Minimise impacts on landscape resources and character;
- Avoid the line of sight of important views;
- Be kept in valleys and depressions;
- Not divide a hill by crossing over a summit;
- Cross skyline or ridges where they drop to a low point;
- Follow alignments which are parallel to or diagonal to the contour as far as possible (avoiding cutting across contours at a perpendicular); and
- vary in the alignment to reflect the landform by rising in hollows and descending on ridges.

**3.41** SPEN acknowledges the requirements of Scottish Forestry guidance on Design Techniques for Forest Management Planning: Practice Guide[6]. Within forested areas, the OHL should seem to pass through a series of irregular spaces. The forest should appear to meet across the open space in some places so that the corridor does not split the forest completely. Where appropriate, and in line with relevant electrical and forest management safety guidance, consideration should also be given to the management of woodland edges for biodiversity and wildlife e.g., wildlife bridges.

**3.42** Consideration is also given to the Scottish Government's Control of Woodland Removal Policy[7] which requires that woodland removal should be kept to a minimum and that it should be replanted if felled. The policy only supports woodland removal where it would achieve significant and clearly defined public benefits. In most cases, compensatory planting may form part of this balance.

## Routeing Strategy

**3.43** The approach to routeing an OHL is based on the premise that one of the major effects of an OHL is visual and that the degree of visual intrusion can be reduced by careful routeing. A reduction in visual intrusion can be achieved by routeing the OHL to fit the topography, by using topography and trees to provide screening and/or backclothing, and by routeing the line at a distance from settlements and roads. However, other environmental issues also play a key role in this process, including:

- Landscape character;
- Biodiversity;
- Cultural Heritage;
- Forestry and woodland;
- Hydrology, hydrogeology, and peat;
- Geology and Minerals

[4] Note that Defra has now published version 4.0 of the BNG metric, which is available at The Biodiversity Metric 4.0 - JP039 (naturalengland.org.uk)
[5] https://www.sserenewables.com/sustainability/biodiversity-net-gain/
[6] Forestry Commission (2014) Design Techniques for Forest Management Planning: Practice Guide. Available [online] at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/689922/Design_techniques_for_forest_management_planning.pdf
[7] Forestry Commission Scotland (2009) The Scottish Government's Policy on Control of Woodland Removal. Available [online] at: https://forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal/viewdocument/285

- Planning and Land Use.

**3.44** A Routeing Strategy is developed to provide clarity on how the overall Routeing Objective will be achieved for the specific project in question. This is based on established practice for routeing and careful consideration of the specific technical and environmental constraints and opportunities relating to routeing an OHL through the identified study area. Further information on the detailed routeing strategy is provided in **Chapter 4** of this report.

## Development of Route Options

**3.45** A number of possible 'route options' are identified within the study area, informed by the available constraints data. This process involves the avoidance wherever possible of designated areas of high amenity value and irreplaceable habitat. These areas generally include areas of natural and cultural heritage value designated at a national, European or international level. These high amenity value areas are balanced with the technical constraints to inform the landscape led identification of route options.

## Appraisal of Route Options

**3.46** Each route option is appraised against the agreed environmental and technical routeing considerations, which have supporting objectives. For example, in relation to visual amenity, one objective may be to avoid/reduce, as far as is practicable, potential effects on views from residential receptors. In relation to technical considerations, and the existing electricity network, the objective may be to avoid technical conflicts with existing or planned infrastructure.

**3.47** In conjunction with the collection of relevant data and the appraisal of route options, the routeing considerations and related objectives may be re-appraised and updated as more information becomes available. Route options may then be rejected or modified, or new route options developed. The options which perform poorly in this initial appraisal are not considered further and the remaining route options are then further refined and re-appraised if necessary. The objective of this process is to identify the 'preferred route' which is technically feasible and economically viable whilst causing the least disturbance to the environment and to people.

**3.48** However, undergrounding should only be considered where the environmental effects of the construction and maintenance of the underground route, and its associated wayleave, outweigh the harm of constructing individual wooden poles and maintaining access to the OHL.

## Selection of a Preferred Route

**3.49** After the appraisal of route options, an emerging preferred option is subjected to a further technical check prior to SPEN confirming the preferred option. This is then taken forward for stakeholder and public consultation. The routeing and consultation report (i.e., this document) provides details on route options considered and will provide a clear and transparent justification for the selection of the preferred route option.

## Modification of the Preferred Route

**3.50** If required, following consideration of the consultation feedback the preferred route may be modified to reflect the feedback. Modifications may result in further consultation if necessary.

## Selection of the Proposed Route

**3.51** The preferred route, with any post consultation modifications, is subsequently confirmed by SPEN as the 'proposed' route. This is then progressed to the EIA (if required) and detailed routeing stage to establish a final alignment, including locations for poles and for any ancillary development required such as temporary construction access tracks, laydown areas and construction compounds.

### Consideration of Undergrounding

**3.52** Where overground designations pose a routeing constraint which would mean that an overhead line cannot be accommodated, for example where planning consent is already granted for a conflicting use, sections of the route can be assessed by SPEN for consideration of undergrounding. Undergrounding can provide a technical solution to routeing around an otherwise impassible constraint.

# Chapter 4
# Identification of Route Options

## The Project Routeing Strategy

**4.1** The Routeing Strategy, which has informed the identification and appraisal of the route options for the Cloich Forest WF Connection Project, is as follows:

> *"Route options for a continuous 132kV OHL will seek to avoid sensitive landscape and visual receptors. Routeing options will seek to avoid designated landscapes, high ground and ridgelines, and will aim to respond to the grain of the landscape, subject to avoiding areas of highest amenity value as far as possible. In more densely populated areas and where there are other competing environmental and/or technical constraints, the weighting and balancing of these constraints will be given careful consideration."*

## The Study Area

**4.2** The first step in the routeing process involved identification of the study area, predominantly for the purposes of gathering data specific to the project area. In identifying the study area, it was important to ensure that this was large enough to accommodate a continuous 132kV OHL from the Cloich Forest Wind Farm substation to the existing Currie Substation via all likely route options reflecting the Routeing Objective and Routeing Strategy.

**4.3** A preliminary check was therefore carried out to identify the presence of international, European or nationally designated areas within, or immediately adjacent to, the study area to ensure that potential effects on these areas could be considered. Consideration of the topography was also given in this location to ensure sufficient leeway was afforded to potential future technical constraints.

**4.4** The Study Area therefore reflects the maximum area across which the route options were likely to be located. The study area and its topography is shown in **Figure 4.1**. An overview of the study area characteristics is provided below.

### Study Area Description

**4.5** The overall study area for the Cloich Forest WF Connection Project, as shown in **Figure 4.1**, crosses five administrative boundaries:

- The City of Edinburgh Council (CoEC);

- West Lothian Council (WLC);
- The Scottish Borders Council (SBC);
- South Lanarkshire Council (SLC); and
- Midlothian Council (MC).

**4.6** In total, the study area covers an area of approximately 48,070 hectares.

**4.7** The landscape of the study area is largely influenced by the presence of the Pentland Hills, a regionally designated park (Pentland Hills Regional Park), which form a prominent feature, as experienced from all parts of the study area. Beyond the Pentland Hills, the landscape generally comprises lowland plains and upland fringe to the north-west of the Pentlands and rolling and undulating farmland to the south-east of the Pentlands, with lowland river valleys found in the north-eastern extents of the study area. The topography of the study area is varied, ranging from lows of approximately 70m Above Ordnance Datum (AOD) in the north of the study area near Currie to a maximum elevation of 579m AOD within the Pentland Hills, at the summit of Scald Law.

**4.8** In terms of land use, much of the lower-lying parts of the study area is predominantly used as agricultural land, although there are also areas of low-lying peat moorland and health. Many forestry blocks and shelterbelts are present throughout the landscape and running up the lower slopes of the Pentland Hills. As the landform rises, the land use transitions to rough grazing across the open moorland and hills. Rough grazing extends up the slopes of the Pentland Hills, with open heather moorland, acid heathland and grassland, and some areas of bare rock and scree being present. Land uses include recreation (including walking, biking, fishing, skiing), sheep farming, grouse shooting and use by the Ministry of Defence (MOD) for training purposes at the northern end of the Pentlands. The watercourses and reservoirs are used by Scottish Water as part of the water supply for Edinburgh.

**4.9** Much of the area around the northern end of the Pentlands is well settled and populated, with the villages of Currie and Balerno to the north-west of the Pentlands, Edinburgh immediately north across the City of Edinburgh Bypass, and the settlements of Penicuik, Bilston, Auchendinny and Loanhead located to the east. Much of the area between Edinburgh and Penicuik is well settled, with settlement becoming more scattered further south, with increasing distance from Edinburgh. The Pentland Hills do not have any dense settlement; however, some isolated properties and farms are located on the lower slopes near the edge of the Pentland Hills boundary, and along some of the larger valleys (e.g., near Glencorse Reservoir).

**4.10** In terms of development, existing electricity transmission infrastructure is present within the study area. Several large overhead lines (132kV, 275kV, 400kV) are present in the north and north-west of the study area, connecting into Currie Substation in the north. The presence of these lines is particularly noticeable in the northernmost extents of the study area near Currie and Balerno, and along the north of the Pentland Hills near the City of Edinburgh Bypass. Other electricity infrastructure is generally limited to the distribution network.

**4.11** There are a small number of operational and consented wind farms within the study area:

- Harburnhead (22 turbines at 126m to tip): operational;
- Camilty (6 turbines at 149.9m to tip): consented;
- Muirhall (6 turbines at 125m to tip): operational;
- Muirhall extension (2 turbines at 147m to tip): operational; and
- Muirhall South (3 turbines at 147m to tip): operational.

**4.12** Further afield, there are several additional operational, consented and proposed wind farms which have been noted for completeness:

- Pearie Law (6 turbines at 125m to tip): operational;
- Pates Hill (7 turbines at 107m to tip): operational;
- Bowbeat Wind Farm (24 turbines at 80m to tip): operational;
- Camilty (6 turbines at 149.9m to tip): consented;
- Pearie Law II (4 turbines at 180m to tip): consented;
- Woolfords Farm (3 turbines at 180m to tip); application submitted; and
- Torifchen Wind Farm (18 turbines at 180m to tip – application submitted.

**4.13** Individual turbines (typically at c. 20m in height) are also noted around the periphery of the Pentland Hills, in particular to the south near Carnwarth. Whilst not considered specifically in the routeing appraisal, they will be considered at the EIA stage as appropriate.

**4.14** Wind farm developments that are at the screening or scoping stage of EIA were not mapped to inform the identification of route options[8] due to the level of uncertainty

[8] A review of the status of all wind farms was undertaken on a monthly basis to ensure the latest status/layouts were used to inform routeing.

regarding their final layouts to be progressed through the consenting process.

**4.15** In terms of recreational access, the study area encompasses the entirety of the Pentlands Regional Park which extends across much of the Pentland Hills from the City of Edinburgh Bypass in the north down to Carlops on the east of the Pentlands and Crosswood Bridge to the west. Part of this encompasses Bonaly Country Park. As noted, the Pentland Hills are a popular recreational resource, drawing in visitors daily, such as hill walkers and mountain bikers. The Midlothian Snowsports Centre at Hillend also attracts many visitors to its dry ski slope. In addition, the Cross Borders Drove Road crosses through the study area, from the A70 to the west of the Pentlands, running towards Hawick to the south-east of the study area. The Water of Leith Walkway follows the Water of Leith from Balerno, heading north-east into Edinburgh. National Cycle Networks (NCN) include Route 196, following the river North Esk and a disused railway south-west. NCN Route 75 passes through Balerno, then follows the Water of Leith Walkway north east. In addition, various golf courses are present around the fringes of the hills.

**4.16** The main vehicular routes within the study area comprise the following:

- The City of Edinburgh Bypass which runs through the northernmost extents of the study area, to the north of the Pentland Hills;
- The A70, which runs through the study area from Edinburgh towards Lanark. It broadly follows the north-western boundary of the study area to the north-west of the Pentlands;
- The A702, which broadly forms the eastern and south-eastern boundary of the Pentlands, connecting Edinburgh with Biggar, passing through the small villages of Carlops, West Linton and Dolphinton;
- The A701 which travels through the lower-lying eastern extents of the study area, between Penicuik and Biggar; and
- The A703 which travels through the east of the study area connecting Penicuik with Peebles.

## Identification and Mapping of Routeing Considerations

**4.17** The Holford Rules are broadly hierarchical with Rule 1, deemed the first rule to be considered in routeing. Rule 1 relates to the avoidance, where possible, *of "major areas of highest amenity value"*. Holford Rule 2 makes the following recommendation: "*avoid smaller areas of high amenity value or scientific interest by means of deviation"*.

**4.18** As the Holford Rules do not define what constitutes a major area (Rule 1), and the importance of the areas is irrespective of size, smaller areas of highest amenity value were also mapped at this stage, alongside the larger areas.

**4.19** The Holford Rules do not identify which designated areas constitute areas of highest amenity value. However, SHETL clarification note b) (see **Appendix A**) states that areas of highest amenity value *'require to be established on a project-by-project basis considering Schedule 9 of the Electricity Act, 1989'*, and provides examples to be considered.

**4.20** In this routeing study, the term '*environmental*' has also been used in place of '*amenity*' (with the exception of residential amenity) to reflect more recent thinking which also seeks to recognise the intrinsic values of such areas.

**4.21** On this basis, *'areas of highest environmental value'* (Holford Rule 1) located within the study area and therefore considered within this stage of the routeing process, include the international and national level designated list below, and shown in **Figure 4.2**:

- Ramsar Sites;
- Sites of Special Scientific Interest (SSSIs);
- Special Protection Areas (SPAs);
- Special Areas of Conservation (SACs);
- Schedule of Ancient Monuments;
- Conservation Areas;
- Listed Buildings (Category A, B and C);
- Inventory of Gardens and Designed Landscapes;
- Inventory of Historic Battlefields;
- Ancient Woodland; and
- Peatland Habitats (Class 1, as there is no Class 2 in the study area).

**4.22** The SHETL note a) on Holford Rule 2 (see **Appendix A**) states these areas of *"regional or local high amenity value"* should be identified from Development Plans. For this routeing study, the other areas which have been considered are shown on **Figure 4.2** and include:

- Scottish Wildlife Trust sites (SWT);
- Local Wildlife Sites (LWS);
- Local Nature Conservation Sites (LNCS);
- Locally / Regionally Designated Landscapes (including the Pentland Hills Regional Park and Country Parks);

- Special Landscape Areas (SLA) designated by local authorities;
- Non-designated heritage assets;
- Native Woodland Survey of Scotland (NWSS); and
- Geological Conservation Review Areas.

**4.23** These have been mapped where present and treated as 'avoid where possible' constraints during the identification of the routes. However, where they cannot be avoided, a professional judgement was used to assess any impacts on 'balance with other considerations' through the appraisal.

**4.24** Supplementary Note a) of the Rules relates to residential areas, stating *"avoid routeing close to residential areas as far as possible on grounds of general amenity*". Owing to the scale of the routes and the number of Holford Rule 1 and 2, a 150m radial 'trigger for consideration' area was applied to each residential property within the study area when informing the appraisal.

**4.25** A further detailed methodology for the appraisal is set out in **Appendix B**.

## Identification of Route Options

**4.26** Given the nature of overhead transmission lines, the primary environmental effects are likely to be landscape and visual effects. The best way to limit adverse effects on landscape and visual amenity is by careful line routeing, led by landscape architects, based on the application of professional judgement and informed by fieldwork.

**4.27** Holford Rules 1 and 2, as described above, formed the basis for the landscape led identification of route options. In addition, Rules 4 and 5 of the Holford Rules identify that OHL infrastructure is judged to be more widely visible from surrounding areas when located on higher ground, for example ridges and skylines. Holford Rule 3 which states that, other things being equal, the most direct line should be chosen, with no sharp changes in direction, is also taken account of in identifying route options.

**4.28** In this instance, owing to the presence of the Pentland Hills (both a Holford Rule 2 consideration, and a technically challenging constraint due to the topography) routes were identified to route around the Pentlands as far as possible. Furthermore, in accordance with Holford Rule 3, a route through the Pentlands was considered for completeness to consider a more direct route between the two points of connection.

**4.29** Following a desk-based mapping exercise to define potential route options based on the environmental and technical constraints, site visits were undertaken by LUC's landscape architects on the 13th June and 20th July 2023 to further refine the potential route options for taking forward to the appraisal stage.

**4.30** In parallel to the environmental appraisal, SPEN also undertook a technical appraisal to inform the routeing process.

### Technical Considerations

**4.31** Areas of highest ground and steep slopes (≥ 22 degrees) can form technical constraints to the routeing of high voltage overhead lines. To identify topography, a Digital Elevation Model (DEM) was used which maps gridded Ordnance Survey (OS) Terrain 5 data with a resolution of 5m. To identify slope angles, the slope was calculated from the DEM using ArcGIS Spatial Analyst. Areas of higher ground and the main prominent ridges/steep slopes were mapped and identified as technical considerations.

**4.32** As shown **Figures 4.3a and 4.3b**, routeing east into the Currie substation would involve crossing over (or under) existing residential dwellings, the Juniper Green golf course, the A70 road, the Water of Leith LNCS, and / or passing along-side the existing 275kV overhead steel tower line. SPEN undertook a closer technical viability review to understand the implications of navigating these constraints and concluded that it was too technically challenging and not feasible to navigate round these constraints.

**4.33** Therefore, routeing west into Currie Substation was deemed to be the only viable alternative, and all routes were considered only possible on this basis. All route options commence with the same c. 6.3km stretch between Currie substation and the area marked on the OS map as near Haughead Farm, and this section is therefore appraised as part of all route options.

**4.34** Due to the technical constraints posed by the topography of the Pentland Hills, routes were considered routeing to the east and west of the Pentlands to avoid crossing them as far as practical. A route through the Pentland Hills was, however, considered for completeness, and because it provided the opportunity to appraise a more direct route from the wind farm to the substation.

### Mapping of Constraints

**4.35** Four overall route options have been identified. Mapping of the Holford Rule 1 and 2 constraints showed that for the general routeing of Route Options 1, 3 and 4 (to the west and east of the Pentland Hills respectively), there was more than one way to avoid constraints. Route Options 1, 3 and 4 were therefore broken down into smaller sections where alternative routes were possible, and appraised, to establish an 'overall Route Option' 1, 3 and 4, comprising of their various individual options. Where route options must form part of the 'overall

Route Option', as no alternatives are available, they have just been described and appraised as normal.

**4.36** All identified Route Options were then appraised, with the full appraisal table set out in **Appendix C**.

**4.37** There were no alternative options for avoiding constraints along Route Option 2, and therefore this option was appraised in its entirety. Route Option 2 was then appraised against the 'overall Route Options 1, 3 and 4' (see **Appendix D**) to identify the 'preferred route' (see **Chapter 5**).

## Description of Route Options

**4.38** The identified route options are shown in **Figure 4.4** and described below.

**4.39** The routes are described commencing from the Currie Substation and travelling south and west to then join the proposed Cloich Wind Farm substation. Owing to the size and scale of the routes, it was decided to describe and appraise them from north to south. However, it should be noted that the direction and flow of transmitted energy is actually from the wind farm to the grid connection point (south-north).

### Route Options 1A-F

**4.40** Six route options were identified between the existing Currie substation and Cloich Forest Wind Farm Substation following the western boundary of the Pentland Hills.

**4.41** Overall, Route Option 1 would involve selecting Route Option 1A, then either Route Option 1B or 1C, then either Route Option 1D or 1E, before finishing with Route Option 1F (see **Figure 4.4**).

#### Route Option 1A

**4.42** The alignment of Route Option 1A runs in a south / south-westerly direction from the existing Currie substation for approximately 20.4km where it crosses the Water of Leith and both Corston and Auchinoon Hills before passing through coniferous woodland, Crosswood Burn and the consented turbines of Camilty Wind Farm. The route continues south-west until Henshaw Hill. The route broadly follows the A70 road for approximately 15.6km of the route.

#### Route Option 1B (Optional)

**4.43** Route Option 1B follows on from Route Option 1A south-east for approximately 4.4km and winds through a number of peaks, including Harrows Law, the Derlees Rig, The Pike, Bleak Law and Black Law as far as Cairn Knowe. Route Option 1B crosses the West Water watercourse.

#### Route Option 1C (Optional)

**4.44** Route Option 1C follows on from Route Option 1A due east then south for approximately 4.8km through White Craig and Millstone Rig as far as Cairn Knowe. It crosses the Medwin Water watercourse.

#### Route Option 1D (Optional)

**4.45** Route Option 1D is approximately 6km long and runs in a south-easterly direction past Fernihaugh and Garvald and stops north of Blyth Muir. It crosses Medwin Water watercourse, a Roman Road, and the A702 road.

#### Route Option 1E (Optional)

**4.46** Route Option 1E runs north-east from Cairn Knowe for approximately 6.5km along the northern boundary of North Muir, and then south past Slipperfield as far as the base of White Moss. The route option weaves between Slipperfield Mount, North Slipperfield, South Slipperfield, and Slipperfield Loch. The route option crosses patches of coniferous and non-coniferous woodland, notably around Slipperfield Loch and around South Slipperfield. The A702 road is noted within the route option.

**4.47** White Moss has been avoided as it contains Class 1 peat.

#### Route Option 1F

**4.48** Route Option 1F follows on from Route Option 1D and 1E from Hyndfordwell and Spitalhaugh for approximately 8.2km through Hyndfordwell, Rommanobridge, and then broadly following the A701 north as far as the proposed Cloich Wind Farm substation on the Cloich Hills wooodland.

**4.49** The route option crosses coniferous and non-coniferous woodland, as well as the Lyne Water and Dead Burn watercourses. The route follows the A701 road for approximately 5.25km and crosses a number of existing 25kV wood poles.

### Route Option 2

**4.50** The alignment of Route Option 2 runs generally in a southward direction, from the existing Currie substation to the proposed Cloich Wind Farm substation for approximately 25km. It runs to the north of Currie and Balerno, then heads due south weaving between the valley of Mid Hilland, Cock Rig, Weather Law, The Mount, Patie's Hill, and Carlops Hill towards Carlops. Here, it crosses areas of coniferous woodland, Henshaw, Bavelaw, Gutterford and Fairliehope Burns and the North Esk Reservoir. The route option crosses the A702 at Carlops and continues past Deanfoot Road, past Harlawmuir Burn and Cairn Burn, the dismantled railway, then

crosses the A701 and terminates at the substation within the Cloich Hills woodland.

### Route Option 3A-3E

**4.51** Five route options were identified between the existing Currie substation and Cloich Wind Farm Substation following the northern and eastern boundary of the Pentland Hills.

**4.52** Overall, Route Option 3 would involve selecting Route Option 3A and 3B, then selecting either Route Option 3C or 3D, and finishing with Route Option 3E.

#### Route Option 3A

**4.53** Route Option 3A runs south-westwards past Currie and Balerno, then weaves north-east to the south of both settlements to route to the east and north of the Pentland Hills as far as Hillend. Route Option 3A extends for approximately 21km and crosses the Water of Leith and a number of burns, including Cock Burn, Kinleith Burn, Howden Burn, Poet's Burn and Swanston Burn.

**4.54** The route option also crosses the Bonaly Country Park, which includes a number of Listed Buildings, the Swanston Conservation Area, and part of the Morton Mains Conservation Area.

**4.55** The route option also crosses a number of further local amenity receptors, including the Midlothian Snowsports Centre and the Swanston Golf Club.

#### Route Option 3B

**4.56** Route Option 3B continues on from the alignment of Route Option 3A for approximately 8.7km in a south-westerly direction as far as the settlement of Eight Mile Burn, broadly following the A702.

**4.57** The route option crosses a number of small settlements along the A702, including Easter Howgate and Silverburn. The Battle of Rullion Green Battlefield is also noted within the route option.

**4.58** A number of burns, watercourses and woodland are noted within the route option, including Boghall Burn, Glencorse Burn, and Grain Burn.

#### Route Option 3C (Optional)

**4.59** Route Option 3C continues on from Route Option 3B for approximately 6.2km from Braidwoods to the eastern edge of Deepsyke Forest, routeing to the west of the Auchencorth Moss where possible. The A702, A766 and Deanfoot Road all cross the route option, and a Roman road is also noted running north to south near Eight Mile Burn.

**4.60** The route option crosses Joppa Burn, a number of watercourses near Walstone and Manfield, and most notably the River North Esk, and routes to the north of Deepsyke Forest.

#### Route Option 3D (Optional)

**4.61** Route Option 3D follows on from Route Option 3B for approximately 5.3km from Braidwoods to the eastern edge of Deepsyke Forest, routeing to the east of the Auchencorth Moss where possible. It crosses the A702, A766 and Deanfoot Road. It is noted that the route also crosses Joppa Burn, River North Esk and Hare Burn.

#### Route Option 3E

**4.62** Route Option 3E follows on from Route Options 3C and 3D; from Deepsyke forest for approximately 5.4km as far as the proposed Cloich Wind Farm substation. The route option crosses the settlement of Lamancha and crosses a number of coniferous and non-coniferous woodland areas.

### Route Option 4A-4C/4D

**4.63** Four route options were identified between the existing Currie substation and Cloich Wind Farm Substation following the northern and eastern boundary of the Pentland Hills and navigating to the east of Penicuik.

**4.64** Overall, Route Option 4 involves selecting Route Option 4A and 4B, then selecting either Route Option 4C or 4D to conclude.

#### Route Option 4A

**4.65** Route Option 4A is identical to Route Option 3A in description: running from Currie Station south-west then weaving north and east along the northern boundary of the Pentlands and ending at Hillend.

#### Route Option 4B

**4.66** Route Option 4B follows on from Route Option 4A for approximately 11.2km from Hillend to Leadburn. The route option broadly follows Seafield Moor Road southwards, then follows the A701, B7026 and then the A6094 south as far as Leadburn.

**4.67** The route option crosses the settlements of Milton Bridge, Auchendinny, Howgate and Leadburn. Route Option 4B crosses a number of watercourses, including the Bilston Burn, the Kill Burn, Glencorse Burn, the River North Esk, and the Lead Burn.

### Route Option 4C (Optional)

**4.68** Route Option 4C follows on from Route Option 4B, from Leadburn broadly in a south-western direction for approximately 7.4km to the proposed Cloich Wind Farm substation. The route option follows the dismantled railway as far as Cowdenburn, and then continues south to the substation. It crosses a number of watercourses on Cloich Hill and scattered dwellings. The Cloich Hills woodland is also noted within Route Option 4C.

### Route Option 4D (Optional)

**4.69** Route Option 4D also follows on from Route Option 4B for approximately 7.7km as far as the proposed Cloich Wind Farm substation within the Cloich Hills woodland. The route option broadly follows the dismantled railway, which commences in Leadburn and continues to Nether Falla. Route Option 4D then runs westwards along the Cowieslinn Burn to White Rig, along Middle Burn and south-west towards the substation.

# Chapter 5
# Approach to Appraisal of Route Options

## Introduction

**5.1** The objective of the appraisal of the route options is to identify a preferred route for the Cloich WF Connection Project, in a comparable, documented and transparent way.

**5.2** As outlined in the Routeing Strategy, where the characteristics of the study area were such that they required to be balanced to enable the overarching Routeing Objective to be met, professional judgement, informed by both desk studies and field work, and reflecting the Holford Rules, was employed to identify the preferred route.

**5.3** The process also sought to:

- Reflect the overall Routeing Objective and Routeing Strategy;
- Reflect SPEN's 'Approach to Routeing and Environmental Impact Assessment' document;
- Reflect the Holford Rules for Routeing Overhead Transmission Lines; and
- Draw out distinctions between the routes to enable the relative strengths and weaknesses of each to be identified.

**5.4** The comparative appraisal of route options was undertaken in stages as set out below:

- Identification of appraisal criteria, together with their reasoning for inclusion;
- Application of appraisal criteria to each route option, following the appraisal methodology.
- Comparative appraisal of route options to identify a preferred route;
- SPEN technical review, reflecting system design requirements; and
- Cumulative appraisal with other OHL connections within the study area.

## Appraisal Criteria

**5.5** Based on the established practice for OHL routeing and the routeing considerations for the project, the route options were appraised using the following criteria, which continue to reflect the key considerations of the routeing methodology:

- Length of route;
- Landscape and visual amenity;
- Biodiversity (i.e., ecology and ornithology, including consideration of opportunities for BNG);
- Cultural heritage;
- Forestry and woodland;
- Hydrology (including flood risk), hydrogeology and peat; and
- Land use, planning and development.

**5.6** The reasoning for the use of these criteria and an outline of the methodology for appraising each route option is set out below, and the full methodology is set out in **Appendix B**.

### Length of Route Options

**5.7** Holford Rule 3 states that *"other things being equal choose the most direct line"*. Although this rule primarily relates to avoiding sharp changes in direction, and therefore the need for more visually intrusive angle poles, choosing the most direct route may result in fewer adverse effects, than a longer, less direct route (taking due consideration of other constraints).

### Landscape and Visual Amenity

**5.8** **Figure 5.1a** shows the route options in the context of the landscape and visual amenity constraints.

**5.9** Consideration of landscape sensitivity is determined with reference to both the susceptibility of the landscape to the type and scale of OHL development proposed and the value attributed to the landscape through formal designation or otherwise, using published baseline landscape character information.

**5.10** The Nature Scot (formally SNH) digital map-based National Landscape Character Assessment (published in 2019) has been used as the basis for determining the susceptibility of Landscape Character Types (LCTs) across the study area. This was supplemented by information contained within published landscape capacity studies and observations made during fieldwork to appraise the relative landscape' fit' of each route option.

**5.11** The LCTs found across the study area are shown on **Figure 5.1b,** and the findings of the landscape susceptibility appraisal are presented in **Appendix E.** The study area is contained within 12 LCTs:

- LCT 90 – Dissected Plateau Moorland
- LCT 92 – Plateau Outliers
- LCT 99 – Rolling Farmland - Borders
- LCT 102 – Upland Fringe with Prominent Hills
- LCT 104 – Upland Fringe Rough Grassland
- LCT 114 – Pastoral Upland Valley
- LCT 201 – Plateau Farmland – Glasgow & Clyde Valley
- LCT 212 – Moorland Hills – Glasgow Clyde Valley
- LCT 268 – Upland Hills - Lothians
- LCT 269 – Upland Fringes - Lothians
- LCT 270 – Lowland River Valleys - Lothians
- LCT 274 – Lowland Plain

**5.12** Landscape designations comprising 'areas of high environmental value' (Holford Rule 2), are afforded landscape designation and protection at a local level. The Pentland Hills SLA (Midlothian Council, West Lothian Council and Scottish Borders Council), Pentlands SLA (City of Edinburgh Council), Pentland Hills and Black Mount SLA (South Lanarkshire Council) and Pentland Hills Regional Park, are found across an extensive proportion of the study area, particularly across the Pentland Hills as shown on **Figure 5.1.**

**5.13** Non-residential visual amenity as experienced by those in the wider landscape, e.g. people travelling along roads/ tracks and working in the landscape, was also a factor in the appraisal of route options. This allowed topography, potential backclothing and visual prominence to be considered (similar to Holford Rule 4).

**5.14** In relation to residential visual amenity, there are numerous settlements across the study area, with notable larger settlements including Penicuik in the east, and Currie and Balerno in the north-west. Other smaller villages are found to the south-east of the Pentlands, and much of the area surrounding these settlements contains scattered properties and farmsteads. There are relatively few residential properties within the Pentland Hills. The following matters were considered: (1) the number of properties in proximity to the route option; and (2) where the route option might encroach within the 150m 'trigger for consideration' zone.

**5.15** Consideration was also given to tourism receptors such as promoted/ key recreational viewpoints and promoted routes such as long-distance routes and core paths. There are several core paths present across the study area, and the Cross Borders Drove Road, and Water of Leith Walkway, cut through the study area. In addition, the Pentland Hills are a known attraction, drawing many visitors daily from across the entire area. The hills also contain an OS promoted viewpoint at the summit of Allermuir Hill, and the highest hill in the area at Scald law (579m). Viewpoints, Sustrans routes (NCN Route 75, NCN Route 196), core paths/ long distance routes and

tourist attractions (notably the Pentland Hills Regional Park) are shown on **Figure 5.1.**

### Biodiversity and BNG

**5.16** **Figure 5.2** shows the route options in the context of the biodiversity constraints.

**5.17** Designations were identified through digital information available from NatureScot and mapped.

**5.18** The following international designations are located within the study area:

- Ramsar sites;
- SPAs;
- SACs;
- SSSIs.

**5.19** Holford Rule 1 designations were avoided where possible in identifying the route options. Where, due to insurmountable technical reasons, a designated site cannot be avoided due to its size or geographic location, commentary has been included in the assessment to state whether impacts can be avoided through spanning widths, or whether direct physical impacts are likely to be unavoidable.

**5.20** Through the appraisal process, local designations were also mapped and assessed, and the potential for direct impact considered.

#### Biodiversity Net Gain

**5.21** Detailed BNG information will be provided at the later detailed design phases, with the initial routeing stage taking account of high-level constraints and opportunities through the appraisal process.

**5.22** A BNG optioneering tool will be used for habitat mapping (Scotland's Environment Map / GIS aerial imagery) and the Defra scoring system to assign a RAG (red, amber, green) coding system, that relates to biodiversity value is being prepared for the use in the later detailed design stages of the project. The tool will also use policy and designated sites data, and habitat condition will be assumed as 'high', 'moderate' or 'Poor'/'N/A' (where automatically assigned such as for arable), prior to surveys taking place. It then details habitat type, size, condition, strategic value[9] and a unit value for each habitat area.

**5.23** Linear habitats are difficult to analyse at a high level, with publicly available data regarding hedgerows and lines of trees unavailable and large numbers of watercourses being picked up by aerial mapping. Watercourses should be avoided where possible, however calculations of biodiversity units are not made due to the number of watercourses and the complexity of the crossings within each option. This will be calculated and refined as the project progresses. The preference is for a route that follows green coded routes where possible, minimising interaction with high value (amber/red) habitat.

### Cultural Heritage

**5.24** **Figure 5.3** shows the route options in the context of the cultural heritage constraints.

**5.25** There is a significant number of designated heritage assets, including Scheduled Monuments, Listed Buildings, Gardens and Designed Landscapes, Conservation Areas and also non-scheduled archaeology of likely national importance within the study area.

**5.26** The Pentland Hills and the environs of the route options and study area are rich in assets ranging from the prehistoric to the post-medieval periods. Therefore, the appraisal also considers non-designated assets.

**5.27** Potential effects of the Cloich WF Connection Project as a consequence of setting change, have been assessed by initially identifying assets within 3km of the route option, and 'screening' the assets using professional judgement to identify and appraise assets with the potential to experience an effect on their setting.

### Forestry and Woodland

**5.28** **Figure 5.4** shows the route options in the context of the forestry and woodland constraints.

**5.29** Forest areas within each of the route options were identified through the use of aerial photography, combined with digital data available from NatureScot and Scottish Forestry (SF) sources.

**5.30** These forests were then divided into three groupings:

1. Ancient Woodland (as recorded on the Ancient Woodland Inventory (AWI) of Scotland).
2. Native Woodland Survey of Scotland (NWSS).
3. National Forest Inventory (NFI) for the UK.

**5.31** Many areas of AW, NWSS and NFI are found within the study area, and the route options sought to avoid these where possible.

[9] All habitats have been assumed as being in a location that's ecologically desirable.

**5.32** Appraisal against the forestry criterion comprised analysis of the extent and location of the forestry within the route options to identify net areas for these three forest types.

**5.33** In general terms, the objective in identifying a preferred route is based on identifying the lowest impact for forestry. This reflects the importance of the regional resource of this woodland type and as such, the implications of the proposed removal of this type of forest within the wayleave (area of forestry felled to accommodate the OHL).

**5.34** Further consideration will also be given to minimising impacts on forestry at the route alignment stage, taking account of the need to create long term stable forest edges and to minimise impacts on any forestry management practices. During the alignment / EIA stage, consideration will be given to the impact on forestry through:

- Taking account of existing, and planned, wind farm boundaries to minimise sterilisation of commercial woodland areas and reduce the requirements for additional felling outside the wayleave;
- Taking account of forest design plans and liaising with forestry owners / managers to avoid or reduce restrictions on forest management operations/techniques e.g. maintaining access to woodland blocks for harvesting/safety; and identification of opportunities to retain and/or plant particularly lower growing shrub species within the wayleave.

### Peat, Geology, Hydrology, and Hydrogeology

**5.35** **Figure 5.5** shows the route options in the context of the peat, geology, hydrology, and hydrogeology constraints.

**5.36** NatureScot (2016) carbon and peatland mapping was reviewed and mapped using GIS, to be considered in the appraisal process. There are areas of Class 1, 3, 4 and 5 peat within the study area. Class 1 carbon-rich soils, deep peat and priority peatland habitats are considered by NatureScot to be part of the nationally important resource and should be avoided. Class 3 and 5 soils may also contain carbon rich soils and deep peat and should be avoided where possible.

**5.37** Geological Conservation Review Areas were also considered for completeness, as set out in the methodology.

**5.38** In relation to potential conflicts with policy relating to flooding and to avoid potential increase to flood risk, SEPA future flood zones were mapped using GIS. When appraising the route options, the ability to span the flood zone (average span of 100m for wood pole) was considered. The appraisal considered the potential to cross the flood zone at the narrowest point, all other environmental/ technical considerations being equal.

**5.39** Waterbodies/watercourses, which the route options cross, or are in proximity to were also considered during the appraisal process.

**5.40** There are a number of reservoirs and surface drinking water protected areas (DWPAs) which were taken into consideration in the appraisal.

### Planning and Land Use

**5.41** When appraising the route options, where a route was located within proximity to committed development, the implications of this for the alignment and/or subsequent EIA stage were highlighted. Existing and consented wind farms were also considered at this stage, with a 'trigger for consideration' zone of two times the rotor diameter placed around all turbines to account for the wake effect from the wind generated by the turbines as this can impact the OHL conductors if they are in the horizontal wind rose.

**5.42** Committed development data has been obtained from each Council's website.

**5.43** Local Development Plans for each planning authority were also reviewed and considered for any existing or proposed allocations, including housing and minerals[10].

**5.44** Finally, the agricultural land grade as established by Soils Scotland was considered as part of the routeing appraisal for completeness.

## Technical Review of the Route Options

**5.45** Owing to the potential technical constraints posed by all four routes, all the routes were also reviewed by SPEN in relation to the system/network design requirements. This technical review was undertaken to ensure that, based on the level of detail available, the preferred route is within the technical parameters required to construct the OHL.

**5.46** This review included consideration of the following parameters:

- Altitude;
- Topography, particularly slopes greater than 22 degrees. Note that slopes that were not greater than 22 degrees but steep in nature were also considered as these could be less favourable for routeing;
- Road / railway crossings along the route option;

[10] Previously worked and restored sites were considered viable for routeing on environmental grounds.

- Crossings of existing OHL transmission and distribution infrastructure (such as 33kV, 66kV, 132kV, 275kV and 400kV lines);
- Buildability access constraints (including the presence of steep gorges, restrictive roads and forestry access tracks);
- Proximity to existing OHL transmission and distribution infrastructure;
- Ministry of Defence areas (north part of Pentland Hills);
- Mineral working areas (opencast etc);
- Ground conditions (including geology and peat);
- Public service utilities, including major pipelines (crossings/ proximity);
- Watercourse / catchment areas crossings (i.e. rivers, lochs, reservoir);
- Residential / industrial areas;
- Wind farms (existing and future developments);
- Pollution (consideration of corrosion rates); and
- Woodland and forestry.

**5.47** Potential technical risks identified by the SPEN technical review are set out for each route option in **Appendix C**.

## Consideration of Cumulative Effects of the Route Options

**5.48** As set out in **Chapter 3**, the routeing process takes cognisance of other OHL connections which share the project study area. When considering more than one project, combined (or cumulative) effects can arise from the concentration of effects in one area or the distribution of effects across a wider area. It is therefore necessary to find an appropriate balance through the application of professional judgement and experience.

**5.49** The cumulative effect of the Cloich WF Connection Project in the context of the existing OHL connections in the study area has been considered both within the landscape and visual appraisal, and the technical appraisal undertaken by SPEN.

# Chapter 6
# Appraisal Findings

## Overall Route Option Summary

**6.1** A full appraisal of the route options, including alternative sections, was undertaken by the project team (see **Appendix C**). This enabled a preferred route to be selected for each route option.

**6.2** The appraisal findings have been summarised below for each route option.

### Overall Route Option 1: 1A-1B-1D-1F

**6.3** As concluded in the appraisal findings (**Appendix C**), it is considered that the preferred 'Overall Route Option 1' comprises Route Options **1A-1B-1D-1F** (hereafter referred to as 'Overall Route Option 1').

**6.4** Overall Route Option 1 crosses through the Pentland Hills SLA and the Black Mount SLA, and crosses the north-western edge of Pentland Hills Regional Park. There are a number of visual amenity and residential receptors located throughout Overall Route Option 1, including residential receptors (scattered settlements), and the users of core paths. These will need to be considered further at the detailed routeing stage.

**6.5** Whilst Overall Route Option 1 does not contain any Ramsar sites, SPAs, or SWTs, Route Option 1 does cross the River Tweed SAC. Route Option 1A also includes part of the Cobbinshaw Reservoir SSSI, but this can be avoided through detailed routeing. There are six LNCS within Route Option 1; five of which can be avoided through detailed routeing. The Dalmahoy Hill LNCS cannot be spanned or avoided.

**6.6** There are 18 AWI records in total in Overall Route Option 1. These will need to be avoided where possible during detailed routeing.

**6.7** There is evidence of peatland throughout Route Options 1A and 1B; however, none of this peatland is classified as priority peatland habitat. Overall Route Option 1 crosses named and unnamed watercourses. The main flood risk area of note is within Route Option 1F; however, this can be spanned with careful routeing in the south of the route option, where the flood risk area it is at its narrowest (~120m wide). Route Options 1A, 1B and 1D also cross areas of fluvial flood risk, however it is thought that these areas can be spanned or avoided.

**6.8** The Ravelrig Quarry may pose a technical constraint to Overall Route Option 1 and will need to be considered at the detailed routeing stage.

**6.9** There are no Scheduled Monuments, Conservation Areas, GDLs, or Historic Battlefields within Overall Route Option 1. However, a number of Listed Buildings and known non-designated heritage assets are noted, with Route Option 1F containing the most Listed Buildings and Route Option 1A containing the most non-designated heritage assets. Therefore, there are likely to be unavoidable impacts on the setting of Listed Buildings and non-designated heritage assets.

#### Comparison of Route Option 1B and Route Option 1C

**6.10** The comparative appraisal of Route Option 1B and Route Option 1C identified Route Option 1B as the preferred route option as it is shorter than Route Option 1C; it lies further away from the Craigengar SSSI and SAC; and it has potential to avoid Class 5 peatland habitat (not priority habitat). It also crosses fewer watercourses, DWPAs and flood zones.

**6.11** Route Option 1C also performed less well due to its potential landscape and visual impact on the high point at White Craig, the steep slopes between White Craig and Millstone Rig (which also pose a technical constraint), and the potential cumulative visual effects arising from the interaction of the OHL with the above ground Medwin Water pipeline and its existing supporting infrastructure. Furthermore, Route Option 1B crosses fewer core paths, and provides more opportunity to backcloth the OHL against forestry, or on lower lying land, and to minimise landscape and visual impacts through detailed routeing.

#### Comparison of Route Option 1D and Route Option 1E

**6.12** The comparative appraisal of Route Option 1D and Route Option 1E identified Route Option 1D as the preferred route option as it is also the shortest route and lies further away from biodiversity receptors including the Westwater Ramsar and SAC.

**6.13** It is marginally preferred on landscape grounds and technical grounds as well as it has less potential to impact upon residential amenity receptors to the south of Slipperfield Loch when considered in combination with the consented Slipperfield Quarry.

**6.14** Route Option 1E also performed less well due to potential impacts on areas of potential priority peatland and because the route option also crosses more existing electrical and civil infrastructure including a possible high-pressure gas line. Route Options 1A, 1B and 1D also do not contain any SACs.

### Route Option 2

**6.15** There are no route option sections within Route Option 2 which need to be compared.

### Overall Route Option 3: 3A-3B-3D-3E

**6.16** As concluded in the appraisal table (**Appendix C**), the overall preferred Route Option 3 comprises **3A-3B-3D-3E** (hereafter referred to as 'Overall Route Option 3').

**6.17** Overall Route Option 3 crosses the Pentland Hills SLA and the northern edge of the Pentlands Regional Park, and Bonaly Country Park. Whilst Route Option 3 does not pass through any additional locally designated landscapes, the route option is located in and around a number of settlements including around Currie, Balerno, Penicuik and Lamancha, and also a number of core paths.

**6.18** Overall Route Option 3 crosses two Conservation Areas, a Historic Battlefield, and includes a number of Listed Buildings. It will also cross a number of priority peatland habitats which cannot be spanned or avoided, especially within Route Options 3D and 3E. Furthermore, Overall Route Option 3 crosses a number of NFI and NWSS, many of which cannot be avoided.

**6.19** In terms of land use, Overall Route Option 3 has a number of challenging constraints, including the Ravelrig Quarry and the MOD Castlelaw and Dreghorn Training Area and Ranges. Whilst some public access to the MOD area is allowed along public rights of way, some of the area is fenced off and the Training Area presents a significant constraint to OHL routeing.

#### Comparison of Route Option 3C and Route Option 3D

**6.20** The comparative appraisal of Route Option 3C and Route Option 3D identified Route Option 3D as the preferred route option. Route Option 3D is the shorter of the two route options. Peat extraction is also being undertaken in Route Option 3C which cannot be avoided as it spans the entire route option width. Therefore, with regard to land use, Route Option 3D is preferred to Route Option 3C.

**6.21** Route Option 3D has fewer interactions with non-designated heritage assets than Route Option 3C. However, while Route Option 3D is the preferred route option, it is important to note that this option runs along the western boundary of Penicuik GDL and crosses more LCTs with an overall medium-high sensitivity to OHL development. Therefore, potential heritage and landscape impacts will need to be considered carefully at the detailed routeing stage.

**6.22** In terms of technical considerations, there is no overall route preference between Route Options 3C and 3D; however, Route Option 3D has fewer electrical infrastructure

crossings than Route Option 3C. Whilst a high-pressure gas pipeline would need to be crossed with Route Option 3D, this pipeline would need to be crossed with Route Option 3B too and is therefore unavoidable in Overall Route Option 3 whichever route is taken.

### Overall Route Option 4: 4A-4B-4C

**6.23** As concluded in the appraisal table (**Appendix C**), it is considered that the preferred 'Overall Route Option 4' comprises Route Options **4A-4B-4C** (hereafter referred to as 'Overall Route Option 4').

**6.24** This Overall Route Option crosses the least amount of peatland habitat (Class 4 and 5), crosses fewer watercourses and flood risk areas, and fewer NFI records. However, Overall Route Option 4 will result in likely impacts to designated and non-designated heritage assets, including three Conservation Areas and a number of listed buildings.

**6.25** Furthermore, Route Option 4A and 4B are very constrained by residential properties, particularly north of the villages of Currie and Balerno; along the A701; south of the Bonaly area; between Swanston and the Edinburgh Bypass; and between Penicuik and Auchendinny. It is unlikely to be able to route more than 150m from all the dwellings.

#### Comparison of Route Option 4C and Route Option 4D

**6.26** The comparative appraisal of Route Option 4C and Route Option 4D identified Route Option 4C as the preferred option as it the least impact on LCTs and on visual amenity, including on road receptors.

**6.27** Route Option 4C is not within 2km of a SAC and crosses the least amount of peatland habitat (with Route Option 4D crossing several wide areas of Class 4 and 5 peatland). Route Option 4C also crosses fewer watercourses and flood risk areas. Route Option 4C has fewer NFI records and no NWSS records and also less impact on the Leadburn Community Woodland.

**6.28** Route Option 4C has less technical constraints, including the consideration of electrical infrastructure and existing road infrastructure.

**6.29** Notwithstanding this, Route Option 4C has the potential to impact both a number of Listed Buildings and additional non-designated heritage assets and these would need to be considered carefully at the detailed routeing stage.

## Preferred Route Option

**6.30** Once each overall route option was confirmed, a further summary table was completed appraising Overall Route Option 1, 3 and 4 against Route Option 2 (**Appendix D**).

**6.31** All route options are considered challenging with respect to landscape and visual amenity. They all pass through the Pentland Hills SLA and LCTs with a medium to high susceptibility to OHL development. There are also a number of sensitive receptors (residential, tourism and recreation) in close proximity to all the route options, and in some cases, it will not be possible to avoid the 150m 'trigger for consideration' zone. Furthermore, all route options have potential impacts on peatland, and it is likely that impacts on forestry are unavoidable with all route options.

**6.32** The comparative appraisal of all the Overall Route Options has identified that at approximately 25km, Route Option 2 is considerably shorter than the other three options which are all approx. 40km in length. However, Route Option 2 raises the greatest concerns (and consenting risk) from a landscape and visual amenity perspective given that it traverses the centre of the Pentland Hills, albeit at the 'least worst' crossing point in landscape and visual amenity terms. Route Option 2 also crosses the North Esk Valley SSSI which cannot be avoided. Route Option 2 is also least favoured from a cultural heritage point of view due to the potential impact on historic landscapes.

**6.33** Furthermore, due to the higher altitude, there would be a requirement for shorter span lengths to cross the Pentland Hills as a result of the steeper topography, with increased infrastructure as a result. The topography within Route Option 2 would also make accessing the line for construction and maintenance particularly challenging.

**6.34** Route Options 3 and 4 are considered more sensitive than Route Option 1 in terms of landscape and visual amenity around Penicuik and Auchendinny; and as they pass through the Pentlands SLA and the northern edge of the Pentlands Regional Park and Bonaly Country Park. Similarly, from a heritage perspective, Route Options 3 and 4 cross two Conservation Areas to the north which include Listed Buildings.

**6.35** Route Option 3 also crosses a large swathe of Class 1 priority peatland which cannot be avoided; and an SSSI which cannot be spanned; and the Battle of Ruillion Inventory of History Battlefields record, which also cannot be avoided. Furthermore, Route Options 3 and 4 raise additional 'technical' concerns in terms of the existence of an MOD training area, and the requirement to cross a golf course within Route Option 4.

**6.36** Route Option 1 presents its own challenges, as would be expected with a route of this length and in this location. For example, it crosses an LNCS which cannot be spanned or avoided, crosses two SLAs and LCTs with a medium to high susceptibility to OHL development and would potentially impact a number of visual amenity receptors (residential, recreational and tourist), subject to detailed routeing. There

are likely to be unavoidable impacts on the setting of Listed Buildings and non-designated heritage assets and there are a number of existing and consented developments which would have to be taken into account at the detailed routeing stage.

**6.37** However, it is considered that Overall Route Option 1 (1A-1B-1D-1F) is the preferred route option, as shown in **Figure 6.1**. This is because Overall Route Option 1 is considered to best meet the routeing objective in that, on balance, it causes the least disturbance to the environment and the people who live, work and enjoy recreation within it.

**6.38** The Preferred Route Option, along with the alternative route options considered, form the basis of this round of consultation with stakeholders and the public. Further details in relation to the consultation process are provided in **Chapter 7.**

# Chapter 7
# Consultation Process and Next Steps

## The Consultation Process

**7.1** As set out in **Chapter 1**, SPEN will apply to the Scottish Ministers for consent to install and keep installed the new 132kV OHL from the proposed Cloich Wind Farm substation to the proposed Currie substation under Section 37 of the Electricity Act 1989. SPEN will also apply for deemed planning permission for the line and associated works under Section 57(2) of the Town and Country Planning (Scotland) Act 1997. Whilst there are no formal pre-application requirements for consultation in seeking section 37 consent/deemed planning permission, SPEN is embracing best practice as outlined in the *Scottish Government Energy Consents Unit's Good Practice Guidance for Applications under Section 36 and 37 of the Electricity Act 1989 (February 2022)*. This guidance encourages applicants to engage with stakeholders and the public in order to develop their proposals in advance of such applications being made.

**7.2** Therefore, prior to the submission, SPEN is carrying out consultation with stakeholders and the public.

**7.3** Following the submission of the application for Section 37 consent and deemed planning permission on the Preferred Route Option, the Scottish Government Energy Consents Unit will, on behalf of Scottish Ministers, carry out further consultation with the public and stakeholders, including City of Edinburgh, West Lothian, South Lanarkshire and Scottish Borders Councils.

## Consultation Strategy

**7.4** SPEN attaches great importance to the effect that its works may have on the environment and local communities and is very keen to hear the views of local people to help it develop the Cloich WF Connection Project in the best way.

**7.5** The overall objective of the consultation process is to ensure that all parties with an interest in the Cloich WF Connection Project continue to have access to 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.

**7.6** In addition, it is envisaged that the key issues identified through this process can be recorded and presented to decision makers to assist the consenting process.

**7.7** As part of the consultation strategy, SPEN will be holding exhibitions for members of the public, stakeholders and consultees. Details of the consultation process are set out below.

### Consultation Launch and Duration

**7.8** The consultation will run for five weeks from Monday 13th May to Monday 17th June 2024.

**7.9** Prior to the consultation, an advert will appear in local weekly newspapers including; C&B News (Currie & Balerno News) on Friday 3rd May, Evening Edinburgh News on Tuesday 14th May, Borders Telegraph on Wednesday 15th May, and Peeblesshire News on Friday 10th May.

**7.10** The advert will provide information on the project, where and when the consultation will take place and confirm that comments received at this stage are informal comments to SP Energy Networks, with the opportunity to comment formally to the ECU available once an application has been submitted to them. A copy of the advertisement text to be publicised in the local newspaper is provided in **Appendix F**.

**7.11** Consultation leaflets have been distributed to local properties located within 1km of the route options as well as Balerno and West Linton on Monday 13th May 2024. A copy of the public consultation leaflet is contained in **Appendix G**.

**7.12** The closing date for sending responses to SPEN will be midnight on Monday 17th June 2024. Following this date, the information will remain accessible online and available to download (on the project website).

### Consultees

**7.13** SPEN wishes to consult with relevant stakeholders and gain their views on the proposed route of the Cloich WF Connection Project. The consultation will seek to gain views from the following broad groups:

- Statutory and non-statutory consultees, including community councils (as listed in Appendix H);
- Known local interest and community groups operating in City of Edinburgh, West Lothian, South Lanarkshire and Scottish Borders Council areas;
- Locally elected members of the following wards: Pentland Hills, East Livingston and East Calder, Clydesdale East, and Tweedale West;
- Elected members of City of Edinburgh, West Lothian, South Lanarkshire and Scottish Borders Council areas, the Member of Parliament (MP) and Members of the Scottish Parliament (MSPs) whose constituencies are within the above mentioned Council areas closest to the project; and
- Local residents, businesses and the public in general.

**7.14** As noted above, leaflets have been distributed to local residents between Friday 10th and Monday 13th May. Email correspondence has been sent to relevant stakeholders advising them of the consultation and seeking their views on the proposals. The list of stakeholders consulted can be found in **Appendix H.**

### The Focus of the Consultation

**7.15** This report presents the findings of Phase One of the Cloich WF Connection Project, the routeing process, resulting in the identification of a preferred route.

**7.16** The focus of the consultation will be to ask for people's views on:

- The preferred route; and
- Any other issues, suggestions or feedback; particularly views on the local area, for example areas used for recreation, local environmental features, and any plans to build along the preferred route.

### Sources of Information about the Consultation

**7.17** The principal sources of information regarding the consultation will comprise the Cloich WF Connection Project website and the three public exhibitions.

#### Project Leaflet

**7.18** The leaflet includes details of the project, the consultation process, how to find out more and how to submit comments by feedback form, website, post or email, and by when. The leaflet will be emailed to community councils and known local interest and community groups operating in City of Edinburgh, West Lothian, South Lanarkshire and Scottish Borders Councils areas.

#### Project Website

**7.19** The website www.spenergynetworks.co.uk/pages/cloich.aspx will contain publicly available consultation documents for viewing or download.

#### Consultation Documents

**7.20** Hard copies of consultation documents will be made available at the in-person consultation events.

#### Public Consultation Events

**7.21** As part of the first round of public consultation events for the project, SPEN will hold three public exhibitions where people can look at maps, talk to members of the project team

and pick up a feedback form. Locations have been chosen so that people within the consultation zone are only a short distance from their nearest exhibition by car or public transport. The dates and venues are listed in full in the project leaflet and on the website. The format will be an afternoon/evening drop-in.

**7.22** The exhibitions will be held at the following locations on the days and times stated:

- **Tuesday 28th May 2024** between 11:30am – 6pm at St Andrews New Church Hall, Main Street, West Linton, EH46 7EE;
- **Wednesday 29th May 2024** between 1pm – 6pm at Tarbrax Village Hall, Crosswood Terrace, Tarbrax, West Calder, EH55 8XE; and
- **Monday 3rd June 2024** between 1pm - 7pm at Balerno Community Centre, 7- 11 Main Street, Balerno, Edinburgh, EH14 7EQ.

A virtual information room will also be made available for those that are not able to attend the in person events. The link to it will be made available through the project website: www.spenergynetworks.co.uk/pages/cloich.aspx.

### How to Make Comments or Discuss the Project

**1.18** People will be able to submit comments or ask questions:

- At the public exhibition;
- By email;
- Via the Online feedback form;
- In writing; or
- By phone.

#### Email

**7.23** SPEN will also accept comments relating to the specific focus of this round of consultation by e-mail to Cloichprojectmanager@spenergynetworks.co.uk mailto:no later than midnight on 17th June 2024**.**

#### Online Feedback Form

**7.24** SPEN will also accept comments relating to the specific focus of this round of consultation via the online feedback form which can be found on the project website via www.spenergynetworks.co.uk/pages/cloich.aspx.

#### In Writing

**7.25** SPEN will also accept comments relating to the specific focus of this round of consultation in writing. Letters are to be posted to the following address and should be received no later than 17th June 2024.

Cloich WF Connection Project
Land and Planning Team
SP Energy Networks
55 Fullarton Drive
Glasgow
G32 8FA

**7.26** If contacting SPEN by post, people are advised to allow up to 7 days for these to be received. It may not be possible to consider comments received after this date.

#### By Phone

**7.27** The Community Liaison Team can be contacted during the consultation period on 07516 461129.

## Next Steps

**7.28** The responses received from the consultation process will be considered in combination with the findings of this report to enable SPEN to decide on the 'proposed' route to be progressed to the next stage.

**7.29** The proposed route will then progress to identify an OHL alignment, including individual pole positioning which will be informed by the emerging findings of the surveys and assessment undertaken as part of the Environmental Impact Assessment (EIA), detailed engineering ground surveys and discussions with landowners. This alignment, including all ancillary development will be included in the application for Section 37 Consent and deemed planning permission.

**7.30** SPEN will consult fully with affected landowners and occupiers on all aspects of the Cloich WF Connection Project and will give them an opportunity to comment on proposals as they progress.

# Appendix A

## The Holford Rules and NGC and SHETL Clarifications

### The Holford Rules: Guidelines for the Routeing of New High Voltage Overhead Transmission Lines (with NGC 1992 and SHETL 2003 Notes)

**Rule 1:**

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

**Notes on Rule 1**

- 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.
- Areas of highest amenity value require to be established on a project-by-project basis considering Schedule 9 to The Electricity Act 1989, Scottish Planning Policies, National Planning Policy Guidelines11, 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 (NPPG 14)[12];
- Special Protection Area (NPPG 14)[13] ;
- Ramsar Site (NPPG 14)[14];
- National Scenic Areas (NPPG 14)[15];
- National Parks (NPPG 14)[16];
- National Nature Reserves (NPPG 14)[17];
- Protected Coastal Zone Designations (NPPG 13)[18];
- Sites of Special Scientific Interest (SSSI) (NPPG 14)[19];
- Schedule of Ancient Monuments (NPPG 5)[20];

[11] The National Planning Policy Guidelines ("NPPG") have been superseded by the Scottish Planning Policy ("SPP") published on 23 June 2014. The references to the relevant equivalent paragraphs of the SPP are noted.
[12] Now noted in SPP paragraph 207.
[13] Now noted in SPP paragraph 207.
[14] Now noted in SPP paragraph 211.
[15] Now noted in SPP paragraph 212.
[16] Now noted in SPP paragraph 212.
[17] Now noted in SPP paragraph 212.
[18] Now noted in SPP paragraph 87.
[19] Now noted in SPP paragraphs 211-212.
[20] Now noted in SPP paragraph 145.

- Listed Buildings (NPPG 18)[21];
- Conservation Areas (NPPG 18)[22];
- World Heritage Sites (a non-statutory designation) (NPPG 18)[23]; and
- Historic Gardens and Designed Landscapes (a non-statutory designation) (NPPG 18)[24].

**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.**

### Notes on Rule 2

- 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.
- Impacts on the setting of historic buildings and other cultural heritage features should be minimised.
- If there is an existing transmission line through an area of high amenity value and the surrounding land uses have to some extent adjusted to its presence, particularly in the case of commercial forestry, then the effect of remaining on this line must be considered in terms of the effect of a new route deviating around the area.

**Rule 3:**

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

### Notes on Rule 3

- Where possible choose inconspicuous locations for angle towers, terminal towers and sealing end compounds.
- 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 backgrounds, 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 towers will be reduced, and views of the line will be broken by trees.**

[21] Now noted in SPP paragraph 141.
[22] Now noted in SPP paragraph 143.
[23] Now noted in SPP paragraph 147.
[24] Now noted in SPP paragraph 148.

### Notes on Rules 4 and 5

- Utilise background and foreground features to reduce the apparent height and domination of towers from main viewpoints.
- Minimise the exposure of numbers of towers on prominent ridges and skylines.
- *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).
- 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 high voltage lines as far as possible independent of smaller lines, converging routes, distribution poles and other masts, wires and cables, so as to avoid a concatenation or 'wirescape'.**

### Notes on Rule 6

- In all locations minimise confusing appearance.
- 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 when pleasant residential and recreational land intervenes between the approach line and the substation, go carefully into the comparative costs of undergrounding, for lines other than those of the highest voltage.**

### Notes on Rule 7

- When a line needs to pass through a development area, route it so as to minimise as far as possible the effect on development.
- Alignments should be chosen after consideration of impacts on the amenity of existing development and on proposals for new development.
- 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.

### *Explanatory Note on Rule 7*

*The assumption made in Rule 7 is that the highest voltage line is overhead.*

## Supplementary Notes

**Residential Areas**

Avoid routeing close to residential areas as far as possible on grounds of general amenity.

**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.

**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. [*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 Clarifications 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.

- Avoid routeing close to residential areas as far as possible on grounds of general amenity.
- In rural areas avoid as far as possible dominating isolated house, farms or other small-scale settlements.
- 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.

### Supplementary Notes on the Siting of Substations

- Respect areas of high amenity value (see Rule 1) and take advantage of the containment of natural features such as woodland, fitting in with the landscape character of the area.
- Take advantage of ground form with the appropriate use of site layout and levels to avoid intrusion into surrounding areas.
- Use space effectively to limit the area required for development, minimizing the impacts on existing land use and rights of way.
- Alternative designs of substation may also be considered, e.g., ‘enclosed’, rather than ‘open’, where additional cost can be justified.
- Consider the relationship of tower and substation structures with background and foreground features, to reduce the prominence of structures from main viewpoints.
- When siting substations take account of the impacts of line connections that will need to be made.

## Interpretation of the Holford Rules 1 and 2 and the Notes to Rule 2 Regarding the Setting of a Scheduled Monument or a Listed Building

### 1. Interpretation of The Holford Rules 1 and 2

#### 1.1. Introduction

Rules 1 refers to avoiding major areas of highest amenity value, Rule 2 refers to avoiding smaller areas of high amenity value. These rules therefore require identification of areas of amenity value in terms of highest and high, implying a hierarchy, and the extent of their size(s) or area(s) in terms of major and smaller areas.

The NGC Notes to these Rules identify at Rule 1(b) areas of highest amenity value and at Rule 2(a) and (b) of high amenity value that existed in England circa 1992.

### 1.2. Designations

Since 1949, a framework of statutory measures has been developed to safeguard areas of high landscape value and nature conservation interest. In addition to national designations, European Community Directives on nature conservation, most notably through Special Areas of Conservation under the Habitats and Species Directive (92/43/EC) and Special Protection Areas under the Conservation of Wild Birds Directive (79/409/EEC) have been implemented. Governments have also designated a number of Ramsar sites under the Ramsar Convention on wetlands of International Importance (CM6464). Scottish Office circulars 13/1991 and 6/1995 are relevant sources of information and guidance. In addition, a wide range of non-statutory landscape and nature conservation designations affect Scotland.

### 1.3. Amenity

The term 'Amenity' is not defined in The Holford Rules but has generally been interpreted as designated areas of scenic, landscape, nature conservation, scientific, architectural or historical interest.

This interpretation is supported by paragraph 3 of the Schedule 9 to the electricity Act 1989 (the Electricity Act). Paragraph 3 (1)(a) requires that in formulating any relevant proposals the licence holder must have regard to the desirability of preserving natural beauty, or conserving flora, fauna and geological or physiological features of special interest and of protecting sites, buildings, including structures and objects of architectural, historic or archaeological interest. Paragraph 3 (1)(b) requires the license holder to do what he reasonably can do to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any flora, fauna, features, sites, buildings or objects.

### 1.4. Hierarchy of Amenity Value

Rules 1 and 2 imply a hierarchy of amenity value from highest to high.

Schedule 9 to the Electricity Act gives no indication of hierarchy of value and there is no suggestion of a hierarchy of value in either NPPG5: Archaeology and Planning, NPPG 13: Coastal Planning, NPPG 14: Natural Heritage or NPPG 18: Planning and the Historic Environment. Nevertheless, designations give an indication of the level of importance of the interest to be safeguarded.

### 1.5. Major and Smaller Areas

Rules 1 and 2 imply consideration of the spatial extent of the area of amenity in the application of Rules 1 and 2.

### 1.6. Conclusion

Given that both the spatial extent in terms of major and smaller and the amenity value in terms of highest and high that must be considered in applying Rules 1 and 2, that no value in these terms is provided by either Schedule 9 to the Electricity Act, relevant Scottish Planning Policies or National Planning policy Guidelines, then these must be established on a project-by-project basis. Designations can be useful in giving an indication of the level of importance and thus value of the interest safeguarded. The note to The Holford Rules can thus only give examples of the designations which may be considered to be of the highest amenity value.

## 2. The setting a Scheduled Ancient Monument or a Listed Building

The NGC note to Rule 2 refers to the setting of historic buildings and other cultural heritage features. NPPG 5: Archaeology and Planning refers to the setting of scheduled ancient monuments and NPPG 18: Planning and the Historic Environment refers to the setting Listed Buildings. None of these documents define setting.

# Environmental and Planning Designations – Examples of Designations to be Taken into Account in the Routeing of New High Voltage Transmission Lines

## Major Areas of Highest Amenity Value

In Scotland relevant national or international designations for major areas of highest amenity value include the following identified from Scottish Planning Policies and National Policy Guidelines[25]:

- Special Areas of Conservation (NPPG 14);
- Special Protection Areas (NPPG 14);
- Ramsar Sites (NPPG 14);
- National Scenic Areas (NPPG 14);
- National Parks (NPPG 14);
- National Nature Reserves (NPPG 14);
- Protected Coastal Zone Designations (NPPG 13);
- Sites of Special Scientific Interest (NPPG 14);
- Scheduled Ancient Monuments (NPPG 5);
- Listed Buildings (NPPG 18);
- Conservation Areas (NPPG 18);
- World Heritage Sites (NPPG 18); and
- Historic Gardens and Designated Landscapes (NPPG 18).

## Other Smaller Areas of High Amenity Value

There are other designations identified in development plans of local planning authorities which include areas of high amenity value:

- Special Landscape Areas;
- Areas of Great Landscape Value;
- Regional Scenic Areas;
- Regional Parks; and
- Country Parks.

The nature of the landscape in these areas is such that some parts may also be sensitive to intrusion by high voltage overhead transmission lines but it is likely that less weight would be given to these areas than to National Scenic Areas and National Parks.

## Flora and Fauna

Legislation sets out the procedure for designation of areas relating to flora, fauna and to geographical and physio-geographical features. Designations relevant to the routeing of transmission lines will include Special Area of Conservation, Special Protection Area, Sites of Special Scientific Interest, National Nature Reserves, Ramsar Sites and may also include local designations such as Local Nature Reserve.

[25] See footnotes under Holford Rule 1 (note on Rule 1) for references update.

### Area of Historic, Archaeological or Architectural Value

Certain designations covering more limited areas are of relevance to the protection of views and the settings of towns, villages, buildings or historic, archaeological or architectural value. These designations include features which may be of exceptional interest. Of particular importance in this connection are:

- Schedule of Ancient Monuments;
- Listed Buildings, especially Grade A and Grade B Conservation Areas; and
- Gardens and Designated Landscapes included in the Inventory of Gardens and Designated Landscapes of Scotland.

### Green Belts

Generally, the purposes of Green Belts are not directly concerned with the quality of the landscape.

# Appendix B

## Routeing Appraisal Methodology

**Table B.1: Routeing Appraisal Methodology Table**

| Criterion | Sub-criteria | Objectives | Methodology |
|---|---|---|---|
| **Length of Route** | Length of Route Option (Holford Rule 3) | To choose the shortest and most direct route (Holford Rule 3). | Holford Rule 3 states, "*other things being equal, choose the most direct line*". Although this rule primarily relates to avoiding sharp changes in direction, and therefore the need for more visually intrusive angle poles, choosing the most direct route may result in fewer adverse environmental effects than a longer, less direct route (taking due consideration of other constraints). The approximate length of the centre line of each route option is calculated using Geographical Information Systems (GIS). |
| **Landscape and Visual Amenity** | ■ Locally Designated Landscapes, including Special Landscape Areas (SLAs) and the Pentland Hills Regional Park (Holford Rule 2)<br>■ Landscape Character Types (LCT) (Holford Rules 4, 5, 6 and 7), including Landscape Susceptibility.<br>■ Residential Visual Amenity with '150m trigger for consideration zone' (similar to Holford Rule 4)<br>■ Tourism and Recreation: potential for views from OS promoted viewpoints, Sustrans routes, Core Paths, long distance promoted trails, tourist attractions and recreational areas such as golf courses and Country Parks (Notes on Clarification to the Holford Rules) | ■ To seek to avoid/reduce, as far as practical, effects on designated landscapes (Holford Rule 1 and 2).<br>■ To contribute to the understanding of likely landscape and visual sensitivities within different areas for routeing (Holford Rules 4, 5, 6 and 7).<br>■ To seek to avoid/reduce, as far as practicable, potential effects on views from residential receptors.<br>■ To seek to avoid/reduce, as far as practicable, potential effects on formal/informal recreational areas and tourism features. (Further Notes on Clarification to the Holford Rules). | There are no Holford Rule 1 designations (National Scenic Areas) located within the study area.<br><br>Holford Rule 2 areas of local value have therefore been mapped and identified to inform the appraisal. These include areas of scenic value designated at local level (e.g., Special Landscape Areas (SLAs), and which have a level of protection in a Local Development Plan (LDP), and other designations such as the Pentland Hills Regional Park. The potential for effects on the identified special qualities of these designated areas are appraised where present within the study area.<br><br>The NatureScot's digital map-based national Landscape Character Assessment (LCA) (published in 2019)[26] is used as the basis for determining the susceptibility of Landscape Character Types (LCTs) across the study area. This is supplemented by information contained within relevant published landscape capacity studies and observations made during fieldwork to appraise the relative landscape 'fit' of each route option. Landscape susceptibility refers to the ability of the landscape to accommodate a particular kind of change without significant change in its character, in this instance the introduction of wood pole 132kV OHL development. During the appraisal of route options, indicators of landscape susceptibility are considered to ensure the most appropriate landscape 'fit' of the proposed OHL development. Reflecting Holford Rules 4, 5 and 6, the appraisal considers aspects of landscape character including landform and scale, landcover and pattern (e.g. in terms of topography or field boundaries), the presence of other man-made influence, the presence and distribution of settlement and evidence of existing and likely future change within the landscape. The findings of the landscape susceptibility appraisal are presented in **Appendix E**.<br><br>In all areas, routeing should seek a positive fit between the type and scale of OHL and the receiving landscape character. Routes with a positive landscape fit are likely to give rise to less severe, fewer, and less widespread effects on landscape character. Routes with a poorer landscape fit, for example running along ridge lines, or cutting across valleys, are likely to have greater effects on landscape character. The appraisal also considers landscape sensitivity, with reference to both the susceptibility of the landscape to the type and scale of OHL development proposed and the value attributed to the landscape through formal designation or otherwise, using published baseline landscape character information.<br><br>As effects on views and visual amenity are experienced by people as receptors, receptors at their homes are often judged to be most susceptible to changes in views and visual amenity. Residential dwellings are mapped, and 150 m buffers on these are applied as 'trigger for consideration zones' for residential visual amenity to reflect the principles within the Further Notes on Clarification to the Holford Rules and published Landscape Institute Guidance on Residential Visual Amenity Assessment (RVAA) (TGN 02/2019)[27]. Potential effects on residential visual amenity are considered with regard to locations where these buffers overlapped with each route option. Particular consideration is given to higher concentrations of residential receptors within close proximity of route options that may result in pinch points. The implications for principal views from individual properties are considered, informed by aerial photography and field work.<br><br>Approved and validated planning applications for residential dwellings which are not yet constructed are considered as 'committed development' under the Land Use topic where present within the route option (see section on Land Use below). In relation to residential amenity, approved and validated[28] planning applications for residential dwellings within 150m of the route option are considered in the identification of pinch points. It is |

[26] https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions
[27] https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/03/tgn-02-2019-rvaa.pdf
[28] Undetermined planning applications are those which have been validated, i.e. are 'live' applications, but have not yet been decided.

| Criterion | Sub-criteria | Objectives | Methodology |
|---|---|---|---|
| | | | recognised that the degree of certainty of construction of these two types of potential future development differs.<br><br>Consideration is also given to visual amenity experienced by people within a 2km radius of the route options at locations where recreational activities are undertaken, including tourist attractions. To inform consideration of visual amenity, a number of potential receptors (i.e. areas where people are undertaking recreation or visiting tourist attractions where views of the surrounding landscape are important to that experience) are identified and mapped, including but not limited to golf courses, country parks, holiday/caravan parks, promoted visitor attractions, promoted tourist routes/core paths and long-distance walking/cycle routes. Data on recreation and tourism interests is gathered using a desk-based approach using Ordnance Survey maps, aerial satellite imagery and GIS datasets supplemented by fieldwork. Outdoor tourist attractions, promoted viewpoints and formal recreational facilities, where the surrounding landscape contributes to the recreational experience, were identified from Ordnance Survey maps, fieldwork, and tourist information. Transport routes are identified from Ordnance Survey maps. The potential for visual amenity effects on users of these features is considered in relation to professional judgements about the likely sensitivity of receptors, observations made during fieldwork and the type and scale of the proposed OHL. |
| **Biodiversity** | ■ Ramsar Sites (Holford Rule 1)<br>■ Special Protection Areas (SPA) (Holford Rule 1)<br>■ Sites of Special Scientific Interest (SSSI) (Holford Rule 1)<br>■ Special Areas of Conservation (SAC) (Holford Rule 1)<br>■ Scottish Wildlife Trust (SWT) Reserves (Holford Rule 2)<br>■ Local Nature Conservation Sites (LNCS), Local Biodiversity Sites (LBS) and Local Wildlife Sites (LWS) (Holford Rule 2) | ■ To seek to avoid/reduce, as far as practical, effects on the qualifying features of designated sites of nature conservation importance (Holford Rule 1 and 2). | In accordance with Holford Rule 1, areas of highest environmental value are mapped to identify whether any of these areas are located within the study area.<br><br>In accordance with Holford Rule 2, areas of regional or local value are also mapped to determine their presence (or lack of) within the study area. These include Local Nature Reserves (LNRs) (including RSPB Reserves), Local Nature Conservation Sites (LNCS) / Local Wildlife Sites (LWS) and Scottish Wildlife Trust (SWT) Reserves.<br><br>Physical effects on areas of 'highest amenity value' and regional or local value were identified based on the size/location of the designated sites which the route option overlaps, reflecting the potential to avoid locating the wood poles supporting the overhead line (OHL) within the designated site at the detailed design stage. Holford Rule 1 sites will have been avoided where possible in identifying the route options. Where, due to insurmountable technical reasons, a designated site cannot be avoided due to its size or geographic location, the general preference would be to route through the larger site as this is likely to be able to accommodate an OHL more readily than a smaller site (due to the smaller proportion of the overall site area that the OHL would affect).<br><br>The appraisal also considers the distance of the route options to ecological designations and their qualifying features and identifies a route preference considering these factors. Where possible, the connectivity and pathways for impact (e.g. via watercourse or functionally linked habitat) are also considered with the route options with the lowest potential for pathway-related effects on designations being preferred. Where Holford Rule 1 designated sites with non-avian qualifying species are located within 2km of a route option, these are considered within the appraisal, while Scottish Wildlife Trust Reserves located within 1km of a route option and Local Nature Conservation Sites, Local Biodiversity Sites, and Local Wildlife Sites (including those which are confirmed and proposed) located within each route option were considered within the appraisal. The habitats and species within the designation are considered, as well as any functional ecological connectivity to the route option and the likelihood of effects on the species' metapopulations within and beyond the boundaries of the designated sites. Note that woodlands on the Ancient Woodland Inventory are considered under forestry, below.<br><br>An ornithological 'trigger for consideration' zone of 2km is applied around designations for which birds are a qualifying feature, including SPAs, Ramsar Sites, SSSIs and RSPB Reserves. A 2km zone is applied because bird species that are qualifying features of designated sites may be reliant on habitats adjacent to, but outside, the designated site boundaries: for example, qualifying species nesting within the SPA may forage up to 2km from nest sites. Hence, the presence of a route within a 2km 'trigger for consideration' zone may present a risk of disturbance and collision for individuals of these species, and the risk is considered to be proportionate to the length of the route which intersects with the 2km zone. The appraisal states the length of route which intersects with the 'trigger for consideration zone' and considers whether this zone can be avoided during the detailed alignment stage and/or whether suitable mitigation can be implemented during construction/operation.<br><br>Other species such as breeding Schedule 1 birds (outwith the boundaries of designated sites), European Protected Species (such as otters) and other nationally protected species (such as water vole and badger) will be considered during the detailed alignment and subsequent assessment stage, informed by the findings of field surveys. |

| Criterion | Sub-criteria | Objectives | Methodology |
|---|---|---|---|
| | | | As far as possible, hydrology and forestry data sets are also reviewed as they indicate the presence of habitats such as open water and woodland. The appraisal considers the level of sensitivity of the habitat, the species this habitat is likely to support, and its distance from/degree of overlap with the route option. Ancient Woodland was also considered within this category.<br><br>The absence of an ecological feature from the datasets cannot be taken to represent actual absence. Habitat distribution patterns should be interpreted with caution as they may reflect survey/reporting effort rather than actual distribution. |
| **Cultural Heritage** | ■ Scheduled Monuments (Holford Rule 1)<br>■ Listed Buildings (Holford Rule 1)<br>■ Conservation Areas (Holford Rule 1)<br>■ Inventory Gardens and Designed Landscapes (GDL) (Holford Rule 1)<br>■ Inventory Historic Battlefields (Holford Rule 1)<br>■ Non-designated heritage assets (Holford Rule 2) | ■ To seek to avoid/minimise, as far as practical, direct physical change on designated features of cultural heritage interest ('heritage assets') or change in their settings which would harm their cultural significance or perception (Holford Rule 1 and 2). | In accordance with Holford Rule 1, areas of highest environmental value are mapped to identify whether any of these areas are present within the study area. These include:<br>■ Scheduled Monuments (SMs): SMs are monuments of national importance, given legal protection under the Ancient Monuments and Archaeological Areas Act 1979.<br>■ Category A Listed Buildings: In Scotland, Listed Buildings are protected under the Listed Buildings and Conservation Areas (Scotland) Act 1997. Buildings of special architectural or historic interest are divided into three categories to reflect their degree of interest. Category A Listed Buildings are considered to be of national or international importance.<br>■ Conservation Areas (CAs): CAs are considered worthy of preservation or enhancement because of their special architectural or historic interest. They are given legal protection under the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.<br>■ Inventory Gardens and Designed Landscapes (GDLs): GDLs which are particularly important for their scenic quality and historic interest and are an important element of Scotland's historic environment and landscape. Historic Environment Scotland (HES) select nationally important sites for the Inventory under the terms of the Ancient Monuments and Archaeological Areas Act 1979 and maintains that Inventory of GDLs that meet criteria published in HES' Designation Policy and Selection Guidance[29].<br>■ Inventory of Historic Battlefields (Scotland): HES maintains an Inventory of Historic Battlefields which is a list of national important battlefields in Scotland that meet the criteria published in HES' Designation Policy and Selection Guidance[30].<br><br>World Heritage Sites (WHS) would otherwise be included, but there are no WHS located within the study area.<br><br>In addition to the areas of highest environmental value above, and in accordance with Holford Rule 2, non-designated heritage assets are also identified to inform the appraisal. For example, non-designated assets recorded on Canmore[31].<br><br>Policy and guidance seeks the preservation[32] of heritage assets and their setting and the routeing appraisal therefore focusses on the ways in which harm could arise to assets via:<br>■ Direct physical change[33];<br>■ Change in the setting of assets which affects their cultural significance[34]; and<br>■ Change in the setting of assets which affects how the asset and its cultural significance is appreciated[35].<br><br>The cultural heritage appraisal provides a high-level consideration of effects to the heritage significance of:<br>■ Designated assets identified by HES data; and<br>■ Non-designated heritage assets identified using Canmore.<br><br>The methodology for assessing potential direct physical change comprises identifying the number, extent and nature of designated and non-designated heritage assets. These are then noted in relation to the opportunity, or otherwise, for avoiding direct physical change at the detailed routeing stage. |

[29] https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=8d8bbaeb-ce5a-46c1-a558-aa2500ff7d3b
[30] https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=8d8bbaeb-ce5a-46c1-a558-aa2500ff7d3b
[31] National Record of the Historic Environment
[32] Generally held, as a result of legal precedent, as meaning "to do no harm to", i.e. an asset could change but if this change is not harmful to its cultural significance then it would be understood as having been preserved.
[33] For example, this could include change to the key characteristics or fabric of a designated, or non-designated asset.
[34] For example, this could include blocking or obstructing the line of sight from a defensive asset and a topographic feature it was sited to observe/control (e.g. from a medieval castle to the river crossing it policed), or obscuring or obstructing intervisibility between related monuments.
[35] For example, this could include placing infrastructure in a location which affects appreciation of an asset (e.g. a pole being visible on a hillside when the principal elevation of a listed building is seen from its approach road/drive, or where it might lie within a designed vista from a listed building or a GDL).

| Criterion | Sub-criteria | Objectives | Methodology |
|---|---|---|---|
| | | | Potential effects of the OHL arising from how it may affect the cultural significance of historic assets as a result of change within their settings is assessed by initially identifying assets within the route option itself and within 3km of the route options (the distance within which potentially significant effects are considered most likely to occur). These are then reviewed to identify those with susceptibility for harm to their cultural significance associated with the proposed OHL being within their setting. With some exceptions, consideration is not given to effects related to setting change for non-designated heritage assets at this stage. The non-designated heritage assets where effects associated with setting change are considered are due to those assets forming part of a related system with a designated asset and where the proposed OHL may affect how these relationships can be understood (e.g. a Roman fort SM and associated non-designated sections of Roman road). |
| **Forestry and Woodland** | ■ Ancient Woodland Inventory (AWI) (Holford Rule 1)<br>■ Native Woodland Survey of Scotland (NWSS) (Holford Rule 2)<br>■ National Forest Inventory (NFI) (Holford Rule 5) | To seek to avoid/reduce, as far as practical, effects on forestry, particularly areas of ancient woodland (Holford Rule 1) and native woodland (Holford Rule 2, and on future forestry operations (Holford Rule 5). | Notes c) and d) in respect of Rules 4 and 5 of the Holford Rules state "*where possible follow open space and run alongside, not through woodland or commercial forestry and consider opportunities for skirting edges of copses and woods. Protect existing vegetation including woodland and hedgerows, and safeguard visual and ecological links with the surrounding landscape*".<br><br>On this basis, forest and woodland areas within each of the route options are identified through the use of aerial photography, combined with digital data available from NatureScot and Scottish Forestry (SF) sources.<br><br>Forests and woodland are divided into three groupings:<br><br>**Table 1.1:** Ancient Woodland (as recorded on the Ancient Woodland Inventory (AWI) of Scotland)[36].<br><br>**Table 1.2:** Native Woodland Survey of Scotland (NWSS).<br><br>**Table 1.3:** National Forest Inventory (NFI) for the UK[37].<br><br>It is recognised that there is often an overlap between the three records.<br><br>Appraisal against the forestry and woodland criterion comprises analysis of the extent and location of each forest and woodland type within the route options to identify net areas for these three forest and woodland types. A GIS-based calculation is run to identify the total area (hectares (ha)) of woodland, of each forestry category listed above, present within each route option. As ancient woodland areas are also included in the NFI, the total area of 'other' (non-ancient) woodland is calculated by subtracting the total AWI area from the total NFI area. Although the AWI and NFI datasets do not always precisely align in individual cases (it is possible for areas contained within the AWI not to feature in the NFI), visual inspection indicates that the datasets are sufficiently aligned across the route options for the purposes of route option appraisal using this calculation method.<br><br>In general terms, the objective in identifying a preferred route is based on identifying the lowest impact for all three types of forest and woodland. This requires a subjective review which places greater weight on reducing the impact on type 1 and also 3 ahead of type 2. This reflects the importance of the local resource of these woodland types and as such, the implications of the proposed removal of this type of woodland within the wayleave (area of woodland felled to accommodate the OHL). The method of appraisal of route options seeks to minimise effects particularly on areas of ancient woodland, due to the value of this resource as reflected in NPF4. In addition, for the AWI designated areas, consideration is given as to whether this woodland type is a Plantation on Ancient Woodland Site (PAWS) rather than continuing to be of native woodland species. While still recognising the importance of PAWS sites it is considered important to identify these separately from other AWI designations.<br><br>GIS mapping is used to support commentary in the appraisal table as to whether woodland of different types can potentially be avoided through detailed design or whether it cannot (assuming that the final wayleave within woodland will be up to 60 m in width (i.e. 30 m on either side of the OHL)), e.g. if it spans the entire width of the route option, with observations being made concerning the implications of this. Due to the often scattered and broken nature of natural forests and woodland, for example, there is frequently the opportunity to avoid areas through careful consideration of the detailed route alignment.<br><br>Based on the above, a judgement is made as to which route option is preferred. Consideration is also be given to minimising impacts on forestry and woodland at the detailed route alignment stage, taking account of the need to create long term stable forest edges and to minimise impacts on forestry and woodland |

[36] Ancient Woodland (as recorded on the Ancient Woodland Inventory (AWI) of Scotland) encompasses: Ancient and Semi-Natural Woodland (ASNW) and Plantation on Ancient Woodland (PAWS); Long Established woodlands of Plantation Origin (LEPO); and other woodlands on Rob Roy sites.
[37] Updated where necessary to reflect woodlands recently planted and not yet updated in the NFI

| Criterion | Sub-criteria | Objectives | Methodology |
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| | | | management practices. During the alignment/EIA stage consideration will be given to all three forest and woodland types through:<br>■ taking account of existing, and planned, windfirm boundaries to minimise sterilisation of commercial forestry and woodland areas and reduce the requirements for additional felling outwith the wayleave;<br>■ taking account of forest design plans and liaising with forestry owners/managers to avoid, or reduce restrictions on forest management operations/techniques e.g. maintaining access to woodland blocks for harvesting/safety; and<br>■ identification of opportunities to retain and/or plant particularly lower growing shrub species within the wayleave. |
| **Peat, Geology, Hydrology & Hydrogeology** | ■ NatureScot Priority Peatland Habitats (Class 1 and Class 2) (Holford Rule 1)<br>■ NatureScot Peatland Habitats (Classes 3, 4 and 5)<br>■ Geological Conservation Review (GCR) Area<br>■ Waterbodies / watercourses<br>■ Flood Zones and Drinking Water Protected Areas | ■ To seek to avoid/reduce loss of peatlands in accordance with National Planning Framework 4 (NPF4) (Holford Rule 1).<br>■ To avoid locating wood poles within/near watercourses and waterbodies to reduce/eliminate any negative impact on water quality/quantity<br>■ To cross flood zones at their narrowest point to minimise locating infrastructure within flood zones, where possible. | The presence of NatureScot Priority Peatland Habitats is also considered during the route appraisal. NatureScot have published a series of maps and guidance documents relating to Priority Peatlands (Mapping of Carbon Rich Soil, Deep Peat and Priority Peatlands (CPP) (July 2016)). By dividing peatland habitat types into 5 broad 'classes', NatureScot have mapped those areas of Scotland of greatest value for carbon sequestration through peat formation. Class 1 and 2 peatlands are those which offer greatest restoration and carbon-sequestration potential and should be avoided as far as possible. GIS is used to identify the location of Class 1 and 2 peatlands with respect to the length and/or area of intersection of the route option. Professional judgement is applied to identify the possibility of avoiding effects upon the constraint via detailed design; and, where the constraint is unavoidable, the severity of potential effects upon it is identified, taking into account mitigation. The avoidance of all peat is a consideration and areas of Class 3, 4 and 5 peat will also be considered in the route appraisal using the NatureScot GIS data to identify locations. It should be noted there is no Class 2 peatland located within the Study Area.<br>Geological Conservation Review Areas, as mapped and identified by NatureScot[38], have also been mapped and considered as part of the Routeing considerations for completeness. GCR were initially identified by the Nature Conservation Committee in 1977 and have informed the process of selecting areas of national and international importance for geology and geomorphology across the UK. Since then, GCRs are regularly updated by the UK's conservation bodies, including NatureScot (formerly Scottish Natural Heritage). Where GCRs have already informed SSSI or LNCR designations, these have been commented on within the Biodiversity appraisal.<br>GIS is also used to map watercourses / waterbodies and Drinking Water Protected Areas to identify those which interact with the route options. The location of each constraint with respect to the route option; the length and/or area of intersection of the route option with the constraint is identified. Professional judgement is then applied to identify the possibility of avoiding effects upon the constraint via detailed design; and, where the constraint is unavoidable, the severity of potential effects upon it, taking into account mitigation.<br>To avoid potential conflicts with policy relating to flooding and to avoid potential increases to flood risk, the Scottish Environment Protection Agency (SEPA) online flood mapping tool is used to review SEPA flood zones and location of the route options relative to the flood plain and SEPA 200-year + climate change flood zones are mapped using GIS. When appraising the route options, the ability to span the flood zone (maximum span of approximately 100m for wood poles) is considered. The appraisal considers the potential to cross the flood zone at the narrowest point, all other environmental / technical considerations being equal. |
| **Planning and Land Use** | ■ Local Development Plan (LDP) Allocations (Holford Rule 7)<br>■ Committed Development (Consented and Undetermined[39] Planning Applications) (Holford Rule 7)<br>■ Scotland Land Capability for Agriculture Classes 1, 2 and 3.1 (Holford Rule 7) | ■ Avoid, where possible, land use conflict with committed development including consented and undetermined planning applications and land allocated within an LDP (Holford Rule 7).<br>■ To seek to avoid/reduce, as far as practical, effects on Best and Most Versatile (BMV) agricultural land (Holford Rule 7).<br>Identify potential areas of former mine workings or instability | The land use appraisal identifies potential conflicts between the route options and existing and future, i.e. planned or consented but not yet constructed/operational, land uses.<br>Land which is already allocated for development within the route options, for example, through a Local Development Plan (LDP), and land which is subject to a valid planning application or planning permission, also presents the potential for future land use conflicts. Land of this type is referred to as 'committed development' in the appraisal, although it is taken into account that the degree of likelihood of future land use conflict varies within this type (e.g. land with a planning consent as against land with a validated planning application that has not yet been determined).<br>All approved and validated planning applications available on the relevant planning authority's online Planning Portal as of the 25 April 2024, including those at appeal, have been considered as part of this planning |

[38] Geological Conservation Review Sites have been identified by the Joint Nature Conservation Committee and https://www.nature.scot/professional-advice/protected-areas-and-species/protected-areas/local-designations/geological-conservation-review-sites
[39] Undetermined planning applications are those which have been validated, i.e. are 'live' applications, but have not yet been decided.

| Criterion | Sub-criteria | Objectives | Methodology |
|---|---|---|---|
| | Coal Authority Planning Review Area | | appraisal. Developments consented prior to April 2019[40] are considered either likely not to be constructed (as the consent will likely have expired[41]) or to have already been constructed and therefore should now be captured as existing development within relevant data used to inform the appraisal across all topics.<br><br>Planning applications considered within the cut-off period include applications which have received planning permission or planning permission in principle (PPiP) consent; applications for approval of matters specified in conditions (AMSC) associated with PPiP consents granted prior to the April 2019 cut-off date; and applications which have been validated, i.e. are 'live' applications, but not yet determined. To avoid duplication, applications for Non-Material Amendments, Condition Variations or Discharge of Conditions were not referenced in the appraisal where these related to a planning application which had already been captured under other categories.<br><br>When appraising the route options, where a committed development is located (fully or partially) within the route option, the implications of this for the detailed routeing/alignment design and/or subsequent environmental assessment stage are highlighted.<br><br>Both residential and non-residential committed developments have been considered within the appraisal: for example, residential dwellings, holiday lets, agricultural buildings, etc. However, small scale householder planning applications within the curtilages of existing residential properties have not been included within the appraisal table; it is understood that detailed routeing will ensure sufficient minimum distances are maintained where practicable between dwellings and the Cloich Forest Wind Farm Connection Project, and minor applications can be spanned and avoided.<br><br>Route options with the lowest number of committed developments present, or where the committed developments could be avoided through detailed design, are generally preferred.<br><br>As outlined above, the land use appraisal also considers land which is allocated for a specific purpose within the LDP for each Council area:<br><br>■ The City of Edinburgh Council (CoEC);<br>■ West Lothian Council (WLC);<br>■ Midlothian Council (MC);<br>■ South Lanarkshire Council (SLC); and<br>■ The Scottish Borders Council (SBC).<br><br>The appraisal assesses the extent to which areas allocated within the LDPs are present within the route options. A judgement is made as to whether areas allocated under either LDP can or cannot be avoided during the detailed design stage. Route options which avoid or cross fewer allocated areas within the LDPs are preferred.<br><br>Areas of current or future mineral extraction areas have also been identified as part of the planning history search and through the review of the LDP policy allocations, and what the implications for the routes are (i.e. whether these areas should or can be avoided, or what mitigation would need to be considered at detailed siting stage). The Coal Authority interactive map[42] has been reviewed to obtain information on areas of potential shallow mine workings and locations of mine entries for completeness.<br><br>The appraisal also considers the Land Capability for Agriculture classification system which is used to rank land based on its potential productivity and cropping flexibility. This is determined by the extent to which the physical characteristics of the land (soil, climate and relief) impose long term restrictions on its use. The LCA is a seven-class system, whereby classes 1, 2 and 3.1 in Scotland are referred to as 'Best and Most Versatile' land (with regards to agricultural productivity) and are afforded a degree of protection from development[43]. These grades of agricultural land are subject to predictive mapping and opportunities to avoid them during routeing are appraised. The appraisal assesses the area (hectares) of BMV agricultural land present within each of the route options and the route which avoids the most BMV agricultural land is preferred. |

[40] Under Section 58 of the Town and Country Planning (Scotland) Act 1997 (as amended), any planning permission granted expires after a period of 3 years beginning with the date on which permission was granted. Generally, unless the planning permission states otherwise, planning permissions expire three years following the date granted to commence development.
[41] Using 5 years as a buffer to account for the impacts of covid legislation which extended the time period of consents to the 31st March 2022.
[42] Coal Authority (2024) Available at: https://mapapps2.bgs.ac.uk/coalauthority/home.html (accessed 11th April 2024)
[43] Bibby, J.S., Douglas, H.A., Thomasson, A.J. & Robertson, J.S. (1982) Land capability classification for agriculture. Macaulay Land Use Research Institute, Aberdeen.

# Appendix C

## Route Option Appraisal

Overall Route Option 1 would involve selecting Route Option 1A, then either Route Option 1B or 1C, then either Route Option 1D or 1E, before finishing with Route Option 1F. Please refer to **Figure 4.4** which sets out the full extent of the Route Options.

**Table C.1: Route Option 1A-1F Appraisal**

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
|---|---|---|---|---|---|---|---|---|
| **Length of Route Option (km)** | Length of Route Option (Holford Rule 3) | c. 21.1 km | c. 4.4km | c. 5.0km | c. 6.0km | c. 7.1km | c. 8.2km | The shortest route would be following Route Options 1A-1B-1D-1F. |
| **Landscape and Visual Amenity** | Locally Designated Landscapes, including Special Landscape Areas (SLAs) and the Pentland Hills Regional Park (Holford Rule 2) | Route Option 1A passes through the Pentland Hills SLA (WLC), Pentland Hills and Black Mount SLA (SLC), and the most westerly extents of the Water of Leith SLA (CoEC). In addition, the route passes through the north-western edge of Pentland Hills Regional Park.<br>Some options exist to route part of the OHL to the north-west of the A70, beyond the boundary of the SLAs. | The entirety of Route Option 1B passes through the Pentland Hills and Black Mount SLA (SLC). | Route Option 1C passes through the Pentland Hills and Black Mount SLA (SLC), and a small portion of it passes through Pentland Hills SLA (SBC). | Route Option 1D passes through the Pentland Hills and Black Mount SLA (SLC), and Pentland Hills SLA (SBC). | Route Option 1E through the Pentland Hills SLA (SBC). | There are no locally designated landscape designations within Route Option 1F. | There is **no preference** between Route Options 1B and 1C, and 1D and 1E as they all cross SLAs. |
| | Landscape Character Types (LCT) (Holford Rules 4, 5, 6 and 7), including Landscape Susceptibility | Route Option 1A passes through four LCTs, with an overall medium susceptibility to OHL development:<br>■ LCT 212: Moorland Hills - Glasgow and Clyde Valley (medium-high susceptibility for OHL)<br>■ LCT 268: Upland Hills – Lothians (medium-high susceptibility for OHL)<br>■ LCT 269: Upland Fringes – Lothians (low susceptibility for OHL)<br>■ LCT 274: Lowlands Plain (low susceptibility for OHL) | Route Option 1B passes through one LCT, with an overall medium-high susceptibility to OHL development:<br>■ LCT 212: Moorland Hills - Glasgow and Clyde Valley (medium-high susceptibility for OHL) | Route Option 1C passes through two LCTs, with an overall medium-high susceptibility to OHL development:<br>■ LCT 212: Moorland Hills - Glasgow and Clyde Valley (medium-high susceptibility for OHL)<br>■ A small section of the route is within LCT 90: Dissected Plateau Moorland (medium-high susceptibility for OHL) | Route Option 1D passes through five LCTs, with an overall medium-high susceptibility to OHL development:<br>■ LCT 90: Dissected Plateau Moorland (medium-high susceptibility for OHL)<br>■ LCT 99: Rolling Farmland – Borders (high susceptibility for OHL)<br>■ LCT 102: Upland Fringe with Prominent Hills (medium susceptibility for OHL)<br>■ LCT 201: Plateau Farmland (low susceptibility for OHL)<br>■ LCT 212: Moorland Hills – Glasgow and Clyde Valley (medium-high susceptibility for OHL) | Route Option 1E passes through two LCTs, with an overall medium-high susceptibility to OHL development:<br>■ LCT 90: Dissected Plateau Moorland (medium-high susceptibility for OHL)<br>■ LCT 99: Rolling Farmland – Borders (high susceptibility for OHL) | Route Option 1F passes through two LCTs, with an overall medium-high susceptibility to OHL development:<br>■ LCT 92: Plateau Outliers (medium susceptibility for OHL)<br>■ LCT 99: Rolling Farmland – Borders (high susceptibility for OHL) | All of the Route Options cross at least one LCT with a medium-high susceptibility for OHL. Therefore, there is **no preference** for a Route Option on LCT grounds. |
| | Residential Visual Amenity with '150m trigger for consideration zone' (similar to Holford Rule 4) | Route Option 1A includes scattered settlement along the A70, skirting north of the settlement of Currie. Opportunities to route more than 150m from the | There are no residential receptors within Route Options 1B and 1C. | | Route Option 1D includes scattered settlements. However, opportunities to route more than 150m from the dwellings will be | Route Options 1E includes scattered settlements.<br>A sand and gravel quarry has been consented (Scottish Borders | There are a number of settlements within Route Option 1F, primarily positioned along the A701, including Damside, Romannobridge and | There is **no preference between Route Options 1B and 1C.**<br>The consenting of the sand and gravel extraction |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
|---|---|---|---|---|---|---|---|---|
| | | dwellings will be possible at detailed routeing stage. | | | possible at detailed routeing stage. | application ref: 24/00390/FUL) to the south of Slipperfield Loch which will reduce the ability to keep the route alignment away from residential properties. | properties south of West Linton. Opportunities to route more than 150m from the dwellings will be possible at detailed routeing stage. | site to the south of Slipperfield Loch in Route Option 1E will reduce ability to keep away from properties – as north side of woodland at Slipperfield is closer to residents, so **Route Option 1D is preferred.** |
| | Visual Amenity (similar to Holford Rule 4) | Route Option 1A may cut through coniferous forest and shelterbelts which run alongside the A70. Any wayleaves through existing forestry will result in a landscape impact.<br><br>Although some areas of ancient woodland are present within this section, including at Glenpark, and are considered a key landscape feature. There are opportunities to avoid these.<br><br>The start of Route Option 1A crosses the Cross Borders Drove Road near Harperrig Reservoir and may impact views experienced by recreational receptors. | Route Option 1B cuts across an area of very open higher land to the south-western end of the Pentland Hills. By avoiding the summits of hills and routeing at lower elevations, there is potential for the OHL to be largely backclothed by landform. However, it is likely that part of the OHL would be visible on the skyline crossing over the ridge of hills.<br><br>Any wayleaves through existing forestry will result in a landscape impact.<br><br>Receptors in this area are largely confined to people walking along the network of core paths and local footpaths. | Route Option 1C passes through, and / or alongside, the steeper, well-vegetated valley of Medwin Water. Compared to the surrounding area, the terrain of this valley is more complex in nature. Multiple changes in direction should be avoided by taking the OHL along the lower part of the hillside above the valley.<br><br>The steep nature of the valley would mean that the OHL would be largely backclothed by landform and vegetation, however when crossing the ridge near White Craig, will result in the OHL being visible on the skyline.<br><br>Receptors in this section are largely confined to people walking along the network of core paths and local footpaths and are likely to experience cumulative visual effects arising from the interaction of the OHL with the above ground Medwin Water pipeline and the existing supporting infrastructure for this. | Depending on more detailed routeing, the existing forestry and woodland within Route Option 1D provides opportunities to backcloth the OHL in some locations, along with the landform of North Muir and Mendick Hill. It will be preferable to seek a route across the lower rather than the upper slopes, backclothing against tree belts. | Route Option 1E should avoid cutting through coniferous forest and shelterbelts to the south-west of West Linton and at Slipperfield Mount; and instead use them to backcloth the OHL.<br><br>The valley along Dry Burn is relatively narrow and steep in places, compared to some of the other route options, providing the sense of a smaller scale landscape. The valley slopes and flanks of North Muir will provide potential backclothing of the OHL.<br><br>Receptors in this section are largely confined to people walking along the network of core paths and local footpaths, views from scattered residential properties, and from the golf course. | Route Option 1F should avoid cutting through coniferous forest and woodland shelterbelts near Romannobridge. The numerous blocks and shelterbelts of forestry and woodland will provide opportunities to backcloth the OHL.<br><br>This Route Option passes over the Cross Borders Drove Road near Damside, and the A701. Receptors traveling along these routes will experience impacts upon their views. | **Route Option 1B is marginally preferred to 1C** as there is less potential for cumulative impacts (including the above-ground Medwin Water pipeline) on visual amenity receptors. However, further detailed routeing should avoid higher land on both routes where practicable to avoid visibility on the skyline.<br><br>There is **no preference between Route Options 1D and 1E.** |
| | Tourism and Recreation: potential for views from OS promoted viewpoints, Sustrans routes, Core Paths, long distance promoted trails, tourist attractions and recreational areas such as golf courses (Notes on Clarification to the Holford Rules) | Route Option 1A crosses the north of the Cross Border Drove Road from the A70, near to Harperrig Reservoir.<br><br>Route Option 1A also crosses the Pentland Hills Regional Park, which brings many visitors and hill walkers to the area.<br><br>Several core paths pass through this Route Option, including City of Edinburgh Council core paths CEC16: Kirknewton, and CEC17: Riccarton.<br><br>Furthermore, the local path network within Route Option 1A draws people into Pentland Hills | There are several core paths and aspirational core paths within Route Option 1B, including CL/3183/1, CL/3181/1, and CL/3184/1. Other paths form part of the wider network of routes.<br><br>There are no OS promoted viewpoints, long distance trails, or tourist attractions of note within Route Option 1B. | Core path CL/3184/1 is located within Route Option 1C.<br><br>There are no OS promoted viewpoints, long distance trails, or tourist attractions of note within Route Option 1C. | Route Option 1D crosses the Scottish Borders Council core path 169, as well as a promoted path, Roman Road and a Public Right of Way.<br><br>There are no OS promoted viewpoints or tourist attractions of note within Route Option 1D. | Route Option 1E crosses the Scottish Borders Council core path 169 (which follows the Roman Road), as well as a promoted path, and a Public Right of Way.<br><br>There are no OS promoted viewpoints or tourist attractions of note within Route Option 1E. | Route Option 1F passes the Cross Borders Drove Road as it crosses the A701 near Damside.<br><br>Route Option 1F crosses Several Scottish Borders Council paths, including core path 168 and a Public Right of Way.<br><br>There are no OS promoted viewpoints or tourist attractions of note within Route Option 1F. | **Route Option 1B is marginally preferred to Option 1C** as it would cross fewer core paths, and aspirational core paths.<br><br>**There is no preference between Route Options 1D and 1E** as they both would result in comparable impacts on a tourist and recreational amenity. |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
|---|---|---|---|---|---|---|---|---|
| | | Regional Park. Route Option 1A also passes the roadside National Cycle Network Route 75 north of Currie.<br>There are no OS promoted viewpoints within Route Option 1A. | | | | | | |
| | **Overall preference for Landscape and Visual Amenity** | Overall, **Route Option 1A-1B-1D-1F** is marginally the preferred route, however, the route will cross a number of SLAs and the Pentlands Hills Regional Park, and the impact on several core paths will need to be taken into consideration during detailed routeing.<br>Route Option 1B is preferred to 1C as it is crosses fewer core paths and provides more opportunity to backcloth the OHL against forestry, or on lower lying land, and minimise landscape and visual impacts through detailed routeing.<br>Route Option 1D is marginally preferred to 1E as it has less potential to impact upon residential amenity receptors to the south of Slipperfield Loch when combined with committed development in the area (consented Slipperfield Quarry). | | | | | | |
| **Biodiversity** | Ramsar Sites (Holford Rule 1) | There are no Ramsar sites within Route Options 1A, 1B or 1C, nor do they pass through the 2km trigger for consideration zone of any Ramsar site. | | | There are no Ramsar sites within Route Option 1D, but a small part is within the 2km trigger for consideration zone of the Westwater Ramsar site. | There are no Ramsar sites within Route Option 1E, but a large part is within the 2km trigger for consideration zone of the Westwater Ramsar site. | There are no Ramsar sites within Route Option 1F nor does it pass through the 2km trigger for consideration zone of any Ramsar site. | There is **no preference between Route Options 1B and 1C** in relation to **impact** on Ramsar sites.<br>There is **a slight preference for Route Option 1D** as it is **further away** from the **Westwater** Ramsar site than Route Option 1E, although Route Option 1D still remains within the 2km trigger for consideration zone. |
| | Special Protection Areas (SPA) (Holford Rule 1) | There are no SPAs within Route Options 1A, 1B and 1C nor do they pass through the 2km trigger for consideration zone of any SPAs. | | | There are no SPAs within Route Option 1D, but a small part is within the 2km trigger for consideration zone of the Westwater SPA. | There are no SPAs within Route Option 1E, but a large part is within the 2km trigger for consideration zone of the Westwater SPA. | There are no SPAs within Route Option 1F nor are there any SPAs located within 2km. | There is **no preference between Route Options 1B and 1C** in relation to **impact** on SPAs.<br>There is **a slight preference for Route Option 1D** as it is **further away** from the **SPA** than Route Option 1E, although Route Option 1D still remains within the 2km trigger for consideration zone. |
| | Sites of Special Scientific Interest (SSSI) (Holford Rule 1) | Route Option 1A includes part of the Cobbinshaw Moss SSSI, but this can be avoided through routeing.<br>Route Option 1A is within the 1km trigger for consideration zone of the Craigengar SSSI. | There are no SSSIs within Route Option 1B. | There are no SSSIs within Route Option 1C.<br>Route Option 1C is within the 1km trigger for consideration zone of the Craigengar SSSI, passing around 20m from the SSSI[1]. | There are no SSSIs within Route Option 1D.<br>Route Option 1D is within the 1km trigger for consideration zone of the Dolphinton – West Linton Fens and Grassland SSSI. SSSIs within 2km of Route Option 1D are:<br>■ Dolphinton - West Linton Fens SSSI<br>■ Grassland SSSI<br>■ A small section of the Westwater Reservoir SSSI | There are no SSSIs within Route Option 1E.<br>Route Option 1E is within the 2km trigger for consideration zone of the Westwater SSSI.<br>■ Route Option 1E is within the 1km trigger for consideration zones of the Dolphinton – West Lindon Fens and Grassland SSSI. | There are no SSSIs within Route Option 1F.<br>Route Option 1F is not within the 1km trigger for consideration zone of the Dolphinton – West Linton Fens and Grassland SSSI. | **Route Option 1B is preferred** over 1C as 1B is further away from the Craigengar SSSI.<br>There is **no preference** between **Route Options 1D and 1E** in terms of impact on SSSIs. |

[1] The Craigengar SSSI is designated for its upland habitats and vascular plants.

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
|---|---|---|---|---|---|---|---|---|
| | Special Areas of Conservation (SAC) (Holford Rule 1) | There are no SACs within Route Option 1A and 1B. | | There are no SACs within Route Option 1C.<br><br>Route Option 1C is within the 1km trigger for consideration zone of the Craigengar SAC, passing within 20m from the SAC at its closest point. | There are no SACs within Route Option 1D. | Route Option 1E contains an approximate 3.3km stretch of the River Tweed SAC (following the West Water) which follows the northern boundary of the Route Option. | Route Option 1F contains an approximate 2.5km length of the River Tweed SAC which spans the width of the route option. However, the OHL could span the width of the SAC to avoid any direct impacts. | **Route Option 1B** is **marginally preferred over Route Option 1C** as it further away from SACs.<br><br>**Route Option 1D** is **preferred over Route Option 1E** in terms of impact on SACs. |
| | Scottish Wildlife Trust (SWT) Reserves (Holford Rule 2) | None of the Route Options 1A, 1B, 1C, 1D, 1E and 1F contain a SWT Reserve. | | | | | | There is **no preferred route option** as there is no notable difference between the routes in relation to impacts on SWT Reserve. |
| | Local Nature Conservation Sites (LNCS), Local Biodiversity Sites (LBS) and Local Wildlife Sites (LWS) (Holford Rule 2) | Four LNCS are located wholly within Route Option 1A:<br>■ Crosswood Reservoir (West Lothian) is located within the east of the Route Option but could be avoided by detailed routeing;<br>■ Auchinoon Quarry (West Lothian) is very small and although it is wholly within the Route Option, it would be easily avoidable through detailed routeing;<br>■ Dalmahoy Hill / Kaimes Hill / Ravelrig Quarry (biodiversity / geodiversity) spans the width of the Route Option and would likely require a wayleave through it; and<br>■ Crosswood Burn (biodiversity) which spans the width of the Route Option cannot be avoided. However, the proposed OHL could span the Crosswood Burn at its narrowest point.<br><br>Four further LNCSs are located within, or partly within, the Route Option which can be avoided through detailed routeing:<br>■ Riccarton Estate (biodiversity);<br>■ Harlaw Reservoir/Water of | There are no LNCS within Route Options 1B and1C. | | There are two LNCSs partly within Route Option 1D and both can be avoided through routeing:<br>■ Garvald Burn (biodiversity)<br>■ Ingraston Moss (biodiversity) | The Slipperfield Lochs (biodiversity) LNCS located entirely within Route Option 1E but could be avoided through detailed routeing.<br><br>The White Moss (biodiversity) LNCS marginally crosses the Route Option but could be spanned or avoided through detailed routeing. | There are two LNCSs entirely within Route Option 1F, and one partly within the Route Option but all of them could be avoided through detailed routeing:<br>■ Longstruther Burn (wildlife)<br>■ Bog Wood (biodiversity)<br>■ Spital Haugh (biodiversity) | There is **no preference** between **Route Options 1B and 1C** in terms of impact on LNCs.<br><br>There is **no preference** between **Route Options 1D and 1E** in terms of impact on LNCs as both Route Options can avoid LNCs. |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
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| | | Leith/Bavelaw Burn/Black Springs/Threipmuir & Harlaw Reservoirs (biodiversity / geodiversity);<br>■ Harperrig Reservoir (biodiversity); and<br>■ Crosswood Burn Reservoir (biodiversity). | | | | | | |
| | **Overall preference for Biodiversity** | Therefore, in terms of impact on Biodiversity, the **marginally preferred Route Option is 1A-1B-1D-1F**.<br>Route Option 1B is preferred to 1C as it is further away from the Craigengar SSSI, and SACs.<br>Route Option 1D is preferred to 1E as it is further away from the Westwater RAMSAR site and SAC. | | | | | | |
| **Cultural Heritage** | Scheduled Monuments (Holford Rule 1) | There are no Scheduled Monuments within Route Option 1A.<br>There are few Scheduled Monuments within 3km of Route Option 1A, the closest being Camilty Hill enclosure (SM1165) and Camilty Hill / Castle Greg Roman fortlet (SM1933) situated c. 560m north of Route Option 1A. The Scheduled Monuments are situated within plantation woodland and are largely screened from the surrounding landscape. However, their elevated position may result in partial visibility of Route Option 1A. | There are no Scheduled Monuments within the Route Options 1B or 1C.<br>No locations were identified within 3km of Route Options 1B and 1C where the introduction of grid infrastructure is likely to result in harmful effects as a result of changes in setting. | | There are no Scheduled Monuments within Route Option 1D or 1E.<br>Within 3km, Scheduled Monuments predominately comprise evidence for prehistoric domestic, ritual and funerary activity (e.g. SM3544 and SM5742). It is unlikely that these Scheduled Monuments will be subject to significant changes in setting as a result of the introduction of grid infrastructure. Careful placement and design of infrastructure and ancillary development is likely to mitigate any potential significant effects. | | There are no Scheduled Monuments within Route Option 1F.<br>Within the wider landscape Scheduled Monuments predominately include evidence for prehistoric defensive, domestic, ritual and funerary activity, e.g. Whiteside Hill fort (SM2955). The introduction of grid infrastructure on elevated ground within Route Option 3F may result in changes in setting. However, careful placement and design is likely to mitigate any potential significant effects. | There is **no preference between the Route Options.** Impacts on the setting of Scheduled Monuments located further afield adjacent to Route Options 1D / 1E and 1F should be taken into consideration within more detailed routeing. |
| | Listed Buildings (Holford Rule 1) | There are six Listed Buildings within Route Option 1A, which are all Category B listed:<br>■ Ainville (LB7363) an 18th century farm house;<br>■ The Old Schoolhouse, Causewayend Kirknewton (LB ref LB14158) a 19th century former school house;<br>■ Stables, Causewayend (LB14159) stable block associated with the former schoolhouse;<br>■ Wester Causewayend Farmhouse and Steading (LB18980), a listed farmstead | Only the Category B Listed Black Hill Farm (LB643), a 17th farm associated with the Covenanters, is located within Route Option 1B and 1C. This Listed Building may be susceptible to a change in setting as a result of the introduction of grid infrastructure, which could be harmful to its appreciation and understanding.<br>Within 3km of Route Options 1B and 1C, the Category B Covenanters' Grave, Black Law (LB643) and Category C Medwynhead House (LB8366) may be susceptible to a change in setting as a result of the introduction of grid infrastructure, that could be harmful to the cultural significance of the Listed Buildings. Careful route placement and design is likely to mitigate any potential significant effects.<br>It is unlikely that other Listed Buildings within 3km of the Route Option, such as those at Dunsyre, will be subject to setting changes. | | There are four Listed Buildings within Route Option 1D; three category B and one Category C.<br>The Category B buildings include:<br>■ Medwynbank Sawmill (LB645)<br>■ Garvald House (LB8381)<br>■ Garvald Home Farm (LB8382)<br>These buildings all date from the early to mid- 19th century and pertain to the growth and expansion of Garvald and Ferniehaugh.<br>The Category C Medwynhead House (LB8366) comprises an 18th century former farmstead.<br>These Listed Buildings may be susceptible to a | There is one Listed Building within Route Option 1E: the Category C Medwynhead House (LB8366) an 18th century former farmstead.<br>This Listed Building may be susceptible to a change in setting as a result of the introduction of grid infrastructure, which could be harmful to its appreciation and understanding.<br>Listed Buildings within 3km of Route Option 1E are concentrated at the village of West Linton. It is unlikely that an OHL within Route Option 1E would be visible within the setting of these Listed Buildings, due to the screened from intervening topography, development and/or vegetation, and it is | There are 12 Listed Buildings within the Route Option 1F, 11 Category B and one Category C.<br>These assets largely related to the post-medieval development of Romannobridge, Paulswell and the development of Halmyre Mains.<br>These Listed Buildings may be susceptible to a change in setting as a result of the introduction of grid infrastructure, that could be harmful to how the buildings are appreciated and understood today. Careful route alignment, pole placement and design, is likely to mitigate any potential significant effects.<br>Listed Buildings within 3km of Route Option are concentrated at Newlands | There is **no preference between Route Options 1B and 1C.**<br>**Route Option 1E is preferred to 1D** as there are fewer Listed Buildings located within it.<br>There are likely to be unavoidable impacts as a consequence of setting change on Listed Buildings within the Route Option, which will need to be minimised as best practicable through the detailed routeing phase. |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
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| | | complex of early 19th century date. The Steading is divided into five distinct elements; and<br>■ Buteland Farm (LB26779) an early 19th century farm complex.<br>■ Glenrbook Road (LB26857) 19th century stable block associated with former country house.<br>These Listed Buildings may be susceptible to a change in setting as a result of the introduction of grid infrastructure, that could be harmful to how the buildings are appreciated and understood.<br>Within 3km of Route Option 1A, Listed Buildings are concentrated at Harburn House GDL, Glen Brook and Balerno on the outskirts of the City of Edinburgh. Route Option 1A is unlikely to appear to be seen within the setting of these Listed Buildings, as the route appears screened by intervening topography, development and/or vegetation. The introduction of an OHL is therefore unlikely to affect how the Listed Buildings are understood or appreciated. | | | change in setting as a result of the introduction of grid infrastructure, that could be harmful to how the buildings are appreciated and understood today.<br>It is unlikely that other Listed Buildings within 3km of Route Option 1D, such as those at Dunsyre, and Newholm will be subject to changes in setting. | unlikely to affect how they would be otherwise understood or appreciated. | Church, Spitalhaugh and West Linton. It is unlikely that these buildings will be subject to significant changes in setting. | |
| | Conservation Areas (Holford Rule 1) | There are no Conservation Areas within Route Option 1A.<br>Within 3km of the Route Option there are the following Conservation Areas:<br>■ Currie (CA34)<br>■ Juniper Green (CA31)<br>■ Balerno (CA33)<br>■ Hermiston (CA39)<br>■ Kirknewton (CA376)<br>Route Option 1A does not appear to be sited on key views along routes through and / or toward these Conservation Areas so is | There are no Conservation Areas within, or within 3km of, Route Options 1B, 1C and 1D. | | | There are no Conservation Areas within Route Option 1E and 1F.<br>The West Linton (CA631) Conservation Area is located within 3km of Route Options 1E and 1F.<br>An OHL within Route Options 1E and 1F may be impact key views of the Conservation Area along routes which later run through the Conservation Area, including Core Paths 168 and 169. However, due to distance and screening by intervening topography, buildings and vegetation, it is unlikely that the introduction of grid infrastructure would be harmful to the understanding or appreciation of the Conservation Area. | | There is **no preference between Route Options 1B and 1C.**<br>**Route Option 1D is preferred to 1E** as there are no Conservation Areas within, or within 3km of, Route 1D. |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
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| | | unlikely to affect how they are experienced or perceived. | | | | | | |
| | Inventory Gardens and Designed Landscapes (GDL) (Holford Rule 1) | There are no inventory GDLs within Route Option 1A.<br><br>Harburn House (GDL00208) is situated c. 1.6km north of the central section of Route 1a. Information reviewed indicates that there are restricted views from the designed landscape and Listed Buildings at its core, towards the route option, and it is unlikely that the introduction of grid infrastructure would be harmful to the understanding or appreciation of the GDL. | There are no inventory GDLs within Route Options 1B, 1C, 1D, 1E and 1F or within 3km. | | | | | **There is no preferred Route Option.** |
| | Inventory of Historic Battlefields (Holford Rule 1) | There are no inventory historic battlefields within Route Options 1A, 1B, 1C, 1D, 1E and 1F or within 3km of the Route Options. | | | | | | **There is no preferred Route Option.** |
| | Non-designated heritage assets (Holford Rule 2) | There are 65 non-designated heritage assets located within Route Option 1A.<br><br>Whilst evidence for later prehistoric occupation, Roman military features and roads are present within Route Option 1A (e.g. Canmore ID 72226), these assets largely comprise post-medieval farmsteads and associated agricultural features. | There are three non-designated heritage assets located in Route Option 1B.<br><br>These assets comprise one post-medieval farmstead (Canmore ID 181733), and two undated marker cairns (Canmore ID 90611 and 90620). | There are two non-designated heritage assets located in Route Option 1C. These assets comprise undated ecclesiastical and agricultural sites:<br>■ Rodgers Kirk (Canmore ID 49006)<br>■ Blackhill Farm (Canmore ID 181773) | There are 42 non-designated heritage assets located in Route Option 1D.<br><br>Whilst evidence for later prehistoric occupation, Roman military features and roads are present (e.g. the Border - Crawford - Inveresk Roman Road Canmore ID 71715), these assets largely comprise post-medieval farmsteads and associated agricultural features. | There are 38 non-designated heritage assets located in Route Option 1E.<br><br>Evidence for early prehistoric occupation has been identified within Route Option 1E, through the recovery of flints, arrowheads and axe heads.<br><br>Assets range in date and form, from later prehistoric funerary remains (Cairn Knowe Canmore ID 368956), Roman military features and roads (e.g. the Border - Crawford - Inveresk Roman Road Canmore ID 71716), through to post-medieval farmsteads and associated agricultural features. | There are 57 non-designated heritage assets located within Route Option 1F.<br><br>These assets largely comprise evidence for medieval, post-medieval and modern agricultural features, such as farmsteads, byres and dovecots. Assets associated with post-medieval infrastructure and post Improvement settlement development are also present within the Route Option 1F. | **Route Option 1C is marginally preferred to 1B** as there are fewer non-designated heritage assets located in the Route Option.<br><br>**Route Option 1E is marginally preferred to 1D** as there are fewer non-designated heritage assets located in the Route Option.<br><br>Physical changes to these assets are to be avoided where possible and poles and associated infrastructure are to be sited in a way which does not disrupt how they can be understood in relation to contemporary/ related assets and the surrounding landscape. |
| | **Overall preference for Cultural Heritage** | On balance, the overall preferred Route Option 1 comprises **1A-1C-1E-1F**.<br><br>Either 1B or 1C could be progressed with consideration to alignment through detailed design, however the preference for 1C over 1B is marginal with 1C containing fewer designated assets within the Route Option.<br><br>Route Option 1E has been selected over 1D as this has fewer Listed Buildings and non-designated heritage assets within the Route Option. | | | | | | | |
| **Forestry and Woodland** | Ancient Woodland Inventory (AWI) (Holford Rule 1) | There are seventeen AWI records within, or partially within, Route Option 1A with a totalling 32.8 hectares. Through careful routeing, it is considered that all AWIs can be avoided. | There are no AWI records within Route Option 1B and 1C. | | One AWI is partly within Route Option 1D, totalling 0.8 hectares. Through careful routeing, it is considered that the AWI can be avoided. | There are no AWIs within Route Option 1E and 1F. | | There is **no preference between Route Options 1B and 1C.**<br><br>**Route Option 1E is preferred to 1D** as there are no AWIs within 1E. |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
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| | Native Woodland Survey of Scotland (NWSS) (Holford Rule 2) | There are sixteen NWSS records within, or partially within Option 1A with a total area of 23.3 hectares. These can be avoided. | There are no NWSS records within Route Option 1B and 1C. | | There is one NWSS record within Route Option 1D which is 1.1 hectares. This can be avoided through careful routeing. | There are five NWSS records within or partially within Route Option 1E, totalling 4.9 hectares; this can be avoided through careful routeing. | There are fourteen NWSS records within or partially within Option 1F with a total area 20.5 hectares. These can be avoided through careful routeing. | There is **no preference between Route Options 1B and 1C.**<br>**Route Option 1D is preferred to 1E** as there are fewer NWSS records within it. |
| | National Forest Inventory (NFI) (Holford Rule 5) | There are 99 NFI records within, or partially within, Route Option 1A totalling 329.5 hectares.<br>Some loss of NFI forest cover would be unavoidable in this Route Option which may impact the viability of the route. | There are no NFI records within Route Option 1B and 1C. | | There are 48 NFI records located within Option 1D, total area 60.5 hectares.<br>Some loss of forest cover would be unavoidable on this Option. | There are 51 NFI records within Option 1E, with a total area of 65.6 hectares.<br>Some loss for forest cover would be unavoidable on this Option. | There are 94 records within Option 1F with a total area of 382.8 hectares.<br>Some loss for forest cover would be unavoidable on this Option. | **There is no preference between Route Options 1B and 1C.**<br>**Route Option 1D is marginally preferrable to 1E** with respect to impacting fewest hectares of NFI designated woodland, but detailed routeing may minimise impact on woodland further. |
| | **Overall preference for Forestry and Woodland** | In terms of Forestry and Woodland, it is considered that **1A-1B/1C-1E-1F** is the preferred route option.<br>There is no preference between Route Options 1B and 1C.<br>As Route Option 1E contains no AWIs compared to 1D which contains one AWI record, 1E is marginally preferred. | | | | | | |
| **Peat, Geology, Hydrology & Hydrogeology** | NatureScot Priority Peatland Habitats (Class 1 and Class 2) (Holford Rule 1).<br>NatureScot Peatland Habitats (Classes 3, 4 and 5). | Route Option 1A does not cross any priority peatland Habitat (Class 1 and 2).<br>Route Option 1A crosses several areas of Class 5 peatland, noted on NatureScot mapping at the south extent of the route northeast of Harrows Law, at Camilty Plantation and just north of Shear Burn. | Route Option 1B does not cross any priority peatland habitat (Class 1 and 2).<br>Route Option 1B crosses several areas of Class 5 peatland, noted on NatureScot mapping on the northwest and south sides of Harrows Law, north of Bleak Law and west of Cairn Knowe within the route. | Route Option 1C does not cross any priority peatland habitat (Class 1 and 2).<br>Route Option 1C crosses several areas of Class 5 peat which are located west of White Craig, southeast of Whitecraig and north/east of Black Law. There are also small areas of Class 4 peat fringing the east side along the south of the route option (east of Medwin Water). | Route Option 1D does not cross any priority peatland habitat (Class 1 and 2).<br>Route Option 1D crosses small areas of Class 3, 4 and 5 peat in the far west of the route, with an area of Class 5 peat near the Garvald Burn and Tarth Water that can be spanned or avoided. | Route Option 1E splits into two sections to route around White Moss Class 1 priority peatland habitat to connect onto Route Option 1F. However, Route Option 1E does still cross through this habitat.<br>There are several sections of Class 3,4 and 5 peat within Route Option 1E, most of which are small and can be avoided. However, there is one large section of mostly Class 5 peat (some Class 3) which covered the entire width of Route Option 1E for a length of between 500m and 1300m that cannot be spanned or avoided. | Route Option 1F does not cross through any priority peatland habitat but it is adjacent to an area of Class 1 priority peatland at White Moss on its west side.<br>There is also very small area of Class 4 peat within Route Option 1F which can be avoided. | There is evidence of peatland found throughout Route Options 1A, 1B and 1C; however, none of this peatland is priority peatland habitat. Some of this peatland will be avoidable through detailed routeing; however, in some sections it covers the full width of Route Option 1.<br>**Route Option 1B is preferred to 1C as** this would avoid wider areas of Class 5 peat.<br>**Route Option 1D is preferred to 1E** as this would avoid the Class 1 priority peatland habitat at White Moss, however, this can be avoided at the detailed routeing stage. |
| | Geological Conservation Review (GCR) Areas | There are no GCR Areas located within Route Options 1A, 1B, 1C, 1D, 1E or 1F. | | | | | | There is **no overall route preference.** |
| | Waterbodies / watercourses | Route Option 1A crosses several named and unnamed watercourses. These include the Dry Burn, Green Burn, small sections of Crosswood Burn, Shear Burn, Whitlea Burn and the Water of Leith. | Route Option 1B crosses a few named and unnamed watercourses including smaller tributaries to Darby Burn and West Water, as well as the West Water itself running through the centre/south. | Route Option 1C crosses a few named and unnamed watercourses including smaller tributaries of the Medwin Water and the Medwin Water itself which flows through the south/centre. | Route Option 1D crosses a few named and unnamed watercourses. These include the West Water in the west, the Medwin Water, the Garvald Burn, the Tarth Water and smaller tributaries. | Route Option 1E crosses a few named and unnamed watercourses including tributaries of the West Water, and the West Water itself, which flows within the northern part. | Route Option 1F crosses one main watercourse- the Lyne Water- with some smaller unnamed tributaries and the Dead Burn. | **Route Option 1B is marginally preferred to 1C** as it crosses fewer watercourses.<br>**Route Option 1E is marginally preferred to 1D** as it crosses fewer watercourses.<br>In rural areas there is a high likelihood of small burns and waterways |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
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| | | Crosswood reservoir is located within the route option.<br><br>Harperrig Reservoir is located close to Route Option 1A (within 100m and 40m from the boundary, respectively). | | | | | | which will be able to be identified on a site visit. |
| | Flood Zones and Drinking Water Protected Areas | Route Option 1A crosses two main areas of fluvial flood risk marked on the SEPA future flood maps (1 in 200-year plus climate change event) along the course of Green Burn and the Water of Leith. Neither are wider than 180m and are generally much shorter and can be spanned or avoided.<br><br>Route Option 1A fringes on the boundaries of the South Medwin and Water of Leith Drinking Water Protected Areas (DWPA), but the route is downstream of both and the DWPA can be avoided.<br><br>Crosswood Reservoir is operated by Scottish Water for the supply of drinking water. | Route Option 1B only has one flood risk area noted by SEPA future flood mapping - a small extent of the West Water in the southeast of the route. The flood risk area is narrow and can be spanned or avoided.<br><br>Route Option 1B crosses through the upstream section of the South Medwin DWPA (Surface) (Waterbody ID 10933). | Roue Option 1C has only one area of fluvial flood risk noted by SEPA future flood mapping, which is along the course of the Medwin Water, which flows within the route in the south. The flood risk extent is estimated at around 60m width at maximum and can be spanned.<br><br>Route Option 1C crosses through the upstream section of the South Medwin DWPA (Surface) (Waterbody ID 10933). | There are three areas of fluvial risk within Route Option 1D noted by the SEPA future flood mapping, which are located along the West Water, Medwin Water and Tarth Water. However, the flood risk areas can be spanned or avoided within the route.<br><br>Route Option 1D crosses through the upstream section of the South Medwin DWPA (Surface) (Waterbody ID 10933). | SEPA future flood maps indicates a narrow flood risk area in Route Option 1E, associated with the West Water within the route, however this can be avoided within the route option.<br><br>Slipperfield Loch and two other unnamed waterbodies are also within the east of the route.<br><br>Route Option 1E crosses through the West DWPA (Surface (Waterbody ID 5320) and the South Medwin DWPA (Surface) (Waterbody ID 10933). | SEPA future flood maps indicate one key area of flood risk within the Route Option 1F, along the Lyne Water at Romannobridge. This is up to 650m wide in places in the north of the route, with narrower crossing points in the south of the route that are less than 120m wide.<br><br>Route Option 1F crosses through the Lyne Water DWPA (Surface) (Waterbody ID 5312). | All of Route Option 1 crosses through DWPAs, however **Route Option 1B is marginally preferred to 1C** as it crosses fewer / smaller flood zones and DWPAs.<br><br>**Route Option 1D is marginally preferred to 1E** as it crosses a large area not covered by a DWPA, while 1E passes entirely through a DWPA. The key flood risk area is within Route 1F, but this can be spanned with careful alignment in the south of the route, where the flood risk area it is at its narrowest (~120m wide). |
| | **Overall preference for Peat, Geology, Hydrology & Hydrogeology** | The preferred route option is **Route Options 1A-1B-1D-1F.**<br><br>Route Option 1B is preferred to 1C as it would span / avoid Class 5 peatland habitat (not priority habitat), crosses fewer watercourses, DWPAs and flood zones.<br><br>Route Option 1D is marginally preferred to Route Option 1E it avoids Class 1 peatland near White Moss altogether, but Route Option 1D does cross directly through a DWPA. | | | | | | | |
| **Planning and Land Use** | Planning and Development:<br><br>■ Local Development Plan (LDP) Allocations. (Holford Rule 7)<br><br>■ Committed Development (Consented and Undetermined[2] Planning Applications) since 2019[3]. | **City of Edinburgh**<br><br>**LDP Allocations**<br><br>■ Housing Proposal: Riccarton Mains Road, Currie (HSG 35) – capacity for 25-35 homes<br><br>■ Housing Proposal: Curriehill Road, Currie (HSG 36) - capacity for 50-70 homes<br><br>■ Housing Proposal: Newmills Road, Balerno (HSG 37) – capacity for 175-245 homes<br><br>■ Housing Proposal: Ravelrig Road, Balerno (HSG 38) – planning permission | ***City of Edinburgh* –** Route Options 1B-1F do not fall within CoEC. | | | | | In terms of planning and development there is **no preferred route** between Route Options 1B and 1C.<br><br>Route Option **1D is slightly preferred over 1E** as there are fewer committed developments within its boundary. |

[2] Undetermined planning applications are those which have been validated, i.e. are 'live' applications, but have not yet been decided.
[3] It is not considered that development prior to 2019 should be considered as these applications are likely to have expired if not implemented or fully built out and in situ within 5 years.

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
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| | | granted in principle in 2015 for a housing development on the Site (planning refs. 14/02806/PPP and 14/02010/PPP)<br>■ Cycleway Footpath Safeguard: Off road alternative (NCNR 75)<br>■ Ravelrig Quarry Minerals Site (RS3, RS5)<br>**Committed Development**<br>■ 21/01053/FUL – permission granted for 2 new dwellinghouses at The Mill House<br>■ 22/03017/FUL – permission granted for a new electricity feeder station from the railway at the proposed electricity substation, Riccarton Mains Road, Currie. Should the new electricity feeder pillar impact the design of the Cloich connection, this will be considered through the design stage.<br>■ 23/00373/FUL – permission to reposition the house plots at The Mill House<br>It is likely these can be avoided through detailed routeing. | | | | | | |
| | | ***West Lothian***<br>**LDP Allocation**<br>■ Policy MRMW 6: Pipeline Consultation Pipeline – requires the council to consult with the Health and Safety Executive and with Transco / BP, as appropriate, on development proposals which are located within pipeline consultation zones. Proposals will be refused where there is an unacceptable risk to human life. | ***West Lothian –*** Route Options 1B-1F do not fall within WLC. | | | | | |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
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| | | ■ LDP Site ref. P-41 is located approximately 1.3km from Route Option 1A, and comprises land reserved for the extension of the Pentland Hills Regional Park. The designation is demarcated by a point on the LDP map. It is not clear from the LDP Map whether the actual extent of the site reserved for the Pentland Hills expansion is likely to overlap with Route Option 1A.<br>**Committed Development**<br>■ 0311/FUL/20 – permission granted for a second access to Camilty Wind Farm, at Camilty Plantation<br>■ 0320/FUL/21 – permission granted for 6 turbines at Camilty Plantation<br>■ 0300/FUL/23 – pending determination for eight houses near Kirknewton<br>It is likely these committed developments can be avoided through detailed routeing. | | | | | | |
| | | ***South Lanarkshire***<br>**LDP Allocations**<br>■ There are no LDP site allocations.<br>■ Minerals allocations: intermittent allocation of construction aggregates along LPA boundary.<br>**Committed Development**<br>■ There is no committed development along route Option 1A within SLC as of 25/04/2024). | ***South Lanarkshire***<br>**LDP Allocations**<br>■ There are no LDP site allocations.<br>**Committed Development**<br>■ There is no committed development along route Option 1B within SLC as of 25/04/2024). | ***South Lanarkshire***<br>**LDP Allocations**<br>■ There are no LDP site allocations.<br>■ Minerals allocations: intermittent allocation of construction aggregates along LPA boundary.<br>**Committed Development**<br>■ There is no committed development along route Option 1C and 1D within SLC as of 25/04/2024). | | ***South Lanarkshire –*** Route Options 1E and 1F do not fall within SLC. | | |
| | | ***Scottish Borders*** – Route Options 1A and 1B do not fall within SBC. | | ***Scottish Borders***<br>**Committed Development** | ***Scottish Borders***<br>**Committed Development** | ***Scottish Borders***<br>**LDP Allocations** | ***Scottish Borders***<br>**LDP Allocations** | |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
|---|---|---|---|---|---|---|---|---|
| | | | | ■ There is no committed development along Route Option 1C within Scottish Borders Council (as of 25/04/24). | ■ 21/01619/FUL – permission granted for 6 self-contained accommodation units on land south of Willow House, Garvald.<br>It is likely this committed development can be avoided through detailed routeing. | ■ Hazard pipeline buffers (IS12)<br>**Committed Development**<br>■ 20/00575/S37 – consent granted for a 11kV overhead line refurbishment on land northwest and northeast of Tarfhaugh Farmhouse, West Linton.<br>The proposed quarry would span c.70% of Route Option 1E's width, however, the quarry could be avoided through detailed routeing.<br>■ 22/01114/FUL – permission granted for two agricultural (sheep) buildings on land at Slipperfield Farm, West Linton.<br>It is likely that these committed developments can be avoided through detailed routeing.<br>■ 21/00152/FUL – permission granted at appeal for a new sand and gravel quarry on land south of Slipperfield Loch, West Linton.<br>The above consented sand and gravel quarry is unlikely to enable a sufficient gap between the residential houses, the quarry and the route option, therefore this committed development cannot be avoided through detailed routeing. | ■ Hazard pipeline buffers (IS12)<br>**Committed Development**<br>■ 22/01744/FUL - permission granted for a slurry lagoon at Hyndfordwells Farm, West Linton. The site area for the development is 0.78ha and it is not clear if this permission has been implemented / completed.<br>It is likely that these committed developments can be avoided through detailed routeing. | |
| | | ***Midlothian –*** None of the Route Options in route 1 fall within MLC. | | | | | | |
| | Scotland Land Capability for Agriculture Classes 1, 2 and 3.1 (Holford Rule 7) | Route Option 1A includes small sections of prime agricultural land (Class 3.1) either side of Currie's conurbation and railway line. The OHL is not likely to impact the ability of the surrounding land to remain in agricultural use. | Route Options 1B, 1C, 1D, 1E and 1F do not contain any prime agricultural land. | | | | | There is **no preferred route option** as Route Options 1B/1C and 1D/1E do not contain any prime agricultural land. |
| | Coal Authority Reporting Area for Planning | Part of Route Option 1A to the west and south of Crosswood reservoir is located within a Coal | Route Options 1B, 1C, 1D, and 1E are not located within a Coal Authority Mining Reporting Area. | | | | Route Option 1F resides within a Coal Authority Mining Reporting Area.<br>A mine entry record is noted to the west of | There is **no preferred route option** as Route Options 1B/1C and 1D/1E are not within the Coal Authority's Reporting Area. |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
|---|---|---|---|---|---|---|---|---|
| | | Authority consultation area.<br><br>A coal outcrop is noted as a 'development High Risk Area' to the south of Cobbinshaw Moss which would need to be avoided as best possible during detailed routeing.<br><br>Some small old quarries are present to the north of Harperig Reservoir, however, these could be avoided or spanned at detailed route planning stage. | | | | | Grassfield Forest which is also noted as a 'Development High Risk Area'. This should be avoided as best possible during detailed routeing. | |
| | **Overall preference for Planning and Land Use** | The preferred route in terms of Planning and Land Use is via **Route Options 1A-1B/C-1D-1F.**<br><br>There is no clear preference between Route Option 1B and 1C and either could be progressed through detailed design.<br><br>Route Option 1D is preferred to 1E as there are fewer committed developments which would need to be designed around through the alignment stage. | | | | | | |
| **Technical** | Altitude and Topography | Route 1A has the most even ground with around 80% having a gradient of less than 6°, although this rises to a maximum of 24° in some sections.<br><br>In total, 95% of Route Option 1A is below 200m, with the highest altitude at c. 380m.<br><br>Risk of steeper terrain within Leith Valley south of Ravelrig Quarry. | Route option 1B has a more uneven terrain with roughly 50% of this section having a gradient less than 6° with a maximum gradient of 28°.<br><br>The entirety of Route Option 1B is above 200m, with the maximum altitude at c. 430m. | Approximately half of Route 1C has a gradient less than 6°, although this gradient reaches 52° in one area, this could pose significant difficulties for an overhead line route.<br><br>The entirety of Route Option 1C is above 200m, with the maximum altitude at c. 420m. | Route option 1D has a more uneven terrain with roughly 50% of this section having a gradient less than 6° with a maximum gradient of 28°.<br><br>The entirely of Route Option 1D is above 200m, with the maximum altitude at c. 310m. | Route 1E again has a more even surface with around 75% of the route with a gradient less than 6° and a maximum of 24°.<br><br>The entirely of Route Option 1E is above 200m, with the maximum altitude at c. 320m. | Route 1F has a varied gradient along its route, with a long stretch of the route having a gradient of less than 6° and has a maximum gradient of 32°.<br><br>The entirety of Route Option 1F is above 200m, with the maximum altitude at c. 375m. | Given the long length of this route, the slope varies significantly throughout. Almost the entire Route Option 1 has an altitude above 200m, except Route 1A of which approximately 95% is less than 200m.<br><br>In Scotland, altitudes above 200m AOD are technically by design considered to be an extreme environment due to high wind and ice loading. The maximum altitude within Route 1 is approximately 430m.<br><br>**Route Option 1B is preferred to Route 1C** and **Route 1E is marginally preferred to 1D** as the gradients are not as steeply sloped. |
| | Infrastructure (Holford Rule 7)<br>■ Existing OHL transmission and distribution infrastructure<br>■ SP Energy Networks Land Use Risks | ■ 400kV Crossing<br>■ 132kV Crossing<br>■ 275 kV Crossing<br>■ Ten 11kV Crossings are located within this route option<br>■ A high-pressure gas pipeline is crossed twice, once near Buteland Farm and then again near Colzium Farm House.<br>■ High risk on entry to Currie substation, cable entry required. | ■ A private access track is noted within 1B which runs from Easton (to the north of Dolphinton) north past Carin Knowe and as far as Covenanter's Grave Hill. | ■ A private access track is noted within 1C, which roughly follows the route of the Medwin Water. this section connecting West Linton (to the west) to the A701. | ■ Two 11kV Crossings are located within this route option, and low-voltage connections noted<br>■ The A702 road runs north-south in the most eastern portion of Route Option 1D. | ■ Four 11kV Crossings are located within this route option, with a low voltage connection noted along the A702<br>■ There is a potential high-pressure gas pipeline in Route Option 1E where the route runs alongside the pipe.<br>■ The A702 road runs north-south in the most eastern portion of Route Option 1E. Minor roads / track crossings are also included in Route | ■ Four 11kV Crossing are located within the route option, with two low-voltage connections noted near Romannobridge<br>■ Route Option 1F crosses a high-pressure gas line crossing near Hamilton Hall East.<br>■ The A701 crosses Route Option 1F running north-east to south-west. The B7059 is also noted within this section connecting West Linton (to the west) | There is **no overall preference between Route Options 1B and 1C**, as they do not contain existing A-Roads, trunk roads, rail infrastructure or any wind energy development.<br><br>Route Option **1D is slightly preferred** to Route Option 1E on the basis that it has less electrical infrastructure than 1E, and Route Option 1E does not have a suspected high-pressure gas line running through it. |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
|---|---|---|---|---|---|---|---|---|
| | | ■ Curriehill Railway Station lies within Route Option 1A with a possibility of a double crossing between Currie SIS and National Cycle Route 75. Cognisance of statutory clearance requirements for rail crossings are to be considered.<br>■ Deanfoot road and the A701 are also crossed within this route.<br>■ Approximately 15km of the A70 falls within Route Option 1A.<br>■ A number of minor road/track crossing along this route in which statutory clearance requirements will need to be considered.<br>■ Route Option 1A crosses the Tarmac Ravelrig Quarry, which has an amber risk rating due to known presence of mine workings.<br>■ Crosswood Reservoir will need to be spanned or avoided. | | | | Option 1E (including Bogsbank Road and Thief's Road) | to the A701. Minor road crossings also noted in Route Option 1F (B7509). | |
| | **Overall Technical Preference** | The marginally preferred route in terms of Technical Considerations is Route Options **1A-1B/C-1D-1F** as this route would cross the least amount of infrastructure**.**<br>There is no clear preference between Route Option 1B and 1C and either could be progressed through detailed design.<br>Route Option 1D is marginally preferred to 1E as it does not contain a suspected high pressure gas pipeline and cross fewer existing OHLs. | | | | | | |
| **Overall Preferred Route Option** | | **The overall preferred Route Option 1 comprises 1A-1B-1D-1F (hereafter referred to as 'Overall Route Option 1').**<br>Overall Route Option 1 crosses through the Pentland Hills SLA and the Black Mount SLA, and crosses the north-western edge of Pentland Hills Regional Park. There are a number of visual amenity and residential receptors located throughout Overall Route Option 1, including residential receptors (scattered settlements), and the users of core paths. These will need to be considered further at the detailed routeing stage.<br>Whilst Overall Route Option 1 does not contain any Ramsar sites, SPAs, or SWTs, Route Option 1 does cross the River Tweed SAC. Route Option 1A also includes part of the Cobbinshaw Reservoir SSSI, but this can be avoided through detailed routeing. There are six LNCS within Route Option 1; five of which can be avoided through detailed routeing. The Dalmahoy Hill LNCS cannot be spanned or avoided.<br>There are 18 AWI records in total in Overall Route Option 1. These will need to be avoided where possible during detailed routeing.<br>There is evidence of peatland throughout Route Options 1A and 1B; however, none of this peatland is classified as priority peatland habitat. Overall Route Option 1 crosses named and unnamed watercourses. The main flood risk area of note is within Route Option 1F; however, this can be spanned with careful routeing in the south of the route option, where the flood risk area it is at its narrowest (~120m wide). Route Options 1A, 1B and 1D also cross areas of fluvial flood risk, however it is thought that these areas can be spanned or avoided.<br>The Ravelrig Quarry may pose a technical constraint to Overall Route Option 1 and will need to be considered at the detailed routeing stage.<br>There are no Scheduled Monuments, Conservation Areas, GDLs, or Historic Battlefields within Overall Route Option 1. However, a number of Listed Buildings and known non-designated heritage assets are noted, with Route Option 1F containing the most Listed Buildings and Route Option 1A containing the most non-designated heritage assets. Therefore, there are likely to be unavoidable impacts on the setting of Listed Buildings and non-designated heritage assets.<br>The comparative appraisal of Route Option 1B and Route Option 1C identified Route Option 1B as the preferred route option as it is shorter than Route Option 1C; it lies further away from the Craigengar SSSI and SAC; and it has potential to avoid Class 5 peatland habitat (not priority habitat). It also crosses fewer watercourses, DWPAs and flood zones. | | | | | | |

| Criterion | Sub-Criteria | Route Option 1A | Route Option 1B (Optional) | Route Option 1C (Optional) | Route Option 1D (Optional) | Route Option 1E (Optional) | Route Option 1F | Preference |
|---|---|---|---|---|---|---|---|---|
| | | Route Option 1C also performed less well due to its potential landscape and visual impact on the high point at White Craig, the steep slopes between White Craig and Millstone Rig (which also pose a technical constraint), and the potential cumulative visual effects arising from the interaction of the OHL with the above ground Medwin Water pipeline and its existing supporting infrastructure. Furthermore, Route Option 1B crosses fewer core paths, and provides more opportunity to backcloth the OHL against forestry, or on lower lying land, and to minimise landscape and visual impacts through detailed routeing.<br><br>The comparative appraisal of Route Option 1D and Route Option 1E identified Route Option 1D as the preferred route option as it is also the shortest route and lies further away from biodiversity receptors including the Westwater Ramsar and SAC. It is marginally preferred on landscape grounds and technical grounds as well as it has less potential to impact upon residential amenity receptors to the south of Slipperfield Loch when considered in combination with the consented Slipperfield Quarry.<br><br>Route Option 1E also performed less well due to potential impacts on areas of potential priority peatland and because the route option also crosses more existing electrical and civil infrastructure including a possible high-pressure gas line. Route Options 1A, 1B and 1D also do not contain any SACs. | | | | | |

Appraisal of Route Option 2. There were no alternative Route Options considered within Route Option 2. Please refer to **Figure 4.4** which sets out the full extent of Route Option 2.

**Table C.2: Route Option 2 Appraisal**

| Criterion | Sub-Criteria | Route Option 2 |
|---|---|---|
| **Length of Route Option (km)** | Length of Route Option (Holford Rule 3) | c. 25km |
| **Landscape and Visual Amenity** | Locally Designated Landscapes, including Special Landscape Areas (SLAs) and the Pentland Hills Regional Park (Holford Rule 2) | **North of Pentlands**<br>This section crosses the westerly extents of the Water of Leith SLA (CoEC).<br>**Pentlands**<br>This section of Route Option 2 passes through the Pentlands SLA (CEC) and the Pentland Hills Regional Park. Additionally, it passes along the boundary of Pentland Hills SLAs (SBC and MLC).<br>**South of Pentlands**<br>The most northern extent of this section of Route Option 2 is within the Pentland Hills SLA (SBC and MLC) boundaries. Elsewhere, there are no landscape designations. The village of Carlops is a Conservation Area.<br>**Summary**<br>The majority of the route passes through several locally and regionally designated landscapes including SLAs, a Regional Park, and other national designations including the Carlops Conservation Area. |
| | Landscape Character Types (LCT) (Holford Rules 4, 5, 6 and 7), including Landscape Susceptibility | **North of Pentlands**<br>LCT 274: Lowland Plain (low susceptibility for OHL)<br>**Pentlands**<br>LCT 90: Dissected Plateau Moorland (medium-high susceptibility for OHL)<br>LCT 268: Upland Hills – Lothians (medium-high susceptibility for OHL)<br>LCT 269: Upland Fringes – Lothians (medium susceptibility for OHL)<br>**South of Pentlands**<br>LCT 92: Plateau Outliers (medium susceptibility for OHL)<br>LCT 99: Rolling Farmland – Borders (high susceptibility for OHL)<br>**Summary**<br>The LCAs within this Route Option have a medium-high susceptibility to OHL development, particularly across the prominent Pentland Hills. |
| | Residential Visual Amenity with '150m trigger for consideration zone' (similar to Holford Rule 4) | **North of Pentlands**<br>A number of scattered settlements are noted along the A70, skirting north of the settlement of Currie. Opportunities to route more than 150m from the dwellings will be possible at detailed routeing stage.<br>**Pentlands**<br>There are two properties within this section of Route Option 2, situated by North Esk Reservoir and along the access track to the reservoir approximately 1km north-west of Carlops, however opportunities to route more than 150m from the dwellings will be possible at detailed routeing stage.<br>**South of Pentlands**<br>This section of Route Option 2 may also cross the village of Carlops, including the entire Conservation Area, with a cluster of properties situated along the A702. Additionally, scattered properties and farmsteads along Deanfoot Road and A701 fall within this section of Route Option 2 It will be difficult to route more than 150m from the dwellings in Carlops at detailed routeing stage, however opportunities to underground existing OHL infrastructure near Carlops, and other mitigation techniques could be considered.<br>**Summary**<br>There are relatively few residential receptors within Route Option 2, and the OHL could avoid the 150m trigger zone for the majority of the route. However, the area around Carlops represents a pinchpoint which is more constrained. It may not be possible to maintain a 150m property trigger zone in this area. |
| | Visual Amenity (similar to Holford Rule 4) | **North of Pentlands**<br>This route section may create wayleaves through shelterbelts near Currie and Balerno, should they be crossed.<br>The introduction of an additional OHL would potentially increase cumulative effects arising from interaction with other OHLs of differing sizes in the areas surrounding these settlements.<br>**Pentlands**<br>The landform of the Pentland Hills is complex compared to the surrounding lowland plains and rolling agricultural land. The presence of an OHL in this area may therefore detract from views across this complex open landscape, which may be experienced from the many hill summits surrounding this section of Route Option 2, and from the footpaths which cut through this area. The OHL will introduce a linear feature in a landscape otherwise characterised by the curves of open hill summits and valley slopes. Route Option 2 is likely to result in the OHL being seen against the skyline when crossing the ridge. Potential cumulative effects may arise from interactions with the existing local distribution infrastructure extending from Carlops up to North Esk Reservoir, however opportunities to upgrade or underground this may reduce potential for cumulative effects.<br>**South of Pentlands** |

| Criterion | Sub-Criteria | Route Option 2 |
|---|---|---|
| | | South of the Pentlands, there is potential for cumulative visual effects to arise near Carlops due to the presence of extensive local distribution infrastructure. However, these effects could be reduced by undergrounding the existing infrastructure and allowing a more sensitive route through the area for the proposed OHL.<br>The visual prominence of the route may be reduced by the undulating landform providing screening, and opportunities to backcloth the route alongside the forestry at Deepsyke Forest.<br>This section of Route 2 will require wayleaves to cross shelterbelts near Carlops, and to access the substation in Cloich Forest.<br>**Summary**<br>The sections of Route Option 2 to the north and south of the Pentlands are likely to result in less concern with relation to visual amenity, particularly if the existing infrastructure around Carlops can be undergrounded as a form of mitigation. However, routeing across the Pentland Hills raises greater concerns as the OHL would be visible from many hills and along popular walking routes in the Regional Park. |
| | Tourism and Recreation: potential for views from OS promoted viewpoints, Sustrans routes, Core Paths, long distance promoted trails, tourist attractions and recreational areas such as golf courses and Country Parks (Notes on Clarification to the Holford Rules) | **North of Pentlands**<br>This section of Route Option 2 cuts across the on-road National Cycle Network (Route 75), north of Balerno.<br>There are no OS promoted viewpoints or tourist attractions of note within this section of Route Option 2.<br>**Pentlands**<br>There are no OS promoted viewpoints or long-distance routes. However, the nearby summits of the Pentland Hills (e.g., East Cairn Hill) will have views to Route Option 2. In addition, the popular Pentlands ridge footpath crosses through the route option for approximately 0.7km. North Esk Reservoir serves as a popular destination for walkers within the Pentland Hills Regional Park, with a Public Right of Way path leading to it which runs along the length of the route option from Carlops to the ridge footpath.<br>**South of Pentlands**<br>There are no OS promoted viewpoints, long distance trails, or tourist attractions of note within this section of Route Option 2. However, Carlops and the River North Esk may draw visitors. Scottish Borders core paths 164, 165, and 166 pass through this section, as well as a Public Right of Way path.<br>**Summary**<br>There are several well-used trails within the Pentlands. There are no promoted viewpoints or other tourism and recreational facilities along this route, though it is noted that the Pentland Hills Regional Park is popular and well visited by hill walkers, cyclists and cross-country skiers in winter. |
| **Biodiversity** | Ramsar Sites (Holford Rule 1) | There are no Ramsar Sites within Route Option 2, and it is not within the 2km trigger for consideration zone of a Ramsar site. |
| | Special Protection Areas (SPA) (Holford Rule 1) | There are no SPAs within 2km of Route Option 2 and it is not within the 2km trigger for consideration zone of a SPA. |
| | Sites of Special Scientific Interest (SSSI) (Holford Rule 1) | There are two SSSIs with sections that are partly within Route Option 2. North Esk Valley SSSI includes biological and geological qualifying features including lowland acid grassland and valley fen habitat; a section of this SSSI entirely spans the Route Option and cannot be avoided through routeing. Carlops Meltwater Channels SSSI qualifies for geological features.<br>Route Option 2 is within the 1km trigger for consideration zone of Lynslie Burn SSSI, which is designated for its geology. |
| | Special Areas of Conservation (SAC) (Holford Rule 1) | There are no SACs within Route Option 2. |
| | Scottish Wildlife Trust (SWT) Reserves (Holford Rule 2) | There are no SWT Reserves within Route Option 2 |
| | Local Nature Conservation Sites (LNCS), Local Biodiversity Sites (LBS) and Local Wildlife Sites (LWS) (Holford Rule 2) | There are nine LNCSs partly within Route Option 2:<br>■ Riccarton Estate (biodiversity)<br>■ Dalmahoy Hill / Kaimes Hill / Ravelrig Quarry (biodiversity / geodiversity)<br>■ Water of Leith LNCS (?)<br>■ Harelaw Reservoir/Water of Leith/Bavelaw Burn/Black Springs/Threipmuir & Harlaw Reservoirs (biodiversity / geodiversity)<br>■ Fairliehope Burn (biodiversity)<br>■ Scroggy Brae (biodiversity)<br>■ River North Esk – Dalkeith to Carlops (biodiversity)<br>■ Carlops Dean (biodiversity)<br>■ The Linn, Hollow Haugh (wildlife) – also a locally designated wildlife site<br>■ Pond Knowe, Macabiehill (biodiversity)<br>Dalmahoy Hill / Ravelrig Quarry cannot be avoided through detailed routeing, whereas it is likely that Harelaw Reservoir can be spanned. |
| **Cultural Heritage** | Scheduled Monuments (Holford Rule 1) | There are no scheduled monuments within Route Option 2. |

| Criterion | Sub-Criteria | Route Option 2 |
|---|---|---|
| | | There are few scheduled monuments within 3 km of the route option, the most notable being prehistoric defensive structures and a post-medieval quarry. The closest monuments comprise, Bents Quarry (SM6065) situated 120m away, Dalmahoy Hill fort (SM1213) situated 500m away, and Kaimes Hill fort (SM1172) located 550m away. Due to the elevated position of the prehistoric monuments within the landscape it is likely that the introduction of grid infrastructure could result in changes in setting.<br><br>Old Deepsykehead Neolithic long cairn (SM2789), located c.800m east of Option 2, represents a rare example of a monument type not generally associated with southern Scotland. Although situated within and screened by plantation forest, setting change to this asset – given the monument type's close association with topography and other assets in the landscape – careful consideration will be required at design stage. Similarly, Old Deepsykehead enclosed cremation cemetery (SM2678), located within 200m of the corridor, requires careful consideration in design – as does the elevated potential for additional, related, Bronze Age material in the vicinity. (Bents Quarry lime kilns (SM6065) are not considered highly susceptible but will also require consideration. |
| | Listed Buildings (Holford Rule 1) | There are 15 Listed Buildings located in Route Option 2; 11 of which are Category B and four of Category C.<br><br>Thirteen of the Listed Buildings are situated in the Carlops Conservation Area, and largely comprise 18th century weavers' cottages and the growing development of the village during this period, associated with the weaving industry.<br><br>Outside the Carlops Conservation Area, the other Listed Buildings within Route Option 2 are Butelands Farm (LB26779); a 19th century farm complex, and Glenrbook Road (LB26857); and a 19th century stable.<br><br>These Listed Buildings may be susceptible to a change in setting as a result of the introduction of grid infrastructure, which could be harmful to how these buildings are appreciated and understood today. The route alignment, pole placement and design, will be key to the reduction of significant effects.<br><br>Outside Route Option 2, and within 3 km of the proposed route, Listed Buildings are concentrated at West Linton and Newhall. Route Option 2 does not appear to be located within the setting of these Listed Buildings, as it is likely views would be screened by intervening topography, development and/or vegetation. Therefore, it is unlikely to affect how these assets are understood or appreciated. |
| | Conservation Areas (Holford Rule 1) | There is one Conservation Area within Route Option 2.<br>■ Carlops CA – 18th century historic village core established for the cotton weaving industry.<br><br>The introduction of grid infrastructure may alter how the Conservation Area is experienced, however, careful route alignment, pole placement and design, is likely to mitigate any potential significant effects.<br><br>Within 3km of Route Option 2 the following Conservation Areas have been identified:<br>■ Currie (CA34)<br>■ Juniper Green (CA31)<br>■ Balerno (CA33)<br>■ Hermiston (CA39)<br>■ Kirknewton (CA376)<br><br>Route Option 2 does not appear to be located on key views through and towards these Conservation Areas and so is unlikely to affect how these Conservation Areas are experienced or perceived. |
| | Inventory Gardens and Designed Landscapes (GDL) (Holford Rule 1) | There are no GLDs within Route Option 2.<br><br>Newhall GDL (GDL00297) is located approximately 175m east of the central route option. Newhall GDL comprises a picturesque landscape laid out along the glen on the River North Esk and is associated with the Category B Newhall House, an 18th century house, and walled gardens.<br><br>There will likely be partial visibility of OHL located within Route Option 2, although the introduction of grid infrastructure is unlikely to alter how the GDL is perceived, and with careful route alignment, pole placement and design, is likely to mitigate any potential significant effects. |
| | Inventory Historic Battlefields (Holford Rule 1) | There are no inventory historic battlefields within Route Option 2 or within 3km. |
| | Non-designated heritage assets (Holford Rule 2) | There are 109 non-designated heritage assets located in Route Option 2.<br><br>These assets largely comprise evidence for medieval, post-medieval and modern agricultural features, such as farmsteads, byres and dovecots. Assets associated with post-medieval infrastructure and industry, including quarrying, toll roads, tile works and bridges, as well as and post-Improvement settlement are also present within Route Option 2.<br><br>Physical changes to these assets are to be avoided where possible and poles are to be sited in a way which does not disrupt how they can be understood in relation to contemporary/ related assets and the surrounding landscape. |
| **Forestry and Woodland** | Ancient Woodland Inventory (AWI) (Holford Rule 1) | There are 21 AWI records located within or partially within Route Option 2, totalling 62.1 hectares. It is considered that these could be avoided through detailed routeing. |
| | Native Woodland Survey of Scotland (NWSS) (Holford Rule 2) | There are19 NWSS records located within or partially within Route Option 2, totalling 24.4 hectares. It is considered that most of these could be avoided through detailed routeing, but some impacts on the more northerly blocks may be unavoidable. |
| | National Forest Inventory (NFI) (Holford Rule 5) | There are 90 NFI records within or partially within Route Option 2, totalling 190.1 hectares. Some loss of NFI forest cover would be unavoidable in this Route Option which may impact the viability of the route. |
| **Peat, Geology, Hydrology & Hydrogeology** | NatureScot Priority Peatland Habitats (Class 1 and Class 2) (Holford Rule 1) | There are no areas of priority Class 1 or 2 peatland within Route Option 2.<br><br>The route crosses several small sections of Class 4 and 5 peat in the south of the route before reaching wide areas of Class 3, 4 and 5 peatland in the centre and north of the route (from north of Carlops across the Pentlands, extending to north of the Bavelaw Burn). Some of these areas of peat are over 1.7km wide and cannot be spanned or avoided. |

| Criterion | Sub-Criteria | Route Option 2 |
|---|---|---|
| | NatureScot Peatland Habitats (Classes 3, 4 and 5) | Where peat is found, it is likely that there will be some technical difficulties and increase cost, with special foundations and bog shoes required for construction. |
| | Geological Conservation Review (GCR) Areas | Route Option 2 partly crosses the Gutterford Burn GCR around the North Esk Reservoir and the Carlops GCR which stretches approximately 6km north-east to south-west from Auchencorth Moss to the Lyne Water watercourse. It is likely that the two GCR records informed the designation of the North Esk Valley SSSI and the Carlops Meltwater Channels SSSI.<br>Provided that the poles can be placed such that they do not alter the existing landforms, there appears to be little technical reason why the presence of this Conservation Area should prevent the use of Route Option 2, in particular it is likely to be possible to span much of this area, thereby limiting the requirement for the establishment of poles to support the future overhead cable. This would need to be subject to detailed discussions with Nature Scot. |
| | Waterbodies / watercourses | Route Option 2 crosses numerous named and unnamed watercourse along its extent. These include Dead Burn, Cairn Burn, Harlawmuir Burn, Fairliehope Burn, Gutterford Burn, Henshaw Burn, Bavelaw Burn and Cock Burn. The upper extent of the River North Esk also runs through Route Option 2. North Esk Reservoir is also within Route Option 2 but could be avoided. |
| | Flood Zones and Drinking Water Protected Areas | SEPA future flood mapping indicates narrow flood risk areas along the courses of Dead Burn, Cairn Burn the River North Esk and Bavelaw Burn. None of these flood risk areas are particularly wide and can be easily spanned or avoided within Route Option 2. Route Option 2 does not cross any DWPAs. |
| **Planning and Land Use** | Planning and Development:<br>■ Local Development Plan (LDP) Allocations. (Holford Rule 7)<br>■ Committed Development (Consented and Undetermined[4] Planning Applications) since 2019[5]. | ***City of Edinburgh***<br>**LDP Allocations**<br>■ There are no LDP site allocations.<br>**Committed Development**<br>■ 22/03017/FUL – permission granted for a new electricity feeder station from the railway at the proposed electricity substation, Riccarton Mains Road, Currie. Should the new electricity feeder pillar impact the design of the Cloich connection, this will be considered through the design stage<br>This development will inform the design of the Cloich Forest Wind Farm Connection Project in due course. |
| | | ***West Lothian –*** Route Option 2 does not fall in WL. |
| | | ***South Lanarkshire –*** Route Option 2 does not fall in SL. |
| | | ***Scottish Borders***<br>**LDP Allocations**<br>■ There are no LDP site allocations.<br>**Committed Development**<br>■ 19/00153/FUL - pending determination by the council in relation to the 'Erection of and change of use to form holiday leisure centre comprising of 100 holiday lodges, 10 tree lodges, 10 cabins/pods, 30 glamping pods, 3 no sales cabins, refurbishment and extension of existing clubhouse, erection of two buildings and associated works to form leisure complex with retail, leisure facilities, food and drink'. Further information has been submitted to progress the application which has triggered another round of statutory consultation. If approved, can be avoided through detailed routeing by bypassing the site to the east. |
| | | ***Midlothian***<br>**LDP Allocations**<br>■ There are no LDP site allocations.<br>**Committed Development**<br>■ There is no committed development along Route Option 2 within Midlothian Council (as of the 25/04/24). |
| | Scotland Land Capability for Agriculture (LCA) Classes 1, 2 and 3.1 (Holford Rule 7) | Class 2 and 3.1 prime agricultural land is found at the start of the route either side of Currie's railway line. This cannot be avoided through routeing.<br>Route Option 2 does not contain any further prime agricultural land (Classes 1, 2, or 3.1). |
| | Coal Authority Reporting Area for Planning | Route Option 2 falls within the Coal Consultation Area around Carlops, to the south-east of the Route Option. It falls partly within a 'Development High Risk Area' on account of it being potentially subject to change, with probably shallow coal mine workings noted.<br>It is understood that a number of boreholes were historically drilled immediately south of Carlops Village to try and prove an oil shale seam. Further assessment with regard to this mineral would be necessary during more detailed route planning, albeit it should be possible to avoid or span over any areas of concern. |
| **Technical** | Altitude and Topography | Most of Route Option 2 has an altitude above 200m. The maximum altitude within Route 2 is approximately 400m. In Scotland, altitudes above 200m AOD are technically, by design, considered to be an extreme environment due to high wind and ice loading.<br>Given the long length of this route, the slope varies significantly throughout, the first section remains mostly below 6°, before becoming more uneven along the rest of the route, with only approximately half of the route with a gradient less than 6°. Around 5% if this route has a technically difficult gradient above 22°, with a maximum of approximately 39°. |

[4] Undetermined planning applications are those which have been validated, i.e. are 'live' applications, but have not yet been decided.
[5] It is not considered that development prior to 2019 should be considered as these applications are likely to have expired if not implemented or fully built out and in situ within 5 years.

| Criterion | Sub-Criteria | Route Option 2 |
|---|---|---|
| | Infrastructure (Holford Rule 7)<br>■ Existing OHL transmission and distribution infrastructure<br>■ SP Energy Networks Land Use Risks | ■ Crossing 400kV<br>■ Crossing 33kV<br>■ 132kV Crossing<br>■ 275 kV Crossing<br>■ Twelve 11kV crossings are located within Route Option 2, with a low-voltage connection also noted within the route option<br>■ Curriehill Railway Station lies within Route Option 2, with a possibility of a double crossing between Currie SIS and National Cycle Route 75. Cognisance of statutory clearance requirements for rail crossings will be required during detailed routeing.<br>■ A number of minor road/track crossing along this route in which statutory clearance requirements will need to be considered. Deanfoot Road and the A701 are also crossed within this route. The A70 road runs along the most northern boundary of Route Option 2. The A702 road runs north-south across the middle of Route Option 2.<br>■ Route Option 2 crosses the Tarmac Ravelrig Quarry, which has an amber risk rating due to known presence of mine workings.<br>■ A high-pressure gas pipeline is crossed near Buteland farm, a full utility search would be required to establish extents of all utility services found within the route option. |
| **Overall Preferred Route Option** | | **Route Option 2 is the only route option and is therefore the preferred route for this section of the proposed overhead line.**<br>However, it must be noted that the majority of the route passes through several locally and regionally designated landscapes including SLAs, a Regional Park, and other national designations including the Carlops Conservation Area. |

Overall, Route Option 3 would involve selecting Route Option 3A and 3B, then selecting either Route Option 3C or 3D, before finishing with Route Option 3E. Please refer to **Figure 4.4** which sets out the full extent of the Route Options.

**Table C.3: Route Options 3A-3E Appraisal**

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| **Length of Route Option (km)** | Length of Route Option (Holford Rule 3) | c. 21.3 km | c. 8.9 km | c. 6.1 km | c. 5.3 km | c. 5.5 km | Route Option **3D is preferred to 3C** as it is the shortest route. |
| **Landscape and Visual Amenity** | Locally Designated Landscapes, including Special Landscape Areas (SLAs) and the Pentland Hills Regional Park (Holford Rule 2) | Route Option 3A passes through the Pentlands SLA (CoEC), the most westerly extents of the Water of Leith SLA (CoEC), and the northern edge of Pentland Hills Regional Park. Additionally, it passes the through the northern tip of Bonaly Country Park, and the northern portion of Swanston Conservation Area. | Route Option 3B passes through the Pentland Hills SLA (MLC). It passes adjacent to the north-western edge of the Penicuik Garden and Designed Landscape. | The majority of Route Option 3C passes through the Pentland Hills SLA (MLC). | Almost the entirety of Route Option 3D passes through the Pentland Hills SLA (MLC). It passes to the west of the Penicuik Garden and Designed Landscape – but not through. | There are no locally or regionally designated landscape designations within Route Option 3E. | **Route Option 3C is marginally preferred to 3D** as 3D runs along the western boundary of the Penicuik Garden and Designated Landscape. |
| | Landscape Character Types (LCT) (Holford Rules 4, 5, 6 and 7), including Landscape Susceptibility | Route Option 3A passes through four LCTs, with an overall medium susceptibility to OHL development:<br>■ LCT 268: Upland Hills – Lothians (medium-high susceptibility for OHL)<br>■ LCT 269: Upland Fringes – Lothians (low susceptibility for OHL)<br>■ LCT 270: Lowland river Valleys – Lothians (medium susceptibility for OHL)<br>■ LCT 274: Lowland Plain (low susceptibility for OHL) | Route Option 3B passes through two LCTs, with an overall medium-high susceptibility to OHL development:<br>■ LCT 268: Upland Hills – Lothians (medium-high susceptibility for OHL)<br>■ LCT 270: Lowland river Valleys – Lothians (medium susceptibility for OHL) | Route Option 3C passes through one LCT, with an overall medium-high susceptibility to OHL development:<br>■ LCT 269: Upland Fringes – Lothians (medium-high susceptibility for OHL) | Route Option 3D passes through two LCTs, with an overall medium-high susceptibility to OHL development:<br>■ LCT 269: Upland Fringes – Lothians (medium-high susceptibility for OHL)<br>■ LCT 270: Lowland river Valleys – Lothians (medium susceptibility for OHL) | Route Option 3E passes through two LCTs, with an overall medium-high susceptibility to OHL development:<br>■ LCT 92: Plateau Outliers (medium susceptibility for OHL)<br>■ LCT 99: Rolling Farmland – Borders (high susceptibility for OHL) | **Route Option 3C is marginally preferred to 3D** as 3D crosses more LCTs with an overall medium-high sensitivity to OHL development. |
| | Residential Visual Amenity with '150m trigger for consideration zone' (similar to Holford Rule 4) | Route Option 3A includes a number of scattered settlements along much of its route, including; north of the villages of Currie and Balerno, along the A701, south of the Bonaly area, and between Swanston and the Edinburgh Bypass. Generally, opportunities to route more than 150m from the dwellings will be possible at detailed routeing stage, however a pinchpoint around Bonaly Tower may need this buffer distance to be reduced. | Route Option 3B broadly follows the A702 along the north-western edge of Penicuik and contains scattered properties and farmsteads along the A702 and other minor roads in the area. This wider area is quite constrained, particularly near the northern end, so it may be difficult to maintain a 150m separation distance from properties. Opportunities to maintain maximum separation from the dwellings may be possible at detailed routeing stage. | There are two residential dwellings located in Route Option 3C: one situated on the A702 and one on an unclassified road further south at Marfield. Opportunities to route more than 150m from the dwellings will be possible at detailed routeing stage. | There is one dwelling located in Route Option 3D, which lies adjacent to the A702 at Braidwoods. Opportunities to route more than 150m from the dwelling will be possible at detailed routeing stage. | Route Option 3E contains scattered residential dwellings, clustered around the A701 near Lamancha. Opportunities to route more than 150m from the dwellings will be possible at detailed routeing stage. | **Route Option 3D is marginally preferred to 3C** as there are fewer residential receptors within Route Option 3D. |
| | Visual Amenity (similar to Holford Rule 4) | Route Option 3A is likely to impact shelterbelts and areas of ancient woodland to the south of Balerno and Currie, and also near Bonaly, the removal of which would impact key landscape features.<br>The introduction of an OHL within Route Option 3A would result in the greater encirclement of the settlements of Currie and Balerno, and potentially increase | Route Option 3B runs parallel to the A702 road and receptors travelling along the A702 may experience sequential views of the OHL for up to 9km.<br>Route Option 3B will require the removal of shelterbelts and areas of ancient woodland which are likely to be crossed along the A702. | The northern section of Route Option 3C runs parallel to the A702 and receptors travelling along the A702 may experience sequential views of the OHL for a couple of kilometres.<br>The complex topography of the River North Esk gorge will present technical challenges as well as resulting in the OHL interrupting the visual composition of this area (although | Route Option 3D crosses the River North Esk gorge. The complex topography of the River North Esk gorge may lend itself to an OHL interrupting the visual composition of this area (although noting that an existing OHL crosses the gorge). There is potential to upgrade the existing OHL to reduce the need for several OHLs in this area.<br>The peatland of Auchencorth Moss has been commercially harvested | Route Option 3E is likely to result in the removal of shelterbelts around Lamancha and in Cloich Forest.<br>Routeing adjacent to Deepsyke Forest will enable the OHL to be backclothed by trees. The peatland east of the forest has been commercially harvested so the introduction of an OHL is unlikely to detract substantially from the area, particularly if backclothed. | **There is no overall route preference,** as all Route Options result in comparable impacts on visual amenity. |

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| | | cumulative effects arising from interaction with other OHLs of differing sizes in the area to the north and south of the settlements. The higher elevation of the OHL in comparison to Currie and Balerno may mean the OHL appears against the skyline (depending on route location). However, it could also enable backclothing by landform of the Pentlands. | Extensive mature vegetation along Roue Option 3B will provide some screening of the OHL (particularly if located east of the A702) and may also provide backclothing. The landform of the Pentland Hills will also provide backclothing reducing the visual prominence of the OHL but still potentially interrupting views towards the Pentland Hills. | noting that an existing OHL crosses the gorge). There is potential to upgrade the existing OHL to reduce the need for several OHLs in this area.<br>Generally, there are few receptors in this area, although some recreational walkers may walk along the footpath on Auchencorth Moss. Routeing adjacent to Deepsyke Forest will enable the OHL to be backclothed by trees. The peatland of Auchencorth Moss has been commercially harvested so the introduction of an OHL is unlikely to detract substantially from the area, particularly if backclothed. | so the introduction of an OHL is unlikely to detract substantially from the area. However, crossing Auchencorth Moss may result in the OHL appearing on the skyline from some locations. | | |
| | Tourism and Recreation: potential for views from OS promoted viewpoints, Sustrans routes, Core Paths, long distance promoted trails, tourist attractions and recreational areas such as golf courses and Country Parks (Notes on Clarification to the Holford Rules) | Route Option 3A crosses a number of core paths, including City of Edinburgh Council core paths CEC 2: The Braids, CEC 19: Harlaw and Threipmuir, AND CEC 20: Bonaly and Bonaly Links. Core paths lead to the Pentland Hills Regional Park, and local designations such as the Red Moss of Balerno Nature Reserve and Bonaly Country Park. Route Option 3A also passes the on-road National Cycle Network (Route 75) north of Currie.<br>Route Option 3A does not cross any further OS promoted viewpoints, long distance trails, or tourist attractions of note. The Swanston Golf Course is immediately adjacent to the route option, and part of it driving range is within the section under the existing OHLs. | Many core paths are present within Route Option 3B, primarily leading off the A702 into the Pentland Hills or towards settlement. The most westerly extents of this section are within the Pentlands Regional Park.<br>Route Option 3B does not cross any further OS promoted viewpoints, long distance trails, or tourist attractions of note. | Route Option 3C crosses a Scottish Borders Council Public Right of Way, which starts at Deanfoot Road and follows the edge of Auchencorth Moss.<br>Route Option 3C does not cross any further OS promoted viewpoints, long distance trails, or tourist attractions of note. | Route Option 3D does not cross any OS promoted viewpoints, long distance trails, or tourist attractions of note.<br>However, the nearby Gowk Stone, located approximately 32m east of the route corridor near Auchencorth, Penicuik (320394, 657639) may attract some visitors for its heritage importance. | There are no OS promoted viewpoints, long distance trails, or tourist attractions of note within this section. | **Route Option 3D is preferred to 3C** as there are no tourism and recreation receptors located within it. |
| | **Overall preference for Landscape and Visual Amenity** | **There is no overall preference for the Route Option with respect to Landscape and Visual Amenity.**<br>Route Option 3C passes through fewer LCTs, and avoids proximity to Garden and Designated Landscapes, but 3D avoids more residential, tourist and residential amenity.<br>Route Option 3 will cross through the Pentland Hills SLA, and Pentlands SLA. | | | | | |
| **Biodiversity** | Ramsar Sites (Holford Rule 1) | There are no Ramsar sites in Route Options 3A, 3B, 3C, 3D, and 3E and the route options are not within the 2km trigger for consideration zones of any Ramsar sites. | | | | | There is **no preferred route option** as there is no notable difference between the routes in relation to potential impacts on Ramsar sites. |
| | Special Protection Areas (SPA) (Holford Rule 1) | There are no SPAs in Route Options 3A, 3B, 3C, 3D, and 3E or within 2km the route options are not within the 2km trigger for consideration zones of any SPAs. | | | | | There is **no preferred route option** as there is no notable difference between the routes in relation to potential impacts on SPAs. |

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| | Sites of Special Scientific Interest (SSSI) (Holford Rule 1) | There are no SSSIs within Route Option 3A.<br>■ The Route Option is within the 1km trigger for consideration zone of the Balerno Common SSSI. | There are no SSSIs within Route Option 3B. | Auchencorth Moss SSSI is partly within Route Option 3C and is designated for its raised bog habitat – this cannot be avoided through routeing.<br>■ Route Option 3C is within the 1km trigger for consideration zones of the Carlops Meltwater Channels SSSI (geological features) and the Whim Bog SSSI (raised bog). | Auchencorth Moss SSSI is partly within Route Option 3D and is designated for its raised bog habitat – this cannot be avoided through routeing.<br>■ Route Option 3D is within the 1km trigger for consideration zone of the Whim Bog SSSI (raised bog). | Two SSSIs are partly located within Route Option 3E:<br>■ Auchencorth Moss, designated for its raised bog habitat and which cannot be avoided through routeing; and<br>■ Whim Bog designated for raised bog habitat, which can be avoided through routeing. | **Route Option 3C** is **marginally preferred over 3D** as it contains a smaller area of the Auchencorth within it. |
| | Special Areas of Conservation (SAC) (Holford Rule 1) | There are no SACs in Route Options 3A, 3B, 3C, 3D, and 3E. | | | | | There is **no preferred route option** as there is no notable difference between the routes in relation to impacts on SACs. |
| | Scottish Wildlife Trust (SWT) Reserves (Holford Rule 2) | The Erraid Wood SWT reserve partly overlaps with Route Option 3A but can be avoided through routeing. | There are no SWT reserves in Route Options 3B, 3C, 3D and 3E. | | | | There is **no preferred route option** as there is no notable difference between the Route Options in relation to impacts on SWTs. |
| | Local Nature Conservation Sites (LNCS), Local Biodiversity Sites (LBS) and Local Wildlife Sites (LWS) (Holford Rule 2) | There are nine LNCSs within, or partially within, Route Option 3A:<br>■ Riccarton Estate (biodiversity)<br>■ Dalmahoy Hill / Kaimes Hill / Ravelrig Quarry (biodiversity / geodiversity)<br>■ Harelaw Reservoir/Water of Leith/Bavelaw Burn/Black Springs/Threipmuir & Harlaw Reservoirs (biodiversity / geodiversity)<br>■ Water of Leith - Inveroe to Glenbrook & Cock Burn (biodiversity)<br>■ Bavelaw Burn (biodiversity)<br>■ Torphin Quarry (biodiversity / geodiversity)<br>■ Howden Burn/Redford Brae & Laverock Dale/Torduff Reservoir & Bonaly Burn<br>■ Swanston Burn (biodiversity)<br>■ Erraid Wood (biodiversity)<br>Dalmahoy Hill / Kaimes Hill / Ravelrig Quarry (biodiversity / geodiversity) LNCS crosses the width of the Route Option and cannot be avoided or spanned.<br>Route Option 3A crosses the Harelaw Reservoir LNS three | There are three LNCSs partly within Route Option 3B:<br>■ Bush Estate (biodiversity)<br>■ Bush Estate and Glencorse Burn (biodiversity)<br>■ Glencorse Valley and Logan Burn (biodiversity)<br>The full width of Route Option 3B crosses the Glencorse Valley and Logan Burn LNCS, but as it is only 20m wide it is likely that this can be spanned. | The full width of Route Option 3C crosses three LNCS:<br>■ River North Esk – Dalkeith to Carlops<br>■ River North Esk - Drumbuie to Brunston Castle<br>■ Hare Moss and Auchencorth Moss<br>The River North Esk – Drumbuie to Brunston Castle, and Hare Moss and Auchencorth Moss cannot be spanned or avoided. The River North Esk to Dalkeith LNCS resides within the boundary of the River North Esk to Drumbuie LNCS but can be spanned as it is approximately 25-30m wide. | The full width of Route Option 3D crosses three LNCS:<br>■ River North Esk – Dalkeith to Carlops (biodiversity)<br>■ River North Esk - Drumbuie to Brunston Castle (biodiversity)<br>■ Hare Moss and Auchencorth Moss (biodiversity)<br>Part of the Penicuik House Estate LNCS also falls within Route Option 3D, but it could be avoided through detailed routeing.<br>The River North Esk – Drumbuie to Brunston Castle, and Hare Moss and Auchencorth Moss cannot be spanned or avoided. The River North Esk to Dalkeith LNCS resides within the boundary of the River North Esk to Drumbuie LNCS but can be spanned as it is approximately 25-30m wide. | There are no LNCS within Route Option 3E. | Route 3C is marginally preferred to Route 3D, as there is one less LNCS designation located within it to avoid. However, it is considered that as it can be avoided, overall, there is **no preferred route option** in relation to potential impacts on LNCS / LWSs. |

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| | | times, and the Howden Burn LNCS twice. However, is likely these can be spanned at their narrowest points at the detailed routeing stage. | | | | | |
| | **Overall preference for Biodiversity** | There is no overall preference between Route Options 3C and 3D as they result in comparable impacts to biodiversity. | | | | | |
| **Cultural Heritage** | Scheduled Monuments (Holford Rule 1) | The Harlaw Enclosure (SM 6188) Scheduled Monument is located within Route Option 3A, which comprises a prehistoric enclosed settlement.<br><br>As the asset is below ground, it is unlikely that the Scheduled Monument will be subject to significant changes in setting.<br><br>There are few Scheduled Monuments within 3km of Route Option 3A, the closest of which comprises, a prehistoric defensive fort and 20th century training trenches (SM13717). It is unlikely that these monuments will be subject to significant changes in setting as a result of the introduction of grid infrastructure and careful placement and design, is likely to mitigate any potential significant effects. | The Camp Hill fort (SM 1163) Scheduled Monument is located in Route Option 3B, which comprises prehistoric earthworks believed to be the remains of a later prehistoric fort.<br><br>Physical changes to this asset must be avoided. Due to its elevated position within the landscape, it is likely that the introduction of grid infrastructure could result in changes in setting, however careful placement and design, may mitigate any potential significant effects.<br><br>Within the wider landscape (3km) Scheduled Monuments predominately comprise evidence for Prehistoric forts (SM90064) located on the hills overlooking Penicuik. The elevated position of these monuments means that the introduction of grid infrastructure could result in changes in setting, however careful placement and design, may mitigate any potential significant effects. | There are no Scheduled Monuments located within Route Option 3C.<br><br>Within the wider landscape (3km) Scheduled Monuments range in date and form evidence prehistoric and medieval defensive structures (e.g. Brunston Castle SM1192), and post-medieval industrial limekilns (Bents Quarry SM6065).<br><br>The elevated position of the defensive Scheduled Monuments means that the introduction of grid infrastructure could result in changes in setting, however careful placement and design, is likely to mitigate any potential significant effects.<br><br>It is unlikely that any potential change in setting to the post-medieval industrial features would result in significant effects. | There are no Scheduled Monuments within Route Option 3D, or within 3km of it.<br><br>Within the wider landscape (3km) Scheduled Monuments range in date and form evidence prehistoric and medieval defensive structures (e.g. Brunston Castle SM1192).<br><br>The elevated position of these monuments means that the introduction of grid infrastructure could result in changes in setting, however careful placement and design, is likely to mitigate any potential significant effects. | There are no Scheduled Monuments within Route Option 3E.<br><br>Within 3km of the Route Option, the closest monument is Bents Quarry (SM6065) which is located 300m away. Given its nature as a quarry, it is unlikely that the Scheduled Monument t will be subject to significant changes in setting as a result of the introduction of grid infrastructure. | There is **no preferred route option** as there is no notable difference between the routes in relation to potential impact on Scheduled Monuments.<br><br>The careful placement and design, is likely to mitigate any potential significant effects |
| | Listed Buildings (Holford Rule 1) | There are seven Listed Buildings within Route Option 3A, two Category A, three Category B and two Category C. The Category A assets are as follows:<br>■ Cockburn Farm / House (LB26792) 17th century farm complex.<br>■ Bonaly Tower (LB 28033)18th century farmhouse, with boundary walls, gates, bridge, garden terraces and steps and garden statuary<br><br>The Category A Listed Buildings may in particular be susceptible to a change in setting as a result of the introduction of grid infrastructure, which could be harmful to its appreciation and understanding.<br><br>The Category B assets are as follows:<br>■ Buteland Farm (LB26779) 19th century farm complex | There are two Listed Buildings, one Category B and one Category C located in Route Option 3B:<br>■ Category B Penicuick Martyrs' Cross House (LB 7461) 18th century house used as a parish school.<br>■ Category C Boghall Farmhouse (LB2387) 19th century farmhouse.<br><br>These Listed Buildings may be susceptible to a change in setting as a result of the introduction of grid infrastructure, which could be harmful to its appreciation and understanding.<br><br>Within 3km of Route Option 3B Listed Buildings are concentrated at Penicuik and associated with the Post-Medieval development of the town. Route Option 3B does not appear to be sited within the setting of these Listed Buildings, screened by intervening | There are no Listed Buildings located in Route Option 3C.<br><br>Within 3km of Route Option 3C, Listed Buildings are concentrated at Newhall. Route Option 3C does not appear to be sited within the setting of these Listed Buildings, screened by intervening topography, development and/or vegetation, and it is unlikely to affect how they are understood or appreciated. | There are no Listed Buildings located in Route Option 3D.<br><br>Within 3km of Route Option 3D, Listed Buildings are concentrated at Penicuik. Route Option 3D does not appear to be sited within the setting of these Listed Buildings, screened by intervening topography, development and/or vegetation, and it is unlikely to affect how they are understood or appreciated. | There are 4 Listed Buildings within Route Option 3E, one Category A, two Category B, and one Category C.<br>■ Category A Sundial Lamancha (LB15177)<br>■ Category B Entrance gateway (LB 15178)<br>■ Category B Lamancha (LB15176)<br>■ Category C Lower Grange (LB15175)<br><br>These Listed Buildings may be susceptible to a change in setting as a result of the introduction of grid infrastructure, which could be harmful to its appreciation and understanding.<br><br>Within 3km of Route Option 3E there are some Listed Buildings concentrated at the Whim Hall estate. Route Option 3E does not appear to be sited within the setting of these Listed Buildings, screened by intervening topography, development and/or vegetation, and it is unlikely to | There is **no preferred route option** as there is no notable difference between the routes in relation to potential impact on Listed Buildings. |

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| | | ■ Druim (LB46286) with gates and garden terrace, Norman early 20th century<br>■ Glenbrook Road (LB26857) 19th century stables<br>The Category C assets are as follows:<br>■ Balleny Bridge (LB26883) late 18th century bridge<br>■ The Cottage (former Coach House and Stables) (LB49548) at Bonaly Tower, with garden statuary. Late 19th century<br>Within 3km of Route Option 3A, Listed Buildings are concentrated at Balerno, Currie and Colinton on the outskirts of the City of Edinburgh. Route Option 3A does not appear to be sited within the setting of these Listed Buildings, screened by intervening topography, development and/or vegetation, and it is unlikely to affect how they are understood or appreciated. | topography, development and/or vegetation, and it is unlikely to affect how they are understood or appreciated. | | | affect how they are understood or appreciated. | |
| | Conservation Areas (Holford Rule 1) | There are two Conservation Areas within Route Option 3A.<br>■ Swanston (CA23) a historic village core and associated landscape.<br>■ Morton Mains (CA30) a historic rural landscape with historic buildings<br>The introduction of grid infrastructure may alter how the Conservation Areas are experienced, however, careful route alignment, pole placement and design, is likely to mitigate any potential significant effects.<br>Within 3km of Route Option 3A, the following Conservation Areas have been identified:<br>■ Currie (CA34)<br>■ Juniper Green (CA31)<br>■ Balerno (CA33)<br>■ Hermiston (CA39)<br>■ Kirknewton (CA376)<br>Route Option 3A does not appear to be sited on key views along routes through and toward these Conservation Areas so is unlikely to affect how they are experienced or perceived. | There are no Conservation Areas within Route Option 3B, or within 3km of Route Option 3B. | There are no Conservation Areas within Route Option 3C.<br>The closest Conservation Area is Penicuik (CA344) which located within the centre of Penicuik 1.5km away from the Route Option. The Conservation Area will be screened by residential buildings and the introduction of grid infrastructure is unlikely to be harmful to its setting. | There are no Conservation Areas within Route Option 3D and 3E, or within 3km of them. | | There is **no preferred route option** as there is no notable difference between the routes in relation to potential impact on Conservation Areas. |
| | Inventory Gardens and Designed | There are no GDLs within Route Option 3A: | There are no GDLs within Route Option 3B. | There are no GDLs within Route Option 3C. | There is one GDL within Route Option 3D: | There are no GDLs in Route Option 3E or within 3km. | **Route Option 3C is preferred to 3D** as would have a |

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| | Landscapes (GDL) (Holford Rule 1) | Within 3km of Route Option 3A there is one GDL:<br>■ Malleny (GDL00272) located within the town of Balerno.<br>This GDL will be screened by residential buildings and the introduction of grid infrastructure is unlikely to be harmful to its setting or result in significant effects. | Within 3km of Route Option 3B there is one GLD:<br>■ Penicuik GLD (GDL 00311) a fine example of an 18th century designed landscape.<br>Located 25m away from the edge of Route Option 3B. Its elevated position within the landscape indicates that there will likely be partial visibility of the proposed route, although the introduction of grid infrastructure is unlikely to alter how the GDL is perceived, and with careful route alignment, pole placement and design, is likely to mitigate any potential significant effects. | Within 3km, Newhall GDL is located c. 175m from Route Option 3C (GDL00297). Newhall is a picturesque landscape laid out along the glen on the River North Esk and is associated with an 18th century house and walled gardens.<br>There will likely be partial visibility of Route Option 3C, although the introduction of grid infrastructure is unlikely to alter how the GDL is perceived, and with careful route alignment, pole placement and design, is likely to mitigate any potential significant effects. | ■ Penicuik (GDL 00311) a fine example of an 18th century designed landscape.<br>Situated both within and adjacent to Route Option 3D, there is the potential for both direct physical effects to the GDL and setting changes.<br>Physical changes to the GDL are to be avoided where possible, and changes in setting to be mitigated through the careful positioning of poles, in order to avoid disruption to the experience and appreciation of the GDL, or how the GDL understood in relation to contemporary assets. | | lesser impact on GDLs. |
| | Inventory Historic Battlefields (Holford Rule 1) | There are no inventory listed historic battlefields located within Route Option 3A or within 3km of the Route Option. | The Battle of Rullion Green (BTL27) Inventory Historic Battlefield, which dates to 1666, is located in Route Option 3B. It is unlikely that the Historic Battlefield can be spanned or avoided.<br>Key characteristics of the battlefield can still be identified enabling the events which took place to be more fully understood. The introduction of grid infrastructure will result in changes in setting, and how the asset is experienced. Undergrounding will be at risk of damaging below-ground heritage assets. This area should be avoided. | There are no inventory listed historic battlefields within Route Options 3C, 3D and 3E. | | | There is **no preferred route option** between Route Option 3C and 3D with respect to Historic Battlefields.<br>It is recommended that detailed routeing avoids the Historic Battlefield within Route Option 3B. |
| | Non-designated heritage assets (Holford Rule 2) | There are 60 non-designated heritage assets located in Route Option 3A.<br>Whilst evidence for later prehistoric and Roman occupation are present within Route Option 3A, these assets largely comprise evidence for the post-medieval and modern expansion of the City of Edinburgh. The central section of Route Option 3A contains military remains relating to the Castlelaw and Dreghorn Military Training Area (Canmore ID 277106), a firing range developed during the First World War, and still in active use. | There are 45 non-designated heritage assets located in Route Option 3B.<br>Evidence for early prehistoric occupation has been identified within the route option, through the recovery of flints, arrowheads and axe heads.<br>Assets range in date and form and include a prehistoric Stone Circle (Canmore ID 51863), Roman military features and roads (e.g. the Border - Crawford - Inveresk Roman Road Canmore ID 71721), through to post-medieval farmsteads and associated agricultural feature, and assets associated with the post-medieval expansion of Townships in Midlothian, e.g. Penicuik. | There are 23 non-designated heritage assets located in Route Option 3C.<br>These assets largely comprise evidence for post-medieval industry, including collieries and quarries. | There are 7 non-designated heritage assets located in Route Option 3D.<br>These assets include a prehistoric standing stone (Canmore ID 51642), a Bronze Age funerary cain (Canmore ID 51626), as well as evidence for medieval and post-medieval agricultural activity. | There are 19 non-designated heritage assets located in Route Option 3E.<br>These assets largely comprise evidence for, post-medieval and modern agricultural and industrial features, such as farmsteads, mines and tile works, in addition to isolated defences sites, such as the possible 18th century military encampment at Lower Grange (Canmore ID 50226). | **Route Option 3D is preferred to 3C** as would have a lesser impact on non-designated heritage assets.<br>Physical changes to any non-designated heritage assets are to be avoided where possible and poles are to be sited in a way which does not disrupt how they can be understood in relation to contemporary/ related assets and the surrounding landscape. |
| | **Overall preference for Cultural Heritage** | Overall, the preferred Route Option is **3A – 3B – 3D – 3E,** as Route Option 3D has the least interactions with designated and non-designated assets which could lead to harm. | | | | | |

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| **Forestry and Woodland** | Ancient Woodland Inventory (AWI) (Holford Rule 1) | There are 19 AWI records within or partially within Route Option 3A, totalling 56.8 hectares. The AWI records within the first section of the Route Option as far as Balerno are likely to be avoided. Those further east to the north of the Pentlands are unlikely to be avoided through detailed routeing. | There are 14 AWI records within or partially within Route Option 3B, totalling 57.5 hectares. Of these, it is considered that one AWI cannot be avoided through detailed routeing. | There are two AWI records partially within Route Option 3C, totalling 1.0 hectare. These can be avoided through detailed routeing. | There is one AWI record partially within Option 3D, totalling 0.5 hectares. This AWI can be avoided through detailed routeing. | There is one AWI record partially within Option 3E, total area 0.3 hectares. This AWI can be avoided through detailed routeing. | **Route Option 3D is marginally preferred to 3C** as there is only one AWIs within 3D. However, it is concluded that both should be able to be avoided through detailed routeing, and therefore there may be no overall preference further down the line.<br>AWIs within Route Option 3B are unlikely to have opportunities to route around them. |
| | Native Woodland Survey of Scotland (NWSS) (Holford Rule 2) | There are 13 NWSS records within or partially within Route Option 3A, totalling 18.6 hectares. These can be avoided through detailed routeing. | There are fourteen NWSS records within or partially within Route Option 3B, total area 19.875 hectares. These can be avoided through detailed routeing. | There is one NWSS record partially within Route Option 3C, total area 0.57 hectares. The NWSS can be avoided through detailed routeing. | There are two NWSS records within or partially within Route Option 3D, total area 1.152 hectares. These can be avoided through detailed routeing. | There are no NWSS records located within Option 3E. | **Route Option 3C is marginally preferred to 3D** as it is likely to impact fewer NWSS records. However, it is concluded that, through detailed routeing, these could be avoided, and therefore there may be no overall preference further down the line. |
| | National Forest Inventory (NFI) (Holford Rule 5) | There are 90 inventory records within or partially within Route Option 3A, totalling 124.5 hectares.<br>Some loss of forest cover would be unavoidable with this Option. | There are 57 inventory records within or partially within Route Option 3B, totalling 71.9 hectares.<br>Some loss of forest cover would be unavoidable with this Option. | There are five inventory records within or partially within Route Option 3C, totalling 2.2 hectares.<br>These could be avoided through detailed routeing. | There are 12 inventory records within or partially within Route Option 3D, totalling 3.5 hectares.<br>These could be avoided through detailed routeing. | There 56 inventory records within or partially within Route Option 3E, totalling 205.9 hectares.<br>Some loss of forest cover would be unavoidable with this Option. | **Route Option 3C is preferred** to 3D as there are fewer NFI records with a smaller total hectarage. |
| | **Overall preference for Forestry and Woodland** | Overall, the overall preferred Route Option for forestry and woodland comprises **3A-3B-3C-3E.**<br>Route Option 3C is preferred to 3D as whilst there is one extra AWI in Route Option 3C, this can be avoided through careful routeing, and generally Route Option 3C has fewer woodland designations. | | | | | |
| **Peat, Geology, Hydrology & Hydrogeology** | NatureScot Priority Peatland Habitats (Class 1 and Class 2) (Holford Rule 1)<br>NatureScot Peatland Habitats (Classes 3, 4 and 5) | Route Option 3A does not cross any areas of Class 1 or 2 priority peatland habitat.<br>The route does not cross any Class 3, 4 or 5 peat noted on NatureScot (2016) mapping. | Route Option 3B does not cross any areas of Class 1 or 2 priority peatland habitat.<br>The route does not cross any Class 3, 4 or 5 peat as noted on NatureScot (2016) mapping. | Route Option 3C crosses over a wide area (840m) of priority Class 1 peatland area in the south of the route at Auchencorth Moss. The Class 1 peatland area covers the full width of the route for a length of around 840m wide and cannot be avoided or spanned.<br>It is understood that this area of peat is being extracted through the extant 1989 consent which was reviewed in 2016. The peat extraction site has permission for peat to be extracted until 2040 ((planning ref. 16/00202/ROMP).<br>There are also several large areas of Class 5 peat within this route option, which extend over the full width of the route option | Route Option 3D crosses over an area of priority Class 1 peatland area in the south of the route at Auchencorth Moss, but this can be avoided within the route.<br>There are also large areas of Class 3 and 5 peat within this route option, which extend for the entire width of the route option for a length of approximately 2.8km wide, which cannot be avoided or spanned. | Route Option 3E crosses over a large area of Class 1 priority peatland southeast of Deepsyke Forest. This area is between 460 and 1.1km long and extends the full width of the route. The Class 1 peatland cannot be spanned or avoided.<br>There are some areas of Class 4 and 5 peat within the route, which cannot be avoided. | Route Options 3C and 3D both cross over priority peatland habitat in the south of the routes. There is scope within Route Option 3D to avoid the Class 1 priority peatland habitat, but there is no scope within 3C to avoid up to 840m of Class 1 peat. There is however within route 3D, large areas of Class 3 and 5 peat |

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| | | | | for a total length of approximately 1.2km, which cannot be avoided or spanned. | | | which cannot be avoided.<br><br>Based on priority peatland habitat the **preferred Route would be 3D.** If Route Option 3C were widened in its south extent to avoid the Class 1 peat habitat 3C may be viewed as more preferable.<br><br>The large area of Class 1 peatland within 3E cannot be avoided or spanned.<br><br>Overall, Route Option 3 cannot avoid priority Class 1 peatland habitat.<br><br>Where peat is found, it is likely that there will be some technical difficulties and increase cost, with special foundations and bog shoes required for construction. |
| | Geological Conservation Review (GCR) Areas | Route Options 3A and 3B do not cross a GCR. | | Route Option 3C crosses the Carlops GCR. Provided that the poles can be placed such that they do not alter the existing landforms, there appears to be little technical reason why the presence of this Conservation Area should prevent the use of Route Option 3C, in particular it is not likely to be possible to span much of this area, thereby limiting the requirement for the establishment of poles to support the future overhead cable. This would need to be subject to detailed discussions with Nature Scot. | Route Option 3D crosses the northern boundary of the Carlops GCR near Auchencorth Moss This could be avoided through detailed routeing. | Route Options 3D does not cross a GCR. | **Route Option 3D is marginally preferred** to Route Option 3C as Route Option 3C cannot span or avoid the GCR. However, the wood poles are unlikely to alter the existing landforms through construction or operation, and therefore the preference is marginal. |
| | Waterbodies / watercourses | Route Option 3A crosses several named and unnamed watercourses, including Cock Burn, Bavelaw Burn, Bonaly Burn, Braid Burn, Howden Burn, Swanston Burn and other smaller tributaries.<br><br>The route lies just downgradient of Harlaw Reservoir, and Torduff Reservoir. | Route Option 3B crosses several named and unnamed watercourses, including Cornton Burn, Loan Burn, Grain Burn, Glencorse Burn and Boghall Burn.<br><br>Glencorse Reservoir, a public drinking water supply reservoir, lies over 1km upgradient to the west of the route. | Route Option 3C crosses one watercourse, as the River North Esk flows east through the centre of the route. There are several small unnamed tributaries within the route. | Route Option 3D crosses the Corton Burn, River North Esk, Hare Burn and Black Burn, as well as several smaller unnamed tributaries. | Route Option 3E has numerous drainage ditches within the route, some smaller unnamed tributaries and a small section of the Dead Burn in the south of the route. | Route Option 3B passes partly through a DWPA.<br><br>Both Route Options 3C and 3D cross the same watercourse (River North Esk) with very similar flood risk extent (narrow |

<table>
<tr><th>Criterion</th><th>Sub-Criteria</th><th>Route Option 3A</th><th>Route Option 3B</th><th>Route Option 3C (Optional)</th><th>Route Option 3D (Optional)</th><th>Route Option 3E</th><th>Preference</th></tr>
<tr><td></td><td>Flood Zones and Drinking Water Protected Areas</td><td>SEPA future flood maps indicate only three areas of flood risk along the route option, at Cock Burn, the outflow of Harlaw Reservoir to the Water of Leith (Bavelaw Burn) and the Braid Burn. These flood risk areas are narrow and can be spanned or avoided within Route Option 3A.</td><td>SEPA future flood maps indicate areas of fluvial flood risk along Cornton Burn, Glencorse Burn and the downstream extent of Boghall Burn. The widest flood extent is along Glencorse Burn (between 70m and 170m wide) and all can be avoided and spanned.<br><br>The route passes through the east side of the Glencorse Burn DWPA (Surface) (Waterbody ID 3814).</td><td>SEPA future flood mapping indicates a flood risk area associated with the River North Esk, which is up to 70m wide at the route crossing location and can be spanned.</td><td>SEPA future flood mapping indicates a flood risk area associated with the River North Esk, which is up to 80m wide at the route crossing location and can be spanned.</td><td>SEPA flood maps indicate no areas at fluvial flood risk within the route.</td><td>floodplain which can be spanned).<br><br>In rural areas there is a high likelihood of small burns and waterways which can be identified on a site visit.<br><br>Therefore, there is a no preference in the route options from a hydrology and flood risk perspective.</td></tr>
<tr><td></td><td>Overall preference for Peat, Geology, Hydrology & Hydrogeology</td><td colspan="6">The marginally preferred route is via Route Options 3A-3B-3D-3E, as Route Option 3D can span the priority habitat within its route option and is likely to be able to span the Carlops GCR, compared to Route Option 3C’s areas of priority habitat and GCR cannot be spanned.<br><br>The priority Class 1 peatland habitat in Route Option 3E cannot be spanned or avoided.</td></tr>
<tr><td>Planning and Land Use</td><td>Planning and Development:<ul><li>Local Development Plan (LDP) Allocations. (Holford Rule 7)</li><li>Committed Development (Consented and Undetermined[6] Planning Applications) since 2019[7].</li></ul></td><td colspan="2">City of Edinburgh<br><br>LDP Allocations<ul><li>There are no LDP site allocations.</li></ul>Committed Development<ul><li>22/03017/FUL – permission granted for a new electricity feeder station from the railway at the proposed electricity substation, Riccarton Mains Road, Currie. Should the new electricity feeder pillar impact the design of the Cloich connection, this will be considered through the design stage</li></ul></td><td colspan="3">City of Edinburgh – Route Options 3B-3E do not fall within CoEC.</td><td>In terms of Planning and Development, Route Option 3D is preferred to 3C as the ‘live’ peat extraction site (Auchencorth Moss) found to the south of both Route Options can be avoided via Route Option 3D.</td></tr>
<tr><td></td><td></td><td colspan="6">West Lothian – None of the Route Options fall within WLC.</td></tr>
<tr><td></td><td></td><td colspan="6">South Lanarkshire – None of the Route Options fall within SLC</td></tr>
<tr><td></td><td></td><td colspan="2">Scottish Borders – Route Options 3A and 3B do not fall within SBC</td><td>Scottish Borders<br><br>LDP Allocations<ul><li>No site allocation within the LDP Policy Map.</li></ul>Committed Development<ul><li>There is no committed development of relevance along Route Option 3C within the Scottish Borders Council area (as of 25/04/2024).</li></ul></td><td>Scottish Borders – Route Option 3D does not fall within SBC</td><td>Scottish Borders<br><br>LDP Allocations<ul><li>No site allocation within the LDP Policy Map.</li></ul>Committed Development<ul><li>There is no committed development of relevance along Route Option 3E within the Scottish Borders Council area (as of 25/04/2024).</li></ul></td><td></td></tr>
<tr><td></td><td></td><td>Midlothian<br><br>LDP Allocations</td><td>Midlothian<br><br>LDP Allocations</td><td colspan="2">Midlothian<br><br>LDP Allocations<ul><li>No site allocations within the LDP Policy Map.</li></ul></td><td>Midlothian – Route Option 3E does not fall within MLC</td><td></td></tr>
</table>

[6] Undetermined planning applications are those which have been validated, i.e. are ‘live’ applications, but have not yet been decided.
[7] It is not considered that development prior to 2019 should be considered as these applications are likely to have expired if not implemented or fully built out and in situ within 5 years.

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| | | ■ No site allocation within the LDP Policy Map.<br>**Committed Development**<br>■ There is no committed development of relevance along Route Option 3A within the Midlothian Council area (as of 25/04/2024). | ■ No site allocation within the LDP Policy Map.<br>**Committed Development**<br>■ 20/00736/FUL – permission granted for erection of three self-catering holiday pods at Old Rullion Cottage, Penicuik.<br>The proposed development is easily avoided through detailed routeing. | **Committed Development**<br>■ There is no committed development of relevance along Route Option 3C or 3D within the Midlothian Council area (as of 25/04/2024).<br>■ It should be noted that there is a live peat extraction site at Auchencorth Moss (16/00202/ROMP) found to the south of both Route Options 3C (which cannot be spanned) and 3D (which can be spanned). | | | |
| | Scotland Land Capability for Agriculture Classes 1, 2 and 3.1 (Holford Rule 7) | Class 2 and 3.1 prime agricultural land is found to:<br>■ At the start of the route either side of Currie's railway line;<br>■ In the middle of the route to south of Currie and Bonaly; and<br>■ At the end of the route around Swanston and Hillend.<br>In some areas, this is unlikely to be avoided through careful routeing. | Northern end of Route Option 3B is LCA Class 2 land (prime land). This could be avoidable if route runs tight to the eastern boundary of the A702 but can't be avoided at Easter Howgate. | Route Options 3C, 3D and 3E do not contain any prime agricultural land (Classes 1, 2, or 3.1). | | | There is **no preferred route option** as Route Options 3C and 3D do not contain any prime agricultural land. |
| | Coal Authority Reporting Area for Planning | The easternmost portion of Route Option 3A falls within a Coal Authority Mining Reporting Area, and Route Option 3B also fall within a Coal Authority Mining Reporting Area. However, the Route Options do not cross any areas of high development risk for coal. | | Route Option 3C falls within a Coal Authority Mining Reporting Area.<br>Part of Route Option 3C to the west of Nine Mile Burn, near Harlawmuir, falls within a potential Coal Authority high risk zone. The Coal Authority do not indicate records of previous extraction of coal seams, however, BGS maps and the Coal Authority website indicate the presence of numerous (at least 10) former mineshafts which further confirms the likelihood of previous extraction and shallow workings. Whilst it should be possible to avoid the mine entries if they are accurately located, some investigation would be necessary to determine the depth to and condition of the shallow coal seams and thereafter enable the selection of suitable locations for the siting of poles in order to span over areas of shallow workings. Alternatively, where this is not possible, consolidation of workings should be considered. | Route Option 3D falls within a Coal Authority Mining Reporting Area.<br>Part of Route Option 3D, to the south of Brunstane Cottages falls within a potential Coal Authority high risk zone. The Coal Authority do not indicate records of previous extraction of coal seams, however, BGS maps and the Coal Authority website indicate the presence of three abandoned mineshafts which further confirms the likelihood of previous extraction and shallow workings. Whilst it should be possible to avoid the mine entries, some investigation would be necessary to determine the depth to and condition of the shallow coal seams and thereafter enable the selection of suitable locations for the siting of poles in order to span over areas of shallow workings. Alternatively, where this is not possible, consolidation of workings should be considered. | A coal seam long the A701 is classified as a potential Coal Authority high risk area (to the north of North Grange and Lamancha). The limestone seams in the area to the north of the A701 have been subject to localised quarry, with more extensive quarrying of limestone undertaken in an area to the west of Route Option 3E. It should be possible to avoid or span over these during detailed design stage if this route option is selected.<br>To the north of North Grange and Lamancha the BGS maps and the Coal Authority website indicate the presence of at least five mineshafts indicating that the coal seams in this area have historically been subject to extraction. Two further mineshafts are present adjacent to the western boundary of Route Option 3E, whilst areas of former opencast Coal Extraction which have been reinstated Whilst it should be possible to avoid the mine entries if they are accurately located, some investigation would be necessary to determine the depth to and condition of the shallow coal seams and thereafter enable the selection of suitable locations for the siting of poles in order to span over areas of shallow workings. Alternatively, where this is not possible, consolidation of workings should be considered. | Route Options 3C, 3D and 3E cross relatively extensive areas beneath which coal seams have been worked at shallow depth with, also, some evidence of open cast extraction.<br>Numerous abandoned mineshafts are also present.<br>Investigation would be necessary at alignment stage to confirm the location of the mine entries, and determine the depth to, and condition of, the shallow coal seams and thereafter enable the selection of suitable locations for the siting of poles in order to span over areas of shallow workings.<br>Alternatively, where this is not possible, consolidation of workings could be |

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| | | | | | | | considered if these routes were to be progressed with **Route Option 3D preferred over Route Option 3C** with respect to the mining legacy. |
| | **Overall preference for Planning and Land Use** | In terms of Planning and Land Use, the **preferred Route Option is 3A-3B-3D-3E**.<br>Route Option 3D is preferred to 3C as it interacts with the least amount legacy mines and associated works and can avoid the 'live' peat extraction site found to the south. | | | | | |
| **Technical** | Altitude and Topography | Most of Route Option 3 is at altitude above 200m. In Scotland, altitudes above 200m AOD are technically, by design, considered to be an extreme environment due to high wind and ice loading. The maximum altitude within Route Option 3 is approximately 375m (Route Option 3C has a maximum altitude of 300m and Route option 3D is 290m for comparison purposes).<br>Given the long length of this route, the slope varies significantly throughout, although a lot of Route Option 3 has a more even surface with approximately 75% of Route Option 3 with a gradient less than 6°. As previously mentioned, there is a lot of topographical variety throughout however, reaching a maximum of 50°, a gradient of this magnitude can cause significant technical challenges during construction as well as operation. | | | | | Route Option 3 is at altitudes above 200m and has a varied gradient across the route. Therefore, the technical challenges during construction and operation of any proposed route will need to be factored in at the detailed design stage. |
| | Infrastructure (Holford Rule 7)<br>■ Existing OHL transmission and distribution infrastructure<br>■ SP Energy Networks Land Use Risks | ■ 400kV Crossing/Parallel<br>■ 132kV Crossing<br>■ Two 275kV crossings are noted in Route Option 3A<br>■ Eleven 11kV crossings and a number of low-voltage connections located within Route Option 3A.<br>■ A number of larger roads which will require crossing including a double roundabout and junctions on the A702 into Biggar Road, as well as Old Pentland Rd, A703 and running parallel to A702.<br>■ There are a number of minor road/track crossing along this route in which statutory clearance requirements will need to be considered.<br>■ Curriehill Railway Station lies within Route option 3A with a possibility of a double crossing between Currie S/S and National Cycle Route 75. Cognisance of statutory clearance requirements for rail crossings are to be considered.<br>■ The MOD Castlelaw and Dreghorn Training Area and Ranges (c. 775ha) runs approximately between 3A | ■ Ten 11kV crossings and a number of low-voltage connections located within Route Option 3B.<br>■ There is another potential crossing of the A702 within Route Option 3B.<br>■ Bathgate to Penicuik high-pressure gas pipeline spans the entire width of Route Option 3B to the south of the route.<br>■ As Route Option 3B runs parallel to Penicuik, there are a number of minor roads crossed along its route via roads connecting the town to the wider rural landscape | ■ Five 11kV Crossings and a number of low-voltage connections located within Route Option 3C.<br>■ Route Option 3C crosses the A766 and a minor track/road adjacent to Auchencorth Moss | ■ Three 11kV Crossings located within Route Option 3D.<br>■ Route Option 3D crosses the A766.<br>■ Bathgate to Penicuik high-pressure gas pipeline crosses Route Option 3D. However, there is no way to route around this pipeline across Route Option 3 as a whole as it spans the entire width of Route Option 3B. | ■ Two 33kV lines and four 11kV lines located within Route Option 3E, with two low-voltage connections also noted.<br>■ Route Option 3E potentially crosses the A701 twice along its route.<br>■ There are a number of minor road/track crossing along this route in which statutory clearance requirements will need to be considered. | There is no overall route preference between **Route Option 3C and 3D,** as whilst 3D has less existing electrical connections, a high-pressure gas pipeline would need to be crossed in Route Option 3D. However, this pipeline would need to be crossed at Route Option 3B too and therefore unavoidable in Route Option 3 whichever route is taken.<br>A full utility search would be required to establish extents of all utility services found within Route Option 3A-3E. |

| Criterion | Sub-Criteria | Route Option 3A | Route Option 3B | Route Option 3C (Optional) | Route Option 3D (Optional) | Route Option 3E | Preference |
|---|---|---|---|---|---|---|---|
| | | below Dreghorn Training Area and Barracks to Castlelaw Hill. Whilst some public access is allowed through public rights of way, some of the area is fenced off and it is unlikely that the development will be allowed to run through this area.<br>■ Route Option 3A crosses the Tarmac Ravelrig Quarry, which has an amber risk rating due to known presence of mine workings.<br>■ A high-pressure gas pipe is present in the Buteland Farm area. | | | | | |
| | **Overall Technical Preference** | There is no preferred route option between Route Option 3C and 3D in terms of technical considerations as both the route options cross a similar amount of infrastructure. | | | | | |
| **Overall Preferred Route Option** | | **The overall preferred Route Option 3 comprises 3A-3B-3D-3E (hereafter referred to as 'Overall Route Option 3').**<br>Overall Route Option 3 crosses the Pentland Hills SLA and the northern edge of the Pentlands Regional Park, and Bonaly Country Park. Whilst Route Option 3 does not pass through any additional locally designated landscapes, the route option is located in and around a number of settlements including around Currie, Balerno, Penicuik and Lamancha, and also a number of core paths.<br>Overall Route Option 3 crosses two Conservation Areas, a Historic Battlefield, and includes a number of Listed Buildings. It will also cross a number of priority peatland habitats which cannot be spanned or avoided, especially within Route Options 3D and 3E. Furthermore, Overall Route Option 3 crosses a number of NFI and NWSS, many of which cannot be avoided.<br>In terms of land use, Overall Route Option 3 has a number of challenging constraints, including the Ravelrig Quarry and the MOD Castlelaw and Dreghorn Training Area and Ranges. Whilst some public access to the MOD area is allowed along public rights of way, some of the area is fenced off and the Training Area presents a significant constraint to OHL routeing.<br>The comparative appraisal of Route Option 3C and Route Option 3D identified Route Option 3D as the preferred route option. Route Option 3D is the shorter of the two route options. Peat extraction is also being undertaken in Route Option 3C which cannot be avoided as it spans the entire route option width. Therefore, with regard to land use, Route Option 3D is preferred to Route Option 3C.<br>Route Option 3D has fewer interactions with non-designated heritage assets than Route Option 3C. However, while Route Option 3D is the preferred route option, it is important to note that this option runs along the western boundary of Penicuik GDL and crosses more LCTs with an overall medium-high sensitivity to OHL development. Therefore, potential heritage and landscape impacts will need to be considered carefully at the detailed routeing stage.<br>In terms of technical considerations, there is no overall route preference between Route Options 3C and 3D; however, Route Option 3D has fewer electrical infrastructure crossings than Route Option 3C. Whilst a high-pressure gas pipeline would need to be crossed with Route Option 3D, this pipeline would need to be crossed with Route Option 3B too and is therefore unavoidable in Overall Route Option 3 whichever route is taken. | | | | | |

Overall, Route Option 4 would involve selecting Route Option 4A and then 4B, then finish with either Route Option 4C or 4D. Please refer to **Figure 4.4** which sets out the full extent of the Route Options.

**Table C.4: Route Options 4A-4C/4D Appraisal**

| Criterion | Sub-Criteria | Route Option 4A | Route Option 4B | Route Option 4C (Optional) | Route Option 4D (Optional) | Preference |
|---|---|---|---|---|---|---|
| **Approximate Length of Line Route (km)** | Length of Route Option (Holford Rule 3) | c. 22km | c. 11km | c. 7.2km | c. 6.8km | The shortest route would be via Route Options **4A-4B-4D**. |
| **Landscape and Visual Amenity** | Locally Designated Landscapes, including Special Landscape Areas (SLAs) and the Pentland Hills Regional Park (Holford Rule 2) | Route Option 4A crosses the most westerly extents of the Water of Leith SLA (CoEC), the Pentlands SLA (CEC) and the northern edge of Pentland Hills Regional Park. Additionally, Route Option 4A passes the through the northern tip of Bonaly Country Park, and the northern portion of Swanston Conservation Area. | Route Option 4B does not pass through any landscape designations.<br>Route Option 4B passes through the Howgate Conservation Area. | Route Options 4C and 4D do not pass through any local or regional landscape designations. | | There is **no preferred route option** as there is no notable difference between Route Options 4C and 4D in relation to Landscape Designations. |
| | Landscape Character Types (LCT) (Holford Rules 4, 5, 6 and 7), including Landscape Susceptibility | Route Option 4A passes through four LCTs, with an overall medium susceptibility to OHL development:<br>■ LCT 268: Upland Hills – Lothians (medium-high susceptibility for OHL)<br>■ LCT 269: Upland Fringes – Lothians (low susceptibility for OHL)<br>■ LCT 270: Lowland river Valleys – Lothians (medium susceptibility for OHL)<br>■ LCT 274: Lowland Plain (low susceptibility for OHL) | Route Option 4B passes through three LCTs, with an overall medium-high susceptibility to OHL development:<br>■ LCT 99: Rolling Farmland – Borders (high susceptibility for OHL)<br>■ LCT 269: Upland Fringes – Lothians (medium-high susceptibility for OHL)<br>■ LCT 270: Lowland river Valleys – Lothians (medium susceptibility for OHL) | Route Option 4C passes through two LCTs, with an overall medium-high susceptibility to OHL development:<br>■ LCT 92: Plateau Outliers (medium susceptibility for OHL)<br>■ LCT 99: Rolling Farmland – Borders (high susceptibility for OHL) | Route Option 4D passes through three LCTs, with an overall medium susceptibility to OHL development:<br>■ LCT 92: Plateau Outliers (medium susceptibility for OHL)<br>■ LCT 104: Upland Fringe Rough Grassland (low susceptibility for OHL)<br>■ LCT 114: Pastoral Upland Valley (medium-high susceptibility for OHL) | **Route Option 4C is marginally preferred** to 4D as it would have a lesser impact on LCTs. |
| | Residential Visual Amenity with ‘150m trigger for consideration zone’ (similar to Holford Rule 4) | Route Option 4A includes a number of scattered settlements along much of its route, including; north of the villages of Currie and Balerno, along the A701, south of the Bonaly area, and between Swanston and the Edinburgh Bypass. Generally, opportunities to route more than 150m from the dwellings will be possible at detailed routeing stage, however a pinchpoint around Bonaly Tower may need this buffer distance to be reduced. | Route Option 4B skirts the town of Penicuik to the east and contains scattered properties along the A703, A6094 and B7026, and properties at the edge of the settlement. This area is very constrained by residential properties, particularly between Penicuik and Auchendinny. It is unlikely to be able to route more than 150m from all the dwellings. | There are several residential dwellings scattered along the A701 within Route Option 4C. Opportunities to route more than 150m from the dwellings will be possible at detailed routeing stage. | There are several residential dwellings scattered along the A703 within Route Option 4D. Opportunities to route more than 150m from the dwellings will be possible at detailed routeing stage. | There is **no preferred route option** as there is no notable difference between the routes in relation to impact on residential amenity. |
| | Visual Amenity (similar to Holford Rule 4) | Route Option 4A is likely to impact shelterbelts and areas of ancient woodland to the south of Balerno and Currie, and also near Bonaly, the removal of which would impact key landscape features.<br>The introduction of an OHL would result in the greater encirclement of the settlements of Currie and Balerno, and potentially increase cumulative effects arising from interaction with other OHLs of differing sizes in the area to the north and south of the settlements. The higher elevation of the OHL in comparison to Currie and Balerno may mean the OHL appears against the skyline (depending on route location), however it could also enable backclothing by landform of the Pentlands. | Route Option 4B is likely to impact shelterbelts and areas of ancient woodland near Auchendinny, Howgate and Bilston, the removal of which would impact key landscape features.<br>An OHL is likely to affect views from many of the scattered properties within this section, and would affect views from Glencorse Golf Club, and the golf course which it may need to cross.<br>Route Option 4B runs broadly parallel to the A703, A6094 and B7026 roads and receptors travelling along these roads may experience sequential views of the OHL for several kilometres. Roadside vegetation will provide some screening of views. | Much of Route Option 4C runs parallel to the A701 and receptors travelling along this main route may experience sequential views of the OHL for several kilometres. The OHL will appear partially backclothed by landform and forestry along this route option but may break the skyline in some areas. Depending on the route, forestry blocks and shelterbelts may be impacted. Users of Leadburn Community Woodland will need to be considered, to the south of Leadburn. | The northern extent of Route Option 4D runs broadly parallel to the A703. Receptors travelling along this main route may experience sequential views of the OHL for several kilometres, including cumulative effects arising from interactions with several local distribution lines north of Millenium Farm.<br>Users of Leadburn Community Woodland will need to be considered, to the south of Leadburn. Avoidance should be possible through detailed routeing.<br>From the A703, the OHL will appear to largely sit above the skyline in views to the west but may be afforded some backclothing by forestry.<br>Route Option 4D is likely to impact the forestry on White Rig towards Cloich Forest, and more localised shelterbelts | **Route Option 4C is preferred** to 4D as it would have a lesser impact on Visual Amenity, including impacts on the A703 and the Leadburn Community Woodland. |

| Criterion | Sub-Criteria | Route Option 4A | Route Option 4B | Route Option 4C (Optional) | Route Option 4D (Optional) | Preference |
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| | | | | | which are a key landscape feature. Efforts should be made to avoid these. | |
| | Tourism and Recreation: potential for views from OS promoted viewpoints, Sustrans routes, Core Paths, long distance promoted trails, tourist attractions and recreational areas such as golf courses and Country Parks (Notes on Clarification to the Holford Rules) | Route Option 4A crosses a number of core paths, including City of Edinburgh Council core paths CEC 2: The Braids, CEC 19: Harlaw and Threipmuir, AND CEC 20: Bonaly and Bonaly Links.<br><br>Core paths lead to the Pentland Hills Regional Park, and local designations such as the Red Moss of Balerno Nature Reserve and Bonaly Country Park. The route also passes the on-road National Cycle Network (Route 75) north of Currie.<br><br>Route Option 4A does not cross any further OS promoted viewpoints, long distance trails, or tourist attractions of note. The Swanston Golf Course is immediately adjacent to the route option, and part of it driving range is within the section under the existing OHLs. | Route Option 4B contains part of the traffic free National Cycle Route (Route 196 - Penicuik to Musselburgh cycle-walkway), which closely follows the River North Esk.<br><br>There are no OS promoted viewpoints or tourist attractions of note within Route Option 4B. | Several Scottish Borders Council right of way paths pass through Route Option 4C, including along the dismantled railway near Leadburn Community Woodland.<br><br>There are no OS promoted viewpoints, long distance trails, or tourist attractions of note within Route Option 4C. | Several Scottish Borders Council right of way paths pass through Route Option 4D, including along the dismantled railway near Leadburn Community Woodland.<br><br>There are no OS promoted viewpoints, long distance trails, or tourist attractions of note within Route Option 4D, as it avoids the Scottish Borders Council promoted 'Cloich Loop' route to the south. | There is **no preferred route option** as there is no notable difference between the routes in relation to Tourism and Recreation. |
| | **Overall preference for Landscape and Visual Amenity** | The preferred Route Option for Landscape and Visual Amenity is 4A-4B-4C as Route Option 4C would have a lesser impact on LCTs and visual amenity when compared to Route Option 4D. | | | | |
| **Biodiversity** | Ramsar Sites (Holford Rule 1) | The Route Options do not contain any Ramsar sites, and none are within the 2km trigger for consideration zone of a Ramsar Site. | | | | There is **no preferred route option** as there is no notable difference between the routes in relation to Ramsar sites. |
| | Special Protection Areas (SPA) (Holford Rule 1) | The Route Options do not contain any SPAs, and none are within the 2km trigger for consideration zone of a SPA. | | | | There is **no preferred route option** as there is no notable difference between the routes in relation to SPAs. |
| | Sites of Special Scientific Interest (SSSI) (Holford Rule 1) | There are no SSSIs within Route Option 4A.<br><br>Route Option 4A is within the 1km trigger for consideration zone of the Balerno Common SSSI (ash woodland and geological features). | There are no SSSIs within Route Option 4B.<br><br>Route Option 4B is within the 1km trigger for consideration zones of the Black Burn SSSI (fen and grassland habitat) and the Bilston Burn SSSI (ash woodland and geological features). | There are no SSSIs within Route Option 4C.<br><br>Route Option 4C is within the 1km trigger for consideration zones of the Whim Bog SSSI (raised bog habitat). | There are no SSSIs within Route Option 4D. | **Route Option 4D is preferred** to 4C as it is further away from the Whim Bog SSSI. Therefore, overall, Route Option 4D has a lesser impact on SSSIs than 4C. |
| | Special Areas of Conservation (SAC) (Holford Rule 1) | There are no SACs in Route Options 4A, 4B and 4C, and none of the Route Options are within the 1km trigger for consideration zone of a SAC. | | | There are no SACs within Route Option 4D.<br><br>Route Option 4D is within the 1km trigger for consideration zone of the Riven Tweed SAC, however this zone could be avoided through detailed routeing. | **Route Options 4A, 4B and 4C are marginally preferred** to 4D as they have a slightly reduced impact on SACs. |
| | Scottish Wildlife Trust (SWT) Reserves (Holford Rule 2) | The Erraid Wood SWT reserve partly overlaps with Route Option 4A but can be avoided through routeing. | One SWT reserve, Milkhall Pond, is entirely within route Option 4B but can be avoided through routeing. | There are no SWT Reserves within Route Options 4C and 4D. | | There is **no preferred route option** as there is no notable difference between the routes in relation to SWT Reserves. |
| | Local Nature Conservation Sites (LNCS), Local Biodiversity Sites (LBS) and Local Wildlife Sites (LWS) (Holford Rule 2) | There are nine LNCSs within, or partially within, Route Option 4A:<br>■ Riccarton Estate (biodiversity)<br>■ Dalmahoy Hill / Kaimes Hill / Ravelrig Quarry (biodiversity / geodiversity)<br>■ Harelaw Reservoir/Water of Leith/Bavelaw Burn/Black Springs/Threipmuir & Harlaw | The width of Route Option 4B crosses the following five LNCS, which cannot be avoided, but all of which could be spanned:<br>■ Glencorse Valley and Logan Burn (biodiversity)<br>■ Bush Estate and Glencorse Burn (biodiversity)<br>■ Bonnyrigg to Penicuik Railway (biodiversity) | Route Options 4C and 4D partly cross the Leadburn Community Woodland (biodiversity) LNCS, but this could be avoided through detailed routeing. | | There is **no preferred route option** as there is no notable difference between the routes in relation to LWSs / LNCs. |

| Criterion | Sub-Criteria | Route Option 4A | Route Option 4B | Route Option 4C (Optional) | Route Option 4D (Optional) | Preference |
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| | | Reservoirs (biodiversity / geodiversity)<br>■ Water of Leith - Inveroe to Glenbrook & Cock Burn (biodiversity)<br>■ Bavelaw Burn (biodiversity)<br>■ Torphin Quarry (biodiversity / geodiversity)<br>■ Howden Burn/Redford Brae & Laverock Dale/Torduff Reservoir & Bonaly Burn<br>■ Swanston Burn (biodiversity)<br>■ Erraid Wood (biodiversity)<br>**Dalmahoy Hill / Kaimes Hill / Ravelrig Quarry (biodiversity / geodiversity) LNCS** crosses the width of the Route Option and **cannot be avoided or spanned.**<br>Route Option 4A crosses the Harelaw Reservoir LNCS three times, and the Howden Burn LNCS twice. However, is likely these can be spanned at their narrowest points at the detailed routeing stage. | ■ River North Esk – Dalkeith to Carlops (biodiversity)<br>■ Beeslack Wood and Haughhead (biodiversity)<br>A further five LNCSs are located within, or partially within Route Option 4B:<br>■ Roslin-Moat and Curling Pond (biodiversity)<br>■ Bush Estate (biodiversity)<br>■ Penicuik Mill Lade and the River Esk to Esk Bridge (biodiversity)<br>■ Milkhall Pond (biodiversity)<br>■ Leadburn Community Woodland (biodiversity)<br>These could be avoided through detailed routeing. | | | |
| | **Overall preference for Biodiversity** | Route Option **4A-4B-4C** is the preferred Route Option.<br>Route Option 4C is marginally preferred to 4D as it does not lie within 1km of a SAC. | | | | |
| **Cultural Heritage** | Scheduled Monuments (Holford Rule 1) | The Harlaw Enclosure (SM 6188) Scheduled Monument is located within Route Option 4A, which comprises a prehistoric enclosed settlement.<br>As the asset is below-ground, it is unlikely that the Scheduled Monument will be subject to significant changes in setting.<br>There are few Scheduled Monuments within 3km of Route Option 4A, the closest of which comprises, a prehistoric defensive fort and 20th century training trenches (SM13717). It is unlikely that these monuments will be subject to significant changes in setting as a result of the introduction of grid infrastructure and careful placement and design, is likely to mitigate any potential significant effects. | Route Option 4B does not contain any Scheduled Monuments.<br>Within the wider landscape Scheduled Monuments predominately comprise evidence for medieval defences, e.g. Old Woodhouselee Castle (SM5607), situated at strategic positions within the landscape adjacent to water courses and at elevated positions. | Route Option 4C does not contain any Scheduled Monuments.<br>The closest Scheduled Monument comprises Bents Quarry (SM6065), situated c. 450 m west. However, due to the positioning, form and function of the Scheduled Monument the proposed grid infrastructure it is unlikely to result in harmful effects as a result of changes in setting. | Route Option 4D does not contain any Scheduled Monuments.<br>The closest Scheduled Monument comprises Northshield Rings fort 'The Camps' (SM731), situated c. 2.3km to the south of the Route Option 4D, and located within forestry. Therefore, grid infrastructure will likely be screened by the forestry, and is unlikely to result in harmful effects as a result of changes in setting. | There is **no overall preferred route option** as all Scheduled Monuments are located outside the Route Options, and it is considered that an OHL in this route location is unlikely to result in effects.<br>Physical changes to these assets are to be avoided. The introduction of grid infrastructure is unlikely to result in harmful effects to Scheduled Monuments as a result of changes in setting. The careful placement and design of infrastructure is likely to mitigate any potential significant effects. |
| | Listed Buildings (Holford Rule 1) | There are seven Listed Buildings located within Route Option 4A: two Category A, two Category B and two Category C. The Category A assets are as follows:<br>■ Cockburn Farm / House (LB26792) 17th century farm complex.<br>■ Bonaly Tower (LB 28033)18th century farmhouse, with boundary walls, gates, bridge, garden terraces and steps and garden statuary<br>The Category A Listed Buildings may in particular be susceptible to a change in setting as a result of the introduction of | There are five Listed Buildings located in Route Option 4B: one Category B and four Category C Listed Buildings.<br>These buildings all date from the 18th century onwards and pertain to the growth and expansion of the post-medieval agrarian economy and the development of Cowgate.<br>These Listed Buildings may be susceptible to a change in setting as a result of the introduction of grid infrastructure, that could be harmful to how the buildings are appreciated and understood today. | There are 16 Listed Buildings located in Route Option 4C; one Category A, three Category B and 12 Category C.<br>The Category A building comprises a 17th century sundial in Lamancha (LB15177), which lies in front of the Category B listed Lamancha house (LB15176) and nearby Category B listed entrance gateway to the house (LB15178). The oldest part of the Lamancha property dates back to the mid-17th century.<br>The other Category B building comprises the Gate Lodge at Whim House (LB15151), a late 18th century building. | Route Option 4D does not contain any Listed Buildings.<br>There are no Listed Buildings identified within 3km of Route Option 4D, where the introduction of grid infrastructure may result in harmful effects as a result of changes in setting. | **Route Option 4D is preferred** to 4C as there are no Listed Buildings located within, or around Route Option 4D. |

| Criterion | Sub-Criteria | Route Option 4A | Route Option 4B | Route Option 4C (Optional) | Route Option 4D (Optional) | Preference |
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| | | grid infrastructure, which could be harmful to its appreciation and understanding.<br>The Category B assets are as follows:<br>■ Buteland Farm (LB26779) 19th century farm complex<br>■ Druim (LB46286) with gates and garden terrace, Norman early 20th century<br>■ Glenrbook Road (LB26857) 19th century stables<br>The Category C assets are as follows:<br>■ Balleny Bridge (LB26883) late 18th century bridge<br>■ The Cottage (former Coach House and Stables) (LB49548) at Bonaly Tower, with garden statuary. Late 19th century<br>Within 3km of Route Option 4A Listed Buildings are concentrated at Balerno, Currie and Colinton on the outskirts of the City of Edinburgh.<br>Route Option 4A does not appear to be sited within the setting of these Listed Buildings, screened by intervening topography, development and/or vegetation, and it is unlikely to affect how they are understood or appreciated. | Outside Route Option 4B and within 3 km, Listed Buildings are concentrated at Penicuik, Auchendinn and Bilston. Route Option 4B does not appear to be sited within the setting of these Listed Buildings, screened by intervening topography, development and/or vegetation, and it is unlikely to affect how they are understood or appreciated. | The remaining Category C buildings largely date from the 18th century onwards and pertain to the growth and expansion of the post-medieval agrarian economy and the development of larger rural estates at Lamancha, Whim House and Madrisa.<br>These Listed Buildings may be susceptible to a change in setting as a result of the introduction of grid infrastructure, that could be harmful to how the buildings are appreciated and understood today.<br>Outside Route Option 4C and within 3km, Listed Buildings are mainly concentrated at the Whim Hall estate.<br>Route Option 4C may be sited within the setting of these Listed Buildings, however the careful placement and design of infrastructure is likely to mitigate any potential significant effects. | | |
| | Conservation Areas (Holford Rule 1) | There are two Conservation Areas located within Route Option 4A:<br>■ Swanston (CA23) a historic village core and associated landscape.<br>■ Morton Mains (CA30) a historic rural landscape with historic buildings<br>The introduction of grid infrastructure may alter how the Conservation Area's are experienced, however, careful alignment, pole placement and design, is likely to mitigate any potential significant effects.<br>Within 3km of Route Option 4A, the following Conservation Areas have been identified:<br>■ Currie (CA34)<br>■ Juniper Green (CA31)<br>■ Balerno (CA33)<br>■ Hermiston (CA39)<br>■ Kirknewton (CA376)<br>Route Option 4A does not appear to be sited on key views along routes through and toward these Conservation Areas so it is unlikely to affect how they are experienced or perceived. | The Howgate Conservation Area (CA338) is located in Route Option 4B.<br>The introduction of grid infrastructure may alter how the Conservation Area is experienced, however, careful route alignment, pole placement and design, is likely to mitigate any potential significant effects.<br>Within 3km of Route Option 4B, the following Conservation Areas have been identified:<br>■ Penicuik (CA344)<br>■ Roslin (CA341)<br>■ Morton Mains (CA30)<br>■ Mavisbank (CA351)<br>■ Gilmerton (CA21)<br>■ Swanston (CA23)<br>Route Option 4B does not appear to be sited on key views along routes through and toward these Conservation Areas so it is unlikely to affect how they are experienced or perceived. | There are no Conservation Areas located within Route Option 4C and 4D, or within 3km of them. | | There is **no preferred route option** as there is no notable difference between the routes in relation to Conservation Areas. |
| | Inventory Gardens and Designed Landscapes (GDL) (Holford Rule 1) | Route Option 4A does not cross any GDLs.<br>Within 3km of Route Option 4A there is one GDL: | Route Option 4B does not cross any GDLs.<br>Within 3km of Route Option 4B there are three GDLs: | Route Option 4C does not cross any GDLs, and there are no GDLs identified within 3km of Route Option 4C. | Route Option 4D does not cross any GDLs.<br>Portmore GDL (GDL00318), an 19th-century country residence set within a larger agricultural estate, is located within | **Route Option 4C is the preferred Route Option** compared to 4D as it does not pass through or near any GDLs. |

| Criterion | Sub-Criteria | Route Option 4A | Route Option 4B | Route Option 4C (Optional) | Route Option 4D (Optional) | Preference |
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| | | ■ Malleny (GDL00272) located within the town of Balerno.<br>This GDL will be screened by residential buildings and the introduction of grid infrastructure is unlikely to be harmful to their setting or result in significant effects. | ■ Penicuik (GDL00311)<br>■ Roslin Glen and Hawthornden Castle (GDL00327)<br>■ Mavisbank (GDL00275)<br>Route Option 4B does not appear to be sited on designed views from or towards these landscapes and the introduction of grid infrastructure is unlikely to affect how they are experienced or perceived. | | 3km of Route Option 4D and situated immediately adjacent to it.<br>The introduction of grid infrastructure in close proximity and along key designed views within the GDL, may result significant changes in setting that could be harmful to how the buildings are appreciated and understood today.<br>The careful placement and design of infrastructure may reduce levels of harm and mitigate any potential significant effect, | |
| | Inventory Historic Battlefields (Holford Rule 1) | There are no inventory listed historic battlefields within Route Option 4A or within 3km of the Route Option. | There are no inventory listed historic battlefields within Route Option 4B.<br>Within 3km there are two identified Inventory battlefields:<br>■ Battle of Rullion Green (BTL27<br>■ Battle of Roslin (BT37)<br>Key characteristics of the battlefield can still be identified enabling the events which took place to be more fully understood. The introduction of grid infrastructure within the landscape surrounding these battlefields may result in changes in setting, and how these assets are experienced. However, the careful placement and design of infrastructure may reduce levels of harm and mitigate any potential significant effect. | Route Option 4C and 4D is not located on any inventory listed historic battlefields, nor are any Historic Battlefields located within 3 km of the two routes. | | There is **no preferred route option** as there is no notable difference between the routes in relation to Inventory Historic Battlefields. |
| | Non-designated heritage assets (Holford Rule 2) | There are 60 non-designated heritage assets located in Route Option 4A.<br>Whilst evidence for later prehistoric and Roman occupation are present within Route Option 4A, these assets largely comprise evidence for the post-medieval and modern expansion of greater Edinburgh area. The central section of the Route Option 4A contains the remains of Castlelaw and Dreghorn Military Training Area (Canmore ID 277106), a former firing range in use from the First World War. | There are 39 non-designated heritage assets located in Route Option 4B.<br>Evidence for early prehistoric occupation has been identified within Route Option 4B, through the recovery of isolated finds, with later occupation evidenced by the extent of railway infrastructure, and assets associated with the post-medieval expansion of Townships in Midlothian, e.g. Penicuik. | There are 37 non-designated heritage assets located in Route Option 4C.<br>These assets largely pertain to railway infrastructure, and assets associated with the post-medieval agrarian economy. | There are 36 non-designated heritage assets located in Route Option 4D.<br>Evidence for early prehistoric occupation has been identified within Route Option 4D, through the recovery of isolated finds, with later occupation evidenced by post-medieval agricultural and industrial practices and the post-medieval development of the Scottish Borders. | **Route Option 4D is marginally preferred** as a Route Option compared to 4C**.** However, at this stage it is not likely to result in a notable difference between the routes in relation to non-designated heritage assets. These constraints will be established through more detailed routeing.<br>Physical changes to any non-designated heritage assets are to be avoided where possible and poles are to be sited in a way which does not disrupt how they can be understood in relation to contemporary/ related assets and the surrounding landscape. |
| | **Overall preference for Cultural Heritage** | The overall preferred Route Option for Cultural Heritage is 4A-4B-4D.<br>Route Option 4D is preferred to 4C as it would result in the least impact on designated and non-designated heritage assets when compared to 4C. | | | | |
| **Forestry and Woodland** | Ancient Woodland Inventory (AWI) (Holford Rule 1) | There are 19 AWI records within or partially within Route Option 4A, totalling 56.8 hectares. The AWI records within the first section of the Route Option as far as Balerno are likely to be avoided. Those further east to the north of the Pentlands are unlikely to be avoided through detailed routeing. | There are eight AWI records within or partially within Option 4B, total area 23.7 hectares. The central and southern areas cannot be avoided. | There are no AWI records within Options 4C and 4D. | | There is **no preferred route option** as there is no notable difference between the routes in relation to Ancient Woodland. |
| | Native Woodland Survey of Scotland (NWSS) (Holford Rule 2) | There are 13 NWSS records within or partially within Route Option 4A, totalling 18.6 hectares. These can be avoided through detailed routeing. | There are eight NWSS records within or partially within Route Option 4B, total area 19.1 hectares. One of these areas cannot be avoided. | There are no NWSS records within Option 4C | There are two NWSS records within Option 4D, total area 3.2 hectares. Both can be avoided. | **Route Option 4C is preferred** to 4D as it contains no NWSS records, and therefore will have a lesser impact on NWSSs than 4D. |

| Criterion | Sub-Criteria | Route Option 4A | Route Option 4B | Route Option 4C (Optional) | Route Option 4D (Optional) | Preference |
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| | National Forest Inventory (NFI) (Holford Rule 5) | There are 90 NFI records within or partially within Route Option 4A, totalling 124.5 hectares. Some loss of forest cover would be unavoidable with this Option. | There are 56 NFI records within or partially within Route Option 4B, totalling 85.9 hectares. Some loss of woodland is considered unavoidable within this route option.<br>Some loss of forest cover would be unavoidable with this Option. | There are 51 inventory records within Route Option 4C, totalling 202.9 hectares.<br>Some loss of forest cover would be unavoidable with this Option. | There are 67 inventory records within, or partially within, Route Option 4D, totalling 265.5 hectares.<br>Some loss of forest cover would be unavoidable with this Option. | **Route Option 4C is preferred** to 4D as it contains fewer NFI records. Either way some loss of forest cover would be unavoidable. |
| | **Overall preference for Forestry** | The preferred Route Option for Forestry is 4A-4B-4C due to Route Option 4C having a significantly smaller proportion of NFI records, and no NWSS records within it. | | | | |
| **Peat, Geology, Hydrology & Hydrogeology** | NatureScot Priority Peatland Habitats (Class 1 and Class 2) (Holford Rule 1)<br>NatureScot Peatland Habitats (Classes 3, 4 and 5) | There are no priority peatland areas (Class 1 and 2) within Route Option 4A.<br>Route Option 4A does not cross any Class 3, 4 or 5 peat noted on NatureScot (2016) mapping. | There are no priority peatland areas (Class 1 and 2) within the route.<br>There are three very small areas of Class 5 peat within the route, all of which can be avoided or spanned. | There are no priority peatland areas (Class 1 and 2) within the route.<br>The route crosses over 2 areas of Class 5 peat, both of which can be avoided within Route Option 4C. | There are no priority peatland areas (Class 1 and 2) within the route.<br>The route crosses several small areas of Class 3, 4 and 5 peat, as well as one large section of Class 4 and 5 peat in the south of the route up to 2.2km wide which could be difficult to avoid. | There is a **marginal preference for Route Option 4C** on the basis that Route Option 4D crosses over several wide areas of Class 4 and 5 peatland that are difficult to span/avoid (south of route around Middle Burn).<br>However, Route Options 4C and 4D (or the route in general) do not cross any priority peatland habitat.<br>Where peat is found, it is likely that there will be some technical difficulties and increase cost, with special foundations and bog shoes required for construction. |
| | Geological Conservation Review (GCR) Area | There are no GCR areas within any of the route options. | | | | There is no preference with respect to GCRs. |
| | Waterbodies / Watercourses | Route Option 4A crosses several named and unnamed watercourses, including Cock Burn, Bavelaw Burn, Bonaly Burn, Braid Burn, Howden Burn, Swanston Burn and other smaller tributaries.<br>The route lies just downgradient of Harlaw Reservoir, and Torduff Reservoir. | Route Option 4B crosses numerous named and unnamed watercourses, including River North Esk, Glencorse Burn and the Boghall Burn. The Lead Burn runs within the route for approximately 2.5km. | Route Option 4C crosses an unnamed tributary of the Lead Burn. | Route Option 4D crosses several watercourses including Middle Burn, Eddleston Water and other small tributaries within the route. | **There is a slight preference for Route Option 4C**, instead of taking 4D as route option 4D crosses more watercourses and flood risk areas compared to 4C.<br>There is no alternative route to avoid the Glencorse Burn Drinking Water Protected Area.<br>In rural areas there is a high likelihood of small burns and waterways which will be able to be identified on a site visit. |
| | Flood Zones and Drinking Water Protected Areas | SEPA future flood maps indicate only three areas of flood risk along the route option, at Cock Burn, the outflow of Harlaw Reservoir to the Water of Leith (Bavelaw Burn) and the Braid Burn. These flood risk areas are narrow and can be spanned or avoided within Route Option 4A. | SEPA future flood mapping indicates several fluvial flood risk areas, including along the Boghall Burn, Glencorse Burn, Lead Burn and the River North Esk. The widest flood risk area is associated within the Boghall Burn (up to 130m wide) but this and all the other flood risk areas can be spanned.<br>Milkhall Pond lies within Route Option 4B.<br>The route crosses within the downstream, eastern side of the Glencorse Burn DWPA (Waterbody ID 3814) which cannot be avoided. | There are no areas of fluvial flood risk within the route option shown on SEPA future flood mapping. | SEPA future flood maps show narrow flood risk area along the Eddleston Burn and Middle Burn, both of which can be spanned. | |
| | **Overall preference for Hydrology, Hydrogeology and Peat** | The marginally preferred Route Option is 4A-4B-4C as Route Option 4C would cross the least amount of Class 4 and 5 peatland, watercourses and flood risk areas. | | | | |
| **Planning and Land Use** | Planning and Development:<br>■ Local Development Plan (LDP) Allocations. | ***City of Edinburgh***<br>**LDP Allocations**<br>■ No site allocations within the LDP Policy Map.<br>**Committed Development** | ***City of Edinburgh***<br>None of the Route Options fall within CofEC | | | There is **no preferred route option** as there is no notable difference between the routes in relation to committed development. |

<table>
<tr><th>Criterion</th><th>Sub-Criteria</th><th>Route Option 4A</th><th>Route Option 4B</th><th>Route Option 4C (Optional)</th><th>Route Option 4D (Optional)</th><th>Preference</th></tr>
<tr><td rowspan="6"></td><td rowspan="5">(Holford Rule 7)<br>■ Committed Development (Consented and Undetermined [8] Planning Applications) since 2019[9].</td><td>■ 22/03017/FUL – permission granted for a new electricity feeder station from the railway at the proposed electricity substation, Riccarton Mains Road, Currie. Should the new electricity feeder pillar impact the design of the Cloich connection, this will be considered through the design stage</td><td colspan="3"></td><td rowspan="5"></td></tr>
<tr><td colspan="4">West Lothian – None of the Route Options fall within WLC.</td></tr>
<tr><td colspan="4">South Lanarkshire – None of the Route Options fall within SLC.</td></tr>
<tr><td>Scottish Borders – Route Option4A does not fall within SBC.</td><td colspan="2">Scottish Borders<br>LDP Allocations<br>■ No allocation within the LDP Policy Map.<br>Committed Development<br>There is no committed development of relevance in Route Option 4B or 4C within the Scottish Borders Council area (as of 25/04/2024).</td><td>Scottish Borders<br>LDP Allocations<br>■ No allocation within the LDP Policy Map.<br>Committed Development<br>■ 23/00678/HAZ - permission granted for storage of Liquified Petroleum Gas (LPG) for agricultural activities associated with the farm, at Millenium Poultry Farm, Cowieslinn, Peebles, Scottish Borders, EH45 8FF.<br>It is likely this proposed development can be avoided through detailed routeing.</td></tr>
<tr><td>Midlothian<br>LDP Allocations<br>■ Midlothian Snowsports Centre (VIS3)<br>■ Pentland Hills Regional Park (RD3)<br>■ Country Parks (RD4)<br>■ Special Landscape Area (ENV6)<br>Committed Development<br>There is no Committed Development of relevance along Route Option 4A within the Midlothian Council area (as of 25/04/2024).</td><td>Midlothian<br>LDP Allocations<br>■ Committed Development (STRAT1)<br>■ Strategic Housing Land Allocations (STRAT3)<br>■ Midlothian Science Zone (ECON2)<br>Committed Development<br>■ 23/00474/DPP – permission granted for the erection of 32 dwellinghouses, Land South East of Auchendinny The Brae Auchendinny Penicuik, City of Edinburgh<br>■ 20/00144/DPP - residential development formation of access roads and car parking and associated works on land at former Wellington School, south of Penicuik, City of Edinburgh.<br>It is likely these committed developments can be avoided through detailed routeing.</td><td>Midlothian<br>LDP Allocations<br>■ There are no housing or minerals allocations in Route Option 4C<br>Committed Development<br>■ 23/01488/FUL DPP – permission granted for the erection of three glamping pods and associated infrastructure at land West Of Old Station Cowdenburn West Linton Scottish Borders<br>It is likely this committed development can be avoided through detailed routeing.</td><td>Midlothian<br>Route Option 4D does not fall within MLC.</td></tr>
<tr><td>Scotland Land Capability for Agriculture Classes 1, 2 and 3.1 (Holford Rule 7)</td><td>Class 2 and 3.1 prime agricultural land is found to:<br>■ At the start of the route either side of Currie’s railway line;</td><td>Route Option 4B contains a mixture of Class 2 and Class 3.1 prime agricultural land around Seafield within the northern portion and middle portion of the route, which is unavoidable.</td><td colspan="2">Route Option 4C and 4D do not contain any prime agricultural land (Classes 1, 2, or 3.1).</td><td>There is no preferred route option as there is no notable difference between the routes in relation to prime agricultural land.</td></tr>
</table>

[8] Undetermined planning applications are those which have been validated, i.e. are ‘live’ applications, but have not yet been decided.
[9] It is not considered that development prior to 2019 should be considered as these applications are likely to have expired if not implemented or fully built out and in situ within 5 years.

| Criterion | Sub-Criteria | Route Option 4A | Route Option 4B | Route Option 4C (Optional) | Route Option 4D (Optional) | Preference |
|---|---|---|---|---|---|---|
| | | ■ In the middle of the route to south of Currie and Bonaly; and<br>■ At the end of the route around Swanston and Hillend.<br>In some areas, this is unlikely to be avoided through careful routeing. | | | | |
| | Coal Authority Reporting Area for Planning | The easternmost portion of Route Option 4A falls within a Coal Authority Mining Reporting Area but does not cross any areas of high development risk for coal. | Route Option 4B falls within a Coal Mining Reporting Area. A swathe of land located partly beneath and to the west of the A6094 up to the settlement of Howgate is classified as a potential Coal Authority high risk area. There are no records of extraction of the mineral seams present within the area to the west of the A6094, and hence the western portion of the Route Option 4B corridor to the south of Howgate, the potential for unrecorded extraction cannot be discounted.<br>Some localised intrusive investigation would confirm the presence or otherwise of any unrecorded workings.<br>More generally, the southern part of this Route Option locally runs parallel to the Southern Upland Fault. Whilst it is extremely unlikely that any significant movement would occur along the fault it would be preferable to avoid placing pole infrastructure directly over or in the immediate vicinity of this fault line. | Route Option 4C mostly crosses a Coal Mining Reporting Area.<br>The first section of Route Option 4C (to the south of the Southern Upland Fault) along the A701 broadly follows a fault line, which comprises sandstone and siltstones.<br>A swathe of land to the north of the fault and along the line of the A701 is classified as a potential Coal Authority high risk area.<br>There are no records of previous extraction of coal seams, however, the BGS maps identify former indications of shallow workings adjacent to coal seam outcrops to the east and west of the A701 in the areas to the east of Whim Hall.<br>An abandoned mineshaft is also indicated on maps although is not recorded on the Coal Authority website. It should be possible to avoid the majority of the potentially at risk areas if the overhead line is situated along the southern edge of Route Option 4C where it runs adjacent to the A701. | Route Option 4D does not fall within a Coal Mining Reporting Area.<br>However, it is noted that sands and gravels have been quarried to the north and to the south of Cowieslinn Dene (currently under the operation of Breedon) with materials still actively being removed from the area to the south of this water course.<br>Areas of made ground and ongoing extraction could be avoided by utilising the western part of the Route Option 4D corridor or the eastern fringes in the vicinity of Cowieslinn. | There is **no preferred route option** between Route Option 4C and 4D as whilst 4D has current sand extraction, 4C also requires the avoidance of potential shallow workings and abandoned mine shafts. |
| | **Overall preference for Planning and Land Use** | There is no preferred route option between Route Option 4C and 4D in terms of land use and planning. | | | | |
| **Technical** | Altitude and Topography | Route Option 4A has a maximum altitude reaching 240m. This is given an Amber (Medium Risk) rating. Initially, Route Option 4A is predominantly less than 200m AOD up to Balerno, and then 92% of Route 4A is below 22° in gradient. The maximum gradient of Route Option 4A and 4A is around 30°. This is also considered to be a medium risk. | Approximately 50% of Route Option 4B has an altitude greater than 200m, with maximum altitudes reaching 300m. This is given an Amber (Medium Risk) rating.<br>In total, 92% of Route Option 4B is below 22° in gradient. The maximum gradient of Route Option 4B is c. 30°. | All of Route 4C and 4D have an attitude above 200m. In Scotland, altitudes above 200m AOD are technically, by design, considered to be an extreme environment due to high wind and ice loading. Both routes have an amber (medium risk) rating.<br>The maximum altitude reaches 375m in Route Option 4C and 350m in Route Option 4D.<br>Routes 4C and 4D are generally less than 22°, but there are more challenging areas within both Route Options which have a maximum slope of around 39°. These areas should be avoided if possible. | | There is **no preferred route option** as there is no notable difference between the routes in relation to altitude and topography.<br>In Scotland, altitudes above 200m AOD are technically, by design, considered to be an extreme environment due to high wind and ice loading, and should be avoided. |
| | Infrastructure (Holford Rule 7)<br>■ Existing OHL transmission and distribution infrastructure<br>■ SP Energy Networks Land Use Risks | ■ 400kV Crossing/Parallel<br>■ 132kV Crossing<br>■ Two 275kV crossings are noted in Route Option 4A<br>■ Eleven 11kV crossings and a number of low-voltage connections located within Route Option 4A<br>■ A number of larger roads which will require crossing including a double roundabout and junctions on the A702 into Biggar Road, as well as Old Pentland Rd, A703 and running parallel to A702.<br>■ There are a number of minor road/track crossing along this route in which statutory clearance | ■ Four 33kV Crossing are noted in Route Option 4B<br>■ Sixteen 11kV crossing are located within Route Option 4B<br>■ Route Option 4B crosses the Glencorse Golf Club. This is considered to carry a red (High risk) rating for technical feasibility.<br>■ The most notable crossings within Route 4B are the A701, Peebles Road, A6074, B7026 and Bush Loan Road.<br>■ A high-pressure gas pipeline spans the whole width of Route Option 4B and cannot be avoided. | ■ Two 33kV Crossings are noted in Route Option 4C<br>■ Route Option 4C crosses seven 11kV crossings and a low-voltage connection<br>■ Route Option 4C includes the A701, which may need to be crossed subject to detailed routeing. | ■ Six 33kV crossings are noted within Route Option 4D.<br>■ Five 11kV crossings and a number of low-voltage connections are noted within Route Option 4D.<br>■ Route Option 4D includes the A703, which may need to be crossed subject to detailed routeing. | In terms of electrical infrastructure, **Route Option 4C is marginally preferred to 4D** as it contains less electrical infrastructure, and in terms of existing road infrastructure.<br>However, both routes would require smaller roads / tracks to be crossed. |

| Criterion | Sub-Criteria | Route Option 4A | Route Option 4B | Route Option 4C (Optional) | Route Option 4D (Optional) | Preference |
|---|---|---|---|---|---|---|
| | | requirements will need to be considered.<br>■ Curriehill Railway Station lies within Route Option 4A with a possibility of a double crossing between Currie S/S and National Cycle Route 75. Cognisance of statutory clearance requirements for rail crossings are to be considered.<br>■ The MOD Castlelaw and Dreghorn Training Area and Ranges (c. 775ha) runs approximately between 4A below Dreghorn Training Area and Barracks to Castlelaw Hill. Whilst some public access is allowed through public rights of way, some of the area is fenced off and it is unlikely that the development will be allowed to run through this area.<br>■ Route Option 4A crosses the Tarmac Ravelrig Quarry, which has an amber risk rating due to known presence of mine workings.<br>■ A high-pressure gas pipe is present in the Buteland Farm area. | ■ Large number of residences/farms in Route Option 4B most notably Auchendinny. | | | |
| | **Overall preference for Technical Constraints** | Overall, the preferred route option in terms of Technical Constraints is 4A-4B-4C.<br>Route Option 4C is preferred to 4D as it contains less electrical and road infrastructure. | | | | |
| **Overall Preferred Route Option** | | **The overall preferred Route Option 4 comprises 4A-4B-4C (hereafter referred to as 'Overall Route Option 4').**<br>This Overall Route Option crosses the least amount of peatland habitat (Class 4 and 5), crosses fewer watercourses and flood risk areas, and fewer NFI records. However, Overall Route Option 4 will result in likely impacts to designated and non-designated heritage assets, including three Conservation Areas and a number of listed buildings.<br>Furthermore, Route Option 4A and 4B are very constrained by residential properties, particularly north of the villages of Currie and Balerno; along the A701; south of the Bonaly area; between Swanston and the Edinburgh Bypass; and between Penicuik and Auchendinny. It is unlikely to be able to route more than 150m from all the dwellings.<br>The comparative appraisal of Route Option 4C and Route Option 4D identified Route Option 4C as the preferred option as it the least impact on LCTs and on visual amenity, including on road receptors.<br>Route Option 4C is not within 2km of a SAC and crosses the least amount of peatland habitat (with Route Option 4D crossing several wide areas of Class 4 and 5 peatland). Route Option 4C also crosses fewer watercourses and flood risk areas. Route Option 4C has fewer NFI records and no NWSS records and also less impact on the Leadburn Community Woodland.<br>Route Option 4C has less technical constraints, including the consideration of electrical infrastructure and existing road infrastructure.<br>Notwithstanding this, Route Option 4C has the potential to impact both a number of Listed Buildings and additional non-designated heritage assets and these would need to be considered carefully at the detailed routeing stage. | | | | |

# Appendix D

## Preferred Route Option Appraisal

Table D.1: Overall Preferred Route Option Appraisal

Table D.1: Overall Preferred Route Option Appraisal

| Criterion | Sub-Criteria | Overall Route Option 1 – Comprising 1A-1B-1D-1F | Route Option 2 | Overall Route Option 3 – Comprising 3A-3B-3D-3E | Overall Route Option 4 – Comprising Route Option 4A-4B-4C | Preferred Route Option |
|---|---|---|---|---|---|---|
| **Length of Route Option (km)** | Length of Route Option (Holford Rule 3) | c. 39.7 km | c. 25km | c. 41km | c. 40.2km | **Route Option 2 is the shortest Route.** |
| **Landscape and Visual Amenity** | ■ Locally Designated Landscapes, including Special Landscape Areas (SLAs) and the Pentland Hills Regional Park (Holford Rule 2)<br>■ Landscape Character Types (LCT) (Holford Rules 4, 5, 6 and 7), including Landscape Susceptibility<br>■ Residential Visual Amenity with '150m trigger for consideration zone' (similar to Holford Rule 4)<br>■ Visual Amenity (similar to Holford Rule 4)<br>■ Tourism and recreation: potential for views from OS promoted viewpoints, Sustrans routes, Core Paths, long distance promoted trails, tourist attractions and recreational areas such as golf courses (Notes on Clarification to the Holford Rules) | Overall Route Option 1 crosses through **Pentland Hills SLA** and Route Options 1A, 1B and 1D also cross through **Black Mount SLA.**<br>Route Options 1B, 1D and 1F cross through LCTs with a **medium to high** susceptibility to OHL development.<br>There are a number of visual amenity and residential receptors located in the Route Options: residential receptors (scattered settlements), tourists visiting the users of core paths, to factor into the OHL detailed routeing stage. There is potential for **cumulative effects** from the OHL/ above ground pipeline and impact on visual amenity.<br>There are opportunities to route more than 150m from the dwellings at detailed routeing stage and by avoiding higher land the route will be less visible in the skyline for other sensitive visual receptors. | The majority of the Route Option passes through several regionally and locally designated landscapes including SLAs and the Pentlands Regional Park and a Conservation Area.<br>The LCAs within Route Option 2 have a **medium to high** susceptibility to OHL development, particularly across the prominent Pentland Hills.<br>The sections of Route Option 2 to the north and south of the Pentlands are likely to result in less concern with relation to visual amenity. However, routeing across the Pentland Hills raises greater concerns as the **OHL would be visible from many hills and along popular walking routes in the Regional Park**.<br>There are several well-used trails within the Pentlands. There are no promoted viewpoints or other tourism and recreational facilities along this route, though it is noted that the Pentland Hills Regional Park is popular and well visited by hill walkers, cyclists and cross-country skiers in winter. | Overall Route Option 3 crosses the Pentland Hills SLA, the Pentlands SLA and the northern edge of the Pentlands Regional Park and Bonaly Country Park.<br>Route Option 3A also passes through the Swanston Conservation Area and the Morton Mains Conservation Area.<br>The Route crosses through LCTs of **medium to high** susceptibility to OHL development.<br>A number of towns and scattered settlements are located in and around all the overall Route Option, including around Currie and Balerno, and then Penicuik and Lamancha. There are comparable impacts on residential (150m trigger for consideration zone), visual amenity, tourism and recreational receptors across the entire route option.<br>Route Options 3A and 3B both cross a number of core paths. None of the overall Route Option crosses any OS promoted viewpoints, long distance trails, or tourist attractions of note. Route Option 3D is located c. 32m east of Gowk Stone which may attract visitors for its heritage importance. | Route Option 4A passes through the Pentlands SLA and the northern edge of the Pentlands Regional Park and Bonaly Country Park, whilst the remainder of the route option does not pass through any landscape designations.<br>Route Option 4A and 4B also pass through the Swanston, Morton Mains and Howgate Conservation Areas. There are no Local or regional landscape designations in Route Option 4C.<br>The LCAs within Route Options 4A-4C have a mixture of **medium and medium-high** susceptibility to OHL development, particularly across the prominent Pentland Hills.<br>There are a number of scattered settlements within Route Option 4A – 4C, and whilst the '150m trigger for consideration' should be achievable at the detailed routeing stage, there are areas within Route Option 4A and 4B which are unlikely to be avoided, and this distance might need to be reduced.<br>In terms of visual amenity of sensitive receptors (residential, tourism and recreation) the OHL will impact key views across the landscape, forestry, core path users, road users and users of the Glencorse Golf Club. Cumulative impacts of the proposed OHL with existing infrastructure will also need to be factored in at the detailed routeing stage. | All route options are challenging with respect to landscape and visual amenity. They all pass through the Pentland Hills SLA and LCTs with a medium to high susceptibility to OHL development. There are also a number of sensitive receptors (residential, tourism and recreation) in close proximity to all the route options, and in some cases, it will not be possible to avoid the 150m 'trigger for consideration' zone.<br>In this regard there is **no clear overall preference**, **however, Route Option 2 is of greatest concern given the route taken across the Pentland Hills, noting that this route was carefully drawn up to represent the likely 'least worst crossing' of the Pentland Hills**. |
| **Biodiversity** | ■ Ramsar Sites (Holford Rule 1) | Route Option 1A includes part of the Cobbinshaw Reservoir SSSI but this can be avoided through detailed routeing. | Two SSSI are located in Route Option 2: North Esk Valley SSSI and the Carlops Meltwater Channels SSSI. **The full width of Route Option 2 crosses the North** | Route Options 3D and 3E may result in direct impacts to the **Auchenforth Moss SSSI. Route Options 3D cannot span the full SSSI** and therefore will result in | The overall Route Option does not contain any Ramsar sites, SPAs, SSSIs, or SACs. | There are a number of Ramsar sites, SPAs, SSSIs, SPAs, SACs, SWTs and LNCS/LWS in |

| Criterion | Sub-Criteria | Overall Route Option 1 – Comprising 1A-1B-1D-1F | Route Option 2 | Overall Route Option 3 – Comprising 3A-3B-3D-3E | Overall Route Option 4 – Comprising Route Option 4A-4B-4C | Preferred Route Option |
|---|---|---|---|---|---|---|
| | ■ SPA (Holford Rule 1)<br>■ SSSI (Holford Rule 1)<br>■ SAC (Holford Rule 1)<br>■ SWT (Holford Rule 2)<br>■ LNCS (Holford Rule 2) | Route Option 1F contains an approximate 2.5 km length of the River Tweed SAC which spans the width of the route option, but the OHL could span the width of the SAC to avoid any direct impacts. Route Options 1A, 1B and 1D do not contain any SACs.<br><br>There are four LNCs noted in Route Option 1A; two of which can be avoided through detailed routeing. **The Dalmahoy Hill LNCS cannot be spanned or avoided.**<br><br>Route Options 1D & 1F also contain LNCs which also can be avoided through detailed routeing.<br><br>The overall Route Option does not contain any Ramsar sites, SPAs, or SWTs. | **Valley SSSI which cannot be avoided through routeing.**<br><br>**Dalmahoy Hill / Kaimes Hill / Ravelrig Quarry Quarry (biodiversity / geodiversity) LNCS** crosses the width of the Route Option and **cannot be avoided or spanned.**<br><br>There are nine LNCSs partly within Route Option 2 and most can be avoided through routeing.<br><br>There are no Ramsar, SPAs, SACs, or SWTs within Route Option 2. | unavoidable impacts to the SSSI. Route Option 3E is also partly located within Whim Bog SSSI; Route Option 3E may be able to span both SSSIs through detailed routeing.<br><br>The overall Route Option does not include any Ramsar sites, SPAs, or SACs.<br><br>Route Options 3B, 3D and 3E do not contain any SWT reserves, whilst Route Option 3A partly covers the Erraid Wood SWT, which can be avoided through detailed routeing.<br><br>There are 15 LNCS crossed within Route Options 3A, 3B & 3D, **four of which cannot be spanned or avoided, but one which could be spanned:**<br><br>■ **Dalmahoy Hill / Kaimes Hill / Ravelrig Quarry Quarry (biodiversity / geodiversity) LNCS** (Route Option 3A)- cannot be avoided or spanned.<br><br>■ **Hare Moss and Auchencorth Moss LNCS** (Route Option 3D) – cannot be avoided or spanned.<br><br>■ **River North Esk - Drumbuie to Brunston Castle LNCS** (Route Option 3D) – cannot be avoided or spanned.<br><br>■ **River North Esk – Dalkeith to Carlops NCS** (Route Option 3D) – cannot be avoided but could be spanned.<br><br>Route Option 3E does not contain any LNCs. | Route Options 4A partly covers the Erraid Wood SWT and Route Option 4B entirely covers the Milkhall Pond, however both can be avoided through detailed routeing.<br><br>Route Options 4A-4Ccross, either entirely or partially, 15 LNCS. **The Dalmahoy Hill / Kaimes Hill / Ravelrig Quarry (biodiversity / geodiversity) LNCS cannot be avoided or spanned**.<br><br>The following cannot be avoided, but could be spanned:<br><br>■ Harelaw Reservoir/Water of Leith/Bavelaw Burn/Black Springs/Threipmuir & Harlaw Reservoirs (biodiversity / geodiversity)<br><br>■ Howden Burn/Redford Brae & Laverock Dale/Torduff Reservoir & Bonaly Burn<br><br>■ Glencorse Valley and Logan Burn (biodiversity)<br><br>■ Bush Estate and Glencorse Burn (biodiversity)<br><br>■ Bonnyrigg to Penicuik Railway (biodiversity)<br><br>■ River North Esk – Dalkeith to Carlops (biodiversity)<br><br>■ Beeslack Wood and Haughhead (biodiversity)<br><br>■ Leadburn Community Woodland (biodiversity)<br><br>Route Option 4C does not contain any SWTs within the Route Option. | proximity to the Route Options. Whilst careful placement and mitigation at the detailed routeing stage can avoid/minimise impacts on many of these designations, they cannot be avoided in their entirety.<br><br>It has been assumed for the purposes of this appraisal that distances of 80-100m can be spanned by a wood pole line. All options cross at least one LNCS which it will not be possible to span or avoid.<br><br>Route Option 2 and 3 cross an SSSI which cannot be avoided through routeing. |
| **Cultural Heritage** | ■ Scheduled Monuments (Holford Rule 1)<br>■ Listed Buildings (Holford Rule 1)<br>■ Conservation Areas (Holford Rule 1)<br>■ Inventory of Gardens and Designed Landscapes (GLD) (Holford Rule 1)<br>■ Inventory of Historic Battlefields (Holford Rule 1) | There are no Scheduled Monuments, Conservation Areas, GLDs, or Historic Battlefields within the overall Route Option.<br><br>There are 23 Listed Buildings (21 Cat B, 2 Cat C) and 167 known non-designated heritage assets throughout overall Route Option, with Route Option 1F containing the most Listed Buildings (12) and Route Option 1A containing the most non-designated heritage assets (65). Therefore, **there is likely to be unavoidable impacts on the setting of Listed Buildings and non-designated heritage assets.** | There are no Scheduled Monuments, GDLs or Historic Battlefields within Route Option 2.<br><br>There are 15 Listed Buildings (11 Cat B and 4 Cat C) located in Route Option 2. 13 of the Listed Buildings are situated in the Carlops Conservation Area, which is also party located within Route Option 2. Route Option 2 does not appear to be located on key views through and towards these Conservation Areas and so is unlikely to affect how this Conservation Area and Listed Buildings are experienced or perceived.<br><br>There are 109 known non-designated heritage assets located within the Route Option 2, and these constraints will be further established through more detailed routeing. | There are two Scheduled Monuments located within Route Option 3A and 3B, however careful placement and design, is likely to mitigate any potential significant effects. Route Options 3D and3E do not contain any Scheduled Monuments.<br><br>A total of 13 listed buildings (3 Cat A, 6 Cat B, and 4 Cat C) are located within Route Options 3A, 3B and 3E, which **may be susceptible to a change in setting as a result of the introduction of grid infrastructure**. There are no listed buildings within Route Option 3D.<br><br>Route Option 3A crosses two Conservation Areas, however, careful route alignment, tower placement and design, is likely to mitigate any potential significant effects. There are no further Conservation Areas located within Route Options 3B, 3D and 3E.<br><br>The only GLD is located within Route Option 3D. This should be avoided. There | Route Option 4A has one Scheduled Monument, however as this asset is below ground it is unlikely that it will be subject to significant changes in its setting as a result of an OHL. Route Options 4B and 4C do not contain any Scheduled Monuments.<br><br>There are 27 Listed Buildings (3 Cat A, 6 Cat B, 18 Cat C) within Route Options 4A – 4C. There are likely to be **unavoidable impacts on Listed Buildings** within the route option, which will need to be minimised through the detailed routeing phase.<br><br>There are three Conservation Areas within Route Options 4A (two) and 4B (one); careful alignment, pole placement and design, is likely to mitigate any potential significant effects.<br><br>There are no GDLs, and Historic Battlefields within the overall Route Option.<br><br>There are **136 known non-designated heritage assets within the overall Route Option**, and further assessments would be | There are a number of designated cultural heritage features (Scheduled Monuments, Listed Buildings, Conservation Areas, GDLs, Historic Battlefields), and non-designated heritage assets in all the Route Options.<br><br>Whilst careful placement and mitigation at the detailed routeing stage will minimise a number of impacts on setting, unavoidable impacts on the setting of cultural heritage features are likely with all options.<br><br>**On balance, Route Option 2 is least favoured from a cultural heritage point** |

| Criterion | Sub-Criteria | Overall Route Option 1 – Comprising 1A-1B-1D-1F | Route Option 2 | Overall Route Option 3 – Comprising 3A-3B-3D-3E | Overall Route Option 4 – Comprising Route Option 4A-4B-4C | Preferred Route Option |
|---|---|---|---|---|---|---|
| | ■ Non-Designated Heritage Assets (Holford Rule 2) | | | are no further GDLs located within the other Route Options.<br><br>**The Battle of Rullion Green Historic Battlefield** is located within Route Option 3B. There are no further Historic Battlefields located within the remaining Route Options. It is unlikely that the Historic Battlefield can be spanned or avoided, and the OHL will result in changes in setting, and how the asset is experienced. Undergrounding will be at risk of damaging below-ground heritage assets. **This area should be avoided.**<br><br>There are 131 non-designated heritage assets located within the overall Route Option and these constraints will be further established through more detailed routeing. | required to establish if there would be any impact on their setting through the careful routeing of the OHL. | **a view due to impact on historic landscapes.** |
| **Forestry and Woodland** | ■ AWI (Holford Rule 1)<br>■ NWSS (Holford Rule 2)<br>■ NFI (Holford Rule 5) | The overall Route Option contains 18 AWI records (17 in route option 1A and one partly within route option 1D); totalling 33.6ha. Careful detailed design could avoid impacts on AWI.<br><br>There are 31 records of NWSS within or partially within the overall Route Option (16 in route option 1A, one in route option 1D and 14 in route option 1F); totalling 44.9ha. Careful detailed design could avoid impacts on NWSS.<br><br>There are 241 records of NFI within or partially within the overall Route Option (99 in route option 1A, 48 in route option 1D and 94 within route option 1F); totalling 772.8ha. Some loss of NFI forest cover would be unavoidable in the overall Route Option. | There are **21 AWIs (totalling 62.1ha) within or partially within Route Option 2**, which can be avoided through detailed routeing.<br><br>Otherwise, there are 19 NWSS records (totalling 24.4ha) and 90 NFI records (totalling 190.1ha) within, or partially within, Route Option 2. There **may be some unavoidable impacts to forestry,** but some can be avoided through detailed routeing. | The overall Route Option contains 35 AWI records (19 in route option 3A, 14 within or partially within 3B and one partly within each of route options 3D and 3E); totalling 115.2ha. **Not all AWI records can be avoided through detailed routeing; some loss to AWI will be unavoidable.**<br><br>There are 29 records of NWSS within or partially within the overall Route Option (13 in route option 3A, 14 in route option 3B and 2 in route option 3D); totalling 39.627ha. There are no NWSS records within route option 3E. Careful detailed design could avoid impacts on NWSS.<br><br>There are 215 records of NFI within or partially within the overall Route Option (90 in route option 3A, 57 in route option 3B, 12 in route option 3D and 56 within route option 3E); totalling 405.8ha. Some loss of NFI forest cover would be unavoidable in the overall Route Option. | The overall Route Option contains 27 AWI records (19 in route option 4A and eight within or partially within 4B); totalling 80.5ha. There are no AWI records within route option 4C. **Not all AWI records can be avoided through detailed routeing; some loss to AWI will be unavoidable.**<br><br>There are 21 records of NWSS within or partially within the overall Route Option (13 in route option 4A and eight in route option 4B); totalling 37.7ha. There are no NWSS records within route option 4C. Careful detailed design could avoid impacts on most of the NWSS, however one area within route option 4B cannot be avoided.<br><br>There are 197 records of NFI within or partially within the overall Route Option (90 in route option 4A, 56 in route option 4B, and 51 in route option 4C); totalling 413.3ha. Some loss of NFI forest cover would be unavoidable in the overall Route Option. | There may be unavoidable impacts on forestry and woodland with all route options. **However, Route Option 4 contains AWIs which are unlikely to be avoided through detailed routeing and is least preferred.** |
| **Peat, Geology, Hydrology & Hydrogeology** | ■ NatureScot Priority Peatland Habitats (Class 1 and Class 2) (Holford Rule 1).<br>■ NatureScot Peatland Habitats (Classes 3, 4 and 5).<br>■ Geological Conservation Review Areas<br>■ Waterbodies / Watercourses | There is evidence of peatland throughout the overall Route Option however, none of this peatland is priority peatland habitat.<br><br>There are no Geological Conservation Review (GCR) Areas within the overall route option.<br><br>The overall Route Option crosses named and unnamed watercourses.<br><br>The main flood risk area of note is within Route 1F, but this can be spanned with careful alignment in the south of the route, where the flood risk area it is at its narrowest (~120m wide). Route Options 1A, 1B and 1D also cross areas of fluvial flood risk, however it is thought that these areas can be spanned or avoided. | There is evidence of peatland throughout the overall Route Option however, none of this peatland is priority peatland habitat. Some areas cannot be avoided or spanned.<br><br>Route Option partly crosses the Gutterford Burn GCR and the Carlops GCR. It is likely possible to span much of this area; discussions required with NatureScot re detailed routeing.<br><br>Route Option 2 crosses numerous named and unnamed watercourses along its extent.<br><br>The upper extent of the River North Esk also runs through Route Option 2, and the North Esk Reservoir is also noted. However, the reservoir could be avoided through detailed routeing. | Route Option 3E crosses over a large area of Class 1 priority peatland southeast of Deepsyke Forest. This area is between 460m and 1.1km long and extends the full width of the route. **The Class 1 peatland cannot be spanned or avoided**.<br><br>There is also Class 3-5 peat within Route Options 3D and 3E which **cannot be avoided.**<br><br>Route Option 3D crosses the northern boundary of the Carlops GCR; this could be avoided through detailed routeing.<br><br>The overall Route Option crosses named and unnamed watercourses.<br><br>Route Option 3B passes through a Drinking Water Protected Area which **cannot be avoided through routeing.** | There is evidence of peatland throughout the overall Route Option however, none of this peatland is priority peatland habitat and it can be avoided or spanned through detailed routeing.<br><br>There are no Geological Conservation Review (GCR) Areas within the overall route option.<br><br>The overall Route Option crosses named and unnamed watercourses.<br><br>Route Option 4C does not include any areas of fluvial flood risk, however Route Options 4A and 4B both include areas prone to flooding, however these can be spanned or avoided through careful routeing. | There is Class 1 priority peatland within Overall Route Option 3 **which cannot be spanned or avoided,** and is therefore the least preferred route.<br><br>Route Options 2 crosses the Carlops GCR and Gutterford Burn GCR, which is now an SSSI.<br><br>Route Options 1, 2, and 4 all cross non priority peatland habitat, most of which may not be avoidable, and therefore there is no overall |

| Criterion | Sub-Criteria | Overall Route Option 1 – Comprising 1A-1B-1D-1F | Route Option 2 | Overall Route Option 3 – Comprising 3A-3B-3D-3E | Overall Route Option 4 – Comprising Route Option 4A-4B-4C | Preferred Route Option |
|---|---|---|---|---|---|---|
| | ■ Flood Zones and Drinking Water Protection Areas (DWPA) | The overall Route Option crosses through DWPAs; some of the DWPA in 1A can be avoided through detailed alignment. | There are some areas of flood risk located within Route Option 2. However, they are considered sufficiently narrow that they can be spanned or avoided through routeing. | The overall Route Option contains areas of flood risk which can be spanned or avoided through detailed design.<br><br>Route Option 3D crosses over priority peatland habitat in the south of the routes. **There is scope within Route Option 3D to avoid the Class 1 priority peatland habitat**. | Route Option 4B crosses the Glencorse Burn DWPA which **cannot be avoided through routeing**. | preference between Route Option 1, 2 and 4.<br><br>Whilst all route options cross flood risk areas, it should be possible to span these through careful routeing.<br><br>All route options with the exception of route option 2 cross DWPAs which cannot be avoided. |
| **Planning and Development** | Planning and Development:<br>■ Local Development Plan (LDP) Allocations. (Holford Rule 7)<br>■ Committed Development (Consented and Undetermined1 Planning Applications) since 2019[2].<br>■ Scotland Land Capability for Agriculture Classes 1, 2 and 3.1 (Holford Rule 7)<br>■ Coal Authority Reporting Area for Planning | The overall route option contains several City of Edinburgh Local Development Plan (LDP) housing allocation sites (Riccarton Mains Road, Curriehill Road, Newmills Road and Ravelrig Road), a cycleway footpath allocation and a minerals site which can be avoided though detailed routeing.<br><br>The overall route option contains the following City of Edinburgh Council committed developments which can be avoided through detailed routeing:<br>■ 18/09397/FUL – permission granted at appeal for demolition of existing barn and formation of new kennels at Currievale Farm, Currie<br>■ 21/01053/FUL – permission granted for 2 new dwellinghouses at The Mill House<br>■ 22/03017/FUL – permission granted for a new electricity feeder station from the railway at the proposed electricity substation, Riccarton Mains Road, Currie<br>■ 23/00373/FUL – permission to reposition the house plots at The Mill House<br><br>The overall route option contains the following West Lothian Council committed developments which can be avoided through detailed routeing:<br>■ 0311/FUL/20 – permission granted for a second access to Camilty Wind Farm, at Camilty Plantation<br>■ 0320/FUL/21 – permission granted for 6 turbines at Camilty Plantation<br>■ 0300/FUL/23 – pending determination for eight houses near Kirknewton<br><br>The overall route option contains the following Scottish Borders Council committed developments which can be avoided through detailed routeing: | Within the City of Edinburgh Council there is one committed development for the installation of a new electricity feeder station at Riccarton Mains Road, Currie (22/03017/FUL). This will be considered at the detailed routeing stage as appropriate.<br><br>Within Scottish Borders Council, a pending planning application for a holiday leisure centre for 150 holiday lodges (ref. 19/00153/FUL) can be avoided through detailed routeing.<br><br>Route Option 2 includes small sections of prime agricultural land (Class 2 & 3.1) either side of Currie's railway line which cannot be avoided through detailed routeing. There is no prime agricultural land in the rest of Route Option 2.<br><br>The route is located within a Coal Authority consultation area and falls partly within a 'development high risk area'. Development high risk areas should be avoided as best possible through detailed routeing however it is possible to avoid or span areas of concern. | Within the City of Edinburgh Council there is one committed development for the installation of a new electricity feeder station at Riccarton Mains Road, Currie (22/03017/FUL). This will be considered at the detailed routeing stage as appropriate.<br><br>Within Midlothian Council there is a planning consent for the erection of three self-catering holiday pods at Old Rullion Cottage, Penicuik (20/00736/FUL) and a live peat extraction site at Auchencorth Moss (16/00202/ROMP) which can be spanned or avoided during detailed routeing.<br><br>Route Options 3A and 3B includes small sections of prime agricultural land (Class 2 & 3.1) either side of Currie's conurbation and railway line and around Easter Howgate, which are **unlikely to be avoidable or spanned** through detailed routeing.<br><br>The overall route option falls within the Coal Authority Mining Reporting Area with some potential development high risk areas within route options 3D and 3E. Within route options 3D and 3E the presence of mine entries will require further site investigation to determine the depth and condition to inform detailed routeing. | Within the City of Edinburgh Council there is one committed development for the installation of a new electricity feeder station at Riccarton Mains Road, Currie (22/03017/FUL). This will be considered at the detailed routeing stage as appropriate<br><br>The overall route option contains several Midlothian Council LDP allocations for: Midlothian Snowsports Centre, strategic housing land allocations, Midlothian Science Zone which can be avoided through detailed routeing.<br><br>Route Option 4B contains two Midlothian Council housing developments and one tourist development which can be avoided through detailed routeing:<br>■ Housing development for 395 new dwellings on land south-east of Auchendinny Brae (MC refs: 20/00089/DPP, 22/00848/DPP, and 23/00474/DPP).<br>■ Housing development for 45 dwellings on land of former Wellington School, south of Penicuik (MC ref: 20/00144/DPP).<br>■ 23/01488/FUL DPP – permission granted for the erection of three glamping pods and associated infrastructure at land West Of Old Station Cowdenburn West Linton Scottish Borders<br><br>There is an approved application (Scottish Borders ref: 23/00678/HAZ for 48 tonnes of overground Liquid Petroleum Gas (LPG) storage in relation to agricultural heating, which can also be avoided during detailed routeing.<br><br>Route Options 4A and 4B contain some prime agricultural land either side of Currie's conurbation and the railway line, and around Hillend and Seafield. This is **unlikely to be avoidable or spanned in Route Option 4B.** | There is **no overall preference** in planning and use terms. All route options include consented or submitted planning applications which can be avoided through detailed routeing.<br><br>All route options contain small sections of prime agricultural land which it may not be possible to avoid or span and will require further investigation regarding Coal Authority high risk areas. |

[1] Undetermined planning applications are those which have been validated, i.e. are 'live' applications, but have not yet been decided.
[2] It is not considered that development prior to 2019 should be included.

| Criterion | Sub-Criteria | Overall Route Option 1<br>– Comprising 1A-1B-1D-1F | Route Option 2 | Overall Route Option 3<br>– Comprising 3A-3B-3D-3E | Overall Route Option 4<br>– Comprising Route Option 4A-4B-4C | Preferred Route Option |
|---|---|---|---|---|---|---|
| | | ■ 21/01619/FUL – permission granted for 6 self-contained accommodation units on land south of Willow House, Garvald.<br>■ 22/01744/FUL - permission granted for a slurry lagoon at Hyndfordwells Farm, West Linton. The site area for the development is 0.78ha and it is not clear if this permission has been implemented / completed.<br>Route Options 1A and 1D include some small areas of mineral allocations for construction aggregates.<br>Route Option 1A includes small sections of prime agricultural land (Class 3.1) either side of Currie's conurbation and railway line. The OHL is not likely to impact the ability of the surrounding land to remain in agricultural use.<br>Part of route options 1A and 1F are located within a Coal Authority consultation area and a Coal Authority Mining Reporting Area. Development high risk areas and mine entries should be avoided as best possible through detailed routeing. | | | The overall route option falls within the Coal Authority Mining Reporting Area with some potential development high risk in route option 3B. Part of route option 3C broadly follows the Southern Upland fault line, some of which is classed as a high risk area. Placing any infrastructure directly over or in vicinity of the fault line should be avoided where possible through detailed routeing. | |
| **Technical**<br>**(provided by SPEN)** | ■ Altitude and topography<br>■ Existing infrastructure<br>■ SP Energy Networks Land Use Risks | Almost the entire Route Option 1 has an altitude above 200m, except Route 1A of which approximately 95% is less than 200m. The maximum altitude within Route 1 is approximately 430m.<br>Given the long length of this route, the slope varies significantly throughout, Route 1A has the most even ground with around 80% having a gradient of less than 6°, although this rises to a maximum of 24° in some sections. Route 1B and 1D have a more uneven terrain with roughly 50% of this section having a gradient less than 6° with a maximum gradient of 28°. Route 1F has a varied gradient along its route, with a long stretch of the route having a gradient of less than 6° and has a maximum gradient of 32°.<br>Curriehill Railway Station lies within Route Option 3A with a possibility of a double crossing between Currie S/S and National Cycle Route 75. Cognisance of statutory clearance requirements for rail crossings are to be considered.<br>The overall route contains a number of existing OHL transmission and distribution infrastructure crossings including 11kV, 275kV, 132kV and 400kV; mostly located within route option 1A.<br>There are several A roads, private access tracks and minor roads within the overall route option which will need to considered during detailed routeing.<br>Route options 1A contains a high-pressure gas pipeline which would be crossed twice. | Most of Route Option 2 has an altitude above 200m. The maximum altitude within Route 2 is approximately 400m.<br>Given the length of this route, the slope varies significantly throughout, the first section remains mostly below 6°, before becoming more uneven along the rest of the route, with only approximately half of the route with a gradient less than 6°. Around 5% if this route has a technically difficult gradient above 22°, with a maximum of approximately 39°.<br>Curriehill Railway Station lies at the start of Route Option 2, with a possibility of a double crossing between Currie SIS and National Cycle Route 75. Cognisance of statutory clearance requirements for rail crossings will be required during detailed routeing.<br>Route Option 2 crosses the Tarmac Ravelrig Quarry, which has an **amber risk rating** due to known presence of mine workings.<br>There are a number of minor road/track crossing along this route in which statutory clearance requirements will need to be considered. Deanfoot Road and the A701 are also crossed within this route. The A70 road runs along the most northern boundary of Route Option 2. The A702 road runs north-south across the middle of Route Option 2.<br>A high-pressure gas pipeline is crossed near Buteland farm, a full utility search would be required to establish extents of | Most of Route 3 is at altitude above 200m, which in Scotland, altitudes above 200m AOD are technically, by design, considered to be an extreme environment due to high wind and ice loading. The maximum altitude within this corridor is approximately 375m.<br>Given the long length of this route, the slope varies significantly throughout, although a lot of this corridor has a more even surface with approximately 75% of the corridor with a gradient less than 6°. As previously mentioned, there is a lot of topographical variety throughout however, reaching a maximum of 50°, a gradient of this magnitude can cause significant technical challenges during construction as well as operation.<br>Curriehill Railway Station lies within Route Option 3A with a possibility of a double crossing between Currie S/S and National Cycle Route 75. Cognisance of statutory clearance requirements for rail crossings are to be considered.<br>Route Option 3A crosses the Tarmac Ravelrig Quarry, which has an **amber risk** rating due to known presence of mine workings.<br>The MOD Castlelaw and Dreghorn Training Area and Ranges (c. 775ha) runs to the south of Dreghorn Training Area and Barracks to Castlelaw Hill. Whilst some public access is allowed through public rights of way, some of the area is fenced off and it is unlikely that the development will be allowed to run through this area. | Route 4C has an attitude above 200m. Some sections of Routes 4A and 4B have an altitude below 200m although these routes are mixed, with a maximum altitude reaching 300m in Routes 4A and 4B and reaching 375m in Route 4C.<br>Given the long length of this route, the slope varies significantly throughout, Routes 4A and 4B are more even, with around 80% of these sections having a slope below 6° and reaching a maximum gradient of around 30°. Route 4C is slightly more challenging, with a maximum slope of around 39°.<br>Curriehill Railway Station lies within Route Option 3A with a possibility of a double crossing between Currie S/S and National Cycle Route 75. Cognisance of statutory clearance requirements for rail crossings are to be considered.<br>Route Option 4A crosses the Tarmac Ravelrig Quarry, which has an **amber risk** rating due to known presence of mine workings.<br>The MOD Castlelaw and Dreghorn Training Area and Ranges (c. 775ha) runs to the south of Dreghorn Training Area and Barracks to Castlelaw Hill. Whilst some public access is allowed through public rights of way, some of the area is fenced off and it is unlikely that the development will be allowed to run through this area.<br>Route Option 4A has a number of larger roads which will require crossing including a double roundabout and junctions on the A702 into Biggar Road, as well as Old | **All route options cross altitudes above 200m, which is considered to be an extreme environment due to high wind and ice loading.**<br>All route options cross the Tarmac Ravelrig Quarry, which has an 'amber risk' rating due to known presence of mine workings. However, it may be possible to avoid this through detailed routeing.<br>Statutory rail crossing clearance ratings will need to be considered for all route options, with other considerations including road crossings and high-pressure gas pipelines.<br>Routes 3 and 4 have an additional constraint in terms of the MOD training area whilst Route Option 4 also crosses the Glencorse Golf Club. This is considered to carry a red (High risk) rating for technical feasibility**.** |

| Criterion | Sub-Criteria | Overall Route Option 1<br>– Comprising 1A-1B-1D-1F | Route Option 2 | Overall Route Option 3<br>– Comprising 3A-3B-3D-3E | Overall Route Option 4<br>– Comprising Route Option 4A-4B-4C | Preferred Route Option |
|---|---|---|---|---|---|---|
| | | Route Option 1A crosses the Tarmac Ravelrig Quarry, which has an **amber risk** rating due to known presence of mine workings. | all utility services found within the route option. | A number of larger roads would require crossing including a double roundabout and junctions on the A702 into Biggar Road, Old Pentland Rd, A703 and running parallel to A702 and A766.<br><br>Route Options 3A and 3B cross or are in proximity to a large amount of OHLs (total of 31).<br><br>There are 2 high pressure gas pipeline crossings along this route which cannot be avoided. | Pentland Rd, A703 and running parallel to A702.<br><br>Route Option 4 is in proximity to a number of existing OHLs.<br><br>A high-pressure gas pipeline spans the whole width of Route Option 4B and cannot be avoided.<br><br>**Route Option 4B crosses the Glencorse Golf Club. This is considered to carry a red (High risk) rating for technical feasibility.** | |
| **Overall Preference** | | **The overall preferred route option for the Cloich Forest Wind Farm Connection Project is Overall Route Option 1.**<br><br>All route options are considered challenging with respect to landscape and visual amenity. They all pass through the Pentland Hills SLA and LCTs with a medium to high susceptibility to OHL development. There are also a number of sensitive receptors (residential, tourism and recreation) in close proximity to all the route options, and in some cases, it will not be possible to avoid the 150m 'trigger for consideration' zone. Furthermore, all route options have potential impacts on peatland, and it is likely that impacts on forestry are unavoidable with all route options.<br><br>The comparative appraisal of all the Overall Route Options has identified that at approximately 25km, Route Option 2 is considerably shorter than the other three options which are all approx. 40km in length. However, Route Option 2 raises the greatest concerns (and consenting risk) from a landscape and visual amenity perspective given that it traverses the centre of the Pentland Hills, albeit at the 'least worst' crossing point in landscape and visual amenity terms. Route Option 2 also crosses the North Esk Valley SSSI which cannot be avoided. Route Option 2 is also least favoured from a cultural heritage point of view due to the potential impact on historic landscapes.<br><br>Furthermore, due to the higher altitude, there would be a requirement for shorter span lengths to cross the Pentland Hills as a result of the steeper topography, with increased infrastructure as a result. The topography within Route Option 2 would also make accessing the line for construction and maintenance particularly challenging.<br><br>Route Options 3 and 4 are considered more sensitive than Route Option 1 in terms of landscape and visual amenity around Penicuik and Auchendinny; and as they pass through the Pentlands SLA and the northern edge of the Pentlands Regional Park and Bonaly Country Park. Similarly, from a heritage perspective, Route Options 3 and 4 cross two Conservation Areas to the north which include Listed Buildings.<br><br>Route Option 3 also crosses a large swathe of Class 1 priority peatland which cannot be avoided; and an SSSI which cannot be spanned; and the Battle of Ruillion Inventory of History Battlefields record, which also cannot be avoided. Furthermore, Route Options 3 and 4 raise additional 'technical' concerns in terms of the existence of an MOD training area, and the requirement to cross a golf course within Route Option 4.<br><br>Route Option 1 presents its own challenges, as would be expected with a route of this length and in this location. For example, it crosses an LNCS which cannot be spanned or avoided, crosses two SLAs and LCTs with a medium to high susceptibility to OHL development and would potentially impact a number of visual amenity receptors (residential, recreational and tourist), subject to detailed routeing. There are likely to be unavoidable impacts on the setting of Listed Buildings and non-designated heritage assets and there are a number of existing and consented developments which would have to be taken into account at the detailed routeing stage.<br><br>However, it is considered that Overall Route Option 1 is the preferred route option. This is because Overall Route Option 1 is considered to best meet the routeing objective in that, on balance, it causes the least disturbance to the environment and the people who live, work and enjoy recreation within it. It will henceforth be referred to as the 'Preferred Route Option'. | | | |

# Appendix E

## Landscape Susceptibility Appraisal

**E.1** Landscape susceptibility is assessed with reference to the existing landscape characteristics and attributes of the landscape. Accordingly, the NatureScot (previously SNH) web based 2019 Landscape Character Assessment has been used as the basis for determining landscape susceptibility across the study area. The following Landscape Character Types (LCT) fall within the study area and are mapped on **Figure 5.1b.**

- LCT 90 – Dissected Plateau Moorland
- LCT 92 – Plateau Outliers
- LCT 99 – Rolling Farmland - Borders
- LCT 102 – Upland Fringe with Prominent Hills
- LCT 104 – Upland Fringe Rough Grassland
- LCT 114 – Pastoral Upland Valley
- LCT 201 – Plateau Farmland – Glasgow & Clyde Valley
- LCT 212 – Moorland Hills – Glasgow Clyde Valley
- LCT 268 – Upland Hills - Lothians
- LCT 269 – Upland Fringes - Lothians
- LCT 270 – Lowland River Valleys – Lothians
- LCT 274 – Lowland Plain

**E.2** The LCTs have been verified through fieldwork and the landscape character assessment provides a useful assessment tool for this routeing appraisal.

**E.3** Each LCT which is potentially affected by a route option has been evaluated (on its susceptibility to being changed by OHL development of the type proposed) and categorised as having higher to lower susceptibility. The application of professional judgement in the use of the LCT also draws on the principles set out in the Holford Rules. Indicators of the relative levels of landscape susceptibility to accommodate OHL development are shown in the table below:

**Table E.1: Indicators of Landscape Susceptibility**

| Landscape Susceptibility | Characteristics indicating a lower susceptibility to OHL development | | Characteristics indicating a higher susceptibility to OHL development |
|---|---|---|---|
| Grades | **Lower** | **Medium** ⟷ | **Higher** |
| Indicators | Landscape character, existing land use, pattern, scale and attributes are robust and tolerant of the change resulting from OHL development. The change could be accommodated without geographically extensive and/ or significant adverse effects on (or loss of) key perceptual, physical or aesthetic characteristics. | | Landscape character, existing land use, pattern, scale and attributes are vulnerable to being changed or lost resulting from the introduction of OHL development. Key perceptual and aesthetic characteristics are vulnerable to change or loss. |

**E.4** For each LCT, the key characteristics are analysed to inform an overall judgement on the LCT's susceptibility to OHL development (refer to Figure B.2). The following table outlines the rationale for determining landscape susceptibility in relation to key landscape characteristics:

**Table E.2: Characteristics influencing Landscape Susceptibility**

| Characteristics | Characteristics indicating a lower susceptibility to OHL development | Characteristics indicating a higher susceptibility to OHL development |
|---|---|---|
| Landform and Scale | Flatter or gently undulating landscapes<br>Broad valley landscapes<br>Larger scale landscapes | Steep, complex landscapes<br>Complex topography<br>Intimate scale landscapes |
| Landcover and Pattern | Arable, pasture, rough grassland<br>Moorland<br>Simple patterns<br>Landcover which can recover quickly/ does not require complex engineering solutions | Continuous woodland<br>Bog, peat, wetlands<br>Complex patterns<br>Landcover which recovers slowly/ requires complex engineering solutions |
| Human influence | Industry, arable farming, presence of large built structures, disturbed areas<br>Landscapes which have experienced a higher level of human influence<br>More developed/ managed landscapes | Remote landscapes<br>Areas with natural characteristics<br>Landscapes with little evidence of human influence |
| Visual experience | Interrupted horizons<br>Simple skylines | Uninterrupted horizons<br>Distinctive/ complex skylines |
| Settlements | Industrial<br>Sparsely settled arable | Residential<br>Dense patterns of isolated farmstead/ small scale settlements |

**E.5** The following table presents LUC's appraisal of landscape susceptibility to OHL development with reference to the LCT through which the route options pass.

**E.6** This table is divided into three sections representing the area to the south-east of the Pentland Hills (as defined by the Landscapes of Scotland dataset), the Pentland Hills themselves, and the area to the north of the Pentland Hills

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| South-east of Pentlands (Landscapes of Scotland) | | |
| LCT 92- Plateau Outliers<br><br>(extends across Cloich Hills and the site of the Cloich Forest Wind Farm) | Landform and scale – this LCT has a more pronounced relief with a *'greater height difference between summits and valley floors'* in comparison to surrounding LCTs. Hill summits are pronounced, rather than plateaued, and may contain rocky outcrops and scree and are separated from the main plateau by v-shaped river valleys. The presence of major valleys and pronounced hills results in a range of scales.<br><br>Landcover and pattern – a predominant feature of the landscape is the large areas of forestry, though there is a 'textured mosaic' of ground cover, including rough grassland and heather in upland regions. Lower slopes contain some improved grassland. Within the study area, Cloich Forest occupies the majority of this LCT area at over 1000ha in size, along with access tracks to the plantation.<br><br>Human influence – the presence of minor roads within the valley floors, providing access to properties, results in a relatively high visual sensitivity. Within the study area, there are a number of scheduled monuments, thought the most significant within the LCT are located just outside the study area, including White and Black Meldon.<br><br>Visual experience – higher elevations provide 'wide horizons and distant views', overlooking surrounding LCTs. Due to the greatest difference in height between landscape features, outward views vary and a contrast between the uplands and lowland regions is noted. Within the study area, the character is more enclosed due to the large-scale woodland plantation, thus long-distance views are limited in regions.<br><br>Settlements – overall, settlements in this LCT are low density and contained mainly within sheltered valleys, with access tracks traversing the valley floors. Within the study area, the majority of settlements in this LCT are confined to the north | The key characteristics indicate a **medium** susceptibility to OHL development.<br><br>  <br>View northwest from Cloich Forest |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | of the LCT area, close to main road A701. Views from settlements within the Scottish Borders council area are indicated in the western extents, near main road A701. | |
| LCT 99 – Rolling Farmland - Borders (area including settlement of West Linton) | Landform and scale – the landform is gently undulating with more pronounced features at higher elevations. the '*flat or constant gentle gradients'* afford long distance views.<br><br>Landcover and pattern – A mix of arable and pastoral land creates a '*strong geometric field pattern'*, which is enclosed by hedgerows and scattered woodland. The south-western section, bordering the Pentlands SLA, is predominantly enclosed farmland. This is in contrast to the north-east section which contains area of forestry, including Deepsyke Forest.<br><br>Human influence – within the study area, the Cross Borders Drove Road walking route cuts through, passing through West Linton in a south-east – north-west alignment. There are a number of listed buildings, scheduled monuments and the conservation areas of West Linton and Carlops. Existing overhead line infrastructure is present at the south edge of Carlops, where there is access to the North Esk Reservoir by road. Dere Street and the Carlisle to Cramon Roman roads also cut through this area, in addition to several Scottish Borders core paths.<br><br>Visual experience – The '*constant gentle gradients'* afford wide horizons, and distant views are afforded overlooking the 'regular geometric field pattern', beyond the lowlands to other upland areas. The field pattern lends to a neat, '*prosperous'* landscape appearance. In contrast, localised landform and woodland areas offer more intimate spaces. From lower lying areas, long distance outward views are afforded intermittently between tree lines. | The key characteristics indicate a **high** susceptibility to OHL development.<br><br>  |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | Settlements – overall, this LCT is 'moderately densely settled' with a minor road network connecting settlements. Within the study area, this LCT contains the town of West Linton and the southern part of Carlops, among other villages of similar vernacular style. Settlements are served by minor roads, with major road A702 running through West Linton, increasing visual sensitivity in the area. The area of highest visibility from settlements within the Scottish Borders council area is adjacent to the A701, running through the south-eastern edge of the LCT. | |
| LCT 102 – Upland Fringe with Prominent Hills | Landform and scale – medium scale landscape with a diverse and rugged landform of *"steep, cone and dome-shaped hills", "smooth undulations"* and *"strongly elongated ridges and hollows".*<br><br>Landcover and pattern – land cover is dominated by pasture with unimproved grassland and heather moorland on the hill slopes and summits. Woodland cover occurs in scattered blocks, shelterbelts and along watercourses, and hedgerows are common across the area.<br><br>Human influence – small settlements and scattered properties introduce human influence into the landscape. Likewise, forestry plantations, overhead lines and roads (including the A701 and A72) highlight the human influence.<br><br>Visual experience – the hills within and surrounding this LCT are the focal point of views. The contrast in landcover, notably between the smaller-scale areas of woodland and pasture and hills provides a sense of contrast.<br><br>Settlements – outside the settlements of Skirling, the settlement pattern is generally of low density and sparse, with isolated farmsteads. | The key characteristics indicate a **medium** susceptibility to OHL development. |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| LCT 104 – Upland Fringe Rough Grassland | Landform and scale – generally a simple and uniform landform with relatively little topographic variety except for *"gentle undulations"* and localised *"mounds and terraces".*<br><br>Landcover and pattern – land cover is predominantly *"tussocky acid grassland"* used for pasture, with large fields divided by drystone dykes and fences. Tree cover is limited.<br><br>Human influence – the A703 cutting through the LCT and scattering of properties introduce human influence into the landscape. The presence of existing overhead lines also highlights the human influence in the landscape.<br><br>Visual experience – the LCT is afforded *"distant and panoramic"* views with visual horizons dominated by the surrounding upland environment. Due to the open nature of the landscape, there is limited opportunities for enclosed views.<br><br>Settlements – the settlement pattern is generally of low density and sparse, with isolated farmsteads. | The key characteristics indicate a **low** susceptibility to OHL development. |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | |  |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | | View from Leadburn Community Woodland, along Peebles Way/ Leadburn Way |
| LCT 114 – Pastoral Upland Valley | Landform and scale – medium scale landscape which is strongly influenced by the surround uplands which enclose it. Generally, the valley is *"flat and narrow"* with localised areas of widening.<br><br>Landcover and pattern – medium sized fields of improved pasture is the predominant landcover along the floodplain, with fields of permanent pasture and arable land on lower slopes. Trees are common throughout the LCT, in the form of *"small to medium scale mature woodlands"* and *"coniferous plantations and shelterbelts".*<br><br>Human influence – Small settlements, scattered properties and the presence of drystone dykes and fences enclosing fields introduce human elements into the landscape. The A703 road runs along river terraces above the valley floor, and several minor roads extend across the valley.<br><br>Visual experience – The abundance of trees found in this landscape, combined with the surrounding upland areas, results in a strong sense of enclosure. Views within the area are *"medium to long in range"* and focussed along the valley with areas of woodland forming the horizon. Views out of and into the area are confined by the surrounding uplands.<br><br>Settlements – Beyond the small settlement of Eddleston, properties and farmsteads tend to be scattered, albeit broadly focused along the A703. | The key characteristics indicate a **medium-high** susceptibility to OHL development. |
| LCT 201 – Plateau Farmland – Glasgow & Clyde Valley | Landform and scale – an '*extensive, open'* landscape characterised by its transitional position between sheltered lowlands and exposed uplands. The landform is generally flat. | The key characteristics indicate a **low** susceptibility to OHL development. |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | Landcover and pattern – tree cover is limited across the landscape and is in decline. The primary land use is agricultural, with large and evenly spaced fields. Some areas of mosses and restored peat are present.<br><br>Human influence – visible signs of human activity are present in the form of major transport routes including A70 and A701, and pylons and telegraph poles.<br><br>Visual experience – the decline in tree cover has reduced the rural character of the area and, as such, the visual prominence of contemporary human elements such as settlements and transport infrastructure has become more apparent. Views across the landscape are wide and open, with few focal points of note, occupying the foreground of views towards hills of adjoining LCTs.<br><br>Settlements – the LCT contains '*visually prominent*' settlements. Within the study area, scattered individual properties are present north-west of Dolphinton. | |
| LCT 269 – Upland Fringes - Lothians | Landform and scale – a large-scale landscape of broad, undulating slopes. The North Esk gorge is a particularly steep narrow valley which comprised a major glacial meltwater channel in the past. This introduces a smaller-scale, more complex feature into the landscape.<br><br>Landcover and pattern – landcover is varied, comprising areas of arable and pasture fields, improved grassland, remnant heather moorland and rough grassland, and shelterbelts, though heather moorland is most extensive across Auchencorth Moss to the east of the Pentlands.<br><br>Human influence – visible signs of human activity are present in the form of transport corridors, small villages and farmsteads, overhead lines, and occasional industrial developments such as quarries. | The key characteristics indicate a **medium-high** susceptibility to OHL development to the east of the Pentlands. |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | Visual experience – The "*simple, open*" and "*low-lying*" nature of Auchencorth Moss contrasts strongly with the Pentland hills, "*accentuating their height*", which enclose longer ranging views from east of the Pentlands.<br><br>Settlements – generally sparsely populated in the Auchencorth Moss area although some small villages such as Leadburn and Howgate are concentrated along major roads, including the A701 and A702 south of Penicuik. |  <br>View north towards the Pentland Hills, including the summits of West Kip and East Kip |
| LCT 270 – Lowland River Valleys - Lothians | Landform and scale – a small-scale and topographically varied landscape, which comprises incised and enclosed meandering river valleys with arable land on upper slopes and fringes. The small valleys of tributaries and burns feeding into the main river of the North Esk create patterns of | The key characteristics indicate a **medium** susceptibility to OHL development. |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | complex *"interweaving slopes".* The North Esk gorge is a particularly unique and complex narrow and steep valley formed by glacial meltwater.<br><br>Landcover and pattern – the area is well-wooded, particularly along rivers, including the notable Ancient Woodland of Roslin Glen. As the valleys open, areas of scrub and pasture become more prominent, with arable land defined by shelterbelts and hedgerows on the upper, gentler slopes.<br><br>Human influence – drystone walls are common around the upper North Est, introducing manmade features into the landscape. This landscape is also heavily influenced by large settlements, villages and scattered properties, and the infrastructure that serve them including the A701 and A702 roads.<br><br>Visual experience – views tend to be focussed along river valleys but are foreshortened by the *"enclosing wooded slopes"* which form a barrier. Within more open areas, long-ranging views to the surrounding hills are afforded.<br><br>Settlements – a highly populated landscape comprising the towns of Penicuik and Loanhead, with several other smaller villages and properties surrounding the towns. | |
| Within Pentlands (Landscapes of Scotland) | | |
| LCT 90 – Dissected Plateau Moorland | Landform and scale – an overall grandeur of scale is noted with strong topographical features consisting of level-topped hills and ridges, separated by steep sided valleys which are '*more intimate'*, enclosed by woodland and surrounding topography. Cauldstane Slap is a notable pass between East Cairn Hill and West Cairn Hill- on the border between this LCT and LCT 268. | The key characteristics indicate a **medium-high** susceptibility to OHL development. |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | Landcover and pattern – the LCT is largely covered by peatland, heather moorland and grassland, leading to a sense of naturalness and a characteristically colourful landscape across the seasons. Within the Pentland Hills in particular, '*distinctly shaped conifer plantations and shelterbelts on lower hill slopes and valley sides'* are present, providing colour contrast with the moorland landcover.<br><br>Human influence – outside the study area, wind farm developments such as Fallago Rig, Crystal Rig And Dun Law exert an existing human influence, forming skyline features in many views. Within the study area, Thieves Road cuts through the LCT, leading from West Linton towards isolated properties. The Cross Borders Drove Road walking route also cuts through, joining Thieves Road at Baddinsgill Farm and later passing Cauldstane Slap perpendicularly. Both routes cross this area of the LCT in an approximately north-south alignment. There is a water pipe running along the valley floor of Medwin Water, on the border of this LCT and LCT 212.<br><br>Visual experience – long distance, open views are afforded across the rolling terrain of the Pentlands from plateaus and the summits of West Carin Hill, Byrehope Mount and The Mount, within the study area. Unobstructed views to adjoining LCTs and distant hills influence the perception of scale and remoteness. In contrast, views from the valleys are enclosed, limited by surrounding hills. Cauldstane Slap is an exception to this, providing 360° views across the Pentland Hills, and the Lothians and Tweedmuir Hills beyond. It is noted as an iconic viewpoint in Scottish Borders council SG.<br><br>Settlements – overall, this LCT has a low settlement density with isolated properties in a dispersed pattern, primary situated within valleys. Within the study area, settlements consist of individual farms located near Baddinsgill Reservoir, clustered around Thieves Road. Views from |  |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | settlements within the Scottish Borders council area are concentrated on peaks in the northern part of the LCT, such as Wether Law and The Mount. | |
| LCT 212 – Moorland Hills – Glasgow Clyde Valley | Landform and scale – a large-scale landscape with a gently sloping plateau, and localised areas of steeper slopes. Hills reach over 400m and consist of rolling moorland.<br><br>Landcover and pattern – landcover is predominantly heather and peat moorland. On the lower slopes rough grazing pasture is more common with occasional forestry blocks.<br><br>Human influence – there is little settlement within this area with the exception of a few isolated farmsteads. Other human influence includes introduction of small-scale forestry and farming (sheep grazing) in the area. There is a water pipe running along the valley floor of Medwin Water, on the border of this LCT and LCT 90.<br><br>Visual experience – the hill tops and elevated slopes offer *"long panoramic views"* and views towards nearby *"landmarks"* in adjacent landscapes. The prominent hills of the Pentlands provide a *"distinctive skyline"* characterised by its undeveloped nature.<br><br>Settlements – the area is largely unsettled due to its inaccessibility, but some isolated farmsteads are located along the periphery of the LCT. | The key characteristics indicate a **medium-high** susceptibility to OHL development.<br>  |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| LCT 268 – Upland Hills - Lothians | Landform and scale – a large-scale and topographically varied landscape. The north-eastern section features two parallel ridgelines in a broadly north-east to south-west alignment, separated by a deep valley which houses Logan Burn and several reservoirs, between major summits including Black Hill and Carnethy Hill. The south-western section contains East Cairn Hill and the northern bank of West Cairn Hill, whose summit is in adjoining LCT 90. Between the hills lies the Cauldstane Slap pass.<br><br>Landcover and pattern – landcover across the area is varied comprising *"heather moor, grassland, broadleaf woodland, open water and wetland"* offering great diversity for habitats. Upper slopes are primarily dominated by rough grazing whilst pasture is common on lower slopes.<br><br>Human influence – human influence is evident throughout the landscape. Although settlement is limited to the peripheral locations, the presence of the A702, drystone dykes and the prominent dry ski-slope at Hillend introduce obviously human elements within the landscape. Less prominent evidence includes the numerous paths and tracks used for recreational purposes which dissect the Pentlands, and occasional military training near Castlelaw Hill. Human activity is focussed across the north, with golf courses and popular hill walking routes being present.<br><br>Visual experience – the hill summits and ridges offer a *"panoramic outlook"*. The prominent hills of the Pentlands are visually important for providing a *"backdrop"* in external views. Key summits Allermuir Hill and Caerketton Hill, and the Caerketton crags, along with the northern slopes of the Pentlands and the Hillend Ski Slope are noted within the view cones of 15 key views from various locations within the City of Edinburgh council area, forming the skyline and backdrop. Additionally, hills such as Scald Law and Carnethy Hill are visible in distant views from SLAs within Midlothian, | The key characteristics indicate a **medium-high** susceptibility to OHL development.<br><br>  <br><br>View from Swanston Golf Course of key summits including Allermuir Hill and Caerketton Hill |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | including from the Gladhouse Reservoir and Moorfoots Scarp SLA, where they form a dramatic backdrop. The Scottish Borders council SG notes Cauldstane Slap as an iconic viewpoint, with panoramic views afforded across the Pentland Hills, and Lothians and Tweedsmuir Hills beyond.<br><br>Settlements – the area is sparsely populated due to its inaccessibility, but some isolated farmsteads and properties are located along the A702 and at lower elevations on the slopes. | |
| LCT 269 – Upland Fringes - Lothians | Landform and scale – broad, undulating slopes at a large scale. Localised landform undulations create '*intimate'* depressions, introducing complex, smaller scale features into the landscape.<br><br>Landcover and pattern – landcover is varied, comprising areas of arable and pasture fields, improved grassland, remnant heather moorland and rough grassland, and shelterbelts. The north-western extents of the Pentlands (Landscapes of Scotland) are predominately covered in coniferous forestry, a mixture of mature and recently planted, which enhances the landform undulations in providing '*intimate'* and '*enclosed'* depressions at a local scale.<br><br>Human influence – visible signs of human activity are present in the form of transport corridors, small villages and farmsteads, overhead lines, and occasional industrial developments such as quarries.<br><br>Visual experience – the LCT provides a visual transition from the upland hills of the Pentlands, '*apparent in the contrasting landforms'* between key summits of the Pentlands and lower lying regions to the north, including LCT 274: Lowland Plain.<br><br>Settlements- there are no settlements within this area of the LCT, but a few scattered individual properties. | The key characteristics indicate a **medium** susceptibility to OHL development within the Pentlands. |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| | |  <br>View from unclassified road south-west of Balerno overlooking Red Moss Nature Reserve in the foreground with the Pentland Hills beyond |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| North-west of Pentlands (Landscapes of Scotland) | | |
| LCT 269 – Upland Fringes - Lothians | Landform and scale – Active and disused quarries form '*craggy visual features in an otherwise simple landscape'*. Localised landform undulations create '*intimate'* depressions, introducing complex, smaller scale features into the landscape.<br><br>Landcover and pattern – landcover is varied, comprising areas of arable and pasture fields, improved grassland, remnant heather moorland and rough grassland, and shelterbelts. Shelterbelts and areas of forestry are more common to the west of the Pentlands with recent shelterbelts planted on lower-lying ground.<br><br>Human influence – visible signs of human activity are present in the form of transport corridors, small villages and farmsteads, overhead lines, and occasional industrial developments such as quarries.<br><br>Visual experience – The LCT provides a visual transition from the upland hills of the Pentlands, '*apparent in the contrasting landforms'* between key summits of the Pentlands and lower lying regions to the north, including LCT 273: Lowland Plateau- Lothians.<br><br>Settlements – Scattered individual properties are located along the A70 on the north-western edge of the Pentlands. Settlements are found further north-west, including Harburn. The northernmost section of this LCT area contains the southern edge of Balerno and properties on minor roads south of Currie. | The key characteristics indicate a **medium-high** susceptibility to OHL development to the west of the Pentlands.<br><br>  <br>View north-west from Harlaw Road |

| Landscape Character Area | Key landscape characteristics | LUC appraisal: Landscape susceptibility to OHL development of the type proposed |
|---|---|---|
| LCT 274 – Lowland Plain | Landform and scale – large-scale landscape comprising *"smoothly rolling"* agricultural land. Smaller scale features include the incised valley of the Water of Leith which runs broadly parallel to the A70.<br><br>Landcover and pattern – the predominant landcover is arable land in medium- to large-scale fields defined by hedgerows and fences. Riparian woodland is present along the Water of Leith, and shelterbelts of woodland are found throughout the area.<br><br>Human influence – The presence of settlements, the transport network and extensive farming have introduced human elements into the landscape. Furthermore, the presence of wind farms and overhead lines provide further evidence of human change.<br><br>Visual experience – Expansive views are possible towards "*nearby landscapes of… hills"* and the area is "*visually important in providing the setting of Edinburgh"* from the west.<br><br>Settlements – The area is heavily populated with numerous villages and hamlets, including the settlements of Currie and Balerno. Smaller settlements and scattered properties are also found throughout this landscape. | The key characteristics indicate a **low** susceptibility to OHL development.<br><br>  <br><br>View west from Torphin Road |

**E.7 Figure E.1** provides a high-level illustration of areas within the study area which have a higher susceptibility to OHL development. The illustration was created by identifying key considerations and layering them, with the darker highlighted areas indicating a greater number of potential constraints, and therefore areas which are more susceptible to development. Considerations include national and local designations, in addition to observations of recreational land use and existing infrastructure which may result in cumulative effect.

National designations include SSSIs, Conservations Areas, Gardens and Designed Landscapes, Ramsar Sites, Special Protection Areas, and Special Areas of Conservation. Local designations include Regional Parks, Country Parks, Special Landscape Areas, Local Nature Reserves, and Scottish Wildlife Trust Reserves. Additional considerations include Peat (Category 1), long distance walking routes, key views, existing infrastructure, and river valleys.

# Appendix F

## Newspaper Adverts

# Cloich Forest Wind Farm Connection Project

SP Energy Networks

# We'd like your views!

**Scotland is a world leader in the fight against climate change.**

Our country has a target of Net Zero carbon emissions by 2045, with the UK aiming for Net Zero by 2050.

To help meet those targets, SP Energy Networks needs to strengthen Scotland's electricity transmission and distribution network so we can transport increasing amounts of clean, green energy from where it's produced to where it's needed.

Our transmission work includes the provision of a new 132kV wood pole overhead line connecting the proposed Cloich Forest Wind Farm substation to the grid at Currie substation.

We have identified a preferred route for the proposed new overhead line, and we would like to hear local people's views to help us develop our plans.

**Our public consultation runs from Monday 13 May 2024 to Monday 17 June 2024.**

We are holding three public exhibitions where you can view our plans and talk to the project team. Information relating to the proposed overhead line, including a virtual consultation room, will also be made available online from the **13th May 2024** at:

**www.spenergynetworks.co.uk/pages/cloich.aspx**

You can leave comments on the website, and you can also contact us in the following ways:

**Email:** **Cloichprojectmanager@spenergynetworks.co.uk**

**Post:** Cloich Project Manager,
Land and Planning Team
SP Energy Networks
55 Fullarton Drive
Glasgow, G32 8FA

At this stage, your comments are not representations to the planning authority. If we do make an application for development consent in future, you will be able to make formal representations to the planning authority at that stage.

## Public exhibitions

| Date | Location |
|---|---|
| 28th May 2024, 11:30am to 6pm | St Andrew's New Church Hall, Main Street, **West Linton**, EH46 7EE |
| 29th May 2024, 1pm to 6pm | Tarbrax Village Hall, Crosswood Terrace, Tarbrax, **West Calder**, EH55 8XE |
| 3rd June 2024, 1pm to 7pm | Balerno Community Centre, 7 - 11 Main Street, **Balerno,** Edinburgh, EH14 7EQ |

# Appendix G

## Consultation Leaflets

## We want to hear your views!

Our consultation period will run between **Monday 13th May and Monday 17th June**. Please submit any comments to us by **midnight on Monday 17th June 2024**. Following this date, the information will remain accessible online and available to download.

Please find details below on how to get in touch with us and find out more:

Visit the website: **www.spenergynetworks.co.uk/pages/cloich.aspx**

Email us: **Cloichprojectmanager@spenergynetworks.co.uk**

Send us a letter

**Cloich Project Manager**,
Land and Planning Team, SP Energy Networks,
55 Fullarton Drive, Glasgow, G32 8FA

Attend a public exhibition

The exhibitions will be held at the following locations and times:

**Tues 28th May 2024 between 11:30am – 6pm**
St Andrew's New Church Hall, Main Street, West Linton, EH46 7EE

**Wed 29th May 2024 between 1pm - 6pm**
Tarbrax Village Hall, Crosswood Terrace, Tarbrax, West Calder, EH55 8XE

**Mon 3rd June 2024 between 1pm - 7pm**
Balerno Community Centre, 7- 11 Main Street, Balerno, Edinburgh, EH14 7EQ.

Visit the online virtual exhibition

**www.spenergynetworks.co.uk/pages/cloich.aspx**

## What happens next

Your comments will be reviewed and fed into the detailed design and alignment for the new OHL, which will be the subject of the Section 37 application to the Scottish Government's Energy Consents Unit The comments received in this consultation will also be collated into a report which will be made publicly available on SP Energy Networks website.

- Detailed Design
- Scoping
- EIA & Second Round of Consultation
- Section 37 Submission

SP Energy Networks

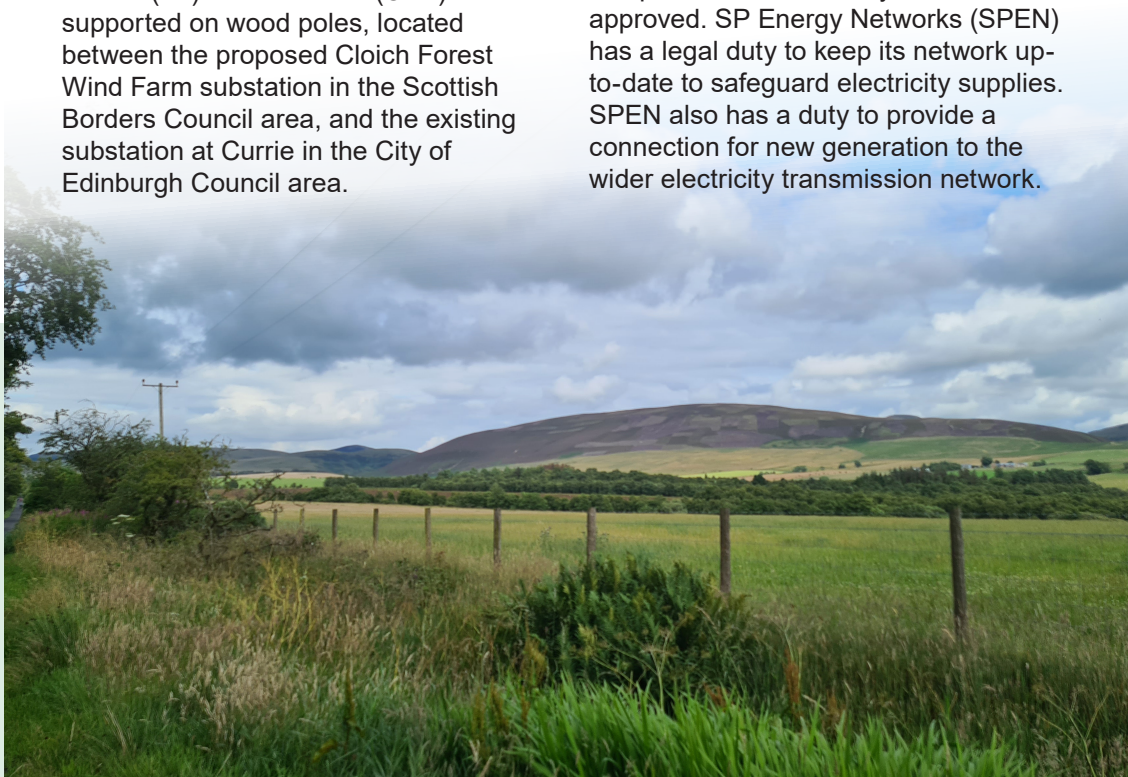
# Cloich Forest Wind Farm Connection Project

## Preferred Route for a New 132kV Overhead Line

## Background

The Cloich Forest Wind Farm Connection Project involves a 132 kilovolt (kV) overhead line (OHL) supported on wood poles, located between the proposed Cloich Forest Wind Farm substation in the Scottish Borders Council area, and the existing substation at Currie in the City of Edinburgh Council area.

The connection is required to allow the proposed Cloich Forest Wind Farm to input into the electricity network if approved. SP Energy Networks (SPEN) has a legal duty to keep its network up-to-date to safeguard electricity supplies. SPEN also has a duty to provide a connection for new generation to the wider electricity transmission network.



## What will the overhead line look like?

The proposed OHL will be supported by trident wood poles with galvanised steelwork cross arms supporting aluminium conductors (wires) on insulators. These are suitable for supporting single circuit lines operating at 132 kV.

Wood poles are dark brown in colour when newly constructed and weather over the years to a light grey. They have a standard height above ground of approximately 14 metres (m), but these can be increased or reduced as required where circumstances dictate, e.g. over elevated land, structures or features.

The distance between wood poles will average between 80 m to 100 m, but can be increased if there is a requirement to span a larger distance due to the presence of a feature in the landscape, such as a reservoir.

The precise pole configuration, height and span will be determined after a detailed line design has been agreed.

Typical trident wood pole

## Preferred Route Option

SPEN has been working with independent environmental consultants to identify options for potential routes for the proposed OHL. Our objective is to identify a route for the overhead line which meets the technical requirements of the electricity system, which are economically viable and cause, on balance, the least disturbance to the environment and the people who live, work and enjoy recreation within it.

SPEN are committed to engaging with stakeholders, including local communities, through the consultation process and your feedback will be used to review the routeing findings and inform the next steps.

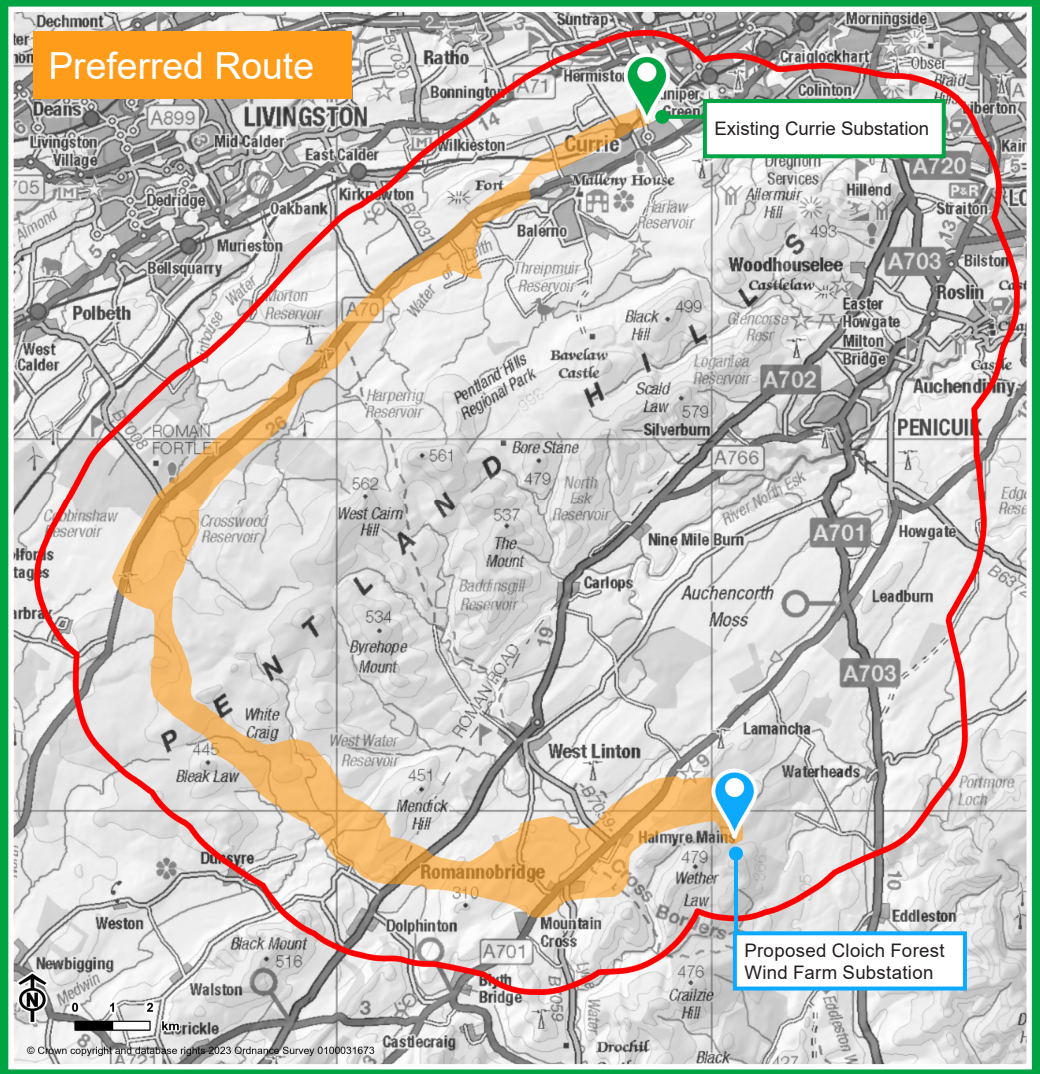
## What we would like your views on?

As part of the consultation we would like your views on:

1. The preferred route for the Cloich Forest Wind Farm Connection Project

2. Any other issues, suggestions or feedback you would like us to consider. We would particularly like to hear your views on your local area, for example areas you use for recreation, local environmental features you would like us to consider, and any plans you may have to build in proximity to the preferred route.

# Cloich Forest Wind Farm Connection Project




More information about the process we have followed to identify, appraise and select the preferred route can be found on the project website:

**www.spenergynetworks.co.uk/pages/cloich.aspx**

Please note comments at this stage are informal comments to SPEN and are made to allow SPEN to determine whether changes to the preferred route are necessary. An opportunity to comment formally to the Scottish Government Energy Consents Unit will follow at a later stage in the process following submission of the Section 37 application.

# Appendix H

## Stakeholder Consultee List

### Consultee List

#### Statutory Consultees

- City of Edinburgh Council
- West Lothian Council
- Scottish Borders Council
- South Lanarkshire Council
- SEPA (south)
- NatureScot
- Historic Environment Scotland

#### Internal Scottish Government Advisors

- Transport Scotland
- Scottish Forestry
- The Coal Authority

#### Community Councils

- Currie
- Balerno
- Ratho and District
- East Calder and District
- Kirknewton
- West Calder and Harburn
- Tarbrax, Woolfords, Auchengray and District
- Black Mount
- West Linton
- Lamancha, Newlands and Kirkurd
- Eddleston and District

#### Non-Statutory Consultees

- British Horse Society
- Telecommunications (Virgin, BT, etc.)
- Civil Aviation Authority
- Crown Estate Scotland
- Defence Infrastructure Organisation
- Edinburgh Airport

- Fisheries Management
- Friends of the Pentlands
- The Water of Leith Conservation Trust
- John Muir Trust
- Kirknewton Airport
- Mountaineering Scotland
- NATS Safeguarding
- National Farmers Union of Scotland
- The Ramblers Association
- RSPB Scotland
- Raptors
- Scottish Rights of Way and Access Society (ScotWays)
- Scottish Water
- Scottish Wildlife Trust
- Scottish Badgers
- South Scotland Red Squirrel Group
- Scottish Outdoor Access Network
- Sports Scotland
- The British Association of Shooting and Conservation
- The Health and Safety Executive
- The National Trust for Scotland
- Network Rail
- Visit Scotland

### Community Councils

- City of Edinburgh:
  - Currie
  - Balerno
  - Ratho and District
- West Lothian:
  - East Calder and District
  - Kirknewton
  - West Calder and Harburn
- South Lanarkshire:
  - Tarbrax, Woolfords, Auchengray, and District
  - Black Mount
- Scottish Borders:
  - West Linton
  - Lamancha, Newlands and Kirkurd
  - Eddleston and District

### Ward Councillors for:

- Pentland Hills
- East Livingston and East Calder
- Clydesdale East
- Tweedale West

### MPs for:

- Edinburgh South West
- Livingston
- Dumfriesshire, Clydesdale and Tweeddale
- Midlothian

### MSPs for:

- Edinburgh Pentlands
- Almond Valley
- Clydesdale
- Midlothian South, Tweeddale and Lauderdale