

Siting and Consultation Document

February 2025

BT Route Tie-in and Associated Ladyburn 132 kV Collector Substation

Preface

Gillespies LLP has prepared this Siting and Consultation Document on behalf of SP Transmission Plc. It describes a proposal for a short section of new overhead electricity line near Glenluce. This will involve adding three new towers and replacing one existing tower to connect the proposed Ladyburn 132 kV Collector Substation to the electricity network.

The new substation is needed to connect the electricity from the Artfield Forest, Dumfries and Galloway 2, and Craig Nab Wind Farms to the existing network. SP Transmission Plc is legally responsible for providing this connection to ensure that electricity flows safely and reliably.

The new substation will tie in with the existing 132 kV steel lattice tower line (the BT Route), which runs northeast from Glenluce Substation. The connection will require a section of new overhead line, consisting of two new steel lattice tower structures, and the replacement of an existing tower.

This Siting and Consultation Document offers an overview of the project, including its background and objectives. It highlights the need for a new substation and summarises SP Transmission plc's license duties. The report also describes the methodology used to identify and evaluate potential sites, leading to the selection of a preferred location. Finally, it presents the findings from the work carried out to inform and support the project's ongoing development.

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

http://www.spenergynetworks.co.uk/pages/ladyburn_132kv_collector_substation.aspx

The Routing and Consultation Document is also available to read in hard copy at the following locations:

Glenluce Public Hall, 22 Main Street, Glenluce DG8 OPR

Representations to this consultation should be received no later than 25th March 2026 and can be made using the details below:

By email to Ladyburntie-in@spenergynetworks.co.uk

By post to Ladyburn Tie-in 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
BGS	British Geological Survey
Collector Substation	A substation that collects electricity from multiple generation sources (like wind farms or solar sites) and feeds it into the wider transmission or distribution network through a single, higher-capacity connection
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
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 was identified through the routeing study process
Proposed Route	The proposed route, which will go forward to environmental assessment
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
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
Tie-in	A tie-in is the point at which new electrical infrastructure is physically and electrically connected to the existing network. Connecting a new overhead line to an existing overhead line
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

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1 Introduction

1.1 Project Background

- 1.1.1 To fulfil its statutory obligations to provide connections for new generation customers, SP Transmission Plc (SPT) proposes the construction of three new steel lattice towers and a replacement tower to tie into the existing steel lattice tower line that runs northeast to Glenluce Substation. This is required to connect the proposed 132 kV Ladyburn Collector Substation to the electricity network.
- 1.1.2 The new substation will be located in western Dumfries and Galloway, northeast of the village of Glenluce, as shown in **Figure 1**. An aerial image of the area is shown in **Figure 2**. The substation will tie in to the wider transmission network via SPT's existing 132 kV steel lattice tower line ('the BT Route'), which runs broadly parallel to the north side of the A74 between Newton Stewart and Glenluce Substation.
- 1.1.3 Its strategic location has been selected to minimise the overall infrastructure footprint by serving as a shared node for up to three renewable energy projects in the area, including the Artfield Forest Wind Farm, Dumfries and Galloway 2 Wind Farm, and Craig Nab Wind Farm, thereby providing a coordinated and efficient infrastructure solution.
- 1.1.4 This Siting and Consultation Document provides an overview of the substation siting process and the methodology used in site selection, followed by a presentation of the findings, which in turn inform the Stage 1 pre-application consultation. The consultation will collect feedback from stakeholders and the public to help shape and refine the project's subsequent stages.

1.2 The Proposed Ladyburn 132 kV Collector Substation

- 1.2.1 The proposed Ladyburn 132 kV Collector Substation will use air-insulated switchgear (AIS) technology, which means that the equipment is installed outdoors, with air used as the insulating medium. A similar substation is shown in the aerial image below.

Typical 132 kV Substation



© Vieve Forward (cc-by-sa/2.0) geograph.org.uk/p/3985829 Minety electricity substation, taken Saturday, 17 May, 2014

- 1.2.2 The new substation will employ a single busbar configuration, which is a standard substation design used to efficiently collect and redistribute electrical power from multiple incoming and outgoing circuits. This design provides a straightforward and cost-effective layout suitable for substations with moderate operational complexity, while still accommodating essential control, protection, and maintenance functions. It also enables the integration of future connections with minimal disruption.
- 1.2.3 The dimensions of the new substation compound, which will be enclosed within a 3 m high palisade security fence, will be approximately 130 m X 230 m, which will also allow for perimeter mounding and/or planting, subject to overhead line entry requirements and consultation with Dumfries and Galloway Council.
- 1.2.4 The site will contain new electrical switchgear and plant to a maximum height of approximately 15 m, a small control building and internal fencing around the live equipment. Access will be provided via a new, permanent 4.5 m-wide access track off the lane leading north from the unnamed lane northeast of Glenluce towards Carscreugh. There is no requirement for permanent security lighting.
- 1.2.5 For the new substation to connect to the BT Route, a short section of new overhead line, comprising two new steel lattice tower structures, and the replacement of an existing tower is required. A key consideration when selecting a suitable site for the substation was its proximity to the BT route, to minimise the length of the new overhead line required for the tie-in.
- 1.2.6 The substation will include the following components. Please note that, at this early stage in the design, these are indicative only:
- 6no. single busbar bays, each comprising a 132 kV circuit breaker, 132 kV disconnector switches (isolators), 132 kV earth switches, 132 kV instrument transformers (voltage and current), surge arresters and cable sealing ends, and other equipment needed to connect, isolate, protect, and control the circuit (6 – 10 m high);
 - A fully equipped control room building to accommodate the essential operational and monitoring equipment (single storey, 4 – 5 m);
 - A small distribution substation building to provide ancillary power, lighting, heating and ventilation (4 – 5 m high);
 - Lightning protection masts (up to 6 – 8 m);
 - Two terminal towers, each approximately 35.5 m high (final height to be determined at detailed design stage);
 - Four 132 kV steel gantry structures, each up to 15 m high;
 - A new permanent access track from the local public road to the substation compound;
 - Perimeter and compound lighting controlled remotely or set to switch off after a predetermined time;
 - Internal access roads and parking provision;
 - A drainage system to effectively manage stormwater;
 - A 2.4 – 3 m high steel palisade security fence and internal fencing around the live compound; and
 - Earthworks and landscaping (extent to be confirmed).

1.3 Background to the Need for the Project

- 1.3.1 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.

- 1.3.2 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 Ladyburn 132 kV Collector Substation will support this goal by enabling the transmission of renewable electricity, helping reduce operational emissions and promoting electrification.
- 1.3.3 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 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.

1.4 The Legislative Framework

- 1.4.1 The BT Route Tie-in with Associated Ladyburn 132 kV Collector Substation Project is located entirely within the Dumfries and Galloway Council administrative area. The Dumfries and Galloway statutory development plan comprises the National Planning Framework 4 (NPF4) and the Dumfries and Galloway Local Development Plan 2 (LDP2), which was adopted on 13 February 2023¹.
- 1.4.2 Because the project includes a section of 132 kV overhead line to tie in to the BT Route, an application for section 37 consent under the Electricity Act 1989 will be submitted to the Scottish Government Energy Consents Unit (ECU) for determination by the Scottish Ministers. This consent is required for the construction, operation, and maintenance of the new overhead line. At the same time, SPT will apply for deemed planning permission under section 57(2) of the Town and Country Planning (Scotland) Act 1997 (as amended by the 2019 Act) ('the 1997 Act'). The section 37 application will cover both the new overhead line and the Ladyburn 132 kV Collector Substation, with the substation considered ancillary to the tie-in, as its sole function is to facilitate the connection of the new grid connections to the existing network. Planning permission for the ancillary development will be sought through a section 57 direction under the Electricity Act 1989.
- 1.4.3 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.
- 1.4.4 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.
- 1.4.5 A request for a screening opinion will also be submitted to the ECU to determine if the project requires a formal Environmental Impact Assessment (EIA).
- 1.4.6 At this stage, it is not known whether the project potentially qualifies as an EIA development under the terms of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the 'EIA Regulations'), which will require the section 37 application to the ECU to be accompanied by a statutory EIA Report. If, after submitting a screening opinion request to Scottish Ministers, the project is deemed not to constitute EIA development, the section 37 application will include an Environmental Report. This non-statutory report would

¹ Dumfries and Galloway Council (2024) The Dumfries and Galloway Local Development Plan 2. Available at: <https://www.dumfriesandgalloway.gov.uk/planning-building/planning/planning-policy/local-development-plan/local-development-plan-2-ldp2> [Accessed 12 January 2026]

include similar information to an EIA Report but will not provide judgments on whether likely effects should be considered ‘significant’ in EIA terms.

1.5 SPT’s Statutory and Licence Duties

- 1.5.1 SP Energy Networks (‘SPEN’) is the trading name of Scottish Power Energy Network Holdings Limited. SPEN is the parent company of SPT and SP Distribution plc (‘SPD’). SPT owns and operates the electricity transmission network in central and southern Scotland, while SPD owns and manages the distribution network in that same region. Its transmission network serves as the backbone of the electricity system, carrying large amounts of electricity at high voltages over long distances from generating sources such as wind farms and power stations. The transmission network includes over 4,000 km of overhead lines and more than 360 km of underground cables. The electricity is then delivered through the distribution system, which supplies more than two million customers in central and southern Scotland.
- 1.5.2 As the holder of a transmission licence under the Electricity Act 1989, SPT is subject to several 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.
- 1.5.3 In addition, when formulating proposals for network reinforcements or grid connections such as that proposed for the BT Route Tie-in with Associated Ladyburn 132 kV Collector Substation 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’*.
- 1.5.4 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’*.
- 1.5.5 These statutory duties and licence obligations underpin how SPT approaches the development of new transmission infrastructure 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.
- 1.5.6 SPT’s Schedule 9 Statement² 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.
- 1.5.7 Under schedule 9, 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).

1.6 Pre-Application Consultation

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

² SP Transmission Plc (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 December 2025]

- 1.6.2 SPT recognises the importance of consulting effectively on proposals and is keen to engage with 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 their 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 6**.

1.7 Strategic Siting

- 1.7.1 To meet its customer connection obligations, SPT undertook a strategic optioneering study for a connection into the existing BT route and a new 132 kV Collector Substation. This study identified the need for a new 132 kV substation located near SPT's existing BT Route in Glenluce.
- 1.7.2 A preferred area for the proposed Ladyburn 132 kV Collector Substation was identified to the northeast of Glenluce, near the BT Route and the A75. This area, referred to as the 'substation siting area', together with the identified site options, is shown in **Figure 3**.
- 1.7.3 Ideally, from a technical and operational perspective, the preferred location for the new substation needs to be as close to the BT Route as possible to enable efficient electrical connectivity and minimise the need for additional towers. However, SPT recognised that, where justified, alternative sites further from the BT Route could be considered if they offered environmental, land-use, or technical benefits and were technically feasible.
- 1.7.4 The landscape around Glenluce is characteristically rural, gently rolling, and pastoral, shaped by a long agricultural history and punctuated by coastal and upland features. Small watercourses and ditches drain the area. **Figure 4** shows the combined environmental considerations across the study area.

2 SPT's Approach to Substation Siting

2.1 Overview of the Substation Siting Process

- 2.1.1 Every substation siting project broadly follows the well-established and sequential step-by-step process outlined in SPEN's document, *Major Infrastructure Projects: Approach to Routeing and Environmental Impact Assessment ('SPEN's Routeing Guidance')*³. While this document primarily addresses the routeing of overhead lines, it also discusses the siting of substations and acknowledges the relevance of the Horlock Rules⁴ as established principles for the siting of new substations and substation extensions.
- 2.1.2 The Horlock Rules, reproduced in **Appendix B**, provide a framework for the siting and design of new substations, aiming to minimise environmental impacts and visual intrusion on the surrounding landscape. Key principles of the Rules include selecting sites that avoid sensitive areas, co-locating new infrastructure with existing facilities where practicable, utilising natural screening and landform features to reduce visibility, and considering the broader landscape, ecological, and heritage context. By applying these rules through a structured siting and appraisal process, SPT ensures that substation developments adhere to recognised best practice in the planning of high-voltage electrical infrastructure. This approach helps reduce adverse environmental and visual impacts, promotes efficient land use, and ensures the safe, secure, and reliable operation of the electricity network, while supporting coordinated, environmentally responsible development across the transmission system.

Study Area

- 2.1.3 A study area is first defined, which is large enough to accommodate all likely site options, taking account of technical requirements such as proximity to the existing and proposed transmission network and access constraints for construction. Baseline mapping of the environmental considerations set out below, and described in more detail in **Appendix C**, is then undertaken to identify the principal siting constraints and opportunities.

Environmental Considerations

- 2.1.4 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.
- 2.1.5 The construction and operation of the proposed substation and short section of overhead line may give rise to effects on people and the environment, including landscape and visual amenity, biodiversity and ornithology, trees and woodland, archaeology and cultural heritage, the water environment, and land use.
- 2.1.6 Some of these effects can be avoided or reduced through careful siting, while others are best mitigated by improving the substation design and using specific construction methods. These will be reviewed later in the design and assessment process.

Technical Considerations

- 2.1.7 Technical considerations that can influence siting include the existing and proposed electricity transmission network, such as slope gradient, altitude, waterbodies, road crossings, and access constraints for construction.

³ SP Energy Networks (2020) Major Infrastructure Projects: Approach to Routeing and Environmental Impact Assessment. Available at: https://www.spenergynetworks.co.uk/userfiles/file/SPEN_Approach_to_Routeing.pdf [Accessed on 21 October 2025]

⁴ The Horlock Rules were devised in 2003 and updated in 2006 by National Grid Company (NGC) plc. The Horlock Rules provide guidelines for the siting and design of new substations, or substation extensions, to avoid or reduce the environmental effects of such developments. They are available online at: <https://www.nationalgrid.com/sites/default/files/documents/13796-The%20Horlock%20Rules.pdf> [Accessed on 21 October 2025]

Economic Considerations

- 2.1.8 In compliance with the duties imposed on SPT in terms of section 9 of the Electricity Act 1989, the proposed site must be '*economically viable*'. SPT interprets this as meaning that, as far as is reasonably practicable, and all other concerns being equal, the site should be as close to the connection point into the existing transmission network as possible (in this case, the existing BT Route) and should avoid areas where technical difficulty or compensatory requirements would render the scheme unviable on economic grounds.

Identification and Appraisal of Site Options

- 2.1.9 Once a substation siting area and study area have been identified and environmental considerations mapped, potential site options are considered. The process aims to avoid areas of high amenity value, including natural and cultural heritage sites designated at national, European, or international levels, which receive the highest levels of policy protection. Areas of local importance that may lack formal national designations but hold community or environmental value are also avoided wherever practicable. Additionally, physical constraints such as altitude and slope gradients are considered, as these can render a site technically unfeasible.
- 2.1.10 Alongside desk-based mapping and appraisal, an on-site environmental review of the substation siting area and study area is also conducted. This review considers the factors such as:
- Suitability of the existing landform to support natural integration of the substation.
 - Consideration of how the substation would visually integrate with the surrounding landscape in terms of its openness and scale.
 - Presence or absence of natural or built elements that could provide screening.
 - Identification of sensitive landscape elements and features that may be affected.
 - Potential views from residential properties and communities.
 - Opportunities to reduce landscape and visual impacts through design, planting, or landform modifications.

Selection of the Proposed Site

- 2.1.11 Once site options have been identified, they are comparatively appraised against the environmental, technical and economic considerations above. This leads to the identification of a proposed site. This is the option considered technically feasible, economically viable, and, on balance, causing the least disturbance to both the environment and the people who live, work, and enjoy recreation within it.
- 2.1.12 The proposed site then goes through consultation with stakeholders and the public, with feedback potentially leading to modifications and, if necessary, further consultation. After considering consultation outcomes and local factors, it undergoes additional environmental surveys, detailed design work, and an environmental assessment, with any extra adjustments made to prevent or reduce environmental impacts.

3 Identifying a Tie-in Location on the BT Route and Potential Site Options

3.1 The Study Area

3.1.1 The first step in the process was to define the study area to enable the collection of project-specific data. In addition to avoiding known environmental constraints, the study area needed to be sufficiently large to accommodate all potential site options, while also considering the following technical requirements identified by SPT:

- A site close to the BT Route to minimise overhead line deviations, reduce transmission losses, optimise connection efficiency, and limit the extent of required line diversions or realignments.
- A minimum footprint of approximately 130 m x 230 m to accommodate the 132 kV AIS substation, ensuring sufficient clearance for operational safety, maintenance access, and equipment layout. This footprint also includes provision for an access road and parking, drainage, cut-and-fill operations, potential screen mounding and landscaping.

3.1.2 A 3 km offset from the substation siting area boundary was established as the study area, and is illustrated in **Figure 1**. Additionally, a 1 km radius offset was defined to provide a sense of scale and allow for more targeted consideration of specific environmental factors.

3.1.3 Three site options were identified based on the technical requirements and the environmental considerations shown in **Figure 3**.

3.2 Substation Site Options

3.2.1 Three site options were identified based on the technical requirements and the environmental considerations shown in **Figure 3**, with a schematic layout for each option in **Diagram 1** below.

Site Option 1

3.2.2 Site Option 1 is located northeast of Glenluce, adjacent to the BT Route in an area of scrub woodland and rough grassland on the lower slopes of Barmain Hill near High Glenjorrie farmstead. It is close to towers BT065 and BT067. Being the closest option to the BT Route, it would require the construction of two new steel lattice towers and the removal of one existing tower to facilitate the connection to the BT Route. However, part of the existing scrub woodland would need to be removed to facilitate the overhead line, its associated servitude corridor and the substation.

3.2.3 The key technical requirements/considerations of Site Option 1 include:

- Site Option 1 is approximately 70 – 80 m from a connection point on the BT Route.
- Two new towers (BT065A and BT066A) would need to be built, one on each side of the existing tower BT066. Existing towers BT065 and BT067 would be retained, and tower BT066 would be removed.
- While the new towers are being constructed, a temporary overhead line diversion would be needed. This temporary line is likely to be installed between towers BT065 and BT067, but the precise route would be finalised as the detailed design progresses.
- The nearby existing towers (BT065 and BT067) would need to be checked to make sure they can handle the new loads from this arrangement. If necessary, strengthening or remedial works (to the towers or their foundations) would be carried out.

Site Option 2

3.2.4 Site Option 2 is located near Site Option 1 but slightly higher up the slopes of Barmain Hill. It comprises an area of grazed pastures outside the scrub woodland. It is further from the BT

Route than Site Option 1 and would require the construction of four new steel lattice towers and the removal of one existing tower to facilitate the connection to the BT Route. Part of the existing scrub woodland would need to be cleared to create and maintain the overhead line servitude corridor, but this would be less extensive than for Site Option 1.

3.2.5 The key technical requirements/considerations include:

- Site Option 2 is approximately 200 m from a connection point on the BT Route.
- Two new towers (BT065A and BT066A) would need to be built, one on each side of the existing tower BT066, which would be removed.
- A minimum of two new towers (BT065B and BT066B) would also be required, one between BT065A and the new substation, and one between BT066A and the new substation.
- While the new towers are being built, a temporary overhead line diversion would be needed for the installation of towers BT065A and BT066A. This temporary line is likely to run between towers BT065 and BT067, but the precise route would be finalised as the detailed design progresses.
- Existing towers BT065 and BT067 would need to be checked to make sure they can handle the new loads from this arrangement. If necessary, strengthening or remedial works (to the towers or their foundations) would be carried out.

Site Option 3

3.2.6 Site Option 3 is situated to the north of Glenluce village in grazed pastures adjacent to Glenjorrie Burn on the eastern side of Vennal Hill. It is close to tower BT070 but over 200 m from tower BT069. It would require the construction of four new steel lattice towers and the removal of two existing towers to facilitate the connection to the BT Route. Some hedgerow trees may need to be felled to create and maintain the overhead line servitude corridor.

3.2.7 The key technical requirements/considerations include:

- Site Option 3 is approximately 170 m from a connection point on the BT Route.
- Two new towers (BT069A and BT070A) would need to be built between towers BT069 and BT071. Towers BT066 and BT070 would be removed.
- A minimum of two new towers (BT069B and BT070B) would also be required, between towers BT069A and the new substation, and one between BT070A and the new substation.
- While the new towers are being built, a temporary overhead line diversion would be needed for the installation of towers BT069A and BT070A. This temporary line is likely to run between towers BT069 and BT071, but the precise route would be finalised as the detailed design progresses.
- Existing towers BT069 and BT071 would need to be checked to make sure they can handle the new loads from this arrangement. If necessary, strengthening or remedial works (to the towers or their foundations) would be carried out.

Diagram 2: Schematic Requirements for a Connection to the existing BT Route (new towers are shown in red)



Site Option 1



Site Option 1



Site Option 3

4 Appraising Site Options

4.1 Introduction

- 4.1.1 The objective of the site options appraisal is to identify a preferred location for the BT Route tie-in and a preferred site for the proposed Ladyburn 132 kV Collector Substation in a consistent, documented, and transparent manner.
- 4.1.2 A structured appraisal process guides the comparative appraisal of site options:
- Identify and map appraisal criteria across the study area;
 - Apply appraisal criteria to each site option;
 - Comparatively assess the site options to identify the proposed site; and
 - Conduct a technical and economic review, reflecting system design and cost considerations.

4.2 Appraisal Criteria

- 4.2.1 Based on the established practice for siting new substations and the siting considerations for the BT Route Tie-in with Associated Ladyburn 132 kV Substation Project, the site options were appraised under the following criteria, which continued to reflect the siting methodology:
- Geology, topography and soils;
 - Landscape (including designations and landscape character);
 - Visual amenity;
 - Biodiversity and ornithology (including ancient and irreplaceable habitats);
 - Trees and woodland;
 - Archaeology and cultural heritage;
 - Watercourses and flood risk;
 - Land use (including agriculture and forestry); and
 - Technical constraints.
- 4.2.2 These are discussed in relation to the study area below. Where a criterion is not located within the study area or does not influence the appraisal, it is not included in the site options appraisal table in **Appendix D**.

Geology, Soils and Peat

- 4.2.3 Ground conditions significantly impact substation construction, affecting foundations, costs, and timelines, which can have consequential effects on people and the environment. Soft soils may need reinforcement, while rocky ground creates excavation challenges but ensures stability. Expansive clays pose a risk of structural movement, and poor drainage or high water tables may necessitate mitigation measures. Weak soils can cause settlement, and high-resistivity or corrosive soils affect electrical safety. Other challenges include rock excavation, contaminated land, and uneven terrain.
- 4.2.4 In the British Geological Survey (BGS) bedrock geology map⁵, the substation siting area is identified as being underlain by rock of the Shinnel Formation, which comprises grey mudstones and siltstones of Ordovician age. Drift deposits consisting of glacial till overlay this solid geology, with small pockets of alluvium locally present adjacent to watercourses. As there are no Geological Conservation Review sites or Local Geodiversity Sites in the substation siting area, geology is not considered a differentiator in route selection.

⁵ The British Geological Survey Geology Viewer is available online at: <https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer/> [Accessed 14 October 2025]

- 4.2.5 The primary soil type within the substation siting area is noncalcareous gleys with brown earths. Alluvial soils are found along the watercourses. A review of the Carbon and Peatland Map 2016⁶ indicates that the substation siting area is underlain by mineral soil with an organic carbon concentration of 5.86% (humose).
- 4.2.6 Geology, soils and peat have therefore not been mapped at this stage as they are not considered a differentiator in site selection.

Landscape and Visual

- 4.2.7 The key landscape and visual considerations are shown in **Figures 5 and 6**.

Protected Landscapes

- 4.2.8 There are no statutory or non-statutory designated landscapes within the study area.
- 4.2.9 Scottish Ministers proposed designating Galloway as Scotland's third National Park, subject to legal and procedural requirements. Had it gone ahead, the substation siting area would have fallen within the proposed park boundary. However, in May 2025, the proposal was formally withdrawn.
- 4.2.10 The nearest statutory designated landscape is the Fleet Valley National Scenic Area (NSA), some 30 km to the east.
- 4.2.11 The nearest non-statutory designated landscape is Castle Kennedy, a Garden and Designed Landscape near Stranraer, some 10 km to the west.
- 4.2.12 The nearest designated landscape is Mochrum Lochs Regional Scenic Areas (RSA), which is approximately 5 km to the southeast of Glenluce. RSA is a non-statutory local landscape designation. RSAs do not have the same statutory protection as NSAs but are important designations within local planning frameworks. Development within these areas is typically subject to policies that aim to preserve their scenic qualities, though the level of protection can vary depending on local planning policies and the specific circumstances of each case.
- 4.2.13 Balkail House in Glenluce is recorded in the Historic Environment Record (HER) (ID: 61174). While it is associated with a designed landscape, this area is not currently listed on the Inventory of Gardens and Designed Landscapes in Scotland. Although it is not statutorily protected, planning authorities may require assessment or mitigation.

Landscape Character

- 4.2.14 NatureScot's online National Landscape Character Assessment⁷ identifies the entire study area as part of the Upland Fringe – Dumfries and Galloway Landscape Character Type (LCT 172). This LCT is described as a transitional landscape of gently rolling hills, valleys and elongated rolling ridges lying between the lower-lying Drumlin Pasture in Moss and Moor Lowland LCT to the south and the uplands of the Plateau Moorlands - Dumfries and Galloway LCT to the north and northeast.
- 4.2.15 The landscape around Glenluce features gentle undulating ridges and hollows rising from the coastal plain in the southwest towards higher ground in the northeast, including Barmain Hill (circa 105mAOD), and ultimately the uplands of Carscreugh Fell, the Machars, and the Galloway Hills. Small northeast–southwest trending streams such as the Vennal Strand, the Glenjorrie Burn, and the Lady Burn, which drain into the Water of Luce, contribute to the varied terrain, although they are only locally visually prominent.
- 4.2.16 The area is mainly rural, supporting sheep and cattle grazing, with some improved grassland and limited arable farming. Field boundaries are typically marked by hedgerows in various condition, occasional stone dykes, and post-and-wire fences. Woodland cover is sparse and

⁶ The Carbon and Peatland Map 2016 is available online at: https://map.environment.gov.scot/Soil_maps/?layer=10 [Accessed 05 October 2025]

⁷ NatureScot's Landscape Character Assessment is available online at: <https://www.nature.scot/professional-advice/landscape/landscape-ch> [Accessed 23 October 2025]

fragmented, comprising small patches of broadleaf trees and conifer shelterbelts, with large plantation forests on higher ground. The combined influence of woodland and topography offers some visual screening and localised enclosure, creating potential opportunities for substation siting.

- 4.2.17 Glenluce is a rural village characterised by traditional, white-painted stone buildings and low-density development. The surrounding countryside contains a dispersed pattern of farmsteads and agricultural buildings. The A75 trunk road passes just south of the village and, together with SPT's steel lattice tower overhead line (BT Route) and a 33 kV wood pole overhead line, forms an important infrastructure corridor. Away from the A75, the landscape becomes notably more tranquil and retains a relatively remote, rural character, despite the visibility of several wind farms, especially in views to the north and northeast.
- 4.2.18 Overall, the landscape which is currently supporting overhead line infrastructure is considered to have medium sensitivity⁸ to a new 132 kV collector substation.

Visual Receptors

- 4.2.19 Visual receptors are the groups of people likely to experience changes to their views due to the proposed Ladyburn 132 kV Collector Substation. This includes residential receptors, road and track users, and recreational receptors such as users of promoted routes like Core Footpaths or visitors to outdoor attractions.
- 4.2.20 In relation to residential receptors, the appraisal considered the number of properties located within or near each site option, as well as any instances where a site option may encroach within 150 m of individual properties.
- 4.2.21 The study area includes the village of Glenluce. The settlement has a linear configuration, extending along a main road that runs parallel to the Lady Burn, a tributary of the Water of Luce. A disused railway line, which features a combination of cutting and embankment, delineates much of the northern boundary of the settlement. The existing Glenluce Substation is situated on the northwestern edge of the village. The screening provided by the rising landform to the north of the village, along with the vegetation surrounding the existing substation and within the gardens of residential properties, obstructs views of all three site options.
- 4.2.22 Outside Glenluce, the study area is sparsely populated with only a few residential properties and farmsteads dispersed across the farmland. The only residential properties within the substation siting area are High Glenjorrie and High Glenjorrie Cottage, located along the private access road leading to High Glenjorrie. Although there is potential for views of a substation at Site Options 1 and 2, particularly from High Glenjorrie, these views would be oblique to the farmstead's main orientation and partially screened by the intervening large agricultural buildings.
- 4.2.23 The nearest residential receptors to Site Option 3 are the occupants of two dwellings approximately 300 m away. Marked as 'Officer's Croft' on OS maps, they are situated west of the lane connecting Glenluce to the Three Lochs Holiday Park and are set within a hollow partly screened by surrounding trees. Combined with the rising landform of Vennal Hill to the east of the lane, there is limited visibility of Site Option 3 from these properties.
- 4.2.24 Other potential residential visual receptors include residents of several scattered properties and farmsteads, such as Blackhill, Glenhowl and Glenhowl Cottage, Glenview, and the new residential property adjacent to Whitecairn Holiday Park, which offers panoramic views out across Glenluce towards Luce Bay. These properties, including a 150 m buffer, are shown in **Figure 6**.

⁸ Landscape sensitivity, combines judgements on both the susceptibility of the landscape to the type and scale of development proposed and the value attributed to the landscape through formal designation or otherwise, using published baseline landscape character information.

- 4.2.25 Visual receptors include people travelling on the A75 and the surrounding local road network. Views from the A75, particularly to the south of the substation siting area, and from most local roads are generally limited due to intervening landform and vegetation. Where longer views towards the site options do occur, these are typically at some distance.
- 4.2.26 An exception is the lane running northeast from Glenluce towards the Three Lochs area, which crosses the western edge of the substation siting area. Along parts of this lane, visibility is restricted by intact hedgerows and rising landform, although there are sections where more open views towards the site options are available, as well as extensive long-distance views across Luce Bay and the distant uplands.
- 4.2.27 There are no nationally or regionally promoted walking trails within the study area. The Southern Upland Way lies approximately 5 km to the northwest. Similarly, there are no National Cycle Network (NCN) routes within the study area. The nearest route is NCN Route 83, which connects Newton Stewart with Wigtown, Glenluce, and the coastal town of Stranraer at the base of Loch Ryan. This route follows the eastern bank of the Water of Luce and the Old Military Road to the west of Glenluce. All identified Core Paths are located in or to the southwest of Glenluce and do not provide views towards the site options.
- 4.2.28 The Moors of Wigtownshire Walk is a promoted 29 km circular route that begins and ends in Glenluce, passing through the Luce Valley and surrounding moorlands. The route follows the lane linking Glenluce with the Three Lochs area, offering long panoramic views. All three site options are visible from various points along this route, especially along the section of the lane connecting Glenluce with the Three Lochs area.
- 4.2.29 Whitecairn Holiday Park is located approximately 1.8 km north of Glenluce. This private facility, which accommodates static mobile homes, touring caravans, and tents, lies to the north of the substation siting area, and the edge of the park affords views across Site Options 1 and 2.

Zone of Theoretical Visibility (ZTV) Maps

- 4.2.30 Bare earth and screened Zone of Theoretical Visibility (ZTV) maps for a 132 kV collector substation on each of the three site options are presented in **Figure 7 (a-f)**. A bare-earth ZTV is based solely on the digital terrain model (DTM) and represents the landform without surface features such as vegetation, buildings, or other visual obstructions. It illustrates the maximum theoretical area from which a development could be seen, providing a worst-case scenario for likely visual effects. In contrast, a screened ZTV uses a digital surface model (DSM) that incorporates features such as trees, woodlands and buildings. By accounting for common visual obstructions, this produces a more realistic depiction of visibility from different locations and provides a clearer understanding of a proposed development's actual impact on the surrounding landscape. However, the effectiveness of both ZTV types depends on field validation to ensure a balanced assessment of potential visual effects.
- 4.2.31 The ZTV maps produced for a typical 132 kV collector substation at each of the site options show that potential visibility is mainly focused on higher ground to the northeast, with smaller areas visible to the west, southwest, and southeast. All three site options exhibit a similar level of potential visibility, although the specific areas where a substation would be visible differ.
- 4.2.32 A substation on Site Options 1 or 2 would be more visible from the east and northeast.
- 4.2.33 A substation on Site Option 3 would be less visible from the northeast but would potentially be seen over a larger area to the south (around Wigtownshire County Golf Club) and to the west, including Challoch Hill.
- 4.2.34 People in Glenluce are unlikely to see a substation on any of the three site options. Views from all but the eastern edge of Whitecairn Holiday Park would also be unlikely for any site option.
- 4.2.35 In contrast, High Glenjorrie, High Glenjorrie Cottage, and Glenhowl are all positioned in locations where views of the substation are likely, regardless of site selection. While the ZTVs suggest that Officer's Croft may have views of a substation on Site Option 3, field survey work has confirmed that such views are unlikely in practice.

Biodiversity and Ornithology

4.2.36 The key biodiversity and ecological constraints are shown in **Figure 8**.

Statutory Designated Sites

4.2.37 Based on information derived from NatureScot's online mapper⁹, the Loch of Inch and Torrs Warren Special Protection Area (SPA) and Ramsar site, Torrs Warren – Luce Sands Site of Special Scientific Interest (SSSI), Luce Bay and Sands Special Area of Conservation (SAC) and Luce Sands Geological Conservation Review Site (GCR) were included in the appraisal. These are located along the southwestern edge of the study area and are all associated with Luce Bay, which supports important habitats and migratory and wintering bird populations. It also takes account of the Flow of Dergoals SAC and SSSI, located on the eastern edge of the study area and one of the few remaining extensive areas of unafforested blanket bog in southwest Scotland.

Non-Statutory Designated Sites

4.2.38 Based on information on NatureScot's SpatialHub Scotland website¹⁰, the Banks of Dervaid Local Nature Conservation Site (LNCS), which is located to the south of the A75 and within 1 km of the substation siting area, was included in the appraisal.

Ancient and Irreplaceable Habitats

4.2.39 Several areas of woodland within the study area are identified as Ancient Woodland Inventory (AWI) sites on Scotland's Environment Map¹¹. Within 1 km of the substation siting area, these include Ballach-a-Heathry Wood, a long-established plantation forming a linear belt of woodland close to Site Options 1 and 2. Other AWI sites, which are further away but still within 1 km include Glen Wood and Fell Wood, both located south of Glenluce, and the Banks of Dervaid, which covers land on either side of the A75 to the south.

4.2.40 A review of the Woodland Trust Ancient Tree Inventory website¹² identified no ancient, veteran or notable trees within 500 m of the site options.

4.2.41 A review of the Carbon and Peatland Map 2016 indicates that the substation siting area is underlain by mineral soil with an organic carbon concentration of 5.86% (humose).

Habitats

4.2.42 A review of aerial imagery and the NatureScot Habitat Map of Scotland website¹³, which includes Scottish Biodiversity List (SBL) sites, identifies that habitats in the substation siting area are dominated by arable land, predominantly used for grazing pasture, with some areas of broadleaved deciduous woodland and field boundary hedgerows. There are no Annex 1 habitats in the substation siting area. Annex I habitats are those listed under the European Union's Habitats Directive and are considered habitat types of 'Community interest' that are deemed to be of significant conservation importance.

Protected and Notable Species

4.2.43 The potential for effects on protected and notable species, including breeding Schedule 1 birds (outside designated site boundaries), European Protected Species (such as otter), and other nationally protected species (such as water vole and badger) will be addressed in greater detail

⁹ NatureScot's Online Mapper is available at: <https://sitelink.nature.scot/site/1532> [Accessed 28 October 2025]

¹⁰ NatureScot's SpatialHub Scotland data is available online at: https://data.spatialhub.scot/dataset/local_nature_conservation_sites-is/resource/2a2fb277-f8be-498e-8339-06a179ed32d5 [Accessed 10 October 2025]

¹¹ Scotland's Environment Map is available online at: <https://map.environment.gov.scot/sewebmap/> [Accessed 28 September 2025]

¹² The Woodland Trust's Ancient Tree Inventory is available online at: <https://ati.woodlandtrust.org.uk/> [Accessed 28 September 2025]

¹³ NatureScot's Habitat Map of Scotland is available online at: https://opendata.nature.scot/datasets/a3e41f2eb2b481fa15c58d831b96250_0/explore?location=55.666281%2C-2.332943%2C16.25 [Accessed 20 October 2025]

during the detailed siting and subsequent appraisal or assessment stages, informed by the results of field surveys.

Cultural Heritage

- 4.2.44 The cultural heritage appraisal provides a high-level consideration of effects on the heritage significance of designated assets identified on the trove.scot database¹⁴, a new online platform, that brings together information from Historic Environment Scotland's (HES) Historic Environment Portal, Canmore, SCRAN, and Property in Care Collection. 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. Any 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 site selection.
- 4.2.45 The East Rhins Archaeologically Sensitive Area (ASA) is located on more elevated land approximately 1.5 km to the north of the site options. The ZTV maps show that none of the site options is visible from the ASA.
- 4.2.46 The cultural heritage constraints included in the appraisal are shown in **Figure 8**. These include the following scheduled monuments, which are within the study area:
- Glenluce Abbey (SM90153);
 - Glenluce Roman Camp (SM7443);
 - Ballach-A-Heathry (SM 1915);
 - Carscreugh Castle (SM2012);
 - Carscreugh Croft,cairn (SM2257);
 - Mid Gleniron,hut circles and field systems (SM5067); and
 - Mid Gleniron, chambered cairns and cairns (SM1944).
- 4.2.47 The closest scheduled monuments to the substation siting area are Glenluce Abbey (SM90153), Glenluce Roman Camp (SM7443) and Carscreugh Castle (SM2012), which are approximately 1.5 km from the site options.
- 4.2.48 There are 48 Listed Buildings in the study area, most of which are in the centre of Glenluce. Although Glenluce village itself is not a Conservation Area, it contains 46 Listed Buildings: one Category A (high sensitivity), nine Category B (medium sensitivity), and 36 Category C (low sensitivity), reflecting the village's rich historical context. While Site Option 3 is relatively close to the village, there is no intervisibility between the listed buildings and any of the site options, due to the screening provided by intervening landform, built development, and existing vegetation.
- 4.2.49 Other than in Glenluce, there are no listed buildings within 1 km of the substation siting area. The nearest is the Category C listed Carscreugh Castle, cottages (LB16760), located to the northwest of the Carscreugh Castle Scheduled Monument.
- 4.2.50 There are no World Heritage Sites, Historic Battlefields or Conservation Areas within the study area.

Woodland and Trees

- 4.2.51 Afforested areas and woodland have been identified using aerial photography, along with digital data sourced from Scotland's Environment Map. These are shown in **Figure 8**, where they are categorised into three distinct groupings:

¹⁴ Trovescot's database is available online at: <https://www.trove.scot/> [Accessed 28 October 2025]

- National Forest Inventory (NFI): Provides a broad overview of all woodlands, including the extent, type, and age, and is typically used for baseline mapping and quantifying potential impacts.
- Ancient Woodland Inventory (AWI): Identifies ancient or long-established woodlands of high ecological and historical value, guiding avoidance and protection measures.
- NWSS (Native Woodland Survey of Scotland): Offers detailed ecological data on native woodlands, including composition, condition, and biodiversity, informing mitigation, enhancement, or restoration.

4.2.52 There are no areas of AWI woodland within the substation siting area. The closest AWIs are Ballach-A-Heathry, a linear belt of woodland approximately 400 m northeast of Site Option 2 and Glen Wood, which lies to the south of Main Road in Glenluce, approximately 400 m from Site Option 3. The Banks of Dervaird AWI is approximately 800 m to the southeast of Site Option 1.

4.2.53 Site Option 1 is entirely situated within an area of hawthorn scrub classified as native broadleaved woodland in the NWSS and NFI.

4.2.54 Site Option 2 is situated next to the hawthorn scrub area marked as NWSS and NFI woodland. While the substation platform itself will not directly affect the woodland, the access requirements and the servitude corridor for the overhead line connecting the substation to the BT Route could lead to some loss of trees within the NWSS/NFI area.

4.2.55 Site Option 3 is not situated within or next to any woodland classified as NWSS or NFI, thus avoiding direct impacts on these resources. However, the overhead line connecting the substation to the BT Route may require removing some trees from a nearby hedgerow to maintain a servitude corridor.

Watercourses and Flood Risk

4.2.56 The Glenjorrie Burn and a second small watercourse cross the substation siting area. Both flow in a south/southwesterly direction to join the Lady Burn (ID:10496) south of Glenluce. The Lady Burn is in the Water of Luce catchment of the Solway Tweed River basin district. The main stem is approximately 11 km in length. The river is of moderate status (2023), according to the SEPA Water Classification Hub¹⁵.

4.2.57 Flood risk areas for both river flooding and small watercourse and surface water flooding are shown in **Figures 10a and 10b** and are derived from SEPA's Flood Risk Maps¹⁶.

4.2.58 The Flood Risk Maps indicate that the primary sources of flooding within the substation siting area are the Glenjorrie Burn and a small unnamed watercourse, which drain in a broadly northeast to southwesterly direction across the substation siting area. Both have a high likelihood of flooding each year (<10%). There are also other small areas with a high likelihood of flooding (<10%). These areas are localised and mainly found in the eastern part of the substation siting area, including around Site Option 1.

4.2.59 Future flood risk levels are also expected to be influenced by climate change.

Land Use

4.2.60 **Figure 11** shows the land use features considered in the appraisal. There is potential for direct or indirect cumulative effects arising from the proposed substation, in combination with the proposed Artfield Forest Wind Farm Connection and the other generation projects that necessitate the Ladyburn 132 kV Collector Substation.

4.2.61 Further information on the Artfield Forest Wind Farm Connection Project can be found on the project website at:

¹⁵ SEPA's Water Classification Hub is available online at: <https://www.sepa.org.uk/data-visualisation/waterclassification-hub/> [Accessed 28 October 2025]

¹⁶ SEPA's Flood Risk Maps are available online at: <https://beta.sepa.scot/flooding/flood-maps/> [Accessed 28 October 2025]

https://www.spenergynetworks.co.uk/pages/artfield_forest_wind_farm_connection_project.aspx

- 4.2.62 The land use appraisal considers the Land Capability for Agriculture (LCA) classification system, which ranks land according to its potential productivity and cropping flexibility, based on factors such as soil, climate, and relief. The LCA system comprises seven classes. In Scotland, Classes 1, 2, and 3.1 are defined as the highest-grade agricultural land due to their high productive capacity and are afforded a degree of protection from development.
- 4.2.63 The substation siting area is classified as Class 3.2 to 6.3 for agricultural¹⁷. This is farmland of moderate to poor quality, suitable primarily for rough grazing rather than arable farming. As such, the substation would not result in the loss of the highest-grade agricultural land.
- 4.2.64 The national scale Land Capability for Forestry (LCF) classification provides information on how well a piece of land could grow trees based on a number of factors, including soil, climate and topography. Similar to the agricultural land classification system, the forestry system ranks land from Class 1 (best) to Class 7 (least suitable).
- 4.2.65 The substation siting area is classed as LCF Class 3 or 4 land¹⁸. Although there isn't a legal requirement to avoid forestry land in the same way as prime agricultural land, Scottish Planning Policy encourages development proposals to avoid high-value commercial forest land unless there is no reasonable alternative. Land-use capability for forestry has not been mapped, but it is noted in the appraisal table.

Technical Constraints

- 4.2.66 SPT reviewed the technical constraints associated with each site option. This included consideration of the following:
- Geotechnical considerations (including topography and ground conditions);
 - Proximity to the existing BT Route and connection requirements;
 - Existing overhead lines and underground cables;
 - Suitability of location for proposed connections;
 - Presence of former coal mining areas;
 - Presence of historical and environmental assets; and
 - Access for construction and services.
- 4.2.67 During the review, each parameter was assigned a specific risk rating (high, medium, or low) for each site option.

¹⁷ Data obtained from Scotland's Environment Map (partial cover layer) available online at: https://map.environment.gov.scot/Soil_maps/?layer=1

¹⁸ Data obtained from Scotland's Environment Map available online at: https://map.environment.gov.scot/Soil_maps/?layer=1

5 Appraisal Findings and Conclusion

5.1.1 The purpose of the appraisal has been to identify and document the preferred location for the BT Route tie-in and the preferred site for the Ladyburn 132 kV Collector Substation transparently and comparably, considering both environmental and technical factors.

5.1.2 Detailed appraisal findings provided in the Site Options Appraisal Table in **Appendix C**.

5.2 Summary - Environmental Considerations

5.2.1 All three site options are situated within the Upland Fringe - Dumfries and Galloway Landscape Character Type (LCT), and there is little to differentiate them in terms of landscape character. However, Site Option 1 features more varied terrain along the Glenjorrie Burn, and Site Option 3 is covered with hawthorn scrub, which makes them more vulnerable to the addition of a new substation compared to Site Option 2¹⁹. The scenic quality of all sites is similarly affected by the existing steel lattice tower line (BT Route) and several wood pole lines. Visually, Site Option 2 is marginally preferred because its slightly better natural screening by the landform would reduce the number of properties with potential views of the substation. Additionally, Site Option 2 offers better opportunities for screen planting.

5.2.2 Site Option 2 is preferred in biodiversity terms. The site comprises rough grazed pasture, which is considered less sensitive to development than the hawthorn scrub habitat (identified as woodland in both the NWSS and the NFI) or the damp grassland found near the Glenjorrie Burn within Site Option 3.

5.2.3 There is little to distinguish between the three options in terms of proximity to designated cultural heritage assets.

5.2.4 Site Options 1 and 2 are marginally preferred over Site Option 3 in relation to flood risk. Site Option 3 is located closer to the Lady Burn and includes more extensive areas identified as being at higher risk of flooding from rivers, surface water, or small watercourses.

5.2.5 In terms of land capability for agriculture, Site Option 1 is marginally preferred as it is classified at a slightly lower grade. There is little to differentiate between the three sites in terms of land capability for forestry.

5.2.6 Overall, balancing environmental considerations, Site Option 2 is preferred.

5.3 Summary - Technical Considerations

5.3.1 SPT carried out a detailed review of the three site options based on technical requirements. This review confirmed that, based on the preliminary information, Site Option 1 is the preferred location because it is both technically feasible and the most cost-effective for construction. It would require the least reconfiguration of the existing overhead line, involving only two new towers, compared with four for Sites 2 and 3, as illustrated in **Diagram 1** in Section 3.2 of this Siting and Consultation Document.

5.3.2 From a constructability perspective, Site Options 1 and 3 present a significant risk of conflict with existing underground or overhead services, which could complicate construction and increase costs. Site Option 2 is therefore preferred, although it would require the more substantial earthworks to construct a level platform.

5.3.3 There is little to differentiate between Site Options 1 and 2 in terms of access, as both are located at a similar distance from the local road and would require comparable lengths of new access. While Site 3 is closer to the local road network, the risks of transporting transformers make Site Options 1 and 2 the preferred options.

¹⁹ Part of the existing scrub woodland would need to be cleared to create and maintain the overhead line servitude corridor, but this would be less extensive than for Site Option 1.

- 5.3.4 The proposed Artfield Forest Wind Farm Connection would connect to the new substation via a 132 kV overhead line approaching from the north. Site Option 2 is the closest location for this connection, helping to minimise the required route for the new overhead line. Additionally, the new substation would need to accommodate several further connections due to planned regeneration schemes in the area. Site Option 2 is situated close to these connections, making it the most economical choice for construction and access to local resources.
- 5.3.5 Overall, balancing technical considerations, Site Option 2 is preferred.
- 5.3.6 There is little to differentiate between the three site options in terms of existing overhead line infrastructure, which would require undergrounding and/or diversion.

5.4 Conclusion

- 5.4.1 The purpose of the appraisal has been to transparently and comparably identify and document the preferred site option for the Ladyburn 132 kV Collector Substation.
- 5.4.2 Balancing environmental, technical and economic considerations, the overall preference is for Site Option 2.
- 5.4.3 An indicative layout for the proposed BT Route tie-in and the proposed Ladyburn 132 kV Collector Substation on Site Option 2 is shown in **Figure 12**. The figure illustrates the maximum site footprint and an indicative permanent access route for construction and maintenance.
- 5.4.4 When developing a detailed design for this site option, consideration will be given to minimising the impact BT Route tie-in on the NWSS and NFI scrub woodland.

6 Consultation and Next Steps

6.1 Consultation Process

- 6.1.1 As set out in Chapter 1 of this Siting and Consultation Document, SPT will be required to apply to Scottish Ministers for consent under section 37 of the 1989 Act for consent for the short section of new 132 kV overhead line with the substation being considered an ancillary development. At the same time, SPT will also apply for deemed planning permission for the project and associated works under section 57(2) of the Town and Country Planning (Scotland) Act 1997. This application will cover both the new overhead line and ancillary works, including the Ladyburn 132 kV Collector Substation. Additionally, a request for a screening opinion will be submitted to the ECU to determine if the project requires an EIA.
- 6.1.2 SPT is following best practice promoted by the ECU, which encourages applicants to engage with stakeholders and the public to help shape their proposals before submitting applications.
- 6.1.3 Prior to the submission of the section 37 application, SPT is planning two rounds of consultation with stakeholders and the public:
- Stage 1 Consultation on the proposed site between 24th February and 25th March 2026; and
 - Stage 2 Consultation on the detailed design route is anticipated in later in 2026.

Reporting on the Consultation

- 6.1.4 Feedback on the comments received during the consultation period will be provided at regular points during the pre-application stage to ensure that stakeholders are kept informed as to how their comments and concerns are being addressed.
- 6.1.5 Following each consultation, SPT will prepare a Consultation Feedback 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.

Approach to and Objective of Stage 1 Consultation

- 6.1.6 SPT attaches great importance to the effect that its works may have on the environment and local communities and is very keen to hear the views of local people to help it inform the development of the BT Route Tie-in with Associated Ladyburn 132 kV Collector Substation Project in the most effective way.
- 6.1.7 The overall objective of the consultation process is to ensure that all parties with an interest in the project have access to accurate and up-to-date information and are provided with the opportunity to inform SPT's proposals during the pre-application stage. In addition, it is intended that the key issues identified through this process be recorded and presented to decision-makers to assist the planning process.
- 6.1.8 SPT has taken steps to identify stakeholders and interested parties before the Stage 1 Consultation and is committed to continuing engagement with all stakeholders and communities both during and outside consultation periods.

Consultees

- 6.1.9 To ensure that all residents and other stakeholders potentially affected by the project are consulted, SPT has defined a consultation zone which includes all residential and business addresses within 1 km of the proposed site. 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 Siting and Consultation Document.
- 6.1.10 The consultation will include the following broad groups:

- Statutory and non-statutory consultees, including community councils;
- Elected members of 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.

Stage 1 Consultation Launch and Duration

6.1.11 The Stage 1 Consultation is scheduled to run from 24 February 2026 to 25 March 2026. In preparation, notices will be published in the Stranraer Free Press on 29 February and 05 March 2026. A consultation leaflet will also be sent to stakeholders, landowners, local interest groups, and community groups, as well as to all residential properties within 1 km of the proposed site. These notifications are intended to inform people about the consultation and invite them to take part.

Sources of Information about the Consultation

6.1.12 In addition to this Siting and Consultation Document, a consultation leaflet has been prepared, which provides a summary of the BT Route Tie-in and Associated Ladyburn 132 kV Collector Substation Project and how to participate in the Stage 1 Consultation. A project website has also been set up, which provides information about the project and hosts a library of publicly available documents for viewing or downloading:

Providing feedback

6.1.13 There will be several ways for people to make comments:

In-person events

6.1.14 Feedback can be provided in person by completing a feedback form at the Stage One Consultation event, which will be attended by members of the project team who will be available to answer questions about the project:

Tuesday 23rd February from 2pm to 7pm.

Online

6.1.15 Comments can be made using the online version of the feedback format at:

http://www.spenergynetworks.co.uk/pages/ladyburn_132kv_collector_substation.aspx .

Email

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

Responding to Feedback

6.1.17 The responses received to the Stage 1 Consultation will be evaluated by SPT and published in the form of a Stage 1 Consultation Feedback Report. Although SPT may not be able to respond to all individual comments, people can request to be kept informed by email as and when there are developments in the BT Route Tie-in with Associated Ladyburn 132 kV Collector Substation Project, including the availability of the Consultation Feedback Report and confirmation of the proposed site option.