PROPOSED 132KV GRID CONNECTION, TORFICHEN

Routeing and Consultation Document

January 2026

QUALITY INFORMATION

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Glossary

Term	Definition
AOD	Above Ordnance Datum
ASA	Archaeologically Sensitive Area
BESS	Battery Energy Storage System
BGS	British Geological Survey
BGS	British Geological Survey
BTO	British Trust for Ornithology
CAR	Controlled Activities Regulations
CEMP	Construction Environmental Management Plan
CSE	Cable Sealing End
DIO	Defence Infrastructure Organisation
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Appraisal Report
Electricity Act	The Electricity Act 1989
Electricity Works Regulations	The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000
EPS	European Protected Species
ES	Environmental Statement
FGS	Forestry Grant Scheme
GCN	Great Crested Newt
GIS	Geographic Information Systems
GWDTE	Groundwater Dependent Terrestrial Ecosystem
HER	Historic Environment Record
HES	Historic Environmental Scotland
Holford Rules	Guidelines developed by the late Lord Holford in 1959 for routeing overhead lines
IBA	Important Bird Area
INNS	Invasive Non Native Species
Km	Kilometres
kV	Kilo-volt capacity of an electricity power line
LCT	Landscape Character Type
LCU	Landscape Character Unit
LDP	Local Development Plan
LEPO	Long Established Plantation Origin
LNCS	Local Nature Conservation Site
LNR	Local Nature Reserve
m	metres
MoD	Ministry of Defence
MW	Megawatt
NATS	National Air Traffic Service
NBN	National Biodiversity Network
NCR	National Cycle Route (contextual)
NGC	National Grid Company
NGET	National Grid Electricity Transmission
NNR	National Nature Reserve
NPF4	National Planning Framework 4
NPPG	National Planning Policy Guideline
NWSS	Native Woodland Survey of Scotland
OHL	Overhead line: an electric line in the open air and above ground level
OS	Ordnance Survey
PAC	Pre-Application Consultation

Term	Definition
PAN	Planning Advice Note
PBA	Protection of Badgers Act (used to classify species)
Preferred Route	The preferred route identified through this routeing study process
Proposed Route	The amended proposed route which will go forward to Environmental Impact Assessment
PV	Photovoltaic
PWS	Private Water Supply
RAMSAR	International Wetlands Designation
ROW / PRoW	Public Right of Way
RSA	Regional Scenic Area
RSA	Regional Scenic Area: area identified by local authorities of regional importance for scenic quality. Names vary between local authorities
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SBL	Scottish Biodiversity List
SCO	Scoping Opinion
Section 37 (S37) application	An application for development consent under Section 37 of the Electricity Act 1989
SEDs	Significant Engineering Difficulties
SEPA	Scottish Environment Protection Agency
SNH	Scottish Natural Heritage, rebrand to NatureScot delayed
SP Energy Networks	Scottish Power Energy Networks
SPA	Special Protection Area
SPD	SP Distribution
SPT	SP Transmission
SSSI	Site of Special Scientific Interest
SW	Scottish Water
TCPA	The Town and Country Planning (Scotland) Act 1997
TEP	Torfichen Energy Park
TS	Transmission Substation
UGC	Underground Cable
WCA	Wildlife and Countryside Act
WFD	Water Framework Directive
WLAs	Wild Land Areas

1 INTRODUCTION

1.1 Background to the Project

1.1.1 Scottish Power Energy Networks Holdings Limited (SP Energy Networks) has a legal duty under the Electricity Act 1989 to provide grid connections to new electricity-generating developments and has been contracted to provide a connection from the Proposed Torfichen Energy Park (TEP) 132 kV substation (National Grid Reference (NGR): 332215, 655000 to the cable sealing end to the western side of the proposed Dun Law Extension to Galashiels 132kV Reinforcement[1] (described in this document as the 'CSE 2') (National Grid Reference (NGR) 347654, 652827), located approximately 22 km north-west of Kelso in the Scottish Borders and Midlothian council areas as illustrated in **Figure 1: Location Plan**.

1.1.2 The connection between the Proposed TEP substation and CSE 2 is proposed to be a mix of overhead line (OHL) and underground cable (UGC) circuits. The OHL and associated works (described in this document as 'the Proposed Development') will be subject to an application under Section 37 (S37) of the Electricity Act 1989. Need for the Grid Connection

1.1.3 As part of SP Energy Networks commitments to tackling climate change the Scottish and UK Governments have set legally binding targets to reach net zero in their greenhouse gas emissions by 2045 in Scotland. There is a need for developing a resilient electricity network and the installation of the Proposed Development will aid in supporting statutory duties to develop and maintain electricity distribution and will further contribute to the transmission network. In delivering net zero, the electricity system - how electricity is generated, transmitted, distributed and used - is undergoing transformational change. The National Planning Framework 4 (NPF4) also states that low carbon energy developments, security of electricity supply and resilience of electricity infrastructure are priorities of the Scottish Government. As such, more connections for electricity transmission are required to keep up with energy demand locally and nationally.

1.2 SP Transmissions Statutory Duties

1.2.1 SP Energy Networks[2] 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). As the holder of a transmission licence under the Electricity Act, SPT is subject to a number of statutory duties and licence obligations. The transmission network is the backbone of the electricity system, carrying large amounts of electricity at high voltages from generating sources such as wind farms and power stations over long distances.

1.2.2 Section 9 of the Electricity Act states that it shall be the duty of a license holder ''*to develop and maintain an efficient, co-ordinated and economical system of electricity transmission; and to facilitate competition in the supply and generation of electricity*''.

1.2.3 Schedule 9 of the Electricity Act requires SPT to take account of specific factors in formulating any relevant proposals. It states that the licence holder:

[1] Dunlaw Extension to Galashiels 132kV Reinforcements, Community Consultation (2024). Available at: Dunlaw Extension to Galashiels 132kv reinforcements - SP Energy Networks [Accessed: September 2025]

[2] SP Energy Networks, the trading name for Scottish Power Energy Network Holdings Limited which 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.

"(a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and

(b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects."

1.3 Stakeholder Engagement

1.3.1 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.

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

1.3.3 SP Energy Networks' approach to stakeholder engagement for major electrical infrastructure projects is outlined in Chapter 2 of the SP Energy Networks' document 'Approach to Routeing and Environmental Impact Assessment'[3]. SP Energy Networks 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 and Scottish Forestry. 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 Report has been prepared to gather feedback on the emerging project details. It will be issued to statutory consultees, and made available on SP Energy Networks' website, with its availability advertised in the press. Local exhibitions and/or public meetings may also be arranged. SP Energy Networks will look to virtual methods of informing consultation and gathering feedback from stakeholders such as project specific websites to share relevant information and broaden its accessibility.
- **The Environmental Assessment Stage**: Feedback received during the first round of consultation on the 'Proposed Route' will be taken into consideration alongside findings of environmental surveys to help identify the final proposed alignment for the OHL. An Environmental Impact Assessment (EIA) Screening will be submitted to determine whether the Proposed Development is EIA. If the Proposed Development is not EIA, a voluntary Environmental Appraisal (EA) will be submitted. If an EIA is determined, the main purpose of the EIA will be to identify the significant effects arising from the Proposed Development. 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

[3] Approach to Routeing and Environmental Impact Assessment (2020). Available at: https://www.spenergynetworks.co.uk/userfiles/file/SPEN_Approach_to_Routeing_Document_2nd_version.pdf .[Accessed: September 2025]

the Scottish Governments, Energy Consents Unit (ECU) as to the information to be provided in the EIA Report.

1.3.4 In addition, and as noted above, SP Energy Networks 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.

1.4 Purpose of the Routeing and Document

1.4.1 The primary purpose of the Routeing and Consultation Document (described henceforth as this 'Report') is to identify a Preferred Route to provide a grid connection from the Proposed TEP substation to CSE 2, taking account of technical, environmental and economic considerations.

1.4.2 This Report presents information on the approach taken in the identification of Route Options, the methodology used for the appraisal of the Route Options and the findings of the studies and appraisals, culminating in the selection of a Route Option as the 'Preferred Route'.

1.4.3 This Report is intended to inform stakeholders and members of the public ('consultees') of the Preferred Route selected, based on the environmental and technical studies undertaken, and offers the opportunity to provide feedback on the Route Options and Preferred Route. The views and opinions of consultees will be considered and will feed into the subsequent selection of the 'Proposed Route' which will be taken forward to the next stage in the process.

1.5 Structure of the Routeing and Consultation Document

1.5.1 The Report has been structured to initially provide context and information on what the Proposed Development will comprise, followed by the process used to arrive at the Preferred Route. The structure of the Report is set out in **Table 1.1** below. It describes the approach taken to identifying and assessing alternative route options in a clear, systematic manner in accordance with SPT's statutory duties and licence obligations and taking into account industry-recognised approaches to the routeing of OHLs.

Table 1.1: Routeing and Consultation Document Structure

Section	Description
1: Introduction	Provides an introduction to the Development, and SPT's statutory obligations and an outline of the purpose and structure of the Report.
2: The Development and Consenting of the Grid Connection	Provides an overview of the consenting process for the Development.
3: Project Description	Provides an overview and description of the project and its key physical components including details of construction requirements.
4: Approach to Routeing	Describes SP Energy Networks general approach to the routeing following established practices and sets out the approach to the Grid Connection.
5: Identification of Route Options	Identifies and describes the Route Options within the Study Area that has been undertaken as well as key constraints or features within it.
6: Baseline Review	Provides a review of the technical and environmental considerations for the Routeing Options
7: Appraisal of Route Options	Identifies and describes the Preferred Route including the reasons for its selection.
8: Next Steps	Describes the key next steps in the grid connection including consultation on the Preferred option and how to provide feedback

2 THE DEVELOPMENT AND CONSENTING OF THE GRID CONNECTION

2.1 Consenting Requirements

2.1.1 S37 of the Electricity Act[4] requires that, except for certain specific examples, all electricity lines exceeding 20 kV will require consent to be granted by the Scottish Ministers. This 'S37 consent' gives approval to install, and keep installed, an OHL.

2.1.2 Section 57 of the TCPA provides that ''*Planning permission may also be deemed to be granted in the case of development with government authorisation*''[5]. In certain circumstances, deemed planning permission may include works that are 'ancillary' or necessary to the operation of the OHL such as cable sealing end compounds.

2.1.3 Finally, some forms of development, including UGCs, are classed as 'permitted development' under the Town and Country Planning (General Permitted Development) (Scotland) Order 1992 (as amended). Developments classified as permitted development may automatically be granted planning permission, by statutory order, and do not require submission of a planning application to the local planning authority. However, Permitted Development rights do not apply if the project is deemed EIA development. Therefore, the UGCs will be included within the application for consent.

2.2 National Planning Framework 4

2.2.1 The NPF4 (2023)[6] contains the national spatial strategy for Scotland and sets out the Scottish Government's spatial principles, regional priorities, national developments and national planning policy. Part 3 Annex C in the NPF4, a section that focusses on the south of Scotland, states that this "*is an important centre for renewable energy generation*", as well as stating that "*Local Development Plans in this area should protect environmental assets and stimulate investment in natural and engineered solutions to climate change and nature restoration, whilst decarbonising transport and building resilient physical and digital connections*". The Proposed Development will facilitate the continued transmission of electricity generated from a renewable source, aligning well with these priorities.

2.2.2 One of the key policies relevant to the Proposed Development in the NPF4 is Policy 11 'Energy'. The policy intent is 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 and emerging low-carbon and zero emissions technologies including hydrogen and carbon capture utilisation and storage (CCUS)*". Provided project design and mitigation demonstrates how development impacts are addressed, it should be considered that the Proposed Development aligns well with Policy 11.

2.3 Local Development Plan Policy

2.3.1 Local Development Plan (LDP) policies are relevant to understanding the local planning context. LDP policies are

[4] Section 37 of the Electricity Act (1989). Available at: Electricity Act 1989. [Accessed September 2025].
[5] Town and Country Planning (Scotland) Act (1997). Available at: Town and Country Planning (Scotland) Act 1997. [Accessed September 2025].
[6] National Planning Framework 4 (2023). Available at National Planning Framework 4. [Accessed September 2025].

material considerations in the decision-making process alongside national planning policy. The relevant local plan(s) in the vicinity of the Proposed Development are the Midlothian Council LDP and the Scottish Borders Council LDP2.

Scottish Borders LDP2 (2024)[7]

2.3.2 The Scottish Borders LDP2 sets out the planning policies for the Scottish Borders Council area and was adopted on 22 August 2024. Within the Scottish Borders LDP2, the main aims are set out, including the aim to play "*its part in achieving the national target for Scotland of net zero greenhouse gas emissions by 2045"*.

Midlothian LDP (2017)[8]

2.3.3 The Midlothian LDP sets out the planning policies for the Midlothian Council area. Within the Midlothian LDP, main aims and objectives are set out in Chapter 1, including the objective to "*Seek to achieve a high quality of design in all new development, including measures to promote community safety, low and zero-carbon technologies and resilience to the impacts of a changing climate"*. The Midlothian LDP was adopted in 2017. The current plan will remain in place while they assess the changes in the new Planning (Scotland) Act 2019 and NPF4.

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

2.4.1 The Electricity Works Regulations[9] stipulate that before consent is granted for certain developments, an EIA must be undertaken. The first stage of the procedure is to determine whether or not the development in question constitutes 'EIA development'.

2.4.2 The Proposed Development currently falls under two Schedule 2 definitions (in accordance with Regulation 2 (1) of the Town and Country Planning Regulations):

(2) an electric line installed above ground

(a) with a voltage of 132 kilovolts or more; and (c) the purpose of which installation is to connect the electric line to a generating station the construction or operation of which requires consent under section 36 of the Electricity Act.

2.4.3 As the Proposed Development falls under Schedule 2, under Regulation 6(1) of the Electricity Works Regulations an individual who is interested in carrying out development may request the Scottish Ministers to provide a screening opinion, to determine whether or not the development in question constitutes 'EIA development'.

2.4.4 SP Energy Networks will request an EIA Screening Opinion from Scottish Ministers.

[7] Scottish Borders Council Local Development Plan 2 (2024). Available at: Adopted Local Development Plan 2 | Local development plan | Scottish Borders Council. [Accessed September 2025].
[8] Midlothian Local Development Plan (2017). Available at: The current development plan for Midlothian | Development plans and policies | Midlothian Council. [Accessed September 2025].
[9] The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations (2017). Available at: The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. [Accessed September 2025].

3 PROJECT DESCRIPTION

3.1 Connection Requirement

3.1.1 A new transmission connection comprising a 132 kV wood pole OHL and possible UGC is required between the proposed between the Proposed TEP substation and CSE 2 (**Figure 1: Location Plan**).

3.2 Design

3.2.1 SP Energy Networks' policy, in line with statutory license requirements, is to seek a continuous OHL solution for all transmission connections and only where there are exceptional constraints are UGC considered an acceptable design option. Only where there are exceptional constraints are UGCs considered an acceptable design option. Such constraints can be found in urban areas and rural areas with the highest scenic and amenity value. Whilst UGCs reduce visual impacts, there are associated technical, environmental and economic disadvantages including:

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

3.2.2 On this basis, the key design assumption is that the Proposed Development will be a mix of OHL and UGC circuits. The distance between the Proposed TEP substation and CSE 2 is approximately 15 km as the cross flies. However, the final connection length will depend on topography, designations and routeing through areas of residential properties. The ratio of OHL to UGC is not known at this stage. However, it is understood that UGC options should be considered in the vicinity of the Proposed TEP substation and CSE 2.

Wood Poles

3.2.3 The trident wood poles would carry a single circuit operating at 132 kV and the design specification would be in line with the Electricity Network Association's Technical Specification "ENA TS 43-50" 132 kV Single Circuit OHL on Wood Poles - a UK Electricity Industry Design Standard. Wood poles are fabricated from pressure impregnated softwood, treated with a preservative to prevent damage to structural integrity.

3.2.4 There are two configurations of trident wood pole; a 'single' pole and an 'H' pole. H-poles are used for 'extreme environments' (above 200 m Above Ordnance Datum (AOD)) as they are subject to greater ice and wind loadings, whereas single-poles are used in less extreme environments at lower altitudes. Given the area surrounding the Proposed Development is mostly above 200 m AOD it is anticipated that the H-pole configuration is most likely to be used throughout.

3.2.5 There are three types of pole and can be either a single or H-pole configuration, these are shown in **Plate 1** below:

- Intermediate: where the pole is part of a straight-line section;

- Angle: where the OHL changes direction. Single-poles can support changes in direction up to a maximum of 30 degrees and H-poles up to 70 degrees. All angle structures require to be back stayed; and
- Terminal: where the OHL terminates into a substation or on to an UGC section via a cable sealing end.

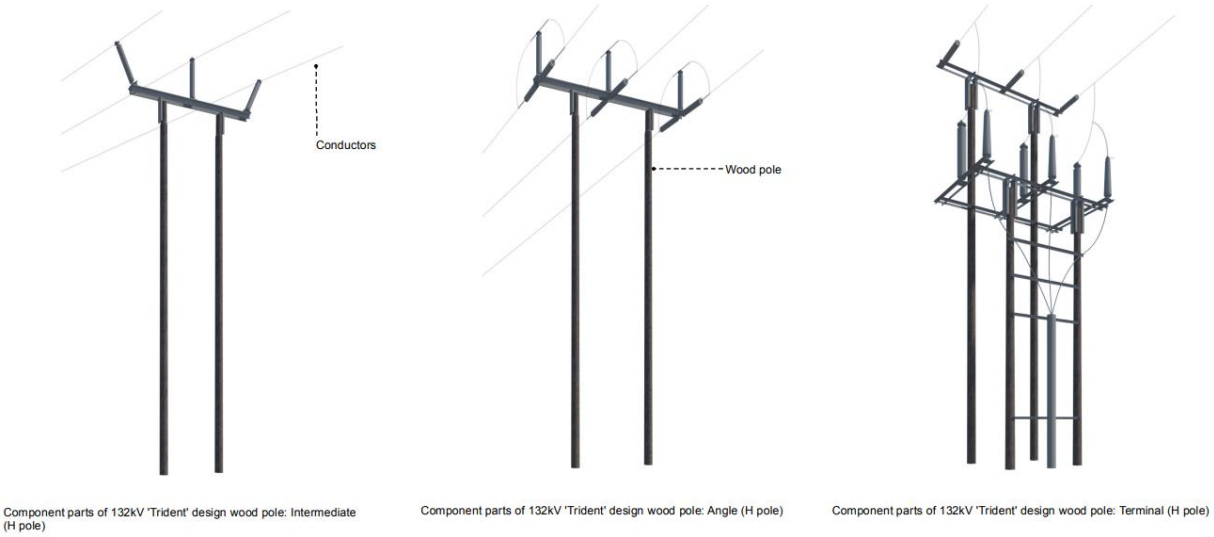

Plate 1: Component Part of various Trident design wood poles (H pole). Image taken from SP Energy Networks' Hawick 132 kV Project[10].

3.2.6 Typical heights for the trident wood poles including insulators are approximately 12 m above-ground height, with a range between 10 m and 21 m. The trident wood poles would support three conductors (wires) in a horizontal flat formation.

3.2.7 Typical spans between trident wood poles at elevations above 200 m are 50–75m for Single-poles and 90-110 m for the H-pole configuration; however, they will vary depending on factors such as the size of the conductor, the size of the structures, terrain, ice and wind loadings etc.

3.2.8 The entry to the Proposed TEP substation and CSE 2 will form part of the design evolution and may consist of a terminal pole or a section of UGC.

3.3 Construction

Overhead Line – Wood Pole

3.3.1 The OHL construction would comprise of the following stages:

- Establishment of temporary infrastructure including construction compounds and other areas of temporary hard standing such as lay down areas. There may be a requirement to construct bell-mouths to the public highway where narrow farm tracks are utilised.
- Provision of access to the pole locations. Access for wood pole construction would use low ground-pressure vehicles such as an argocat, tractor or quad bike; and a tracked excavator. Access may include the use of trackway to minimise the impact on soils (especially in peaty areas) and temporary watercourse crossings may be required.

[10] SP Energy Networks Hawick Substation to V Route 132kV Grid Works Routeing and Consultation Report (2024). Available Online: Hawick-132kV-Project_Routeing-and-Consultation-Report_Final_PRINT-VERSION_figures-combined.pdf. [Accessed September 2025]

- Construction of pole foundations. Pole excavations are typically 3 m by 2 m deep. The excavated material would be sorted into appropriate layers and backfilled to maintain the original soil horizons. No concrete is anticipated to be required.
- Wood poles erected. The excavator(s) would hoist the assembled structure into position and once the structure has been braced in position the trench would be backfilled.
- Stringing of conductors. The conductors would be winched to/pulled from section poles; these poles therefore require access for heavy vehicles to transport the conductor drums and large winches. Where the OHL crosses a road a scaffold tunnel would be used to protect the vehicles from the works. Existing distribution lines would be either switched off, deviated or protected using 'live line' scaffolds.
- Reinstatement of pole sites and removal and reinstatement of temporary infrastructure sites.

3.3.2 Disturbance to local residents and landowners would be minimised as far as possible through the application of proven construction methodologies and the application of a Construction Environmental Management Plan (CEMP) for the duration of the construction period.

3.3.3 A CEMP is a live document that details how a construction project will minimise impacts on the local environment and community, ensuring compliance with legislation and outlines specific procedures for managing issues like pollution, noise and waste during the construction phase of a development. The CEMP is required as part of the planning application process.

3.4 Programme

3.4.1 Construction works described within this scope are currently programmed to commence in 2029 to allow completion of construction and energisation of Proposed Development by 2031. A detailed construction programme will be developed as the Proposed Development progresses.

4 APPROACH TO ROUTEING

4.1 SP Energy Networks' Routeing Approach

4.1.1 The overall approach to routeing is set out within SP Energy Networks' published "Approach to Routeing and Environmental Impact Assessment" 2020 document. This approach sets out the process and various steps undertaken during the routeing, design, assessment and consent stages.

4.2 Routeing Objective

4.2.1 This study follows established best practice in OHL routeing first codified as the 'Holford Rules' in combination with the SP Energy Networks' Approach to Routeing. These are included within **Appendix B**.

4.2.2 Under the Electricity Act, SP Energy Networks is required to consider environmental, technical and economic considerations, and to reach a balance between them. This means that the Proposed Route would be the one selected after an appraisal of a number of Route Options, which balances technical feasibility and economic viability with the least disturbance to people and the environment. Following engagement with relevant stakeholders, including local communities, professional judgement is used to establish the balance.

4.2.3 In accordance with the Electricity Act, the Proposed Development routeing objective is:

"To identify a technically feasible and economically viable route for an overhead transmission line that meets the technical requirements of the electricity network and causes, on balance, the least disturbance to the environment and the people who live, work and recreate within it."[11]

4.3 Established Practice for Overhead Line Routeing

4.3.1 SP Energy Networks' approach to routeing an OHL is based on the premise that the major effect 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 line to fit the topography, by using topography and trees to provide screening and/or background, and by routeing the line at a distance from settlements and roads. In addition, a well-routed line takes into account other environmental and technical considerations and would avoid, wherever possible, the most sensitive and valued natural and man-made features.

4.3.2 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 (NGET)) as owner and operator of the electricity transmission network in England and Wales, with notes of clarification added to update the Holford 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.

[11] SP Energy Networks Approach to Routeing and Environmental Impact Assessment (2020). Available at: SPEN_Approach_to_Routeing_Document_2nd_version.pdf. [Accessed September 2025].

4.3.3 The Holford Rules and the NGC and SHETL clarification notes[12] for the routeing of new high voltage OHL form the basis for routeing the Proposed Development. 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.

4.3.4 The approach is an iterative, systematic evaluation of route alternatives with professional judgement used to establish explicitly the balance between factors. Consultation is an integral part of the routeing strategy process. The approach to routeing OHL is summarised in the below **Chart 1: SP Energy Networks Routeing Methodology**.

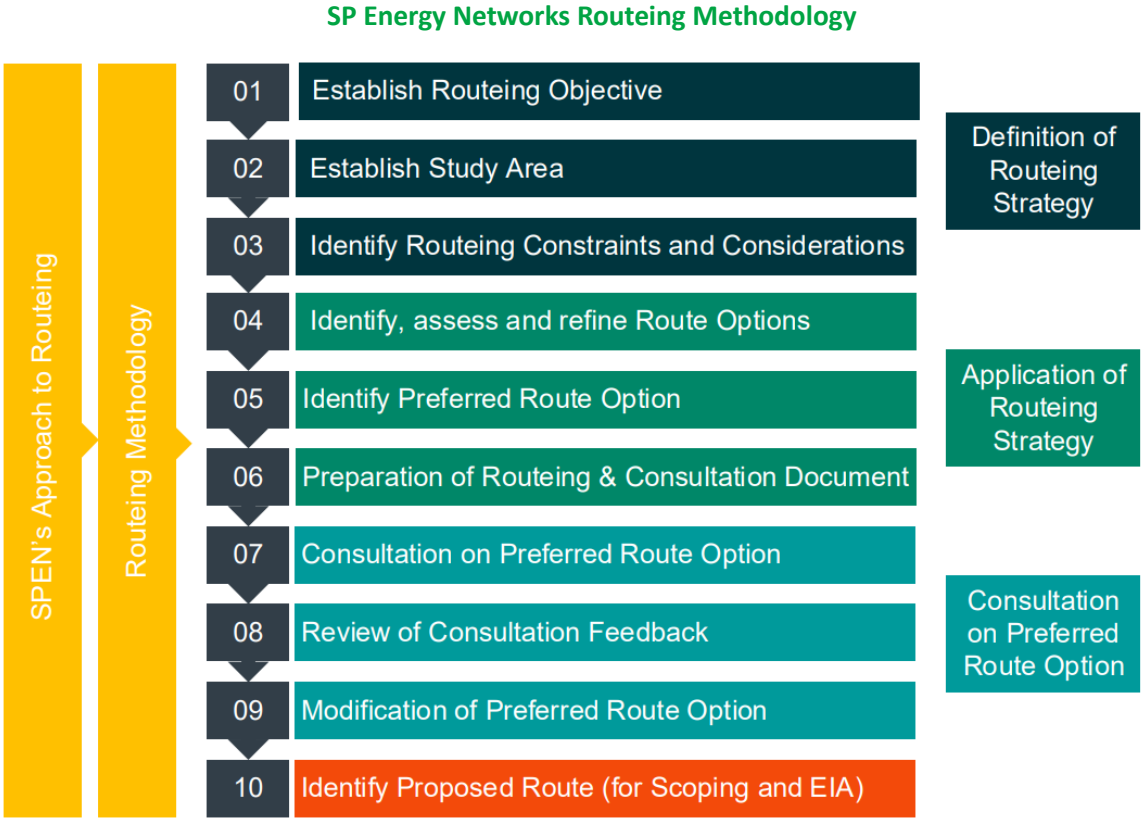

Chart 1: SP Energy Networks Routeing Methodology

4.4 Overview of Routeing Process

Study Area

4.4.1 A Study Area is first defined, taking account of the technical requirements (i.e. connection points), environmental requirements and considerations such as topography. Baseline mapping of the routeing considerations outlined below then enables routeing constraints and opportunities to be identified.

[12] Scottish Hydro-Electric Transmission Limited (SHETL) (2004) The Holford Rules: Guidelines for the Routeing of New High Voltage Overhead Transmission Lines with NGC 1992 and SHETL 2003 Notes.

Environmental Considerations

4.4.2 Statutory duties imposed by Section 38 and Schedule 9 of the Electricity Act require licence holders to seek to preserve features of natural and cultural heritage interest, and mitigate where possible, any adverse effects which a development may have on such features. The construction and operation of an OHL will have potential effects on people and the environment, including potential effects on (in no hierarchical order):

- Landscape, Views and Visual Amenity;
- Cultural Heritage;
- Ecology and Nature Conservation;
- Geology, Hydrology and Hydrogeology;
- Recreation and Tourism;
- Land Use; and
- Forestry and Woodland.

4.4.3 Some effects can be avoided or limited through careful routeing. Other effects are best mitigated through local deviations of the route and the refining of pole locations and/or specific construction practices. These are reviewed as part the Environmental Impact Assessment process during the next phase of works. This Report does not present assessments for socio-economics, noise or traffic. Construction traffic and noise will be considered through the application of proven construction methodologies and the application of a CEMP for the duration of the construction period. Socio economics will be covered at a high level within Chapter 6 Recreation and Tourism (Chapter 6: Baseline Review).

4.4.4 Following this, the potential constraints and opportunities for a project can been identified and used to formulate a site-specific routeing strategy.

Technical Considerations

4.4.5 Technical considerations potentially include existing infrastructure (in this case wind farms and existing OHLs), landowner constraints, altitude and slope angle and physical constraints such as large water bodies and flood zones.

4.4.6 These technical considerations are not considered as being absolute constraints but are a guide to routeing. The approach taken is to identify preferred environmental options informed by a staged review of technical issues.

Economic Considerations

4.4.7 In compliance with Schedule 9 of the Electricity Act, the siting objective requires the proposed connection to be economical. It is understood that this is interpreted by SP Energy Networks as meaning that as far as possible, and all other things being equal, the route should minimise the required OHL diversions, and should avoid areas where technical difficulty or compensatory schemes would render the connection uneconomical.

4.5 Identification and Appraisal of Route Options

4.5.1 Following identification of the Study Area a number of possible ‘Route Options’ for the Proposed Development are identified. This process involves the avoidance where possible of areas of high ‘amenity’ value. These generally include areas of natural and cultural heritage value designated at a national, European or international level as these are afforded the highest levels of policy protection. The Study Area and Route Options also includes consideration of existing wind turbines, through which technical limitations would mean future connections would be unachievable.

4.5.2 The Route Options are then appraised against environmental criteria, including the length of the Route Options. As each Route Option is developed, its effect on the routeing considerations is recorded. At this stage, a Route Option may be rejected, modified or studied in more detail. In conjunction with the collection of relevant data and the evaluation of Route Options, the routeing considerations may be re-appraised and updated as more information becomes available. Route Options may then be rejected or modified, or new Route Options developed. This stage is iterative based on the findings of the appraisal and consultation responses and may result in modification to the routeing strategy and/or the Route Options which then require reappraising.

4.6 Selection of Preferred Route

4.6.1 The comparative appraisal of Route Options leads to identification of an 'emerging Preferred Route' which is subjected to a technical review to confirm that the emerging Preferred Route is technically feasible. At this stage the emerging Preferred Route is subjected to a review of potential cumulative effects with other proposed connections within the Study Area, as outlined below. Following the cumulative review, with associated revisiting or modification of routes as necessary, the 'Preferred Route' is selected.

4.6.2 The Preferred Route is the option which is considered technically feasible and economically viable whilst causing the least disturbance to the environment and to people. This is then taken forward for stakeholder and public consultation. The Preferred Route is subjected to further consideration in response to public consultation and may be modified further in the light of these consultations. Modifications may result in further consultation if necessary.

4.6.3 The Preferred Route, modified to take into account consultations and the consideration of specific local issues, is then confirmed as the 'Preferred Route'. The Preferred Route is subjected to further environmental survey, detailed design and subsequent environmental appraisal, resulting in the further modifications required to avoid and/or minimise effects on the environment.

5 IDENTIFICATION OF ROUTE OPTIONS

5.1 Routeing Strategy

5.1.1 In principle, the Preferred Route should be the shortest route which avoids steep gradients and technical constraints, and either avoids or minimises potential impacts to environmental considerations.

5.1.2 To limit adverse effects on the landscape, routes should, wherever possible, follow the grain of the landscape, avoiding high ground and ridgelines and generally following valleys so that the OHLs and poles are seen against a hill or forest backdrop.

5.1.3 A Study Area has been determined for the Proposed Development which is described in more detail below.

5.1.4 The Study Area for the Proposed Development is defined by a process, which was underpinned by key drivers determining the location of the Proposed Development.

Phase 1 Initial Study Area

5.1.5 For the first phase, an Initial Study Area of 5 km was identified. This was based on the location of the TEP as a 'start point' and CSE 2 as the 'end point' and a straight connection line between the two.

5.1.6 An Initial Study Area of 5 km was considered likely to yield suitable locations for routeing while addressing the key drivers. The Initial Study Area was then narrowed down based on various constraints found in the area.

Phase 2 Environmental and Technical Considerations

5.1.7 For the second phase, following the identification of the Initial Study Area, the high-level desk-based review undertaken above was used to identify the areas of highest amenity, main centres of population and major technical constraints, which include listed buildings, scheduled monuments, Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSI), and landscape and visual considerations (topography, character and visual amenity). This is shown in **Figure 2: Environmental Designations and Sensitive Areas**. From this, eight Route Options were identified using the routeing methodology and are presented in **Figure 3: Route Options and Environmental Designations and Sensitive Areas.**

5.1.8 Consideration was given to the location of environmental features and the potential for adverse environmental effects (**Figure 2: Environmental Designations and Sensitive Areas** shows the Study Area in the context of the Key Environmental Considerations). The Route Options were chosen as they avoid or minimise potential impacts on the key environmental considerations (Ecology assets, Heritage assets, residential areas, water bodies, topography and wind farm developments).

5.1.9 Due to the constrained nature of the Initial Study Area, a 1 km and 2 km Offset Zone was created using the outer most areas of the Initial Study Area to allow for flexibility routeing and to cover any routes that would potentially fall outwith the Initial Study Area. The 2 km Offset Zone from the outermost sections is the Study Area.

5.1.10 When determining the relevant environmental and technical consideration for each topic, an Area of Study (AoS) was determined. Each AoS identifies the specific distance for the particular environmental or technical aspect where features within this area become triggers for consideration.

5.2 Study Area

5.2.1 The Study Area begins in Midlothian at the Proposed TEP Substation, and the area north-east and east of the Gladhouse Reservoir and then heads east and sits below North Middleton, and then continuing south-east adjacent to the Moorfoot hills to CSE 2 near Oxton, Scottish Borders and approximately 30 km south-east of Edinburgh. This is shown on **Figure 1: Location Plan and is included in Appendix A: Figures**. The Study Area is approximately 18 km long by 1 km at the widest part.

5.2.2 On 28th and 29th May 2024, a survey of the Study Area was completed by the landscape team, that considered landscape and visual considerations within the Study Area.

Characteristics of the Study Area

5.2.3 The Study Area lies within the Southern Uplands, just south of the Southern Upland Fault, as can be seen in **Figure 4: Landscape Character**. The northern extent of the Study Area lies within the Upland Fringes – Lothians Landscape Character Type (LCT) 269 (broad, undulating slopes, arable fields divided by hedgerows and improved grassland land and heather moorland) before moving into Plateau Grassland – Borders LCT 91 (dome shaped hills, dry Atlantic heather moor and un-improved/semi-improved grassland, minor roads and farm tracks and multiple wind farm developments) and Pastoral Upland Valley LCT 114 (flat valley floor, improved pasture, large fields, drystone and fences, broad leave and riparian woodland and willow). The Study Area skirts the edge but generally avoids the sensitive Dissected Plateau Moorland LCT 90, home to the Moorfoot Hills.

5.2.4 There are several listed buildings (Grades B and C) and scheduled monuments within the Study Area, with notable clusters of listed buildings located at Middleton, Crookstone Old and Oxton. Schedule Monuments are mainly located in the south and east of the Study Area.

5.2.5 There are multiple areas of Ancient Woodland within the Study Area. These are mainly located within the west, north and north-east of the Study Area in small clusters. There are other areas of woodland located throughout the Study Area, however these are not designated.

5.2.6 There are several watercourses, scattered throughout the Study Area the most notable include Gala Water, Heriot Water, Armet Water with several smaller Burns that feed into Gala Water and River Tweed. To the east several further Burns feed into Lauder Water which lies just beyond the Study Area.

5.2.7 The Study Area purposely avoids the surrounding large village of Lauder but encompasses the village of Stow. The remainder of the Study Area is sparsely populated with a single A-road and network of B-roads, a disused railway line and Core Paths throughout the Study Area. Smaller areas of settlement within the Study Area includes Falahill, Heriot, Halltree and Oxton.

5.2.8 In addition, there are several 11 kV, 33 kV, 132 kV and 400 kV OHL within the Study Area. The 400 kV ZA Route is located in the east of the Study Area, located past Toddleburn, as well as the 33 kV. The 132 kV P Route is also located in the east, but closer to Oxton. There are current proposals for the 132 kV P Route to be dismantled and replaced with the new 132 kV DunLaw Extension to Galasheils[13] and CSE 2 to be located to the west of this new OHL. There are also multiple minor lines located throughout the Study Area.

[13] At the time of writing the 132 kV DunLaw Extension to Galasheils OHL has undergone initial round of public consultation on the proposed route and details can be found on the SP Energy Networks Website. SP Energy Networks (2024). Available Dunlaw Extension to Galashiels 132kv reinforcements - SP Energy Networks [Accessed September 2025].

5.3 Route Options

5.3.1 Given the nature of the Study Area the primary environmental effects are likely to be: Ecology, Hydrology, Landscape, Cultural Heritage, Forestry and Land Use. The best way to limit adverse effects on these factors is to conduct topic specialists to inform on Route Options, based on professional judgement and informed by fieldwork. A Landscape site visit was undertaken on 28th and 29th May 2024, to inform development of Route Options. Additional surveys such as Phase 1 Ecology Survey, and Cultural Heritage site walkover are anticipated to be conducted in 2026 once the Proposed Route Option is established.

5.3.2 Holford Rules 1 and 2, as described above, form 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.

5.3.3 Based on the Key Environmental Constraints, shown in **Figure 2: Environmental Designations and Sensitive Areas**, eight Proposed Route Options were identified. The Proposed Routeing Options are shown in **Figure 3: Route Options and Environmental Designations and Sensitive Areas**. These eight Route Options were identified to best avoid the environmental and technical considerations of the area. Environmental baseline studies and survey data was used to determine what constraints existed.

6 BASELINE REVIEW

6.1 Introduction

6.1.1 To inform the appraisal of the identified Route Options and to ensure information used as part of this appraisal is up to date a review of the technical considerations and environmental considerations was undertaken. The results of this review are outlined below.

6.2 Technical Considerations

6.2.1 The key technical considerations identified within the Study Area are related to constructability, slope of the ground and construction access.

6.2.2 The technical requirements for wood pole OHLs become more onerous with altitude because of issues such as wind loading and icing risk. Altitudes below 200 m are generally considered 'normal environments', and above 200 m 'extreme environments' where a H-pole design is appropriate. As previously discussed, the majority of the Study Area is above 200 m AOD.

6.2.3 Hill slopes in the area are generally relatively gentle but there are several areas of steeper ground. **Figure 5: Landscape Constraints (Topography)** shows the Study Area coloured by height which identifies the areas of steeper ground, between 15% and 20%, and over 20% gradient[14].

6.2.4 The proximity of the OHL to the existing infrastructure has also been taken into consideration. There are two constraints to be considered as detailed in Energy Networks Association's document Separation between Wind Turbines and OHL[15] [16] and summarised as follows:

- OHLs cannot be located within topple distance of a wind turbine which equates to the wind turbine height to blade tip plus 10% or height to blade tip plus the electrical safety distance which is 2.3 m for 132 kV OHLs;
- The downwind wake effect of wind turbines can cause increased levels of movement of the OHL conductors which in extreme cases could lead to conductor clashing. The effects are negligible at a distance of 3 times the rotor diameter of the wind turbine, although there is some flexibility in this depending on the intervening topography; and
- OHLs should be designed to ensure sufficient safety clearance from existing OHL.

6.2.5 Further technical considerations include:

- Buildability/Access constraints (including restrictive roads and forestry access tracks);
- Mineworking areas (opencast etc);
- Ground conditions (including peat);
- Public Service utilities (crossings/proximity) (including major pipelines);
- Watercourse/Catchment area crossings (i.e. Rivers, Lochs and Reservoirs);

[14] Gradients identified from OS Terrain 50 data which does not show small areas of steeper ground
[15] Energy Networks Association (2012): Engineering Recommendation L44, Separation between Wind Turbines and Overhead Lines Principals of Good Practice
[16] Energy Networks Association (2016): Technical Specification 43-8, Overhead Line Clearances

- Road/railways crossings along corridor;
- Residential/Industrial areas;
- Pollution (consideration of corrosion rates); and
- Forestry.

6.3 Environmental Considerations

6.3.1 Environmental considerations were determined through gathering of baseline environmental information which was obtained from a number of sources as summarised below.

- Designated or sensitive sites and other constraints from the MAGIC website, Scotland's environment map, NatureScot Site Link, National Biodiversity Network (NBN) Atlas;
- Archaeological designations and other recorded sites from Historic Environment Scotland;
- Landscape Character Assessments and Landscape Character Types (LCT) from NatureScot;
- Scottish Forestry Geographic Information System database and maps;
- Scottish Environment Protection Agency (SEPA) Scottish Flood Hazard and Risk areas;
- Review of the Scottish Borders LDP (2024)[17] and Midlothian LDP (2017)[18];
- Review of OS mapping (1:50,000 and 1:25,000) and aerial photography (Google Earth Pro, Google Streetview, Bing maps);
- Scottish Government's Scotland's Noise Map;
- Extrapolation of OS OpenData to identify further features including locations of watercourses and waterbodies, and to undertake a preliminary slope analysis; and
- Review of other local information through online and published media such as tourism sites and walking routes.

6.3.2 An overview of the baseline environmental information for relevant environmental aspects is provided below and are illustrated on **Figures 3 to 10**.

6.4 Landscape and Visual Amenity

6.4.1 A desktop study was undertaken which has been updated to inform the baseline information presented below following identification of the Route Options. The desktop study reviewed existing publicly available landscape baseline information relating to designated sites, landscape character, recreational long-distance routes and core paths, settlements, transport routes, visitor attractions as well as trees, vegetation and other environmental conditions. Freely downloadable datasets (including those available from NatureScot) were consulted for information regarding the presence of the considerations detailed below. In addition, online sources of mapping, aerial imagery, including Google Earth and Streetview, were used.

6.4.2 The desktop study has been supplemented by information gained from a site visit that was undertaken by landscape architects on 28th and 29th May 2024.

[17] Scottish Borders Council (2024) Local Development Plan. [Online] Available at: https://www.scotborders.gov.uk/downloads/file/12939/adopted-ldp2-volume-1-policies. [Accessed August 2025]
[18] Midlothian (2017) Local Development Plan. [Online] Available at: https://www.midlothian.gov.uk/downloads/file/4893/midlothian_local_development_plan. [Accessed August 2025]

6.4.3 In considering potential landscape and visual constraints, a 5 km Area of Search (AoS) from the Route Options has been adopted. This is based upon previous experience with similar developments elsewhere in southern Scotland and reflects guidance on the identification of study areas contained within SP Energy Networks Approach to Routeing and Environmental Impact Assessment[19].

6.4.4 Receptors considered include:

- Landscape Designations and Wild Land Areas (WLAs);
- Landscape Character and Elements (including topography and land cover); and
- Visual Receptors and Visual Amenity.

Landscape Related Designations

6.4.5 There are no national landscape designations (National Scenic Area, National Park or Wild Areas) applicable to the AoS.

6.4.6 In the 1960s, Scotland identified locally designated Areas of Great Landscape Value (AGLV), however no written justification for each area was provided. In 2006, Natural Heritage and Historic England published a new guidance document, 'Guidance on Local Landscape Designations' for councils to re-evaluate local designations under a new standardised name; Special Landscape Areas (SLA). Midlothian Council conducted a review in 2012 of the locally designated AGLV and designated new SLA, of which the Proposed TEP substation and surrounding AoS fall within SLA Gladhouse Reservoir and Moorfoot Scarp and a second SLA Fala Moor falls within the AoS.

6.4.7 SLA Gladhouse Reservoir and Moorfoot Scarp is 'centred upon Gladhouse Reservoir and the moorland and farmland surrounding it together with the containing scarp and hill fringes of the Moorfoot Hills to the south and east.' The SLA draws particular focus on the 'important panoramic views from the B7007 across Midlothian and the Forth Valley'.

6.4.8 SLA Fala Moor is 'located in the south-eastern part of Midlothian, on the boundary with the Scottish Borders.' It is 'contained by foothills to the south, it is an open, seemingly remote landscape largely contained from views from the surrounding area yet offering dramatic and panoramic views over the Lothians to the north.' The key reasons for its designation being 'the rarity of this secluded and natural upland moorland' and the 'extensive open views from the moor across the Lothians'.

6.4.9 No SLA in the Scottish Borders fall within the AoS.

6.4.10 The extent and location of the SLA can be viewed on **Figure 6: Landscape Constraints**.

Landscape Character: Topography

6.4.11 The AoS consists of upland landscapes within the Southern Uplands, focused between the Lammermuir Hills to the north-east beyond the AoS and the Moorfoot Hills to the south-west. The upland plateau landscape consists of gently rolling hills of approximately 350-400 m AOD with domed peaks and convex slopes. To the south is the upland valley of Gala Water which continues south-west beyond the AoS. The Gala Water Valley is '*incised by narrow tributary valleys and enclosed by rolling dissected plateau uplands*' [20].

[19] SP Energy Networks Approach to Routeing and Environmental Impact Assessment (2020). Available at: SPEN_Approach_to_Routeing_Document_2nd_version.pdf. [Accessed September 2025].
[20] NatureScot, (2019). Landscape Character Type 114 Pastoral Upland Valley. Available at: LCT 114 - Pastoral Upland Valley - Final pdf.pdf. [Accessed September 2025].

6.4.12 The Proposed TEP substation lies at approximately 320 m AOD on the northern foothills of the Moorfoot Hills along the Southern Upland Fault. The cable sealing end lies at an altitude of approximately 325 m AOD on the plateau grasslands of the Scottish Borders, south-west of the village of Oxton.

Landscape Character: Landcover and Land Use

6.4.13 Landcover within the AoS typically consists of arable and upland, pastoral agriculture containing areas of commercial forestry. Elevated locations are home to wind farms. The main transport route, the A7 runs north to south following the course of the Gala Water with smaller B-roads, minor roads and farm tracks connecting the A7 to surrounding villages and farms. Settlement is comprised of scattered farms and small villages typically of a traditional grey whinstone with slate roofs built close to river crossing points along the Gala Water and A7, and isolated farm buildings in the plateau grasslands.

Landscape Character: Landscapes of Scotland

6.4.14 NatureScot (previously known as Scottish Natural Heritage (SNH)) has identified 79 unique areas of landscape across Scotland, of which the AoS is within Area 67: Lammermuirs and Moorfoots which describes the area as having, *'rounded, open and bare hills breached only by a few north-south passes and incised valleys. The expansive, windswept hills have large areas of heather moor, managed by muirburn, which gives the appearance of a 'devoré' velvet texture and seasonal colour changes. The remainder consists mainly of rough grass sheep grazing with some forestry plantations. Their height and sense of remote grandeur contrasts with the surrounding landscapes. Settlement is limited to a few small villages on the lower flanks; cairns and remnant hill forts hint at a long history of occupation.'*[21]

6.4.15 The Lammermuirs and Moorfoots Landscape is culturally associated with the novel, The Bride of Lammermuir, published in 1819 by Sir Walter Scott and the opera Lucia di Lammermoor written in 1835 by Gaetano Donizett (loosely based on the novel).

Scottish Landscape Character Assessment

6.4.16 In 2019 a review of the 1990s NatureScot Landscape Character Areas (LCA) was undertaken by SNH which identified 390 new Landscape Character Types (LCT) of Scotland[22] which are available in an online interactive map. The original LCAs are now superseded. The AoS falls within 7 of the LCTs namely from west to east:

- LCT 269 Upland Fringes – Lothians;
- LCT 266 Plateau Moorland – Lothians;
- LCT 90 Dissected Plateau Moorland;
- LCT 91 Plateau Grassland – Borders;
- LCT 114 Pastoral Upland Valley;
- LCT 267 Plateau Grasslands – Lothians; and
- LCT 115 Upland Valley with Mixed Farmland.

[21] NatureScot, (2012). The Landscapes of Scotland.Available at: https://www.nature.scot/doc/landscapes-scotland-map-and-descriptions [Assessed July 2024, Reassessed April 2025]
[22] NatureScot, (2019). Landscape Character Types (LCTs) SNH. Available at: https://arcg.is/m85Sq [Assessed July 2024, Reassessed April 2025].

6.4.17 The Landscape Character Assessment from the 2019 online LCTs of Scotland no longer includes guidelines for development. While the original landscape character assessment included guidelines, these are now archived and are no longer available online.

6.4.18 The extent and location of the LCAs can be viewed on **Figure 4** Landscape Character Assessment and Designations.

6.4.19 Some of the LCT have more than one area, therefore this report refers to the relevant area that falls within the AoS. Areas of LCT outside the AoS would not be subject to significant effects and have therefore not been considered further.

Landscape Character Type: 269 Upland Fringes – Lothians

6.4.20 There are two separate areas of LCT 269 Upland Fringes – Lothians identified within the LCT study, of which the Proposed TEP substation is situated within the southern tip of the eastern area of LCT 269 which extends east along the back of the Lammermuir Hills towards the coast. The character of this landscape is described as:

6.4.21 "*Characterised by broad, undulating slopes, almost flat in places, some steep-sided, gradually merging with the more varied rolling terrain of the lowlands to the north. These fringes mark the line of the Southern Upland Fault which separates the Midland Valley to the north from the Southern Uplands of Scotland to the south. Close to the edge of the Moorfoots, Gladhouse Reservoir forms a prominent stretch of open water*."[23]

6.4.22 Key relevant characteristics of this LCT are quoted as:

- "*Broadly undulating, landforms forming a series of smooth rounded hills and slopes, some steep-sided and some gently sloping, shelving gradually from the Uplands northward to merge with rolling farmlands;*
- *Scattered throughout the area, and hidden within depressions, are a number of small ponds, lochs and reservoirs, such as those at … Gladhouse;*
- *… Tree cover is … frequent in the form of shelterbelts;*
- *Clearly transitional landscape between lowland and upland characters; and*
- *Views across the lowland… backed by the ridge lines of the hills to the south*."

Landscape Character Type: 266 Plateau Moorland – Lothians

6.4.23 Of the two areas of LCT 266 Plateau Moorland - Lothians identified within the wider LCT study, the western most area, the Moorfoot Plateau is within the AoS at the southern extremity of Midlothian. A narrow strip of the LCT, the northern flank of Dundreich, falls within the AoS close to the Proposed TEP substation. The character of this landscape is described as:

6.4.24 The LCT "*comprises two areas of hills, and moors forming broad plateaux with rounded summits. Blackhope Scar (651 metres) and Dundreich (622 metres) are distinct high points on the Moorfoot ridge when viewed from the north in Midlothian. [The] hill ranges extend southwards into the Borders. Despite their relatively modest elevation the lateral extent of these hills is dominant in their lowland context*."[24]

6.4.25 Key relevant characteristics are quoted as:

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[23] NatureScot Landscape Character Type 269 Upland Fringes – Lothians (2019). Available at: https://www.nature.scot/sites/default/files/LCA/LCT%20269%20-%20Upland%20Fringes%20-%20Lothians%20-%20Final%20pdf.pdf. [Accessed August 2025].

[24] NatureScot Landscape Character Type 266 Plateau Moorland – Lothians (2019). Available at: https://www.nature.scot/sites/default/files/LCA/LCT%20266%20-%20Plateau%20Moorland%20-%20Lothians%20-%20Final%20pdf.pdf. [Accessed August 2025].

- *"Characterised chiefly by their altitude, generally ranging from 350 metres to 650 metres, and their subdued plateaux landscapes;*
- *Smooth convex hill slopes dissected by a complex tracery of valley landforms which vary in scale and appearance, from minor burn narrow incised gullies to occasional wider flat-bottomed valleys of larger rivers;*
- *Open upland character with sparse tree cover;*
- *Rough grasses on upper slopes, with poor rough grassland and occasional improved pasture on lower slopes;*
- *Generally unenclosed, with some post and wire fences along roads and access tracks, and occasional stone sheep stells and walls around farmsteads;*
- *Sparsely inhabited, with scattered farmsteads in valleys;*
- *Reservoirs creating local focal points; and*
- *Forms the skyline when viewed from the lower land to the north*."

Landscape Character Type: 90 Dissected Plateau Moorland

6.4.26 The AoS falls within the central of three areas of LCT 90 Dissected Plateau Moorland, identified within the wider NCT study. LCT 90 runs along the western edge of the AoS and covers the Moorfoot Hills. The character of this landscape is described as:

6.4.27 "*The dissected Plateau Moorland ranges mainly between 300 and 500 metres, rising to 650 metres at the high plateau summits of the Moorfoot Hills. The topography is characterised by a level or gently-undulating plateau surface, formed by the summits of a series of ridges and hills, separated by strong convex slopes on the intervening valley sides. The valley features range in scale from minor clefts and gullies to the larger burns and rivers*."[25]

6.4.28 Key relevant characteristics are:

- "*Plateau landform consisting of a series of level-topped hills and ridges;*
- *Strong topographic identity and overall grandeur of scale;*
- *Individual hill masses separated by steep sided valley features of differing scales;*
- *Semi-natural peatland, heather moorland and grassland communities dominant, with a high degree of perceived naturalness of vegetation cover;*
- *Very low settlement density with isolated, dispersed pattern; and*
- *Sense of wildness created by wide horizons and long distance, unobstructed views*."

[25] NatureScot, (2019). *Landscape Character Type 90 Dissected Plateau Moorland*. Available at: https://www.nature.scot/sites/default/files/LCA/LCT%20090%20-%20Dissected%20Plateau%20Moorland%20-%20Final%20pdf.pdf [Accessed August 2025].

Landscape Character Type: 91 Plateau Grassland – Borders

6.4.29 A large proportion of the AoS falls within LCT 91 Plateau Grassland – Borders. It "*occurs as a single area in the central section of the Moorfoot/Lammermuir plateau, bounded by the valleys of the Gala and the Leader. The area forms an upland plateau landscape of smooth gently rolling hills covered by coarse acid grassland*."[26] The character of this landscape is described as:

6.4.30 "*[D]istinguished from Dissected Plateau Moorland by a slightly lower elevation and a dominance of grassland cover. The plateau height ranges from 350 to 400 metres, the consistent hills being typically dome-shaped with convex slopes. The large scale landform has subtle variations in relief caused by narrow shallow gullies eroded by minor burns*."

6.4.31 Key characteristics are:

- "*Large scale, rolling plateau topography with gentle slopes and smooth relief;*
- *Vegetation cover dominated by coarse grassland with localised patches of heather moorland, rush pasture and scattered small coniferous plantations and shelterbelts;*
- *Low density settlement with widely dispersed farm buildings;*
- *Wind farm development in the northern and central parts of the LCT;*
- *Remote, isolated quality; and*
- *Open, panoramic views*."

Landscape Character Type: 114 Pastoral Upland Valley

6.4.32 A southerly, central portion of the AoS falls within the eastern of two areas of LCT 114 Pastoral Upland Valley identified within the wider NCT study. The area "*is represented by the … Gala Water valley, on the flanks of the Moorfoot plateau. It comprises open, medium to large scale valleys with moderately sloping sides*."[27] The character of this landscape is described as:

6.4.33 "*moderate enclosing slopes typically allow improved pasture to extend high on to the valley sides. The sides may frequently be incised by narrow v-shaped tributary valleys. The valley floor is generally flat and narrow, widening out in areas of less resistant geology. Landform is mainly smooth and large in scale with local undulations and flat terraces. In some areas the river has cut steep bluffs at the floodplain edges. Localised areas of scree are prominent on some of the steeper valley sides particularly in the Gala Water. There is a diversity of landform features at detailed scale. In geological terms, both valleys cut across the regional trend of the rock structure, with the result that differences in resistance to erosion tend to be closely reflected by fluctuations in valley width, alignment and the steepness of side slopes*."[28]

6.4.34 Key characteristics are:

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[26] NatureScot, (2019). *Landscape Character Type 91 Plateau Grassland – Borders*. Available at: https://www.nature.scot/sites/default/files/LCA/LCT%20091%20-%20Plateau%20Grassland%20-%20Borders%20-%20Final%20pdf.pdf. [Accessed August 2025].

[27] NatureScot, (2019). *Landscape Character Type 114 Pastoral Upland Valley*. Available at: https://www.nature.scot/sites/default/files/LCA/LCT%20114%20-%20Pastoral%20Upland%20Valley%20-%20Final%20pdf.pdf. [Accessed August 2025].

[28] SNH National Landscape Character Assessment Landscape Character Type 114 Pastoral Upland Valley (2019). Available at: LCT 114 - Pastoral Upland Valley - Final pdf.pdf. [Accessed August 2025].

- Flat valley floor with smooth moderately sloping sides incised by narrow tributary valleys and enclosed by rolling dissected plateau uplands;
- Land cover of permanent pastures on valley floor and sides with frequent woodlands, merging with unimproved grassland and heather on upper slopes;
- Scattered farms and villages along the valley floor and lower sides typically built around road junctions and river crossings; and
- A medium scale enclosed landscape of smooth curves, strongly influenced by the surrounding uplands.

Landscape Character Type: 267 Plateau Grasslands – Lothians

6.4.35 LCT 267 Plateau Grasslands – Lothians comprises a single area of which a small pocket measuring 0.5 sq.km is situated within the north of the AoS. As a LCT, it *"creates a transition between the open moor and grassland plateau to the south in the Scottish Borders, and the farmed and settled hill fringes to the north. It forms the southern margin of a larger unit extending southwards into the Scottish Borders."*[29]

6.4.36 Key characteristics are:

- Extensive, smooth, level moorland plateau contrasting with the encircling rounded farmed hill slopes at its edges;
- Improved pasture on hill slopes;
- Distinctive and abundant shelterbelts and woodland areas which are predominantly coniferous on hill slopes and along moor edges;
- Scattered farmsteads and minor roads and tracks on lower slopes;
- Diversity of landcover on hill slopes; and
- High degree of tranquillity.

Landscape Character Type: 115 Upland Valley with Mixed Farmland

6.4.37 LCT 115 Upland Valley with Mixed Farmland encompasses two areas, of which the AoS falls within 1.6 sq.km of the Leader Valley area to the east. It *"is represented by the upper parts of the Leader valley, coinciding with two broad tongue shaped outcrops of Old Red Sandstone which flank the harder rocks of the Lammermuir plateau. A broad upland vale characterised by its distinctive geology and soil types."*[30] The character of this landscape is described as:

6.4.38 "*[C]haracterised by wide, fairly flat valley floors, with well-defined flood plains bounded by fluvial and fluvioglacial terraces, frequently eroded by river meanders into cliffs and bluffs of freshly-exposed material. Above these, the valley sides slope evenly to the upland margins."*

6.4.39 Key characteristics are:

- Broad flat valley floor with distinct floodplain and meandering river channel;
- Evenly sloping valley sides;

[29] NatureScot, (2019). Landscape Character Type 267 Plateau Grasslands – Lothians. Available at: Scottish Landscape Character Types Map and Descriptions | NatureScot. [Accessed August 2025].
[30] NatureScot, (2019). Landscape Character Type 115 Upland Valley with Mixed Farmland. Available at: https://www.nature.scot/sites/default/files/LCA/LCT%20115%20-%20Upland%20Valley%20with%20Mixed%20Farmland%20-%20Final%20pdf.pdf. [Accessed August 2025].

- Rich red soils derived from Old Red Sandstone parent materials;
- Land cover dominated by arable and improved pasture land, with medium to large sized fields;
- Valley bottom and lower valley sides well-treed, with hedgerows, hedgerow trees, small woodlands and coniferous plantations all locally prominent;
- Significant designed landscapes; and
- Unity of vernacular architecture utilising local red sandstone and whinstone.

Local Landscape Character Assessment

6.4.40 There are no published local landscape character assessments. Fieldwork undertaken by landscape architects confirmed the distinctive character differences between the NatureScot LCTs. Given the large scale of the AoS and the Proposed Development, further subdivision of the landscape into local character areas is not considered beneficial and therefore has not been considered further.

Landscape Sensitivity and Capacity

6.4.41 Landscape sensitivity refers to the degree to which the landscape is sensitive to the change brought about by the introduction of development, and thus how likely it is that a given change would lead to a considerable effect on landscape character. Judgements on the sensitivity of a given landscape are based on a combination of its susceptibility to change brought about by the development and the values accorded to the landscape[31].

6.4.42 Landscape sensitivity is development-specific i.e. it is a function of the type of development (its particular form and characteristics), how this affects the landscape directly (physical changes) and how this affects it indirectly (perceptual effects on how the character of the landscape is appreciated).

6.4.43 Key factors that contribute to the sensitivity of landscape include underlying physical aspects such as landform and scale; human aspects such as land use and land cover; and perceptual aspects, particularly the degree of wildness and perceived naturalness. These factors, which draw on the principles of the Holford Rules, are taken into account both in the identification of Route Options and in the appraisal.

6.4.44 The sensitivity of the local landscape to the introduction of wood pole OHL was considered during field observations as part of this study.

6.4.45 As noted above, the landscape of the AoS is of predominantly flat valley floor with moderately sloping sides enclosed by large scale rolling plateau uplands. The principal land cover is grassland pastures with pockets of small coniferous plantation woodlands and heather moorland on upper slopes. Whilst relatively remote (there are scattered villages and isolated farms) it is noticeably 'tamed' and managed, with the main A7 and tributary B-roads, farm roads and wind farm access tracks. Pastures are enclosed by dry stone walls and metal fencing. The landscape is influenced by wind turbines, existing wooden pole OHL and pylons. The introduction of an additional 132 kV wood pole OHL would be a noticeable change, increasing the more obvious human influence on the landscape, but is unlikely to affect its defining characteristics. As such, the local landscape is considered to be of low sensitivity to the Proposed Development.

Visual Amenity

6.4.46 The AoS is located within the remote and sparsely populated Southern Uplands, approximately between Falahill and Oxton.

[31] Guidelines for Landscape and Visual Impact Assessment, Landscape Institute and IEMA, 3rd Edition 2013

6.4.47 The AoS is home to several Core Paths, of which sensitive recreational users of the following may receive views of the Proposed Development: Core Path 33, 207 and 208 (near Falahill and Heriot) and Core Path 22 (near Oxton).

6.4.48 Further to the Core Paths, the Scottish Borders have published their own unnamed local Promoted Paths, Rights of Way and Permissive/Customary paths.[32] Sensitive recreational receptors using the Public Rights of Way (PRoW) may have views of the Proposed Development.

6.4.49 There are no Scottish Great Trails within the AoS.

6.4.50 Sustrans National Cycle Route 1, a long-distance route from Dover to the north of Scotland passes through the AoS.

6.4.51 Panoramic views from the B7007 across Midlothian and the Forth Valley were described within the SLA Gladhouse Reservoir and Moorfoots Scarp.

6.4.52 There are several small settlements with residential receptors at the villages of Heriot, Falahill, Haltree, and Oxton, as well as smaller hamlets or isolated properties or farms in locations such as Carcant, Brothershield, Nettingflat, Nether Brotherstone, Crookeston North Mains, Crookston South Mains and Hartside.

6.4.53 Panoramic views from the B7007 across Midlothian and the Forth Valley as identified within Gladhouse Reservoir and Moorfoots Scarp Special Landscape Area (SLA). Other transport receptors include users of the road network namely the A7, B709, B7007 and B6368.

6.5 Cultural Heritage

6.5.1 A 1 km AoS has been applied to the Route Options to identify designated Cultural Heritage Assets that have the potential to be impacted by the Proposed Development. The AoS was determined based on professional judgement and previous SP Energy Networks schemes and assumes that there is little to no potential for significant adverse effects beyond this area based on the height and design of the Proposed Development. Those identified within 1 km of the Route Options have been listed in the **Table 6.1** below.

Table 6.1: Cultural Heritage Designations within 1 km of the Route Options.

Designation Type	Considerations present in within 1 km of the Route Options.
Scheduled Monument (SM)	There are eight scheduled monuments, two of which are located within the Route Options (SM1177 and SM1176). These include prehistoric domestic and defensive settlements and forts (SM1166, SM1176, SM1170, SM1171 and SM1177), a ritual and funerary henge (SM2155), and two Iron Age scooped settlements (SM2135 and SM4554).
Listed Buildings (LB)	There are 13 listed buildings (Category B and C), five of which are located within the Route Options. There are five Category B listed buildings, one of which is located within the Route Options, around Heriot (LB13405). These comprise Heriot House (LB13405), Crookstone House (LB13895), Old Crookstone House (LB17396), Esperston Farmhouse, including Gatepiers (LB6644) and Outerston Farm, Cartshed and Granary (LB45818).

[32] Scottish Borders Council, (2024). Scottish Borders Core Paths. Available at: Scottish Borders Core paths | Scottish Borders Council (scotborders.gov.uk). [Assessed July 2024].

Designation Type	Considerations present in within 1 km of the Route Options.
	There are eight Category C listed buildings, four of which are located within the Route Options These are primarily located in clusters in the south of the AoS along the A7 (between Fountainhall and Stow) and in the west of the AoS, along the B709, west of Heriot. These comprise four houses (LB6722, LB8207, LB51010, LB45818 and LB51298) a bed and breakfast (LB45182), a church (LB50278), a bridge (LB8208).
Garden and Designed Landscape	There are no Garden and Designed Landscapes.
Conservation Area	There are no Conservation Areas.
Inventory Battlefield	There are no Inventory Battlefields.
Historic Marine Protected Area	There are no Historic Marine Protected Areas.
World Heritage Site	There are no World Heritage Sites.

6.5.2 There are 88 non-designated cultural heritage assets within the Route Options, which are recorded within the Scottish National Record of the Historic Environment (SNRHE) database which is maintained by Historic Environment Scotland (HES). It should be noted that the local Historic Environment Records (HERs) for Scottish Borders and Midlothian council, maintained by Scottish Borders Council and East Lothian Council, respectively, have not been consulted at this stage. In addition, it is likely there are as yet unrecorded cultural heritage sites within the Route Options. Therefore, the number of non-designated heritage assets will be higher than those listed by the SNRHE only. Identification of such sites with upstanding archaeological remains will be undertaken by conducting a walkover survey of the Preferred Route.

6.5.3 There may be historic assets which will have potential adverse impacts to their setting from the Proposed Development. Heritage assets where setting contributes to their significance will be considered as part of a setting assessment at a later stage, where required.

6.6 Ecology and Ornithology

Designations

6.6.1 A desk study to identify protected areas which may fall within the Proposed Development's ecological zone of influence and to provide wider context was undertaken (**Figure 8: Ecological Constraints**) the specific ecological AoS are listed below, and included:

- International and European sites, which comprise SACs, Special Protected Areas (SPAs) and Ramsar sites up to 10 km from the Route Options (and extended up to 20 km if designated for geese).
- National statutory designated sites, which comprise SSSI and National Nature Reserves (NNR) up to 2 km from the Route Options.
- Local statutory and non-statutory sites, which comprise Local Nature Reserves (LNR), Local Nature Conservation Sites (LNCS), Butterfly Conservation – Scottish Priority Landscapes[33], B-Lines[34] and Important

[33] Butterfly Conservation. Available at: https://butterfly-conservation.org/. [Accessed August 2025].
[34] Buglife . B-lines. Available at: https://www.buglife.org.uk/our-work/b-lines/. [Accessed August 2025].

Bird Areas (IBA) within 1 km of the Route Options. Woodland listed on the Ancient Woodland Inventory (AWI)[35] and Native Woodland Survey of Scotland (NWSS)[36] within the AoS.

- Other important areas, Class 1, 2 and 3 peatland identified on the Carbon and Peatland map[37] within the AoS.

6.6.2 The International and National statutory designated sites within their defined ecological zone of influence for the Route Options are identified below in **Tables 6.2.** and **6.3**.

Table 6.2: International designated sites within their defined ecological zone of interest

International Designation	Location to the Route Options at the Closest Point	Reasons for Designation
River Tweed SAC	Intersects Route Options 2, 4, 5, 6, 7 and 8. Located immediately south of Route Options 1 and 3.	Annex I habitats that are a primary reason for selection of this site include water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. Annex II species that are a primary reason for selection of this site: • Atlantic salmon; and • Otter. Annex II species present as a qualifying feature, but not a primary reason for site selection: • Sea lamprey; • Brook lamprey; and • River lamprey.
Moorfoot Hills SAC	Located immediately adjacent to Route Option 8.	Annex I habitats that are a primary reason for selection of this site include European dry heaths and blanket bogs.
Gladhouse Reservoir SPA	Located approximately 0.9 km from all Route Options.	The SPA qualifies under Article 4.2 by regularly supporting a population of European importance of the migratory species pink-footed geese (winter average of 10,500 individuals, over 10% of the Eastern Greenland/Iceland/UK biogeographic population).

[35] NatureScot.Ancient Woodland Inventory. Available at: https://opendata.nature.scot/datasets/snh::ancient-woodland-inventory/explore . [Accessed August 2025].
[36] Scottish Forestry (online). Native Woodland Survey of Scotland (NWSS). Available at: https://www.forestry.gov.scot/forests-environment/biodiversity/native-woodlands/native-woodland-survey-of-scotland-nwss . [Accessed August 2025]
[37] Scottish Soils. Carbon and peatland 2016 map. Available at: https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/ . [Accessed August 2025].

International Designation	Location to the Route Options at the Closest Point	Reasons for Designation
Gladhouse Reservoir Ramsar		The Ramsar site qualifies under Ramsar Criterion 6 by regularly supporting 1% or more of the individuals in a population of pink-footed geese.
Fala Flow SPA	Located approximately 2.4 km north of Route Options 1, 2, 3 and 4 at the closest point.	The SPA qualifies under Article 4.2 as an internationally important wetland supporting in winter an average of 2,400 pink-footed geese (2% of the Icelandic/Greenlandic breeding population).
Fala Flow Ramsar		The Ramsar site qualifies under Ramsar Criterion 6 by regularly supporting 1% or more of the individuals in a population pink-footed geese.
Peeswit Moss SAC	Located 2.7 km west of all Route Options.	Annex I habitats that are a primary reason for selection of this site include active raised bogs. Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site, include degraded raised bogs still capable of natural regeneration.
Westwater SPA	Located approximately 19.9 km west of all Route Options.	The SPA qualifies under Article 4.2 by regularly supporting a population of European importance of the migratory species: pink-footed geese (1986/87 to 1990/91, an average peak winter count of 29,600 individuals, 15% of the Eastern Greenland/Iceland/UK population). Pink-footed geese also form a component of the waterbird assemblage designation.
Westwater Ramsar		The Ramsar site qualifies under Ramsar Criterion 6 by regularly supporting 1% or more of the individuals in a population of pink-footed geese. Pink-footed geese also form a component of the waterbird assemblage designation.
Firth of Forth SPA	Located approximately 16 km north of Route Options 1, 2 and 5 at the closest point.	The SPA qualifies under Article 4.2 by regularly supporting populations of European importance of the migratory species (1993/94 to 1997/98 winter peak means) pink-footed geese (10,852 individuals, 6% of the Eastern Greenland/Iceland/UK biogeographic population). Pink-footed geese also form a component of the waterbird assemblage designation.

International Designation	Location to the Route Options at the Closest Point	Reasons for Designation
Firth of Forth Ramsar		The Ramsar site qualifies under Ramsar Criterion 6 by regularly supporting 1% or more of the individuals in a population of waterbirds (1993/94 to 1997/98 winter peak means): pink-footed geese. Pink-footed geese also form a component of the waterbird assemblage designation.

Table 6.3: National Statutory designated sites within their defined ecological zone of interest

National Statutory Designation	Location to the Route Options at the Closest Point	Reasons for Designation
Moorfoot Hills SSSI	Located immediately adjacent to Route Option 8.	Notified natural features: blanket bog; upland habitat assemblage; upland birch woodland; breeding bird assemblage; and breeding golden plover.
Gladhouse Reservoir SSSI	Located approximately 0.9 km from all Route Options.	Notified natural features: pink-footed geese, nonbreeding.
Airhouse Wood SSSI	Located approximately 500 m north of all Route Options.	Notified natural features: upland oak woodland.

6.6.3 The Local and non-statutory designated sites within their defined ecological zone of influence for the Route Options are identified in **Table 6.4**.

Table 6.4: Local and non-statutory designated sites within their defined ecological zone of influence

Local and Non-Statutory Designation	Location to the Route Options at the Closest Point	Reasons for Designation
LNCS	There are three LNCSs identified within 1 km of the Route Options. Threeburnford Cleugh LNCS, located within all Route Options. Clints Hill LNCS, located within Route Options 1, 2, 3 and 4.	LNCS identified by Scottish Borders Council. Threeburnford Cleugh LNCS - Juniper scrub, burnsides and flushes with species-rich grassland and wetland habitats, locally notable plants, a UK priority butterfly and protected mammals[38].

[38] Scottish Borders Council (2020). Local Biodiversity Sites, Technical Note 4. Available at: https://www.scotborders.gov.uk/downloads/file/7554/local-biodiversity-technical-note . [Accessed August 2025].

Local and Non-Statutory Designation	Location to the Route Options at the Closest Point	Reasons for Designation
	Longmuir Burn and Moss LNCS, located approximately 0.6 km south of Route Options 2, 4, 5, 6, 7 and 8 at the closest point.	Clints Hill LNCS and Longmuir Burn and Moss LNCS – no additional information available.
Butterfly Conservation – Scottish Priority Landscapes	Central Borders Cleuchs falls within all of the Route Options.	Designated due to its assemblage of butterfly species and its value to those species.
B-Lines	A B-Line is located approximately 0.83 km north of Route Options 1, 2 and 5 at the closest point.	B-Lines are Buglife designated areas of importance for insect species, either for maintaining or improving to support insect diversity and populations.
IBA	Moorfoot Hills IBA is located immediately adjacent to Route Option 8 at the closest point. Gladhouse Reservoir IBA is located approximately 0.9 km west of all Route Options.	Bird assemblage as stated above for the following sites: • Moorfoot Hills IBA – Moorfoot Hills SAC and SSSI; and • Gladhouse Reservoir IBA - Gladhouse Reservoir SPA, Ramsar and SSSI.
Ancient woodland as listed on the AWI	There are 12 areas listed in the AWI within the AoS. Of these, an area of Category 2b Long-Established of Plantation Origin (LEPO) woodland is located within Route Options 1, 2, 3, 4, 5, 6 and 7. Additionally areas of Category 2b LEPO woodland are located along the perimeters of all Route Options.	The following woodlands are present: • Category 1a Ancient (of semi-natural origin); and • Category 2b Long-Established (of plantation origin).
NWSS	There are 44 areas identified on the NWSS located within the AoS. This includes native woodland, nearly-native woodland and open land habitat.	The following native woodlands are present: wet woodland, lowland mixed deciduous woodland, upland birchwood, upland oakwood and upland mixed ashwood. The following nearly-native woodlands are present: lowland mixed deciduous woodland.
Carbon and Peatland Map 2016	Class 1 and Class 3 peat is present within the western extent of all Route Options. Additional areas of Class 3 peatland are located in the middle of Route Options 1, 2, 3	Class 1 – Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value.

Local and Non-Statutory Designation	Location to the Route Options at the Closest Point	Reasons for Designation
	and 4 as well as the eastern extent of Route Options 2, 4, 5, 6, 7 and 8.	Class 3 – Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat.

Protected Species

6.6.4 A data search for protected or notable species (e.g. listed on the Scottish Biodiversity List[39]) in the AoS within the last 10 years was undertaken. Only datasets that are freely available for commercial use were searched, which includes those with Open Government Licence (OGL), Creative Commons no rights reserved (CCO) and Creative Commons licence with attribution (CC-BY)[40].

6.6.5 The data search identified records of the following species within the AoS:

- Badger;
- Bats, including: brown long-eared bat; common pipistrelle; Daubenton's bat; Myotis bat species; Natterer's bat; noctule bat species; pipistrelle bat species; and soprano pipistrelle;
- Brown hare; and
- Common lizard.

6.6.6 The desk study also identified records of grey squirrel within the AoS, an Invasive Non-Native Species (INNS). Grey squirrels out-compete red squirrels for resources and also carry disease (squirrelpox)[41].

6.6.7 Additionally, a desk-based habitat suitability assessment was undertaken for the protected and notable species below. The assessment incorporated a high-level review of general habitat suitability, using publicly available map resources and aerial photography.

6.6.8 The AoS contains habitats potentially suitable to support the following protected and notable species[42]:

- Amphibians (great crested newt (GCN) are EPS, WCA); within the AoS newts could utilise ponds for breeding as well as surrounding terrestrial habitat for hibernation. The AoS is also within a marginal geographic location for great crested newt[43]. Other amphibians such as common frog and common toad could utilise wetland and marshy habitats.
- Badger (PBA); within the AoS these are likely to utilise woodland and conifer plantation preferentially for sett-building, and foraging and open areas for foraging and commuting;

[39] A superseded government list still used as a reference to identify priority / notable species.
[40] NBN Atlas.Data licences. Available at: https://docs.nbnatlas.org/data-licenses/ . [Accessed August 2025].
[41] Red Squirrels in South Scotland. Threats to red squirrels. Available at: https://www.red-squirrels.org.uk/Threats_to_Red_Squirrels.pdf . [Accessed August 2025].
[42] EPS = European Protected Species, WCA = Wildlife and Countryside Act, SBL = Scottish Biodiversity List and PBA = Protection of Badgers Act
[43] O'Brien D., Hall, J., Miro, A. and Wilkinson, J. (2017). Testing the validity of a commonly-used habitat suitability index at the edge of a species' range: great crested newt Triturus cristatus in Scotland. Amphibia-Reptila, 38: 265-273.

- Bats (EPS and SBL); within the AoS these are likely to utilise suitable built structures and mature woodland and trees for roosting, and linear features (such as woodland edge and riparian corridors) for foraging and commuting;
- Brown hare (SBL); within the AoS these are likely to utilise open areas and cereal crops for foraging and form creation;
- Freshwater pearl mussel (SBL); within the AoS these have the potential to utilise watercourses for feeding and reproduction;
- Hedgehog (SBL); within the AoS these are likely to utilise woodlands, shelterbelts and arable and grassland for foraging, and woodlands for hibernation;
- Lamprey and eel (SBL); within the AoS these are likely to utilise watercourses for reproduction and foraging;
- Migratory salmonids (SBL); within the AoS these are likely to utilise watercourses for reproduction and foraging;
- Otter (EPS and SBL) and water vole (WCA); within the AoS these are likely to utilise running and standing freshwater habitat and riparian vegetation for shelter and foraging;
- Pine marten (WCA and SBL); within the AoS these are likely to utilise woodland (including linear woodlands and shelterbelts) for denning and foraging as well as more open heath and grassland areas for foraging (for voles etc.);
- Red squirrel (WCA and SBL); within the AoS these are likely to utilise woodland (including linear woodlands and shelterbelts) for drey-building and foraging; and
- Reptiles (WCA); within the AoS these are likely to utilise woodland edges, scrub, tussocky grassland and heathland as well as areas suitable for basking and hibernation.

Habitats

6.6.9 A review of publicly available map resources (Carbon and Peatland map, AWI, NWSS) and aerial photography was undertaken to assess the habitats present within the AoS.

6.6.10 The AoS is largely comprised of agricultural land (both arable and grazing land) with areas of conifer plantation scattered throughout. The A7 intersects the AoS together with several other B roads and local roads. Small pockets of heathland, broadleaved woodland, lines of trees and hedgerows are interspersed throughout the area. Several watercourses are present within the Survey Area, including the Gala Water and Heriot Water, as well as several burns and smaller watercourses. The Carbon and Peatland map also identified class 1 and class 3 peatland in all the Route Options which is indicative of priority habitat (blanket bog). The area of these peatland is detailed below in **Table 6.5**.

Table 6.5: Class 1 and Class 3 peatland within each of the Route Options

Peatland Class	Route Option							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Class 1	143.95 ha	143.95 ha	143.95 ha	143.95 ha	143.95 ha	143.95 ha	143.95 ha	51.14 ha
Class 3	87.85 ha	101.46 ha	87.96 ha	101.41 ha	80.36 ha	80.76 ha	107.51 ha	76.82 ha

6.6.11 The NBN Atlas search returned records of Japanese knotweed and Giant hogweed, both INNSs, within the AoS.

Ornithology

6.6.12 The potential presence of notable (Annex I[44], SBL[45] or BoCC[46]) bird species in the AoS was determined through professional experience of likely species based on habitats and geographical location, plus a search of NBN Gateway commercial use datasets for records recorded within the last 10 years.

6.6.13 Notable bird species records returned by NBN included the following:

- Raptors and owls – barn owl, short-eared owl and peregrine falcon;
- Waders – common sandpiper, oystercatcher, curlew and redshank; and
- Wildfowl and grouse – black grouse, barnacle goose, pink-footed goose and greylag goose.

6.6.14 Habitats within the AoS predominantly comprise agricultural and grazing land with areas of commercial woodland and clear-fell interspersed. Areas of heathland/moorland are present in the north-west with smaller areas in the south and east.

6.6.15 Agricultural areas and associated farm buildings could support breeding waders (including oystercatcher) and barn owl. Moorland areas could potentially support breeding hen harrier short-eared owl, waders including curlew, and lekking black grouse. Woodland breeding raptors including goshawk could potentially be present within woodland habitats.

6.6.16 Agricultural areas could support wintering wildfowl including pink-footed goose and greylag goose. Gladhouse Reservoir SPA and Fala Flow SPA are located directly adjacent to the AoS to the north-west and north-east respectively. Both SPAs are designated for supporting overwintering pink-footed goose. Habitat within the AoS is suitable for this species to forage. However, studies undertaken have shown that favoured foraging areas are typically to the north of the SPAs, with only limited overlap with the northern end of the AoS[47].

6.7 Geology, Hydrology and Hydrogeology

6.7.1 The AoS for Geology Hydrology and Hydrogeology was set as 1 km from the Route Options.

6.7.2 The geology, hydrology and hydrogeology considerations within the AoS are shown on **Figure 9: Hydrological Constraints.**

[44] Annex I of The Birds Directive. (2009). Available at: The Birds Directive - Environment - European Commission. [Accessed in August 2025].
[45] Nature Scot (2020). Scottish Biodiversity List. Available at: https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy-and-cop15/scottish-biodiversity-list . [Accessed August 2025].
[46] BTO (2021). Birds of Conservation Concern 5. Available at: https://www.bto.org/sites/default/files/publications/bocc-5-a5-4pp-single-pages.pdf . [Accessed August 2025].
[47] Mitchell, C. 2012. Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl and Wetlands Trust / Scottish Natural Heritage Report, Slimbridge. 108pp.

Surface Water and Flood Risk

6.7.3 According to Ordnance Survey (OS) 1:50,000 scale mapping and the Scottish Environmental Protection Agency (SEPA) Water Classification Hub[48] multiple named and unnamed watercourses are present within AoS, including multiple Water Framework Directive (WFD) classified and unclassified watercourses. These watercourses are all within the Gala Water and Leader Water sub-catchments of the River Tweed system.

6.7.4 The WFD classified watercourses within the AoS (north-west to south-east) include:

- Gore Water/Middleton South Burn (ID:3819);
- Keith Water/Fala Dam Burn (ID:4011);
- Heriot Water/Blackwater Hope (ID: 5286);
- Gala Water (Source to Armet Water confluence) (ID;5282);
- Gala Water (Heriot Water to Armet Water confluence) (ID;5281);
- Gala Water (Armet Water confluence to River Tweed) (ID:5280);
- Armet Water (ID:5285);
- Lugate Water (ID:5283);
- Caddon Water (ID:5298);
- Allan Water (Source to River Tweed) (ID:5297);
- Cockholm Burn (ID:5284);
- Lauder Burn (to confluance with Leader Water) (ID:5274);
- Leader Water/Kelphope Burn (Cleekhimin Burn confluence to River Tweed) (ID:5266); and
- Leader Water (ID:5406).

6.7.5 According the SEPA classification hub, the classification of the above WFD classified water courses range from Bad to Good in 2022[31].

6.7.6 According to SEPA Flood mapping[49] areas of fluvial flood risk within the AoS are primarily associated with the Gala Water (ID:5280 – ID:5282) and its tributaries, the Leader Water (ID:5406) and its tributaries, the Cockholm Burn (ID:5284), and the Ludgate Water (ID:5283). The areas associated with these watercourses present both Medium and High likelihood of flooding limited to proximity of the tributary channels but more extensively across the floodplains of the Gala Water and Leader Water, with receptors including local villages, public roads and the railway line. In addition, there are several small areas with a High, Medium and Low, likelihood of pluvial flooding throughout the AoS.

[48] SEPA Water Classification Hub (2022). Available at: https://www.sepa.org.uk/data-visualisation/water-classification-hub/ [Accessed September 2025]

[49] SEPA Flood Maps (2019). Available at: https://scottishepa.maps.arcgis.com/apps/webappviewer/index.html?id=b3cfd390efa44e3b8a72a07cf5767663&showLayers=FloodMapsBasic_5265;FloodMapsBasic_5265_0;FloodMapsBasic_5265_1;FloodMapsBasic_5265_2;FloodMapsBasic_5265_3;FloodMapsBasic_5265_4;FloodMapsBasic_5265_5;FloodMapsBasic_5265_6;FloodMapsBasic_5265_7;FloodMapsBasic_5265_8;FloodMapsBasic_5265_9;FloodMapsBasic_5265_10;FloodMapsBasic_5265_11. [Accessed October 2024].

Geology

6.7.7 According to British Geological Survey (BGS) mapping[50] the majority of the AoS is underlain by Inverclyde Group (Mudstone, Siltstone and Sandstone) and Gala Group (Sandstone, Conglomerate and Argillaceous rocks) bedrock groups. Higher ground is free from superficial cover except for small areas of peat and till. Alluvium underlies rivers and streams.

Hydrogeology

6.7.8 According to the SEPA Water Classification Hub[51] the AoS is underlain by the Peebles, Galashiels and Hawick ground water body (ID:150697) which received a Good WFD status in 2022.

6.7.9 According to BGS hydrogeology mapping[33] the majority of the AoS is underlain by the Gala Group low productivity aquifer which has limited groundwater, available in near surface weathered zone and secondary fractures. Smaller areas containing moderately productive aquifers are present within the AoS, these include:

- Strathclyde Group;
- Clackmannan Group;
- Inverclyde Group; and
- Stratheden Group.

Peat

6.7.10 The NatureScot Carbon and Peatland Map[52] indicates that Class 1 Priority Peatland ('nationally important carbon-rich soils, deep peat and priority peatland habitat') are located within the north-west of the AoS.

Water Supplies

6.7.11 The local authority private water supply (PWS) data obtained in August 2024 indicates multiple PWS throughout the AoS.

6.8 Recreation And Tourism

6.8.1 The following Core Paths are within the Study Area:

- A section of Core Path 195 east of Gladhouse Reservoir;
- Core Path 33 around Heriot and heading north-west towards Middleton and North Middleton;
- A section of Core Path around Falahill and heading north to Fala Dam and Fala Village;
- A small Core Path (208) is located east of Heriot, between the railway line and the A7;

[50] BGS GeoIndex Onshore Viewer for Hydrogeological map of Scotland (2020). Available at: http://mapapps2.bgs.ac.uk/geoindex/home.html?layer=BGSHydroMap&_ga=2.59199725.1532853921.1644263485-96331536.1635767367 [Accessed October 2024].
[51] SEPA Water Classification Hub (2022). Available at: https://www.sepa.org.uk/data-visualisation/water-classification-hub/ [Accessed October 2024].
[52] Carbon and Peatland Map (2016).Available at: https://map.environment.gov.scot/Soil_maps/?layer=10 [Accessed October 2024].

- A small Core Path (207) is located north of Heriot and joins Core Path 33; and
- A section of Core Path 22 to the south-west of Oxton.

6.8.2 The area within the Study Area is predominantly rural and consists of rolling hills, and small villages scattered throughout. Way marked routes include riverside ambles, woodland walks, waterfalls, and reservoirs across locations such as Roseberry Reservoir and Gladhouse Reservoir near Midothian, in addition, there are the Moorfoot Hills which lie to the south-west of the Study and provide various hiking routes. The tallest is Blackhope Scar which lies outside the Study Area and this is part of a circuit which can be accessed from Gladhouse Reservoir (two car parks at the north-east end of the reservoir). There are several guesthouse / hotels within the Study Area, including Braehill House (adjacent to the A7, between Falahill and Heriot), Crookston House B&B and Shepherds Huts (south-east of Halltree at the A7), Airhouses (west of Oxton) and Mauldslie Hill Cottage (east of Gladhouse Reservoir. There is also a hotel (Tower Hotel) located within Oxton at the crossroads. There is a heritage path in the north-east of the Study Area (Fala Moor Road) which stems from Fala, one in the east of the Study Area (Dere Street North) which runs adjacent to the A68 and one more running from Oxton to the south-west in the eastern extent of the Study Area (Girthgate).

6.9 Land Use

6.9.1 Between Gladhouse Reservoir and Heriot, there are areas of:

- Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common);
- Class 4.1 (land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal);
- Class 4.2 (land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops);
- Class 5.1 (Land capable of use as improved grassland. Few problems with pasture establishment and maintenance and potential high yields)
- Class 5.2 (Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain);
- Class 5.3 (Land capable of use as improved grassland. Pasture deteriorates quickly);
- Class 6.1 (Land capable of use as rough grazings with a high proportion of palatable plants);
- Class 6.2 (Land capable of use as rough grazings with moderate quality plants);
- Class 6.3 (Land capable of use as rough grazings with low quality plants); and
- Classes 4.1 and 4.2 are mainly found adjacent to Gladhouse Reservoir and adjacent to the A7.

6.9.2 Class 3.2 is found in the north of the Study Area, just south of Middleton. Between Heriot and Oxton, the main classes found are 5.1 to 6.3, all of which are found in patches.

6.9.3 As such, the Study Area has limited capability to support agriculture, and it is unlikely that the effect on agriculture would be a determining factor in route selection. There were no major planning applications or relevant developments identified within the Study Area by searching the Scottish Borders LDP[53] and Midlothian LDP planning portal[54].

6.9.4 Throughout the Study Area there are four existing wind farms comprising Toddleburn Wind Farm, Carcant Wind Farm, Longmuir Rig Wind Farm, and Longpark Wind Farm. The Study Area has informed by the location of existing wind turbines, with the Study Area not encroaching within 200 m of an existing turbine.

6.9.5 A review of both the Scottish Borders Council and Midlothian Council Planning Portals was undertaken for proposed developments within the Study Area within a five-year window, 04 August 2020 to 04 August 2025. The following planning applications were identified shown in **Table 6.6** below.

Table 6.6: Planning Applications within the Study Area between 04 August 2020 to 04 August 2025

Planning Ref	Address	Planning Proposal	Decision
Scottish Borders Council			
22/01960/FUL	Land North Of Carcant Lodge Wull Muir Wind Farm Heriot Scottish Borders	Erection of 8 No wind turbines with a maximum tip height of 150 metres, formation of access tracks, borrow pit, temporary construction compound, erection of control building, onsite substation and associated infrastructure and energy storage compound	Appeal Sustained
21/01444/PAN	Land North And East Of Carcant Lodge Wull Muir Wind Farm Heriot Scottish Borders	Wind farm of up to 8 No turbines up to 135m high to tip	Validated in Sep 2021, no further action since validation
21/00864/FUL	Site At Garvald Law Heriot Scottish Borders	Erection of replacement 17.5m tower with antennae and dishes for Airwave, erection of Cabins/cabinets, standby generator and VSAT dish and upgrade of existing access track	Decided
21/01808/S36	Greystone Knowe Wind Farm Land South-west Of Brockhouse Farmhouse Fountainhall Galashiels Scottish Borders	Onshore wind farm of 14 turbines with a maximum tip height of 180 metres, and ancillary infrastructure	Committee 25 Mar 2024

[53] Scottish Borders Council Planning Portal. Available at: Viewing a planning application | Scottish Borders Council. [Accessed August 2025].
[54] Midlothian Planning Portal. Available at: Simple Search. [Accessed August 2025].

Planning Ref	Address	Planning Proposal	Decision
25/00657/FUL	Dun Law Wind Farm (West Side) Oxton Scottish Borders	Erection of a temporary wind monitoring meteorological mast of up to 100m in height	Currently at recommendation and or committee stage
23/01451/S36	Ditcher Law Wind Farm Land North, South, East And West Of Vineleaf Cottage Oxton Scottish Borders	Erection of 9 wind turbines each with a tip height of 200m above ground level (agl) and up to 30MW Battery Storage plus ancillary infrastructure. The Proposed Development will have an indicative electricity export output of approximately 59.4MW from wind generation and a battery storage capacity of up to 30MW. The total project capacity will be approximately 89.4MW	Currently at recommendation and or committee stage
25/00866/SCO	Longmuir Renewable Energy Land At Toddleburn Wind Farm Oxton Stow Scottish Borders	Hybrid Renewable Energy Park comprising of onshore wind turbine generations, PV solar arrays and a Battery Energy Storage Systems, as well as associated infrastructure.	Decided
25/00521/PN	Land At Moorfoot Hills East Of Bowbeat Hill Heriot Scottish Borders	Peatland restoration work	Approved
22/01210/PAN	Land North Of Carcant Lodge Wull Muir Wind Farm Heriot Scottish Borders	Wind farm development of 8 wind turbines, including associated development such as crane pads, access tracks, a substation and temporary construction compound	Decided
25/00866/SCO	Hybrid Renewable Energy Park comprising of onshore wind turbine generations, PV solar arrays and a Battery Energy Storage Systems, as well as associated infrastructure.	Longmuir Renewable Energy Land At Toddleburn Wind Farm Oxton Stow Scottish Borders	Decided
24/00731/FUL	Hazelbank Quarry Stow Galashiels Scottish Borders	Application under Section 42 to vary conditions 3 and 4 of planning permission 10/00265/MIN	Decided

Planning Ref	Address	Planning Proposal	Decision
		allowing a review of the quarry development plan and associated timescale.	
Midlothian Council			
23/00795/S36	Land to North of Former Quarry Broad Law Gorebridge	Proposed development comprising 18 three-bladed horizontal axis turbines, up to 180 m tip height; associated low to medium voltage transformers and related switchgear at each turbine; turbine foundations; hardstand areas for erection cranes at each turbine location; a network of access tracks including watercourse crossings, turning heads and site entrance from the public road network; borrow pits (dependent on availability of stone within the site); a substation compound containing electrical infrastructure, control building, welfare facilities and a telecommunications mast; a Battery Energy Storage System (BESS), rated at approximately 50 MW and associated compound; a network of buried electrical and communication cables; temporary construction compounds; a potential concrete batching plant; and habitat management and biodiversity enhancement.	Awaiting decision
21/00488/PNFOR	Land of East of Junction on A7 and B6367 Gorebridge	Formation of access track for the purposes of forestry	Decided - Grant
24/00362/SCO	Temple Quarry Gorebridge	EIA Scoping Opinion for applications (24/00161/S42, 24/00162/S42 and 24/00163/S42) to extend the time period for completion of mineral extraction operations to 31st December 2028, and completion of the final restoration of the site by 31st December 2030	Screening/scoping issued
23/00773/S42	Middleton Limeworks Gorebridge	Section 42 Application to amend condition 1 and 6 of consent 22/00546/S42 to extend the timeframe of operations	Decided – Grant with conditions
21/00132/DPP	Former Quarry Broad Law Gorebridge	Erection of stationary rocket propulsion and ancillary specialist equipment testing facility, and associated office and storage facilities; formation of hardstanding, access tracks, car parking, SUDS ponds and bunds; erection of fencing; and associated works	Decided – Grant with conditions

Planning Ref	Address	Planning Proposal	Decision
20/00909/SCR	Former Quarry Broad Law Gorebridge	EIA Screening Opinion for rocket engine testing facility	Screening/scoping issued

Forestry and Woodland

6.9.6 There are large areas of Ancient Woodland, National Forest Inventory (NFI) woodland and forestry management across the Study Area.

6.9.7 There are approximately 21 areas of Ancient Woodland within the Study Area, these in total cover around 15% of the Study Area (as although there are multiple areas, their coverage is low). These are located mainly in the north-west and north of the Study Area, with a few areas in the east. Seven of the areas are Class 2a Ancient Woodland, Ancient (of semi-natural origin), and the other 14 areas are class 2b Ancient Woodland, Long-Established (of Plantation origin). For NWSS, the main clusters are around east of the B6468. There are small areas spread out throughout the Study Area, with smaller clusters around Heriot and west of Oxton.

6.9.8 Regarding forestry management and plans, there are small clusters of Rural Development Contracts (RDC) Forest Plan areas (15% to 20% coverage), in the north-east and north, around south of Temple and the Proposed TEP substation. There are three larger areas of FGS Forest Plans in the Study Area (located at Heriot, to the east of the B6367 and to the east of the B6368, in total approximately 10% coverage). There are small areas of Scottish Forestry Grant Scheme (SFGS) in the Study Area, mainly located to the south of Heriot and the west of Oxton). This only covers approximately 5% of the Study Area.

7 Appraisal of Route Options

7.1 Appraisal Methodology

7.1.1 In accordance with SP Energy Networks' overall approach to routeing, the routeing objective for the Proposed Development is to:

- To identify a technically feasible and economically viable route for a continuous 132 kV overhead line connection between the Proposed TEP substation to CSE 2.
- The route should, on balance, cause the least disturbance to the environment and the people who live, work and enjoy recreation within it.

7.1.2 As outlined in the overall approach to Routeing, the characteristics (ie. Topography, environmental sensitivities, proximity to residential etc.) of the Study Area are required to be balanced and roughly equal to enable the overarching Routeing Objectives to be met. As such, professional judgement by appropriately qualified environmental professionals (informed by both desk studies, field work, and a reflection of the Holford Rules) and will be employed to identify the Preferred Route. This professional judgement will be made on a case-by-case basis.

7.1.3 The process also seeks to:

- continue to reflect the overall Routeing Objective and Routeing Strategy;
- continue to reflect SP Energy Networks' Approach to Routeing and EIA document;
- continue to reflect the Holford Rules for Routeing OHL;
- draw out distinctions between the Route Options to enable the relative strengths and weaknesses of each to be identified.

7.1.4 The comparative appraisal of Route Options is undertaken in stages as set out below:

(i) Dentification of appraisal criteria, together with their reasoning for inclusion;

(ii) Application of appraisal criteria to each Route Option, following the appraisal methodology;

(iii) Comparative appraisal of Route Options to identify a Preferred Route;

(iv) SP Energy Networks technical review, reflecting system design requirements; and

(v) Cumulative appraisal with other/future OHL connections within the Study Area.

7.2 Appraisal Criteria

7.2.1 Based on the established practice for the OHL routeing and the routeing considerations for the Proposed Development, the Route Options are appraised using the following criteria, which continue to reflect the key considerations of the routeing methodology. The reasoning for the use of these criteria and an outline of the methodology for appraising each Route Option is outlined below.

Length of Route

7.2.2 Route length is considered as an appraisal criterion because generally the longer the line, normally the more resources are required to construct it and the more potential it must result in considerable environmental effects. Whilst direct quantitative comparisons cannot be made, other things being equal, a 10 km route is likely to be visible from, and affect the environment over, twice the area of a 5 km route.

7.3 Landscape and Visual Amenity

7.3.1 Landscape and visual amenity is considered as an appraisal criterion given the primary environmental effects of OHLs are likely to be landscape and visual effects.

7.3.2 The landscape appraisal took into account the landscape character and sensitivity of the different LCT affected (as identified in **Section 6.4: Landscape and Visual Amenity**), the degree to which the Route Options and potential alignments within the Route Option could be considered to fit the grain and form of the landscape, and the degree to which the options conformed to the Holford Rules, particularly rules 4 and 5 (rules 1 to 3 were considered in the identification of Route Options). Consideration was given not only to the route itself but to the potential requirements for construction access tracks.

7.3.3 Because landscape was a key factor in developing the Route Options, the appraisal therefore takes a qualitative approach, drawing out the key differences between the Route Options.

7.3.4 In relation to visual amenity, consideration was given to the potential visibility of the OHL of each Route Option from the sensitive receptors as set out in **Section 6.4: Landscape and Visual Amenity**.

7.3.5 As part of this, the degree to which an OHL would be perceptible was considered. Studies have been undertaken by several landscape practitioners[55]. These suggest that wood poles may be perceived in most circumstances up to about 1.5 km, and that poles are not generally perceived beyond 6 km. The degree to which poles are perceived depends on whether they are seen against a backdrop or against the sky, the age of the line (new poles are dark and tend to blend in well, whist older poles weather to a light silver-grey and can be more visible in the middle distances), and the design of the pole (H-poles tend to be more noticeable than single poles).

7.3.6 Taking this into account and taking account of screening provided by woodland and built form, the appraisal identified the receptors sufficiently close to each of the Route Options to be at risk of considerable adverse effects on visual amenity. This was undertaken through a combination of desk study and fieldwork.

7.4 Cultural Heritage

7.4.1 Given the presence of heritage assets within the Route Options and AoS, as summarised in **Section 6.4**, cultural heritage is considered as an appraisal criterion.

7.4.2 A desk-based review was undertaken to understand how each Route Option intersects with designated and non-designated heritage assets. Where a Route Option contains designated and non-designated heritage assets, the potential for physical impacts would be of paramount importance in ascertaining the viability of the route. The importance of the setting of heritage assets, within the route corridors and their respective 1 km Offset Zones, was also considered during the appraisal to ensure that potential visual impacts from the Proposed Development were a key consideration, especially in relation to designated heritage assets.

7.4.3 Where avoidance the potential physical impacts or impacts through changes to the setting of a heritage asset is achievable, this will be stated in the appraisal. Where this is not achievable, the route will be ranked to reflect this. Overall, the route will be ranked to limit the potential impacts to designated over non-designated heritage assets. However, this will depend on the significance description and the potential impact.

[55] D Horn, I McAulay and M Turnbull (May 2010) High Voltage Wood Pole Transmission and Distribution Main Interconnector Lines in Rural Landscapes: Perceptibility

7.5 Ecology and Ornithology

7.5.1 The presence of ecological receptors within, and surrounding, the AoS is considered as an appraisal criterion. Information for ecological receptors considered as part of the appraisal has been collected and reviewed using existing data available from the AoS and wider landscape. The following biodiversity factors (sub-criteria) have been considered as part of the appraisal:

- Areas of nature conservation interest, including statutory designations and non-statutory, local designations;
- Sensitive habitats, including bog and mire habitats, and those likely to be Groundwater Dependant Terrestrial Ecosystems (GWDTE); and
- Confirmed presence of protected or notable (e.g. Scottish Biodiversity List) species, and suitable habitat for protected or notable species.

7.5.2 Although each of the Route Options is considered to have the potential to affect the biodiversity factors, they have not been used to inform the appraisal as there is no significant disparity between Route Options based on available data. A high-level evaluation of each receptor present/potentially present was undertaken in order to inform the comparison of the Route Options and qualify preference between each option. The high-level evaluation included consideration of value, rarity and susceptibility to impact from OHL development, amongst other factors.

7.6 Geology, Hydrology and Hydrogeology

7.6.1 The geology, hydrology and hydrogeology receptors considered in this appraisal relate to flood risk, private water supplies, groundwater resources, designated sites and peat. GWDTE has already been included within the Ecology and Ornithology appraisal. These receptors were identified in the Baseline section.

7.7 Recreation and Tourism

7.7.1 The effects on recreation and tourism have been appraised within the visual amenity topic as no major tourist attractions are located within the AoS, apart from a handful of guesthouses, marked routes and heritage paths. However, Core Path 33 which is situated within the centre of the AoS, and is bisected by all the Proposed Routes and Core Path 207 is intersected by Route Option 5 and 6, therefore this may impact upon the experience of the recreational user.

7.7.2 Recreation and tourism is therefore considered as an appraisal criterion.

7.8 Land Use

7.8.1 The land use topic covers several considerations including existing and committed developments, valid planning applications, agricultural land and woodland. Woodland is not considered as part of this appraisal as it is included within the Forestry and Woodland appraisal.

7.8.2 As described in **Section 6.3**, the only land use receptors within the Study Area include agricultural land, ranging from Class 3. – Class 6.3, prime agricultural land refers to Classes 1 – 3.1. The rest of the Study Area has limited capability to support agriculture and as a result it is unlikely that the effect on agriculture would be a determining factor in route selection.

7.8.3 There are also multiple valid planning applications including wind farm proposals. The existing wind turbines of the surrounding wind farms have been avoided where possible when determining the Study Area as appropriate distance will be required between a Route Option and a turbine. Land use is therefore considered further in the route appraisal below.

7.8.4 An existing 33 kV transmission substation (TS Todd3 Toddleburn) is located within the Study Area as well as transmission towers (associated with the TS Dune1 Dunlaw Extension 132 kV transmission substation) which are located to the eastern side of the Study Area. There are several existing 11 kV OHL within the Study Area, predominantly within the eastern extent with fewer located to the west. An existing 33 kV OHL also is located to the far eastern side of the Study Area.

7.8.5 Further to this, there are several wind farms within the Study Area and near several of the Route Options. The wind farms located within the Study Area range from existing, in-planning and consented. The following wind farms are located within the Study Area:

- Toddleburn Wind Farm (existing);
- Longmuir Wind Farm (in-planning);
- Wull Muir Wind Farm (consented);
- Carcant Wind Farm (existing);
- Falahill Wind Farm (existing);
- Cowbrae Cottage Wind Fram (existing); Cowbrae Cottage Wind Farm (existing);
- Greystone Knowe Wind Farm; and
- Torfichen Wind Farm (in-planning).

7.9 Forestry and Woodlands

7.9.1 The baseline text has been gathered using the areas within each Route Option. Existing Forestry data available within the public domain within the Route Options and wider landscape has been reviewed. These include: Scottish Forestry Map Viewer and Ordnance Survey. At the time of writing, a forestry survey has not been undertaken to identify forestry type and quality present within each Route Option. All Route Options contain areas of Ancient Woodland, forestry woodland and other woodland and tree blocks.

7.9.2 Given the presence of forestry and woodland, including Ancient Woodland, and individual and grouped trees within and surrounding the Study Area, it is considered as an appraisal criterion. This criterion has been split into commercial forestry and non-commercial woodland. The ability to avoid the identified areas of commercial forestry and non-commercial woodland has been used as a main factor to differentiate between Route Options.

8 APPRAISAL OF ROUTE OPTIONS

The findings of the detailed appraisal for the Route options for each criterion are outlined below. No weightings have been applied to each criterion. The Route options and the key environmental constraints are shown on **Figure 3**.

8.1 Landscape Appraisal

National and Local Designated Sites

8.1.1 All the Route Options originate from within the Gladhouse Reservoir and Moorfoots Scarp 'Special Landscape Area' (SLA), a local landscape designation within Midlothian. Therefore, the impacts of the Route options on the Gladhouse Reservoir and Moorfoots Scarp SLA are broadly comparable. The proposal would introduce an urbanising feature to the SLA which is designated for its open and expansive landscape that is sparsely settled and secluded with panoramic views. The Moorfoot Hills scarp is an important and distinctive feature of the SLA that forms the backdrop to views from the north. Of the Route Options, Routes 1, 2 and 5 run along the base of the scarp whereas routes 3, 4, 6, 7 and 8 crosses over the scarp having wider reaching visual effects on the wider SLA. Of these, Routes 7 and 8 cross the scarp at the highest elevations of 370 m and 400 m AOD respectively. The introduction of the Proposed Development would be out of character with the SLA and would therefore not be a suitable 'landscape fit'.

8.1.2 As the Gladhouse Reservoir and Moorfoots Scarp SLA is comparably affected by all Route Options, this report looks at differentiating factors beyond impact on the Gladhouse Reservoir and Moorfoots Scarp SLA. These are covered below and within the landscape character and visual amenity sections.

8.1.3 Route Options 1-4 are situated approximately 450 m south of Fala Moor SLA, another local designation within Midlothian. Here the proposed OHL would potentially have an urbanising influence on the character of the landscape in views from Fala Moor SLA, however these would be viewed at a distance and may not be readily distinguishable.

Landscape Character

Route Option 1

8.1.4 All routes originate in LCT 269 Undulating Upland Fringe. From here, Route Option 1 heads north-east through an agricultural landscape with wooded sections. The route progresses along the boundary of LCT 269 and LCT 266 Plateau Moorland – Lothians at the base of a long steep scarp that forms the base of the Moorfoot Hills. At the A7, the route turns approximately 90 degrees to the south-east into LCT 91 Plateau Grassland – Borders to travel down the Gala Valley. Here the landscape is already partially degraded by the presence of the A7, an existing small unnamed wind farm, a disused railway track, and existing OHL, therefore, the presence of an additional OHL would be in keeping with the surrounding landscape character. By following the base of the scarp at the boundary of LCT 269 and not crossing the hill into LCT 266, the impacts of the proposed OHL on the wider landscape character are restricted to LCT 91 and LCT 269.

8.1.5 The route turns along a new south-eastern trajectory close to the village of Nettingflat towards Nether Brotherstone through LCT 91 Plateau Grassland – Borders which is characterised by rolling plateau topography with open panoramic views and a remote isolated quality. Here the proposed OHL would introduce an urbanising feature into an open, isolated landscape. The route then rises steeply up a convex open slope and passes through a saddle between Hartside Hill and Clints Hill into woodland on the other side. The landscape here is influenced by existing pylons and timber OHL, however the introduction of an additional OHL to the convex open slopes would greatly increase their detrimental presence within the landscape character. The final section of the route passes north of Toddleburn Wind Farm, running parallel to existing pylons approximately 900m to the north before terminating at the Cable Sealing End. In this final stretch the landscape is degraded by the presence of high-voltage pylons and wind farms therefore the presence of the proposed OHL would reflect existing features of the landscape. Overall, Route Option 1 is considered an undesirable 'landscape fit'.

Route Option 2

8.1.6 Route Option 2 follows the same route as Option 1, heading north-east through an agricultural landscape with wooded sections, and progresses along the base of a steep scarp at the edge of LCT 269 Undulating Upland Fringe, down the Gala Valley and through the open and remote isolated landscape of LCT 91 Plateau Grassland – Borders. Between Nettingflat and Nether Brotherstone, the proposed OHL would introduce an urbanising influence within a landscape that has a remote and isolated quality and is therefore more sensitive to change. While there are existing low voltage OHL/ telephone lines within the landscape, an additional high voltage OHL would increase their influence within a largely unspoilt LCT.

8.1.7 Near Nether Brotherstone Route Option 2 turns directly south following a valley landscape that is home to Armet Water and existing timber OHLs. Along this stretch the proposed OHL would be contained within the valley and the character would be broadly in keeping with the existing OHL. Before reaching Crookston, the route turns east across the open landscape of LCT 91 just south of Toddleburn Wind Farm. Route Option 2 differs from Route Option 1 by avoiding the steep convex slopes of Clints Hill and by traversing south of Toddleburn Wind Farm, instead taking a longer route that achieves a slightly better 'landscape fit' than Route Option 1. Overall, Route Option 2 is a reasonable but not a good 'landscape fit'.

Route Option 3

8.1.8 Route Option 3 heads north-east through an agricultural landscape with wooded sections and progresses briefly along the boundary of LCT 269 Undulating Upland Fringe before gently turning south-east on the northern tip of LCT 266 Plateau Moorland – Lothians. While LCT 266 is characterised by its altitude and open upland slopes that form the skyline when viewed from the north, Route Option 3 traverses the outer extent of the LCT which has more gentle slopes and would therefore be less impactful on the perception of the wider character. The route continues south-east into LCT 91 Plateau Grassland – Borders to the south of an existing wind farm.

8.1.9 The route continues east crossing the A7 over the open isolated landscape of LCT 91 Plateau Grassland – Borders following Route Option 1. Along this stretch, Route Option 3 would introduce an urbanising influence within a landscape that has a remote and isolated quality and is therefore more sensitive to change. While there are existing low voltage OHL/ telephone lines within the landscape, an additional high-voltage OHL would increase their influence within a largely unspoilt LCT. The route then rises steeply up a convex open slope and passes through a saddle between Hartside Hill and Clints Hill into woodland on the other side. The landscape here is influenced by existing pylons and timber OHL, however the introduction of a new OHL to the convex open slopes would greatly increase their detrimental presence within the landscape character. The final section of the route passes north of Toddleburn Wind Farm, running parallel to existing pylons approximately 900m to the north before terminating at the Cable Sealing End. In this final stretch the landscape is degraded by the presence of high-voltage pylons and wind farms therefore the proposed OHL would be in keeping with the landscape.

8.1.10 Route Option 3 differs from Route Option 1 by avoiding the approximately 90-degree angle at the A7 by taking a more direct route south of the existing wind farm. Overall, Route Option 3 is considered an undesirable 'landscape fit'.

Route Option 4

8.1.11 Route Option 4 starts following the same route as Route Option 3, it heads north-east through an agricultural landscape with wooded sections and progresses briefly along the boundary of LCT 269 Undulating Upland Fringe before gently turning south-east crossing on the boundary of LCT 266 Plateau Moorland – Lothians. While LCT 266 is characterised by its altitude and open upland slopes that form the skyline when viewed from the north, Route Option 4 traverses the outer extent of the LCT which has more gentle slopes and would therefore be less impactful on the perception of the wider character than by going over the steep slopes to the south. The route continues south into LCT 91 Plateau Grassland – Borders to the south of an existing wind farm.

8.1.12 The route continues east crossing the A7 over the open and remote isolated landscape of LCT 91 Plateau Grassland – Borders following Route Option 2 and 3. From Nettingflat to Nether Brotherstone, the proposed OHL would introduce an urbanising influence within a landscape that has a remote and isolated and unspoilt quality and is therefore more sensitive to change. While there are existing low voltage OHL/ telephone lines within the landscape, an additional high-voltage OHL would increase their influence within a largely tranquil and unspoilt LCT.

8.1.13 Near Nether Brotherstone Route Option 4 turns directly south following a valley landscape that is home to Armet Water and existing timber OHLs. Along this stretch the proposed OHL would be contained within the valley and the character would be broadly in keeping with the existing OHL. Before reaching Crookston, the route turns east across the open landscape of LCT 91 just south of Toddleburn Wind Farm. Route Option 4 differs from Route Option 3 by avoiding the steep convex slopes of Clints Hill and by traversing around Toddleburn Wind Farm, instead taking a longer route that is a slightly better 'landscape fit' than Route Option 3. Overall, Route Option 4 is a reasonable but not a good 'landscape fit'.

Route Option 5

8.1.14 Route Option 5 initially follows the same route as Option 1 and 2, as it heads north-east through an agricultural landscape with wooded sections, and progresses along the boundary of LCT 269 and LCT 266 Plateau Moorland – Lothians at the base of a long steep scarp. By following the base of the hillside at the boundary of LCT 269 and not crossing the hill into LCT 266, the impacts of the proposed OHL on the wider landscape character are restricted to LCT 91 and LCT 269. At the A7, the route turns approximately 90 degrees to the south-east into LCT 91 Plateau Grassland – Borders to travel down the Gala Valley. The route leaves LCT 91 and joins LCT 114 Pastoral Upland Valley, a linear LCT that lies adjacent to LCT 91 but is generally a flat valley with moderately enclosed slopes. LCT 114 continues to follow the A7, a disused railway line and Gala Water. LCT 114 is strongly influenced by the surrounding uplands and is home to scattered villages typically at road junctions which is mirrored by Route Option 5. Given its flat topography with wide sloping sides, frequent woodland and existing infrastructure, this would generally be a good 'landscape fit' for the Proposed Development.

8.1.15 Near Crookston House, Route Option 5 turns east passing between woodland belts, following the natural contours before going in a slightly north-easterly trajectory back through the open, undulating and remote landscape of LCT 91 mirroring Route Option 4 as it does so. The route passes south of Toddleburn wind farm and terminates at the Cable Sealing End. Overall, Route Option 5 minimises the introduction of infrastructure to undeveloped LCT that would be more sensitive to change and follows the Gala Water valley, reducing wide reaching impacts on the surrounding upland landscape. It is therefore a good 'landscape fit'.

Route Option 6

8.1.16 Route Option 6 initially follows the same route as Option 3 and 4, it heads north-east through an agricultural landscape with wooded sections, and progresses briefly along the boundary of LCT 269 Undulating Upland Fringe before gently turning south-east on the northern tip of LCT 266 Plateau Moorland – Lothians. While LCT 266 is characterised by its altitude and open upland slopes that form the skyline when viewed from the north, Route Option 6 traverses the outer extent of the LCT which has more gentle slopes and would therefore be less impactful on the perception of the wider character than by going over the steep slopes to the south. The route continues south-east into LCT 91 Plateau Grassland – Borders to the south of an existing wind farm.

8.1.17 Here Route Option 6 follows Route Option 5 by travelling down the Gala Water Valley. The route leaves LCT 91 and joins LCT 114 Pastoral Upland Valley, a linear LCT that lies adjacent to LCT 91 but is generally a flat valley with moderately enclosed slopes. LCT 114 continues to follow the A7, a disused railway line and Gala Water. LCT 114 is strongly influenced by the surrounding uplands and is home to scattered villages typically at road junctions which is mirrored by Route Option 6. Given its flat topography with wide sloping sides, frequent woodland and existing infrastructure, this would generally be a good 'landscape fit' for the Proposed Development.

8.1.18 Near Crookston House, Route Option 6 turns east passing between woodland belts, following lower contours before going in a slightly north-easterly trajectory back through the open, undulating and remote landscape of LCT 91 mirroring Route Option 4 as it does so. The route passes south of Toddleburn Wind Farm and terminates at the Cable Sealing End. Overall, Route Option 6 reduces the introduction of infrastructure to undeveloped LCT that would be more sensitive to change and follows the Gala Water valley, reducing wide reaching impacts on the surrounding landscape. It is therefore a good 'landscape fit'.

Route Option 7

8.1.19 This Route Option starts with the same route as the other options, heading north-east through an agricultural landscape with wooded sections, west of Whitelaw Cleugh the route turns south-east and crosses the steep scarp of LCT 266 Plateau Moorland – Lothians, which is characterised by its altitude and open upland slopes that form the skyline when viewed from the north. The introduction of an OHL to this steep scarp would give clear skyline views of the proposed OHL from the north including views from the Gladhouse Reservoir and Moorfoots Scarp SLA.

8.1.20 South of the steep scarp, Route Option 7 then heads south-east through LCT 91 Plateau Grassland – Borders, a generally remote open landscape with wide panoramic views. However, the route follows an approximately 1.5 km linear coniferous plantation that would be able to obscure some awareness of the proposed OHL and reduce its dominance within the landscape. The route then descends to a lower altitude, crossing undulating agricultural fields with wooded sections as it joins the Gala Water Valley. The route continues into LCT 114 Pastoral Upland Valley where it follows the A7 main transport corridor before turning slightly north-east near Crookston House between woodland belts and following lower contours. Here it travels in a slightly north-easterly trajectory back through the open, undulating and remote landscape of LCT 91 mirroring Route Option 4 as it does so. The route passes south of Toddleburn Wind Farm and terminates at the Cable Sealing End. Overall, Route Option 7 would generally be a suitable 'landscape fit'.

Route Option 8

8.1.21 North-east of Broad Law, Route Option 8 crosses the steep scarp of LCT 266 Plateau Moorland – Lothians, which is characterised by its altitude and open upland slopes that form the skyline when viewed from the north. The introduction of an OHL to this steep scarp would give clear skyline views of the proposed OHL from the north including views from the Gladhouse Reservoir and Moorfoots Scarp SLA.

8.1.22 This route runs through LCT 90 Dissected Plateau Moorland which has a wild characteristic created by wide horizons and long-distance unobstructed views. However, given the area in question is influenced by the presence of Carcant Wind Farm, the proposed OHL would increase the influence of infrastructure on the landscape.

8.1.23 The Route Option then changes direction abruptly to travel north-east along the B709 through LCT 114 Pastoral Upland Valley, a linear LCT that lies adjacent to LCT 91 but is generally a flat valley with moderately enclosed slopes. The Route Option changes direction again east of Heriot, now travelling south-east along the A7, the main transport corridor. Near Crookston House, Route Option 8 changes direction a third time to traverse slightly north-easterly back through the open, undulating and remote landscape of LCT 91 mirroring Route Option 4. The route passes south of Toddleburn Wind Farm and terminates at the Cable Sealing End. Overall, Route Option 8 would generally be a reasonable but not a good 'landscape fit'.

Landscape Character: Preferred Route

8.1.24 Route Option 5 would be the Preferred Route to reduce adverse impacts to landscape character. The route is situated within the context of the A7, a disused railway line, small scale wind farm and existing timber pole power lines. Therefore, the Proposed Development would not be out of character along Route Option 5 and it would minimise adverse impacts from introducing infrastructure to undeveloped upland LCT that would be more sensitive to change.

Visual Amenity Appraisal

Route Option 1

8.1.25 Proposed Development within all Route Options would be visible for recreational receptors using core footpaths to the north-east of Gladhouse Reservoir, although views would arise in the middle to far distance. The Proposed Development would be visible to sensitive recreational receptors using Core Path 8-59 (Core Path 8-59 continues into Core Path 33 when it crosses the county line into the Scottish Borders) as well as two unnamed Rights of Way that would all be crossed by the proposed OHL (one of the unnamed Rights of Way which joins Fountainhall along the A7 with Hartside near the Cable Sealing End is crossed by all 8 Route Options, therefore it shall not be referenced again as all Route Options would have equal visual impact). Against a backdrop of the A7 main road, views would also be available from sensitive residential receptors at Falahill, which includes the northern properties within the dispersed settlement of Heriot. Views would also be available from residential receptors at Nettingflat which would be viewed against other telephone and OHLs whereas from residential receptors at Nether Brotherstone, views of the proposed OHL would be at odds with the surrounding open, remote landscape. Views would also be available from the dispersed settlement to the south of Temple.

8.1.26 In the southern sections of the corridor, views would arise west of Hartside as Route Option 1 crosses a second undesignated footpath, whilst sensitive residential receptors within Hartside village situated approximately 600m north of Route Option 1 would have distant views to the south-west. However, views of the proposed OHL would be against a landscape already degraded by existing high-voltage pylons and Toddleburn Wind Farm and are therefore less sensitive to the type of change proposed. All Route Options pass approximately 600m from residential receptors at Hartside, although sequential views would be available of Route Options 1 and 3.

8.1.27 The Cable Sealing End terminates approximately 900m north-east of Core Path 22, therefore all Route Options fall within approximately 600m of the Core Path, resulting in views from sensitive recreational receptors affecting all Route Options. These views would be seen against a backdrop of high-voltage pylons which cross Core Path 22 at this point. As Core Path 22 is equally impacted by all Route Options it shall not be mentioned further to avoid repetition.

Route Option 2

8.1.28 The Proposed Development would be visible to sensitive recreational receptors using Core Path 8-59 (Core Path 8-59 continues into Core Path 33 when it crosses the county line into the Scottish Borders). Views would also be available to recreational receptors along an unnamed Right of Way connecting the A7 near Heriot with Brothershiels in the north. Views would also be available from sensitive residential receptors within Falahill, Heriot, Nettingflat, Nether Brotherstone and Crookston North Mains plus isolated properties within the remote rural landscape. Views from residential receptors at Nether Brotherstone would be of high sensitivity to the type of change proposed given the surrounding open, remote landscape character and visual amenity. Views would also be available from residential receptors at Hartside, however these would be in the context of existing high-voltage pylons and Toddleburn Wind Farm and are therefore less sensitive to the type of change proposed.

Route Option 3

8.1.29 The Proposed Development would appear in sequential views from sensitive recreational receptors for an approximately 2 km section of Core Path 33. Along this stretch, some views of the Proposed Development would appear in the background of an existing wind farm. Views would also be available to recreational receptors along an unnamed Right of Way connecting the A7 near Heriot with Brothershiels in the north as Route Option 3 crosses it south-west of Brothershiels, and from sensitive residential receptors within Falahill, Heriot, Nettingflat and Nether Brotherstone. Views from residential receptors at Nether Brotherstone would be of high sensitivity to the type of change proposed given the surrounding open, remote landscape character and visual amenity. Views would also arise west of Hartside as Route Option 3 crosses a second undesignated footpath, whilst residential receptors at Hartside would have distant views to the south-west however, these would be in the context of existing high-voltage pylons and Toddleburn Wind Farm and are therefore less sensitive to the type of change proposed. While all Route Options pass approximately 600m from Hartside, sequential views would be available of Route Options 1 and 3.

Route Option 4

8.1.30 The Proposed Development would appear in views from sensitive recreational receptors using Core Path 8-59 (Core Path 8-59 continues into Core Path 33 when it crosses the county line into the Scottish Borders) and then sequential views would be experienced from sensitive recreational receptors using an approximately 2 km section of Core Path 33. Along this stretch, some views of the Proposed Development would appear in the background of an existing wind farm. Views would also be available to recreational receptors along an unnamed Right of Way connecting the A7 near Heriot with Brothershiels in the north as Route Option 4 crosses it south-west of Brothershiels and from sensitive residential receptors within the villages of Falahill, Heriot, Nettingflat, Nether Brotherstone and Crookston North Mains plus isolated properties within the remote rural landscape. Views from residential receptors at Nether Brotherstone would be of high sensitivity to the type of change proposed given the surrounding open, remote landscape character and visual amenity. Views would also be available from residential receptors at Hartside, however these would be in the context of existing high-voltage pylons and Toddleburn Wind Farm and are therefore less sensitive to the type of change proposed.

Route Option 5

8.1.31 A proposed OHL along Route Option 5 would be visible from sensitive recreational receptors using Core Path 8-59 and Core Path 33 (these Core Paths join at the boundary between Midlothians and the Scottish Borders) which is crossed by Route Option 5 to the north. The proposed OHL would then appear in sequential views along a further section of Core Path 33 'Link on Road' for approximately 1.8 km near the village of Heriot, and from Core Paths 207 and 208 both of which are short paths crossing a disused railway line. The proposed OHL would be noticeable from groups of residential receptors at Falahill, Heriot, Haltree and Crookston South Mains. However, views experienced by sensitive recreational and residential receptors would be viewed against the backdrop of the A7, a disused railway line and existing timber pole power/telephone lines. Route Option 5 crosses a second undesignated footpath as it traverses a ridgeline south-west of the Toddleburn Wind Farm. Further views would be available from residential receptors at Hartside, however these would be in the context of existing high-voltage pylons and Toddleburn Wind Farm in the foreground of views and are therefore less sensitive to the type of change proposed.

Route Option 6

8.1.32 A proposed OHL along Route Option 6 would be visible from recreational receptors using Core Path 8-59 and then sequential views would be experienced by sensitive recreational receptors along an approximately 2 km stretch of Core Path 33. Along this stretch, some views of the Proposed Development would appear in the background of an existing small wind farm. The proposed OHL would then appear in views along a further section of Core Path 33 'Link on Road' for approximately 1.8 km near the village of Heriot, and from Core Paths 207 and 208 both of which are short paths crossing a disused railway line. Views of the proposed OHL would likely be available from groups of residential properties at Falahill, Heriot, Haltree and Crookston South Mains. However, these properties are situated along the A7 and adjacent disused railway line where views of existing timber pole telephone/power OHL already exist and are therefore less sensitive to the type of change proposed. Route Option 6 crosses a second undesignated footpath as it traverses a ridgeline south-west of the Toddleburn Wind Farm. Further views would be available from residential receptors at Hartside, however these would be in the context of existing high-voltage pylons and Toddbleburn Wind Farm in the foreground of views and are therefore less sensitive to the type of change proposed.

Route Option 7

8.1.33 Views of the Proposed Development along Route Option 7 would be visible from recreational users of Core Path 33 which crosses Route Option 7 in three locations. However, the route is in the context of a linear coniferous plantation for approximately 3.3 km, which would form a backdrop to views and visually reduce the dominance of the proposal. Views would likely also be available from recreational receptors along an unnamed Right of Way south of Heriot and sensitive residential receptors from properties within Heriot, Haltree and Crookston South Mains. However, these properties are predominantly situated along the A7 and adjacent disused railway line where views of existing timber pole telephone/power OHL already exist and are therefore less sensitive to the type of change proposed. Route Option 5 crosses a second undesignated footpath as it traverses a ridgeline south-west of the Toddleburn Wind Farm. Further views would be available from residential receptors at Hartside, however these would be in the context of existing high-voltage pylons and Toddleburn Wind Farm in the foreground of views and are therefore less sensitive to the type of change proposed.

Route Option 8

8.1.34 Views would also be available from sensitive residential properties at Carcant and the dispersed residential receptors located along the B709, including the village of Heriot and sequential views of the proposed OHL would be visible from recreational users along a section of Core Path 33 for approximately 2.3 km and in the context of the B709 south-west of Heriot and from recreational receptors along an unnamed Right of Way south of Heriot. Further along towards the A7, views would also likely be available from residential properties at Haltree and Crookston South Mains however, these properties are situated along the A7 and adjacent disused railway line where views of existing timber pole telephone/power OHL already exist and are therefore less sensitive to the type of change proposed. Route Option 5 crosses a second undesignated footpath as it traverses a ridgeline south-west of the Toddleburn Wind Farm. Further views would be available from residential receptors at Hartside, however these would be in the context of existing high-voltage pylons and Toddleburn Wind Farm in the foreground of views and are therefore less sensitive to the type of change proposed.

Visual Amenity: Preferred Route

8.1.35 Route Option 5 would be the Preferred Route to reduce adverse impacts to visual amenity from sensitive receptors. While there are sensitive visual receptors situated along Route Option 5, these experience views against a backdrop of existing infrastructure. Route Option 5 also has fewer crossing points with Core Footpaths and undesignated footpaths in comparison to the other routes, particularly those associated with the uplands to the north-west of Heriot.

8.2 Cultural Heritage Appraisal

Route Option 1

8.2.1 There are eight designated heritage assets located within the 1 km AoS of Route Option 1, one of which is located within the Route Option: Brotherstone fort (SM1177). The fort is located within the eastern section of the Route Option. Due to the Scheduled Monument being located within the Route Option, changes within the assets setting have potential to cause significant impacts as setting, including intervisibility between forts, contributes to their cultural significance. As scheduled monuments are protected by law, there will be no direct physical impacts to them from construction activities. There are an additional two Scheduled Monuments located within the 1 km AoS of Route Option 1. Hartside, scooped homesteads (SM4554) is located 318 m north of Route Option 1 and Overhowden, henge (SM2155) is located 960 m east of Route Option 1. Both Scheduled Monuments are located in the eastern section of all eight Route Options and therefore anticipated impacts to the cultural significance from change within the setting of these assets is unlikely to be avoided.

8.2.2 Additionally, there are five Listed Buildings located within the 1 km AoS of Route Option 1, this includes Middleton Mains (LB45182), a category C listed building located 620 m north of Route Option, Heriot House (LB13405), a category B listed building located 1 km south of Route Option 1 and Esperston Farmhouse (LB6644), a category B listed building located 765 m north of Route Option 1. Cartshed and Granary, Outerston Farm (LB45817) and Cottage, Outerston Farm (LB45818), are category B and C listed buildings, respectively and are located adjacent to each other, 950 m north of Route Option 1 in the western section of the route. There is potential for significant impacts to cultural significance from changes within setting of these assets.

8.2.3 There are 23 non-designated assets relating to prehistoric defensive and settlement activity, and post-medieval agricultural activity. These are located across the Route Option. Significant effects to these assets could be mitigated through micro siting of the wooden poles, demarcation and avoidance.

Route Option 2

8.2.4 There are 13 designated assets located within the 1 km AoS of Route Option 2, two of which are located within the Route Option. Brotherstone fort (SM1177) is in the north-east of the route and Middlehill fort (SM1176) is in the south-east of the Route Option. Due to the Scheduled Monuments being located within the Route Option, changes within the assets setting have potential to cause significant impacts as setting, including intervisibility between forts, contributes to their cultural significance. As scheduled monuments are protected by law, there will be no direct physical impacts to them from construction activities. There are an additional two scheduled monuments within the 1 km AoS of Route Option 2. Hartside, scooped homesteads (SM4554) is located 318 m north of Route Option 2 and Overhowden, henge (SM2155) is located 960 m east of Route Option 2. Both Scheduled Monuments are in the eastern section of all eight Route Options and therefore anticipated impacts to the cultural significance from change within the setting of these assets is unlikely to be avoided.

8.2.5 An additional nine listed buildings are located within the 1 km AoS of Route Option 2, this includes Middleton Mains (LB45182), a category C listed building located 620 m north of Route Option, Heriot House (LB13405), a category B listed building located 1 km south of Route Option 2 and Esperston Farmhouse (LB6644), a category B listed building located 765 m north of Route Option 2. Cartshed and Granary, Outerston Farm (LB45817) and Cottage, Outerston Farm (LB45818), are category B and C listed buildings, respectively and are located adjacent to each other, 950 m north of Route Option 2 in the western section of the route. Four listed buildings, comprising Old Crookston House (LB17396, LB13895, LB51298 and LB51010) are clustered west of the southern section of the Route Option. There is potential for significant impacts to cultural significance from changes within setting of these assets.

8.2.6 There are 26 non-designated assets relating to prehistoric settlement activity, post-medieval agricultural activity and modern railway infrastructure, spread across the Route Option. No significant effects are anticipated as any impacts can be mitigated through micro-siting of the wooden poles, demarcation and avoidance.

Route Option 3

8.2.7 There are seven designated assets within the 1 km AoS, one of which is located within the eastern section of the Route Option: Brotherstone fort (SM1177). Due to the Scheduled Monuments being located within the Route Option, changes within the assets setting have potential to cause significant impacts as setting, including intervisibility between forts, contributes to their cultural significance . As scheduled monuments are protected by law, there will be no direct physical impacts to them from construction activities. There are an additional two scheduled monuments within the 1 km AoS comprising Hartside, scooped homesteads (SM4554) and Overhowden, henge (SM2155), clustered east of the Route Option. Setting is particularly important to the cultural significance of the henge monument; therefore, it is possible that there will be significant effects from changes within the setting of this asset.

8.2.8 An additional three listed building located within the 1 km AoS of Route Option 3. House (LB13405), a category B listed building is located 1 km south of the middle of the Route Option, Esperston Farmhouse (LB6644), a category B listed building located 765 m north of Route Option 3, Cartshed and Granary, Outerston Farm (LB45817), a category B listed building located 950 m north of Route Option 3 and Cottage, Outerston Farm (LB45818), are category B and C listed buildings, located adjacent to Cartshed and Granary, Outerston Farm, 950 m north of Route Option 3 in the western section of the route. It is possible that there will be significant effects from changes within the setting of the listed building from the Proposed Development.

8.2.9 There are 21 non-designated assets relating to prehistoric settlement and defensive activity, medieval and post-medieval agricultural activity and modern settlements and are located across the Route Option. No significant effects are anticipated as any impacts can be mitigated through micro-siting of the wooden poles, demarcation and avoidance.

Route Option 4

8.2.10 There are 12 designated heritage assets located within the 1 km AoS of Route Option 4, two of which are located within the Route Option. This include Brotherstone fort (SM1177), located in the north-east of the Route Option, and Middlehill fort (SM1176), located in the south-east of the Route Option. Due to the Scheduled Monuments being located within the Route Option, changes within the assets setting have potential to cause significant impacts as setting, including intervisibility between forts, contributes to their cultural significance. As scheduled monuments are protected by law, there will be no direct physical impacts to them from construction activities. There are also an additional two scheduled monuments within the 1 km AoS of Route Option 4. Hartside, scooped homesteads (SM4554) is located 318 m north of Route Option 4 and Overhowden, henge (SM2155) is located 960 m east of Route Option 4. Setting is particularly important to the cultural significance of the henge monument; therefore, it is possible that there will be significant effects from changes within the setting of this asset.

8.2.11 An additional eight listed buildings are located within the 1 km AoS of Route Option 4. This includes Heriot House (LB13405) located 1km south of the Route Option, Esperston Farmhouse (LB6644), a category B listed building located 765 m north of Route Option 4, Cartshed and Granary, Outerston Farm (LB45817), a category B listed building located 950 m north of Route Option 4 and Cottage, Outerston Farm (LB45818), are category B and C listed buildings, located adjacent to Cartshed and Granary, Outerston Farm, 950 m north of Route Option 4 in the western section of the route. Four listed buildings, comprising Old Crookston House (LB17396, LB13895, LB51298 and LB51010) are clustered west of the southern section of the Route Option. There is potential for significant impacts to cultural significance from changes within setting of these assets.

8.2.12 There are 25 non-designated assets within Route Option 4 relating to prehistoric settlement and defensive activity, post-medieval agricultural activity and modern railway infrastructure, located across the Route Option. No significant effects are anticipated as any impacts can be mitigated through micro-siting of the wooden poles, demarcation and avoidance.

Route Option 5

8.2.13 There are 13 designated assets located within the 1 km AoS of Route Option 5, two of which are located within the Route Option. Heriot House (LB13405), a category B listed building is located within the centre of Route Option 5 and Middlehill (SM1176), is in the south-east of Route Option 5. Due to a Scheduled Monument and Listed Building being located within the Route Option, changes within the assets setting have potential to cause significant impacts as setting, contributes to their cultural significance. As scheduled monuments and listed buildings are protected by law, there will be no direct physical impacts to them from construction activities.

8.2.14 There are an additional three scheduled monuments within the 1 km AoS comprising Hartside, scooped homesteads (SM4554) and Overhowden, henge (SM2155), clustered east of the Route Option and Hodge Cairn (SM1171), located 215 m south of Route Option 5. Setting is particularly important to the cultural significance of the henge monument and fort; therefore, it is possible that there will be significant effects from changes within the setting of these assets.

8.2.15 There are eight additional listed buildings located within the 1 km AoS of Route Option 5. This includes Middleton Mains (LB45182), located 620 m north the route option, Esperston Farmhouse (LB6644), a category B listed building located 765 m north of Route Option 5, Cartshed and Granary, Outerston Farm (LB45817), a category B listed building located 950 m north of Route Option 5 and Cottage, Outerston Farm (LB45818), are category B and C listed buildings, located adjacent to Cartshed and Granary, Outerston Farm, 950 m north of Route Option 5 in the western section of the route. Four listed buildings, comprising Old Crookston House (LB17396, LB13895, LB51298 and LB51010) are clustered west of the southern section of the Route Option. As Route Option 5 routes through the listed buildings comprising Old Crookston House, it is anticipated that the setting of these assets will be impacted and therefore as setting contributes to these assets' cultural significance, it is anticipated that there will be significant effects to the setting of these assets.

8.2.16 There are 39 non-designated assets within the 1 km AoS of Route Option 5 relating to prehistoric settlement and defensive activity, post-medieval agricultural activity and quarries and modern railway infrastructure. These are mainly clustered in the middle section of Route Option 5. No significant effects are anticipated as any impacts can be mitigated through micro-siting of the wooden poles, demarcation and avoidance.

Route Option 6

8.2.17 There are 12 designated assets located within the 1 km AoS of Route Option 6, two of which are within the Route Option. Heriot House (LB13405), a category B listed building is located within the centre of Route Option 6 and Middlehill (SM1176), is in the south-east of the Route Option. Due to a Scheduled Monument and Listed Building being located within the Route Option, changes within the assets setting have potential to cause significant impacts as setting, contributes to their cultural significance. As scheduled monuments and listed buildings are protected by law, there will be no direct physical impacts to them from construction activities.

8.2.18 There are an additional three scheduled monuments within the 1 km AoS comprising Hartside, scooped homesteads (SM4554) and Overhowden, henge (SM2155), clustered east of the Route Option and Hodge Cairn (SM1171), located 215 m south of Route Option 6. Setting is particularly important to the cultural significance of the henge monument and fort; therefore, it is possible that there will be significant effects from changes within the setting of these assets.

8.2.19 There are an additional seven listed buildings within the 1 km AoS of Route Option 6. Esperston Farmhouse (LB6644), a category B listed building located 765 m north of Route Option 6, Cartshed and Granary, Outerston Farm (LB45817), a category B listed building located 950 m north of Route Option 6 and Cottage, Outerston Farm (LB45818), are category B and C listed buildings, located adjacent to Cartshed and Granary, Outerston Farm, 950 m north of Route Option 6 in the western section of the route. Old Crookston House (LB17396, LB13895, LB51298 and LB51010), comprised of four listed buildings, clustered west of the southern section of the Route Option. As Route Option 6 routes through the listed buildings comprising Old Crookston House, it is anticipated that the setting of these assets will be impacted and therefore as setting contributes to these assets' cultural significance, it is anticipated that there will be significant effects to the setting of these assets.

8.2.20 There are 37 non-designated assets within Route Option 6 relating to prehistoric settlement and defensive activity, post-medieval agricultural activity and quarries and modern railway infrastructure. These are mainly clustered in the middle section of Route Option 6. No significant effects are anticipated as any impacts can be mitigated through micro-siting of the wooden poles, demarcation and avoidance.

Route Option 7

8.2.21 There are 13 designated assets within the 1 km AoS, one of which is located within Route Option 7. Middlehill (SM1176) is located in the eastern section of Route Option 7. Due to the Scheduled Monument being located within the Route Option, changes within the assets setting have potential to cause significant impacts as setting, including intervisibility between forts, contributes to their cultural significance. As scheduled monuments are protected by law, there will be no direct physical impacts to them from construction activities. There are an additional three scheduled monuments within the 1 km AoS comprising Hartside, scooped homesteads (SM4554) and Overhowden, henge (SM2155), clustered east of the Route Option and Hodge Cairn (SM1171), located 215 m south of Route Option 7. Setting is particularly important to the cultural significance of the henge monument and fort; therefore, it is possible that there will be significant effects from changes within the setting of these assets.

8.2.22 Additionally, there are nine listed buildings located within the 1 km AoS. Heriot House (LB13405) is located 65 m north of Route Option 7, Heriot Parish Church (LB50278) is located 700 m south of Route Option 7 and within Route Option 8 and Esperston Farmhouse (LB6644), a category B listed building is located 765 m north of Route Option 7. Cartshed and Granary, Outerston Farm (LB45817) and Cottage, Outerston Farm (LB45818), are category B and C listed buildings, respectively and are located adjacent to each other, 950 m north of Route Option 7 in the western section of the Route Option. Crookston House is located north (LB17396) and south (LB13895, LB51298 and LB51010) of the Route Option. As Route Option 7 routes through the listed buildings comprising Old Crookston House, it is anticipated that the setting of these assets will be impacted and therefore as setting contributes to these assets' cultural significance, it is anticipated that there will be significant effects to the setting of these assets.

8.2.23 There are 24 non-designated assets within Route Option 7 relating to prehistoric settlement and defensive activity, post-medieval agricultural activity and quarries and modern railway infrastructure, these are mainly located in the eastern section of the Route Option. No significant effects are anticipated as any impacts can be mitigated through micro-siting of the wooden poles, demarcation and avoidance.

Route Option 8

8.2.24 There are 16 designated assets within the 1 km AoS of Route Option 8, five of which are located within the Route Option. Carcant House (LB8207) and Carcant Bridge (LB8208) are both category C listed buildings located in the western section of the Route Option. Borthwick Hall (LB6722) and Heriot Parish Church (LB50278) are both category C listed buildings located in the centre of Route Option 8, these structures are part of the cluster of non-designated assets located within the Route Option. Middlehill (SM1176) is in the eastern section of Route Option 8. Due to a Scheduled Monument and Listed Building being located within the Route Option, changes within the assets setting have potential to cause significant impacts as setting, contributes to their cultural significance. As scheduled monuments and listed buildings are protected by law, there will be no direct physical impacts to them from construction activities.

8.2.25 Additionally, there are six scheduled monuments located within the 1 km AoS. This includes Scooped Settlement (SM2135) located 225 m north of Route Option 8, Corsehope Rings (SM1166) located 485 m south of the Route Option, Halltree Rings (SM1170) located 880 m south of the Route Option, Hodge Cairn (SM1171) located 215 m south of the Route Option and Hartside, scooped homesteads (SM4554) and Overhowden, henge (SM2155), clustered east of Route Option 8. Setting is particularly important to the cultural significance of the prehistoric scheduled monuments; therefore, it is possible that there will be significant effects from changes within the setting of these assets.

8.2.26 There are an additional five listed buildings within the 1 km AoS of Route Option 8. Heriot House (LB13405) located 635 m north of Route Option 8 and the cluster of listed buildings for Crookston House, located north (LB17396) and south (LB13895, LB51298 and LB51010) of the Route Option. As Route Option 8 routes through the listed buildings comprising Old Crookston House, it is anticipated that the setting of these assets will be impacted and therefore as setting contributes to these assets' cultural significance, it is anticipated that there will be significant effects to the setting of these assets

8.2.27 There are 50 non-designated assets within Route Option 8, relating to prehistoric settlement and defensive activity, medieval ecclesiastical buildings, post-medieval agricultural activity and modern railway infrastructure. These are located throughout Route Option 8, however there is a cluster south-east of Roughsware Wood. No significant effects are anticipated as any impacts can be mitigated through micro-siting of the wooden poles, demarcation and avoidance.

Cultural Heritage: Preferred Route

8.2.28 The appraisals of the eight Route Options have determined that there are cultural heritage constraints in each. These are summarised and compared to determine the most suitable route for cultural heritage which would result in the least potential impacts, leading to potentially significant adverse effects. The appraisal has determined that Route Option 3 would be the Preferred Route for Cultural Heritage.

8.2.29 All Route Options have at least one designated heritage asset within them. Routes 1, 3 and 7 all have one designated heritage asset, a scheduled monument, within the Route Option and therefore have the least potential for significant adverse effects from the Proposed Development. Of these three route options, Route Option 3 has the least amount of designated heritage assets within 1 km and has the least amount of non-designated heritage assets within the Route Options. Therefore, Route Option 3, has the least potential for heritage assets to be impacted through changes within their setting and direct physical impacts, leading to significant adverse effects.

8.2.30 Route Option 8 would be the least favoured Route Option as it has 16 designated heritage assets within 1 km of the AoS, five of which are within the Route Option and have the potential for significant adverse effects from the development. This Route Option also had the most non-designated heritage assets within the route compared to the others and therefore the most potential for direct physical impacts.

8.2.31 Although Route Option 3 is the Preferred Route for cultural heritage, there is still potential for significant effects through changes within the setting of scheduled monuments and listed buildings.

8.3 Ecology and Ornithology Appraisal

8.3.1 Each of the Route Options considered potentially affect the following biodiversity factors:

- International and European designated sites: Multiple SPA, SAC and Ramsar sites are located within the search parameters of the desk study. Notably, the River Tweed SAC within Route Options 2, 4, 5, 6, 7 and 8 as well as Moorfoot Hills SAC located adjacent to Route Option 8. There is a greater extent of the River Tweed SAC within Route Option 8 and as such it is the least preferred option, followed by the remaining Route Options which contain the SAC (Route Options 2, 4, 5, 6 and 7). There is no preference between the remaining Route Options. The remaining designations are largely equidistant from designated sites and as such there is no preference among Route Options. The SPA and Ramsar sites are largely designated for overwintering geese, which there is suitable habitat to support within all the Route Options. NatureScot should be consulted with regards to the approach to ornithology surveys.
- National designated sites: Three SSSIs are located within the search parameters of the desk study. They are largely equidistant from all Route Options, except for Moorfoot Hills SSSI which is located adjacent to Route Option 8. As such this is the least Preferred Route with respect to nationally designated sites. There is no preference between the remaining Route Options.
- Local designated sites: Threeburnford Cleugh LNCS is located within all the Route Options and Clints Hill LNCS is located within Route Options 1, 2, 3 and 4. There is no preference between the Route Options for the remaining designations (Butterfly Conservation – Scottish Priority Landscapes, B-Lines and IBA). Route Options 1, 2, 3 and 4 are the least Preferred Routes as the LNCSs span the width of the Route Options and cannot be avoided. There is no preference between the remaining Route Options.
- Ancient woodland: A single area of 2b LEPO woodland is located within Route Options 1, 2, 3, 4, 5, 6 and 7. All AWI listed woodland within or adjacent to the Route Options are Category 2b LEPO woodland. AWI woodlands are located on the perimeter or do not span the width of the Route Option and could be avoided. As such there is no preference between the Route Options.

- NWSS: All NWSS woodland parcels do not span the width of the Route Options and could be avoided. As such there is no preference between the Route Options.
- Carbon and Peatland map: All Route Options contain Class 1 peat and could therefore contain priority habitat (blanket bog). Route Option 8 is the Preferred Route as there is the least area of Class 1 peatland between the Route Options. There is no preference between the remaining Route Options as they all have similar total areas of Class 1 peatland.
- Protected species: All Route Options have the potential to support a range of protected species, as detailed in the ecological baseline. There is no disparity between Route Options for protected species.
- Habitats: All Route Options are dominated by similar habitats. These include agricultural land and plantation woodland as well as broadleaved woodland, treelines and hedgerows, upland heathland, blanket bog (where there is Class 1 peat) and watercourses. All Route Options have the potential to support GWDTEs. There is no disparity between Route Options for habitats.
- Ornithology: Habitats within the AoS could support and number of birds of conservation interest, including breeding waders, barn owl, hen harrier, short-eared owl, black grouse and overwintering geese. There is no disparity between Route Options for ornithology.

Ecology and Ornithology: Preferred Route

8.3.2 The Preferred Routes for Ecology are Route Option 1 and Route Option 3. There is no disparity between the two options with reference to designated sites, protected species, habitats or ornithology.

8.4 Geology, Hydrology and Hydrogeology Appraisal

Route Option 1

8.4.1 Route Option 1 contains multiple named and unnamed watercourses. The WFD classified watercourses within Route Option 1 include: Gore Water/Middleton South Burn (ID: 3819), Keith Water/Fala Dam Burn (ID 4011), Gala Water (Source to Armet Water confluence) (ID: 5282), Armet Water (ID: 5285) and the Leader Water (ID 5406). The WFD status of these watercourses ranges from Bad to Good in 2023[57].

8.4.2 Route Option 1 is within a High river flood risk zone associated with the Keith Water/Fala Dam Burn, Armet Water and its tributaries and Leader Water and its tributaries.

8.4.3 Route Option 1 contains four PWS and one SEPA CAR registered activity.

8.4.4 Based on Scottish Water (SW) dataset there are no SW abstractions within the Route Option 1.

8.4.5 Route Option 1 is underlain by the Peebles, Galashiels and Hawick groundwater body as well as Gladhouse groundwater body. It is also underlain by Gala group, Shinnel group, Portpatrick formation (low productivity aquifers) and Inverclyde group (moderately productive aquifer).

8.4.6 According to NatureScot SiteLink[32] there are no designated sites relevant to Geology, Hydrology and Hydrogeology within the Route Option 1.

8.4.7 According to NatureScot carbon and peatland mapping[34] Route Option 1 contains nationally important Class 1, peat as well as Classes 3, 4 and 5. However, the majority of Route Option 1 is underlain by Class 0 mineral soils.

Route Option 2

8.4.8 Route Option 2 contains multiple named and unnamed watercourses. The WFD classified watercourses within Route Option 2 include: Gore Water/Middleton South Burn (ID: 3819), Keith Water/Fala Dam Burn (ID 4011), Gala Water (Source to Armet Water confluence) (ID: 5282), Armet Water (ID: 5285) and the Leader Water (ID 5406). The WFD status of these watercourses ranges from Bad to Good in 2023[30].

8.4.9 Route Option 2 is within a High river flood risk zone associated with the Keith Water/Fala Dam Burn, Armet Water and its tributaries and Leader Water and its tributaries.

8.4.10 Route Option 2 contains four PWS and one SEPA CAR registered activity.

8.4.11 Based on SW dataset there are no SW within Route Option 2.

8.4.12 Route Option 2 is underlain by the Peebles, Galashiels and Hawick groundwater body as well as Gladhouse groundwater body. It is also underlain by Gala group, Shinnel group, Portpatrick formation (low productivity aquifers) and Inverclyde group (moderately productive aquifer).

8.4.13 According to NatureScot SiteLink[32] there are no designated sites relevant to Geology, Hydrology and Hydrogeology within the Route Option 2.

8.4.14 According to NatureScot carbon and peatland mapping[34] Route Option 2 contains nationally important Class 1, peat as well as Classes 3, 4 and 5. However, the majority of Route Option 2 is underlain by Class 0 mineral soils.

Route Option 3

8.4.15 Route Option 3 contains multiple named and unnamed watercourses. The WFD classified watercourses within Route Option 3 include: Gore Water/Middleton South Burn (ID: 3819), Keith Water/Fala Dam Burn (ID 4011), Gala Water (Source to Armet Water confluence) (ID: 5282), Armet Water (ID: 5285) and the Leader Water (ID 5406). The WFD status of these watercourses ranges from Bad to Good in 2023[30.]

8.4.16 Route Option 3 is within a High river flood risk zone associated with the Keith Water/Fala Dam Burn, Armet Water and its tributaries and Leader Water and its tributaries.

8.4.17 Route Option 3 contains five PWS and one SEPA CAR registered activity.

8.4.18 Based on SW dataset, there are no SW within Route Option 3.

8.4.19 Route Option 3 is underlain by the Peebles, Galashiels and Hawick groundwater body as well as Gladhouse groundwater body. It is also underlain by Gala group, Shinnel group, Portpatrick formation (low productivity aquifers) and Inverclyde group (moderately productive aquifer).

8.4.20 According to NatureScot SiteLink[32] there are no designated sites relevant to Geology, Hydrology and Hydrogeology within the Route Option 3.

8.4.21 According to NatureScot carbon and peatland mapping[34] Route Option 3 contains nationally important Class 1, peat as well as Classes 3, 4 and 5. However, the majority of Route Option 3 is underlain by Class 0 mineral soils.

Route Option 4

8.4.22 Route Option 4 contains multiple named and unnamed watercourses. The WFD classified watercourses within Route Option 4 include: Gore Water/Middleton South Burn (ID: 3819), Keith Water/Fala Dam Burn (ID 4011), Gala Water (Source to Armet Water confluence) (ID: 5282), Armet Water (ID: 5285) and the Leader Water (ID 5406). The WFD status of these watercourses ranges from Bad to Good in 2023[30].

8.4.23 Route Option 4 is within a High river flood risk zone associated with the Keith Water/Fala Dam Burn, Armet Water and its tributaries and Leader Water and its tributaries.

8.4.24 Route Option 4 contains five PWS and one SEPA CAR registered activity.

8.4.25 Based on SW dataset there are no SW abstractions within Route Option 4.

8.4.26 Route Option 4 is underlain by the Peebles, Galashiels and Hawick groundwater body as well as Gladhouse groundwater body. It is also underlain by Gala group, Shinnel group, Portpatrick formation (low productivity aquifers) and Inverclyde group (moderately productive aquifer).

8.4.27 According to NatureScot SiteLink[32] there are no designated sites relevant to Geology, Hydrology and Hydrogeology within the Route Option 4.

8.4.28 According to NatureScot carbon and peatland mapping[34] Route Option 4 contains nationally important Class 1, peat as well as Classes 3, 4 and 5. However, the majority of Route Option 4 is underlain by Class 0 mineral soils.

Route Option 5

8.4.29 Route Option 5 contains multiple named and unnamed watercourses. The WFD classified watercourses within Route Option 5 include: Gore Water/Middleton South Burn (ID: 3819), Keith Water/Fala Dam Burn (ID 4011), Gala Water (Source to Armet Water confluence) (ID: 5282), Armet Water (ID: 5285), Heriot Water/Blackhope Water (ID: 5286), Gala Water (Heriot Water to Armet Water confluences) (ID: 5281) and the Leader Water (ID 5406). The WFD status of these watercourses ranges from Bad to Good in 2023[30].

8.4.30 Route Option 5 is within a High river flood risk zone associated with the Keith Water/Fala Dam Burn, Armet Water and its tributaries, Heriot Water/Blackhope Water and its tributaries, Gala Water (Heriot Water to Armet Water confluences) and Leader Water and its tributaries.

8.4.31 Route Option 5 contains six PWS and one SEPA CAR registered activity.

8.4.32 Based on SW dataset there are no SW within Route Option 5.

8.4.33 Route Option 5 is underlain by the Peebles, Galashiels and Hawick groundwater body as well as Gladhouse groundwater body. It is also underlain by Gala group, Shinnel group, Portpatrick formation (low productivity aquifers) and Inverclyde group (moderately productive aquifer).

8.4.34 According to NatureScot SiteLink[32] there are no designated sites relevant to Geology, Hydrology and Hydrogeology within the Route Option 5.

8.4.35 According to NatureScot carbon and peatland mapping[34] Route Option 5 contains nationally important Class 1, peat as well as Classes 3, 4 and 5. However, the majority of Route Option 5 is underlain by Class 0 mineral soils.

Route Option 6

8.4.36 Route Option 6 contains multiple named and unnamed watercourses. The WFD classified watercourses within Route Option 6 include: Gore Water/Middleton South Burn (ID: 3819), Keith Water/Fala Dam Burn (ID 4011), Gala Water (Source to Armet Water confluence) (ID: 5282), Armet Water (ID: 5285), Heriot Water/Blackhope Water (ID: 5286), Gala Water (Heriot Water to Armet Water confluences) (ID: 5281) and the Leader Water (ID 5406). The WFD status of these watercourses ranges from Bad to Good in 2023[30].

8.4.37 Route Option 6 is within a High river flood risk zone associated with the Armet Water and its tributaries, Heriot Water/Blackhope Water and its tributaries, Gala Water (Heriot Water to Armet Water confluences) and Leader Water and its tributaries.

8.4.38 Route Option 6 contains seven PWS and one SEPA CAR registered activity.

8.4.39 Based on SW dataset, there are no SW within Route Option 6.

8.4.40 Route Option 6 is underlain by the Peebles, Galashiels and Hawick groundwater body as well as Gladhouse groundwater body. It is also underlain by Gala group, Shinnel group, Portpatrick formation (low productivity aquifers) and Inverclyde group (moderately productive aquifer).

8.4.41 According to NatureScot SiteLink[32] there are no designated sites relevant to Geology, Hydrology and Hydrogeology within the Route Option 6.

8.4.42 According to NatureScot carbon and peatland mapping[34] Route Option 6 contains nationally important Class 1, peat as well as Classes 3, 4 and 5. However, the majority of Route Option 6 is underlain by Class 0 mineral soils.

Route Option 7

8.4.43 Route Option 7 contains multiple named and unnamed watercourses. The WFD classified watercourses within Route Option 7 include: Gore Water/Middleton South Burn (ID: 3819), Gala Water (Source to Armet Water confluence) (ID: 5282), Armet Water (ID: 5285), Heriot Water/Blackhope Water (ID: 5286), Gala Water (Heriot Water to Armet Water confluences) (ID: 5281) and the Leader Water (ID 5406). The WFD status of these watercourses ranges from Bad to Good in 2023[30].

8.4.44 Route Option 7 is within a High river flood risk zone associated with the Armet Water and its tributaries, Heriot Water/Blackhope Water and its tributaries, Gala Water (Heriot Water to Armet Water confluences) and Leader Water and its tributaries.

8.4.45 Route Option 7 contains four PWS and one SEPA CAR registered activity.

8.4.46 Based on SW dataset, there are no SW within Route Option 7.

8.4.47 Route Option 7 is underlain by the Peebles, Galashiels and Hawick groundwater body as well as Gladhouse groundwater body. It is also underlain by Gala group, Shinnel group, Portpatrick formation (low productivity aquifers) and Inverclyde group (moderately productive aquifer).

8.4.48 According to NatureScot SiteLink[32] there are no designated sites relevant to Geology, Hydrology and Hydrogeology within the Route Option 7.

8.4.49 According to NatureScot carbon and peatland mapping[34] Route Option 7 contains nationally important Class 1, peat as well as Classes 3, 4 and 5. However, the majority of Route Option 7 is underlain by Class 0 mineral soils.

Route Option 8

8.4.50 Route Option 8 contains multiple named and unnamed watercourses. The WFD classified watercourses within Route Option 8 include: Gala Water (Source to Armet Water confluence) (ID: 5282), Armet Water (ID: 5285), Heriot Water/Blackhope Water (ID: 5286), Gala Water (Heriot Water to Armet Water confluences) (ID: 5281) and the Leader Water (ID 5406). The WFD status of these watercourses ranges from Bad to Good in 2023[30].

8.4.51 Route Option 8 is within a High river flood risk zone associated with the Armet Water and its tributaries, Heriot Water/Blackhope Water and its tributaries, Gala Water (Heriot Water to Armet Water confluences) and Leader Water and its tributaries.

8.4.52 Route Option 8 contains eight PWS and one SEPA CAR registered activity.

8.4.53 Based on SW dataset, there are no SW within Route Option 8.

8.4.54 Route Option 8 is underlain by the Peebles, Galashiels and Hawick groundwater body as well as Gladhouse groundwater body. It is also underlain by Gala group, Shinnel group, Portpatrick formation (low productivity aquifers) and Inverclyde group (moderately productive aquifer).

8.4.55 According to NatureScot SiteLink[32] there are no designated sites relevant to Geology, Hydrology and Hydrogeology within the Route Option 8.

8.4.56 According to NatureScot carbon and peatland mapping[34] Route Option 8 contains nationally important Class 1, peat as well as Classes 3, 4 and 5. However, the majority of Route Option 8 is underlain by Class 0 mineral soils.

Geology, Hydrology and Hydrogeology: Preferred Route

8.4.57 Overall, Route Options 1 and 3 are considered the Preferred Option for Geology, Hydrology and Hydrogeology. All Route Options have a similar number of identified receptors within them including watercourses, PWS and SEPA CAR registered activity. Further to this, all Route Options have areas of High river flooding within them and there are no designated sites relevant to Geology, Hydrology and Hydrogeology within any of the Route Option. All Route Options within contain an area of Class 1 peatland, where unavoidable this will require additional consideration, including NVC data and peat surveys at alignment selection stage.

8.4.58 Habitat survey information was not available at the time of this appraisal to establish potential GWDTE. In the absence of this information, it has been assumed that GWDTE are present within each Route Option.

8.4.59 The preference for Route Option 1 and 4 are therefore due to the amount of the Route Option near to a watercourse and flood zone, as shown in **Figure 9 Hydrological Constraints**. Further to this, Route Options 1 and 3 also have fewer PWs located within them in comparison to several other Route Options. Route Options 6 and 8 are the least preferred due to the higher number of PWS located within these Routes.

8.5 Recreation and Tourism

8.5.1 All Route Options cross Core Path 33 and Route Option 5 and 6 cross Core Path 207. However, impacts are expected to be minimal and therefore no significant impacts are likely on core paths or on the heritage routes in the Study Area. The Route Options are not expected to have significant impacts on the few guesthouses in the area.

8.5.2 There are no other tourism or recreational areas that are impacted by the Route Options.

Recreation and Tourism: Preferred Route

8.5.3 Route Options 1, 2, 3 and 4 are preferred as they cross a smaller area of Core Path 33 which is overlapped by all Route Options.

8.6 Forestry and Woodlands Appraisal

8.6.1 The following hectares of AWI and NFI are present throughout the route corridors of the following Route Options. The impacts on woodland can potentially be minimised/avoided through detailed design of the Proposed Development within the site boundary.

Route Option 1

8.6.2 Route option 1 traverses from the south-east corner of Hartside Hill, across the B6368 and A7, and finishes within proximity to Torfichen Hill. There are approximately 10 separate woodland schemes present in Route Option 1, covering around 5-10%. An OHL within this Route Option could avoid the identified woodland schemes.

Route Option 2

8.6.3 Route Option 2 traverses from the south-east corner of Hartside Hill and travels west towards the intersection between the A7 and the B6368. At the intersection, the route travels north towards Stobbin Dean, then moving west and finishing within proximity to Torfichen Hill, following the same route as Route Option 1. There are approximately eight separate woodland schemes located within Route Option 2, covering around 10-15%. An OHL within this Route Option could avoid the identified woodland schemes.

Route Option 3

8.6.4 Route Option 3 travels from the south-east corner of Hartside Hill to the southernmost point of Brotherstone Hill, then travelling in an easterly direction before finishing within proximity to Torfichen Hill. There are approximately eight separate woodland schemes located within Route Option 3, covering around 10-15%. An OHL within this Route Option could avoid the identified woodland schemes except for one identified woodland area.

Route Option 4

8.6.5 Route Option 4 travels from the south-east corner of Hartside Hill and follows the same route as Route Option 2, with the only deviation being at Fala Hill, where the route travels west along the southernmost point and finishes within proximity to Torfichen Hill. There are approximately eight separate woodland schemes located within Route Option 4, covering around 10-15%. An OHL within this Route Option could avoid the identified woodland schemes.

Route Option 5

8.6.6 Route Option 5 travels from the south-east corner of Hartside Hill towards the intersection between the A7 and the B6368. The route then travels north alongside the west side of the A7, before traversing east at the A7/B367 intersection and finishing within proximity to Torfichen Hill. There are approximately seven separate woodland schemes located within Route Option 5, covering around 10%. An OHL within this Route Option could avoid the identified woodland schemes.

Route Option 6

8.6.7 Route Option 6 follows largely the same route as Route Option 5, travelling west along the southern side of Fala Hill rather than west from the A7/B367 intersection. There are approximately eight separate woodland schemes located within Route Option 6, covering around 10%. An OHL within this Route Option could avoid the identified woodland schemes.

Route Option 7

8.6.8 Route Option 7 traverses west from the south-east corner of Hartside Hill to the intersection between the A7 and the B6368. The route then travels north-west along the A7 before moving west at the A7/B709 intersection and finishing within proximity to Torfichen Hill. There are approximately three separate woodland schemes located within Route Option 7, covering around 5%. An OHL within this Route Option could avoid the identified woodland schemes.

Route Option 8

8.6.9 Route Option 8 traverses west from the south-east corner of Hartside Hill to the intersection between the A7 and the B6368. The route then travels south-west, directly following the B709. The route then travels north-west in between Whietside Law and Carcant Hill, before finishing within proximity to Torfichen Hill. There are approximately six separate woodland schemes located within Route Option 8, covering around 10%. An OHL within this Route Option could avoid the identified woodland schemes.

Woodland and Forestry: Preferred Route

8.6.10 Overall, although there is little different between each of the Route Options, Route Option 7 is preferred to due fewer woodland schemes located within the Route Option as well as little coverage (5%). This is beneficial as it is easier to avoid areas of woodland.

8.7 Technical Considerations and Economic Considerations

8.7.1 A high level review of the technical and economic considerations for each of the Route Options are set out below.

8.7.2 All Route Options:

- Cross watercourses, main roads and the railway track which follows the A7. Alternative solutions may be needed for these crossings which will be assessed in later stages of the Proposed Development.
- Can be accessed via minor roads, tracks, and the main roads, but temporary access in remote areas may present technical difficulties and will require further detailed design.
- Pass through, or in proximity to, existing, consented or planned wind farms and may require undergrounding.
- Cross, or come into proximity with, existing 11 kV OHL's (primarily located around the A7).

8.7.3 Cost of construction may increase for those Route Options that cross multiple rivers, roads, and electricity infrastructure and further complexities may result from routeing through areas of steep topography. Further breakdown of the technical considerations is summarised for each Route Option below.

Route Option 1

8.7.4 Route Option 1 is approximately 18.2 km long. Route Option 1 crosses main roads such as the B7007, the A7, the B6367 and the B6368. This Route Option also crosses a railway line heading from north to south through the Route Option, adjacent to the A7. This Route Option crosses several small watercourses, primarily in the eastern half of the Route Option. Route Option 1 passes through two wind farm developments (one in-planning, TEP (in planning) and, and the Toddleburn (other existing). This means the Proposed Development may need undergrounding in these areas. Within this Route Option, there are some narrower sections.

8.7.5 Route Option 1 crosses main roads such as the B7007, the A7, the B6367 and the B6368. This Route Option also crosses a railway line heading from north to south through the Route Option, adjacent to the A7. This Route Option crosses several small watercourses, primarily in the eastern half of the Route Option. Route Option 1 passes through/in proximity to two wind farm developments (TEP (in planning) and Toddleburn (existing). The Proposed Development may need undergrounding in these areas.

8.7.6 Within this Route Option, there are some narrower sections where routeing flexibility is reduced. The Route Option is approximately 2.1 km at its widest point and 0.3 km at its narrowest point. The narrowest sections are located between the B7007 and the A7, and between the A7 and the CSE 2. In these areas routeing flexibility for an OHL is reduced. Considering topography, the Route Option starts in a gently sloping area in the west but as it routes towards the CSE 2, the slopes become steeper, especially around Clints Hill and Hartside Hill.

Route Option 2

8.7.7 Route Option 2 is approximately 19.5 km long. Route Option 2 crosses main roads such as the B7007, the A7, the B6367 and the B6368. This Route Option also crosses a railway line heading from north to south through the Route Option, adjacent to the A7. This Route Option crosses five rivers, three of which will need crossed and two which could be avoided with careful routeing. Route Option 2 routes through/in proximity to the Proposed TEP substation (in planning) and may require undergrounding.

8.7.8 The majority of the Route Option is narrow, with wider areas located at the Proposed TEP substation, the A7 and between the B6368 and at the CSE 2. The Route Option is approximately 2.1 km at its widest point and 0.3 km at its narrowest point. Numerous narrower areas reduce routeing flexibility for an OHL. Considering topography, the Route Option starts in a gently sloping area in the west but as it routes towards the CSE 2, the slopes become steeper, especially around Clints Hill and Crookston Hill.

Route Option 3

8.7.9 Route Option 3 is approximately 17.4 km long. Route Option 3 crosses main roads such as the B7007, the A7, and the B6368. This Route Option also crosses a railway line heading from north to south through the Route Option, adjacent to the A7. This Route Option crosses five rivers, three of which will need crossed and two which could be avoided with careful routeing at Fala Hill. Route Option 3 routes through/in proximity to the Proposed TEP substation (in planning) and existing Toddleburn Wind Farm and may require undergrounding in these locations.

8.7.10 The majority of the Route Option is narrow, with a wider area located at the Proposed TEP substation. The Route Option is approximately 2.1 km at its widest point and 0.3 km at its narrowest point. Numerous narrower areas reduce routeing flexibility for an OHL. Considering topography, the Route Option starts in a gently sloping area in the west but as it routes towards the CSE, the slopes become steeper, especially around Clints Hill and Hartside Hill.

Route Option 4

8.7.11 Route Option 4 is approximately 19 km long. Route Option 4 crosses main roads such as the B7007, the A7, and the B6368. This Route Option also crosses a railway line heading from north to south through the Route Option, adjacent to the A7. This Route Option crosses five rivers, two of which will need crossed and three which could be avoided with careful routeing. Route Option 4 routes through/in proximity the Proposed TEP substation (in planning) and may require undergrounding in this location.

8.7.12 The majority of the Route Option is narrow, with wider areas located at the Proposed TEP substation, the area where it turns from south to east at the B6368 and at the CSE 2. The Route Option is approximately 2.1 km at its widest point and 0.3 km at its narrowest point. Numerous narrower areas reduce routeing flexibility for an OHL. Considering topography, the Route Option starts in a gently sloping area in the west but as it routes towards the CSE 2, the slopes become steeper, especially around Clintshill and Crookston Hill.

Route Option 5

8.7.13 Route Option 5 is approximately 19.8 km long. Route Option 5 crosses main roads such as the B7007, A7, B6367, and the B709. This Route Option also crosses a railway line heading from north to south throughout the Route Option, adjacent to the A7. This Route Option overlaps six rivers, five of which will need to be crossed and one (near the CSE 2) could be avoided via careful routeing. Route Option 5 routes through/in proximity to the TEP and may require undergrounding in this location.

8.7.14 The majority of the Route Option is narrow, with wider areas being located at the Proposed TEP substation and the CSE 2. The Route Option is approximately 2.1 km at its widest point and 0.3 km at its narrowest point. Numerous narrower areas reduce routeing flexibility for an OHL. Considering topography, the Route Option starts in a gently sloping area in the west but as it routes towards the CSE 2, the slopes become steeper, especially around Crookston Hill, White Hill and towards the CSE 2. However, there is a flatter area of the Route Option around the A7 as it passes through the valley.

Route Option 6

8.7.15 Route Option 6 is approximately 18.6 km long. Route Option 6 crosses main roads such as the B7007, A7, and the B709. This Route Option also crosses a railway line heading from north to south throughout the Route Option, adjacent to the A7. This Route Option crosses six rivers, four of which will need to be crossed with two rivers (near the CSE 2 and at Fala Hill) potentially avoidable via careful routeing. Route Option 6 routes through/in proximity to the Proposed TEP substation and may require undergrounding in this location.

8.7.16 The majority of the Route Option is narrow, with wider areas being located at the Proposed TEP substation and the CSE 2. The Route Option is approximately 2.1 km at its widest point and 0.3 km at its narrowest point. Numerous narrower areas reduce routeing flexibility for an OHL. Considering topography, the Route Option starts in a gently sloping area in the west but as it routes towards the CSE 2, the slopes become steeper, especially around Crookston Hill, White Hill and towards the CSE 2. However, there is a flatter area of the Route Option around the A7 as it passes through the valley.

Route Option 7

8.7.17 Route Option 7 is approximately 18 km long. Route Option 7 crosses main roads such as the B7007, B709 and the A7. This Route Option also crosses a railway line heading from north to south throughout the Route Option, adjacent to the A7. This Route Option crosses six rivers, four of which may need to be crossed and two (south-east of the B7007 and one north of the CSE 2) could be avoided via careful routeing. The Route Option passes through/in proximity to Proposed TEP substation and Wull Muir (consented) which may require undergrounding in these locations.

8.7.18 The Route Option remains wide from the Proposed TEP substation until the B709, and then narrows until the CSE 2. The Route Option is approximately 2.1 km at its widest point and 0.3 km at its narrowest point. Numerous narrower areas reduce routeing flexibility for an OHL. Considering topography, the area near the Proposed TEP substation is gently sloping, however the Route Option routes through steeper areas as it progresses to the CSE 2, especially in areas around Crookston Hill, White Hill and the CSE 2.

Route Option 8

8.7.19 Route Option 8 is approximately 18.2 km long. Route Option 8 crosses mains roads such as the B7007, B709 and the A7. This Route Option also crosses a railway line heading from north to south throughout the Route Option, adjacent to the A7. This Route Option crosses four rivers, three of which will need to be crossed with one potentially avoidable via careful routeing. The whole Route Option is relatively narrow, as it follows a flat valley floor from Carcant Hill until the A7 (as it follows the B709). The Route Option routes through Proposed TEP substation where it will require undergrounding. It also routes through/in proximity to the existing Carcant Wind Farm, where it may require an additional area of undergrounding.

8.7.20 Routeing flexibility may be difficult in this area due to the narrow nature of the Route Option combined with the roads, rail track and rivers. The Route Option is approximately 1 km at its widest point and 0.3 km at its narrowest point. Numerous narrower areas reduce routeing flexibility for an OHL. Considering topography, there are steep areas between Wull Muir and Broad Law hills, between Carcant Hill and Longshaw Law, either side of the valley that follows the B709 and from the A7 to the CSE 2. This may increase the technical complexity of routeing this Route Option as there are limited options of flatter areas.

Technical and Economic: Preferred Route

8.7.21 The least Preferred Route from a technical and economic perspective are Route Option 1, 7 and 8. This is due to the wind farms that these Route Options pass through and would therefore be more expensive due to undergrounding required in these areas. These Route Options are also narrow and do not allow for as much flexible routeing compared to the other Route Options.

8.7.22 With the remaining Route Options, there is little differentiation due to similar steep topography, the crossing of similar roads and rail track and the overlap of other electricity and wind infrastructure. Although Route Option 5 and 6 seem to be the most preferred, the Preferred Route from a technical and economic perspective is Route Option 5 as it follows the A7 in parallel (meaning this Route Option can also be routed in parallel to existing infrastructure) and has fewest significant engineering difficulties (SEDs) when compared to the other options. It routes through a flatter valley floor along the A7 also and only passes through one wind farm. Route Option 5, although slightly longer than Route Option 6, takes a route which means it avoids an area of steeper topography (Fala Hill), which could lead to cost efficiencies.

8.8 Preferred Route

8.8.1 Following the environmental and technical review of the eight Route Options, it can be concluded that Route Option 8 is the least Preferred Route. Route Option 8 has the most designated heritage assets within 1 km and crosses the largest area of the River Tweed SAC compared to the other Route Options. Further to this, Route Option 8 contains a high number of PWS and crosses approximately three rivers as well as routeing through both Torfichen Wind Farm and Carcant Wind Farm. The route of Route Option 8 has steep areas between Wull Muir and Broad Law hills, between Carcant Hill and Longshaw Law making it narrow. Moorfoot Hills SSSI (a nationally designated site) is located adjacent to Route Option 8. Due to the various constraints located within Route Option 8, it would also mean that areas of the Route are likely to need undergrounding.

8.8.2 After Route Option 8, Route Options 2, 4 and 6 are the next least preferred options.

8.8.3 Route Option 2 has areas of remote and isolated quality landscape which would mean that the area would be more sensitive to change, this also includes views from residential properties. Route Option 2 has several designated and non-designated heritage assets within the Route and LNCs within the Route. Further to this, there are approximately eight separate woodland schemes located within Route Option 2.

8.8.4 Route Option 4 is a narrow Route and overlaps five rivers, two of which will be crossed, including Gala Water. There are also areas of steep topography within Route Option 4 around Clintshill and Crookston Hill, demonstrating why this was not a Preferred Option.

8.8.5 Route Option 6 is likely to result in significant effects from a change in setting on three scheduled monuments, it also contains a high number of PWS within the Route. Further to this Route Option 6 crosses Core Path 33 and Core Path 207. There are approximately eight separate woodland schemes located within Route Option 6.

8.8.6 The remaining routes are Route Options 1, 3 and 5.

8.8.7 From an Ecology and Ornithology and Geology, Hydrology and Hydrogeology perspective Route Options 1 and 3 are considered the Preferred Options. This is in relation to designated sites, protected species, habitats or ornithology, these two Route Options performed the best. Both Route Options 1 and 3 may require less of the OHL route to be within or cross watercourses and their associated flood zones whilst also potentially affecting fewer PWS. Route Options 3 is also preferred from a Cultural Heritage perspective due to a potentially lesser impact upon designated and non-designated heritage assets. However, it is noted that from the appraisals undertaken for each of these aspects that the difference between these routes and Route Option 5 is not significant.

8.8.8 Route Option 5 is preferred from both Landscape Character and Visual Amenity aspects. It is also a more technically Preferred Route. This is primarily as Route Option 5 has a better fit with the existing landscape character of the surrounding area (an important consideration of the Holford Rules). Further to this, Route Option 5 has fewer core and undesignated footpath crossings compared to other Route Options, particularly those associated with the uplands to the north-west of Heriot. From a technical perspective, Route Option 5 is considered more preferred as it follows the A7 in parallel and routes through a flatter valley floor along the A7.

8.8.9 Accounting for the appraisal of the above environmental considerations, the preferred and least preferred route options, by topic, have been shown in **Table 8.1** below. Tabs that are 'blue' are preferred and tabs that are 'grey' are least preferred.

Table 8.1 Environmental Preferred Route Options

Environmental Topic	RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8
Ecology and Ornithology								
Recreation and Tourism								
Forestry and woodland								
Geology, Hydrology and Hydrogeology								
Cultural Heritage								
Landscape and Visual								
Technical and Economic								

8.8.10 Overall, Route Option 5 is considered the Preferred Route Option given overall landscape and visual preference for this Route Option, a technical preference for this Route Option and few significant differentiators between Route Options 1, 3 and 5 for the other environmental aspects. Therefore, Route Option 5 is considered the Preferred Route and will be taken forwards as the 'Preferred Route' for the next stages of the project.

9 NEXT STEPS

9.1 Consultation on the Preferred Route

9.1.1 The responses received from the consultation process will be considered in combination with the findings of this Report to enable SP Energy Networks to decide on the 'Proposed Route' to be progressed to the next stage.

9.1.2 The Proposed Route will then progress to a more detailed review to identify an OHL alignment, including individual pole positioning, which will, subject to EIA screening, be informed by a more detailed assessment of potential impacts to the environment, detailed engineering ground surveys and discussions with landowners.

9.1.3 SP Energy Networks will carry out consultation with stakeholders and the public prior to the submission of a S37 application, consisting of:

- Stage 1 Consultation on the 'Preferred Route' as detailed in this Report, including PAC 1 event.
- Stage 2 - Potential PAC 2 event to consult on the Detailed Route Alignment. This requirement for this event will be considered following feedback from the PAC 1 event.

9.1.4 Following Stage 1/Stage 2 Consultation, a PAC 3 event will take place. This event will be to inform, not consult and will present the Proposed Development as it will be submitted to the ECU.

9.1.5 The deadline for receipt of feedback for Round One consultation will be 24th March 2026.

9.1.6 Following the submission of application for S37 consent, the Scottish Government Energy Consents Unit will, on behalf of Scottish Ministers, carry out further statutory consultation with the public and stakeholders, including Midlothian Council and Scottish Borders Council.

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

9.2 Consultation Material

Project website

9.1.8 The website will act as a single source of truth for up-to-date information regarding the grid connection. This will host publicly available consultation documents for viewing or download, and an online feedback form. The feedback form will be available from 23rd February 2026 until the deadline for receipt of feedback on 24th March 2026.

How people can make a comment

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

- At one of our consultation events;
- Online, using the feedback form on the website;
- By post, using a paper feedback form, or by letter;
- By emailing the feedback form or in the body of an email; or
- By phone to the SP Energy Networks Project Consultation Contact Centre.

Consultation Events

9.1.10 Two in-person consultation events will be held within the Study Area. Details of these events will be publicised in local newspapers prior to the events being held, and details also included on the SP Energy Networks website.

9.1.11 These events will include several information boards, like the information provided on Scottish Power EN connection website. They will also be attended by members of the grid connection team who will be able to introduce the grid connection and will be available to answer questions on grid connection, the routeing approach and the Preferred Route.

Confirmation of the Proposed Route and EIA

9.1.12 The responses received from the consultation process will be considered in combination with the findings of this Report and inform the identification of the Proposed Route to be taken to next the phase. The Proposed Route will then progress to a more detailed review to identify an OHL alignment, including pole positions. This will be informed by the Environmental Appraisal or Environmental Impact Assessment, detailed engineering ground surveys and discussions with landowners. The alignment, including all ancillary development, will be included in the application for S37 consent and deemed planning permission. Ancillary development will include all development necessary to construct and operate the grid connection. SP Energy Networks will consult fully with affected landowners and occupiers on all aspects of the grid connection and will give them an opportunity to comment on proposals as they progress.

Appendices

Appendix A – Figures

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\\uk.wspgroup.com\central data\Projects\70116xx\70116015 - SPEN Torfichen 132kV OHL Connection\GIS\MXD\EIA\Figure - Location Plan.mxd

N

Legend:

- Substation
- Study Area

Torfichen Energy Park

Cable Sealing End

MIDLOTHIAN

MOORFOOT HILLS

Fala Moor

Middleton Moor

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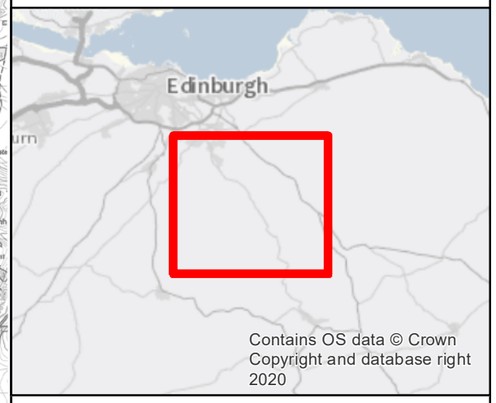

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0 2 4

Km

8 First Street
Manchester,
M15 4RP,
UK
T+ 44 161 200 5000

Client: SP Energy Networks

Project: Torfichen 132kV OHL Connection

Title: Figure 1 Location Plan

Drawing No:		Drawn:	PB
Date:	08/08/2025	Checked:	RT
Scale:	80,000 @ A3	Approved:	RT

User Name: INPB03368 | Date Saved: 08/08/2025 15:52:50

\\uk.wspgroup.com\central data\Projects\70116xxx\70116015 - SPEN Torfichen 132kV OHL Connection\GIS\MXD\EIA\Figure 2 - Environmental Designations and Sensitive Areas.mxd

Torfichen Energy Park

Cable Sealing End

N

Legend:

- Substation
- 2km Study Area
- Core Paths
- Grade A Listed Building
- Grade B Listed Building
- Grade C Listed Building
- Scheduled Monuments
- Conservation_Areas
- Special Protection Areas
- Special Areas of Conservation
- Sites of Special Scientific Interest
- Ramsar Sites
- Ancient Woodland Inventory
- National Forest Inventory
- River
- Flood Zone - Low Risk
- Flood Zone - Medium Risk
- Flood Zone - High Risk

Edinburgh

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Km

8 First Street
Manchester,
M15 4RP,
UK
T+ 44 161 200 5000

Client: SP Energy Networks

Project: Torfichen 132kV OHL Connection

Title: Figure 2
Environmental Designations and Sensitive Areas

Drawing No:

Date: 08/08/2025

Scale: 70,000 @ A3

Drawn: PB

Checked: RT

Approved: RT

Torfichen Energy Park

Cable Sealing End

1
2
3
4
5
6
7
8

N

Legend:

- Route Options
- Substation
- 2km Study Area
- Core Paths
- Grade A Listed Building
- Grade B Listed Building
- Grade C Listed Building
- Scheduled Monuments
- Conservation Areas
- Special Protection Areas
- Special Areas of Conservation
- Sites of Special Scientific Interest
- Ancient Woodland Inventory
- Ramsar Sites
- River
- Suface Water Flooding - Low Risk
- Suface Water Flooding - Medium Risk
- Suface Water Flooding - High Risk

Edinburgh

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Km

8 First Street
Manchester,
M15 4RP,
UK
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Client: SP Energy Networks

Project: Torfichen 132kV OHL Connection

Title: Figure 3
Route Option and
Environmental Designations
and Sensitive Areas

Drawing No:		Drawn:	PB
Date:	08/08/2025	Checked:	RT
Scale:	70,000 @ A3	Approved:	RT

Torfichen Energy Park

Cable Sealing End

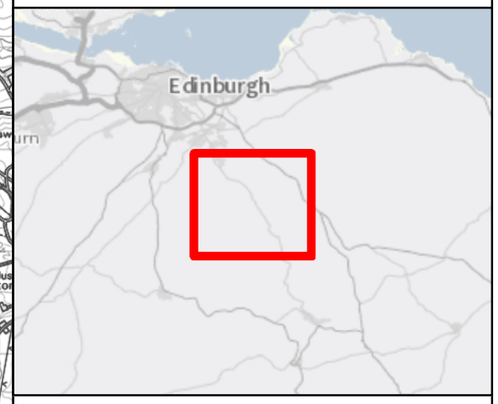
N

Legend:

- Route Options
- Substation
- 1km Study Area

Landscape Character Types

- 90: Dissected Plateau Moorland
- 91: Plateau Grassland - Borders
- 114: Pastoral Upland Valley
- 115: Upland Valley with Mixed Farmland
- 266: Plateau Moorland - Lothians
- 267: Plateau Grassland - Lothians
- 269: Upland Fringes - Lothians



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Client: SP Energy Networks

Project: Torfichen 132kV OHL Connection

Title: Figure 4
Landscape Character

Drawing No:
Date: 08/08/2025
Scale: 60,000 @ A3
Drawn: PB
Checked: RT
Approved: RT

Torfichen Energy Park

Cable Sealing End

MIDLOTHIAN

SOUTH LANARKSHIRE

Gorebridge

Fala Moor

Middleton Moor

Fala

Crichton

Newlandrig

Carrington

Temple

North Middleton

Borthwick

Middleton

Middleton Hall

Tynehead

Soutra Hill

Soutra Aisle

Dun Law

Turf Law

Fountainhall

Heriot

Crookston Mains

Crookston North Mains

Peat Hill

Longshaw Law

Peatrig Hill

Windy Knowe

Dun Law

Mount Main

Ladyside Height

Dewar Hill

Garvald Funks

Blackhope Scar

Rough Moss

Mauldslie Hill

Auntly Cot Hills

Wull Muir

Broad Law

Heriot Cleugh

Hangingshaw Hill

Symington Hill

Cairn's Cathpair

Edinburgh

N

Legend:

- Route Options
- Substation
- 1km Study Area
- Contour

Topography (m)

840
775
675
575
475
375
275
175
75
0

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Km

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UK
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Client: SP Energy Networks

Project: Torfichen 132kV OHL Connection

Title: Figure 5
Landscapel Constraints (Topography)

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Date: 08/08/2025
Scale: 60,000 @ A3
Drawn: PB
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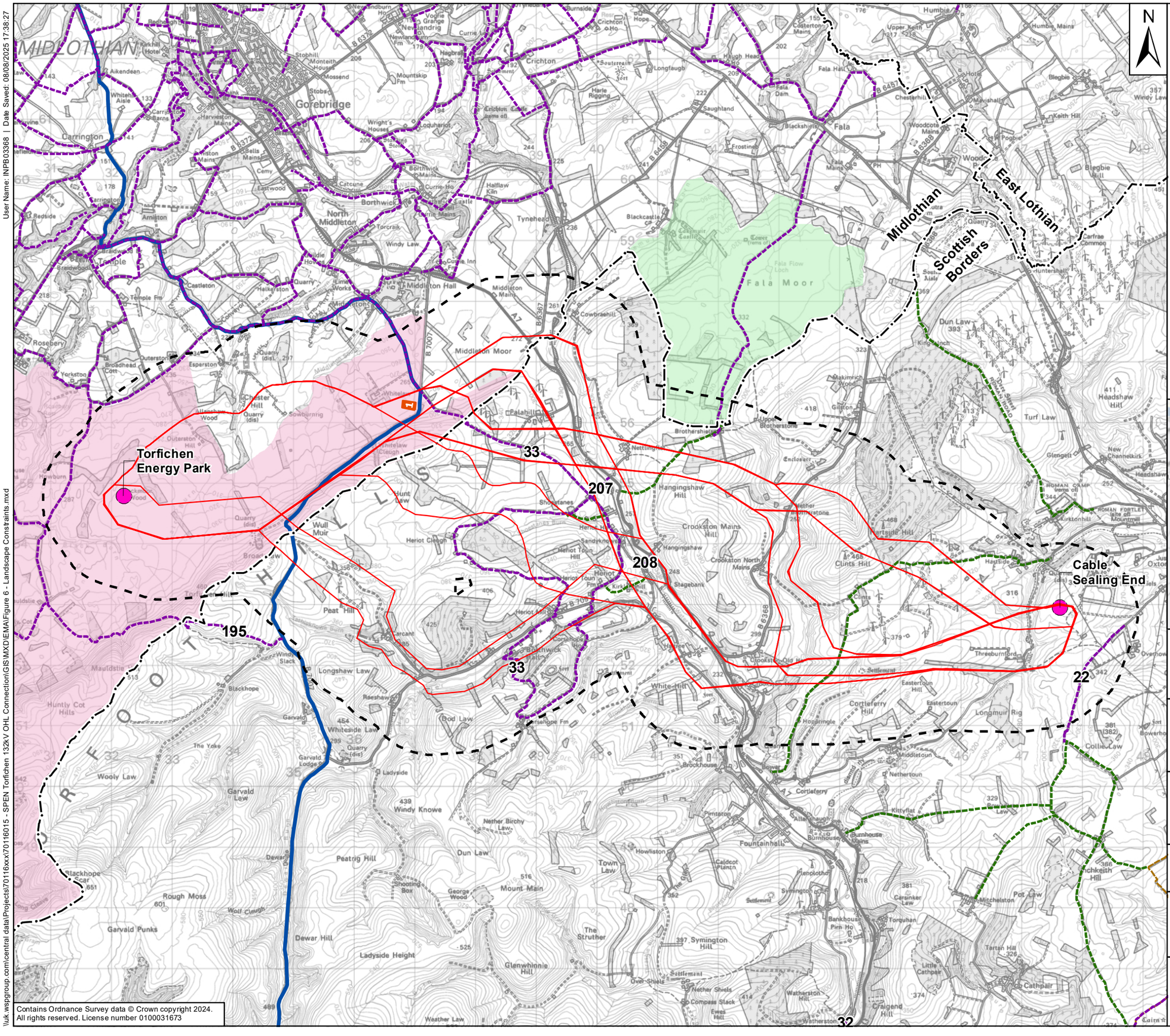
Approved: RT



N

Legend:

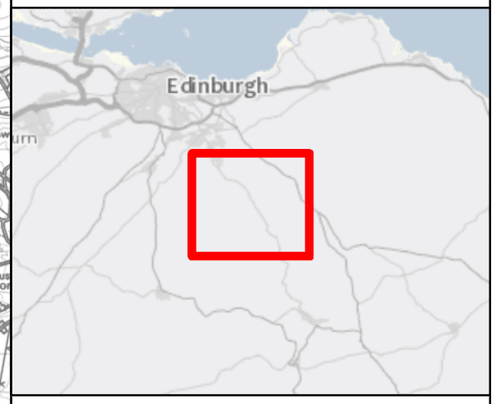
- Route Options
- Substation
- 1km Study Area
- Council Boundary

Public Promoted Routes

- National Cycle Route 1
- Core Paths
- Right of Way

Special Landscape Area

- Fala Moor SLA
- Gladhouse Reservoir and Moorfoot SLA



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8 First Street
Manchester,
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UK
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Client: SP Energy Networks

Project: Torfichen 132kV OHL Connection

Title: Figure 5
Landscape Constraints

Drawing No:	XX	Drawn:	PB
Date:	08/08/2025	Checked:	RT
Scale:	60,000 @ A3	Approved:	RT

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\\uk.wspgroup.com\central data\Projects\70116xxx\70116015 - SPEN Torfichen 132kV OHL Connection\GIS\MXD\EIA\Figure 7 - Heritage Constraints.mxd

Torfichen Energy Park

Cable Sealing End

Fala Moor

N

Legend:

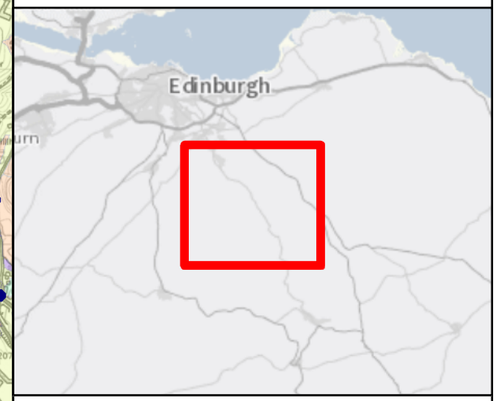
- Route Options
- Substation
- 1km Study Area
- 2km Study Area
- Grade A Listed Building
- Grade B Listed Building
- Grade C Listed Building

Canmore Points

- 10km Precision
- 1km Precision
- 100m Precision
- 10m Precision
- 1m Precision
- Scheduled Monuments
- Conservation Areas

Historic Landuse Assessment

- Agriculture and Settlement
- Built-up Area
- Designed Landscape
- Energy, Extraction and Waste
- Leisure and Recreation
- Moorland and Rough Grazing
- Rural Settlement
- Spiritual and Ritual
- Transport
- Water Body
- Woodland and Forestry



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UK
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Client: SP Energy Networks

Project: Torfichen 132kV OHL Connection

Title: Figure 7
Heritage Constraints

Drawing No:

Date: 11/08/2025

Scale: 70,000 @ A3

Drawn: PB

Checked: RT

Approved: RT

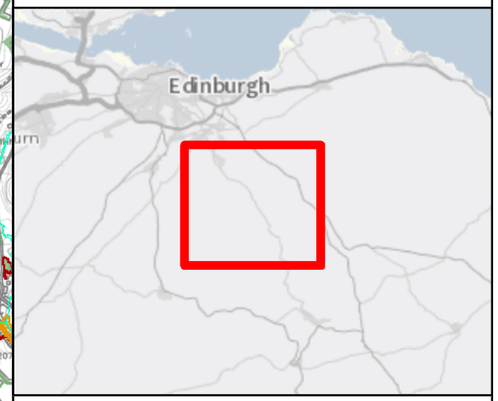
Torfichen Energy Park

Cable Sealing End

N

Legend:

- Route 1
- Route 2
- Route 3
- Route 4
- Route 5
- Route 6
- Route 7
- Route 8
- 1km Study Area
- 2km Study Area
- Substation
- Butterfly Conservation
- Special Protection Areas
- Special Areas of Conservation
- Sites of Special Scientific Interest
- Ancient Woodland Inventory
- Local Nature Conservation Review Sites
- Native Woodland Scotland
- National Forest Inventory
- Ramsar Sites
- Buglife Blines Network



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Client: SP Energy Networks

Project: Torfichen 132kV OHL Connection

Title: Figure 8
Ecological Constraints

Drawing No:

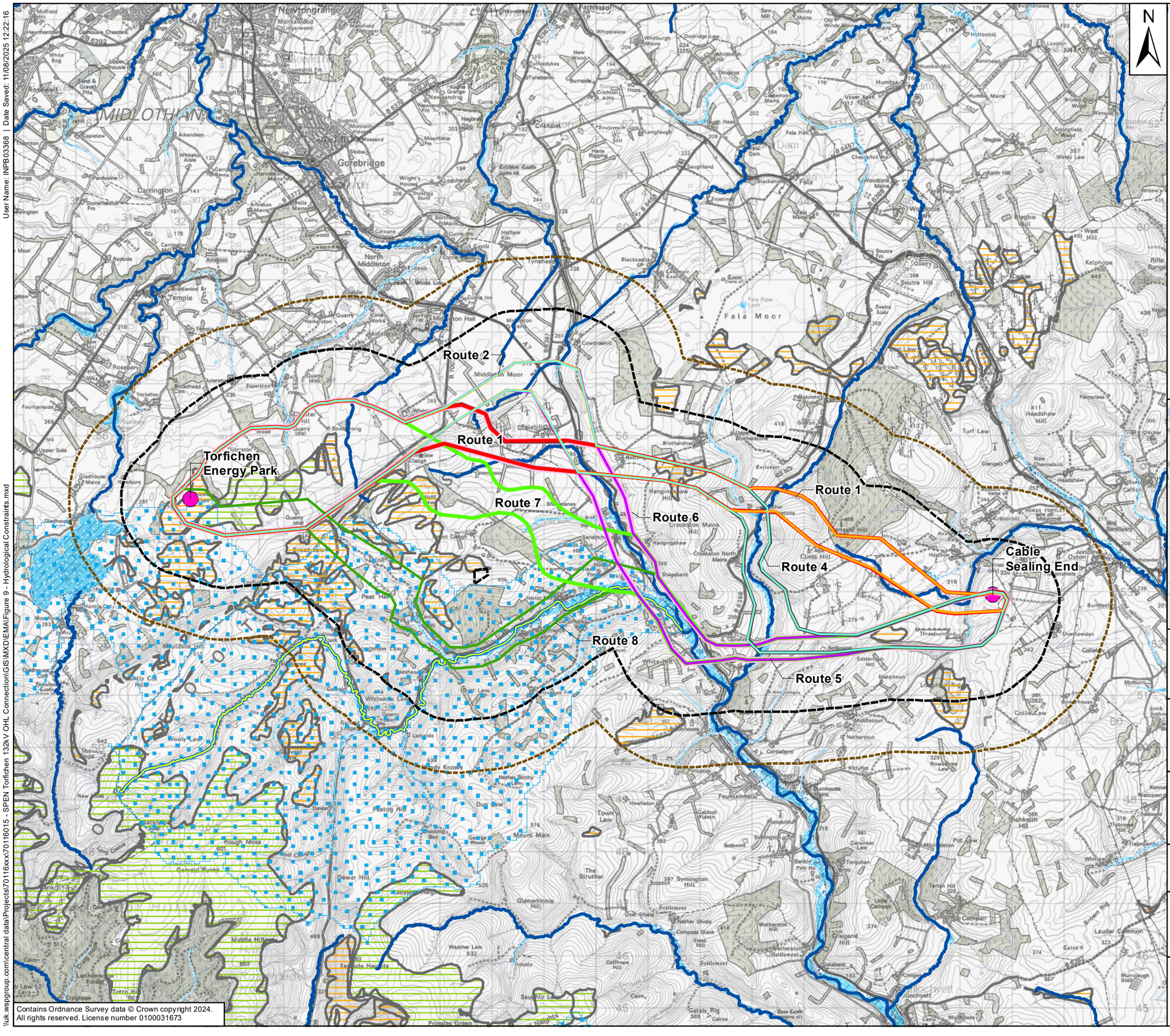
Date: 11/08/2025

Scale: 70,000 @ A3

Drawn: PB

Checked: RT

Approved: RT



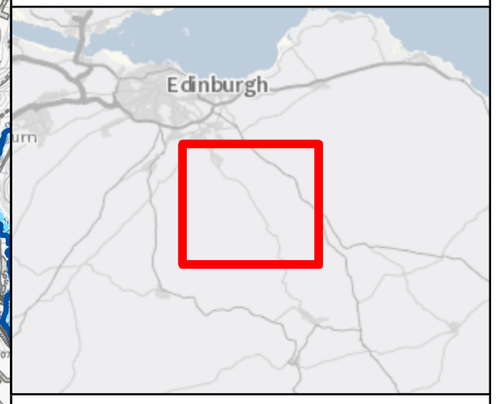
N

Legend:

- Substation
- Route 1
- Route 2
- Route 3
- Route 4
- Route 5
- Route 6
- Route 7
- Route 8
- 1km Study Area
- 2km Study Area
- Drinking Water Protected Areas - River
- Drinking Water Protected Areas - Catchments
- River
- Surface Water Flooding - Low Risk
- Surface Water Flooding - Medium Risk
- Surface Water Flooding - High Risk

Carbon Peatland

- Class 1
- Class 3



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Client: SP Energy Networks

Project: Torfichen 132kV OHL Connection

Title: Figure 9
Hydrological Constraints

Drawing No:		Drawn:	PB
Date:	11/08/2025	Checked:	RT
Scale:	70,000 @ A3	Approved:	RT

N

Legend:

- Route 1
- Route 2
- Route 3
- Route 4
- Route 5
- Route 6
- Route 7
- Route 8
- 2x rotor exclusion zone
- 1km Study Area
- SPT Transmission Substation
- SPT Transmission Towers
- Substation
- Existing
- In-planning
- Consented
- 11kV OHL Line
- 33kV OHL Line
- SPT Transmission OHL
- Core Paths
- River
- Grade A Listed Building
- Grade B Listed Building
- Grade C Listed Building
- Conservation Areas
- Scheduled Monuments
- Special Protection Areas
- Special Areas of Conservation
- Sites of Special Scientific Interest
- Ancient Woodland Inventory
- National Forest Inventory
- Ramsar Sites
- Flood Zone - Low Risk
- Flood Zone - Medium Risk
- Flood Zone - High Risk

Cowbrae Cottage
Falahill
Torfichen Energy Park
Torfichen
Wull Muir
Carcant
Greystone Knowe
Longmuir
Toddleburn
TS-DUNE1 DUNLAW EXTENSION 132kV
TS-DUNE3 DUNLAW EXTENSION
TS-TODD3 TODDLEBURN 33KV
Cable Sealing End

Edinburgh

0 2 4
Km

Buffers indicating 2x rotor diameter from turbines.

Generic 3x rotator diameter buffer:
these have been calculated using the following:

Toddleburn: 90m.
Falahill: 13m
Carcant: 80m
Cowbrae Cottage: 5.5 & 13m
Longmuir: 172m
Torfichen: 150m
Greystone Knowe: 150m
Wull Muir: 136m

8 First Street
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UK
T+ 44 161 200 5000

Client: SP Energy Networks

Project: Torfichen 132kV OHL Connection

Title: Cumulative Developments

Drawing No: Figure 10
Date: 12/09/2025
Scale: 60,000 @ A3

Drawn: PB
Checked: RT
Approved: RT

Appendix B – Holford Rules

THE HOLFORD RULES: GUIDELINES FOR THE ROUTEING OF NEW HIGH VOLTAGE OVERHEAD TRANSMISSION LINES (WITH NGC 1992 AND SHETL 2003 NOTES)

RULES 1-7

Rule 1

AVOID ALTOGETHER, IF POSSIBLE, THE MAJOR AREAS OF HIGHEST AMENITY VALUE, BY SO PLANNING THE GENERAL ROUTE OF THE LINE IN THE FIRST PLACE, EVEN IF THE TOTAL MILEAGE IS SOMEWHAT INCREASED IN CONSEQUENCE.

NOTE ON RULE 1

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

b) Areas of highest amenity value require to be established on a project-by-project basis considering Schedule 9 to The Electricity Act 1989, Scottish Planning Policies, National Planning Policy Guidelines[56], 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)*
- *Special Protection Area (NPPG 14)*
- *Ramsar Site (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 (SSSI) (NPPG 14)*
- *Schedule of Ancient Monuments (NPPG 5)*
- *Listed Buildings (NPPG 18)*
- *Conservation Areas (NPPG 18)*
- *World Heritage Sites (a non-statutory designation) (NPPG 18)*
- *Historic Gardens and Designed Landscapes (a non-statutory designation) (NPPG 18)*

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.

[56] National Planning Policy Guideline series (NPPG) has been superseded by Scottish Planning Policy (SPP) published on 23 June 2014. The areas of highest amenity value are now included within SPP.

NOTE ON RULE 2

a) Small areas of highest amenity value not included in Rule 1 as a result of their spatial extent should be identified along with other areas of regional or local high amenity value identified from development plans.

b) Effects on the setting of historic buildings and other cultural heritage features should be minimised.

c) If there is an existing transmission line through an area of high amenity value and the surrounding land uses 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.

NOTE ON RULE 3

a) Where possible choose inconspicuous locations for angle towers, terminal towers and sealing end compounds.

b) Too few angles on flat landscape can also lead to visual intrusion through very long straight lines of towers, particularly when seen nearly along the line.

Rule 4

CHOOSE TREE AND HILL BACKGROUNDS IN PREFERENCE TO SKY 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.

NOTES ON RULES 4 AND 5

a) Utilise background and foreground features to reduce the apparent height and domination of towers from main viewpoints.

b) Minimise the exposure of numbers of towers on prominent ridges and skylines.

c) Where possible follow open space and run alongside, not through woodland or commercial forestry, and consider opportunities for skirting edges of copses and woods. Where there is no reasonable alternative to cutting through woodland or commercial forestry, the Forestry Commission Guidelines should be followed (Forest Landscape Design Guidelines, second edition, The Forestry Commission 1994 and Forest Design Planning – A Guide to Good Practice, Simon Bell/The Forest Authority 1998).

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

Rule 6

IN COUNTRY WHICH IS FLAT AND SPARSELY PLANTED, KEEP THE 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'.

NOTE ON RULE 6

a) In all locations minimise confusing appearance.

b) Arrange wherever practicable that parallel or closely related routes are planned with tower types, spans and conductors forming a coherent appearance. Where routes need to diverge, allow where practicable, sufficient separation to limit the effects 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.

NOTE ON RULE 7

a) When a line needs to pass through a development area, route it so as to minimise as far as possible the effect on development.

b) Alignments should be chosen after consideration of effects on the amenity of existing development and on proposals for new development.

c) When siting substations take account of the effects 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

a) Residential Areas

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

b) Designations of Regional and Local Importance

Where possible choose routes which cause the least disturbance to Areas of Great Landscape Value and other similar designations of Regional or Local Importance.

c) Alternative Lattice Steel Tower Designs

In addition to adopting appropriate routeing, evaluate where appropriate the use of alternative lattice steel tower designs available where these would be advantageous visually, and where the extra cost can be justified [*Note: SHETL have reviewed the visual and landscape arguments for the use of lattice steel towers in Scotland and summarised these in a document titled Overhead Transmission Line Tower Study 2004].*

FURTHER NOTES ON CLARIFICATION TO THE HOLFORD RULES

LINE ROUTEING AND PEOPLE

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

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

b) In rural areas avoid as far as possible dominating isolated houses, farms or other small-scale settlements.

c) Minimise the visual effect perceived by users of roads and public rights of way, paying particular attention to the effects of recreational, tourist and other well-used routes.

SUPPLEMENTARY NOTES ON THE SITING OF SUBSTATIONS

a) 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.

b) Take advantage of ground form with the appropriate use of site layout and levels to avoid intrusion into surrounding areas.

c) Use space effectively to limit the area required for development, minimizing the effects on existing land use and rights of way.

d) Alternative designs of substations may also be considered, e.g. 'enclosed', rather than 'open', where additional cost can be justified.

e) Consider the relationship of towers and substation structures with background and foreground features, to reduce the prominence of structures from main viewpoints.

f) When siting substations take account of the effects of line connections that will need to be made.

Holford Rules - Appendix A

INTERPRETATION OF THE HOLFORD RULES 1 AND 2 AND THE NOTES TO RULE 2 REGARDING THE SETTING OF A SCHEDULED ANCIENT 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 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, of 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 licence 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 Act gives no indication of hierarchy of value and there is no suggestion of a hierarchy of value in either NPPG 5: 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 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 of 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 of Listed Buildings. None of these documents define setting.

Holford Rules - Appendix B

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

1 In Scotland relevant national or international designations for major areas of highest amenity value include the following identified from Scottish Planning Policies and National Planning Policy Guidelines[57].

- Special Areas of Conservation (NPPG 14)
- Special Protection Areas (NPPG 14)

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

- 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 (NPGG 18)
- Historic Gardens and Designed Landscapes (NPPG 18)

Other Smaller Areas of High Amenity Value

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

- Areas of Great Landscape Value
- Regional Scenic Areas
- Regional Parks
- Country Parks

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

Flora and Fauna

3 Legislation sets out the procedure for designation of areas relating to flora, fauna and to geographical and physiogeographical 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.

4 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 of 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
- Gardens and Designed Landscapes included in the Inventory of Gardens and Designed Landscapes of Scotland

Green Belts

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