

Routeing and Consultation Document

October 2025

Artfield Forest 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 132kV connection between the proposed Artfield Forest Wind Farm and the proposed Ladyburn 132kV Collector Substation, which is to be located in farmland approximately 1.5km to the northeast of Glenluce.

Known as the 'Artfield Forest Connection Project', the proposed development is located in the Dumfries and Galloway administrative area.

This Routeing and Consultation Document provides an overview of the Artfield Forest Connection Project, including its background and objectives. It also 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:

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

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

Glenluce Public Hall, 22 Main Street, Glenluce DG8 0PR

Representations to this consultation should be received no later than Tuesday 25th November 2025 and can be made using the details below:

By email to: ArtfieldForest@spenergynetworks.co.uk

By post to:

The Project Manager,
Artfield Forest Connection Project
Land and Planning
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G32 8FA

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

Contents

Preface	2
1 Introduction	1
The Proposed Artfield Forest Wind Farm.....	2
The Need for the Project	2
The Legislative Framework	2
SPT's Statutory and Licence Duties	3
Other Proposed Connections.....	4
The Development and Consenting Process	4
Purpose and Structure of the RCD.....	5
2 Project Description	6
Introduction.....	6
Overhead Line Components	6
Typical Construction Requirements	8
Overview of the Construction Process	9
3 Routeing Overhead Lines	12
SPT's Approach to Routeing	12
Potential Effects of an Overhead Line	12
Routeing Methodology	13
The Routeing Objective	16
Application of the Holford Rules.....	17
4 The Study Area.....	19
Defining the Study Area	19
Routeing Considerations	19
5 Routeing Strategy and Identification and Description of Route Options	27
The Routeing Strategy.....	27
Description of Route Options	28
6 Appraisal of Route Options and Identification of the Preferred Route	30
Route Option Appraisal	30
The Preferred Route Option	32
7 Consultation and Next Steps.....	33
Consultation Process.....	33
Approach to and Objective of Stage 1 Consultation	33
Consultees	33
Stage 1 Consultation Launch and Duration	34
Sources of Information about the Consultation	34
Providing feedback	34
Responding to Feedback.....	34
 Appendix A - Holford Rules	
Appendix B - Figures	
Appendix C - Routeing Considerations	
Appendix D - Landscape Susceptibility	
Appendix E – Route Options Appraisal Table	

Figures (within Appendix B)

Figure 1: Study Area

Figure 2: Topography

Figure 3: Routeing Considerations and Route Options

Figure 4a: Route Options 1 and 3

Figure 4b: Route Options 2a and 2b

Figure 5: Biodiversity and Geological Conservation

Figure 6: Cultural Heritage

Figure 7: Woodland and Forestry

Figure 8: Landscape and Visual Receptors

Figure 9: Landscape Character Types

Figure 10a: Flood Risk – Surface Water/Small Watercourses

Figure 10b: Flood Risk – Rivers

Figure 11: Infrastructure

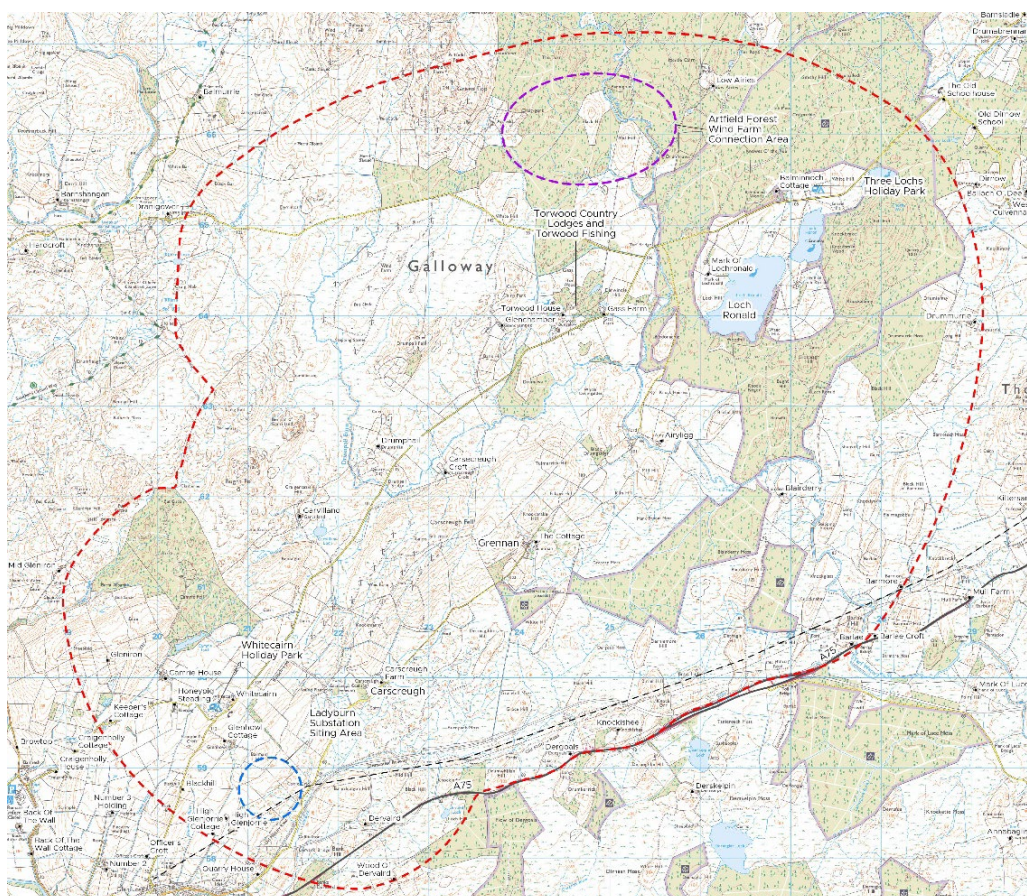
Figure 12: Preferred Route

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1 Introduction

- 1.1 Gillespies LLP has prepared this Routing and Consultation Document (RCD) on behalf of SP Transmission Plc (SPT) as part of the Artfield Forest Connection Project. The project is located within Dumfries and Galloway, with the nearest settlement being the village of Glenluce.
- 1.2 SPT, as the licensed transmission operator for SP Energy Networks ('SPEN'), is proposing a new overhead line to connect the proposed Artfield Forest Wind Farm Substation with the proposed Ladyburn Substation¹, located near Glenluce. The new overhead line would operate at 132kV and be supported on Trident wood pole structures, with potential heights ranging between 11 metres (m) to 16m high. The typical span length between poles would be around 80m to 100m, with the total route extending approximately 9 kilometres (km).
- 1.3 As a transmission licence holder, SPT is legally obliged to connect the wind farm to the electricity transmission network.
- 1.4 This RCD sets out the background to the Artfield Forest 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, which will be undertaken to gather feedback from stakeholders and the public. This feedback will help inform and refine the next stages of the project.
- 1.5 The extract from **Figure 1** below shows the location of the Artfield Forest Connection Project, its start and end points, and the existing high-voltage electricity network.

The Study Area and Connection Points



¹ The proposed Ladyburn 132kV Collector Substation is being advanced separately under the Town and Country Planning (Scotland) Act 1997 and does not form part of the Artfield Forest Connection Project. SPT intends to consult on the substation proposals in 2026, with further details to be provided closer to the consultation period.

The Proposed Artfield Forest Wind Farm

- 1.6 The proposed Artfield Forest Wind Farm is situated on an undulating plateau at around 150 metres (m) above Ordnance Datum (AOD), lying between the Galloway Hills to the east and northeast and the smaller Southern Upland Hills near Glen App to the west. The development, which was consented in February 2023, comprises 12 wind turbines with a maximum blade tip height of 180m and an overall generating capacity of up to 67 Megawatts (MW) of renewable energy. The consented scheme also includes a main access point into the wind farm directly from the public road to the west of Tarf Bridge.
- 1.7 In June 2025, the developers consulted on proposed design changes to increase the maximum blade tip height to 200m, which would raise the generating capacity to up to 86MW. The Environmental Impact Assessment (EIA) and supporting studies prepared for the consented development are currently being updated to reflect the redesigned scheme, with a view to submitting a revised application to the Scottish Ministers in late 2025.
- 1.8 The original planning application and associated wind farm documents are available on the Scottish Government's Energy Consents Unit (ECU) planning portal at www.energyconsents.scot (reference ECU00003245). Further information on the amended project is available on the project website at <https://projects.statkraft.co.uk/Artfield-Forest/>.

The Need for the Project

- 1.9 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 a rise in the concentration and volume of greenhouse gases in the atmosphere, a significant contributor to which is the use of fossil fuels to generate electricity, provide heat and fuel transportation.
- 1.10 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 Artfield Forest Connection Project will support this goal by enabling the transmission of renewable electricity, helping reduce operational emissions and promoting electrification.
- 1.11 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 T Route Rebuild 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

- 1.12 The Artfield Forest Connection Project is located entirely within the Dumfries and Galloway administrative area. The Dumfries and Galloway statutory Development Plan consists of National Policy Framework 4 (NPF4) and the Local Development Plan 2 (LDP2)², which was adopted on 13 February 2023. The Scottish Ministers are required to determine the application having regard to the statutory duties in Schedule 9 of the Electricity Act 1989 (the 1989 Act) and any other relevant material considerations, one of which will be relevant aspects of the statutory Development Plan.
- 1.13 SPT will apply to the Scottish Ministers for consent for the new overhead line under section 37 of the 1989 Act. At the same time, SPT will seek a direction that planning permission is deemed to be granted under Section 57(2) of the Town and Country Planning (Scotland) Act 1997 ('the 1997

² Dumfries and Galloway Council (2023) Dumfries and Galloway Council Local Development Plan 2. Available at: www.dumfriesandgalloway.gov.uk/sites/default/files/2024-07/Adopted_LDP2_OCTOBER_2019_web_version.pdf [Accessed 27 August 2025]

Act) for the new 132kV overhead line and all ancillary development. The Scottish Ministers are required to determine the application having regard to the statutory duties in Schedule 9 of the 1989 Act and taking account of any other relevant material considerations, one of which will be relevant aspects of the statutory Development Plan.

- 1.14 The Planning (Scotland) Act 2019 ('the 2019 Act') amends and updates the 1997 Act and provides the legal basis for NPF4. Section 13 of the 2019 Act amends Section 24 of the 1997 Act regarding the meaning of the statutory development plan, such that for the purposes of the 1997 Act, the Development Plan for an area is taken as consisting of the provisions of the National Planning Framework and any Local Development Plan. A key provision of the Planning (Scotland) Act 2019 is that in the event of any incompatibility between a provision of NPF4 and a provision of an LDP, the provision that is later in date will prevail. That includes instances where an LDP remains silent on an issue that is now addressed in NPF4.
- 1.15 There is a distinction to be drawn between the grant of an application for section 37 consent and a direction that planning permission is deemed to be granted under Section 57(2) of the 1997 Act. Deemed planning permission can only be given upon the granting of consent under section 37 of the 1989 Act. It is a matter for the discretion of the Scottish Ministers as to whether they consider it appropriate to make such a direction. The decision to grant section 37 consent is the principal decision.

SPT's Statutory and Licence Duties

- 1.16 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 wind farms and power stations, over long distances. The transmission network comprises over 4,000km of overhead lines and more than 360km of underground cables. The electricity is then delivered via the distribution system, which serves more than two million customers in central and southern Scotland.
- 1.17 When developing proposals for a new transmission line, SPT is required under Section 9(2) of the 1989 Act *to develop and maintain an efficient, co-ordinated and economical system of electricity transmission' and to 'facilitate competition in the supply and generation of electricity'.*
- 1.18 SPT is also required to provide connections for electricity generators seeking to connect to the transmission system within its licensed area. It must make the transmission system available for this purpose and ensure that it remains fit for purpose through appropriate reinforcements to accommodate the contracted capacity.
- 1.19 In addition, when developing proposals for the installation of overhead transmission lines and other works, SPT is subject to the following duties under Section 8 and Schedule 9 of the 1989 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'.*
- 1.20 Section 38 and Schedule 9 of the 1989 Act also prescribes that *'a licence holder [...] shall avoid, so far as possible, causing injury to fisheries or to the stock of fish in any waters'.*
- 1.21 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.

- 1.22 SPT's Schedule 9 Statement³ sets out how the company complies with its duties under Schedule 9 of the 1989 Electricity Act (the '1989 Act'). The Schedule 9 Statement also refers to applying best practice methods to assess the environmental impacts of proposals and identify appropriate mitigation measures.
- 1.23 The Schedule 9 Statement requires SPT to consult with the relevant landowners and occupiers, as well as statutory consultees such as the local authority, parish and community councils, NatureScot, Historic Environment Scotland ('HES') and the Scottish Environment Protection Agency ('SEPA').
- 1.24 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).

Other Proposed Connections

- 1.25 SPT has no knowledge of any other planned grid connections which may have an overlapping study area.

The Development and Consenting Process

- 1.26 The Artfield Forest Connection Project requires consent through a section 37 application to the Scottish Ministers under the 1989 Act. 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 Town and Country Planning (Scotland) Act 1997. This application will cover both the new overhead line and ancillary works. Additionally, a request for a screening opinion will be submitted to the ECU to determine if the project requires an Environmental Impact Assessment (EIA).
- 1.27 The proposal for the new overhead line, which SPT will submit to the ECU, must meet the technical requirements of the electricity system. It must also be efficient and economically viable, while, on balance, minimising disturbance to the environment and to the people who live, work, or undertake recreation within the area.
- 1.28 The development of the Artfield Forest Connection Project will follow a staged and sequential planning and design process, typically advancing through a routeing study to the identification of a preferred and then a proposed route. Proposals are then developed alongside the statutory requirements set out in the EIA Regulations, the Electricity (Applications for Consent) Regulations 1990 (the '1990 Regulations'), other technical studies and landowner discussions, concluding with a final proposal and accompanying environmental appraisal report or EIA based on the proposed alignment.

Pre-Application Consultation

- 1.29 SP Energy Networks prioritises early engagement with stakeholders and the public before submitting applications. This approach helps shape projects in the best way possible, ensures that everyone with an interest in the T Route Rebuild Project has access to up-to-date information, and provides clear opportunities to influence the proposals as they develop during the pre-application stage. To support this, SP Energy Networks will carry out two rounds of consultation before submitting the section 37 application. These consultations are designed to give stakeholders and the public the chance to review project proposals, provide feedback, and help inform the final design.

³ 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 July 2025]

- Stage 1 Consultation on the preferred route, as set out in this RCD in Autumn 2025.
- Stage 2 Consultation on the proposed route is anticipated in Spring 2026.

Purpose and Structure of the RCD

- 1.30 The primary purpose of this RCD for the Artfield Forest Connection Project is to report on Stage 1 of the planning, design and consultation process. Stage 1 focuses on identifying and reviewing possible route options in order to select a preferred route for consultation. This stage also involves engaging with local communities and wider stakeholders to gather feedback, which will inform and ultimately help confirm the proposed route. The RCD is being published in conjunction with the launch of the Stage 1 Consultation.
- 1.31 The aim of the Stage 1 Consultation is to gather specific feedback from local communities, the public, and wider stakeholders on route options and the preferred route. It also aims to highlight locally important issues that will ultimately shape the development of the proposed route. Pre-application consultations with the community, along with broader engagement with local authorities, statutory consultees, the public, and other relevant organisations, will enhance the quality of proposals and offer an opportunity to develop plans that incorporate feedback from community and stakeholder engagement.
- 1.32 The structure of the RCD is outlined in **Table 1** below. It explains the approach taken to identifying and assessing alternative route options in a clear, systematic manner, in line with SPT's statutory duties, licence obligations, and industry-recognised approaches to the routeing of overhead lines.
- 1.33 The RCD also includes the figures and appendices listed in the contents at the start of this report.

Table 1: Report Structure

Section	Description
Chapter 1: Introduction	Introduces the Artfield Forest Connection Project, provides an outline of the RCD's purpose and structure, and explains the need for the project.
Chapter 2: Project Description	Provides an overview of the Artfield Forest Connection Project and its key components, including details of the construction process.
Chapter 3: Routeing Overhead Lines	Describes SPT's general approach to routeing and sets out the approach to routeing the Artfield Forest 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 Description of Route Options	Describes the routeing strategy applied specifically to the Artfield Forest Connection Project and identifies and describes the route options.
Chapter 6: Appraisal of Route Options and Identification of the Preferred Route Option	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 Artfield Forest Connection Project, including consultation on the preferred route option and how to provide feedback.

2 Project Description

Introduction

- 2.1 This chapter provides a description of the infrastructure required for the Artfield Forest Connection 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 for the purposes of the routeing study and to inform the Stage 1 Consultation process. Further pre-application consultation will be undertaken 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 As explained in the **Chapter 1** of this RCD, the project comprises a new single circuit 132kV overhead line carried on wood poles from the proposed Artfield Forest Wind Farm Substation to the proposed Ladyburn Substation near Glenluce.
- 2.3 The wood pole support structures will be of the ‘Trident’ design. These 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 An overhead line consists of conductors (or wires) suspended at a specified height above ground and supported by either wood poles or steel lattice towers spaced at intervals. Conductors can be made either of aluminium or steel strands and are strung (supported) from insulators attached to the steelwork on top of the wood poles. These prevent the electric current from crossing to the wood pole.
- 2.5 Single circuit⁴ 132kV 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 Artfield Forest Connection Project.

Wood Pole Support Structures

- 2.6 The new overhead line will be carried on Trident wood pole support structures fabricated from sustainably sourced softwood, which is pressure-treated with a preservative to prevent damage. Depending on the location, the wood poles will be either single or double ‘H’ poles, consisting of two poles joined by steel cross-bracing above and below ground, as shown in **Photos 1 and 2** below. Single poles will be used along most of the route, with H-poles at either end to transition into the substations or where there are high deviation angles.
- 2.7 Galvanised steel stay wires (‘back stays’) will be installed at some poles to resist the lateral mechanical forces acting on the pole structures and keep them vertical. These are typically required where the line changes direction and at terminal positions. They are attached near the top of the wood poles and anchored in the ground by a below-ground timber foundation block, as shown in **Photo 2**.
- 2.8 Three types of wood pole support structures will be used:
- Intermediate - where the pole is part of a straight section of line, and no change in direction is required.
 - Angle (also known as tension) - where there is a horizontal or vertical deviation in the line direction, or where straight sections of the line need to be segmented. Angle poles can accommodate changes in direction (up to 30 degrees for single poles and 60 degrees for double poles). All angle poles need backstays.

⁴ A single circuit high voltage electricity line is designed to carry one electrical circuit, hence it has only one set of conductors.

- Terminal - where the line terminates into a substation or onto an underground cable via a cable sealing end.
- 2.9 Wood poles are dark brown when first erected and weather to a light silver grey after about five years.
- 2.10 Experience on similar projects has shown that poles are generally just perceptible up to around 5km⁵ when seen against the sky, but typically not noticeable beyond 1.5km if landform and/or vegetation provide an effective background.
- 2.11 Typical terminal structures and angle poles are shown in **Photos 3 and 4** below.

Conductors

- 2.12 A single circuit comprises three separate conductors attached to insulators on the poles.
- 2.13 The proposed design is likely to be aluminium conductors of 300mm² cross-sectional area with an optical fibre included in one of the phase conductors. The fibre optic communication cable is for internal operational use by SPT only and is related to the running of its network. The Trident design does not have an earth wire. Terminal poles with cable sealing ends or earth wires are grounded using copper conductors and copper rods arranged in a grid formation beneath the base of the poles. This ensures effective earthing, enhancing safety and system performance.

Insulators

- 2.14 Insulators attached to the top of the wood pole support the conductors and prevent the electric current from crossing to the galvanised steel cross-arm and pole body. The insulators are likely to be made from a grey polymeric compound (plastic), which reduces the glare that can be experienced in sunny conditions.

Photo 1: Typical Single Trident Wood Pole

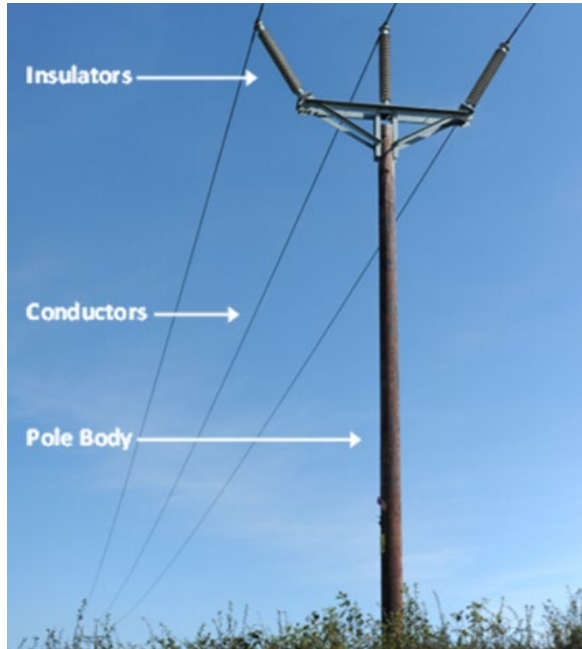


Photo 2: Typical H-Pole with Backstays



⁵ Although potentially perceptible at 5km, when seen at this distance, the poles would be highly unlikely to give rise to significant landscape or visual effects, or effects on the setting of cultural heritage assets.

Photo 3: Typical Terminal Structure



Photo 4: Typical Angle Pole



Wood Pole Heights and Span Lengths

- 2.15 Wood pole structures are typically 11 - 16m tall, although individual pole heights may be adjusted to meet statutory clearance requirements. Span length or the distance between poles generally ranges from 80m to 100m and can be increased or decreased to accommodate environmental or technical/topographical conditions as required
- 2.16 The foundation depth is around 2 – 2.5m, depending on the ground conditions.

Typical Construction Requirements

- 2.17 The construction of the new overhead line follows a well-established sequence of activities. In addition to the overhead line, it also 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 will be trimmed or removed as necessary.
- 2.18 Construction typically comprises the following activities:
- Tree felling or lopping (where required);
 - Preparation of temporary accesses, construction compound, laydown and storage 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.
- 2.19 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 due to the need for the wire stays to stabilise the wood poles in the ground.

- 2.20 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

- 2.21 A temporary construction compound(s) will be required for the storage of materials, and the siting of staff offices and other facilities. Its location and size will be identified at a later stage in the design process.
- 2.22 Temporary storage or 'laydown areas' for the poles are also needed. Measuring approximately 20m x 20m, these are usually surfaced with crushed stone to facilitate safe access from the public road.

Temporary Working Areas

- 2.23 Temporary working areas of approximately 30m x 30m are needed at each pole location during construction. Pulling (or 'stringing') areas measuring around 25m x 15m are also required but often overlap with working areas.
- 2.24 The size and shape of working areas may vary due to environmental or land-use constraints, with each area taped off for protection.
- 2.25 All temporary areas are restored to their original land use and condition after construction.

Overview of the Construction Process

- 2.26 The erection of the wood poles requires excavation to position the pole brace block and or steel foundation braces, as illustrated in **Photo 5** below. A typical excavation for a pole is approximately 3m² and 2m deep. The material excavated is sorted and reused for backfilling purposes. No concrete is used.
- 2.27 In areas with peat or soft ground, special 'floating' foundations or soil mixing techniques may be needed to stabilise the substrate.

Photo 5: Wood Pole Foundation (Intermediate H-pole)



- 2.28 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 6**.

Photo 6: Installation of a Wood Pole



- 2.29 Once sufficient poles have been erected, stringing of the conductors will be undertaken. This requires temporary ‘pulling’ (or ‘stringing’) areas measuring approximately 25m x 15m every 3 – 4km along the route or where there is a change in direction.
- 2.30 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.

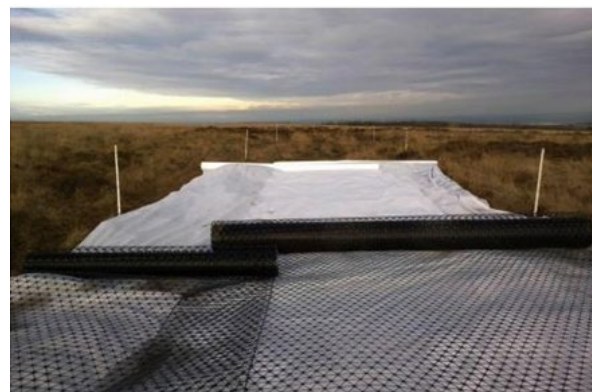
Accesses

- 2.31 Temporary accesses to all pole locations will be from the existing road network and will use existing gates, tracks and watercourse crossings wherever possible. This may require the widening of gateways, the removal (and subsequent replacement) of hedges and fences, and the installation of temporary fencing.
- 2.32 Low-pressure ground vehicles are preferred, but in sensitive areas, temporary floating tracks or steel matting may be used as shown in **Photos 7 and 8**. After construction, all temporary tracks are fully reinstated.

Photo 7: Temporary Composite Roadway Panels



Photo 8: Temporary Aluminium Roadway Panels



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.

Decommissioning

- 2.34 Wood pole overhead lines typically require refurbishment or replacement after approximately 40 years. Alternatively, a line may be decommissioned and the wood poles removed, and the ground restored.

3 Routing Overhead Lines

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

SPT's Approach to Routing

- 3.2 Routing overhead lines is a complex process which, in line with SPT's statutory duties and licence obligations, requires a balance between several factors. These include engineering and technical requirements, economic factors, and potential impacts on people who live, work, enjoy recreation, or pass through the area.
- 3.3 SPT's approach to the routing and assessment of overhead lines and associated infrastructure, including sections of underground cable, is outlined in SP Energy Network (SPEN)'s document, Approach to Routing and Environmental Impact Assessment ('SPEN's Routing Guidance')⁶. This approach aligns with SPT's commitment to formulate proposals that meet the technical requirements of the electricity system, which are efficient and economically viable, and on balance, minimise disturbance to the environment and the people who live, work and enjoy recreation within it.
- 3.4 Projects follow a staged and sequential planning and design process typically advancing through routing studies to the identification of a proposed route. Proposals are then developed 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 accompanying environmental appraisal or EIA, which form the basis of the section 37 application based on the proposed alignment.

Stage 1: Route Assessment to identify a Proposed Route

- 3.5 This stage involves identifying and reviewing route options to determine a preferred route for consultation. Consultation and engagement with local communities and wider stakeholders is particularly important at this stage. This stage establishes the route options for consultation, setting out the preferred route. Feedback received during this stage will inform the selection of the proposed route.

Stage 2: Design and Development, including EIA Studies on the Proposed Alignment

- 3.6 The second stage addresses the design development of the proposed route. This builds on the first consultation and engagement activity, as well as the environmental assessment studies, to finalise and confirm the alignment.

Potential Effects of an Overhead Line

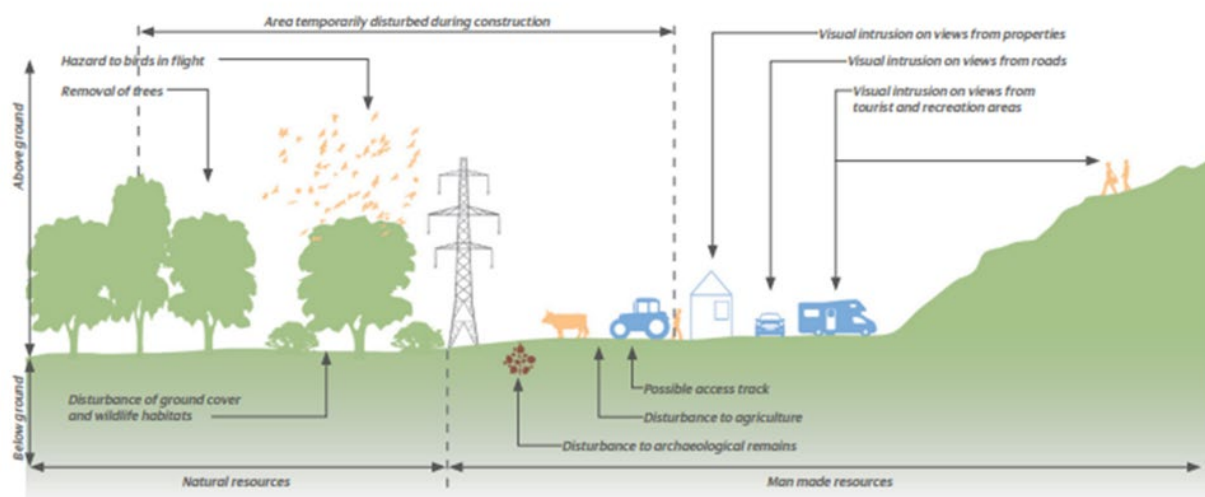
- 3.7 Overhead lines are large linear features in the landscape that can potentially affect, to varying degrees, visual and other environmental aspects of the areas they traverse, as illustrated in **Diagram 1** below.
- 3.8 Given the scale of overhead lines relative to nearby objects such as houses and trees, the most likely impact is intrusion on people's views or the overall character of the landscape in which they are located.
- 3.9 An overhead line may also affect people and the environment due to disturbance during construction works and maintenance operations during its lifetime. This includes potential effects related to construction and operational noise, as well as vehicle movements. Steel towers require below-ground concrete foundations, which may disturb archaeological remains or nature

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

conservation interests. Conductors strung between poles or towers may require tree felling or pruning to maintain the necessary clearance.

- 3.10 Some direct and indirect effects may also be experienced outside of the immediate construction area, for example, temporary stone access tracks may have to be built for construction access.

Diagram 1: Potential Effects of an Overhead Line (extracted from SPEN's Approach to Routeing and Environmental Impact Assessment)



- 3.11 As there is no technical means to eliminate visual effects, other than choosing appropriate support structures, and only limited opportunities for screening through planting, one of the most effective ways to avoid or reduce adverse visual impacts is through careful routeing. This involves using the existing landform and vegetation to provide screening or a suitable backdrop and positioning the route at an appropriate distance from settlements and roads.
- 3.12 Routeing decisions also consider a wide range of environmental and technical factors, avoiding, wherever possible, the most sensitive and valued natural and man-made features. A well-routed line balances visual, environmental, and technical considerations, even where this results in a longer overall route.

Routeing Methodology

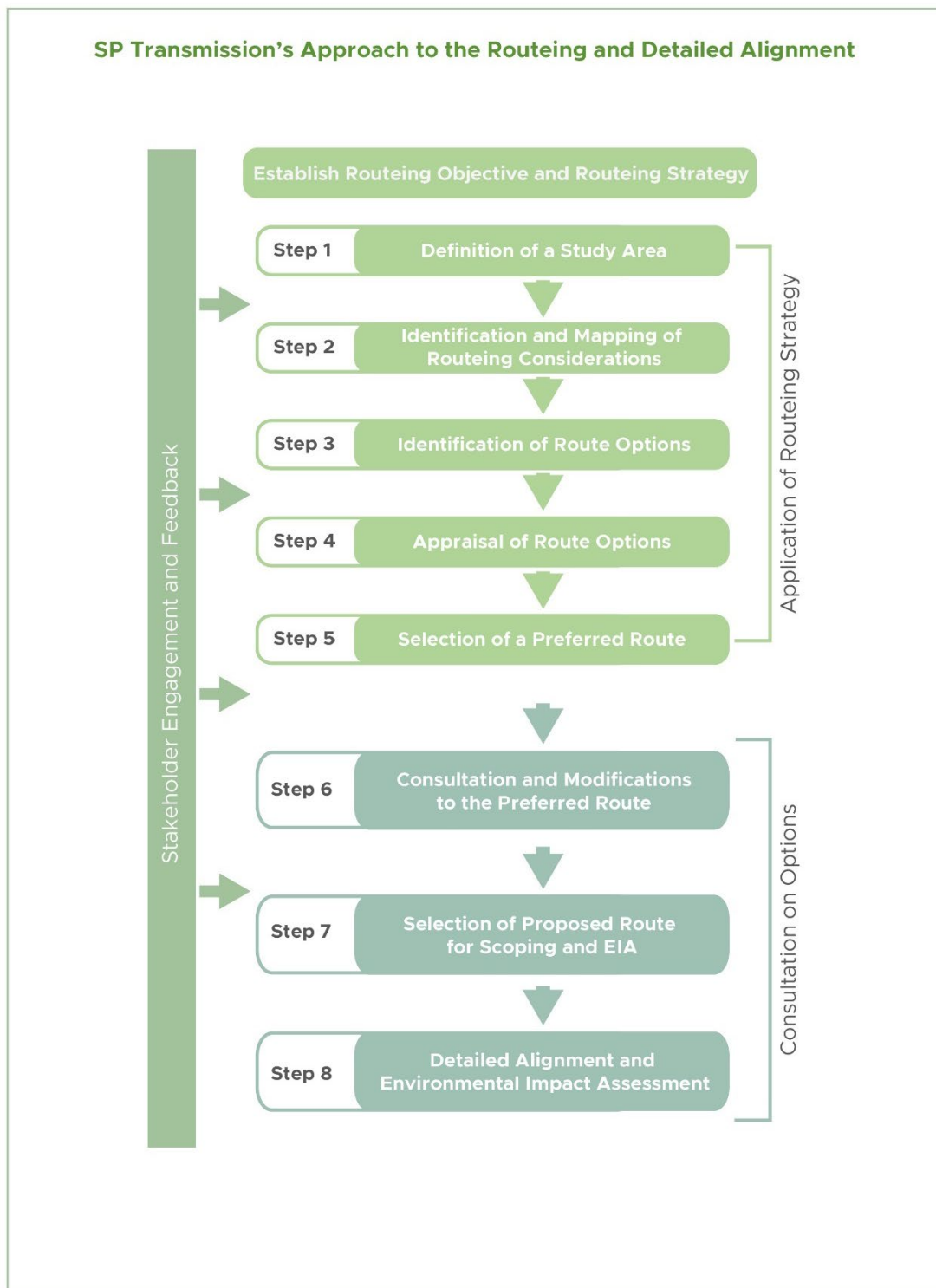
- 3.13 It is generally accepted across the electricity industry that the guidelines developed by the late Lord Holford in 1959 for routeing overhead lines, commonly known as the 'Holford Rules'⁷ (including subsequent updates), should continue to form the basis for routeing high-voltage overhead lines. A copy of the Holford Rules, together with the associated Notes and Clarifications, is provided in **Appendix A**.
- 3.14 Key principles of the Holford Rules include avoiding prominent ridges and skylines, following broad wooded valleys, using landform and vegetation for screening or backgrounding, and routeing the line at a distance from settlements and key viewpoints. The Holford Rules also caution against sharp changes in direction, as the angle towers or poles required for such deviations tend to be bulkier and occupy more space, thereby increasing their visual impact. Environmental issues, including biodiversity and cultural heritage, are also carefully considered in the routeing process. On that basis, it is acknowledged that a well-routed overhead line takes

⁷ In 1959, Lord Holford, then advisor to the Central Electricity Generating Board (CEGB), developed a series of guidelines with regard to the routeing of high voltage overhead lines, which have subsequently become known as the 'Holford Rules' ('the Rules'). It is generally accepted across the electricity industry that the Rules should continue to be used as the basis for routeing high voltage overhead lines. The Rules were reviewed in the early 1990s by the National Grid Company (NGC) Plc. (now National Grid Electricity Transmission (NGET)) with notes of clarification added to update them and reflect up to date circumstances. A subsequent review of the Rules including the NGC Clarification Notes was undertaken by Scottish Hydro Electric Transmission Limited (SHETL) (now SHE Transmission plc) in 2003 to reflect Scottish circumstances.

account of other environmental and technical considerations, even if the length is increased as a consequence.

- 3.15 Since the formulation of the Holford Rules, formal requirements for environmental assessment have been introduced. While environmental assessment addresses broader topics than the visual amenity issue on which the Rules concentrate, they remain a valuable tool in selecting and assessing potential route options.
- 3.16 In addition to the Holford Rules, the routeing process was also informed by:
- SPT and Gillespies extensive experience in routeing overhead lines;
 - Feedback from stakeholder consultations on other projects; and
 - Relevant national and local planning policy and guidance.
- 3.17 The routeing methodology is shown graphically in **Diagram 2** below and briefly described in the subsequent text. Steps are undertaken sequentially, with each step informing the next, culminating in a preferred route and, ultimately, a proposed route for the new overhead line. Consultation with statutory and non-statutory consultees is carried out throughout the process.
- 3.18 Although presented linearly for clarity, the approach is iterative. Steps may be revisited as new information arises or further assessment is undertaken. Each stage undergoes a technical review by SPT before it can progress. The process involves close collaboration between SPT's engineering, land, and environmental teams, who balance technical, environmental, and stakeholder interests.

Diagram 2: SP Transmission's Approach to Routeing and Detailed Alignment



The Routeing Objective

- 3.19 The first step 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 Artfield Forest Connection Project is:

To establish a technically feasible and economically viable route for a new 132kV overhead line connecting the proposed Artfield Forest Wind Farm to the proposed Ladyburn Substation, with minimal impact on the environment and the people who live, work, travel through, or engage in recreational activities within the area. The aim is also to ensure no net loss of biodiversity while actively pursuing opportunities for biodiversity net gain whenever possible.

- 3.20 The routeing process starts with the definition of the routeing objective, then works through the routeing process Steps 1 – 5.
- **Step 1** is the identification of a study area large enough to accommodate all potential route options, taking account of technical requirements.
 - **Step 2** is the baseline mapping of the routeing considerations. This informs the identification of constraints and opportunities for routeing and also helps define the routeing strategy specific to the study area and its key routeing considerations.
 - **Steps 3 – 5** are the application of 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 overhead line connections in the study area. After any necessary route modifications, the preferred route is selected.
 - **Step 6** is when the preferred route proceeds to stakeholder and public consultation(s). Feedback from the consultation may prompt further modifications to the preferred route, necessitating additional consultation if significant changes are made.
 - **Steps 7 - 8** confirm the proposed route and detailed alignment after incorporating consultation feedback and addressing specific issues. This proposed route is then subjected to further environmental surveys, detailed design, and potentially EIA, leading to any additional modifications needed to avoid or minimise environmental impacts.
- 3.21 **Steps 1 – 5** are the focus of this RCD and ensure that route options are identified, assessed and refined taking account of the routeing strategy as well as, where relevant, feedback received from consultation with key statutory stakeholders. For the purposes of the routeing study, route options are identified that form relatively broad corridors in which a route alignment could be developed in subsequent stages of the Artfield Forest Connection Project's development.

Routeing Considerations

- 3.22 In accordance with SPT's statutory duties and licence obligations, routeing considerations include technical, environmental and economic factors. These considerations are essential for identifying and assessing route options, ensuring the process remains robust and transparent.

Technical Factors

- 3.23 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 are taken into consideration. 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.

Environmental Considerations

- 3.24 SPT's statutory duties under section 38 and Schedule 9 of the 1989 Act 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 potential effects on both people and the environment, including (but not limited to):
- Landscape;
 - Views and visual amenity (including recreational receptors);
 - Ecology and ornithology;
 - Woodland;
 - Historic environment;
 - Hydrology, soils (such as deep peat) and water resources; and
 - Flood risk.
- 3.25 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.

Economic Factors

- 3.26 In accordance with Section 9 of the 1989 Act, the proposed route must be economical. SPT interprets this to mean that,
- 3.27 Under Section 9 of the 1989 Act, 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.
- 3.28 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.
- 3.29 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.

Application of the Holford Rules

- 3.30 Routeing considerations for the new overhead line (see **Appendix C**) have been guided by the Holford Rules and their associated notes and clarifications. These have been interpreted and applied to identify relevant routeing factors.
- 3.31 The Rules are broadly hierarchical, with Rules 1 and 2 emphasising avoidance of areas of the highest or high amenity value. Rule 1 recommends avoiding major areas of the highest amenity value wherever possible, while Rule 2 advises deviating around smaller areas of high amenity. In this context, 'amenity' generally refers to designated sites of scenic, landscape, nature conservation, scientific, architectural, or historical importance, consistent with SPT's duties under Schedule 9 of the 1989 Act. For this study, the term 'amenity' has been replaced with 'environmental' to better reflect the environmental, social, and cultural significance of these areas.

- 3.32 SHETL's 2003 review provides examples of areas of 'highest' or 'high' amenity (or environmental) value, noting that these must be determined on a project-by-project basis in accordance with Schedule 9. For this study, such areas include international and national designations related to landscape, nature, built heritage, or archaeological conservation.
- 3.33 While the Rules do not define 'major' or 'smaller' areas, they note that the spatial extent of high-value areas should be considered. Here, value is not considered to be related to the size of an area, so for the purposes of this study, this has been interpreted as the extent to which areas of the highest or high amenity or environmental value are avoidable in routeing
- 3.34 The notes and clarifications also provide guidance on areas of moderate or low amenity/environmental value, which should be identified through regional or local development plans. In this study, these are considered detailed routeing factors and include local wildlife sites or reserves, undesignated woodland, and outdoor recreational areas such as country parks.
- 3.35 Although the Rules do not explicitly address residential areas, the subsequent notes and clarifications suggest avoiding routeing near settlements where possible for general amenity reasons. Settlements are therefore treated as areas of highest environmental value. Smaller clusters or individual properties, while of similar importance, are considered a deviation issue to be addressed when developing the detailed route alignment.
- 3.36 Rules 3 - 6 highlight the importance of landscape and visual factors, including landscape character sensitivity to overhead lines, use of landform and woodland to reduce visual intrusion, avoidance of skylining, and consideration of existing overhead lines to prevent cumulative visual effects ('wirescapes'). For this study, these landscape and visual considerations have guided the identification of route options alongside the factors described above.

4 The Study Area

- 4.1 This chapter describes the study area and the associated routing considerations, as outlined in Steps 1 and 2 of the routing methodology (see **Diagram 2**). An overview of the routing considerations and how these relate to the Rules and accompanying notes set out in **Appendix C**.

Defining the Study Area

- 4.2 The study area shown in **Figure 1** has been defined through a combination of desk-based assessment and field survey, ensuring that it is sufficiently broad to capture all reasonable routing options for the new overhead line. Its extent reflects the need to balance the minimisation of significant environmental effects with technical feasibility and economic viability. As the proposed Artfield Forest Wind Farm Substation and the proposed Ladyburn Substation provide fixed connection points, the study area is broadly aligned in a northeast-southwest direction. This follows the orientation of the topography (see **Figure 2**), as the Galloway Hills slope down towards the coast. The study area has been drawn relatively wide to ensure adequate flexibility for route development and to encompass a range of environmental, technical, and land-use constraints, thereby allowing a robust comparison of alternative route alignments during the appraisal process.
- 4.3 This process enables the identification of route options between the proposed connection points, with route option choices informed by areas of highest environmental sensitivity in line with the Holford Rules and SPEN's Routing Guidance. Route length was also considered to ensure an appropriate balance between environmental protection, technical deliverability, and cost.
- 4.4 The three route options identified are shown on the routing considerations plan in **Figure 3** and individually in **Figures 4a and 4b**.

Routing Considerations

- 4.5 In line with Step 3 of the routing methodology shown in **Diagram 2**, routing considerations within the study area have been identified to inform the routing strategy and the assessment of route options. These considerations are overlaid with the three route options in **Figure 3**.
- 4.6 Routing 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.
- 4.7 Details of these routing 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

- 4.8 This section identifies the areas of very high or high environmental value within or near the study area, in line with Holford Rules 1 and 2. While the Holford Rules do not explicitly define these areas, the subsequent notes suggest that they should be evaluated on a project-specific basis. In the context of the Artfield Forest Connection Project, these areas include internationally and nationally designated sites, particularly those recognised for their landscape, natural, built, or archaeological heritage value.

Landscape Designations

National Parks

- 4.9 There are no National Parks in or close to the study area. A proposal by Scottish Ministers to designate Galloway as Scotland's third National Park is not being pursued.

Regional Scenic Areas

- 4.10 There are no Regional Scenic Areas in or close to the study area. The nearest are:

- Galloway Hills Regional Scenic Area (RSA) is located outside and to the east of the study area. As route options will not cross or run close to this RSA, it does not influence the routing process.
- South Ayrshire RSA is located outside and to the north of the study area. Due to the distance between the RSA. As route options will not cross or run close to this RSA, it does not influence the routing process.
- Rhinns Coast RSA is located outside and to the west of the study area. Due to the distance between the RSA. As route options will not cross or run close to this RSA, it does not influence the routing process.
- Mochrum Lochs RSA is located outside and to the south of the study area. Due to the distance between the RSA. As route options will not cross or run close to this RSA, it does not influence the routing process.

Garden and Designed Landscapes

- 4.11 The nearest Garden and Designed Landscape is Castle Kennedy, which lies outside and to the west of the study area near Stranraer. As the Castle is over 8km from the boundary of the study area and route options for the connection do not need to cross or run close to the castle, it does not influence the routing process.

Ecological Designations (Figure 5)

Special Areas of Conservation

- 4.12 Three Special Areas of Conservation (SACs) are present in or close to the study area:
- The Kilhern Moss SAC, which overlaps Kilhern Moss SSSI, is located just outside the western edge of the study area.
 - The River Bladnoch SAC encompasses the Tarf Water and the Drumpail Burn, which flow through the central and eastern part of the study area.
 - The Flow of Dergoals SAC is a large blanket bog area that overlaps with the Flow of Dergoals SSSI and is found to the south of the A75 east of Glenluce.
- 4.13 The routing process aims to avoid sensitive features where possible and to maximise separation distances to mitigate potential environmental effects. While it may not be feasible to avoid crossing some tributaries of the River Bladnoch SAC, impacts should be minimised if crossings are made by overhead line. If a route option crossing the River Bladnoch SAC is selected, careful attention must be given to pole placement to maximise separation distances and reduce potential environmental effects.

Special Protection Areas

- 4.14 There are no Special Protection Areas (SPAs) within the study area. The nearest site is Loch of Inch and Torrs Warren SPA, which overlaps with Luce Bay and Sands SPA, Torrs Warren - Luce Sands SSSI and Loch of Inch and Torrs Warren Ramsar. This SPA lies to the south and west of Glenluce and covers the northern part of Luce Bay. As route options will not cross or run close to this SPA, which is also separated from the study area by the settlement of Glenluce, it does not influence the routing process.

Sites of Special Scientific Interest

- 4.15 There are 3 SSSIs within the study area, which are all designated for the habitats that they support:
- The River Bladnoch SSSI, which overlaps with the River Bladnoch SAC, as explained above.
 - The Flow of Dergoals SSSI which overlaps with the Flow of Dergoals SAC as explained above.
 - Derskelpin Moss SSSI which is one of the few non-afforested blanket bogs in the area and retains many of the pools and ridges typical of a natural bog. The site is also important for

breeding wildfowl and waders, including dunlin and golden plover. Black grouse and a range of predatory birds are also recorded in the area.

- 4.16 To minimise environmental impacts, route options should be designed to avoid crossing SSSIs, thereby preventing direct habitat loss or damage. When routeing near SSSIs, careful planning is essential to mitigate potential indirect effects, including pollution pathways that could impact these sensitive areas.

Priority Peatland Habitats

- 4.17 Carbon and Peatland Class 1 and 2 covers much of the study area and is nationally important.
- 4.18 To minimise environmental impacts, route options should be designed to avoid crossing Carbon and Peatland Classes 1 and 2, thereby preventing direct habitat loss or damage. When routeing near peatland, careful planning is essential to mitigate potential indirect effects, including pollution pathways that could impact these sensitive areas.

Important Bird Areas

- 4.19 No Important Bird Areas (IBA) are located within the study area. The closest is the Loch of Inch and Torrs Warren IBA, which covers the coastal region south and west of Glenluce and overlaps with several other international and national designations. As route options will not cross or pass near this IBA, it does not influence the routeing process.

Archaeological and Heritage Designations (Figure 6)

Archaeologically Sensitive Areas

- 4.20 There are two Archaeologically Sensitive Areas (ASAs) are in or close to the study area, which Dumfries and Galloway Council have designated because of their archaeological importance.
- East Rhinns ASA is an area that has been designated in recognition of its archaeological interest as a wider collection of important archaeological sites contained within a wide expanse of moorland and rough pasture grassland around the Water of Luce and Cross Water of Luce river system.
 - Knock Fell ASA to the south of the A75 is a prominent landmark of the Machars landscape. A prehistoric fort is situated on top of the fell, which is widely visible from the surrounding area. The open landscape setting is an important characteristic of this ASA.
- 4.21 The Torrs Warren ASA lies just outside the study area to the south and west of Glenluce and covers the northern part of Luce Bay. It is an important area for early human settlement, but as the route options will not cross or run close to this ASA, it does not influence the routeing process.

Scheduled Monuments

- 4.22 The following Scheduled Monuments are present in the western part of the study area:
- Mid Gleniron, hut circles and field systems (SM5067);
 - Ballach-a-heathry, cairn (SM1915);
 - Bennan of Garvilland, fort (SM1955);
 - Cairn na Gath, long cairn, Balmurrie Fort (SM1922);
 - Cascreugh Castle (SM2012);
 - Knock Fell, fort (SM1988);
 - Carscreugh Croft, cairn (SM2257);
 - Mid Gleniron, chambered cairns and cairns (SM1944); and
 - Long Cairn, 200m NE of Kilhern (SM13771).

- 4.23 These Scheduled Monuments are associated with the East Rhins ASA. They include the remains of hut circles, burnt mounds, cairns, clearance cairns and field systems dating from the prehistoric to the post-medieval periods.
- 4.24 A Scheduled Monument is also associated with Knock Fell ASA to the south of the study area.
- 4.25 Route options should avoid direct impacts on Scheduled Monuments and utilise landform and vegetation to help reduce indirect adverse effects on their setting. However, given their prevalence, towards the western edge of the study area, some impact on their setting may be unavoidable. Route planning should consider these settings, using natural landforms and vegetation to minimise visual impacts as much as possible.

Listed Buildings

- 4.26 The highest concentration of listed buildings lies just outside the study area at Glenluce, where they are focused on Main Street. As the route options will not cross or run close to these listed buildings, they have not influenced the routeing process. A few listed buildings are also dispersed throughout the study area, including Carscreugh Castle Cottages, a Category C Listed building situated next to Carscreugh Castle Scheduled Monument. When routeing near these, careful planning is essential to mitigate potential indirect effects on their setting.

Trees and Woodland (Figure 7)

- 4.27 NPF4 recognises the role that trees and woodland play 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 will most likely be required.
- 4.28 Ancient Woodland within the study area, which is designated as an irreplaceable habitat in NPF4, includes Ballach-a-Heathry and the Banks of Dervaird. There is also a small unnamed woodland near the remains of Carscreugh Castle. The sites are also identified in the Native Woodland Survey of Scotland (NWSS). Route options should avoid Ancient Woodland sites (AWS) and woodlands identified in the NWSS to prevent their loss.
- 4.29 Commercially managed plantations largely cover the higher ground to the east and northeast of the study area.
- 4.30 Native woodland accounts for approximately 10% of the total woodland area, with wet woodland, upland birch woods, and lowland mixed deciduous woodland forming the largest proportion. Upland ash and oak woods are also notable components. Much of the semi-natural woodland occurs as wood pastures, shelter belts, and hedgerows, often following river valleys, although smaller copses are also present, particularly in the lower-lying areas. Long-established plantation woodland is also present.
- 4.31 Rhododendron and other invasive species currently affect about 2.4% of the woodland.
- 4.32 It is anticipated that Ash dieback (*Hymenoscyphus fraxineus*) will kill up to 80% of ash trees across the UK. The disease has spread widely in Dumfries and Galloway.

Settlement (Figure 8)

- 4.33 For the purposes of routeing, settlements are considered to represent areas of high environmental sensitivity and should be avoided wherever possible. Although not explicitly referenced in the Holford Rules, this approach is consistent with their underlying principles. In addition to the settlement of Glenluce, there are several scattered clusters and individual residential properties throughout the study area. Route options should therefore seek to minimise proximity to such properties. Where complete avoidance is not feasible, potential

effects can be more appropriately addressed during the subsequent, more detailed route alignment design stage.

Recreational Resources (Figure 8)

- 4.34 The Southern Upland Way is a nationally designated long-distance walking route listed as one of Scotland's Great Trails and skirts the northwestern edge of the study area. It offers panoramic sequential views of the surrounding landscape.

Areas or Sites of Medium or Lower Environmental Value

- 4.35 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, including golf courses. 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 Character (Figure 9)

- 4.36 NatureScot's online National Landscape Character Assessment⁸ defines the following Landscape Character Types (LCT) across the study area.
- LCT 167 - Moss and Forest Lowland;
 - LCT 168 - Drumlin Pasture in Moss and Moor Lowland;
 - LCT 172 - Upland Fringe – Dumfries and Galloway;
 - LCT 173 - Plateau Moorland – Dumfries and Galloway; and
 - LCT 174 - Plateau Moorland with Forest – Dumfries and Galloway.
- 4.37 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**.
- 4.38 Much of the higher ground in the northern and eastern parts of the study area lies along the edge of the Galloway Forest. This is classified as the Plateau Moorland with Forest LCT and forms part of the Wigtownshire Moors. It comprises a gently undulating plateau between 150m and 250m AOD, overlain by a varied land cover of extensive coniferous plantations interspersed with broadleaved woodland, open moorland, unimproved grassland, small-scale farmland, and sparse settlement connected by only a few minor roads. The Three Lochs area, centred around Loch Heron, Loch Ronald and Loch Mabury, is an environmentally rich and scenically diverse part of Dumfries and Galloway. Clearings around the lochs open up contrasting views across the water, while the mosaic of woodland, water, and moorland habitats supports notable biodiversity. The area's tranquil character and dark skies further enhance its experiential qualities, offering opportunities for recreation such as walking, cycling, horse riding, fishing, and wildlife watching. The Three Lochs Holiday Park is a popular visitor destination within this landscape.
- 4.39 The central part of the study area is classified as the Plateau Moorland LCT and comprises an expansive flat or gently undulating plateau lying between 150m and 250m AOD. This area forms a low upland 'edge' to the valleys of the Water of Luce and the Cross Water of Luce, where the landform becomes more rolling and varied, particularly to the east of the Water of Luce. The plateau is characterised by extensive areas of open moorland, rough grassland, and patches of heath, interspersed with some small conifer plantations and broadleaved woodlands in which Torwood Country Lodges and Torwood Fishery are situated. Other small blocks of broadleaved woodland are found along the watercourses and in more sheltered locations. Settlement is sparse and typically dispersed farmsteads or smallholdings are connected by a limited network

⁸ NatureScot (2019) Landscape Character Assessment [online]. Available at: <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions>

of minor roads and tracks. The open and elevated character of the moorland allows for wide views both across the moorland itself and towards the higher land of the Galloway Forest to the north and east. These views frequently include wind farms, which are a characteristic feature of this LCT.

- 4.40 The Upland Fringe LCT occupies the south-western part of the study area and forms a transitional landscape of gently rolling hills, valleys, and elongated ridges between the lower-lying Drumlin Pasture in Moss and Moor Lowland LCT to the south and the uplands of the Plateau Moorlands LCT to the north. Altitudes range from 120–170m, though the landscape feels higher due to the contrast with the low-lying coastal areas around Luce Bay. Locally uneven topography, with minor valleys, ridges, and hollows, creates visual interest. Pasture dominates the land cover, including rough and improved grassland, with small-scale conifer forests, shelterbelts, and tree lines reinforcing the enclosure of the landform. Field boundaries, often hedgerows or walls, together with the distinctive silhouettes of beech trees, contribute to the agricultural character and seasonal visual effects. Settlement is sparse, typically consisting of dispersed farmsteads or smallholdings connected by a limited network of minor roads and tracks. The landscape provides panoramic views and prominent skylines, linking lowland pastures with upland areas. Despite the presence of wind farms, the overall impression remains of a settled, treed, and visually dynamic rural fringe.
- 4.41 To the south and east of the Plateau Moorland with Forest and Plateau Moorland LCTs lies the Drumlin Pasture in Moss and Moor Lowland LCT. Within the study area, this LCT forms a relatively narrow strip on either side of the A75 east of Glenluce, north of Knock Moss and the Flow of Dergoals, before broadening east of Barlae Hill and north of the Mark of Luce Moss. The LCT displays a medium to small-scale landscape of gently undulating land between 50–100m, with occasional summits over 200m. The defining feature of this landscape is the frequent presence of small, rounded, elongated mounds (drumlins) interspersed with more rugged, irregularly shaped hills set within flat wetlands and dissected by the Bladnoch River and its tributaries. The area forms a mosaic of pasture, moss, rough moorland, scattered gorse, small woods, and plantation blocks. Settlement is sparse but connected, with isolated farmsteads, lanes, and occasional small villages such as Kirkowan (outside the study area), while prehistoric monuments and designed landscapes add cultural interest. The A75 and an existing transmission line run through the LCT, following the route of the Old Military Road, a historic route connecting Dumfries to Portpatrick, used for military and trade movements. In the 1760s, Glenluce became a junction linking the road to Wigtown and Ayr. The landscape is intimate and visually complex, with a semi-natural character, although wind turbines visible from the A75 and high traffic volumes introduce audible and visual disturbance.
- 4.42 The Moss and Forest Lowland LCT just clips the southern boundary of the study area and is found mainly to the south of the A75. The gently undulating landform generally lies below 100m AOD and is drained by Tarf Water, Dergoals Burn and a network of minor tributaries. There is a simple landcover of plantation woodlands interspersed with open areas of mossland, drier moorland on the higher ground, and occasional pasture areas, including some distinctive domed and walled pastures.

Archaeological and Heritage Sites (Figure 6)

- 4.43 There are several non-designated heritage sites with known extents in the study area. These are archaeological sites or features recognised as heritage assets in planning decisions and assessments (e.g., through Historic Environment Scotland or Local Development Plans), but they do not have statutory protection. They are recorded in databases such as TroveScot⁹ or local Sites and Monuments Records (SMRs) maintained by local authorities or Historic Environment Scotland. Examples includes cropmarks, earthworks, ruins, or industrial remains that have been documented but are not scheduled monuments or listed building.

⁹ TroveScot is the new national record of the historic environment in Scotland. Managed by Historic Scotland, it combines information from our Historic Environment Portal, Canmore, SCRAN, and Property in Care Collections.

- 4.44 These sites are mainly located in the commercial plantations around the site for the Porposed Artfield Forest Wind Farm and in the Three Lochs area, although Carscreugh Castle (National Record of the Historic Environment (NRHE) ID: 62147) is located close to the minor road south of Carscreugh Wind Farm.

Ecological Designations (Figure 5)

- 4.45 There is only one Local Wildlife Site (LWS) within or adjacent to the study area: the Banks of Dervaird, located to the south-west. This site is notable for its hazel scrub habitat, which provides important shelter and foraging opportunities for local wildlife, including birds, small mammals, and invertebrates. While relatively small in extent, the Banks of Dervaird LWS represents a valuable local ecological resource, supporting both conservation and landscape character objectives within the study area.

Recreational Resources (Figure 8)

- 4.46 The Southern Upland Way, a long-distance walking route listed as one of Scotland's Great Trails, crosses the north-western edge of the study area. It offers long sequential views of the surrounding landscape.
- 4.47 The Three Lochs Holiday Park is located in the north-east of the study area, covering a 485ha site with woodland and fields. Overlooking Loch Heron, the Park offers a mix of accommodation, including mobile homes, lodges, and camping facilities.
- 4.48 Torwood Country Lodges and Torwood Fishing are located to the west of the Three Lochs area. The site provides holiday lodge accommodation and access to two small fishing ponds, set within within the wooded grounds of Torwood House.
- 4.49 Whitecairn Holiday Park is located on a rural hillside, some 2km northeast of Glenluce. Offering a mix of mobile homes and lodges, it promotes relaxing and peaceful breaks in a quiet rural location.
- 4.50 In addition to the Southern Upland Way noted above, the only Core Path in the study area is Three Lochs Kirkowan (Path ID – KIRF/432/1-2).
- 4.51 The Moors of Wigtownshire Walk is a 29km circular route starting and ending in Glenluce, providing an experience of the Luce Valley and surrounding moorlands. The trail follows the valley before crossing open moors, including heathland, mosses, wetlands, and small watercourses, which support a diverse array of wildlife. Passing near the Three Lochs area, the route offers panoramic views across the lowlands and distant uplands.
- 4.52 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. Careful routeing is also necessary to ensure that the development does not adversely affect recreational activities and enjoyment of the holiday parks.

Other Routeing Considerations

- 4.53 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 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 10a and 10b)

- 4.54 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 incorporates 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 project area are associated with the Tarf Water and its tributaries, and, to a lesser extent, the Lady Burn.

Existing and Proposed Electricity Transmission Infrastructure (Figure 11)

- 4.55 The routing process takes account of the following existing overhead lines in the area in order to avoid unnecessary crossings and maintain required safety clearances:
- The 'BT Route' - an existing 132kV overhead line supported by steel lattice towers, which runs from Newton Stewart to Glenluce; and
 - The 'XX Route' - an existing 33kV overhead line supported by wood poles, which runs parallel to the south side of the BT Route between Newton Stewart to Glenluce.
- 4.56 A network of smaller 11kV wood pole lines traverses the study area, including connections from nearby wind farms to the Glenluce Substation.

Existing and Proposed Wind Farms (Figure 11)

- 4.57 Existing wind farms located within or close to the study area include Carscreugh Wind Farm, Glenchamber Wind Farm, Artfield Fell Wind Farm to the north of the A75 and Barlockhart Moor Wind Farm to the south of the A75.
- 4.58 Approved wind farms include Aries Wind Farm.
- 4.59 Wind farms, which are the subject of an application or are in scoping, include Artfield Forest Wind Farm, Craig Nab Wind Farm, Aries II Wind Farm and Garvilland Wind Farm to the north of the A75 and Barlockhart Moor Wind Farm Extension to the south of the A75.
- 4.60 There are also some single and pairs of wind turbines present within the area.

5 Routing Strategy and Identification and Description of Route Options

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

- Reflect the overarching routing objective and strategy;
- Remain consistent with SPEN's Routing Guidance; and
- Comply with the Holford Rules for overhead transmission lines.

The Routing Strategy

5.2 Whilst the routing objective is general and applicable to most overhead line projects, the routing strategy is specific to the Artfield Forest Connection Project. It has been developed with reference to the routing objective outlined in **Chapter 3** of this RCD, along with the routing considerations identified in **Chapter 4** and **Appendix C**. The strategy provides a consistent framework for identifying and evaluating route options, with the aim of selecting a preferred option that best achieves the objective while effectively balancing the identified considerations.

5.3 The routing strategy for the Artfield Forest Connection Project is as follows:

Identify a route which is as direct as possible between the proposed Artfield Wind Farm and the Ladyburn Collector Substation, following the natural contours of the intervening landscape as it transitions from the upland plateau through the prominent ridges of the upland fringe, to the distinctive drumlin landscapes to the south.

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

When crossing the River Bladnoch 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 Priority Peatland Habitat Category 1 and 2.

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 visitors to the Three Lochs Holiday Park and Whitecain Holiday Park. Consider their key features and layout, including existing and proposed uses, as well as important views.

Avoid direct impacts on the Southern Upland Way, Moors of Wigtownshire Walk, and Core Paths, while minimising likely effects on the views experienced along these recreational routes.

Minimise the amount of tree loss, including Ancient Woodland, NWI Woodland 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 wind turbines, as well as any proposals for the A75.

5.4 SPT is committed to ensuring its projects do not result in a loss of biodiversity and, where possible, deliver BNG. This commitment applies across all projects within its licensed areas in line with relevant legislation and policy.

5.5 SPT's approach aligns with the principles of NPF4, which places 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 ecological networks, and demonstrate long-term biodiversity improvements through careful planning, best-practice assessment, and the implementation of nature-based solutions.

- 5.6 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.

Description of Route Options

- 5.7 The topography of the area, together with the various technical and environmental constraints, has limited the number of feasible route options within the study area. The route options are
- 5.8 **Figures 3 and 4** show the three identified route options for the new overhead line. Each option shares the same connection points, beginning at the site for the proposed Artfield Forest Wind Farm Substation provided by the developer and terminating at the proposed Ladyburn Collector Substation.
- 5.9 The 'edges' of the mapped route options do not represent precise boundaries for routeing. The purpose of identifying these routes is to delineate the broad geographic areas where routeing an overhead line is considered preferable compared to other areas.

Route Option 1

- 5.10 From its starting point at the proposed Artfield Forest Wind Farm Substation, just south of Black Hill, Route Option 1 heads in a southwesterly direction through the coniferous plantation of Artfield Forest. On exiting the plantation, it continues west-southwest, either following the northern edge of the forest, or the southern edge and minor lane linking Tarf Bridge with Dranigower. After passing to the north of Glenchamber Wind Farm, the route turns to a broadly southerly direction following the lower-lying land along the valley of the Drumpail Burn and passing to the east of Larig Fell and Bught Fell. This section of the route option would require routeing to the east or west of a Scheduled Monument and potentially within the edge of the East Rhins ASI. It then passes between the properties of Garvilland and Drumphail, before joining Route Option 2. Continuing southwest, the route largely follows the alignment of the minor lane, crossing several smaller watercourses along the way.
- 5.11 In following the lane along the lower-lying land between Camrie Fell to the west and Carscreugh Fell to the east, the route benefits from the backdrop provided by the surrounding slopes. Carscreugh Wind Farm and other large wind farms are prominent features of this landscape, having altered its qualities of wildness, character, and remoteness. Near Whitecairn Holiday Park, the route options pass either east or west of the shelterbelt woodland situated east of the park, before reaching the proposed Ladyburn Collector Substation site south of Barmain Hill.

Route Option 2a

- 5.12 From its starting point at the proposed Artfield Forest Wind Farm Substation, just south of Black Hill, Route Option 2a heads southwest through the coniferous plantation of Artfield Forest. On exiting the plantation, it turns south and passes either side of White Hill through an area of peat deposits and several small watercourses. After crossing the minor lane that links Tarf Bridge with Dranigower, the route option broadly follows an existing north-south access track, passing Cairn Park and Glenchamber as it continues south toward the minor road linking Tarf Bridge with Dranigower Bridge.
- 5.13 The route continues southwest across the moorland and skirting the western slope of Bank Hill before joining the minor road connecting Glenluce with the Three Lochs. At Drumpail Bridge, it crosses the meandering course of the Drumpail Burn, a tributary of the Tarf Water, which is designated as an SAC. Continuing southwest, the route largely follows the alignment of the minor lane, crossing several smaller watercourses along the way.
- 5.14 In following the lane along the lower-lying land between Camrie Fell to the west and Carscreugh Fell to the east, the route benefits from the backdrop provided by the surrounding slopes. Carscreugh Wind Farm and other large wind farms are prominent features of this landscape, having altered its qualities of wildness, character, and remoteness. Near Whitecairn Holiday

Park, the route options pass either east or west of the shelterbelt woodland situated east of the park, before reaching the proposed Ladyburn Collector Substation site south of Barmain Hill.

Route Option 2b

- 5.15 Route Option 2b heads southeast from the proposed Artfield Forest Wind Farm Substation, passing through a short section of coniferous plantation. After exiting the plantation, the route joins a forest access track and continues south toward the minor road linking Tarf Bridge with Dranigower Bridge. At the lane it turns in a more southwesterly direction, passing between Tor Wood and the southern edge of Artfield Forest before joining Route Option 2a near Glenchamber.
- 5.16 By aligning with the lower-lying landform and avoiding localised hills, the route utilises the upper slopes and surrounding conifer plantations to provide a backdrop to views of the overhead line, reducing its visual prominence and potential skylining.

Route Option 3

- 5.17 Route Option 3 is the longest of the three options. From its starting point at the proposed Artfield Forest Wind Farm Substation, south of Black Hill, it runs southeast through an extended section of coniferous plantation before turning south to follow the minor road from Tarf Bridge, which provides access to Airyligg. The Tarf Water SAC constrains this part of the route to the west and plantation woodland and Loch Ornald to the east. A pinch point occurs near Airyligg, created by both the presence of residential properties and the need to cross the Tarf Water, where the valley broadens into ecologically sensitive habitats. To accommodate a potential alignment, the route has been widened at this location. South of the crossing, the route continues through Grennan Moss and a commercial plantation before descending into the drumlin landscape of the lowlands, where it passes around prominent hills including Derniemore Hill, Birrel Hill, and the Braid Hills, which rise above the surrounding peatland of Dergoals Moss.
- 5.18 East of Knockshee, Route Option 3 turns to the south-southwest to follow the A77 valley corridor, running broadly parallel to the A75 both the existing transmission line (BT Route) and a 33kV wood pole line (XX Route) for approximately 5km. It then turns northwards to connect into the Ladyburn Collector Substation, located south of Barmain Hill.

6 Appraisal of Route Options and Identification of the Preferred Route

- 6.1 This chapter summarises the appraisal of the three identified route options, which was informed by desk-based studies using GIS and field work, supported by professional judgement. It takes into account the Holford Rules (**Appendix B**), relevant routeing considerations (**Appendix C**), and the susceptibility of the landscape 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 appraisal 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 Artfield Forest Wind Farm with the proposed Ladyburn 132kV Collector Substation northeast of Glenluce, three potential route options have been identified, all running broadly northeast to southwest and numbered from west to east. Route Option 1 is approximately 10km long, Route Option 2a is 8.9km, Route Option 2b is 9km and Route Option 3 is the longest at 11.5km.
- 6.5 Key environmental constraints include the distinctive drumlin landform, which restricts direct alignments and creates a need for sensitive routeing. There are also many archaeological and heritage assets, as well as scattered residential properties, where avoiding direct visual impacts is a priority. Recreational assets, including the Three Lochs Holiday Park and Whitecairn Holiday Park, further increase visual sensitivity in the area.
- 6.6 Hydrological and ecological considerations are significant, with many small watercourses to be crossed, including the Drumpail Burn and the Tarf Water, both of which are part of the River Bladnoch SAC. Extensive areas of mossland and peatland (Priority Peatland Habitat Categories 1 and 2) cover large parts of the study area, representing both an ecological constraint and a carbon-sensitive resource to be avoided wherever possible.
- 6.7 Existing infrastructure also influences routeing. In the west, several existing and proposed wind farms limit available options, while the presence of an existing transmission line (BT Route) and the A75 introduces further technical and environmental complexity to routeing.

Landscape

- 6.8 Due to the location of the proposed Artfield Forest Wind Farm Substation, all three route options would need to cross sections of commercial plantation. Route Option 2 would cross the shortest section and is therefore considered preferable to the other two route options.
- 6.9 Route Options 1 and 2 both traverse broadly the same sections of LCTs, including a similar length of Plateau Moorland (LCT 173), which is classed as having higher susceptibility to a wood pole line. Consequently, there is relatively little difference in their likely effects on landscape character. By contrast, Route Option 3 passes through extended areas of Moss and Forest Lowland (LCT 167) and Drumlin Pasture in Moss and Moor Lowland (LCT 168), both of which are of higher susceptibility, making this option less preferable.

Visual Amenity

- 6.10 None of the route options are close to any towns or villages. Glenluce is sufficiently distant to be unaffected. The highest concentration of individual dwellings and small clusters occurs around the Gass and Three Lochs area and in the lower-lying farmland northeast of Glenluce. While local variations in topography and the prevalence of small woodlands and linear shelterbelts provide

some opportunities to mitigate the effects on views from these properties, Route Option 3 is marginally less preferred as it passes close to a pinch point around the Tarf Water and residential properties at Airyligg.

- 6.11 Route Option 1 lies closest to the Southern Upland Way, while Route Option 3 is close to the Three Lochs–Kirkcowan Core Path (Path ID – KIRF/432/1-2). Both Route Options 1 and 2 follow part of the Moors of Wigtownshire Walk. In addition, Route Options 1 and 2 pass near Whitecairn Holiday Park, whereas Route Option 3 passes through the popular Three Lochs area and is close to the Three Lochs Holiday Park. Overall, there is little to differentiate between the options, as each could affect views from recreational routes and visitor facilities.

Biodiversity

- 6.12 All three route options have the potential to give rise to significant effects as they pass close to watercourses forming part of the River Bladnoch SAC, designated for its freshwater habitats and species of European importance. Route Options 2 and 3 require direct crossings of these designated watercourses. In addition, Route Option 1 lies close to Kilhern Moss SAC, while Route Option 3 is near the Flow of Dergoals SAC and Derskelpin Moss SSSI. Although a Habitats Regulations Assessment (HRA) may be required, no significant issues are anticipated provided that no in-channel works are undertaken and appropriate buffers are maintained along watercourses. These SACs and SSSI are therefore not considered a differentiator in the selection of route options.
- 6.13 All three route options avoid local sites of high, medium, or low environmental value. However, protected species may be affected, particularly those associated with the freshwater habitats of the River Bladnoch SAC, as well as species linked to moorland, peatland, trees, woodlands, and shelterbelts. Given that Route Option 2 is shorter and more direct and therefore likely to result in comparatively reduced impacts on habitats and protected species.

Historic Environment

- 6.14 Route Option 1 skirts the edge of the East Rhins ASA interest and is within the setting of the Bennan of Garvilland, a Scheduled Monument (SM1955). Routes Options 1 and 2 are also close to the remains of Carscreugh Castle, a Scheduled Monument, which is situated next to Carscreugh Castle Cottages, a Category C listed building. Route Option 2 is also close to two Category C listed buildings on the south side of the woodland at Gass. Route Option 3 is not near any designated sites. Route Option 1 is the least preferred, as it could result in a significant impact on the setting of the Scheduled Monument and on the East Rhins ASA. There is little to differentiate between Route Options 2 and 3 regarding potential impacts on the Carscreugh Castle Scheduled Monument and the associated listed building, as well as the listed buildings near Gass, which could be mitigated through design refinements at the alignment stage.
- 6.15 There is little to differentiate between the route options in terms of non-designated heritage assets. All options would pass close to several undesigned features within the commercial plantation woodland surrounding the proposed Artfield Forest Wind Farm Substation site. Route Option 3 is also near a group of assets of known extent to the south of Loch Ronald. However, potential impacts on these assets could be mitigated through design refinements at the alignment stage. Consequently, no route option is considered preferable with respect to non-designated heritage assets.

Woodland and Forestry

- 6.16 Route Options 1 and 2 pass close to AWI woodland at Ballach-a-Heathry and the small, unnamed area near the remains of Carscreugh Castle. Provided an appropriate buffer is maintained, AWI designation does not influence route selection.
- 6.17 While the NWSS woodland within Route Option 2 could potentially be avoided through detailed alignment, Route Option 3 would require crossing an area of wet woodland along the Tarf Water near Airyligg. Route Option 1 is therefore preferred, as it does not intersect NWSS areas.

- 6.18 NFI woodland is present across all route options and cannot be avoided. However, Route Option 3 would result in the greatest loss of NFI woodland and is consequently the least preferred.

Land Use

- 6.19 With regard to agricultural potential, there is little to differentiate between the route options. None of the land affected is of high agricultural quality. The highest-grade land potentially impacted is Grade 4.2, which is capable of producing a limited range of crops, primarily on grassland with occasional short arable breaks for forage crops.
- 6.20 In terms of forestry capability, most of the land within the study area is classified as Grade F5, indicating limited flexibility for the growth and management of tree crops, or Grade F6, indicating very limited flexibility.

Flood Risk

- 6.21 Route Option 2 would require a crossing of the Drumpail Burn, while Route Option 3 would involve two crossings of the Tarf Water and one crossing of the Lady Burn. All of these watercourses are associated with a 10% annual probability of flooding. Route Option 1 is therefore preferable, as it avoids areas of high flood risk.

Technical and Economic Considerations

- 6.22 SPT conducted a technical review of the four route options in June 2024. It concluded that, from an engineering perspective, a new 132kV wood pole line could be built in any of the three route options, although each presents several challenges, especially concerning peat areas, access through forestry, existing and planned wind farms.

The Preferred Route Option

- 6.23 Overall, based on environmental considerations, Route Option 2 is preferred, Route Option 3 is the least preferred.
- 6.24 Three route options have been identified to connect the proposed Artfield Forest Wind Farm with the Ladyburn Collector Substation. All are subject to environmental and technical constraints, including peatland, designated watercourses within the River Bladnoch SAC, archaeological and heritage assets, and existing infrastructure. Route Option 1 is less favourable due to its proximity to the Bennan of Garvilland Scheduled Monument and the East Rhins ASA. Route Option 3 is the least preferred, as it is the longest and therefore has the greatest potential for environmental impact, including effects on the River Bladnoch SAC, the Lady Burn, sensitive drumlin landscapes east of Glenluce, and areas of Category 1 Priority Peatland habitat.
- 6.25 On balance therefore **Route Option 2 is identified as the preferred option.**

7 Consultation and Next Steps

Consultation Process

- 7.1 As set out in **Chapter 1** of this RCD, SPT will be required to apply to Scottish Ministers for consent under section 37 of the 1989 Act for consent for the Artfield Forest Connection Project. At the same time, SPT will also apply for deemed planning permission for the project and associated works under Section 57(2) of the 1997 Act. This application will cover both the new overhead line and ancillary works. Additionally, a request for a screening opinion will be submitted to the ECU to determine if the project requires an EIA.
- 7.2 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.
- 7.3 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 preferred route, as set out in this RCD in Autumn 2025.
 - Stage 2 Consultation on the proposed route is anticipated in Spring 2026.

Reporting on the Consultation

- 7.4 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.
- 7.5 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 set out a clear explanation for why matters raised through the consultation process have not influenced the submitted proposal.

Approach to and Objective of Stage 1 Consultation

- 7.6 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 Artfield Forest Connection Project in the most effective way.
- 7.7 The overall objective of the consultation process is to ensure that all parties with an interest in the Artfield Forest Connection 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. Additionally, it is intended that the key issues identified through this process will be recorded and presented to decision-makers to assist in the planning process.
- 7.8 SPT has taken steps to identify stakeholders and interested parties before the Stage 1 Consultation and remains committed to engaging with all stakeholders and communities both during and outside consultation periods.

Consultees

- 7.9 SPT will consult with all landowners within the corridor of the preferred route option. 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.
- 7.10 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;
 - Landowners within the consultation zone;
 - Known local interest and community groups; and

- The public in general.

Stage 1 Consultation Launch and Duration

- 7.11 Stage 1 Consultation is scheduled to take place from 28 October to 25 November 2025. To prepare, notices will be published in the Stranraer Free Press on 9, 16, and 23 October 2025. A consultation leaflet will also be sent to stakeholders, landowners, local interest groups, and community groups, as well as to all residential properties within the study area. These notifications are intended to inform people about the consultation and invite them to take part.

Sources of Information about the Consultation

- 7.12 In addition to this RCD, a consultation leaflet has been prepared, which provides a summary of the Artfield Forest Connection Project and how to participate in the Stage 1 Consultation. A project website has also been set up, which provides information about the Artfield Forest Connection Project and hosts a library of publicly available documents for viewing or downloading:

https://www.spenergynetworks.co.uk/pages/artfield_forest_wind_farm_connection_project.aspx#tablist1-panel2

Providing feedback

- 7.13 There will be several ways for people to make comments:

In-person events

- 7.14 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 Artfield Forest Connection Project:
- Tuesday 28th October at Glenluce Public Hall from 2pm to 7pm.

Online

- 7.15 Comments can be made online at https://www.spenergynetworks.co.uk/pages/artfield_forest_wind_farm_connection_project.aspx#tablist1-panel2.ai/ using the online version of the feedback form.

Email

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

Responding to Feedback

- 7.17 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 will not be able to respond to individual comments, people will be able to request to be kept informed by email as and when there are developments in the Artfield Forest Connection Project, including the availability of the Consultation Feedback Report and confirmation of the proposed route option.

Appendix A

The Holford Rules:

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

Artfield Forest Connection Project

Contents

1	Introduction	1
2	The Holford Rules	2
	Supplementary Notes.....	4
	Further Notes on Clarification to the Holford Rules	4

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1 Introduction

- 1.1 In 1959, Lord Holford, then advisor to the Central Electricity Generating Board (CEGB), developed a series of planning guidelines concerning amenity issues, which have subsequently become known as the 'Holford Rules'. A subsequent review of the Holford Rules (and NGC clarification notes) was undertaken by Scottish Hydro Electric Transmission Limited (SHETL) and SP Transmission Ltd (SPT) in 2003. This review concluded that the Holford Rules should be used as originally formulated, but with the NGC's notes of clarification modified and expanded to meet Scottish circumstances.
- 1.2 The following lists the Holford Rules and Supplementary Notes.

2 The Holford Rules

2.1 The Holford Rules with notes and clarifications are as follows:

Rule 1: Avoid altogether, if possible, the major areas of high amenity value, by so planning the general route of the line in the first place, even if the total mileage is somewhat increased in consequence.

2.2 Notes on Rule 1:

- Investigate the possibility of alternative routes, avoiding altogether, if possible, major areas of highest amenity value. The consideration of alternative routes must be an integral feature of environmental statements. If there is an existing transmission line through a major area of highest amenity value and the surrounding land use has to some extent adjusted to its presence, particularly in the case of commercial forestry, then the effect of remaining on this route must be considered in terms of the effect of a new route avoiding the area.
- Areas of highest amenity value require to be established on a project-by-project basis considering Schedule 9 to The Electricity Act 1989, Scottish Planning Policies, National Planning Policy Guidelines, Circulars and Planning Advice Notes and the spatial extent of areas identified

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

- Special Area of Conservation;
- Special Protection Area;
- Ramsar Site;
- National Scenic Areas (Scotland);
- National Landscapes (England);
- National Parks;
- National Nature Reserves;
- Protected Coastal Zone Designations;
- Sites of Special Scientific Interest (SSSI);
- Schedule of Ancient Monuments;
- Listed Buildings;
- Conservation Areas;
- World Heritage Sites (a non-statutory designation; and
- Historic Gardens and Designed Landscapes (a non-statutory designation)

Rule 2: Avoid smaller areas of high amenity value, or scientific interest by deviation; provided that this can be done without using too many angle towers, i.e. the more massive structures that are used when lines change direction.

2.4 Notes on Rule 2:

- Small areas of highest amenity value not included in Rule 1 as a result of their spatial extent should be identified along with other areas of regional or local high amenity value identified from development plans.
- Effects on the setting of historic buildings and other cultural heritage features should be minimised.
- If there is an existing transmission line through an area of high amenity value and the surrounding land uses have to some extent adjusted to its presence, particularly in the case of commercial forestry, then the effect of remaining on this line must be considered in terms of the effect of a new route deviating around the area.

Rule 3: Other things being equal, choose the most direct line, with no sharp changes of direction and thus with few angle towers.

2.5 Notes on Rule 3:

- Where possible choose inconspicuous locations for angle towers, terminal towers and sealing end compounds.
- Too few angles on flat landscape can also lead to visual intrusion through very long straight lines of towers, particularly when seen nearly along the line. The fewer more massive structures used to support the transmission lines, the less impact upon the amenity of the area. However, it is also suggested that in flat or open landscapes, support poles or towers should not be erected in a straight line, as this increases the visual intrusion due to an artificially linear feature being introduced into the landscape.

Rule 4: Choose tree and hill backgrounds in preference to sky backgrounds, wherever possible; and when the line has to cross a ridge, secure this opaque background as long as possible and cross obliquely when a dip in the ridge provides an opportunity. Where it does not, cross directly, preferably between belts of trees.

Rule 5: Prefer moderately open valleys with woods where the apparent height of the towers will be reduced, and views of the line will be broken by trees.

2.6 Notes on Rules 4 and 5:

- Utilise background and foreground features to reduce the apparent height and domination of towers from main viewpoints.
- Minimise the exposure of numbers of towers on prominent ridges and skylines.
- Where possible follow open space and run alongside, not through woodland or commercial forestry, and consider opportunities for skirting edges of copses and woods. Where there is no reasonable alternative to cutting through woodland or commercial forestry, the Forestry Commission Guidelines should be followed (Forest Landscape Design Guidelines, second edition, The Forestry Commission 1994 and Forest Design Planning – A Guide to Good Practice, Simon Bell/The Forest Authority 1998).
- Protect existing vegetation, including woodland and hedgerows, and safeguard visual and ecological links with the surrounding landscape.

Rule 6: In country which is flat and sparsely planted, keep the high voltage lines as far as possible independent of smaller lines, converging routes, distribution poles and other masts, wires and cables, so as to avoid a concatenation or 'wirescape'.

2.7 Notes on Rule 6:

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

Rule 7: Approach urban areas through industrial zones, where they exist; and when pleasant residential and recreational land intervenes between the approach line and the substation, go carefully into the comparative costs of undergrounding, for lines other than those of the highest voltage.

2.8 Notes on Rule 7:

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

Explanatory Note on Rule 7:

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

Supplementary Notes

Residential Areas

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

Designations of County, District and Local Value

- 2.10 Where possible choose routes which minimise the effect on Special Landscape Areas, areas of Great Landscape Value and other similar designations of County, District or Local value.

Alternative Steel Lattice Tower Designs

- 2.11 In addition to adopting appropriate routeing, evaluate where appropriate the use of alternative steel lattice tower designs available where these would be advantageous visually, and where the extra cost can be justified.

Further Notes on Clarification to the Holford Rules

Line Routeing and People

- 2.12 The Holford Rules focused on landscape amenity issues for the most part. However, line routeing practice has given greater importance to people, residential areas etc. The following notes are intended to reflect this.
- Avoid routeing close to residential areas as far as possible on grounds of general amenity.
 - In rural areas, avoid as far as possible dominating isolated houses, farms or other small-scale settlements.
 - Minimise the visual effect perceived by users of roads and public rights of way, paying particular attention to the effects of recreational, tourist and other well-used routes.

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

Interpretation of The Holford Rules 1 and 2

Introduction

- 2.13 Rule 1 refers to avoiding major areas of highest amenity value, Rule 2 refers to avoiding smaller areas of high amenity value.
- 2.14 These Rules, therefore, require identification of areas of amenity value in terms of highest and high, implying a hierarchy, and the extent of their size(s) or area(s) in terms of major and smaller areas.
- 2.15 The NGC Notes to these Rules identify at Rule 1(b) areas of highest amenity value and at Rule 2(a) and (b) of high amenity value that existed in England circa 1992.

Designations

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

Amenity

- 2.18 The term ‘Amenity’ is not defined in The Holford Rules but has generally been interpreted as designated areas of scenic, landscape, nature conservation, scientific, architectural or historical interest.
- 2.19 This interpretation is supported by paragraph 3 of Schedule 9 to the Electricity Act 1989 (the Electricity Act). Paragraph 3 (1)(a) requires that in formulating any relevant proposals the licence holder must have regard to the desirability of preserving natural beauty, or conserving flora, fauna and geological or physiological features of special interest and of protecting sites, buildings, including structures and objects of architectural, historic or archaeological interest. Paragraph 3 (1)(b) requires the license holder to do what he reasonably can do to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any flora, fauna, features, sites, buildings or objects.

Hierarchy of Amenity Value

- 2.20 Rules 1 and 2 imply a hierarchy of amenity value from highest to high.
- 2.21 Schedule 9 to the Electricity Act gives no indication of hierarchy of value, and there is no suggestion of a hierarchy of value in the National Planning Framework (NPF4). Nevertheless, designations give an indication of the level of importance of the interest to be safeguarded.

Major and Smaller Areas

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

Conclusion

- 2.23 Given that both the spatial extent in terms of major and smaller and the amenity value in terms of highest and high that must be considered in applying Rules 1 and 2, that no value in these terms is provided by either Schedule 9 to the Electricity Act 1989 or NPF4, then these must be established on a project-by-project basis. Designations can be useful in indicating the level of importance and thus value of the interest to be safeguarded. The note to The Holford Rules can thus only give examples of the designations which may be considered to be of the highest amenity value.

The setting of a Scheduled Ancient Monument or a Listed Building

- 2.24 The NGC note to Rule 2 refers to the setting of historic buildings and other cultural heritage features. The Ancient Monuments and Archaeological Areas Act 1979 (as amended) governs scheduled monuments in Scotland but does not define “setting” in law. However, the impact on setting is treated as a material consideration in planning and heritage consent processes, meaning development proposals must assess how they may affect the way a monument is experienced or understood.

- 2.25 Although not explicitly defined in legislation, Historic Environment Scotland (HES) defines setting as the way the surroundings of a historic asset or place contribute to how it is understood, appreciated and experienced. HES provides guidance that is widely used to define setting.

Environmental and Planning Designations – Examples of Designations to be Considered in the Routeing of New High Voltage Transmission Lines

Major Areas of Highest Amenity Value

- 2.26 In Scotland relevant national or international designations for major areas of highest amenity value include the following:
- Special Areas of Conservation;
 - Special Protection Areas;
 - Ramsar Sites;
 - National Scenic Areas;
 - National Parks;
 - National Nature Reserves;
 - Protected Coastal Zone Designations;
 - Sites of Special Scientific Interest;
 - Scheduled Ancient Monuments;
 - Listed Buildings;
 - Conservation Areas;
 - World Heritage Sites; and
 - Historic Gardens and Designated Landscapes.

Other Smaller Areas of High Amenity Value

- 2.27 There are other designations identified in development plans of local planning authorities, which include areas of high amenity value:
- Special Landscape Areas;
 - Areas of Great Landscape Value;
 - Regional Scenic Areas;
 - Regional Parks; and
 - Country Parks.
- 2.28 The nature of the landscape in these areas is such that some parts may also be sensitive to intrusion by high-voltage overhead electricity lines but it is likely that less weight would be given to these areas than to National Scenic Areas and National Parks.

Flora and Fauna

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

Area of Historic, Archaeological or Architectural Value

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

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

Green Belts

- 2.31 The purposes of Green Belts are generally not directly concerned with the quality of the landscape.

Appendix B

Figures

Artfield Forest Connection Project

Key:

-  Study Area
-  Existing Steel Lattice Tower Line
-  Artfield Forest Wind Farm Connection Area
-  Ladyburn Substation Siting Area

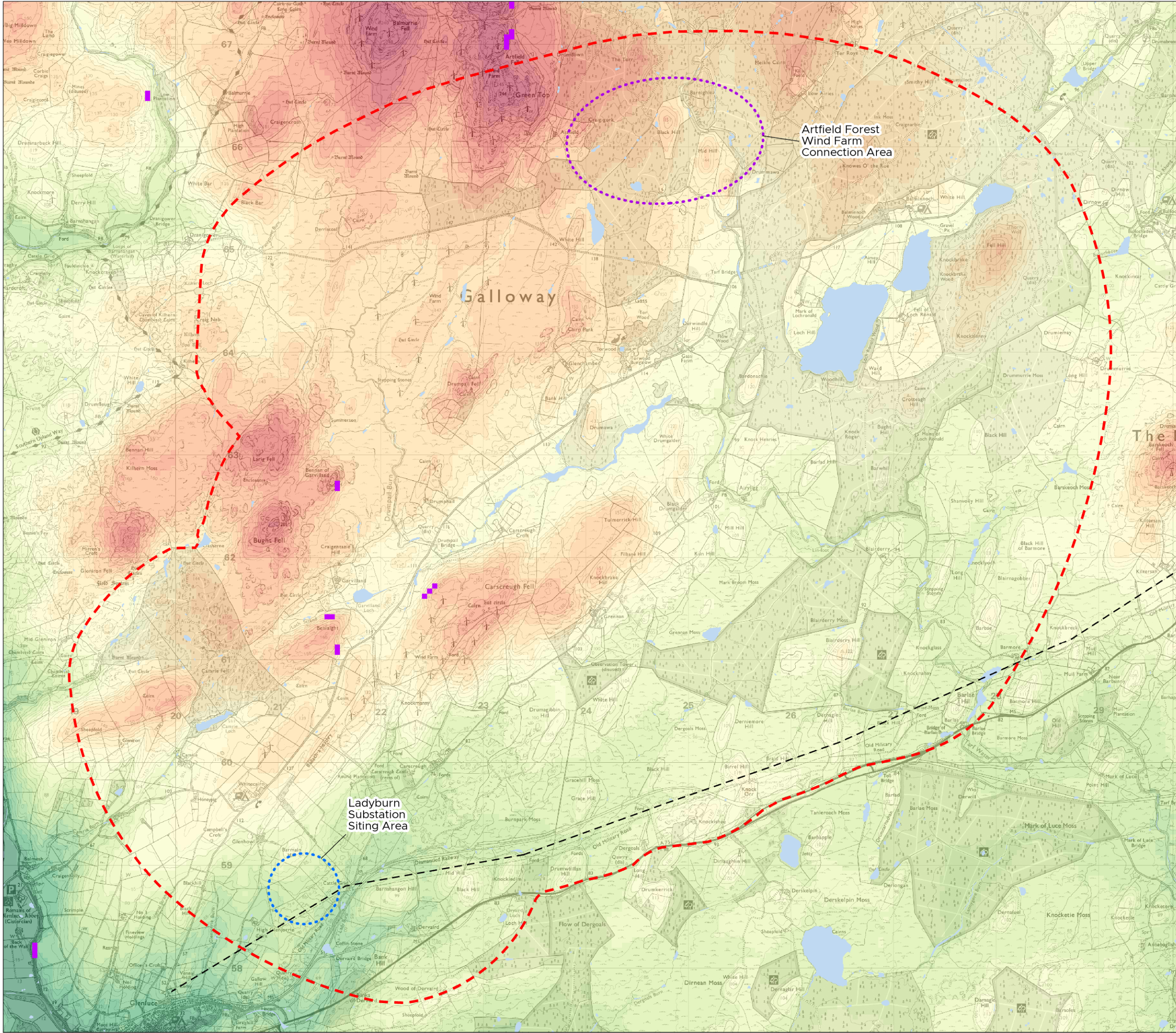


Artfield Forest Connection Project

Figure 2 - Topography

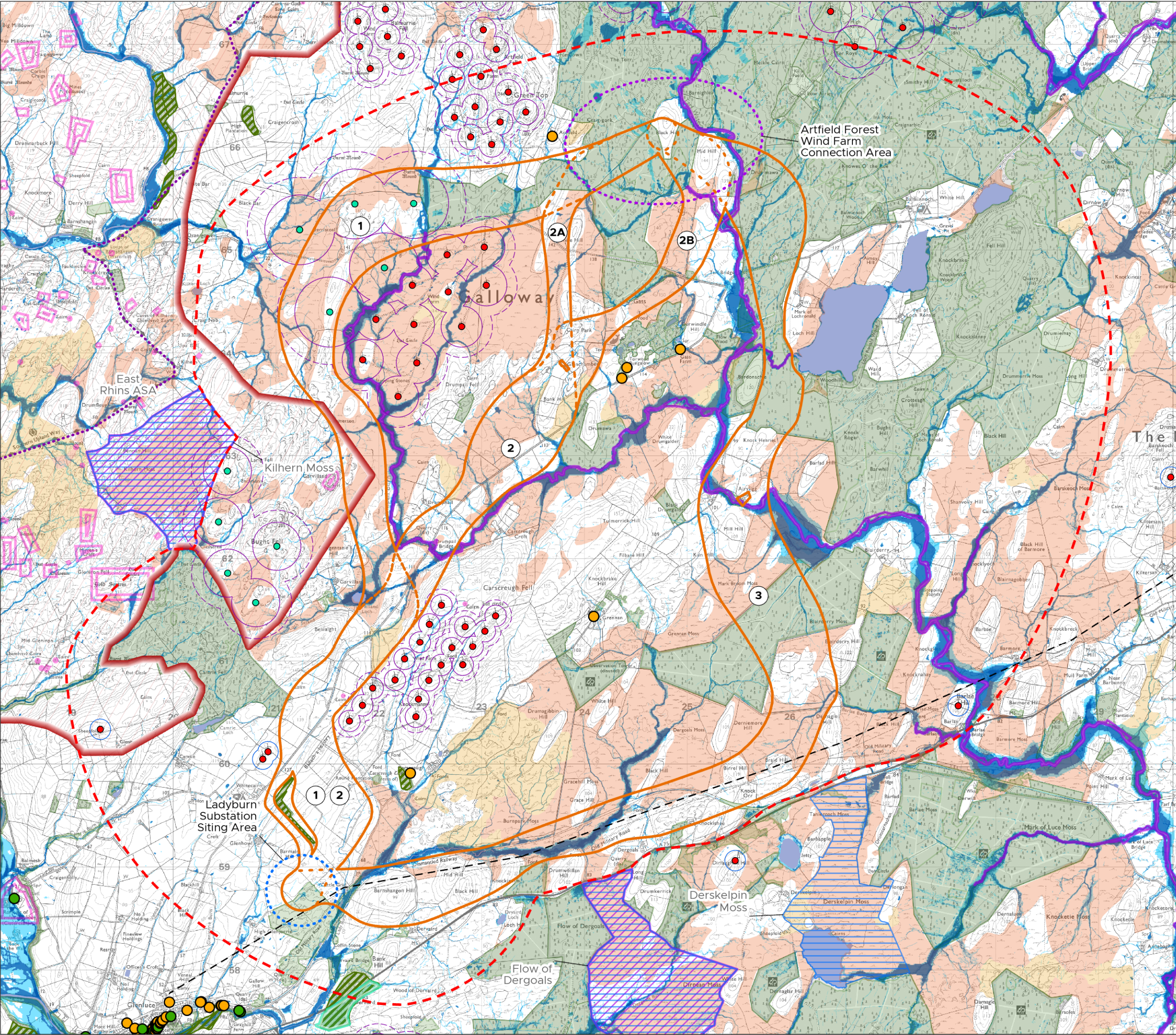
- Key:
- Study Area
 - Existing Steel Lattice Tower Line
 - Artfield Forest Wind Farm Connection Area
 - Ladyburn Substation Siting Area

Terrain Elevation (mAOD)	
	< 20
	20 - 30
	30 - 40
	40 - 50
	50 - 60
	60 - 70
	70 - 80
	80 - 90
	90 - 100
	100 - 110
	110 - 120
	120 - 130
	130 - 140
	140 - 150
	150 - 160
	160 - 170
	170 - 180
	180 - 200
	200 - 220
	> 220
Terrain Gradient	
	15 < Slope < 22 degrees
	Gradient > 22 degrees
	OS VectorMap District Surface Water



Artfield Forest Connection Project

Figure 3 - Routing Considerations and Route Options



Key:

- Study Area
- Existing Steel Lattice Tower Line
- Artfield Forest Wind Farm Connection Area
- Ladyburn Substation Siting Area
- Route Options

OS VectorMap District Surface Water

Southern Upland Way

Listed Building

- Category B
- Category C
- Scheduled Monument
- Archaeologically Sensitive Area (ASA)
- Local Nature Conservation Site (LNCS)
- Ancient Woodland (AWI)
- Special Area of Conservation (SAC)
- Site of Special Scientific Interest (SSSI)
- National Forest Inventory Woodland

Priority Peatland Habitat - Category 1

Priority Peatland Habitat - Category 2

Installed or Approved Wind Turbine

Wind Turbine at Planning Application Stage

2x Turbine Rotor Diameter Buffer Area

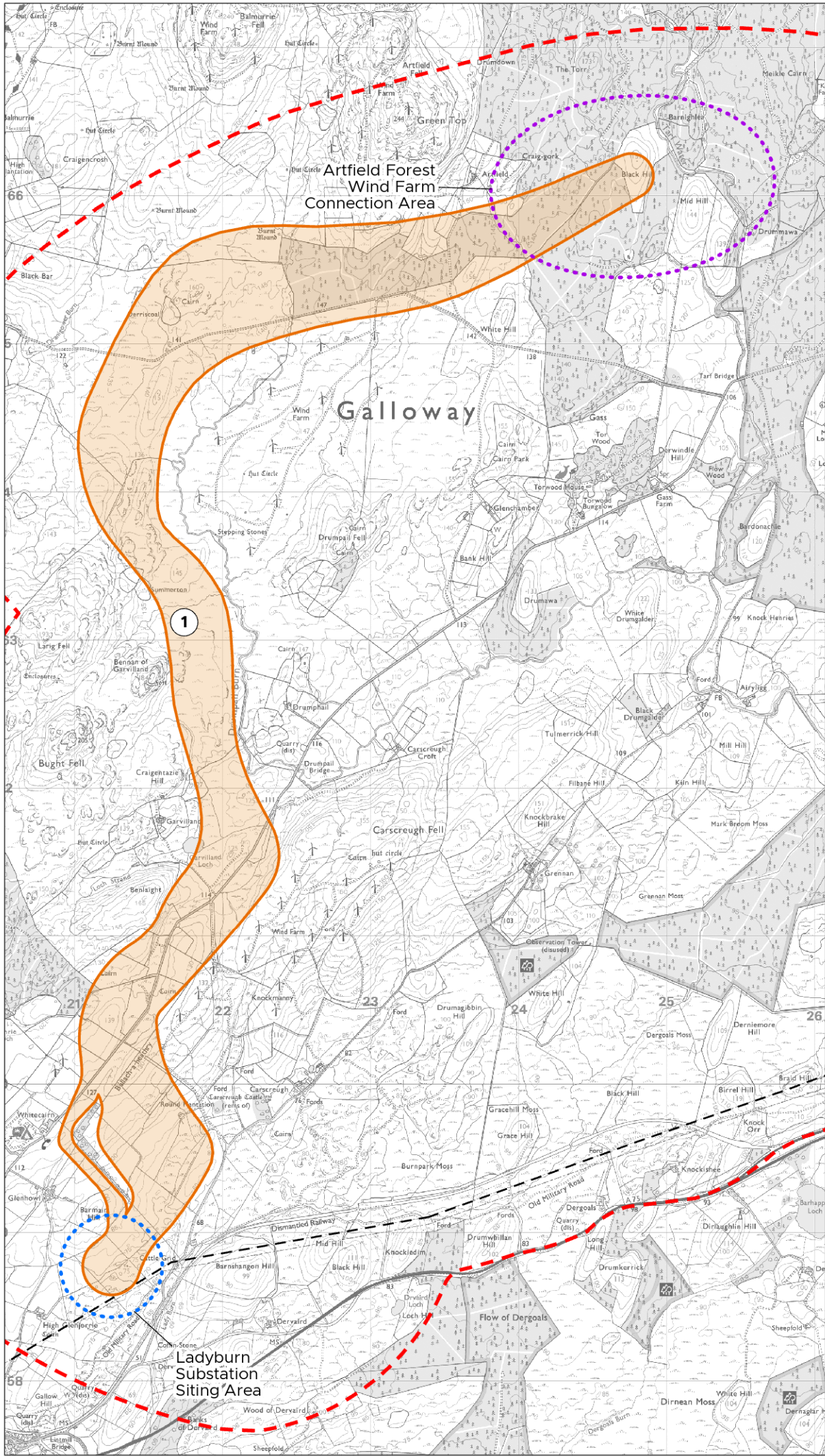
3x Turbine Rotor Diameter Buffer Area

Individual Turbine Minimum 100m Buffer Area

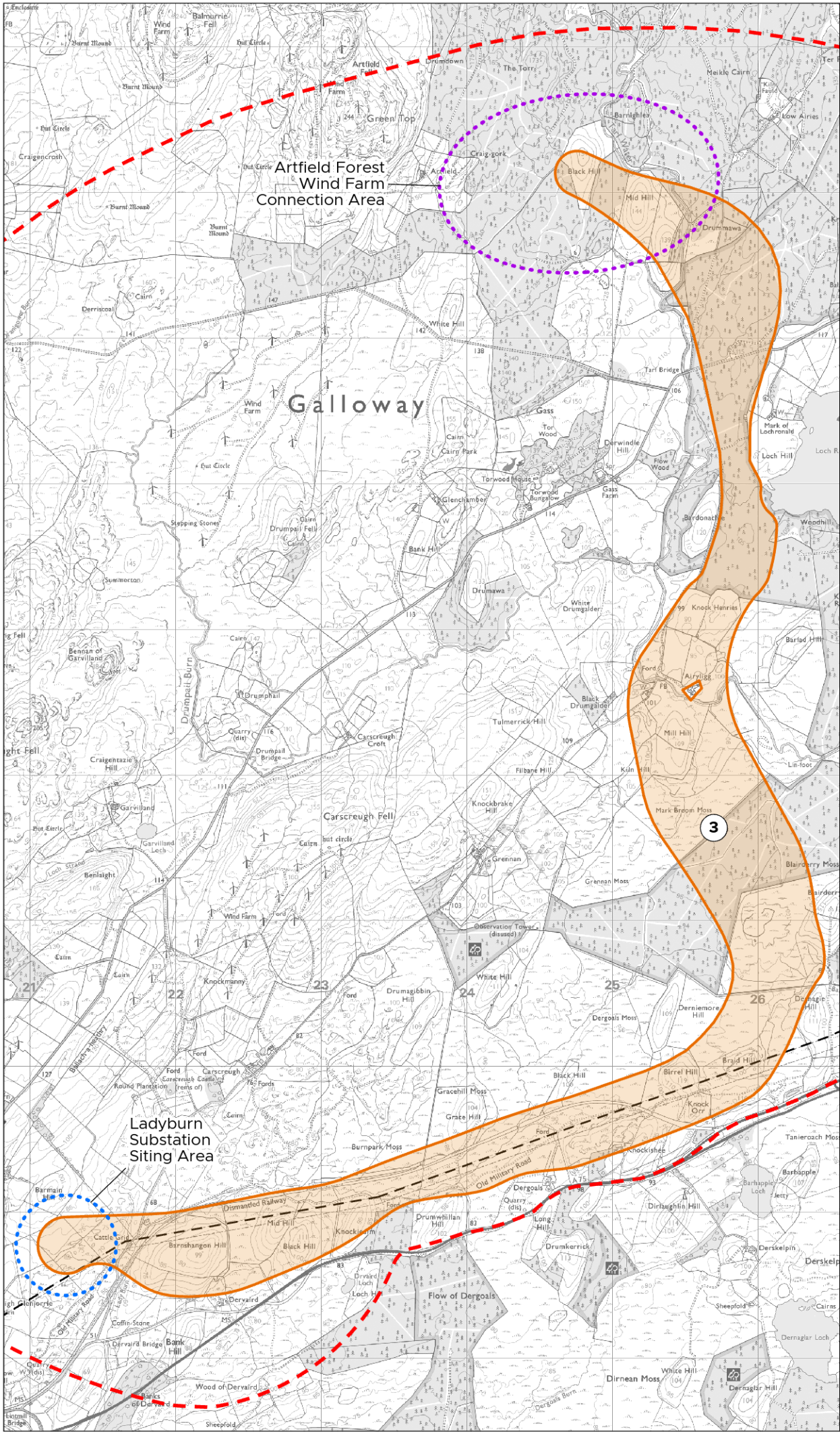
Flooding Risk - Medium Likelihood

Flooding Risk - High Likelihood





Route Option 1



Route Option 3

Artfield Forest Connection Project

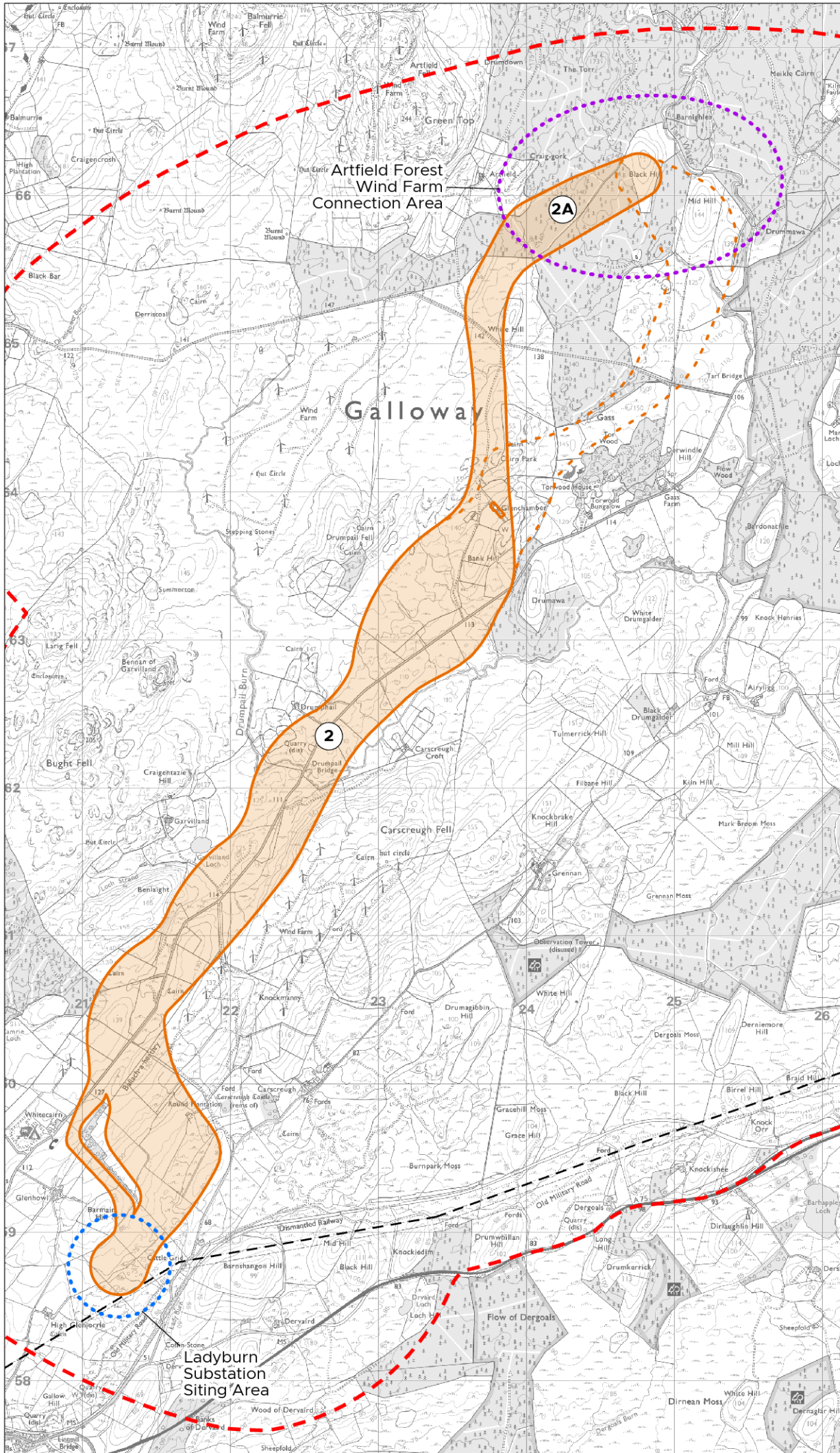
Figure 4a - Route Options 1 and 3

- Key:
- Study Area
 - Existing Steel Lattice Tower Line
 - Artfield Forest Wind Farm Connection Area
 - Ladyburn Substation Siting Area
 - Route Option

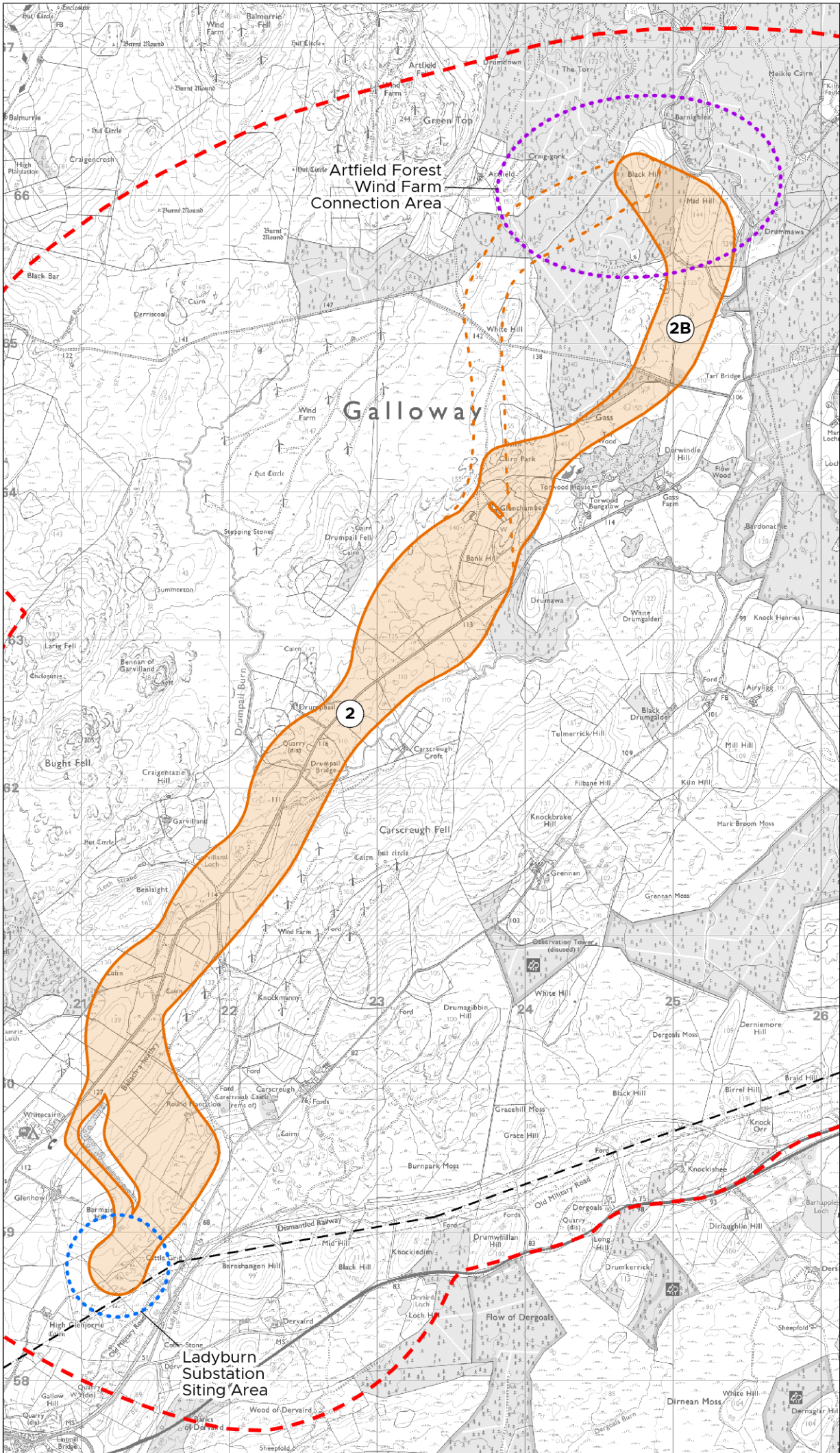


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Route Option 2 (2 + 2A)



Route Option 2 (2 + 2B)

Artfield Forest Connection Project

Figure 4b - Route Options 2A and 2B

- Key:
- Study Area
 - Existing Steel Lattice Tower Line
 - Artfield Forest Wind Farm Connection Area
 - Ladyburn Substation Siting Area
 - Route Option



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Artfield Forest Connection Project

Figure 5 - Biodiversity and Geological Conservation

Key:

Study Area

Existing Steel Lattice Tower Line

Artfield Forest Wind Farm Connection Area

Ladyburn Substation Siting Area

Route Options

Special Landscape Area (SLA)

Local Nature Conservation Site (LNCS)

Ancient Woodland (AWI)

Special Protection Area (SPA)

Site of Special Scientific Interest (SSSI)

Special Area of Conservation (SAC)

National Forest Inventory Woodland

Priority Peatland Habitat - Category 1

Priority Peatland Habitat - Category 2

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Artfield Forest Connection Project

Figure 6 - Archaeology and Cultural Heritage

Key:

Study Area

Existing Steel Lattice Tower Line

Artfield Forest Wind Farm Connection Area

Ladyburn Substation Siting Area

Route Options

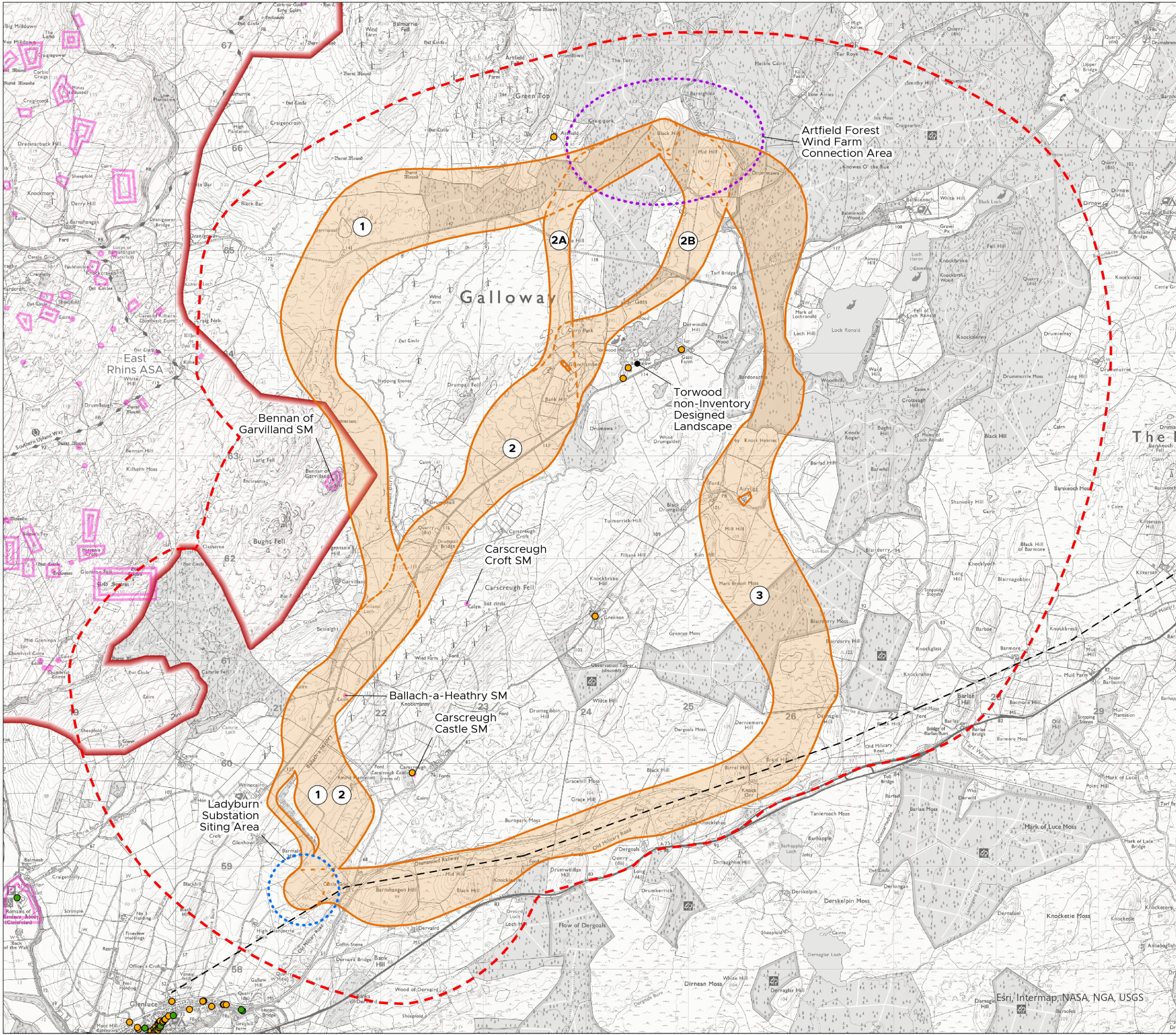
Listed Building

Category B

Category C

Scheduled Monument

Archaeologically Sensitive Area (ASA)



Artfield Forest Connection Project

Figure 7 - Woodland and Forestry

Key:

Study Area

Existing Steel Lattice Tower Line

Artfield Forest Wind Farm Connection Area

Ladyburn Substation Siting Area

Route Options

Native Woodland (NWSS)

Ancient Woodland (AWI)

National Forest Inventory (NFI)

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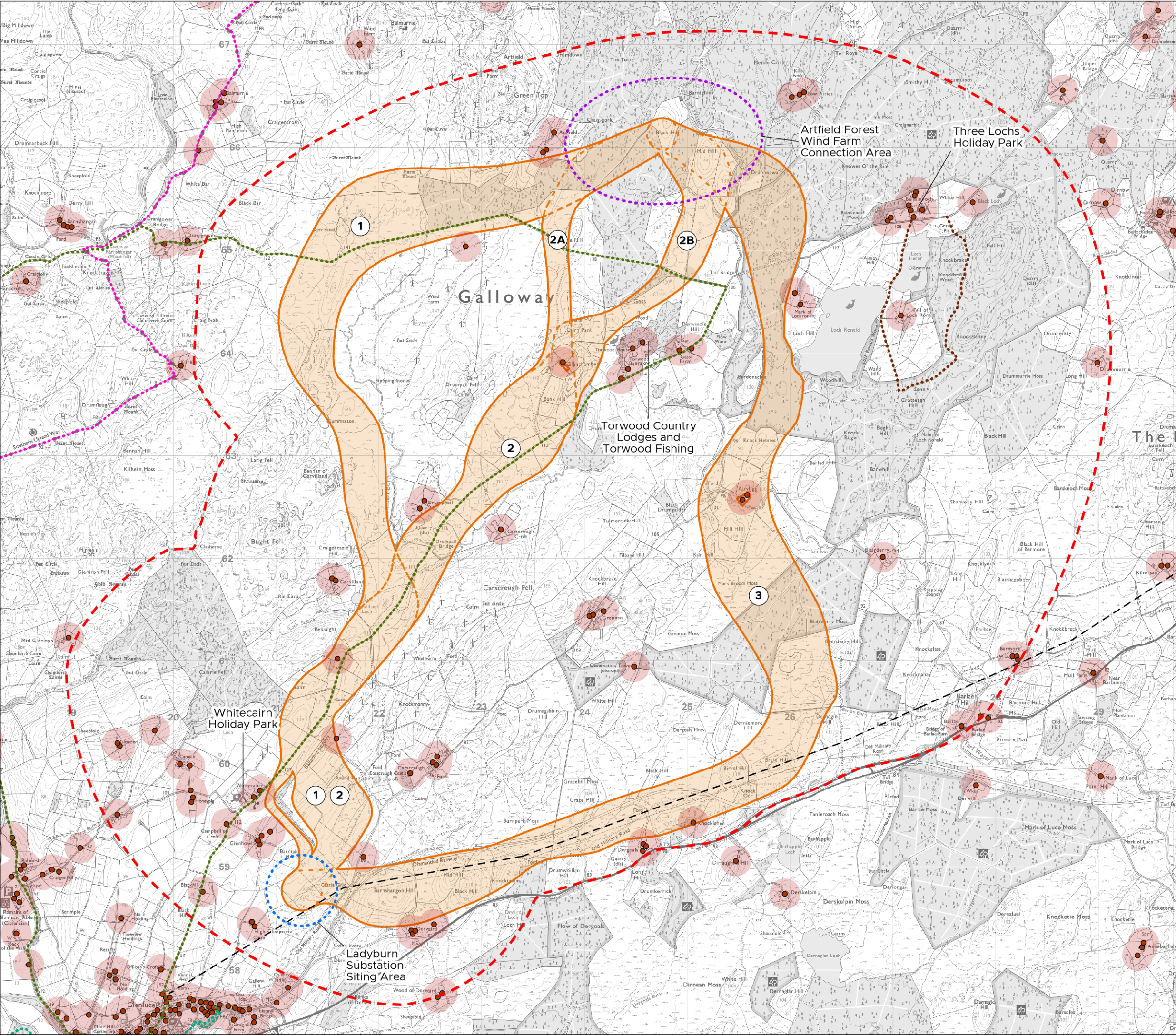
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Artfield Forest Connection Project

Figure 8 - Landscape and Visual Receptors



- Key:
- Study Area
 - Existing Steel Lattice Tower Line
 - Artfield Forest Wind Farm Connection Area
 - Ladyburn Substation Siting Area
 - Route Options
 - Existing Property (Residential and Other Type)
 - Existing Property - 150m buffer
 - Southern Upland Way
 - Moors of Wigtownshire Walk
 - Core Path ID - KIRF/432/1-2
 - Other Core Paths



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Artfield Forest Connection Project

Figure 9 - Landscape Character Types

Key:

Study Area

Existing Steel Lattice Tower Line

Artfield Forest Wind Farm Connection Area

Ladyburn Substation Siting Area

Route Options

Landscape Character Type

159 - Shallow Flat Bottomed Valley

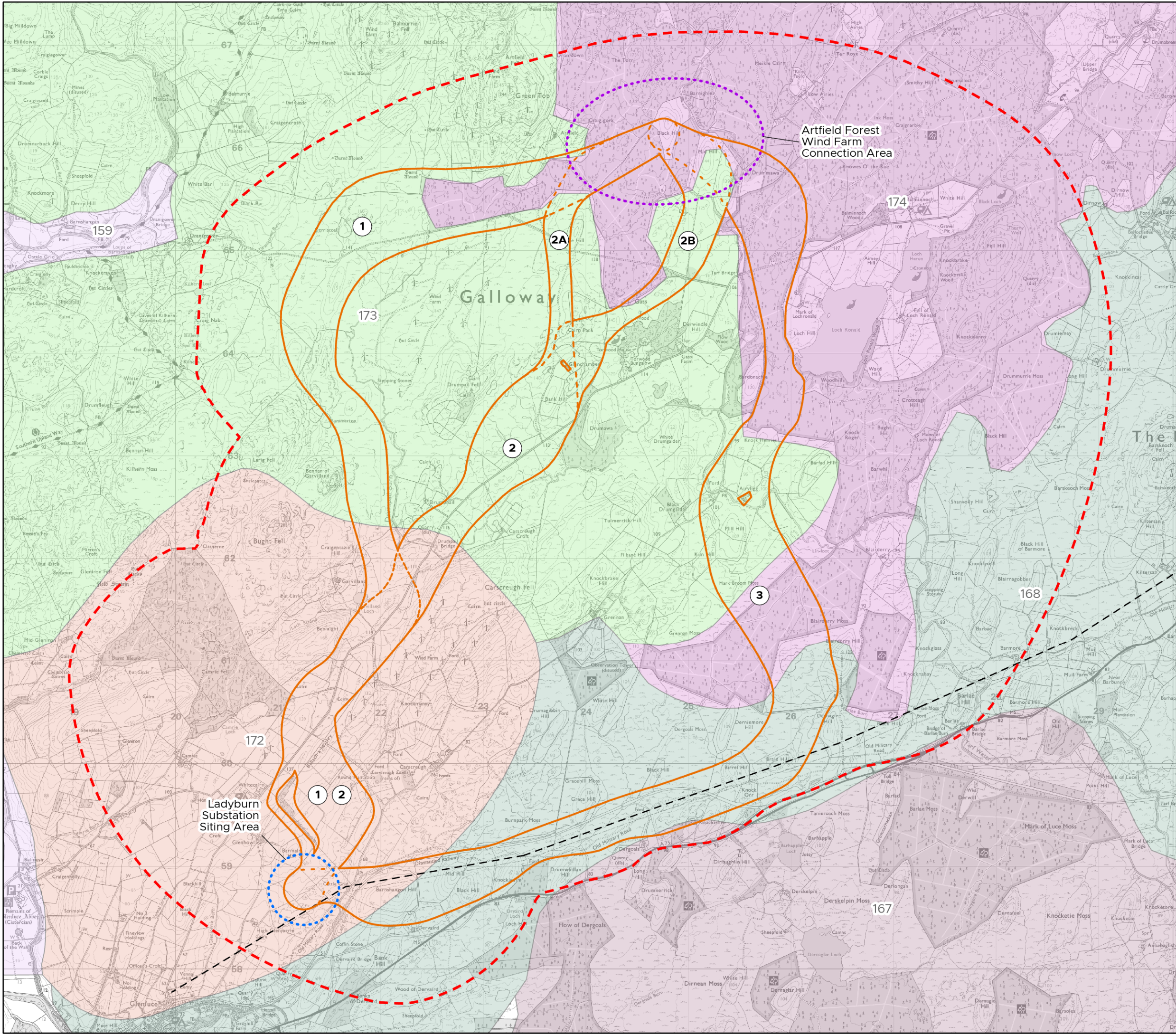
167 - Moss and Forest Lowland

168 - Drumlin Pasture in Moss and Moor Lowland

172 - Upland Fringe - Dumfries and Galloway

173 - Plateau Moorland - Dumfries and Galloway

174 - Plateau Moorland with Forest - Dumfries and Galloway



Artfield Forest Connection Project

Figure 10a
Flood Risk - Surface Water and
Small Watercourses

Key:

-  Study Area
-  Existing Steel Lattice Tower Line
-  Artfield Forest WF Connection Area
-  Ladyburn Substation Siting Area
-  Route Options

 Surface Water and River 10m Buffer (OS VectorMap District Surface Water)
 Small Water Course (OS VectorMap District Surface Water)

SEPA Surface Water and Small Water Courses Flooding Risk

- High Likelihood - Each year this area has a 10% chance of flooding
- Medium Likelihood - Each year this area has a 0.5% chance of flooding



Artfield Forest Connection Project

Figure 10b
Flood Risk - Rivers

Key:

Study Area

Existing Steel Lattice Tower Line

Artfield Forest WF Connection Area

Ladyburn Substation Siting Area

Route Options

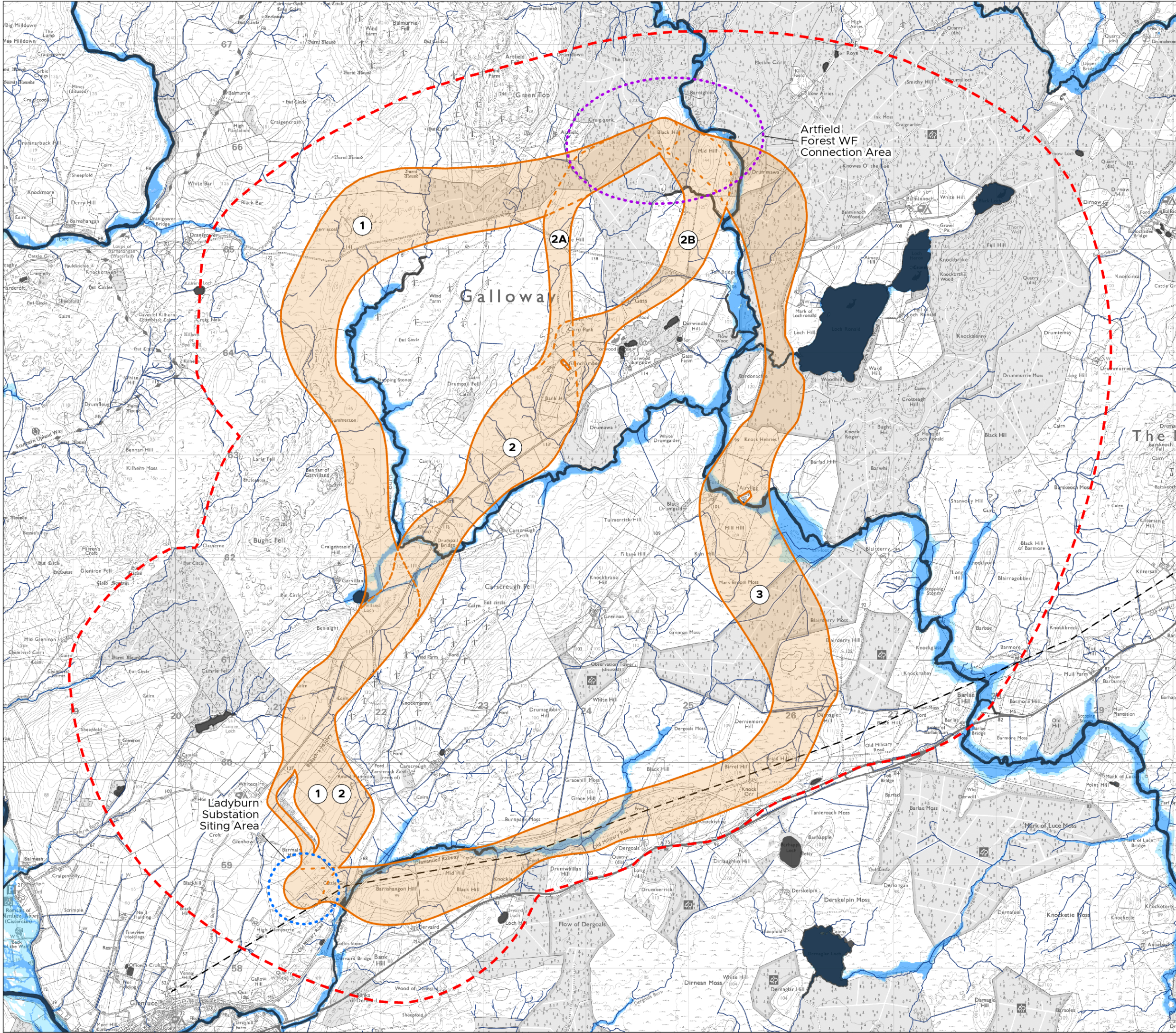
Surface Water and River 10m Buffer (OS VectorMap District Surface Water)

Small Water Course (OS VectorMap District Surface Water)

SEPA River Flooding Risk

High Likelihood - Each year this area has a 10% chance of flooding

Medium Likelihood - Each year this area has a 0.5% chance of flooding



Artfield Forest Connection Project

Figure 11 - Infrastructure

Key:

Study Area

Existing Steel Lattice Tower Line

Existing 33kV Wood Pole Line

A Road

Artfield Forest Wind Farm Site Boundary

Artfield Forest Wind Farm Connection Area

Ladyburn Substation Siting Area

Route Options

Installed or Approved Wind Turbine

Wind Turbine at Planning Application Stage

2x Turbine Rotor Diameter Buffer Area

3x Turbine Rotor Diameter Buffer Area

Minimum 100m Buffer Area

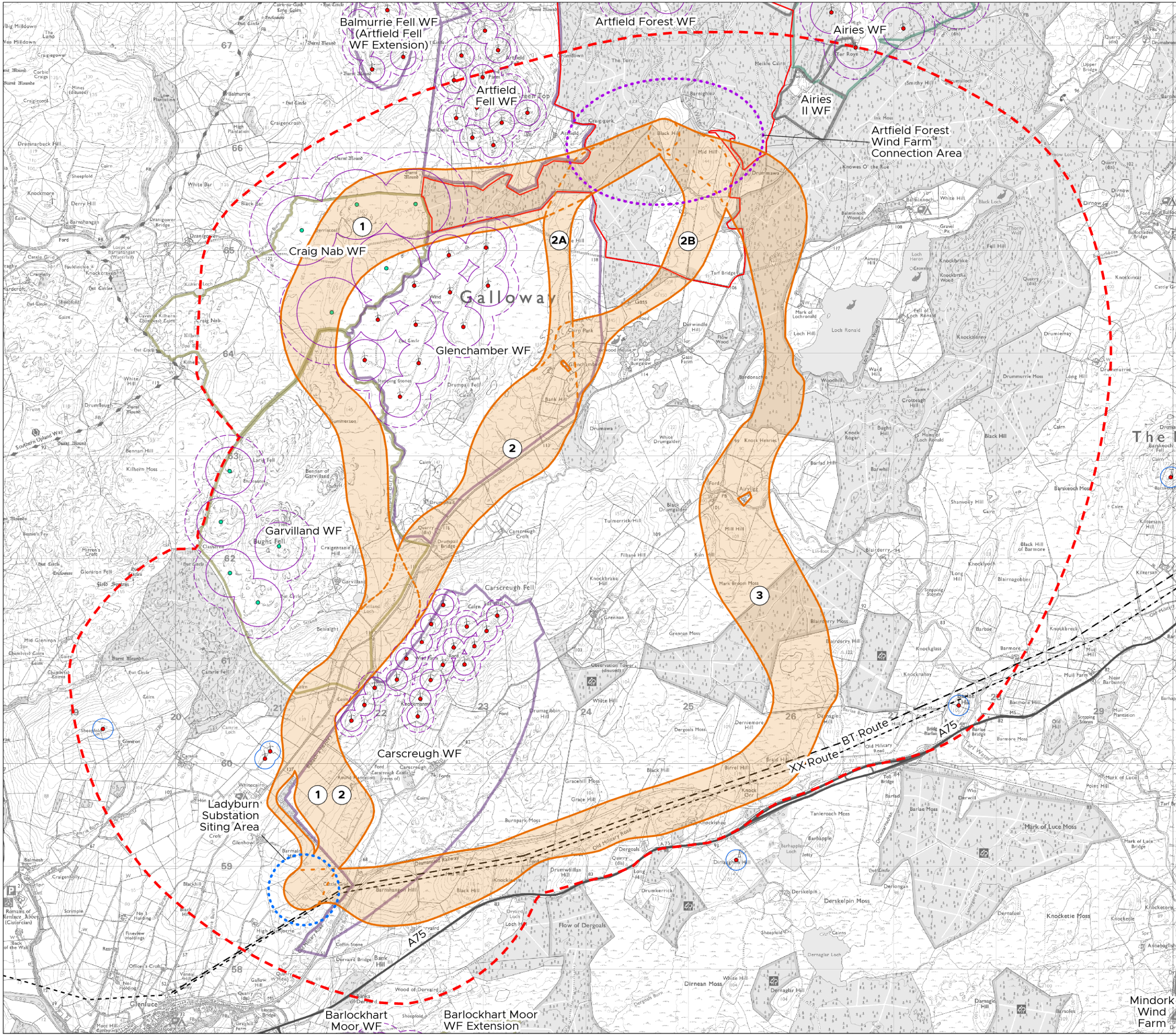
Wind Farm

Installed

Approved

Application

Scoping



Artfield Forest Connection Project

Figure 12 - Preferred Route Option

Key:

Study Area

Existing Steel Lattice Tower Line

Artfield Forest Wind Farm Connection Area

Ladyburn Substation Siting Area

Preferred Route Option

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Appendix C

Routeing Considerations

Artfield Forest Connection Project

Appraisal Topic	Study Area Constraints and Features	Routeing Considerations
Landscape and Visual Amenity	Landscape character (including susceptibility to wood pole overhead lines) (Holford Rules 4, 5, 6 and 7)	Route options should, wherever possible, avoid the most sensitive landscapes and be designed to respect the character and pattern of the surrounding environment. They should seek to minimise crossings of high points and ridgelines and take advantage of opportunities to use existing landforms and woodland as a visual backdrop.
	Visual amenity (Settlements) (Holford Rule 4 and Supplementary Notes)	Route options should, wherever possible, be situated away from settlements and residential properties, and take advantage of opportunities to use existing landform and woodland for screening or as a visual backdrop.
	Visual amenity (scattered individual properties, including a 150m trigger for consideration zone) (Holford Rule 4 and Supplementary Notes)	
	Existing transmission and distribution network (Holford Rule 6)	Using existing infrastructure corridors can help minimise landscape impacts, but care must be taken to avoid creating prominent wirescapes.
Ecology, including Woodland	Kilhern Moss SAC (Holford Rule 1)	Route options should avoid crossing SACs within the study area to prevent potential adverse effects on these sites.
	River Bladnoch SAC (Holford Rule 1)	
	Flow of Dergoals SAC (Holford Rule 1)	
	River Bladnoch SSSI (Holford Rule 1)	Route options should consider the location of SSSIs within the study area and avoid crossing them where possible to prevent or minimise potential adverse effects.
	Flow of Dergoals SSSI (Holford Rule 1)	
	Derskelpin Moss SSSI (Holford Rule 1)	
	NatureScot Priority Peatland Habitat (Class 1 and 2 in Scottish Natural Heritage Carbon and Peatland 2016 Map) (Holford Rule 1)	Route options should consider the location of Priority Peatland Habitat (Class 1 and 2) which is present throughout the study area, and avoid crossing it where possible to prevent or minimise potential adverse effects.
	Ballach-a-Heathry Ancient Woodland Inventory (AWI) site (Holford Rule 2)	Route Options should avoid areas of ancient and native woodland sites to minimise potentially adverse effects on woodland areas, particularly AWI sites.
	High Plantation Ancient Woodland Inventory site (Holford Rule 2)	
	Fell Wood Ancient Woodland Inventory site (Holford Rule 2)	
	Banks of Dervaird Ancient Woodland Inventory site (Holford Rule 2)	
	Several small unnamed Ancient Woodland Inventory sites. (Holford Rule 2)	
	Native Woodland Survey of Scotland sites (Holford Rules 4 and 5)	
	Protected Species and their supporting habitats, including Known nest sites of Annes 1/Schedule 1 raptor species and Black Grouse Leks. (Holford Rule 1)	Route options should seek to avoid or, where not possible, minimise potential adverse effects on protected species and their supporting habitats.
	Banks of Dervaird Local Wildlife Sites (LWS) (Holford Rule 2)	Route options should seek to avoid or, where not possible, minimise potential adverse effects on non-statutory sites of ecological or biodiversity interest.

Appraisal Topic	Study Area Constraints and Features	Routeing Considerations
	Wind farm Habitat Management Plan (HMP) areas (Holford Rule 2)	Route options should aim to avoid HMAs to avoid potential adverse effects on habitat and wildlife. Many HMAs are linked to planning conditions or environmental legislation. Impacts on these areas could result in non-compliance with planning consents, environmental permits, or biodiversity action plans.
Archaeology and Cultural Heritage	East Rhins Archaeologically Sensitive Area (ASA) (Holford Rule 1) Knock Fell ASA (Holford Rule 1)	Route options should seek to avoid, or where not possible, minimise potential adverse effects on Archaeologically Sensitive Areas.
	Mid Gleniron, hut circles and field systems (SM5067) (Holford Rule 1)	Route options should seek to avoid, or where not possible, minimise potential adverse effects on designated archaeological and heritage assets, including scheduled monuments, listed buildings and their settings.
	Ballach-a-heathry, cairn (SM1915) (Holford Rule 1)	
	Bennan of Garvilland, fort (SM1955) (Holford Rule 1)	
	Cairn na Gath, long cairn, Balmurrie Fort (SM1922) (Holford Rule 1)	
	Cascreugh Castle (SM2012) Knock Fell, fort (SM1988) (Holford Rule 1)	
	Carscreugh Croft, cairn (SM2257) (Holford Rule 1)	
	Mid Gleniron, chambered cairns and cairns (SM1944) (Holford Rule 1)	
	Long cairn, 200m NE of Kilhern (SM13771) (Holford Rule 1)	
	Listed buildings (Category A, B and C) (Holford Rule 1)	
	Assets listed on the Council's Historic Environment Record (HER) (Holford Rule 2)	Route options should seek to avoid, or where not possible, minimise potential adverse effects on assets listed on the HER.
	The non-Inventory Designed Landscape of Torwood (Holford Rule 2)	Route options should seek to avoid, or where not possible, minimise potential adverse effects on non-Inventory Designed Landscapes as well as their setting.
Tourism and Recreation	Three Lochs Holiday Park (Clarification Notes)	Route options located near the holiday parks and other recreational assets, including recognised walking or cycling routes, should be carefully planned to minimise potential adverse effects on their users from visual intrusion, noise, and disturbance during construction and operation, as well as impacts on tranquillity and the recreational experience, and any effects on accessibility or safety.
	Torwood Country Lodges and Torwood Fishing (Supplementary Notes)	
	Whitecairn Holiday Park (Supplementary Notes)	
	The Moors of Wigtownshire Walk (Holford Rule 2 and Supplementary Notes)	
	Southern Upland Way – one of Scotland's Great Trails (Holford Rule 1).	
	Core Paths (Holford Rule 2 and Supplementary Notes)	

Appraisal Topic	Study Area Constraints and Features	Routeing Considerations
Land Use and Infrastructure	Settlements (including individual properties) (Supplementary Notes)	Route options should, where possible, avoid routeing close to settlements or residential properties to minimise or reduce potential adverse effects on general amenity.
	Existing high-voltage electricity lines.	Route options should, where possible, avoid crossing existing lines.
	Wind Farms (Holford Rule 7)	Where route options cross or are located near existing or planned wind farms, they should maintain a minimum separation distance from turbines of at least three times the rotor diameter, or the turbine height to blade tip plus 10%, to avoid potential technical conflicts and ensure safe operation.
	Mineral extraction/opencast sites (Holford Rule 7)	Route options should avoid operational mineral extraction sites; however, restored or inactive sites may offer feasible routeing opportunities with reduced environmental and operational constraints.
	Other committed development (Holford Rule 7)	Route Options should consider other committed development in order to avoid or reduce potentially adverse effects or technical conflicts.
	Agricultural potential	Route options should, wherever possible, avoid best and most versatile (BMV) agricultural land to minimise or reduce potential adverse effects on agricultural resources.
	Commercial forestry capability (Holford Rules 4 and 5)	Route options should, wherever possible, avoid directly crossing commercial forestry. Where avoidance is not feasible, routes should consider using existing wayleaves and aim to minimise the amount of felling required to reduce ecological and operational impacts.
Physical environmental features and technical/engineering constraints	Overhead line route length (Holford Rule 3)	Route Options should follow the shortest and most direct route possible whilst taking account of other environmental and technical constraints.
	Waterbodies/watercourses	To develop route options which adhere to a minimum 50m separation zone from watercourses/waterbodies unless otherwise agreed with SEPA. To develop route options that avoid crossing watercourses/waterbodies or, where this is not possible, cross at their narrowest point.
	Flood Zones	To develop route options that avoid crossing flood zones or, where this is not possible, cross at their narrowest point.
	Drinking water protection zones	To develop route options which avoid drinking water protection zones.
	Carbon and Peatland Mapping (Holford Rule 2)	Route options should, wherever possible, avoid areas identified as Class 1 priority peatland habitat to minimise potential

Appraisal Topic	Study Area Constraints and Features	Routeing Considerations
		adverse effects. Where avoidance is not feasible, routes should follow the shortest and most direct alignment possible to reduce disturbance and limit the extent of impacts.
	Topography, elevation and side slopes	Route options should consider topography, elevation, and slope gradients, avoiding areas where steep or unstable terrain could compromise constructability or operational performance.
	Existing high-voltage transmission and distribution network (Holford Rule 6)	Route options should consider existing transmission and distribution infrastructure to avoid potential technical conflicts and ensure safe and efficient integration.

Appendix D

Landscape Susceptibility Appraisal

Artfield Forest Connection Project

Contents

1	Introduction	1
	The Proposed Development	1
	Landscape Character	1
2	Appraising Landscape Susceptibility	3

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1 Introduction

- 1.1 This appendix sets out an overview of the approach taken to consideration of landscape susceptibility as part of the Artfield Forest Connection Project. Together with other environmental and technical considerations, landscape susceptibility is one of the factors which helps inform the selection of a preferred route.
- 1.2 NatureScot defines landscape susceptibility as *‘the degree to which a defined landscape, including its character and associated visual resources, might respond to specified development types or land management changes without undue negative consequences’* (NatureScot, 2022).
- 1.3 Landscapes that are highly susceptible to a particular type of development are at greater risk of experiencing fundamental changes to their key characteristics, potentially resulting in a different landscape character. Assessing the susceptibility of a landscape to a wood pole overhead line, therefore, supports the identification of a route that avoids the most susceptible areas, helping to reduce the likelihood of adverse landscape effects.
- 1.4 It is worth emphasising that a finding of ‘high’ susceptibility does not imply that development is entirely precluded, just as a finding of ‘low’ susceptibility does not guarantee that development is appropriate. Instead, the appraisal provides additional information to help inform the routing process.
- 1.5 Landscape susceptibility should not be used in isolation to determine the acceptability of a particular development in landscape terms and does not replace the need for Landscape and Visual Impact Assessment (LVIA), which evaluates the likely landscape and visual effects of a development proposal.

The Proposed Development

- 1.6 As explained in Chapter 1 of the RCD, the Artfield Forest Connection Project comprises approximately 9km of new overhead line between the proposed Artfield Forest Wind Farm Substation and the proposed Ladyburn Substation northeast of Glenluce. The new overhead line would operate at 132kV and be supported on Trident wood pole structures, with potential heights ranging between 11 metres (m) to 16m high. The typical span length between poles would be around 80m to 100m, with the total route extending approximately 9 kilometres (km).
- 1.7 Beyond the temporary construction phase, landscape-related effects mainly arise from the presence of the proposed wood poles. It is therefore these wood poles which have been used as the determining factor when considering landscape susceptibility. Photos of the different types of wood pole structure are included in Chapter 2 of the RCD.

Landscape Character

- 1.8 A landscape character assessment provides the foundation for evaluating how susceptible a landscape may be to a proposed development. Every landscape is shaped by a combination of natural elements, such as geology, soils, and watercourses, as well as human influences, including settlement patterns and land use, alongside cultural perceptions, including historical associations, social meaning, and aesthetic values. The assessment process analyses how these factors interact to create the distinctive landscapes we see and experience. This is achieved by mapping and describing landscape character types (LCTs), which are generic and can occur in multiple locations, and landscape character areas (LCAs), which are unique to specific places.
- 1.9 NatureScot¹ has produced a digital map-based national landscape character assessment (published in 2019), showing LCTs or areas of consistent and recognisable landscape character across Scotland.

¹ NatureScot (Updated 2023) Scottish Landscape Character Types Map and Descriptions. Available at <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment> [Accessed 13 August 2025]

- 1.10 These LCTs formed the basis for this landscape susceptibility appraisal. Site visits were undertaken to confirm the descriptions of the assessments, note the current condition of the landscape and develop a finer-grained understanding of the landscape and its perceptual qualities to help further inform the routeing and appraisal process.
- 1.11 The six LCT across the routeing study area are shown in **Appendix B - Figure 6** and listed below. An overview of their key characteristics based on the descriptions in NatureScot's website is provided in **Table 1** below.

LCT 159 - Shallow Flat Bottomed Valley
LCT 167 - Moss and Forest Lowland
LCT 168 - Drumlin Pasture in Moss and Moor Lowland
LCT 172 - Upland Fringe – Dumfries and Galloway
LCT 173 - Plateau Moorland – Dumfries and Galloway
LCT 174 - Plateau Moorland with Forest – Dumfries and Galloway

2 Appraising Landscape Susceptibility

- 2.1 Each LCT potentially affected by a route option has been evaluated (using desk-based analysis combined with on-site assessment and verification) and then categorised as having higher or lower susceptibility to the wood pole overhead line. This is a relative grading reflecting the variations in landscape across the study area.
- 2.2 The criteria used to assess the relative levels of landscape susceptibility of the LCT to accommodate wood pole line development are shown in **Table 1**. These criteria are strongly linked to guidance in the Holford Rules and relate to the scope for a landscape to assimilate the wood pole line, thereby reducing the number of line diversions and avoiding woodland clearance or tree felling.
- 2.3 The criteria are often multi-faceted and interlinked, as evidenced by the accompanying descriptions.

Table 1: Indicators of Landscape Susceptibility to Wood Pole Overhead Lines

Criteria	Indicators used to Inform Judgements on Landscape Susceptibility
Landscape scale	The scale of a landscape reflects how its landform is perceived, considering relief, expanse, and elevation. Openness, individual elements, and land use patterns also influence this perception. Assessing landform scale involves evaluating the perceived vertical height, horizontal extent, and the sense of openness or containment shaped by topography and elevation. The land use pattern creates an additional layer of possible enclosure, which might reduce openness, for example, where woodland, hedges and field walls provide containment. Conversely, low-growing vegetation, such as moorland, can reinforce openness. Individual elements and features can also provide reference points against which the landscape scale or size of other elements is perceived and understood. Wood poles are small enough to be positioned near buildings and trees. While they might be slightly larger than these features, they are unlikely to appear substantially taller when viewed within the broader landscape context. Landscapes with hedgerows, hedgerow trees, small fields, and winding roads are well-suited to accommodating wood pole lines. They can also fit within larger-scale landscapes, but their placement near taller structures, such as wind turbines or steel lattice tower lines, must be carefully considered.
Prominent Landscape Features	Landscapes with strong visual features or focal points, such as distinctive landforms, hilltop settlements, monuments, or church spires, are more sensitive to the introduction of wood poles, as the infrastructure may detract from or compete with these defining elements. Similarly, landscapes with simple, uninterrupted skylines are more vulnerable, as poles can break the horizon and disrupt visual cohesion, particularly where several poles appear clustered together. By contrast, in landscapes with more visually complex or already interrupted skylines, wood poles may be more readily absorbed. Even so, care must be taken to avoid creating visual clutter or conflict with prominent features that contribute to the character or identity of the landscape.
Landform shape	Landform is a key factor in determining a landscape's susceptibility to steel lattice tower lines. Smooth, regular, or gently rolling landforms, such as broad valleys and low hills, are generally less sensitive, particularly when surrounded by higher ground that helps reduce the visual prominence of towers. By contrast, steep, elevated, or dramatic landforms are typically more vulnerable to steel lattice towers, as their prominence and distinctive character increase the likelihood of the infrastructure appearing skylined and visually intrusive. Narrow ridges and incised valleys are especially sensitive, particularly where slopes are steep or punctuated by rock outcrops, since these features naturally draw attention and offer limited opportunities for screening. While complex or irregular landforms can sometimes provide visual containment or backdropping, careful siting is essential to ensure that towers do not overwhelm or

Criteria	Indicators used to Inform Judgements on Landscape Susceptibility
Landscape and Land Use Pattern and Complexity	disrupt their intricate form. Flat landscapes can also be more susceptible when there is no surrounding higher ground to absorb or contain the infrastructure, leaving towers more exposed in open views. The pattern of a landscape affects its susceptibility to overhead lines primarily through the visual character it creates, rather than the physical susceptibility of land cover types. Landscapes with complex, irregular, or historic patterns, such as mosaics of hedgerows, trees, and traditional field boundaries, are generally more vulnerable, as towers can appear visually disruptive and out of scale with these finer-grained patterns. Conversely, simple, uncluttered landscapes with sweeping lines and large, uniform groundcover are typically less susceptible, as the scale and openness of the pattern can more readily accommodate tall structures. While trees and woodland increase landscape complexity, they can also mitigate effects by providing screening and reducing the apparent height of towers, particularly when combined with undulating landforms. Care must, however, be taken to avoid siting towers where they would detract from or dominate locally distinctive features such as tree knolls, specimen trees, or designed avenues. Settlement distribution also has a direct influence on routeing, particularly in relation to Holford Rule 3. A densely settled area may offer more opportunities for screening, but it can also require more directional changes, complicating the ability to maintain a direct alignment. In contrast, concentrated settlements tend to be easier to plan around than widely dispersed development.
Man-made Influence (including vertical infrastructure)	The degree of human influence, through settlement, land use, or infrastructure, plays a key role in determining a landscape's susceptibility to steel lattice tower lines. Landscapes already shaped by commercial or industrial activity, such as forestry, intensive farming, quarrying, or existing utility infrastructure, are generally less sensitive, as their large-scale and functional character is better able to absorb additional development. Likewise, modern landscapes with frequent man-made features, including roads, railways, wind turbines, or dense settlement, tend to be more robust and less vulnerable. In contrast, traditional rural or historic farmed landscapes are more sensitive, as towers may appear out of place and risk eroding the rural character and perceived time depth. However, even in more developed settings, the concentration of multiple vertical elements can create visual clutter or 'wirescape' effects, reducing coherence and intensifying overall impact.
Perceptual aspects, including scenic quality	Landscapes that provide opportunities for experiencing scenic beauty, defined by a sense of wildness, remoteness, tranquillity, and minimal human influence, tend to be more sensitive to the introduction of wood pole lines. The absence of prominent man-made structures and a prevailing sense of naturalness heighten their vulnerability to visual intrusion. In contrast, landscapes that lack these qualities are generally less affected by such infrastructure.

- 2.4 In 2017, Dumfries and Galloway Council adopted a Wind Farm Landscape Capacity Study as part of their Local Development Plan Supplementary Guidance (Dumfries and Galloway Council, 2017). This study examined various landscapes within the local authority area and provided guidance on their capacity to accommodate wind turbines of different scales. The focus of the study was on commercial wind farm developments and extensions to existing wind farms rather than smaller turbines. Turbines below 30m high to blade tip were not considered in detail, and the study notes that the '*majority of landscapes within Dumfries and Galloway can accommodate turbines of this size providing they are appropriately sited*' (paragraph 2.4.1).
- 2.5 This adopted study was an update of an earlier study, which also looked at turbines of 12 - 20m, which are of a similar height to the proposed wood pole support structures proposed for the Artfield Forest Connection Project.
- 2.6 Paragraph 5.42 of Guidelines for Landscape and Visual Impact Assessment (GLVIA3)² explains that existing landscape capacity studies, such as these, can provide useful background information when they consider the development of the general type which is proposed. While

² Landscape Institute and IEMA, Guidelines for Landscape and Visual Impact Assessment 3rd Edition 2013

not directly comparable, these two studies provide a means of comparing local conditions (observed on-site for this appraisal of landscape susceptibility) with static vertical structures of a similar size to the smaller wind turbines.

- 2.7 **Table 2** below describes the six LCTs, focusing on the particular characteristics of those parts of the LCTs within the study area. The descriptions and accompanying judgements on susceptibility have been informed by desk studies and fieldwork, as well as consideration of the criteria in **Table 1**.
- 2.8 The judgements on susceptibility include reference to the two Dumfries and Galloway landscape capacity studies discussed above (referred to in the table as the 2011 or 2017 study). Although the names of the LCT described in these studies are often different to those in NatureScot's 2019 Landscape Character Type Map, their boundaries are broadly equivalent.

Table 2: Susceptibility of Local Landscape Character Types within the Study Area

LCT 159 - Shallow Flat Bottomed Valley – Dumfries and Galloway LCT	
Overview of landscape character	This LCT falls within the study area, covering the lower part of the valley of the Cross Water of Luce, a tributary of the Water of Luce. It comprises a shallow valley enclosed by low-profiled moorland, which gives way to the rounded hills and undulating ridgelines of the surrounding uplands. The river is fringed by riparian trees and shrubs, with gorse being quite dominant. The key characteristics of the landscape are described on the NatureScot's website as: • <i>'Flat bottomed, shallow but steep-sided valley.</i> • <i>Pastoral valley floor, improved pasture in the lower reaches with hedgerow boundaries, with semi-improved grassland higher up.</i> • <i>Riparian trees and shrubs, as well as gorse.</i> • <i>Medium sized enclosures, with walls higher up and fences in the lower reaches with sheep and cattle grazed.</i> • <i>Mixed and deciduous wooded lower slopes, giving way to conifer plantation or rounded grassy slopes'.</i> During site visits, it was noted that the part of the LCT within the study area matches well with the key characteristics described above.
Susceptibility of the landscape to smaller turbines (<30m)	Both the 2011 and 2017 studies (Character Type 3: Shallow Flat Bottomed Valley) consider that there may be some limited opportunities to site single small-scale turbines in areas where they can relate to the broader scale and simpler pattern of open rough grazing land and more extensive conifer woodland. The areas of more diverse and intricate patterns of fields and small woods are more sensitive to development, and the setting of archaeological sites remains susceptible to visual intrusion. The 2011 study also notes that care should be taken when siting wind farms on surrounding upland character types to avoid their visual impact, particularly in tributary valleys such as the Cross Water of Luce.
Considerations informing the judgement on susceptibility (based on the capacity studies, site survey and the criteria listed in Table 1).	There is potential to site a wood pole line along the lower side slopes of the valley, where it would not interrupt the skyline, visual focal points, or key views, including those associated with the many archaeological and historic features. The sinuous shape of the valleys and the presence of plantation woodlands on the upper slopes, along with riparian vegetation, afford screening or backgrounding opportunities. Routeing should seek to reinforce the land cover pattern, which includes areas with a strong pattern of stone dykes enclosing medium to larger-sized pastures. The landscape has an upland quality, but it is settled and generally well-managed. Therefore, a wood pole line would have a limited impact on any sense of wildness, provided impacts on the more natural habitats are avoided.
Judgement of susceptibility	Based on the above considerations, this sparsely settled and secluded valley has a higher susceptibility to the proposed wood pole line development.

LCT 167 - Moss and Forest Lowland LCT

Overview of landscape character

This LCT occurs in the southern part of the study area and mainly to the south of the A75. The gently undulating landform generally lies below 100m AOD and is drained by Tarf Water, Dergoals Burn and a network of minor tributaries. There is a simple land-cover of plantation woodlands interspersed with open areas of mossland, drier moorland on the higher ground, and occasional areas of pasture, including some distinctive domed and walled pastures. A large area of moss is designated as the Flow of Dergoals SAC/SSSI and is one of the few remaining extensive areas of open blanket bog in Wigtownshire. The nearby Derskelpin Moss SSSI is one of the few non-afforested blanket bogs in the area and retains many of the pools and ridges typical of a natural bog. It also supports an important assemblage of breeding birds.

The key characteristics of the landscape are described on the NatureScot's website as:

- *'Generally flat land with occasional small craggy hilltops, areas of conifer forestry, wet moss and dry moorland/ rough grazing.*
- *Scattered lochs, including Mochrum Loch and Castle Loch.*
- *Numerous antiquities, particularly cairns in the west.*
- *No settlements and few roads and lanes to connect the isolated houses/ farmsteads.*
- *Exposed and isolated character'.*

During the site survey, it was noted that the part of the LCT within the study area matches well with the key characteristics described above, although the scenic rural quality of the landscape is locally diminished by the A75 and by the existing 132kV steel lattice tower line, which lies just outside the northern boundary of the LCT. No wind farms are located in this character type, although several wind farms in neighbouring LCT are visible from a distance.

Susceptibility of the landscape to smaller turbines (<30m)

Both the 2011 and 2017 studies suggest that turbines could be located on small open hill slopes or forest edges that lie close to settlements and would therefore be visually associated with existing built features, thus reducing clutter within the simple open moorland and pasture of this LCT (LCT 11: Moss and Forest Lowland). Cumulative impacts could, however, arise between smaller and larger typologies, or across smaller typologies only. This fairly open and limited geographic area is likely to quickly become cluttered by multiple developments, and inter-visibility is likely from roads and settlements in the surrounding area.

Considerations informing the judgement on susceptibility (based on the capacity studies, site survey and the criteria listed in Table 1).

The openness of the landscape is enhanced by the absence of obvious field boundaries and the lack of enclosure, creating a landscape of medium to large scale. There are a few smaller-scale references in the landscape to help visually assimilate a wood pole line, which would appear out of scale if sited within the larger areas of open moorland.

The small, domed, and walled pastures within the moorland, the Flow of Dergoals SAC/SSSI, and the many archaeological features, including the landmark hill of Knock Fell with its fort and associated ASA, are highly susceptible to potential physical and visual impacts.

Like higher areas of moorland, this area has a few minor roads and tracks connecting widely scattered and isolated houses/ farmsteads, many of which are on the fringes. There are no hamlets or villages, and the landscape has an exposed and isolated character. The landform, vegetation, and general lack of development create the perception of a high moorland plateau with a sense of wildness and remoteness, despite its proximity to nearby settlements and the A75 corridor. A wood pole line would dilute these qualities.

A wood pole line could exacerbate the visual confusion which already occurs where the Barlockhart, Carscreugh, Glenchamber Artfield Fell and Balmurrie Fell wind farms (which comprise a variety of turbine sizes and design/ layouts) are seen together in views from the LCT, including from the A75 tourist route.

Judgement of susceptibility

Based on the above considerations, although the northern edge of this LCT exhibits some characteristics that reduce susceptibility to a wood pole line, the remote and isolated moorland landscape, with its nationally important

	archaeological and ecological features, has a higher susceptibility to the proposed wood pole line development.
LCT 168 - Drumlin Pasture in Moss and Moor Lowland	
Overview of landscape character	Within the study area, this LCT extends in a relatively narrow strip east from Glenluce before widening out east of Barlae Hill. Altitudinal range is generally between 75 and 110m AOD. North of the A75, the occasional summit rises to over 175m AOD. The most recognisable characteristic of this landscape is the frequent occurrence of small, rounded, and elongated mounds (drumlins) and higher, more rugged, irregularly shaped hills rising out of low-lying areas of flat wetland, moss, and floodplain, which in places have been forested. The key characteristics of the landscape are described on the NatureScot's website as: • <i>'Prominent pasture drumlins, set in flatter moss and moor, bounded by hedges and drystone walls to form medium sized fields.</i> • <i>Colour contrast between green drumlins and brown moss and moor.</i> • <i>Scattered antiquities including standing stones and cairns.</i> • <i>Relatively poor road network connecting isolated houses/ farmsteads.</i> • <i>A few small forests and policy landscapes.</i> • <i>Intimate scale and complexity of drumlin landscape'.</i> During site survey, it was noted that the part of the LCT within the study area matches well with the key characteristics described above, although the operational wind farm of Barlockhart is partially located within the far western corner of this LCT. Wind farms in the adjacent LCT extend their influence into this landscape and are intermittently visible from the A75, which is an important tourist route, although it is a discordant feature in itself. The existing 132kV steel lattice tower line is an additional discordant feature.
Susceptibility of the landscape to smaller turbines (<30m)	Both the 2011 and 2017 capacity studies consider that there is scope for locating smaller turbines in <i>Drumlin Pasture in Moss and Moor Lowland</i> if they can be clearly associated with existing development. The 2011 study also recommends undergrounding any new overhead lines.
Considerations informing the judgement on susceptibility (based on the capacity studies, site survey and the criteria listed in Table 1).	The lower side slopes of the less rugged hills offer better opportunities for routeing to screen or background a wood pole line. Routeing over the drumlins would visually conflict with the low relief, rounded profile, smooth texture and often complex and repeated pattern of the landform. The drumlins and occasional small plantation woodlands restrict views, make this a medium to small-scale landscape where the pattern of settlement, trees and smaller-scale landforms and land cover provide ready scale references for wood poles. Care should be taken to avoid cumulative effects with the existing wind farms, especially where turbines are seen from within the areas of drumlin pastures. These are already the focus for other structures, such as communications masts, which can add to visual complexity and potential clutter. Barskeoch and Culvennan Fells form a distinct ridge that contains the eastern part of this LCT within the study area, due to the cumulative visual effects caused by the cluster of wind farms associated with the interior of the Wigtownshire Moors. The low-lying and outward-looking character of the landscape to the south of this ridge makes it sensitive to any development in surrounding landscapes, which may intensify the effects of existing wind farms to the west and north. The perception of semi-naturalness, and the way in which this contrasts with the improved pastures on the drumlins could be adversely affected by the introduction of a wood pole line, although this could be minimised through careful routeing. A wood pole line should avoid intruding on key views from the A75 tourist route, particularly from minor roads that cross the area, as well as on the backdrop and setting of small settlements, archaeological features, and landscapes of historic interest that are present throughout the area.
Judgement of susceptibility	Based on the above considerations, this landscape has a higher susceptibility to the proposed wood pole line development, although susceptibility is locally lower along the A75 corridor.

LCT 172 - Upland Fringe – Dumfries and Galloway

Overview of landscape character

This LCT covers the south-western part of the study area. With an altitudinal range of 120m to 170m AOD, it is 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. There is a rich archaeological and historic heritage with many notable landmarks. The large East Rhins ASA, which extends into the northern part of the LCT, reflects their significance.

The key characteristics of the landscape are described on the NatureScot's website as:

- *'Medium scale pastoral valley with flat floor enclosed by upland fringe pastures, often with rough grassland and moorland covered hills above.'*
- *'Smooth large-scale landform modified in places by bluffs and moraine on valley floor, scree slopes or rock outcrops on valley sides.'*
- *'Narrow, often wooded tributary side valleys.'*
- *'Broadleaf woodlands and scrub on bluff slopes and scattered trees along river banks, occasional coniferous plantations and shelterbelts on valley sides.'*
- *'Valley floor pastures enclosed by drystone dykes with occasional hedgerows, interspersed with occasional patches of scrub, coarse grass and rushes.'*
- *'Scattered villages, farmsteads and mansion houses with policy woodlands.'*

During the site survey, it was noted that the part of the LCT within the study area matches well with the key characteristics described above. However, the area is strongly influenced by Carscreugh Wind Farm and by wind farms in the adjacent LCT, which extend their influence into more settled and diverse lowland landscapes. The existing 132kV steel lattice tower line, which skirts the southern edge of the LCT near Glenluce, is also a locally discordant feature.

Susceptibility of the landscape to smaller turbines (<30m)

Both the 2011 and 2017 capacity studies consider that the broader and gentler hill slopes, with their less diverse vegetation patterns, provide opportunities for assimilating the smaller typologies. However, it is noted that the height of turbines needs careful consideration to minimise the impacts of scale in relation to other landscape features.

Considerations informing the judgement on susceptibility (based on the capacity studies, site survey and the criteria listed in Table 1).

The combination of landform and the enclosure afforded by the pattern of settlement, pastures, plantation woodlands, shelter belts and lines of trees provides ready scale references for wood poles and opportunities for screening or backgrounding.

Routeing should avoid situating wood poles on the skyline of the ridges but instead follow the hill slopes, where the higher ground can provide a backdrop to minimise visibility. Areas with complex landform or distinctive field enclosure patterns should also be avoided.

The dense and multi-layered archaeological features associated with the East Rhins ASA could be disturbed and fragmented by a wood pole line. A wood pole line would need to be carefully sited to avoid impacting on these archaeological features and their settings and to minimise potential cumulative visual effects with the large wind farm developments.

The landscape has an upland quality, but it is settled and generally well-managed. Therefore, a wood pole line would have a limited impact on any sense of wildness provided impacts on the more natural habitats are avoided.

The road network is more extensive than in the surrounding uplands, and routeing should seek to avoid sequential effects on views from the minor roads and footpaths which cross the area.

Judgement of susceptibility

Based on the above considerations, this settled landscape with its contemporary elements and perceived human activity is of **medium** susceptibility to the proposed wood pole line development.

LCT 173 - Plateau Moorland – Dumfries and Galloway

Overview of landscape character

This LCT is located in the central and northern parts of the study area and forms an expansive, flat, or gently undulating plateau between 150m and 250m AOD. It presents a low upland 'edge' to the valley of the Water of Luce and Cross Water of Luce. The landform becomes more rolling and complex close to valleys, particularly

	east of the Water of Luce. The large East Rhins Archaeologically Sensitive Area (ASA) reflects the significance of its many archaeological sites and relic land-use areas. The key characteristics of the landscape are described on the NatureScot's website as: • <i>'Flat or very gently undulating land of open scale and extensive nature.</i> • <i>Numerous streams, some lochs, and waterlogged areas.</i> • <i>Simple landcover of grass moorland and occasional improved pastures relating to upland valleys.</i> • <i>Rough vegetation, grazed by sheep and cattle, with pockets of mixed woodland.</i> • <i>Forested margins/ peripheral areas, with isolated areas of forestry and shelter plantations within the Landscape Character Type.</i> • <i>Mostly unenclosed with occasional large walled or fenced enclosures.</i> • <i>Very few settlements, with isolated farms and properties, marked sometimes by pockets of mixed woodland.</i> • <i>Wind farm development in forested or recently clear-felled margins, and in some central moorland areas east of Cross Water of Luce.</i> • <i>Numerous archaeological sites from historic and prehistoric times, with relict land use areas adding distinctiveness to the landscape.</i> • <i>Feels remote and exposed'.</i> During the site survey, it was noted that the part of this LCT within the study area matches well with the key characteristics described above. Large-scale wind farms, whilst not all located in this LCT, are a defining characteristic at the head of the Cross Water of Luce Valley. It was also noted that some areas of the forestry plantation have been felled and replanted.
Susceptibility of the landscape to smaller turbines (<30m)	Both the 2011 and 2017 capacity studies consider that there is scope for smaller turbines to be associated with the more settled fringes of the <i>Plateau Moorland LCT</i> , avoiding the open moorland where smaller turbines would appear out of scale.
Considerations informing the judgement on susceptibility (based on the capacity studies, site survey and the criteria listed in Table 1).	The valleys and more irregular landform on the outer edges of the plateau moorland offer opportunities to screen or background a wood pole line. The exception are the skylines above the small-scale, relatively diverse and settled valleys of the Water of Luce and Cross Water of Luce, which are particularly susceptible to intrusion from vertical structures and should be avoided. Whilst the sparsely settled landscape and limited visibility from the interior moorlands and upper reaches of the Water of Luce Valley offer scope to avoid impacts on settlement, the extensive area of dense and multi-layered archaeological features associated with the East Rhins ASA could be disturbed and fragmented by a wood pole line. The line would need to be carefully sited to avoid impacting on these archaeological features and their settings, and to minimise potential cumulative effects with the large-scale wind farm development. The effects on views from the open moorland, hill tops and minor roads within this LCT should be avoided by careful routeing. This includes views from the Southern Upland Way, which crosses the LCT in the western part of the study area.
Judgement of susceptibility	Based on the above considerations, although this LCT has some characteristics that reduce susceptibility to a wood pole line, because of the extent and density of the nationally important archaeological features, this landscape has a higher susceptibility to the proposed wood pole line development.
LCT 174 - Plateau Moorland with Forest – Dumfries and Galloway	
Overview of landscape character	This LCT covers the northern and eastern part of the study area and forms part of the Wigtownshire Moors. It comprises a flat or very gently undulating plateau between 150 and 250m AOD. Overlying this is a generally simple land cover of large-scale coniferous forests interspersed with areas of open moorland, small-scale farmland, and sparse settlement, connected by a few minor roads.

	The key characteristics of the landscape are described on the NatureScot's website as: • <i>'Elevated flat or gently undulating landscape of large scale.</i> • <i>Dominance of forestry, with a consistent blanket of dark green, superimposed on plateau moorland, currently being restructures as part of felling rotations, and to accommodate wind farm development.</i> • <i>Some large-scale open plateau moorland components within the area, and smaller pockets of open ground.</i> • <i>Rough grass, farmland and heathland in un-forested areas.</i> • <i>Dark horizons formed by forest margins.</i> • <i>Evidence of historic and pre-historic land use in un-forested areas.</i> • <i>Sparsely populated, but with some pockets of settled farmland.</i> • <i>Occasional loch basins, which are a focus for some recreational and tourist facilities.</i> • <i>Wind farm development of forested or recently clear-felled areas north-western, western and south-western areas.</i> • <i>Remote and exposed character'.</i> During site survey, it was noted that the part of this LCT within the study area matches well with the key characteristics described above. Wind farms, whilst not all located in this LCT, are a defining characteristic of the landscape and detract from the qualities of wild character and remoteness. Additionally, plantation forests are being gradually modified through redesign at rotation or where wind farms are being installed. This typically includes the planting of broadleaf trees, which adds diversity to the dark green colours and textures of the conifers. The landscape around the Three Lochs is locally influenced by the large Three Lochs Holiday Park and Watersports Centre, although the surrounding landform and forest contain its wider influence.
Susceptibility of the landscape to smaller turbines (<30m)	Both the 2011 and 2017 capacity studies consider that smaller turbines would appear out of scale within the larger areas of open moorland and wetland found in <i>Plateau Moorland with Lochs</i>, but that smaller turbines could be associated with the few existing farmsteads and domestic buildings and with the smaller areas of moorland which are more influenced by nearby forestry.
Considerations informing the judgement on susceptibility (based on the capacity studies, site survey and the criteria listed in Table 1).	The combination of landform and the enclosure afforded by the pattern of plantation woodlands, shelter belts and lines of trees provides ready scale references for wood poles and opportunities for screening or backgrounding. The relatively limited visibility of the landscape from public roads and settlements, as well as the screening or backgrounding opportunities provided by the landform and forestry, increase the landscape's ability to absorb or mitigate the effects of a wood pole line on the landscape. A wood pole line would introduce a further man-made influence on the landscape around the Three Lochs. The landscape has an upland quality, but the presence of wind farms and commercial forestry limits the sense of wildness and reduces its susceptibility in relation to key perceptual qualities, such as tranquillity and seclusion. When routeing a wood pole line, care should be taken not to increase the visual confusion and clutter already associated with the wind farms, particularly in sequential views from the minor roads and footpaths.
Judgement of susceptibility	Based on the above considerations, the part of the landscape away from the larger-scale and more expensive upland areas has a lower susceptibility to the proposed wood pole line development.

Appendix E

Route Options Appraisal Table

Artfield Forest Connection Project

Route Options Appraisal Table

The appraisal set out below only refers to designated sites and features which are present within the study area.

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
Route Length	Approximate length of overhead line	10km	9km	11.5km	Route Option 2 is preferred as this is the shortest option.
Ecology	Site of Special Scientific Interest (SSSI)	No overlaps with SSSIs. The nearest SSSI is Kilhern Moss, over 1km west of this route option.	No overlap with SSSIs. The nearest SSSI is Kilhern Moss, over 1km northwest of this route option.	No overlap with SSSIs. The nearest SSSIs are the Flow of Dergoals and Derrskelpin Moss immediately south of the A75 and within 500m of this route option.	Route Option 2 is preferred. As the shorter and more direct route option, from an ecological perspective, it is likely to result in comparatively fewer impacts on habitats and protected species, including Priority Peatland Habitats. All three route options have the potential to give rise to significant effects as they pass close to watercourses forming part of the River Bladnoch SAC, which is designated for its freshwater habitats and species of European importance. Route Options 2 and 3 also require direct crossings of these designated watercourses. Route Option 1 passes within 1km of Kilhern Moss SAC, while Route Option 3 is within 500m of the Flow of Dergoals SAC and Derrskelpin Moss SSSI. Although a Habitats Regulations
	Special Area of Conservation (SAC)	No overlap with SACs. The nearest is the River Bladnoch SAC immediately adjacent to the route option. Kilhern Moss SAC is within 1km of this route option.	Route Option 2 crosses the River Bladnoch SAC near Drumphail. Although this crossing cannot be avoided however, due to the narrowness of the river SAC, no infrastructure will be located within it.	Route Option 3 crosses the River Bladnoch SAC in three locations: - close to the proposed Artfield Forest Windfarm Substation. - immediately west of Loch Ronald. - near Airyligg (Tarf Water). Although these crossings cannot be avoided, due to the narrowness of the river SAC no infrastructure will be located within it. The Flow of Dergoals SAC and Derrskelpin Moss SSSI are within 500m of this route option.	
	NatureScot Priority Peatland Habitat	Areas of Category 1 Peatland are within this route option as it descends from Artfield Forest across open moorland. Some areas could be avoided at the detailed routeing stage.	Areas of Category 1 Peatland are within this route option as it descends from Artfield Forest across open moorland. Some areas could be avoided at the detailed routeing stage.	Areas of Category 1 and 2 Peatland are both within this route option as it descends from Artfield Forest across open moorland in the north and in the south, and broadly parallel with the A75 and existing BT Route. Some areas could be avoided at the detailed routeing stage.	

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
					Assessment (HRA) may be required, no significant issues are anticipated provided that no in-channel works are undertaken and appropriate buffers are maintained along the watercourses. These SACs and SSSI are therefore not considered a differentiator in the selection of route options.
	Suitability for European Protected Species	<u>European Protected Species</u> Bats: Woodlands are present within parts of the route option and so bats and their roosts are likely to be found along the route in multiple locations. Any areas of woodland likely to be impacted would need to be surveyed to assess the potential for roosting bats within the trees. Surveys for foraging/commuting bats may also be required where habitat may be fragmented. Although much of the woodland likely consists of commercial forestry and its typical species assemblage, bats and their roosts are protected as European Protected Species (EPS) and EPS licensing may be required for some sections of the proposed works where roosts are to be impacted, particularly when considering required wayleaves are needed along the final route. Otter: Otter is a very widely distributed EPS within Scotland and is a key consideration along almost all watercourses that the route options cross or run adjacent to. It is considered highly likely that further assessments for this species will be needed, along with EPS licensing where likely impacts are identified. Great Crested Newt: The distribution of great crested newt (GCN) in this part of Scotland is limited. In terms of habitat and regionality, the three route options fall within ‘Zone C’, indicating that the location is unsuitable (based on the habitat suitability index assessment) for GCN. GCN are therefore considered to present a limited constraint to routeing. However, if any ponds lie within 250m of any works these may require further assessment to confirm their presence/absence.			All three route options avoid local sites of high, medium, or low environmental value. However, protected species could be affected, particularly those associated with the freshwater habitats of the River Bladnoch SAC, as well as species linked to moorland, peatland, trees, woodlands, and shelterbelts.
		N/A	Atlantic Salmon: This species is a qualifying feature of the River Bladnoch SAC, suggesting the species may be present in the Route Options 2 and 3. Further surveys would be required to identify the current distribution of the species. In the case that this species is likely to be impacted by development, an EPS licence may be required.		
		<u>Scottish Biodiversity List (SBL) species</u> The SBL includes a range of land mammals, three amphibians, three reptiles, two species of bony fish and three species of jawless fish (lamprey spp.) that could be found along the three route options. The baseline surveys will identify more sensitive areas that may need to be avoided, require species licencing prior to commencing works, or be mitigated by a watching brief/Ecological Clerk of Works attending the construction site prior to and during the works. Red squirrel and common pipistrelle bat have all been recorded within 5km of the route option in the last 10 years, and so surveys and/or mitigation for these species will likely be required where suitable habitat is impacted.			
	Habitats	The route options traverse lowland farmland, including arable, improved, and semi-improved grassland; marshy grassland and flushes; woodland including coniferous plantation, clear fell and semi-natural broadleaved woodland; open moorland including dry heath/acid grassland mosaics.			
		The European Nature Information System (EUNIS) Habitat Level 2 data confirms that all three route options unavoidably traverse areas of blanket bog, which is considered an irreplaceable habitat (in Biodiversity Net			

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
		Gain (BNG) terms). Further survey will be needed to accurately map blanket bog within the route options, but based on desk-based work, direct effects are likely to be avoidable. If affected (in BNG terms) local areas of native broadleaved woodland, riparian habitats, heathland and blanket bog may offer suitable opportunities for enhancement.			
				Where Route Option 3 crosses the River Bladnoch SAC, riparian woodland may be affected and further NVC surveys may be required.	
Landscape and Visual Amenity	Landscape Character Type (LCT)	From north to south, Route Options 1 and 2 cross the following LCTs (with associated susceptibility to a wood pole line): LCT 174 Plateau Moorland with Forest - Dumfries and Galloway (lower susceptibility) LCT 173 Plateau Moorland - Dumfries and Galloway (higher susceptibility) LCT 172 Upland Fringe - Dumfries and Galloway (medium susceptibility) Route Options 1 and 2 cross broadly comparable lengths of LCT, which are of higher and medium susceptibility to a wood pole line. Only the northernmost parts of these options are located within landscapes of lower susceptibility to a wood pole line.		From north to south, Route Option 3 crosses the following LCTs (with associated susceptibility to a wood pole line): LCT 174 Plateau Moorland with Forest - Dumfries and Galloway (lower susceptibility) LCT 173 Plateau Moorland - Dumfries and Galloway (higher susceptibility) LCT 172 Upland Fringe - Dumfries and Galloway (medium susceptibility) LCT 168 Drumlin Pasture in Moss and Moor Lowland (medium susceptibility away from the more complex drumlin landforms and the hill tops). The southern half of Route Option 3 is located within LCTs of higher and medium susceptibility to a wood pole line. Only the northernmost part of the route option is located within a landscape of lower susceptibility to a wood pole line.	Route Options 1 and 2 are preferred as they traverse broadly similar landscapes, including comparable lengths of Plateau Moorland (LCT 173), which is considered more susceptible to a wood pole line. Consequently, the likely impacts on landscape character are relatively similar between these two options. Route Option 3 crosses more extensive areas of Moss and Forest Lowland (LCT 167) and Drumlin Pasture in Moss and Moor Lowland (LCT 168). These landscape types are considered to be of higher susceptibility to a wood pole line, making Route Option 3 the least preferable in terms of potential landscape impacts.
	Visual Amenity	There are very few properties within or close to Route Option 1 and where present they are	There are very few properties within or close to Route Option 2a or 2b and where present they are	There are relatively few properties within or close to Route Option 3 and where present they are mostly scattered	None of the route options are close to any towns or villages. Glenluce is sufficiently distant to be

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
		scattered and relatively isolated properties/farmsteads. Given the lack of access (other than forest tracks), there would be little visibility of the route option as it exits the proposed Artfield Forest Substation and heads southwest through the afforested plateau moorland. It would however be noticeable at the point it crosses the minor road leading from New Luce to the B7027 near Glenchamber Wind Farm. However, due to the route option running perpendicular to the lane and the high tree cover, potential effects would be limited to a relatively short section of this lane. The main viewing opportunities south of this road crossing are from the minor road that leads from Glenluce to the B7027. The new overhead line would be at some distance from this road, and the wood poles would mainly be seen against a backdrop of landform and existing vegetation, which would reduce their prominence. Further south, a new overhead line would potentially be visible from the few dispersed properties scattered throughout the landscape south of Camrie Fell and Cairn Fell but the topography and small plantation woodlands would provide some screening and backdropping. Approaching the proposed Ladyburn Substation siting area, the new overhead line would potentially be visible from parts of the Whitecairn Holiday Park,	scattered and relatively isolated properties/farmsteads. Given the lack of access (other than forest tracks) there would be little visibility of the route option as it exits the proposed Artfield Forest Substation and heads southwest (2a) or southeast (2b) through the afforested plateau moorland. It would however be noticeable at the point it crosses the minor road leading from New Luce to the B7027. However, due to the route option running perpendicular to the direction of travel and the high tree cover, potential effects would be limited to a relatively short section of this road. South of this road, the new overhead line (both 2a and 2b) would potentially be visible from the small cluster of properties near Torwood and the non-Inventory designed landscape of Torwood. However, the local topography and existing woodland cover afford good scope for providing screening and backdropping. However, it would be noticeable where it crosses and runs alongside the minor road leading northeast from Glenluce to the B7027. While road users may see the new overhead line, it would appear within a landscape already associated with wood pole lines. The new overhead line would potentially be visible from the few dispersed properties which are scattered throughout the landscape south of Camrie Fell	and relatively isolated properties/farmsteads. Given the lack of access (other than forest tracks) there would be little visibility of the route option as it exits the proposed Artfield Forest Substation and heads southeast toward Loch Ronald. It would however be noticeable at the point it crosses the minor road leading from New Luce to the B7027, which is used by people accessing the Three Lochs Holiday Park. However, due to the route option running perpendicular to the direction of travel and the high tree cover, it is likely that the potential effects would be limited to a relatively short section of this road. Depending on whether the line runs east or west of a large coniferous plantation, the new overhead line could potentially be visible from the few dispersed properties to the west of the Three Lochs and the Holiday Park, but the topography and woodlands would provide some screening and backdropping. A pinch point occurs near Airylygg, created by the presence of residential properties and the need to cross the Tarf Water. Here, the valley broadens into ecologically sensitive habitats, but the substantial woodland cover along the adjacent Tarf Water provides good screening and backdropping opportunities. Due to the drumlin topography and plantation woodland, there are few viewing opportunities south of Airylygg.	unaffected. The highest concentration of individual dwellings and small clusters occurs around the Gass and Three Lochs area and in the lower-lying farmland north of Glenluce. While local variations in topography and the prevalence of small woodlands and linear shelterbelts provide some opportunity to mitigate visual effects from properties, Route Option 3 is marginally less preferred as it passes through the Three Lochs area, which is a popular area.

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
		valley floor farmsteads and other isolated properties in the more settled lower lying landscape. However, there would be no views from the village of Glenluce, which lies some 1.5km to the southwest of the substation siting area.	and Cairn Fell but the topography and small plantation woodlands would provide some screening and backdropping. Approaching the proposed Ladyburn Substation siting area, the new overhead line would be obliquely visible from parts of the Whitecairn Holiday Park and valley floor farmsteads and other isolated properties in the more settled lower lying landscape. However, there would be no views from the village of Glenluce, which lies some 1.5km to the southwest of the substation siting area.	As the route option approaches the A75 and turns to a westerly direction, there continue to be few properties. There will be transient views from the A75 but these views are already affected by the existing steel lattice tower line (BT Route) and a wood pole Line (XX Route). Most properties near the proposed Ladyburn Substation, which lies broadly parallel to the A75, are isolated and located south of the road, although some views from valley floor properties and farmsteads close to the siting area could be affected. However, there would be no views from the village of Glenluce, which lies some 1.5km to the southwest of the substation siting area.	
	Residential receptors (150m trigger for consideration zone)	The route option overlaps the 150m trigger zone for approximately 6 properties. However, it is considered that the trigger zone for several of these properties could be avoided during route alignment.	The route option overlaps the 150m trigger zone for approximately 7 properties. However, it is considered that the trigger zone for several of these properties could be avoided during route alignment.	The route option overlaps the 150m trigger zone for approximately 11 properties. However, it is considered that the trigger zone for several of these properties could be avoided during route alignment.	There is little to differentiate between the route options as they each pass through sparsely populated areas, and there is scope to minimise impacts on residential properties during route alignment.
Tourism and Recreation	Tourism and Recreation: OS promoted viewpoints (visual amenity – cycle routes, Core Paths, long distance trails, tourist attractions and recreational	Route Option 1 does not cross or pass close to any National Cycle Network (NCN) Routes or Core Paths. Route Option 1 is located approximately 1km to the east of the Southern Upland Way. Although not a nationally promoted route, the Moors of Wigtownshire Walk is a 29km	Route Option 1 does not cross or pass close to any National Cycle Network (NCN) Routes or Core Paths. Route Option 2 is located approximately 3km to the southeast of the Southern Upland Way. Although not a nationally promoted route, the Moors of	Route Option 3 does not cross or pass close to any National Cycle Network (NCN) Routes. The eastern edge of the route option runs parallel to and would cross the Three Lochs Kirkcowan Core Path between Tarf Water and Loch Ronald. The Moors of Wigtownshire Walk is a 29km long promoted circular	Route Option 1 lies closest to the Southern Upland Way, while Route Option 3 is close to the Three Lochs–Kirkcowan Core Path. Both Route Options 1 and 2 would potentially affect views from the Moors of Wigtownshire Walk. In addition, Route Options 1 and 2 pass

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
	areas such as golf courses)	long promoted circular route that would be crossed by and potentially visible from sections of this route option. Views from this footpath are already influenced by existing wood pole lines and wind turbines, so the new overhead line would not introduce a completely new element into the landscape. The southern part of Route Option 1 passes close to Whitecairn Holiday Park and may be visible from parts of the park and the associated residential property. The new overhead line would, however, be seen in the context of existing wood pole lines, and effects on views would be minimised through careful routeing.	Wigtownshire Walk is a 29km long promoted circular route that would be crossed by and potentially visible from sections of this route option. Views from this footpath are already influenced by existing wood pole lines and wind turbines, so the proposed overhead line would not introduce a completely new element into the landscape. The southern part of Route Option 2 passes close to Whitecairn Holiday Park and may be visible from parts of the park and the associated residential property. The new overhead line would, however, be seen in the context of existing wood pole lines, and effects on views would be minimised through careful routeing.	route that Route Option 3 would cross to the southeast of Artfield Forest and west of Loch Roland. The northeastern edge of the route option is approximately 1km west of the popular Three Lochs Holiday Park and would potentially be visible from parts of the Park and the surrounding Three Lochs area. The new overhead line would, however, be seen in the context of existing wood pole lines, and effects on views would be minimised through careful routeing. To the south as the route option runs broadly parallel to the A75 approaching the new Ladyburn Substation, woodlands and forests south of the A road are promoted for tourism. These, however, are not directly within the route option and views towards the route option are likely to be very limited.	near Whitecairn Holiday Park, whereas Route Option 3 passes directly through the popular Three Lochs area. Overall, while there is little to differentiate between the options, each could affect views from recreational routes and visitor facilities. Route Options 1 and 2 are considered slightly less preferable due to their direct overlap with the Moors of Wigtownshire Walk.
Archaeology and Cultural Heritage	Archaeologically Sensitive Area (ASA)	The East Rhins ASA is the largest ASA in Dumfries and Galloway and extends across large areas of upland moorland to the north and west of the route corridor. A small part of this route option lies in the ASA but could be avoided at the detailed routeing stage.	No ASA lies within Route Option 2. The nearest is the East Rhins ASA, which at its nearest point is approximately 500m away.	No ASA lies within or close to Route Option 3.	Route Option 3 is preferred because it is not located near any scheduled monuments and is further from listed buildings than Route Options 2 and 3. Route Option 2 is potentially within the outer extent of the setting of Bannan of Garvilland, fort (SM1955). Route Option 2b is closest to the non-inventory designed landscape of Torwood and the listed buildings
	Scheduled Monument (Holford Rule 1)	Several scheduled monuments are scattered throughout the East Rhins ASA to the west of Route Option 1. The closest is Bannan of Garvilland, fort (SM1955), which is adjacent to the western edge of this route option. The setting of this hillfort includes extensive views across the low ground	Several scheduled monuments are scattered throughout the East Rhins ASA to the west of Route Option 2. The closest is Bannan of Garvilland, fort (SM1955), which is approximately 750m from the western edge of this route option. The setting of this hillfort includes extensive views across the low ground surrounding the	There are no Scheduled Monuments within Route Option 3. The closest is Carscreugh Castle (SM2012), which is located approximately 300m from the western edge of this route option.	

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
		surrounding the Drumphail Burn, spanning a broad arc to the east. Ballach-a-Heathry, cairn (SM1915) at Carscreugh, lies within Route Option 1. It is located east of Camrie Fell, west of Carscreugh Wind Farm, and near the road leading southwest toward Whitecairn Holiday Park. Direct impacts can be avoided at the detailed routeing stage, and its setting is already affected by proximity to wind turbines. Carscreugh Croft, cairn (SM2257), is located within Carscreugh Wind Farm and approximately 250m from the edge of this route option. Carscreugh Castle (SM2012) is located approximately 300m from the eastern edge of this route option.	Drumphail Burn, spanning a broad arc to the east. Ballach-a-Heathry, cairn (SM1915) at Carscreugh, lies within Route Option 2. It is located east of Camrie Fell, west of Carscreugh Wind Farm, and near the road leading southwest toward Whitecairn Holiday Park. Direct impacts can be avoided at the detailed routeing stage, and its setting is already affected by proximity to wind turbines. Carscreugh Croft, cairn (SM2257), is located within Carscreugh Wind Farm and approximately 200m from the edge of this route option. Carscreugh Castle (SM2012) is located approximately 300m from the eastern edge of this route option.		in the Torwood and Gass area. However, potential effects on these assets could be avoided or minimised through design refinements at the detailed routeing and assessment stage. Route Option 1 is the least preferred, as it is within the East Rhins ASA and the setting of Bennan of Garvilland, fort (SM1955).
	Listed buildings (Category A, B and C)	There are no listed buildings within Route Option 1. The nearest listed building to Route Option 1 is a Category C Farmhouse at Artfield, which is located approximately 250m from the edge of this route option. Carscreugh Castle Cottages (Category C) at Carscreugh Farm are located approximately 500m from the edge of this route option. These listed buildings derive heritage significance from their	There are no listed buildings within Route Option 2, but the following listed buildings are located nearby. Torwood Lodge and Torwood House Former Stables (Category C) in Tor Wood are approximately 400m from the edge of this route option. Gass Farm (Category C), east of Tor Wood, is 0.8km from the edge of this route option. Grennan Farmhouse, Steading, Sundial and Boundary Walls	There are no listed buildings within Route Option 3. However, the following Listed Buildings are close to the route option. Gass Farm (Category C), east of Tor Wood is 500m from the closest point of the corridor. Torwood Lodge and Torwood House Former Stables (Category C) in Tor Wood are 1km from the closest point of the corridor. Grennan Farmhouse, Steading, Sundial and Boundary Walls	

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
		functional/historical relationship with the surrounding countryside. As such, they may be susceptible to changes in setting.	(Category C), south of Knockbrake Hill is approximately 1.4km from the edge of this route option. Carscreugh Castle Cottages (Category C) at Carscreugh Farm are approximately 500m from the edge of this route option. These listed buildings derive heritage significance from their functional/historical relationship with the surrounding countryside. As such, they may be susceptible to changes in setting.	(Category C), south of Knockbrake Hill is 1.5km from the closest point of the corridor. To the south, as the route option approaches Ladyburn Substation Siting Area, Carscreugh Castle Cottages (Category C) at Carscreugh Farm are approximately 800m closest point of the corridor. These listed buildings derive heritage significance from their functional/historical relationship with the surrounding countryside. As such, they may be susceptible to changes in setting.	
	Non-designated heritage assets (HER)	Dumfries and Galloway Council's Historic Environment Record (HER) indicates that several historic environment assets are located within each of the three route options. Potential effects on these assets will be avoided or minimised through design refinements at the detailed routeing and assessment stage.			
			The non-Inventory designed landscape of Torwood lies close to the edge of Route Option 2 (notably 2b). The core of this landscape is inward-looking and focused around Torwood House, while the policy woodlands provide substantial screening but any effects on the setting will be avoided or reduced at the detailed routeing and assessment stage to avoid.		
Flood Risk	Flood Zones and waterbodies	Route Option 1 is close to the upper reaches of the Drumpail Burn and crosses one of its tributaries close to Garvilland Loch. The Drumpail Burn and its tributaries have a 10% chance of localised flooding each year. This route option adjoins the eastern edge of Garvilland Loch	Route Option 2 is close to a section of the Drumpail Burn and crosses the burn and one of its tributaries near Drumpail Bridge. The Drumpail Burn and its tributaries have a 10% chance of localised flooding each year. This route option adjoins the eastern edge of Garvilland Loch	Route Option 3 crosses Tarf Water twice, once in Artfield Forest near the proposed Artfield Wind Farm Substation and again close to a property known as Airyligg southwest of Loch Ronald. It also runs close to sections of the Tarf Water, which in places has a relatively wide area with a 10% chance of flooding each year.	Route Option 1 is marginally preferred over Route Option 2 as it avoids crossing any named watercourses. Route Option 2 would require a crossing of the Drumpail Burn, but at a point where the

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
		located to the east of Camrie Fell, which has a 10% chance of localised flooding each year. The route option also crosses several smaller watercourses and drainage channels.	located to the east of Camrie Fell, which has a 10% chance of localised flooding each year. The route option also crosses several smaller watercourses and drainage channels.	The southern section of Route Option 1, which runs parallel to the A75, is located near the Lady Burn, which experiences a 10% chance of localised flooding each year. It also crosses the burn in potentially three locations.	area at risk of flooding is very narrow. Route Option 3 is the least preferred as it would require two crossings of the Tarf Water and up to three crossings of the Lady Burn.
Woodland	Ancient Woodland (AWI)	There is no AWI in Route Option 1. A narrow strip of AWI upland mixed ash woodland is located south of the route option near Whitecairn Holiday Park and north of Barmain Hill, adjoining the route corridor. This can be avoided through detailed route alignment.	There is no AWI in Route Option 1. A narrow strip of AWI upland mixed ash woodland is located south of the route option near Whitecairn Holiday Park and north of Barmain Hill, adjoining the route corridor. This can be avoided through detailed route alignment.	There is no AWI in Route Option 3.	There is little to differentiate between the three route options as any effects on AWI woodland can be avoided through design refinements at the detailed routeing and assessment stage.
	Native Woodland (NWSS)	A narrow strip of NWSS upland mixed ash woodland is located south of the route option near Whitecairn Holiday Park and north of Barmain Hill, adjoining the route corridor. An area of NWSS woodland is within the Ladyburn Substation Siting Area to the south of Barmain Hill. Potential effects on all these woodlands will be avoided through design refinements at the detailed routeing and assessment stage.	Located to the north of the route option, there is a very small area of NWSS woodland, just within the corridor near Tarf Bridge. Further south, Route Option 2 runs close to the policy woodlands associated with the non-Inventory designed landscape of Torwood. A narrow strip of NWSS upland mixed ash woodland is located south of the route option near Whitecairn Holiday Park and north of Barmain Hill, adjoining the route corridor. An area of NWSS woodland is within the Ladyburn Substation	Located to the north of Route Option 3 and east of Mid Hill, there are some small pockets of NWSS woodland that form part of the wider and more extensive commercial forestry in Route Option 3, to the north of Tarf Bridge. Further south, this route option includes small areas of NWSS woodland alongside the Tarf Water near the property known as Airyligg. The southern section of Route Option 1, which runs parallel to the A75, is located close to some areas of NWSS located on the lower slopes of Barnshangon Hill.	There is little to differentiate between Route Option 1 and 2 as any effects on AWI woodland can be avoided through design refinements at the detailed routeing and assessment stage. Route Option 3 is the least preferred due to the potential for unavoidable effects on the woodlands near Mid Hill Airyligg and Barnshangon Hill.

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
			Siting Area to the south of Barmain Hill. Potential effects on all these woodlands will be avoided through design refinements at the detailed routeing and assessment stage.	An area of NWSS woodland is within the Ladyburn Substation Siting Area to the south of Barmain Hill. While potential effects on all these woodlands will be avoided or minimised through design refinements at the detailed routeing and assessment stage, some effects may be unavoidable.	
Land Use	Agricultural potential	There is little to differentiate between the route options. None of the land affected is of high agricultural quality. The highest-grade land potentially impacted is Grade 4.2, which is capable of producing a limited range of crops, primarily on grassland with occasional short arable breaks for forage crops.			In term sof land use
	Forestry Capability	Most of the land within the study area is classified as Grade F5, indicating limited flexibility for the growth and management of tree crops, or Grade F6, indicating very limited flexibility.			
	Forestry (NFI)	As Route Option 1 exits westwards away from the proposed Artfield Forest Wind Farm Substation, some areas of commercial forestry would be unavoidably affected.			Route Option 2 (2b) is preferred as it would cross the shortest section of the commercial plantation. Due to the location of the proposed Artfield Forest Wind Farm Substation, all three route options would need to cross sections of commercial forestry plantation. As Route Option 2 exists from the proposed Artfield Forest Wind Farm Substation, some areas of commercial forestry would be unavoidably affected, although Route Option 2a would affect a larger area than Route Option 2b. Route Option 3 is the least preferred as it

Criterion	Consideration	Route Option 1	Route Option 2a and 2b	Route Option 3	Comment and Preference
					crosses large areas of commercial forestry.
	Wind Farms	Route Option 1 passes through the turbines associated with the planned Craig Nab Wind Farm.	Route Option 2 is close to the existing turbines associated with the Carscreugh Wind Farm, but the appropriate buffer distance can be maintained through design refinements at the detailed routeing and assessment stage.	Route Option 3 is not close to any existing or planned wind farms.	Route Option 3 is preferred as it avoids potential conflict with wind turbines. Route Option 1 is the least preferred as it will be challenging to maintain the appropriate separation distance from the turbines within the planned Craig Nab Wind farm.
Emerging Preference	Three route options have been identified to connect the proposed Artfield Forest Wind Farm Substation with the proposed Ladyburn Substation. All are subject to environmental constraints, including Category 1 and 2 Priority Peatland, designated watercourses within the River Bladnoch SAC, and archaeological and heritage assets. Route Option 1 is less favourable due to its proximity to the Bennan of Garvilland scheduled monument and the East Rhins ASA. Route Option 3 is the least preferred, as it is the longest and therefore has the greatest potential for environmental impact, including effects on the River Bladnoch SAC, the Lady Burn, sensitive drumlin landscapes east of Glenluce, and areas of Category 1 and 2 Priority Peatland habitat.				
	A technical review of the three route options by SPT concluded that a new wood pole line could be constructed along any of them, although each presents challenges, particularly in relation to peat, forestry access, and routing through remote areas. Route Option 1 poses additional challenges due to the requirement to maintain minimum separation distances from turbines - either three times the rotor diameter or the turbine height to blade tip plus 10%. Route Option 3 would potentially have to cross the existing steel lattice tower line (BT Route) which runs parallel to the north side of the A75.				
	From an economic perspective, Route Option 3 is the longest of the options and would also pass through extensive areas of commercial forestry, which could increase construction costs and complexity. It would also potentially incur more compensatory costs for loss of timber. Route Option 1 may also require a section of undergrounding to avoid conflict with wind turbines associated with the planned Craig Nab Wind Farm.				
Preferred Route	On balance, Route Option 2 is therefore identified as the preferred option. A decision on whether to adopt Route Option 2a or 2b near Artfield Forest will be made following further technical work in relation to the commercial forestry.				

