SP Energy Networks

Routeing and Consultation Document

Longcroft Wind Farm Grid Connection Project

Preface

Gillespies LLP has prepared this Routeing and Consultation Document on behalf of SP Transmission Plc. It outlines a proposal for a new 132 kV connection between the proposed Glenburnie Wind Farm (previously referred to as the 'proposed Longcroft Wind Farm') and the proposed Torfichen Cable Sealing End Compound.

Known as the 'Longcroft Wind Farm Grid Connection Project', the proposed development is located in the Scottish Borders administrative area.

This Routeing and Consultation Document provides an overview of the Longcroft Wind Farm Grid Connection Project, including its background and objectives. It outlines the methodology applied and presents the findings from the work conducted to support the project's consultation process.

Electronic copies of the Routeing and Consultation Document can be downloaded free of charge from the project website at:

www.spenergynetworks.co.uk/pages/longcroft_wind_farm_connection.aspx

Representations to this consultation should be received **no later than 24th March 2026** and can be made using the details below:

By email to longcroftgc@spenergynetworks.co.uk

By post to Longcroft Wind Farm Grid Connection Project, Land and Planning Team, SP Energy Networks, 55 Fullarton Drive, Glasgow, G32 8FA

Please note that comments made at this stage are NOT representations to the Scottish Government Energy Consents Unit.

Glossary

AOD	Above Ordnance Datum
ASA	Archaeologically Sensitive Area – non statutory designation for an area that has a high potential for containing archaeological remains or heritage assets
ASNW	Ancient semi-natural woodland identified in the Ancient Woodland Inventory as mostly native species, naturally regenerated
ATI	Woodland Trust Ancient Tree Inventory sites in Scotland
AWI	Ancient Woodland Inventory - maintained by Forestry and Land Scotland
BESS	Battery Energy Storage System - a technology that stores electrical energy (typically using batteries) for use at a later time to help balance supply and demand on the electricity grid
BGS	British Geological Survey
BNG	Biodiversity net gain - the practice of leaving biodiversity in a better state than before a development by ensuring measurable, lasting ecological improvements
CEMP	Construction Environmental Management Plan
Conductors	The wires used in their overhead and underground electricity networks to transmit electrical current
CSEC	Cable Sealing End Compound - a dedicated structure at the termination of an underground cable, designed to safely connect the cable to the electrical network while providing insulation and environmental protection.
ECoW	Ecological Clerk of Works
ECU	Scottish Government Energy Consents Unit
EIA	Environmental Impact Assessment
Electricity Works Regulations	The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000
EIA Report	Environmental Impact Assessment Report - a formal, statutory document required under the EIA Regulations
EIAR	Environmental Impact Appraisal Report – a non-statutory assessment to inform project design and planning decisions
GCR	Geological Conservation Review Sites - Scotland's nationally important sites for geology and geomorphology
GDS	Local Geodiversity Sites - a non-statutory designation to protect sites that are important at a local or regional level
HER	Historic Environment Record
HES	Historic Environment Scotland
Holford Rules	Guidelines developed by the late Lord Holford in 1959 for routeing overhead lines
HRA	Habitats Regulations Assessment - required when a project is likely to have a significant effect on a designated ecological European site
IBA	Important Bird and Biodiversity Area - non-statutory designation of an area recognised by BirdLife International as globally or regionally important for the conservation of bird populations and overall biodiversity
ILA	Infrastructure Location Allowance - a framework for micro-siting final pole positions
LCA	Land Capability for Agriculture classification - ranks land according to its potential productivity and cropping flexibility

LCF	Land Capability for Forestry classification - provides information on how well a piece of land could grow trees based on a number of factors, including soil, climate and topography
Km	Kilometres
kV	Kilo-volt capacity of an electricity power line
Laydown area	Temporary storage area for poles and construction equipment
LCT	Landscape character type
LDP	Local Development Plan
LBA	Local Biodiversity Site - identified by local authorities as of local importance for nature conservation. Names vary between local authorities
m	metres
NatureScot	The lead advisory body on nature, wildlife management, and landscape management across Scotland
NFI	Woodland that meets the minimum criteria for forest/woodland in the National Forestry Inventory maintain be Forest Research, which is the research agency of Forestry and Land Scotland
NSA	National Scenic Area - nationally designated area identified for its exceptional landscape quality
NPF4	National Planning Policy Framework 4
NWS	Any woodland recorded in the 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
PAWS	Ancient semi-natural woodland identified in the Ancient Woodland Inventory as replanted with non-native species but still considered ancient due to the site's history
Preferred Route	The preferred route identified through the routeing study process
Proposed Route	The proposed route, which will go forward to environmental assessment
RCD	Routeing and Consultation Document
RSA	Regional Scenic Area - identified by local authorities of regional importance for scenic quality. Names vary between local authorities
SAC	Special Area of Conservation
SBL	Scottish Biodiversity List - Scotland's official list of species and habitats considered to be of principal importance for biodiversity conservation
section 37 application	An application for development consent under section 37 of the Electricity Act 1989
SEPA	Scottish Environment Protection Agency
SLA	Special Landscape Area - identified by local authorities of local importance for scenic quality. Names vary between local authorities
SPA	Special Protection Area
SPD	Scottish Power Distribution
SP Energy Networks (SPEN)	Scottish Power Energy Networks
SPT	SP Transmission Plc
SSSI	Site of Special Scientific Interest
Stringing areas	Temporary areas which are required for installing the conductors (wires)

SWMP	Site Waste Management Plan
Trident Wood Pole	A timber support for overhead lines and insulators, sometimes carrying communication cables, with a three-arm cross-arm arrangement to support multiple circuits or phases.
Wild Land	Wild Land - areas defined by NatureScot that are considered the most remote, undeveloped, and natural landscapes, where the sense of wilderness and wild character is strong
ZTV	Zone of Theoretical Visibility

Contents

Figures (in Appendix B)

1 Introduction

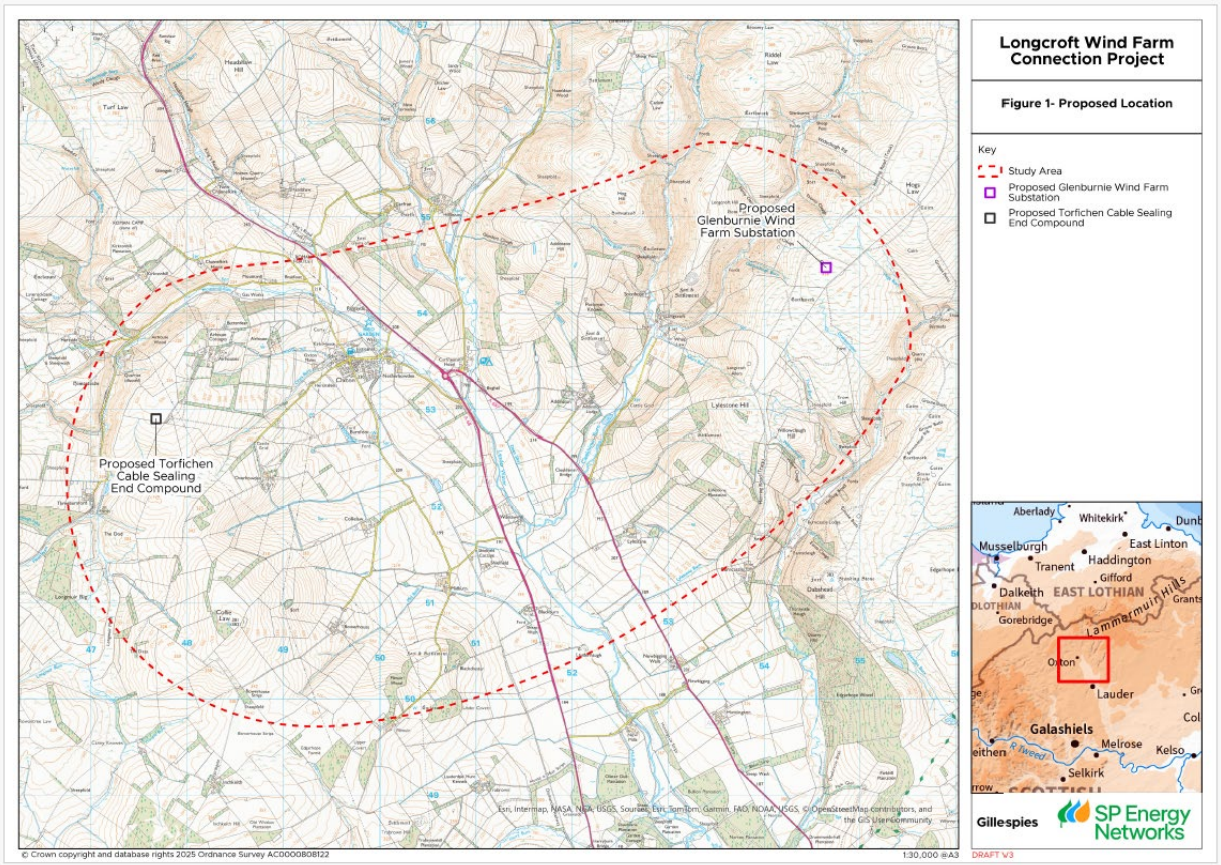
1.1 Gillespies LLP has prepared this Routeing and Consultation Document (RCD) on behalf of SP Transmission Plc (SPT) as part of the Longcroft Wind Farm Connection Project. The proposed development is located within the Scottish Borders council area, with Lauder in the Leader Valley being the nearest town.

1.2 This RCD provides an overview of the Longcroft Wind Farm Grid Connection Project and explains the approach taken during the first stage of its development. It identifies a preferred route for the new overhead line and describes the pre-application consultation process to gather feedback from stakeholders and the public. This feedback will help inform and refine the project's next stages.

1.3 It is important to note that, at this early stage of development, the details provided in this RCD do not represent the final design. However, the information is considered sufficient for the purposes of the routeing study and to inform the initial pre-application consultation.

1.4 The location of the Longcroft Wind Farm Connection Project, its start and end points and the study area for the routeing process are shown below in the extract from **Figure 1**.

Proposed Location (extracted from Figure 1 in Appendix B)



The Proposed Development

1.5 SPT, as the licensed transmission operator for SP Energy Networks ('SPEN'), is proposing a new overhead line to connect the proposed Glenburnie Wind Farm Substation (previously referred to as the 'proposed Longcroft Wind Farm Substation') with the proposed Torfichen Cable Sealing End Compound (referred to as the 'Torfichen CSEC'). The new overhead line will operate at 132 kilovolts (kV) and comprise three conductors (wires) in a horizontal flat formation. The

conductors will be supported on Trident wood pole structures, with potential heights (including insulators) ranging from approximately 11 to 16 m, but some poles may be higher (up to ~21 m) depending on span, terrain and clearance requirements. The typical span length between poles will be around 80 to 110 m, with a total route length of approximately 7.5 kilometres (km). Due to the topography and the need for extra mechanical support, double Trident wood poles (H-poles) will be used along much of the route.

1.6 The proposed Glenburnie Wind Farm Substation and Torfichen CSEC are being progressed as separate section 36 applications and do not form part of the Longcroft Wind Farm Connection Project.

Other Proposed Connections

1.7 Alongside the Longcroft Wind Farm Grid Connection Project, SPT are conducting routeing studies for the following projects within a partially overlapping study area. These studies include:

- A proposal to replace the existing 132 kV overhead line between the Dun Law Extension Substation, near Oxton, and the Galashiels Substation[1]. Once the replacement line is complete, the existing steel lattice tower line between those substations will be removed.
- A proposal to connect the proposed Torfichen Wind Farm and energy storage facilities[2] to near Torfichen Hill, which lies south of Gorebridge, in Midlothian, to the proposed Torfichen CSEC.

1.8 With multiple overhead line projects proposed within a partially overlapping study area, there is an increased potential for cumulative landscape and visual impacts, particularly near Oxton. The routeing process for the new overhead line will therefore consider options that either diverge from clusters of existing and proposed infrastructure in sensitive viewpoints or, where possible, co-locate within a single corridor to concentrate effects. As the design progresses, cumulative Zones of Theoretical Visibility (ZTVs) and photomontages will include the existing 132 kV overhead line, the proposed replacement line, the Torfichen Wind Farm Connection, and the Longcroft Wind Farm Connection, while also assessing the likely combined impacts on ecology and avian interests, peat and soils, cultural heritage, hydrology, and land and access arrangements.

The Proposed Glenburnie Wind Farm

1.9 In October 2023, Renewable Energy Systems Ltd (RES) applied to the Scottish Ministers under section 36 of the Electricity Act 1989 for a 19-turbine wind farm, with turbines up to 220 m tall in height. The proposed site was located northeast of the A697, approximately 8.5 km northeast of Lauder, within the Scottish Borders Council area.

1.10 The Energy Consents Unit (ECU), acting on behalf of the Scottish Ministers, consulted a range of statutory and non-statutory bodies on the original application. Following consideration of the consultation responses, RES undertook further design and assessment work, resulting in an alteration to the original proposal. The development was redesigned, reducing the number of turbines from 19 to 12 and amending the site boundary. The revised site lies approximately 9.9 km northeast of Lauder, on the A697, and remains within the Scottish Borders Council area.

1.11 Originally named Longcroft Wind Farm, the proposed wind farm is now called Glenburnie Wind Farm to reflect the updated design. However, for the purposes of this RCD, the name of SPT's project will remain Longcroft Wind Farm Grid Connection Project.

[1] Further information is available on the project website at: https://www.spenergynetworks.co.uk/pages/dunlawext_galashiels.aspx
[2] Further information is available on the project website at: https://www.torfichen-windfarm.co.uk/

1.12 The application documents for Glenburnie Wind Farm are available to view on the ECU website at www.energyconsents.scot (Reference ECU00004774).

1.13 As a transmission licence holder, SPT has a legal obligation to connect the proposed Glenburnie Wind Farm to the wider electricity transmission network.

Background to the Need for the Project

1.14 The impacts of climate change are widely recognised as one of today's most significant global, economic, environmental and social challenges. A major cause of climate change is the increase in the concentration and volume of greenhouse gases in the atmosphere, which is substantially driven by the use of fossil fuels to generate electricity, provide heat, and power transportation.

1.15 The Scottish Government aims to achieve net-zero greenhouse gas emissions by 2045, balancing emissions with what is absorbed naturally or via technology. Achieving this requires rapid transformation across all sectors, with renewable energy and grid infrastructure playing a key role. The Longcroft Wind Farm Grid Connection Project will support this goal by enabling the transmission of renewable electricity, helping reduce operational emissions and promoting electrification.

1.16 The transition to a low-carbon economy is underpinned by an extensive framework of international agreements, UK and Scottish legislation, and national policy. These measures collectively form the foundation of the need case for renewable energy projects and associated grid infrastructure. The Longcroft Wind Farm Connection Grid Project must therefore be considered within this broader context, where policy and law consistently emphasise the urgent requirement for rapid expansion of renewable capacity and the reinforcement of electricity transmission networks.

The Legislative Framework

1.17 The Longcroft Wind Farm Grid Connection Project is located entirely within the Scottish Borders Council administrative area. The Scottish Borders statutory development plan comprises the National Planning Framework 4 (NPF4) and the Scottish Borders Local Development Plan 2 (LDP2), which was adopted on 22 August 2024[3].

1.18 The Longcroft Wind Farm Forest Connection Grid Project requires consent through a section 37 application to the Scottish Ministers under the Electricity Act 1989. This consent is necessary to install and maintain the new overhead line. At the same time, SPT will apply for deemed planning permission under section 57(2) of the Planning (Scotland) Act 1997 (as amended by the 2019 Act) ('the 1997 Act'). This application will cover both the new overhead line and ancillary works.

1.19 The Scottish Ministers are required to determine the application having regard to the statutory duties in schedule 9 of the Electricity Act 1989 and any other relevant material considerations, one of which will be relevant aspects of the statutory development plan.

1.20 A distinction exists between granting an application for section 37 consent and issuing a direction that planning permission is deemed to be granted under section 57(2) of the 1997 Act. Deemed planning permission can only be issued after consent is granted under section 37 of the Electricity Act 1989. It is at the discretion of the Scottish Ministers to issue such a direction. The primary decision is whether to grant section 37 consent.

1.21 At this stage, it is considered that the project potentially constitutes an EIA development (under the terms of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017), meaning that any section 37 application to the ECU will be accompanied by a statutory

[3] Scottish Borders Council (2024) The Scottish Borders Local Development Plan 2. Available at: https://www.scotborders.gov.uk/plans-guidance/local-development-plan [Accessed 11 October 2025]

Environmental Impact Assessment Report rather than a non-statutory Environmental Impact Appraisal Report.

SPT's Statutory and Licence Duties

1.22 SP Energy Networks ('SPEN') is the trading name for Scottish Power Energy Network Holdings Limited. SPEN is the holding company of SPT and SP Distribution plc ('SPD'). SPT owns and operates the electricity transmission network in central and southern Scotland, and SPD owns and operates the distribution network in the same area. Its transmission network is the backbone of the electricity system, carrying large amounts of electricity at high voltages from generating sources, such as windfarms and power stations, over long distances. The transmission network comprises over 4,000 km of overhead lines and more than 360 km of underground cables. The electricity is then delivered via the distribution system, which serves more than two million customers in central and southern Scotland.

1.23 As the holder of a transmission licence under the Electricity Act 1989, SPT is subject to a number of statutory duties and licence obligations. These include a requirement '*to develop and maintain an efficient, coordinated and economical system of electricity transmission'* and to '*facilitate competition in the supply and generation of electricity'*. This requires SPT to provide connections for electricity generators seeking to connect to the transmission system within its licensed area, to make its transmission system available for these purposes and to ensure that the system is fit for purpose through appropriate reinforcements to accommodate the contracted capacity.

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

1.25 Section 38 and schedule 9 of the Electricity Act 1989 also prescribe that '*a licence holder [..] shall avoid, so far as possible, causing injury to fisheries or to the stock of fish in any waters'*.

1.26 These statutory duties and licence obligations underpin how SPT approaches the development of new transmission infrastructure from network reinforcements to grid connections to ensure that they are technically feasible, economically viable and, on balance, cause the least disturbance to both the environment and the people who live, work and enjoy recreation within it.

1.27 SPT's Schedule 9 Statement[4] sets out how the company complies with its duties under schedule 9 of the Electricity Act 1989. The Schedule 9 Statement also refers to applying best practice methods to assess the environmental impacts of proposals and identify appropriate mitigation measures.

1.28 Under schedule 9 of the Electricity Act 1989, SPT, acting on behalf of SPEN, is required to engage in consultation with relevant landowners, as well as statutory consultees, including local authorities, parish and community councils, NatureScot, Historic Scotland, and the Scottish Environment Protection Agency (SEPA).

[4] SP Transmission Ltd (updated 2025) Statement on Preservation of Amenity in accordance with schedule 9 of the Electricity Act 1989. Available at: https://www.spenergynetworks.co.uk/userfiles/file/Sched9SPTver9.pdf [Accessed 10 October 2025]

Pre-Application Consultation

1.29 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 considered throughout the consenting process.

1.30 SPT 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. It helps inform local communities, landowners, the public, and other stakeholders about transmission proposals and allows them to share views, raise local issues, and provide feedback during the planning and design stages. Engaging both communities and wider stakeholders, such as local authorities and statutory consultees, improves the quality of proposals and allows SPT to refine designs in response to consultation feedback. Further information on the consultation process is provided in **Chapter 7**.

Purpose and Structure of this Document

1.31 The primary purpose of this RCD for the Longcroft Wind Farm Grid Connection Project is to report on Stage 1 of the planning, design, and consultation process set out in the ECU Pre-Application Guidance. It is being published alongside the launch of PAC Event 1.

1.32 The RCD explains how and why a preferred route is being developed and sets out how consultation will be carried out. It provides transparency on the routeing process, outlines the options considered and the constraints that informed them, and explains how environmental, technical, and economic factors are taken into account. The document also sets out how local communities, stakeholders, and statutory bodies can engage with the project, provide feedback, and influence route refinement before a final proposal is confirmed.

1.33 The structure of the remainder of this RCD is outlined in **Table 1** below.

Table 1: Report Structure

Chapter	Description
Chapter 1: Introduction – this section	Introduces the Longcroft Wind Farm Grid Connection Project, provides an outline of the RCD's purpose and structure, and explains the need for the new grid connection.
Chapter 2: Project Description	Provides an overview of the Longcroft Wind Farm Grid Connection Project and its key components, including details of the construction process.
Chapter 3: Route Development	Describes SPT's general approach to routeing and sets out the approach to routeing the Longcroft Wind Farm Grid Connection Project.
Chapter 4: The Study Area	Identifies and describes the study area for routeing the new overhead line, including key constraints or features within it.
Chapter 5: Routeing Strategy and Identification and Appraisal of Route Options	Describes the routeing strategy applied to the Longcroft Wind Farm Grid Connection Project and identifies and describes the route options.
Chapter 6: Appraisal of Route Options and Selection of the Preferred Route	Identifies and describes the preferred route option, including the reasons for its selection.
Chapter 7: Consultation and Next Steps.	Describes the next steps in the Longcroft Wind Farm Grid Connection Project, including consultation on the preferred route option and how to provide feedback.

1.34 The document is accompanied by the figures and appendices listed in the contents page.

2 Project Description

Introduction

2.1 This chapter describes the infrastructure required for the Longcroft Wind Farm Project. It should be noted that, as the project is still in its early stages, the information presented here does not confirm a final design. However, it is considered sufficient to inform the first stage of the pre-application consultation. Further pre-application consultation will be undertaken later in 2026 to seek feedback on the detailed design of the new overhead line, including ancillary works such as access tracks and construction areas.

2.2 The Longcroft Wind Farm Grid Connection Project comprises a new single circuit 132 kV overhead line carried on wood pole support structures from the proposed Glenburnie Wind Farm Substation to the proposed Torfichen CSEC. The new overhead line will operate at 132 kV and comprise three conductors (wires) in a horizontal flat formation. The conductors will be supported on Trident wood pole structures, with potential heights (including insulators) ranging from approximately 11 to 16 m, although some poles may be higher (up to ~21 m) depending on span, terrain and clearance requirements. The typical span length between poles will be around 80 to 110 m, with a total route length of approximately 7.5 kilometres (km). Due to the topography and the need for extra mechanical support, double Trident wood poles (H-poles) will be used along much of the route.

2.3 Trident wood pole support structures are the shortest and simplest of the wood pole designs used by SPT. They are easily obscured by trees and less noticeable in the landscape than heavier wood pole designs or steel lattice towers. Their flexibility enables more effective routeing around obstacles, improving landscape integration. They also do not require concrete foundations, resulting in less intrusive construction methods.

Overhead Line Components

2.4 The new overhead line will consist of aluminium or steel conductors arranged as a single three-phase circuit and mounted on insulators fixed to galvanised steel cross-arms at the top of each wood pole. One of the phase conductors will incorporate an optical fibre for SPT's internal network operations. The insulators, which are usually made from a grey polymeric material, electrically isolate the conductors from the supporting steelwork and pole body, preventing current transfer and reducing glare in bright conditions.

2.5 Single circuit[5] 132 kV overhead lines can sometimes be supported on wood poles, provided there are no technical considerations that require a steel lattice tower. This is the case with the Longcroft Wind Farm Connection Project.

Wood Pole Support Structures

2.6 Trident wood poles are made from sustainably sourced softwood, pressure-treated with a preservative to prevent damage. Three types of wood pole support structures will be used:

- Single-pole structures are employed along straight route sections where span lengths and loads stay within standard design parameters. In these areas, the forces on the poles are primarily vertical, allowing a single pole to reliably support the conductors while minimising the infrastructure's impact on the landscape.
- H-pole (H-frame) structures are employed only where extra structural stability is required, such as at changes in direction, longer spans, or termination points. In these areas, increased horizontal forces result from conductor tension, which a single pole cannot safely support.

[5] As a single circuit high voltage electricity line is designed to carry one electrical circuit, it has only one set of conductors.

The H-pole design distributes these forces across two poles, ensuring safety and durability. Using H-poles selectively reduces the total number of heavier structures along the route and limits visual and landscape impact by restricting their placement to technically necessary locations.

- Terminal wood pole structures are employed at the end of overhead electricity lines or where a section of line is anchored, diverted, or connects to underground cables. In these locations, the conductors are terminated rather than continuing through the structure. Unlike intermediate spans, a terminal span must withstand the full longitudinal tension of the conductors. To manage these increased forces, the wood pole is usually equipped with wire back stays, which safely transfer loads into the ground and maintain structural stability.

2.7 Examples of the different pole structures are shown in **Photos 1 – 3** below. For this project, due to the elevation and exposure, most of the poles will be of the H-Pole

Photo 1: Typical Single Trident Wood Pole

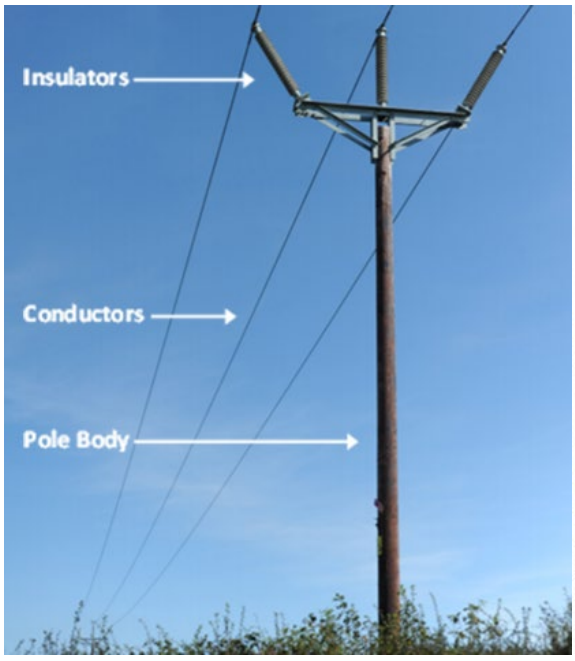


Photo 2: Typical H–Pole with Backstays

Photo 3: Typical Terminal Structure

2.8 Wood poles are dark brown when first erected and weather to a light silver grey after about five years. Experience with similar projects has shown that poles can be visible at distances of 5 – 6 km when seen against the sky but are typically not noticeable beyond 1.5 km when seen against a background of landform and/or vegetation.

Wood Pole Heights and Span Lengths

2.9 Wood pole structures (including the insulators) are typically 11 – 21 m tall, although individual pole heights may be adjusted to meet statutory clearance requirements. The span length or the distance between poles generally ranges from 80 m to 100 m and can be increased or decreased to accommodate environmental or technical/topographical conditions as required

2.10 The foundation depth is around 2 – 2.5 m, depending on the ground conditions.

Overview of the Construction Process

2.11 The construction of the new overhead line follows a well-established sequence of activities. In addition to the overhead line, it requires temporary land use and ancillary infrastructure, including access routes to pole locations, a construction compound, laydown areas for material storage, and designated working areas. Trees that present a safety risk or could infringe statutory clearance distances are trimmed or removed as necessary.

2.12 Construction typically comprises the following activities:

- Tree felling or lopping (where they pose a safety hazard or could infringe statutory clearance distances);
- Preparation of accesses, construction compound, laydown/storage and working areas, and watercourse crossings);
- Excavation of pole footings;
- Delivery of wood poles;
- Installation of wood poles;
- Delivery of conductor drums and stringing equipment;

- Insulator and conductor stringing and tensioning; and
- Site clearance and ground reinstatement.

2.13 The duration of construction activity at any pole site is typically 2 - 3 days. Pole stringing can take up to 2 weeks, depending on the conductor's section length. Angle poles and H-Poles typically take slightly longer than intermediate poles because they require installation of wire stays to stabilise the wood poles in the ground.

2.14 These periods can be spread over several weeks, with periods of inactivity in between if construction difficulties are experienced elsewhere along the line or ground conditions prevent normal progress.

Temporary Construction Compound

2.15 A temporary construction compound(s) is required for the storage of materials, and the siting of staff offices and other facilities. Its location and size will be determined later in the design process.

2.16 Temporary storage or 'laydown areas' for the poles are also needed. Measuring approximately 20 m x 20 m, these are usually surfaced with crushed stone to facilitate safe access from the public road.

Temporary Working Areas

2.17 Temporary working areas of approximately 30 m x 30 m are needed at each pole location during construction. Pulling (or 'stringing') areas measuring around 25 m x 15 m are also required but often overlap with working areas.

2.18 The size and shape of working areas may vary due to environmental or land-use constraints, with each area taped off for protection.

2.19 All temporary areas are restored to their original land use and condition after construction.

Excavation and Pole Installation

2.20 The erection of the wood poles requires excavation to position the pole brace block and or steel foundation braces, as illustrated in **Photo 4**. A typical excavation for a pole is approximately 3 m^2 and 2 m deep. The excavated material is sorted and reused for backfill. No concrete is used.

2.21 In areas with peat or soft ground, special 'floating' foundations or soil mixing techniques may be needed to stabilise the substrate.

Photo 4: Wood Pole Foundation (intermediate H-pole)

2.22 Intermediate wood poles are erected in sections, i.e., between angle poles and/or terminal poles. The insulator fittings and wood poles forming the pole support are assembled close to the excavated foundations and lifted into place using the tracked excavator that dug the foundations, as shown in **Photo 5**.

Photo 5: Installation of a Wood Pole

2.23 Once sufficient poles have been erected, stringing of the conductors will be undertaken. This requires temporary 'pulling' (or 'stringing') areas measuring approximately 25 m x 15 m every 3 – 4 km along the line, or at any change in direction.

2.24 At each pole pulling location, a winch is placed at one end of the stringing section and a tensioner at the other. Pilot wires, secured in blocks on the insulator strings, are connected to both the winch and tensioner. The winch pulls the pilot wires, drawing the conductor through while maintaining tension, preventing contact with the ground and avoiding damage to both the conductor and the surface below.

Accesses

2.25 Temporary accesses to all pole locations will be from the public road network and will use existing gates, tracks and watercourse crossings wherever possible. This may require widening gateways, removing (and subsequently replacing) hedges and fences, and installing temporary fencing.

2.26 Low-pressure ground vehicles are used in many locations as these create very little ground disturbance (**Photo 6**). Stone tracks, both floating (**Photo 7**) and cut and fill (**Photo 8**), are used in poor ground conditions and when heavy plant and a substantial volume of traffic are anticipated. In environmentally sensitive areas, temporary floating panels made of wood, metal, plastic, or steel matting may be used (**Photos 9 and 10**).

2.27 After construction, all temporary tracks are fully reinstated.

Photo 6: Low-Pressure Vehicle Use (no track required)

Photos 7: Floating Stone Track

Photo 8: Cut and Fill Stone Track

Photos 9 and 10: Temporary Roadway Panels

Infrastructure Location Allowance

2.28 Whilst the final route of the new overhead line will be refined through the design process, informed by desk-based and field surveys, infrastructure components may require minor deviations during construction to account for unconfirmed ground conditions or unforeseen issues arising during construction. These may include:

- Pre-construction confirmation of dynamic environmental conditions, such as the location of protected species;
- More detailed technical survey information, particularly in areas of unconfirmed ground conditions such as woodlands;
- The provision of additional scope to effectively mitigate any likely environmental effects; and
- Minor alterations requested by landowners.

2.29 An Infrastructure Location Allowance (ILA) provides a framework for micro-siting the final positions of the overhead line and associated works, ensuring that deviations remain within limits that do not worsen the predicted environmental effects. A horizontal ILA of 50 m along the proposed route alignment is proposed, measured from the centre of each pole or tower, with a 25 m allowance in other directions. Any changes to the ILA will be managed through the Construction Environmental Management Plan (CEMP), overseen by the appointed Ecological Clerk of Works (ECoW), with further input from environmental specialists if necessary. Statutory consultees will be notified of any proposed movements before construction begins.

2.30 The proposed ILA will form part of the section 37 consent application and deemed planning permission, and it is anticipated that it will be included as a planning condition attached to the consent for the Longcroft Wind Farm Connection Project.

Use of Natural Resources

2.31 The Longcroft Wind Farm Grid Connection Project is not expected to require significant use of natural resources, including non-renewable or scarce materials. No major changes to land use are anticipated, with only minimal long-term land take required for the wood poles and little tree removal. There will be no loss of soil or peat, and construction methods will ensure that watercourse crossings do not reduce water quality or impede flow. Additionally, the project does not require potable water.

Waste

2.32 Waste will be produced at different stages of construction, including tree felling and vegetation clearance along the route to access pole locations, stripping of topsoil, excavation for pole footings, and the construction of auxiliary works like temporary working areas. Measures to reduce potential environmental impacts from the storage and transport of waste will include careful placement of stockpiles and storage areas, good practice in designing waste storage facilities and using appropriate containers, the use of sheeting, screening, and damping where suitable, controlling and treating runoff from soil and waste stockpiles, reducing storage times and haulage distances, and sheeting vehicles during transport. Any materials that cannot be reused will be disposed of in accordance with relevant waste management legislation to further minimise potential environmental impacts. All these measures will be implemented through a Site Waste Management Plan (SWMP), which will be part of the CEMP.

Operation and Maintenance

2.33 Wood pole lines are monitored regularly but typically require minimal maintenance. There is also an ongoing requirement to ensure that any vegetation near the overhead line does not compromise safety clearances, through selective trimming or lopping.

Decommissioning

2.34 The wood pole overhead line is likely to require refurbishment or replacement after approximately 40 years. Alternatively, it may be decommissioned, the wood poles removed, and the ground restored.

3 Route Development

3.1 This chapter sets out SPT's approach to routeing the new overhead line.

Overview of SPT's Routeing Process

3.2 SPT's approach to the routeing and assessment of overhead lines and associated infrastructure, including sections of underground cable, is outlined in SP Energy Network (SPEN)'s document, Approach to Routeing and Environmental Impact Assessment ('SPEN's routeing guidance')[6] as well as the company's statutory duties and licence obligations to *'develop and maintain an efficient, coordinated and economical transmission system whilst also causing, on balance, the least disturbance to the environment and to the people who live, work, pass through or enjoy recreation within it'*. The approach is structured around two broad stages:

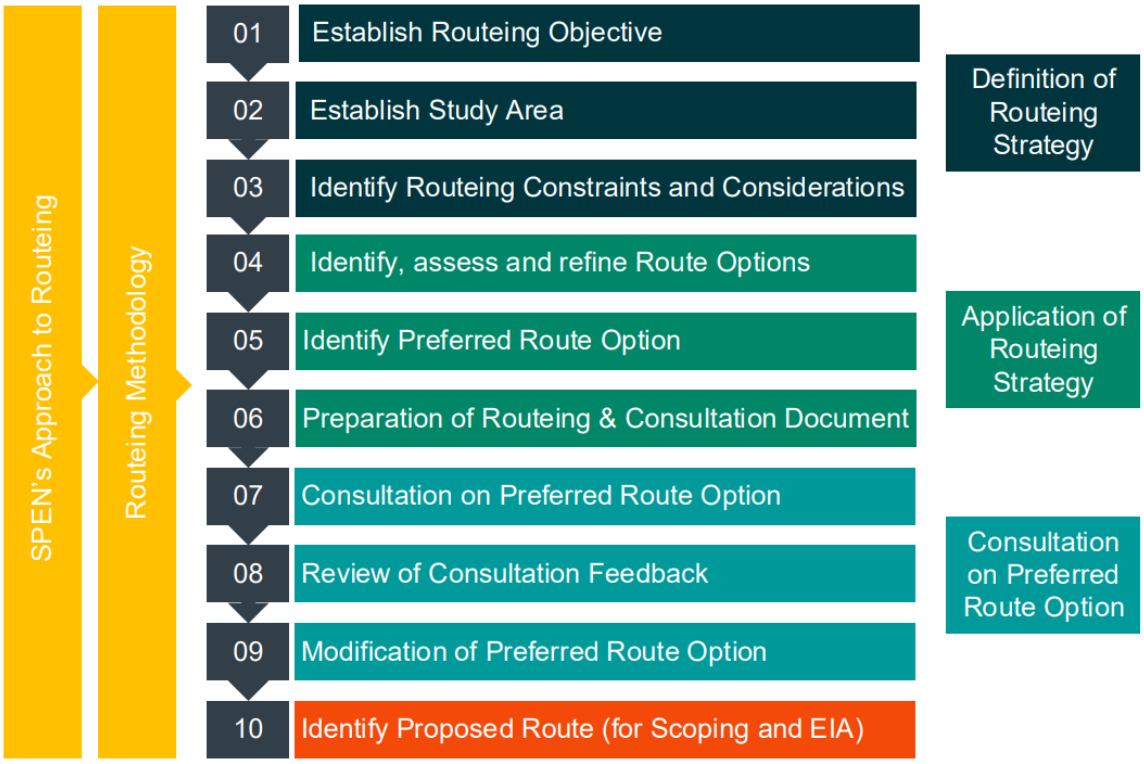
- Stage 1: Route Selection – a route is selected which balances technical feasibility, economic viability, and the need to minimise environmental disturbance. This balance is established through stakeholder and local community engagement and professional judgement.
- Stage 2: Environmental Impact Assessment - once the proposed alignment is established, an EIA is typically required to demonstrate how the project would reduce, offset, or prevent significant adverse effects. An alignment is then established for application purposes.

3.3 Stage 1, which is the focus of this RCD, involves SPT undertaking the steps illustrated in **Diagram 1** below. The steps are shown in sequence for clarity, but in practice, the process is iterative, and steps may be revisited as new information arises or further assessment is needed. Each step is subject to technical review by SPT before progressing to the next. Throughout this stage, SPT's engineering, land, and environmental teams work collaboratively to ensure that technical feasibility, environmental protection, economic considerations, and stakeholder interests are appropriately balanced.

3.4 Proposals are then developed through Stage 2 in conjunction with the statutory requirements outlined in the EIA Regulations (if EIA development), the Electricity (Applications for Consent) Regulations 1990 and other technical studies, as well as discussions with landowners. This process culminates in a final proposal and an accompanying environmental appraisal (EIA), which form the basis of the section 37 application for the proposed alignment.

[6] SP Energy Networks (2020) Approach to Routeing and Environmental Impact Assessment. Available at: https://www.spenergynetworks.co.uk/userfiles/file/SPEN_Approach_to_Routeing.pdf [Accessed 14 September 2025]

Diagram 1: SP Transmission's Approach to Routeing and Detailed Alignment



Step 1 explains the routeing objective for the project, which is based on SPT's licence obligations and schedule 9 responsibilities under the Electricity Act 1989. This objective guides the identification and assessment of route options and is used to evaluate the outcomes of the process, ensuring that the final design is technically feasible, economically viable, and, on balance, causes the least disturbance to the environment and to the people who live, work, and enjoy recreation within it.

Step 2 identifies a study area large enough to accommodate all potential route options, while accounting for technical requirements.

Step 3 maps the baseline routeing constraints and opportunities ('routeing considerations') and defines a routeing strategy specific to the study area. This strategy clarifies how the overall routing objective will be achieved, drawing on established practice and careful evaluation of the technical and environmental factors affecting the overhead line within the study area.

Steps 4 – 6 apply the routeing strategy to identify and comparatively appraise potential route options, which are then subject to technical review to ensure their feasibility. This includes assessing potential cumulative effects with other proposed similar developments in the study area. After any necessary route modifications, the preferred route is selected and the RCD prepared.

Steps 7 - 9 progress the preferred route through pre-application consultation, during which feedback may lead to route refinements and, where changes are significant, further consultation. Following this process, the proposed route and detailed alignment are confirmed, taking account of consultation responses and site-specific issues.

Step 10 confirms the proposed route for further environmental surveys, detailed design and, where required, EIA, which may result in additional amendments to avoid or minimise environmental effects.

3.5 Steps 1–6 are the focus of this RCD and establish a process for identifying, assessing and refining route options, informed by the routeing strategy and, where applicable, feedback from the first pre-application consultation. These options define relatively broad corridors within which a more detailed route alignment can be developed in subsequent stages of the routeing process.

The Holford Rules

3.6 The Holford Rules[7] also inform the routeing process. Although initially developed for high-voltage transmission lines supported on lattice steel towers, many of the underlying principles are equally applicable to overhead lines supported on wood poles. The Holford Rules are widely regarded as industry standard and have been repeatedly tested at public inquiries and hearings held under the Electricity Act 1989. A copy of the Rules, together with the associated Notes and Clarifications, is provided in **Appendix A**.

3.7 Key principles of the Holford Rules, set out in Appendix 4 of SPEN's routeing guidance, include avoiding prominent ridges and skylines, following broad wooded valleys, and using landform and vegetation for screening or backgrounding. Routes should maintain distance from settlements and key viewpoints and avoid sharp changes in direction, as angle poles require more space and can increase visual impact. Environmental considerations, including biodiversity and the historic environment, are integral to the routeing process, and a well-designed overhead line balances these factors, even where this results in a longer route.

3.8 The Rules are hierarchical, with Rules 1 and 2 prioritising avoidance of areas of highest and high environmental value. Rule 1 seeks to avoid major areas of highest value, while Rule 2 supports deviation around smaller areas of high value. In this assessment, 'amenity' is interpreted broadly to include designated scenic, landscape, ecological, scientific, architectural, and historic interests in accordance with schedule 9 of the Electricity Act 1989; therefore, the term 'environmental' is used throughout.

3.9 **Appendix C** sets out how the Rules and subsequent notes relate to the key routeing considerations for the Longcroft Wind Farm Connection Project.

Routeing Objective

3.10 Step 1 in the routeing process is to identify a routeing objective that takes account of SPT's statutory duties and licence obligations. In accordance with SPEN's routeing guidance, the routeing objective for the Longcroft Wind Farm Grid Connection Project is:

> To establish a technically feasible and economically viable route for a new 132 kV overhead line connecting the proposed Glenburnie Wind Farm to the proposed Torfichen 132 kV Substation, which on balance, causes the least disturbance to both the environment and the people who live, work and enjoy recreation within it. The aim is to ensure no net loss of biodiversity while actively pursuing opportunities for biodiversity net gain whenever possible.

[7] In 1959, Lord Holford, then advisor to the Central Electricity Generating Board (CEGB), developed a series of planning guidelines in relation to amenity issues, which have subsequently become known as the 'Holford Rules'. The National Grid Company (NGC) subsequently revised these rules in the 1990s. Although never formally published as official guidance, they are often referred to in planning publications such as, 'Planning Overhead Routes' (RJB Carruthers, 1987) and 'Visual Amenity Aspects of High Voltage Transmission' (GA Goulty, 1989). The Holford Rules form the basis for the decision-making process of siting overhead transmission lines and minimising the potential landscape impact of such infrastructure. They are particularly helpful in identifying route options, as most landscape visual impact assessment guidelines relate to other forms of infrastructure. In contrast, the Holford Rules relate specifically to transmission lines, and although slightly amended in the 1990s, the core premise of each rule remains intact since proposed initially in 1959.

3.11 SPT is committed to ensuring its projects do not result in a loss of biodiversity and, where possible, deliver biodiversity net gain (BNG). This commitment applies across all projects within its licensed areas, in line with relevant legislation and policy, and aligns with the principles of NPF4, which place strong emphasis on addressing the climate and nature crises. In particular, SPT's work reflects Policy 3 on biodiversity, which requires developments to protect and restore habitats, strengthen nature networks, and demonstrate long-term biodiversity improvements through careful planning, best practice assessment, and nature-based solutions.

3.12 SPT's routeing approach prioritises BNG as a key consideration within the broader environmental framework. This ensures that, while balancing various environmental factors, each project contributes to biodiversity enhancement targets on a case-by-case basis.

Routeing Considerations

3.13 Routeing overhead lines is a complex process which, in line with SPT's statutory duties and licence obligations, requires balancing environmental, technical and economic considerations.

Environmental Considerations

3.14 SPT's statutory duties under section 38 and schedule 9 of the Electricity Act 1989 require it to protect features of natural and cultural heritage interest and to do what it reasonably can to mitigate any effects its proposals may have on such features. The construction and operation of the new overhead line will have a potential effect on both people and the environment, including (but not limited to):

- Landscape (including designations and landscape character);
- Visual amenity;
- Biodiversity (including ancient and irreplaceable habitats);
- Trees and woodland;
- Historic environment;
- The water environment; and
- Land use (including woodland, agriculture, forestry and tourism/recreation).

3.15 Some environmental effects can be avoided or reduced through careful routeing. Other effects are best mitigated through local route deviations, refining pole positions, and specific construction practices.

Technical Considerations

3.16 While the Holford Rules and accompanying notes do not explicitly specify technical or economic considerations, these aspects are integral to SPT's statutory duties. In the early stages of routeing (Steps 1 – 5), a range of technical factors is considered. These include the proximity of settlements, waterbodies, and major transport routes; the layout of existing and proposed electricity and renewable energy infrastructure; access and construction logistics; slope gradient; and the presence of peat deposits. While none of these factors are absolute constraints, they may present significant engineering challenges.

Economic Considerations

3.17 In accordance with section 9 of the Electricity Act 1989, the proposed route must be economical. SPT interprets this to mean that:

- Under section 9 of the Electricity Act 1989, the selected route must be economically viable, meaning SPT must balance the costs of the new overhead line with the need to provide a secure, reliable, and safe electricity supply. A proposal is considered viable where the

benefits justify the costs, ensuring that expenditure is proportionate to demand, future growth, and security of supply. SPT must also demonstrate to the regulator, the Office of Gas and Electricity Markets (Ofgem), that the chosen solution delivers the best value for consumers while meeting all statutory and technical requirements.

- Wherever reasonably possible and all other factors being equal, the route should therefore be as direct as feasible and avoid areas where technical challenges or the need for mitigation or compensation, for example, from loss of commercial forestry, would make the project economically unviable.

3.18 Selecting an overhead line also helps meet this requirement. Whilst an underground option would likely offer landscape and visual benefits, these would not be sufficient to outweigh the substantially higher cost, and undergrounding would therefore be inconsistent with SPT's duty to develop and maintain an efficient, secure, and economic electricity network.

4 The Study Area

4.1 This chapter describes the study area and the associated routeing considerations, as outlined in Steps 2 - 3 of the routeing methodology (see **Diagram 1**).

Defining the Study Area

4.2 The study area, shown in **Figure 1**, was defined through a combination of desk-based assessment and field survey. With the proposed Glenburnie Wind Farm Substation and Torfichen CSEC serving as fixed connection points, the study area is broadly oriented east–west, intersecting the predominantly north–south topographic alignment of the Lauder Valley shown in **Figure 2**.

4.3 The study area is sufficiently large to provide sufficient flexibility for route development within a landscape influenced by a range of environmental, technical, and land-use considerations. This approach enables a robust comparison of alternative route options between the connection points, with decisions informed by areas of highest environmental sensitivity in accordance with the Holford Rules and SPEN's routeing guidance.

Routeing Considerations

4.4 In line with Step 3 of **Diagram 1**, routeing considerations were then identified to inform the routeing strategy and the appraisal of route options. These considerations are illustrated in **Figure 3** together with the identified route options.

4.5 Routeing considerations have been separated into two distinct categories: areas or sites of very high or high environmental value, and areas or sites of medium or lower environmental value.

4.6 Details of these routeing considerations within and adjacent to the study area and how they relate to the Holford Rules, and subsequent notes are contained in **Appendix C**.

Areas or Sites of Very High or High Environmental Value

4.7 This section highlights areas of very high or high environmental value within or near the study area, following Holford Rules 1 and 2. For the Longcroft Wind Farm Connection Project, these include internationally and nationally designated sites, especially those valued for their landscape, natural, built, or archaeological heritage.

Landscape Designations (Figure 4)

National Parks

4.8 There are no National Parks in or close to the study area.

National Scenic Areas

4.9 There are no National Scenic Areas (NSA) in the study area. The nearest is the Eildon and Leaderfoot NSA), which is located over 5 km from the south/southeastern edge of the study area. As route options will not cross or run close to this NSA, it does not influence the routeing process.

Biodiversity Designations (Figure 5)

Special Areas of Conservation

4.10 There is one Special Area of Conservation (SAC) in the study area. This is the River Tweed SAC, designated for Atlantic salmon, sea lamprey, river lamprey, brook lamprey, otters, and freshwater habitats. The Leader Water, and the Kelphope, Cleekhimin, Soonhope and Mountmill Burns, which form part of the upper River Tweed catchment, are within the SAC.

4.11 The routeing process seeks to avoid sensitive features where possible and maximise separation to reduce environmental effects. While some crossings of River Tweed SAC tributaries may be unavoidable, if a route crosses the SAC, pole placement must be carefully planned to maximise separation and mitigate potential effects.

Special Protection Areas

4.12 There are no Special Protection Areas (SPA) or Ramsar sites in the study area. The nearest is Fala Flow, located approximately 6 km to the northwest. This site is designated for pink-footed geese, which have also been recorded in the surrounding area. Land within the study area, particularly to the west, may therefore have functional connectivity with this SPA/Ramsar site.

Sites of Special Scientific Interest

4.13 Airhouse Wood SSSI, located in the northwestern part of the study area, is designated for its woodland habitat and includes the Mountmill Burn, part of the upper River Tweed catchment. sensitive ecological features during the construction and operation of the overhead line.

Important Bird and Biodiversity Areas

4.14 The Lammermuir Important Bird and Biodiversity Area (IBA) covers much of the study area east of the Leader Valley. As the proposed Glenburnie Wind Farm Substation is located within this IBA, routeing through it is unavoidable.

Priority Peatland Habitats

4.15 There is no Carbon and Peatland Class 1 and 2 in the study area.

Archaeological and Cultural Heritage Designations (Figure 6)

Scheduled Monuments

4.16 The following Scheduled Monuments are present in or along the boundary of the study area:

- Oxton, Roman fortlet and annexes (SM2837);
- Oxton, Roman Camps (SM4378);
- Addinston, fort (SM362);
- Lylestone, settlement (SM4557);
- Overhowden, henge (SM2155);
- Bowerhouse, fort (SM365);
- Glenburnie, fort (SM4473);
- Hillhouse, fort (SM4627)
- Hartside, scooped homesteads (SM4554);
- Longcroft, fort (SM372);
- Burncastle, fort (SM4656);
- Longcroft Hill, homestead (SM4480);
- Soonhope, homestead (SM4476);
- Hog Hill, settlement (SM4481); and
- Blackchester, fort and settlement (SM364).

4.17 Potential effects from the construction or operation of the new overhead line, both direct and indirect, must be carefully considered during route selection and design. Route options should avoid direct impacts on Scheduled Monuments and, where possible, use landform and

vegetation to minimise visual effects on their setting. In some areas, particularly toward the western edge of the study area, impacts on settings may be unavoidable, and planning should aim to mitigate them through sensitive alignment and screening.

Listed Buildings

4.18 There are two Listed Buildings in or on the edge of the study area:

- Channelkirk Church (LB1893) Category A; and
- Justicehall (LB1894) Category B.

4.19 Impacts on these Listed Buildings should be avoidable given their locations, both in terms of direct physical effects and indirect effects on their settings.

Battlefields

4.20 There are no battlefield sites in the Inventory of Battlefields managed by Historic Environment Scotland in or close to the study area.

Conservation Areas

4.21 There are no conservation areas in or close to the study area.

Garden and Designed Landscapes

4.22 There are no garden and designed landscapes in the study area. The nearest is Thirlestane Castle, which is included in the Inventory of Gardens and Designed Landscapes (Scotland) produced and managed by Historic Environment Scotland (HES). As the Castle is outside the study area and the route options do not need to cross or run close to the parkland, it does not influence the routeing process.

Archaeologically Sensitive Areas

4.23 There are no archaeologically sensitive areas in or close to the study area.

Trees and Woodland (Figure 7)

4.24 NPF4 recognises the role of trees and woodland in helping to achieve net zero by 2045 through sequestering and storing carbon and providing essential ecosystem services. NPF4 Policy 6 states that development proposals that enhance, expand and improve woodland and tree cover will be supported. Policy 6 also states that development proposals involving woodland removal will only be supported where they will achieve significant and clearly defined additional public benefits in accordance with relevant Scottish Government policy on woodland removal. Where woodland is removed, compensatory planting is likely to be required.

4.25 The study area includes no areas of woodland identified as ancient semi-natural woodland (ASNW) or planted ancient woodland sites (PAWS) in the Ancient Woodland Inventory (AWI). There are many small woodlands on the National Forest Inventory dispersed throughout the study area, a few of which are Native Woodland Sites (NWS). Routeing should seek to avoid any woodland removal. When complete avoidance is not achievable, potential effects, particularly on individual trees, can often be addressed by deviation during the more detailed route alignment stage.

4.26 Ash dieback (*Hymenoscyphus fraxineus*) is anticipated to kill up to 80% of ash trees across the UK. The disease has spread widely in the Scottish Borders.

Settlement (Figure 8)

4.27 Settlements are recognised as areas of high environmental sensitivity and should be avoided wherever possible. Although not explicitly referenced in the Holford Rules, this approach aligns

with their underlying principles. In addition to the settlement of Oxton, many scattered clusters and individual residential properties and farmsteads are dispersed throughout the study area. Route options should therefore aim to maximise the distance from these properties. Potential effects, particularly on individual properties, can often be addressed by deviation during the more detailed route alignment stage.

Recreational Resources (Figure 8)

4.28 The Southern Upland Way is a long-distance walking route that runs broadly north to south from Lauder to Melrose. It offers panoramic elevated views of the surrounding landscape. At its closest, it passes within 2.5 km of the southeastern edge of the study area.

4.29 When developing route options, it is essential to consider the proximity of these walking routes and to minimise impacts on the amenity and sequential views from them as much as possible.

Areas or Sites of Medium or Lower Environmental Value

4.30 This section identifies the areas or sites within or close to the study area that are designated at the local or regional level. It also includes undesignated woodland and recreational areas, such as walking or cycling routes, as well as more formalised recreational resources, such as golf courses or holiday parks. While these areas are not of the highest environmental value, route options should still aim to minimise impacts on them. Efforts should be made to preserve these locally important environments, balancing environmental considerations with technical and economic constraints during route selection.

Landscape Designations (Figure 4)

Special Landscape Areas

4.31 The Scottish Borders Council seeks to ensure that local areas of high landscape quality, known as Special Landscape Areas (SLA), are afforded adequate protection against inappropriate development under Policy EP5. The Lammermuir Hills SLA spans much of the study area, including Headshaw Hill, Addinston Hill, and Lylestone Hill, as well as the site of the proposed Glenburnie Wind Farm. This SLA is the largest area of moorland in the Scottish Borders. Despite being a managed landscape that includes the Dun Law Wind Farm and Fallago Rig Wind Farm, it maintains a sense of wildness and remoteness. The vast extent and uninterrupted openness of this landscape greatly enhance its scenic quality. Although the area is sparsely populated, the more expansive Lammermuir plateau provides a prominent backdrop for views from the Leader Valley.

4.32 While it is unlikely to be feasible to develop route options that entirely avoid the SLA, the use of a wood pole line rather than a steel lattice tower line will substantially reduce adverse impacts on this sensitive landscape. Wood pole lines are generally less visually intrusive in the landscape and, when combined with careful routeing, will help minimise effects on the SLA's scenic quality and character.

Landscape Character (Figure 4)

4.33 NatureScot's online national Landscape Character Assessment (2019)[8] defines the following Landscape Character Types (LCTs):

- LCT 90 - Dissected Plateau Moorland;
- LCT 91 - Plateau Grassland – Borders; and

[8] NatureScot (updated 2023) Landscape Character Assessment. Available at: https://www.nature.scot/professional-advice/landscape/landscape-character-assessment [Accessed 15 November 2025]

- LCT 115 - Upland Valley with Mixed Farmland.

4.34 A description of these LCT and an appraisal of their susceptibility to change resulting from the presence of a new wood pole line is presented in **Appendix D**.

4.35 The study area is focused on the Upland Valley with Mixed Farmland LCT, through which the Leader Water flows southwards, passing Lauder and Earlston before joining the River Tweed at Leaderfoot. In the area, the river moves from an upland valley into a broad vale, surrounded by meadows, woodlands, and gently sloping farmland. The valley also forms an important transport route, followed by the A68 and A697. Lauderdale has a rich historical and cultural heritage. It was once a royal hunting forest, crossed by the Roman road Dere Street, and contains ancient camps, burial mounds, and medieval estates such as Thirlestane Castle, which overlooks Lauder from a bluff above the floodplain.

4.36 The village of Oxton lies on the lower valley slopes and can be reached by several small roads from the A68. It is known for its Roman remains, including a camp, a fortlet with annexes, and other sites along Dere Street. Oxton also has early Christian connections, as the birthplace of St Cuthbert (c. AD 635) and the location of the holy spring, Holy Water Cleuch, where he is said to have baptised people. St Cuthbert's Walk starts at Channelkirk Church (Category A-listed) and passes Oxton along the old railway line, continuing south towards Lauder and Melrose.

4.37 The main valley floor and nearby rolling land are mainly used for farming, with medium-sized fields located between the valley slopes and the main road. On the slopes and surrounding hills, there are several rectangular conifer plantations. Small areas of mixed and deciduous woodland are also present, often in narrow strips near farms or along minor streams in the smaller valleys.

4.38 The eastern part of the study area is dominated by the Dissected Plateau of the Lammermuir Hills, a distinctive upland area of gently rounded summits and steep-sided valleys shaped by tributaries of the Leader Water. The hills are characterised by open moorland, rolling terrain, and extensive heather cover, transitioning to pastoral slopes and arable farmland enclosed by drystone dykes and wind-sculpted hedgerows. The hills support rich moorland birdlife, including golden eagle, black grouse, and merlin, and are recognised by BirdLife International as an IBA for their habitats and notable bird populations. The hills are also rich in archaeological sites, including Iron Age forts, and have inspired literary works, most famously Sir Walter Scott's The Bride of Lammermoor.

4.39 The western part of the study area, forming the eastern edge of the Moorfoot Hills, is characterised as Plateau Grassland – Borders. The landscape features smooth, rounded spurs, shallow side glens, and occasional steeper burn-cut notches, rising from low terraces above the valley floor to open upland shoulders and moorland tops. Land cover varies from improved pasture on the lower and mid-slopes, marked by stone dykes and stock fencing, to rough grassland, heather mosaics, and gorse on the upper slopes, interspersed with shelterbelts, small conifer blocks, and riparian strips. Settlement is sparse, with dispersed farmhouses on benches or knolls, connected by minor lanes and tracks leading up from the A68. The upland edge has a simple, cohesive character, with sweeping forms and uncluttered skylines that feel increasingly open with height. Panoramic views from the upper slopes extend across Lauderdale to the Lammermuir Plateau, while from the valley floor the western valley side presents a continuous backdrop of rising land and smooth horizons, occasionally interrupted by forestry.

4.40 The study area is served by a network of roads and transport routes, including the A68 and A697, which follow the Leader Valley. A series of local and minor roads connect to these main routes, typically running up the valley sides. Access to the higher ground of the Lammermuir Plateau is more limited, being generally restricted to private tracks.

4.41 Existing minor lanes, farm tracks, and field margins form a network of Core Paths and other rights of way, providing recreational access across the study area and into the surrounding hills, making use of the valley's gentle lower slopes and the rising upland terrain.

4.42 Existing electrical infrastructure consists of a network of overhead lines, including a 400 kV line and a 132 kV line running from north to south in the western part of the study area. A network of lower-voltage wood pole lines traverses the study area, with the highest concentration in the Leader Valley.

4.43 Windfarms affect the wider landscape of Leaderdale, although their visibility changes with elevation. On the valley floor and lower slopes near Oxton, views are often restricted by the landform, shelterbelts, and settlements. In contrast, from the middle and upper slopes and the higher ground at the valley head, turbines on the Lammermuir and Moorfoot Hills are more noticeable, appearing as vertical features that break the horizon.

Archaeological and Cultural Heritage Assets

4.44 Non-designated heritage assets are recognised for their cultural and historical importance and are monitored by HES and other heritage organisations. Unlike designated heritage assets, however, they do not benefit from the same statutory protections. Potential impacts can be effectively managed by implementing appropriate mitigation measures during construction. They have therefore not been mapped at this stage as they are not considered a differentiator in route selection.

Biodiversity Designations (Figure 5)

4.45 Local Biodiversity Sites (LBS) are non-statutory designations that are identified in Policy EP3: Local Biodiversity and Geodiversity of LDP2 as areas of local importance for biodiversity. Their purpose is to safeguard and enhance local biodiversity, supporting the Scottish Borders Council's statutory duty under the Nature Conservation (Scotland) Act 2004 to conserve biodiversity. Policy EP3 encourages developers to consider biodiversity at the outset of a proposal. Technical Note 4: Local Biodiversity Sites[9] sits alongside Policy EP3, specifically regarding LBS.

4.46 The only LBS sites in or close to the study area are:

- Threeburnford Cleugh LBS (Site Ref. 49) in the western part of the study area. It comprises juniper scrub, burnsides and flushes with species-rich grassland and wetland habitats, locally notable plants, a UK priority butterfly and protected mammals.
- Whaplow Burn (lower) LBS (Site Ref. 53) in the northeastern part of the study area. It comprises burnsides, cleughs and screes with juniper and fern communities and a priority reptile (adder).

4.47 Route options should avoid these sites to prevent their loss.

Recreational Resources

4.48 St Cuthbert's Walk begins at the Category A-listed St Cuthbert's Church and runs south past Oxton along the old railway line, marked by signs and waymarkers, continuing towards Lauder and then Melrose. There it joins St Cuthbert's Way, a 62-mile (100 km) long-distance trail that traces the journey of 7th-century saint Cuthbert from Melrose in the Scottish Borders to Lindisfarne (Holy Island) off the coast of Northumberland, England.

4.49 When developing route options, it is important to consider the proximity of this walking route and to minimise impacts on the amenity and sequential views from it as much as possible.

Other Routeing Considerations

4.50 In addition to sites or features of environmental value, SPT's technical team has also considered potential engineering and technical constraints that could influence the identification of route

[9] Scottish Borders Council Local Biodiversity Sites (2020) Available at: https://www.scotborders.gov.uk/downloads/file/7554/local-biodiversity-technical-note [Accessed 12 November 20256]

options. This includes existing or planned infrastructure, as well as natural and man-made physical constraints such as topography, elevation, slope, ground conditions, and watercourses, alongside existing utilities, roads, and railways.

Flood Risk (Figures 9a and 9b)

4.51 Flood risk is an important consideration in overhead line routeing, as areas prone to flooding can affect both construction and long-term operation. Routeing, therefore, seeks to avoid high- or medium-risk flood areas or to incorporate mitigation measures to ensure the line remains safe and resilient. SEPA's Flood Risk Maps identify areas at risk of flooding from rivers, the sea, or surface water. These indicate that the main areas of flooding in the study area are associated with the Leader Water and its tributaries.

Existing and Proposed Electricity Transmission Infrastructure (Figure 10)

4.52 The routeing process also takes account of the following existing and proposed overhead line connections in the Lauder area in order to avoid unnecessary crossings and maintain required safety clearances.

- 'P' Route: This is an existing 132 kV overhead line supported by steel lattice towers, which runs from Smeaton to Dun Law to Galashiels.
- 'ZA' Route: This is an existing 400 kV overhead line from Smeaton Substation to Eccles Substation.

4.53 A network of smaller 11 kV wood pole lines traverses the study area, with the greatest concentration in the Leader Valley.

4.54 SPT is proposing to replace the P Route with a new overhead line linking the Dun Law Extension Substation to the Galashiels Substation. Following initial proposals, a revised route was provided for public consultation in early 2025. This included approximately 2.5 km of new underground cable in the Airhouse area to reduce visual intrusion and improve integration with existing infrastructure. Further information can be found on the project website at: https://www.spenergynetworks.co.uk/pages/dunlawext_galashiels.aspx

Existing and Proposed Windfarms (Figure 10)

4.55 Existing windfarms located outside, but close to, the study area include Toddelburn to the west, Dun Law to the northwest, and Fallago to the northeast. In addition, there are several wind farm applications with the ECU, alongside the previously mentioned proposed Glenburnie Wind Farm and the proposed Dun Law Wind Farm repowering scheme.

4.56 There are also several small single and pairs of wind turbines present within the area.

5 Routeing Strategy and Identification and Appraisal of Route Options

5.1 This chapter sets out the routeing strategy and identifies three route options. These options are intended to:

- Reflect the overarching routeing objective;
- Remain consistent with SPEN's routeing guidance; and
- Comply with the Holford Rules for overhead transmission lines.

The Routeing Strategy

5.2 Step 3 of **Diagram 1** defines the routeing strategy for the Longcroft Wind Farm Connection Project.

5.3 Whilst the routeing objective is general and applicable to most overhead line projects, the routeing strategy below is specific to the Longcroft Wind Farm Connection Project. It has been developed with reference to the routeing objective and the routeing considerations described in **Chapter 4** and in **Appendix C**.

Identify a route which is as direct as possible between the Glenburnie Wind Farm Substation and the proposed Torfichen Cable Sealing End Compound, following the natural contours of the intervening landscape as it transitions from the Lammermuir plateau through the prominent slopes of the upland fringe, to the distinctive low-lying Leader Valley to the west.

Prioritise avoiding or minimising any potentially adverse effects on views and visual amenity by considering the pattern and distribution of settlements, as well as the individual or clustered properties dispersed throughout the area.

When crossing the River Tweed SAC, select a suitable location to ensure that pole placements maximise separation distances and minimise potential environmental impacts.

Minimise potential direct and indirect effects on all other statutory and non-statutory sites within the study area, habitats and protected species, while exploring opportunities to enhance biodiversity and deliver Biodiversity Net Gain (BNG).

Minimise adverse effects on the experience of people using the Southern Upland Way and the visitors to the Three Lochs Holiday Park and Whitecairn Holiday Park. Consider their key features and layout, including existing and proposed uses, and important views.

Avoid direct impacts on the Southern Upland Way, St Cuthbert's Walk, and Core Paths, while minimising likely effects on the views experienced along these recreational routes.

Minimise tree loss across AWI, NWSS, NWI sites, and commercial forestry.

Consider existing and planned land use and infrastructure as much as possible, including extensions to settlements, proximity to existing and proposed overhead lines, and proximity to wind turbines.

Identification and Description of Route Options

5.4 Steps 4 – 6 of **Diagram 1** apply the routeing strategy to identify and comparatively appraise potential route options, which are then subject to technical review to ensure their feasibility.

5.5 The topography of the area, together with the location of Oxton and various technical and environmental constraints, has limited the number of feasible route options within the study area.

5.6 **Figures 11a and 11b** illustrate the four identified route options for the connection. Each option shares the same connection points, beginning at the developer-provided proposed Glenburnie Wind Farm connection point and terminating at the proposed site for the Torfichen CSEC.

5.7 The route options are numbered 1 to 4, from north to south, and include some potential linkages. The overall aim is to establish a continuous route between the two connection points.

5.8 The 'edges' of the mapped route options do not represent precise boundaries for routeing. The purpose of identifying these routes was to delineate the broad geographic areas where an overhead line is considered preferable compared to other areas.

Route Option 1

5.9 From its starting point on Peat Law, Route Option 1 initially shares the same broad corridor as the other three options, running southwest across the plateau moorland to the north of Lylestone Hill. Near the southern end of the track marked 'Herring Road' on the OS map, the route options begin to diverge, though they still form a broad corridor. Route Option 1 then continues southwest, descending obliquely down the steep southern valley side of the Cleekhimin Burn. In doing so, it crosses the deeply incised valley of the Allers Burn while avoiding several small areas of valley-side woodland.

5.10 The route then crosses the flat valley floor of the Cleekhimin Burn near the cattle grid on the access track leading to the group of properties at Longcroft. From there, it turns northwest, ascending the steep northern side of the Cleekhimin Burn valley between Addinston Lodge and a nearby block of woodland. This woodland would offer some screening of an overhead line from the Addinston Fort Scheduled Monument to the northeast. After passing around the north side of Addinston Lodge, the route option turns west and then southwest to cross a small tributary valley of the Leader Water before descending into Lauderdale and crossing the A697 just south of Boghall.

5.11 Continuing southwest, Route Option 1 crosses the Leader Water and then the A68 in quick succession, before heading west through valley-floor fields east of the dismantled rail line. A series of long, linear tree belts limits routeing through this area. After crossing the dismantled rail line, the route diverges around Burnfoot Farm before crossing the existing 132 kV overhead line (P Route) and passing north of the buildings at Overhowden. Linear woodlands at Overhowden would help screen the overhead line from the Overhowden Henge Scheduled Monument. The route then follows part of the access track to Airhouses, crossing the existing 400 kV overhead line (ZA Route) just before reaching the proposed Torfichen CSEC.

Route Option 2

5.12 Route Option 2 initially follows the same broad corridor as the other three options, running southwest across the plateau moorland to the north of Lylestone Hill. From the southern end of the track marked 'Herring Road', it runs alongside the southern extent of Route Option 1 as far as the valley floor of the Cleekhimin Burn. Unlike Route Option 1, which swings northwest east of Addinston Lodge to rise up the steep northern valley side of the Cleekhimin Burn, Route Option 2 continues along the lower slopes of the southern valley side. This alignment, however, requires crossing the valley floor at a point where the watercourse is relatively wide, with areas of standing water and wet habitat.

5.13 After crossing Cleekhimin Valley and the access road to Addinston Lodge, the route continues west, crossing the A697 north of Cleekhimin Bridge, then Dean Syke and the Leader Water. It rejoins Route Option 1 in the valley-floor fields east of the dismantled rail line. A series of long, linear tree belts limits routeing through this area. After crossing the dismantled rail line, the route diverges around Burnfoot Farm before crossing the existing 132 kV overhead line (P Route) and passing north of the buildings at Overhowden. Linear woodlands at Overhowden would help screen the overhead line from the Overhowden Henge Scheduled Monument. The route then follows part of the access track to Airhouses, crossing the existing 400 kV overhead line (ZA Route) just before reaching the proposed Torfichen CSEC.

Route Option 3

5.14 Route Option 3 initially follows the same broad corridor as the other three options, running southwest across the plateau moorland to the north of Lylestone Hill. From the southern end of the track marked 'Herring Road', it runs contiguous to Route Option 2 as far as the A697, which it crosses north of Cleekhimin Bridge. From this point, it turns southwest to cross Dean Syke, the Leader Water, and the A68, before continuing towards Shiefield, where it converges with Route Option 4.

5.15 Route Option 1 then follows the same corridor as Route Option 4 in a westerly direction as far as the cluster of buildings at Collielaw. From there it diverts in a northerly direction passing to the west of Collielaw before crossing the existing 132 kV overhead line route (P Route) on the sloping land east of Overhowden and rejoining Routes 1 and 2. Linear woodlands at Overhowden would help screen the overhead line from the Overhowden Henge Scheduled Monument. The route then follows part of the access track to Airhouses, crossing the existing 400 kV overhead line (ZA Route) just before reaching the proposed Torfichen CSEC.

Route Option 4

5.16 Route Option 4 initially follows the same broad corridor as the other three options, running southwest across the plateau moorland to the north of Lylestone Hill. From the southern end of the track marked 'Herring Road', it occupies much of the same corridor as Route Option 2. However, instead of descending the valley side to cross the Cleekhimin Burn, it continues on a southwesterly route, remaining high on the valley slopes before following the course of a small, unnamed tributary valley of the Leader Water in a westerly direction down into Lauderdale. The route then crosses the A697 north of Lylestone, where a linear tree belt would screen views from the property.

5.17 Swinging to a more westerly direction, the route crosses the Leader Water just south of where it joins the Cleekhimin Burn. After crossing the A68, it passes through farmland, crossing the dismantled railway line while avoiding several scattered rural properties. It then follows a small, unnamed stream valley north of Bowerhouse Fort Scheduled Monument, before crossing the existing 400 kV overhead line route (ZA Route) and the 132 kV overhead line (P Route) in quick succession. It then follows the contours around the northern side of Collie Law and skirts a cluster of undesignated archaeological assets near Overhowden, before heading north towards the proposed Torfichen CSEC.

6 Appraisal of Route Options and Selection of the Preferred Route

6.1 This chapter summarises the appraisal of the four identified route options. It takes into account the Holford Rules (**Appendix A**), relevant routeing considerations (**Appendix C**), and the landscape's susceptibility to a new wood pole line (**Appendix D**).

6.2 The purpose of the appraisal is to distinguish between the route options by identifying and comparing their relative constraints and opportunities.

Route Option Appraisal

6.3 The detailed route options appraisal table is provided in **Appendix E** and summarised below. It should be read in conjunction with the supporting figures in **Appendix B**.

Environmental Considerations

6.4 To connect the proposed Glenburnie Wind Farm in the Lammermuir Hills with the proposed Torfichen CSEC on the eastern edge of the Moorfoot Hills, four potential route options were identified. All routes generally run east to west and are numbered from north to south. Route Option 1 is approximately 7.5 km long, Route Option 2 is 7.4 km, Route Option 3 is 8.8 km, and Route Option 4 is the longest at 9.3 km.

6.5 The main issues relate to topography and potential visibility as the new overhead line descends from the Lammermuir Hills, which are locally designated as an SLA. Other considerations include the presence of archaeological and heritage assets, such as several Scheduled Monuments, scattered properties, crossings of watercourses with high or medium flood risk within the River Tweed SAC, and intersections with existing 132 kV and 400 kV overhead lines (P Route and ZA Route) that run north–south across all route options.

Landscape

6.6 Due to the location of the proposed Glenburnie Substation, all four route options would need to cross the Lammermuir Hills SLA. Route Option 1 would cross slightly more of the SLA and is therefore considered less preferable than the other three.

6.7 All four route options traverse the same three LCTs, resulting in relatively little difference in their likely effects on landscape character. Only LCT 90 Dissected Plateau Moorland is classed as having high susceptibility to a wood pole line. Each route option crosses approximately the same distance of this higher susceptibility LCT before entering medium susceptibility landscapes to the west. Consequently, landscape character is not a differentiator in route selection.

Visual Amenity

6.8 None of the route options are close to any towns or villages. Oxton and Lauder are sufficiently distant to be unaffected. The highest concentration of individual dwellings and small clusters occurs within the valley floor and lower slopes of the Leader Valley, particularly along the A687 and A68 corridors. While local variations in topography and the prevalence of small woodlands and linear shelterbelts provide some opportunities to mitigate visual effects from properties, Route Option 2 is marginally preferred because it offers greater flexibility to avoid residential properties and farmsteads than the other routes.

6.9 Each route option affects a similar number of Core Footpaths and other public rights of way, including the locally promoted St Cuthbert's Walk. No long-distance trails are near any of the route options. Whilst the holiday accommodation at Airhouses would not be affected by any of

the routes, Route Option 4 is preferred as it avoids routeing along the private access road to these properties.

Biodiversity

6.10 Likely impacts on biodiversity associated with all four routes are broadly similar, with the type and extent of habitats on each route being broadly comparable. The only site of international biodiversity importance which could be affected by the route options is the River Tweed SAC, which is designated for its freshwater habitats and/or species considered to be of European importance. The SAC includes the Leader Water, and the Kelphope, Cleekhimin, Soonhope and Mountmill Burns. Collectively, these form part of the upper River Tweed catchment. Route Option 4 crosses only one of the watercourses within the SAC, whilst the other three route options have to cross two of the watercourses. While a Habitats Regulations Assessment (HRA) may be required, no significant issues are anticipated provided that no in-channel work is undertaken, and an appropriate buffer is maintained along the watercourses. The SAC is therefore not a differentiator in route selection.

6.11 The nearest SPA/Ramsar site is Fala Flow, located approximately 6 km north-west of the western end of the route. This site is designated for the pink-footed goose, a qualifying species that has been recorded in the wider area. An HRA may be required as land within the route corridor, particularly to the west, could be functionally linked to the SPA/Ramsar. Records confirm the use of nearby fields by pink-footed geese, and this potential connectivity would need to be further assessed. However, this does not represent a differentiator in route selection.

6.12 All route options would unavoidably cross the same length of the Lammermuir IBA. The IBA is therefore not a differentiator in route selection.

6.13 All route options avoid local sites of medium or low environmental value. However, their eastern end lies close to the Whalplaw Burn (Lower) LBS, located immediately to the north of the four route options, where they share the same corridor near the proposed Glenburnie Wind Farm. The LBS is therefore not a differentiator in route selection

6.14 Protected species potentially affected, and for which more detailed surveys may be required, include those associated with the freshwater habitats of the upper River Tweed, the higher moorlands and peat deposits in the vicinity of the proposed Glenburnie Wind Farm, and the watercourses, trees, woodlands and shelterbelts within the lower-lying farmland landscape. As Route Options 1 and 2 are shorter and marginally more direct, they are preferred from an ecological perspective, as they are likely to have reduced impacts on these habitats and protected species.

Historic Environment

6.15 None of the route options is considered likely to result in significant impacts on the settings of Scheduled Monuments. However, detailed setting impact assessments will be required as part of the section 37 application. Several hillforts lie in proximity to the route options, but key inter-visibility between these potentially contemporary sites is unlikely to be disrupted. In some cases, such as along Route Options 3 and 4, existing steel lattice tower lines (the P and ZA Routes) are already present in the landscape. As a result, while there is little to distinguish the route options, Route Option 3 is marginally preferred.

6.16 None of the route options is considered likely to result in significant impacts on the setting of Thirlstane Hall Inventory Garden and Designed Landscapes or any Listed Buildings. Accordingly, no route option is preferred for these designated heritage assets.

6.17 There is similarly little to differentiate between the route options in terms of non-designated heritage assets.

Trees and Woodland

6.18 The nearest AWI is Airhouse Wood (also an SSSI), which is located approximately 670 m from the edge of the nearest route option. AWI is therefore not a differentiator in route selection.

6.19 Although the NWSS within Route Options 1 and 2 may be avoided during detailed line routeing, Route Options 3 and 4 are preferred as they do not include an NWSS and therefore offer greater potential for routeing.

6.20 NFI woodlands are present across all route options, with little to differentiate between Route Options 1, 2, and 3. Route Option 4 is the least preferred because crossing an NFI woodland is unavoidable. The other options, therefore, offer greater potential for routeing.

Flood Risk

6.21 Each route option would need to cross the Cleekhimin Burn and the Leader Water, both of which include areas of high and medium flood risk. On balance, however, Route Option 4 is the least preferable as it has the potential to cross a wider extent of the flood zone.

Ground Conditions

6.22 The Carbon and Peatland Map of Scotland shows the distribution of carbon and peatland classes (Class 1, which is representative of nationally important carbon-rich soils and deep peat to Class 5, which is representative of peat soils). Class 1 Peatland Habitat is present within the study area, coinciding with Threepwood Moss SAC/SSSI. Other areas of peatland habitat are mainly Class 3 or 5. Most of the peatland habitat within the study area occupies relatively small, discrete areas and is therefore avoidable, subject to other routeing considerations. Peat deposits are consequently not a differentiator in route selection

Land Use

6.23 Route Options 1 and 2 are marginally preferred in terms of land use, as they would affect the smallest area of land classified as the highest-grade agricultural land, as well as the land most suitable for tree crop growth and management.

Technical and Economic Considerations

6.24 SPT conducted a technical design risk evaluation in September 2025.

6.25 The four route options were reviewed through a desktop study, utilising existing datasets, mapping resources, and design standards to identify potential constraints. This study is complemented by an initial technical appraisal and the development of a preliminary design hazard matrix, which identifies and categorises hazards relevant to construction, operation, and maintenance.

6.26 Following a review of the available information and the technical appraisal matrix, the key findings for the route options are summarised below.

Route Lengths (approximate)

- Route 1 - 7.46 km
- Route 2 - 7.38 km
- Route 3 - 8.64 km
- Route 4 - 9.41 km

Altitude (Figure 2)

- Over 83% of all four route options are at altitudes above 200 m AOD.
- Route 1 has the highest proportion of elevated terrain at 97%.

- Maximum altitude for all routes is approximately 414 m AOD.

Topography (Figure 2)

6.27 Gradients are generally between 0 and 60 degrees, with some sections reaching 6 to 110 degrees.

6.28 Steeper sections of over 110 degrees occur in hilly terrain, with Route Option 4 having the maximum calculated gradient of approximately 24.2 degrees.

6.29 Route Options 1 and 4 traverse, on average, steeper terrain than Route Options 2 and 3, potentially increasing technical challenges for construction and access.

Buildability/Access Constraints

6.30 Existing tracks may provide partial access along all four route options, although inspections will be required to confirm their suitability for construction vehicles. In addition, remote sections, such as open fields, may necessitate temporary access routes, which could be limited by steep terrain. These access considerations are relevant to all four route options.

Proximity to Existing Overhead Lines (Figure 10)

6.31 Each of the route options crosses or runs close to the following overhead line infrastructure:

- Route Option 1 – crosses or is close to 5no. 11 kV wood pole lines and 1no. 132 kV steel lattice tower line;
- Route Option 2 - crosses or is close to 4no. 11 kV wood pole lines and 1no. 132 kV steel lattice tower line;
- Route Option 3 - crosses or is close to 3no. 11 kV wood pole lines and 1no. 132 kV steel lattice tower line; and
- Route Option 4 - crosses or is close to 3no. 11 kV and 1 × 33 kV wood pole lines, 1no. 132 kV and 1no. 400kV steel lattice tower line.

6.32 Early engagement with SPD is advised to minimise potential interruptions to existing connections.

Ground Conditions

6.33 Potential peatland has been identified near the proposed wind farm substation at Peat Law Hill, and further ground investigations will be required at key locations along all routes to assess construction feasibility.

Flooding and Watercourses (Figures 9a and 9b)

6.34 There is a potential flood risk associated with the smaller watercourses along the routes. All routes cross the Cleekhimin Burn and Leader Water. Route Options 1–3 also cross the Clora Burn, while Route Option 1 also crosses the Allers Burn.

6.35 Pole positioning must account for these crossings to minimise flood risk and ensure stability.

Road and Railway Crossings

6.36 As well as the A697/A68, there are minor road and track crossings along all the route options.

6.37 No railway crossings are required.

Windfarms

6.38 No existing windfarms have been identified within the proposed route options. However, updated information from developers is still awaited. Overhead line positioning must maintain

safe clearances from any turbines and comply with SPEN standards regarding falling distance and wake effects.

Public Service Utilities

6.39 Preliminary assessment indicates that all routes cross a high-pressure gas pipeline and a Scotia Gas Networks (SGN) pipeline, and detailed utility surveys will be required to determine the full extent of existing services.

Forestry and Vegetation (Figure 7)

6.40 Small areas of forestry and vegetation occur along the route options. Potential impacts on construction and maintenance should be considered.

Residential/Industrial/Commercial Areas

6.41 There are no industrial or commercial areas, but scattered residential properties, including farmsteads, are present along the four route options. Statutory clearance requirements and buffer zones must be incorporated into the design.

Mineworking Areas

6.42 No active mine workings or quarries were identified, but further enquiries will be made to confirm that no future operations are planned within the route options.

Appraisal Summary

6.43 Based on the engineering criteria and technical appraisal matrix, several potential engineering challenges have been identified with all four route options, including steep terrain gradients, crossings of SPD 11 kV, 33 kV, 132 kV, and 400 kV overhead lines, proximity to farmsteads and dwellings, and, most critically, the crossing of a high-pressure gas pipeline. Special consideration is also required for the connection of the proposed 132 kV overhead line to the network, as it terminates into a cable sealing end and is fed via underground cable. Mitigation measures will likely be necessary to deliver a viable overhead line solution, and the technical observations highlight key issues that should be explored and addressed where practicable.

6.44 Overall, from a technical perspective, the preferred route option is Route Option 2.

Mitigation Factors

6.45 Mitigation measures will likely be needed to address key engineering concerns and deliver a viable overhead line solution:

- Reduce the number of track and watercourse crossings where possible through partial realignment or by selecting route options with fewer crossings.
- Minimise interaction with residential properties and farmsteads by establishing a consistent buffer zone to maintain required clearances.
- Engage early with SPD regarding the 11 kV and 33 kV interface to develop effective solutions and minimise operational impacts.
- Ensure sufficient clearances for crossings with 132 kV and 400 kV overhead lines and further assess the suitability of overhead line termination points connecting to the ZA Route.
- Conduct further analysis of the connection at Glenburnie Windfarm once updated information on turbine placements is available, considering potential wake effects.
- Minimise crossings of the high-pressure gas pipeline across all four route options to reduce risk and facilitate safe construction.

The Preferred Route Option

6.46 Four route options have been identified to connect the proposed Glenburnie Wind Farm Substation with the proposed Torfichen CSEC. All are subject to environmental and technical constraints, including steep slopes, designated watercourses within the River Tweed SAC, archaeological and heritage assets, and existing and proposed infrastructure.

6.47 The key environmental differentiators are visual amenity and tree and woodland distribution. The key technical differentiators are flood risk, steep terrain, the crossing of a high-pressure gas pipeline and a Scotland Gas Network's gas pipeline, and multiple overhead line crossings.

6.48 For the reasons explained above, Route Option 1 is marginally preferred from an environmental perspective, although there is little to differentiate Route Options 1 and 2. Route Options 3 and 4 are the longest and therefore have the potential to affect the greatest number of environmentally sensitive features. Route Option 4 is the least preferred due to its potential effects on an NFI woodland.

6.49 From a technical and economic perspective, Route Option 2 is the preferred option. Route Option 2 is the shortest and traverses less steep terrain than Route Options 1 and 4.

6.50 Overall, based on environmental and technical considerations, the preferred route is Route Option 2. This is shown in **Figure 12**.

7 Pre-application Consultation and Next Steps

7.1 As explained in **Chapter 1** of this RCD, the pre-application consultation process enables local communities, the public and other stakeholders to be better informed about transmission proposals and ensure they can contribute their views, highlight locally important issues and provide feedback on emerging proposals during the planning and design stages. Pre-application consultation with the community, alongside wider consultation with local authorities, statutory consultees, the public, and other bodies, improves the quality of proposals and gives SPT the opportunity to develop them in line with consultation feedback.

7.2 A Pre-application Consultation and Engagement Strategy (the 'PAC Strategy') was submitted to the ECU on 19 December 2025. It sets out how SPT intends to progress the multi-stage consultation in accordance with this guidance, explaining clearly what is to be consulted upon at each stage of planning and design, and any areas of specific feedback sought.

7.3 Given that Torfichen Energy Park overlaps with this project in terms of the close proximity of the cable sealing end compounds, the public events will take place at the same venue and time. This is reflected in a separate PAC Strategy submitted to the ECU for Torfichen Energy Park Grid Connection.

Pre-application Consultation

7.4 In May 2025, the Scottish Government published the Electricity Act 1989 – Transmission Line Projects and Environmental Impact Assessment: Pre-Application Consultation and Engagement Guidance ('1989 Act pre-application guidance'). Although the Electricity Act 1989 does not require statutory pre-application consultation, this guidance sets out expectations for consultation before submitting section 37 applications. It explains what consultation activities should be undertaken, how engagement should be reported, and the process applicants are expected to follow. The aim is to create a consistent, transparent framework for pre-application engagement, helping communities and stakeholders understand when and how they can contribute to project development. The guidance also recognises that consultation should be proportionate and tailored to each project's size, nature, and location.

7.5 The 1989 Act pre-application guidance sets out two key stages in the planning, design and consultation process.

Stage 1 – Definition of the Preferred Route

7.6 This stage includes a routeing study in which alternative options for the new overhead line are identified and assessed, considering a range of environmental, technical and economic considerations. It concludes with the identification of a preferred route option for the new OHL, which is then subject to consultation. Responses to the consultation are then evaluated to inform confirmation of a proposed route to be taken forward to Stage 2.

PAC Event 1

7.7 Pre-application consultation (PAC) Event 1 is held during Stage 1 and focuses on providing information on the need for the project, routeing constraints, and issues that need to be considered in developing the proposed route. Feedback is sought on all route options, the preferred route, and the local issues that will inform the development of the proposed route. Relevant technical experts from the SPT project team will attend the event, along with specialists in specific topic areas, as necessary, such as landscape assessment.

Stage 2 – Design and Development of the Proposed Route

7.8 Building on Stage 1, this stage develops the proposed route in detail and assesses final alignment through the statutory EIA process, including the indicative location of structures and construction and access arrangements. The results of stakeholder engagement are taken into consideration and used to confirm the 'proposed route' for progression to EIA. Further consultation is carried out during the EIA stage, including additional information gathering, and the preparation of a publicly available Screening/Scoping Report which accompanies either a 'Request for a Screening or Scoping Opinion' to the consenting authority.

PAC Event 2

7.9 SPT will assess the requirement for additional events following PAC Event 1. The new overhead line is not considered significant in terms of length, and the impacts on the local environment and residents' amenity are anticipated to be manageable and mitigable. While the requirement to hold an event detailing the proposed alignment is not currently deemed necessary for this project, this will be reconsidered if feedback indicates that additional events would be beneficial during PAC 1. If a PAC 2 event is required, the public consultation is anticipated to take place between May and August 2026. Precise details to be confirmed with the ECU in advance, and relevant publicity of the event will be undertaken.

PAC Event 3

7.10 SPT will undertake a third round of formal consultation (PAC Event 3) to present the finalised proposal intended for the section 37 application. This event will detail SPT's responses to earlier consultation and engagement stages and outline the scope of the final proposals. The need for duplicate events at this stage will be reviewed during the consultation process, though it is expected that a single PAC 3 event will suffice. This event will also outline SPEN's responses to previous consultations and the scope of the final proposals.

7.11 At this stage, it is not possible to be precise about the proposed date for this event, although it is currently anticipated to take place in late summer 2026.

7.12 Further feedback is not requested at this PAC 3, although guidance will be given on how to submit formal representations to Scottish Ministers during the section 37 application process.

Reporting on the Consultation

7.13 Feedback on the comments received during the consultation period will be collated after each PAC event.

7.14 Following the pre-application consultation process, SPT will prepare a PAC Report setting out how the consultation has been undertaken and how comments received have been taken on board in shaping the submitted proposal. If appropriate, it will also provide a clear explanation of why matters raised through the consultation process have not influenced the submitted proposal.

PAC Event 1 Consultation

Consultees

7.15 To ensure that all residents and other stakeholders potentially affected by the Longcroft Wind Farm Grid Connection Project are consulted, SPT has defined a consultation zone which includes landowners impacted by the preferred route and all addresses[10] within 2 km of the preferred

[10] AddressBase Core data available at: https://www.ordnancesurvey.co.uk/products/addressbase-core Accessed 23 January 2026

route. However, any member of the public (whether living within or outside the consultation zone) is welcome to participate in the consultation and comment using one of the channels outlined within this RCD.

7.16 The consultation includes the following broad groups:

- Statutory and non-statutory consultees, including community councils;
- Elected members whose constituencies are within the consultation zone;
- Homes and businesses within the consultation zone;
- Known local interest and community groups within the consultation zone; and
- The public in general.

PAC Event 1 Consultation Launch and Duration

7.17 PAC Event 1 is scheduled to run from 23rd February 2026 to 24th March 2026. In preparation, notices will be published in the Midlothian Advertiser and Southern Reporter newspapers on 29th January 2026. A consultation leaflet informing people about the consultation and inviting them to take part has been sent to stakeholders, landowners, local interest groups, and community groups, as well as to all residential and business addresses within 200 m of the preferred route. A poster is also being displayed on public notice boards.

Sources of Information about the Consultation

7.18 In addition to this RCD, a consultation leaflet has been prepared, which provides a summary of the Longcroft Wind Farm Grid Connection Project and how to participate in the Stage 1 Consultation. The following project website has also been set up, which provides information about the Longcroft Wind Farm Grid Connection Project and hosts a library of publicly available documents for viewing or downloading:

www.spenergynetworks.co.uk/pages/longcroft_wind_farm_connection.aspx

Providing feedback

7.19 There are several ways for people to make comments:

In-person events

7.20 Feedback can be provided in person by completing a feedback form at PAC Event 1, which will be attended by members of the project team who will be available to answer questions about the Longcroft Wind Farm Connection Project:

- Monday 23rd February 2026 at Oxton War Memorial Hall from 3pm to 7pm.

Online

7.21 Comments can be made using the online version of the feedback form at:

www.spenergynetworks.co.uk/pages/longcroft_wind_farm_connection.aspx

Email

7.22 Comments can be sent by e-mail to longcroftgc@spenergynetworks.co.uk. A copy of the online feedback form can also be requested from this address.

Responding to Feedback

7.23 The responses received from PAC Event 1 will be evaluated by SPT and published alongside the responses from PAC Events 2 and 3 in the PAC Report. While SPT may not be able to respond to every individual comment, people can request to receive updates by email as developments occur in the Longcroft Wind Farm Connection Project.