



Greenburn 132kV Connection Project

Environmental Impact Assessment
Screening Report

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Chapter 1

Introduction

1.1 SP Energy Networks (SPEN) intends to apply for Consent under Section 37 (S37) of the Electricity Act 1989 (as amended) ('the Electricity Act'), with deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997 (as amended), to install and maintain a 132 kilovolt (kV) connection from the consented Greenburn Wind Park substation (original ECU reference ECU00002037, current variation request reference ECU00005183) to the existing New Cumnock substation in East Ayrshire (hereafter referred to as the 'Proposed Development'). A 200 m wide corridor has been identified within which the Proposed Development will be located, which will thereafter be referred to as 'the Proposed Route'. The location of the Proposed Route, including the existing and proposed substations, and other existing infrastructure is shown on **Figure 1.1**.

1.2 LUC has prepared this Screening Report on behalf of SPEN to accompany a request for a formal Environmental Impact Assessment (EIA) Screening Opinion from the Scottish Ministers in accordance with Regulation 8 (1) of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, for the Proposed Development.

1.3 The purpose of this Screening Report is to set out the required information to aid the Scottish Ministers in reaching an informed decision on whether the nature, size and location of the Proposed Development is likely to give rise to significant adverse effects on the environment, and therefore, whether an EIA will be required to accompany the application for Section 37 consent. This report concludes that the Proposed Development is not considered EIA development and sets out the proposed scope of the Environmental Appraisal Report (EAR) and accompanying consent documents to be submitted as part of the S37 application.

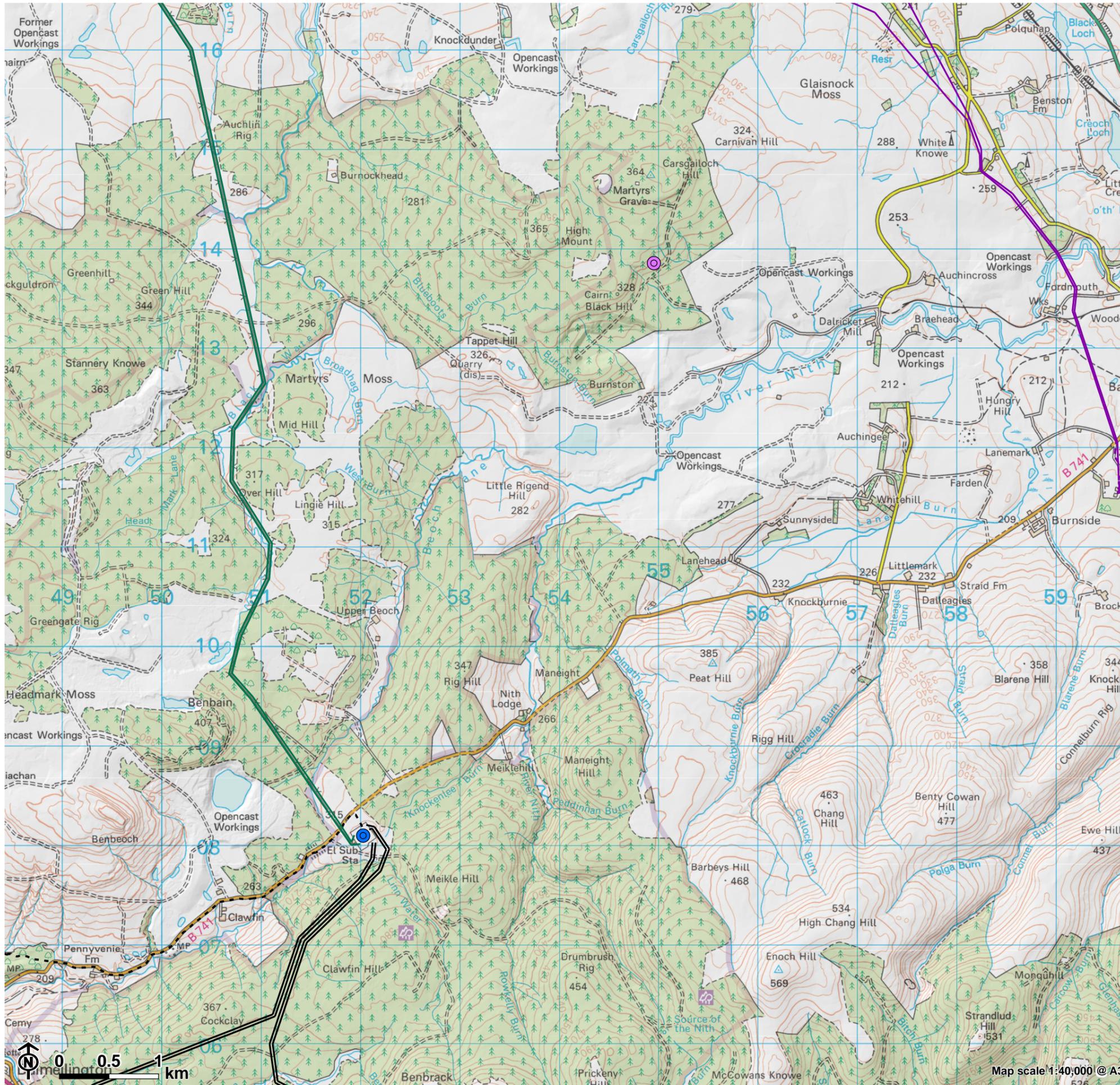
The Applicant

1.4 SPEN owns and operates the electricity transmission and distribution networks in Southern and Central Scotland through its wholly-owned subsidiaries, SP Transmission plc (SPT) and SP Distribution plc (SPD). SPT is the holder of a transmission licence¹. SPEN's transmission network is the backbone of the electricity system within its area, carrying large amounts of electricity at high voltages from generating sources such as wind farms, power stations and various other

¹ The references below to SPEN in the context of statutory and licence duties and the application for Section 37 consent should be

read as applying to SP Transmission plc.

Figure 1.1: Location Plan

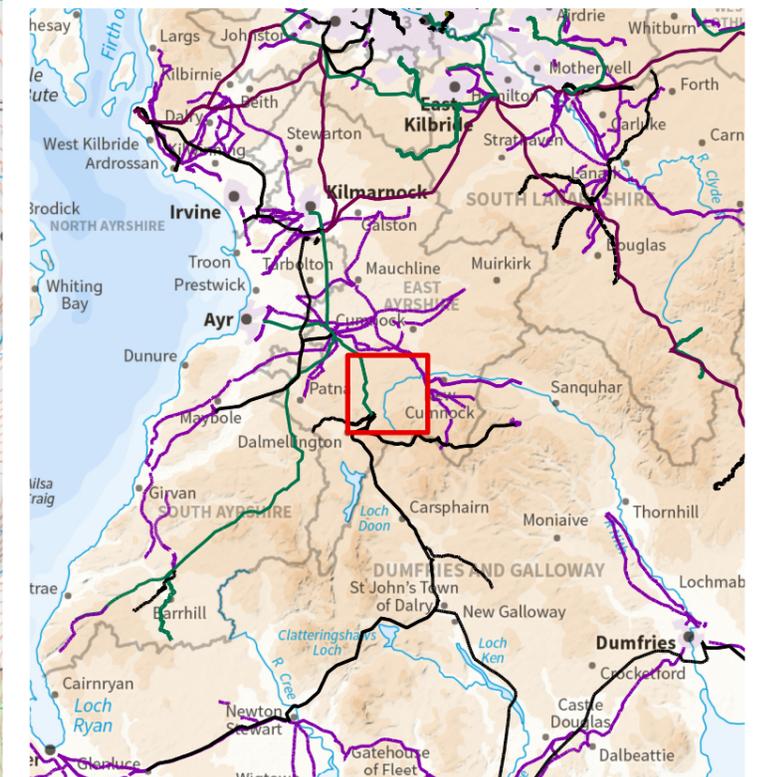


Indicative substation location

- Greenburn Wind Park Substation
- New Cumnock Collector Substation

Existing infrastructure

- 275kV OHL
- 132kV OHL
- 33kV OHL
- - - 132kV UGC
- - - 33kV UGC



utilities across long distances to connected homes and businesses. The transmission network consists of approximately 4,000 kilometres (km) of overhead line (OHL) and over 600 km of underground cable (UGC). The electricity is then delivered via the distribution network which has over 150 substations and in excess of 100 grid supply points which serves approximately two million customers in Southern and Central Scotland.

1.5 As transmission licence holder for Southern Scotland, SPEN is required under Section 9(2) of the Electricity Act to:

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

1.6 SPEN is required in terms of its statutory and licence obligations to provide for new electricity generators wishing to connect to the transmission system in its licence area. SPEN is also obliged to make its transmission system available for these purposes and to ensure that the system is fit for purpose through appropriate reinforcements to accommodate the contracted capacity.

1.7 Section 38 and Schedule 9 of the Electricity Act imposes a further statutory duty on SPEN to take account of the following factors in formulating proposals for the installation of overhead transmission lines:

- *“(a) to have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features 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 any such flora, fauna, features, sites, buildings or objects.”*

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

1.9 As a result of the above, SPEN is required to identify electrical connections that meet the technical requirements of the electricity system, which are economically viable, and cause on balance, the least disturbance to both the

environment and the people who live, work and enjoy recreation within it.

The Need for the Proposed Development

1.10 A request for a connection to the transmission grid has been received by SPEN from the developer of Greenburn Wind Park. Greenburn Wind Park was consented by Scottish Ministers in April 2023 (ECU Reference ECU00002037). The consented Greenburn Wind Park is located near New Cumnock, East Ayrshire, Scotland. It comprises up to 16 wind turbines and a battery storage facility and associated infrastructure, with an expected generating capacity in excess 50 megawatts (MW) of electricity.

1.11 An application for a variation to the Greenburn Wind Park is currently in planning (ECU00005183) to re-site one turbine and remove two other turbines, resulting in a 14 turbine scheme with tip heights up to 180 m. The substation location has remained the same. SPEN has a legal duty under the Electricity Act to provide, develop and maintain technically feasible and economically viable transmission and distribution system grid connections to new electricity generating developments. SPEN also has a duty to provide a connection for new generation (i.e. the proposed Greenburn Wind Park) to the wider electricity transmission network.

1.12 The Proposed Route for the connection is illustrated in **Figure 1.2**. Further detailed design work is required to identify the proposed alignment within the route, which will be subject to a further round of public and statutory consultee consultation prior to the submission of the Section 37 application for consent.

Routeing and Consultation

1.13 A routeing exercise was undertaken in 2024 which comprised a review of environmental, technical and economic considerations and the application of SPEN’s established step-by-step routeing principles² to identify and appraise potential route options to establish a proposed route corridor for the OHL. The methodology and findings of the routeing process are presented in the Greenburn 132kV OHL connection Project: Routeing and Consultation Report (January 2025)³.

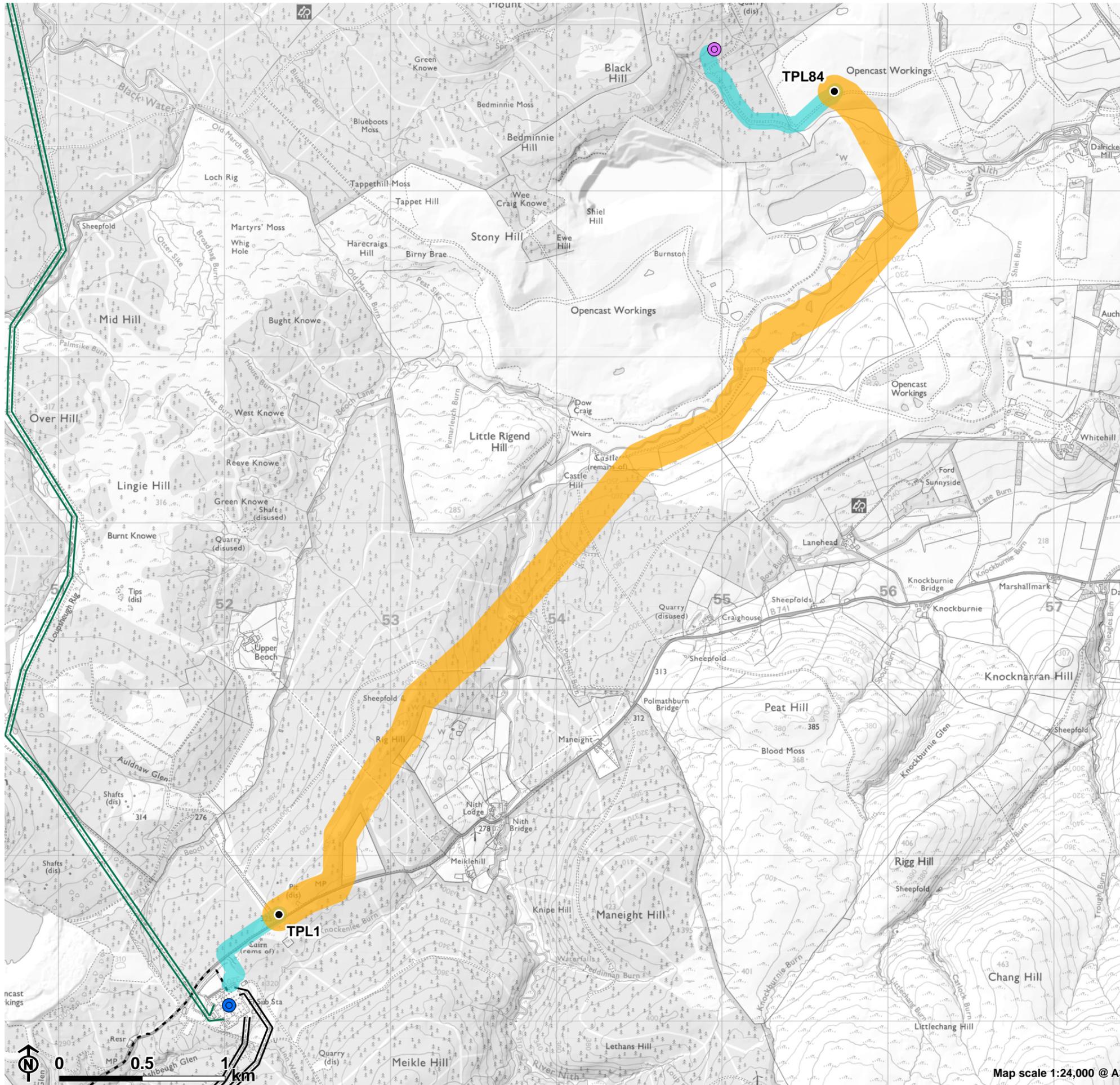
1.14 Following identification of a preferred route, consultation with the public, local authority and statutory and non-statutory consultees was carried out from 22nd January 2025 until 19th February 2025.

1.15 The public exhibition included a series of information presentation boards, newspaper adverts and leaflets outlining

² SPEN (2020) Approach to Routeing and Environmental Impact Assessment. Available at: https://www.spenergynetworks.co.uk/userfiles/file/SPEN_Approach_to_Routeing_Document_2nd_version.pdf

³ SPEN (2025) Greenburn 132kV Connection Project, Routeing and Consultation Report. Available at: https://www.spenergynetworks.co.uk/userfiles/file/Greenburn_Routeing_and_Consultation_Document.pdf

Figure 1.2: Proposed Route



- Terminal pole location (TPL)
- Proposed Route (OHL 200 m wide)
- Proposed Route (UGC 100 m wide)
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- - - 132kV UGC

details of the Proposed OHL. The focus of the consultation was to find out views on:

- The preferred route (OHL Route Option 4, combined with UGC Route Option 2) as shown in **Figure 1.2**; and
- Any other issues, suggestions or feedback; particularly knowledge of the local area, for example areas used for recreation, local environmental features, and any plans to build along the preferred route.

1.16 Following the initial consultation undertaken from 22nd January 2025 until 19th February 2025, SPEN have undertaken a further review of the route which has resulted in a variation between the preferred route consulted upon and the proposed route which is the subject of this Screening Request. Full details of the considerations which have informed this change will be reported in a separate document (Consultation Feedback Report, October 2025)⁴ and made publicly available on the SPEN project website, alongside the original Routeing and Consultation Report (January 2025).

1.17 SPEN will undertake further public consultation on the detailed route alignment following completion of environmental surveys and technical design input as well as ongoing consultation with landowners.

The Consenting and EIA Process

Requirement for EIA

1.18 To determine whether the Proposed Development is ‘EIA development’ regard must be had to the Electricity Works (EIA) (Scotland) Regulations 2017 (herein referred to as the ‘EIA Regulations’). EIA development falls into two categories: Schedule 1 development, for which EIA is mandatory; and Schedule 2 development, which is classified as EIA development where the development is *“likely to have significant effects on the environment by virtue of factors such as its nature, size or location”*.

1.19 The Proposed Development falls under Schedule 2 of the EIA Regulations as it has a voltage of 132kV or more (Schedule 2 Part (2)(a)) and will connect to the Greenburn Wind Park (for which Section 36 consent is required) to the electricity network (Schedule 2 Part (2)(c)). However, under Schedule 3 (Regulation 7(2)(a) of the EIA Regulations), an EIA for a Schedule 2 development may not be required subject to its nature, size and location with regard to the selection criteria for screening.

1.20 Therefore, this request for a Screening Opinion to the Scottish Ministers in accordance with Regulation 8(1) of the Regulations is accompanied by the relevant information in accordance with Regulation 8(2) and 8(3) and takes into account the selection criteria in Schedule 3 and the findings of the work undertaken to date as part of the routeing and consultation process.

1.21 In accordance with Regulation 8 of the EIA Regulations, the following information supports this request for an EIA Screening Opinion:

- A description of the location and the physical characteristics of the Proposed Development, provided and illustrated on **Figures 1.1, 1.2, 2.1 and 2.2** (Regulation 8 (2) (a)).
- Confirmation, as outlined in **Chapter 3: Screening Appraisal**, that the OHL is not considered to be located in an environmentally “sensitive area” (Regulation 8 (2) (b) (i) (ii)).
- A supported conclusion that the Proposed Development will not result in significant effects on the environment, as detailed in **Chapter 3** (Regulation 8 (2) (c) (d)).
- Where applicable, a description of any features, proposed measures or mitigation envisaged to avoid or prevent significant adverse effects on the environment are outlined (Regulation 8 (3)).

1.22 Based on the information presented in this report, the Proposed Development is not considered to be EIA development. Should the Scottish Ministers also determine that the Proposed Development is not EIA development and that subsequent provisions of the EIA Regulations do not apply, SPEN will undertake an environmental appraisal (set out in an EAR) in relation to key topics, to be agreed with consultees) and prepare a supporting EAR to accompany the Section 37 application⁵.

Application for Consent

1.23 Following completion of the EAR, SPEN will apply to Scottish Ministers for consent under Section 37 of the Electricity Act⁶, to install, and keep installed, the 132kV OHL identified above. In conjunction with the Section 37 application, SPEN will apply for deemed planning permission for the 132kV OHL under Section 57(2) of the Town and Country Planning (Scotland) Act 1997, as amended, for any ancillary development such as access tracks or substation

⁴ SPEN (2025) Consultation Feedback Report. Available at: https://www.spenergynetworks.co.uk/userfiles/file/Consultation_Feedback_Report_PDF_02102025.pdf

⁵ Scottish Government (August 2019 update) Applications to the Scottish Ministers Under Section 37 of the Electricity Act 1989 within an EIA Report. Guidance – Processing Applications. Available [online] at:

<https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2018/12/energy-consents-overhead-line-applications-without-an-eia-report/documents/s37-applications-without-an-eia-report-guidance/s37-applications-without-an-eia-report-guidance/govscot%3Adocument/Section%2B37%2Bapplications%2Bwithout%2Ban%2BEIA%2Breport%2B-%2Bguidance%2B-%2Bupdated%2BAugust%2B2019.pdf>

facilitation works. The EAR will accompany the application for consent.

Structure of the Report

1.24 In accordance with Regulations 8(2) and 8(3), and taking into account the selection criteria in Schedule 3 of the EIA Regulations, this EIA screening request includes a plan sufficient to identify the land (see **Figure 1.2**), a description of the nature and the purpose of the Proposed OHL (**Chapters 1 and 2**), consideration of the possible effects on the environment and identification of measures proposed to prevent significant adverse effects informed by the findings of the work undertaken to date as part of the routeing process (**Chapter 3**).

1.25 The remainder of the report is structured as follows:

- **Chapter 2** provides a description of the Proposed Development, including outline construction and maintenance information;
- **Chapter 3** provides a summary of the assessments carried out to date, including an overview of the environmental baseline and a brief description of any likely effects of the Proposed Development; and
- **Chapter 4** outlines the topic areas to be considered further as part of the EAR and documentation to support the application for Section 37 Consent.

1.26 The following appendices are also provided:

- **Appendix A:** Environmental Screening Checklist; and
- **Appendix B:** Peat Survey Report.

Chapter 2

Project Description

The Proposed Route and Surrounding Area

2.1 As illustrated on **Figure 1.2**, the Proposed Route extends from the proposed Greenburn Wind Park Project substation, routing to the east of the House of Water opencast restoration area and then traveling south to cross the River Nith. The Proposed Route then enters coniferous woodland crossing the River Nith once more following the eastern flank of Rig Hill. The corridor then continues south-west, crossing the B741 to reach New Cumnock Station.

2.2 Topography within parts of the Proposed Route have been modified by opencast mining and ongoing restoration. However, it generally comprises an undulating area of foothills and broad river valley which ranges from 220m AOD near Dalricket Mill in the east, to the north-facing slope of Maneight Hill at 370 m AOD in the south. Rig Hill (347 m AOD) is a ridge-like foothill to the Carsphairn Hills, located north-east of New Cumnock substation.

2.3 In addition to the River Nith, there are several small tributary watercourses within the study area, including Beoch Lane and Knockenlee Burn, and areas of standing water within areas affected by opencast mining and ongoing restoration.

2.4 Former mineral extraction and part-restored areas have an impact on the character of the area. Ongoing restoration work of former opencast mines has resulted in the creation of a large steep-sided waterbody at Shiel Hill, and the landscaping and resurfacing of previously excavated areas. Much of the of the study area is relatively rural in nature, comprising small fields of rough grazing, extensive coniferous plantation, and areas of mixed and broadleaf woodland (which include areas of open ground).

2.5 The B741 road passes through the south of the corridor and there are several residential properties adjacent to it, including Maneight and Nith Lodge. There is also a property at Upper Beoch, north of the B741 and west of Rig Hill. Although there are other buildings noted within the study area, these are understood to be associated with former mineral extraction and ongoing restoration and are not inhabited.

2.6 In terms of infrastructure, two existing OHLs extend from New Cumnock substation: a 275kV OHL forms the western edge of the study area, heading north, and a 132kV OHL heads south-west.

2.7 In addition to the consented and proposed Greenburn Wind Park (which is presently partly under construction), the following wind farms are also noted within the nearby vicinity of the Proposed Development as shown on **Figure 2.1**:

- North Kyle Energy Park (operational); and
- Overhill Wind Farm (consented).

The Proposed Development

2.8 A new 132kV connection is required to connect the Greenburn Wind Park substation to the to the existing New Cumnock substation. The Proposed Development would be approximately 8.5 km in length and will comprise primarily of a single circuit 132kV OHL supported on Trident 'H' wood poles with two sections of UGCs approximately 1.7 km in total from the entries into/out of the two substations. The UGC will connect to the OHL sections by a terminal pole. The Proposed Development also includes temporary ancillary infrastructure such as access tracks and working areas.

2.9 Further detailed design work is required to identify the final alignment of the proposed OHL and UGC, including the placement of wood poles. Therefore, a 200 m wide corridor has been adopted for the OHL, and a 100 m wide corridor has been adopted for the UGC (collectively forming the Proposed Route) for the purpose of this screening appraisal, as shown in **Figure 1.2**.

2.10 The indicative alignment will also be subject to a further round of public and statutory consultee consultation prior to the submission of the Section 37 application for consent.

2.11 Land rights will be sought with each landowner for a corridor, typically 60m wide reflecting a 30 m wayleave either side of the centre of the Proposed Development alignment, to protect the resilience of the line from future development and from falling trees. The Screening Corridor is therefore considered broad enough to allow for further detailed design work.

2.12 Further technical design work will also be undertaken by SPEN to further define the location of access tracks and working areas, prior to the final environmental appraisal and Section 37 application being submitted. This design work will also take into account other environmental constraints identified through surveys and liaison with landowners.

Overhead Line (OHL) Infrastructure

2.13 With an OHL of this nature, conductors (or wires) are suspended at a specified height above ground, incorporating minimum safety clearances and supported by wooden poles, spaced at intervals.

2.14 Conductors can be made either of aluminium or steel strands. This connection will include a single three-phase circuit with no earth wire which means that the wood poles will

support three conductors. One of the phase conductors will incorporate a fibre optic cable for communication purposes.

2.15 Conductors are strung from insulators attached to the steelwork at the top of the pole and prevent the electric current from crossing to the pole body.

Wood Pole Structure

2.16 The 132kV OHL will be constructed using the Trident wood pole (double H pole) design with galvanised steelwork cross-arms supporting aluminium conductors on insulators. These are suitable for supporting single circuit lines operating at 132kV.

2.17 The proposed design is described below, and examples of typical pole designs are shown on **Figure 2.2**.

2.18 Wood poles are fabricated from pressure impregnated softwood, treated with a preservative to prevent damage to structural integrity.

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

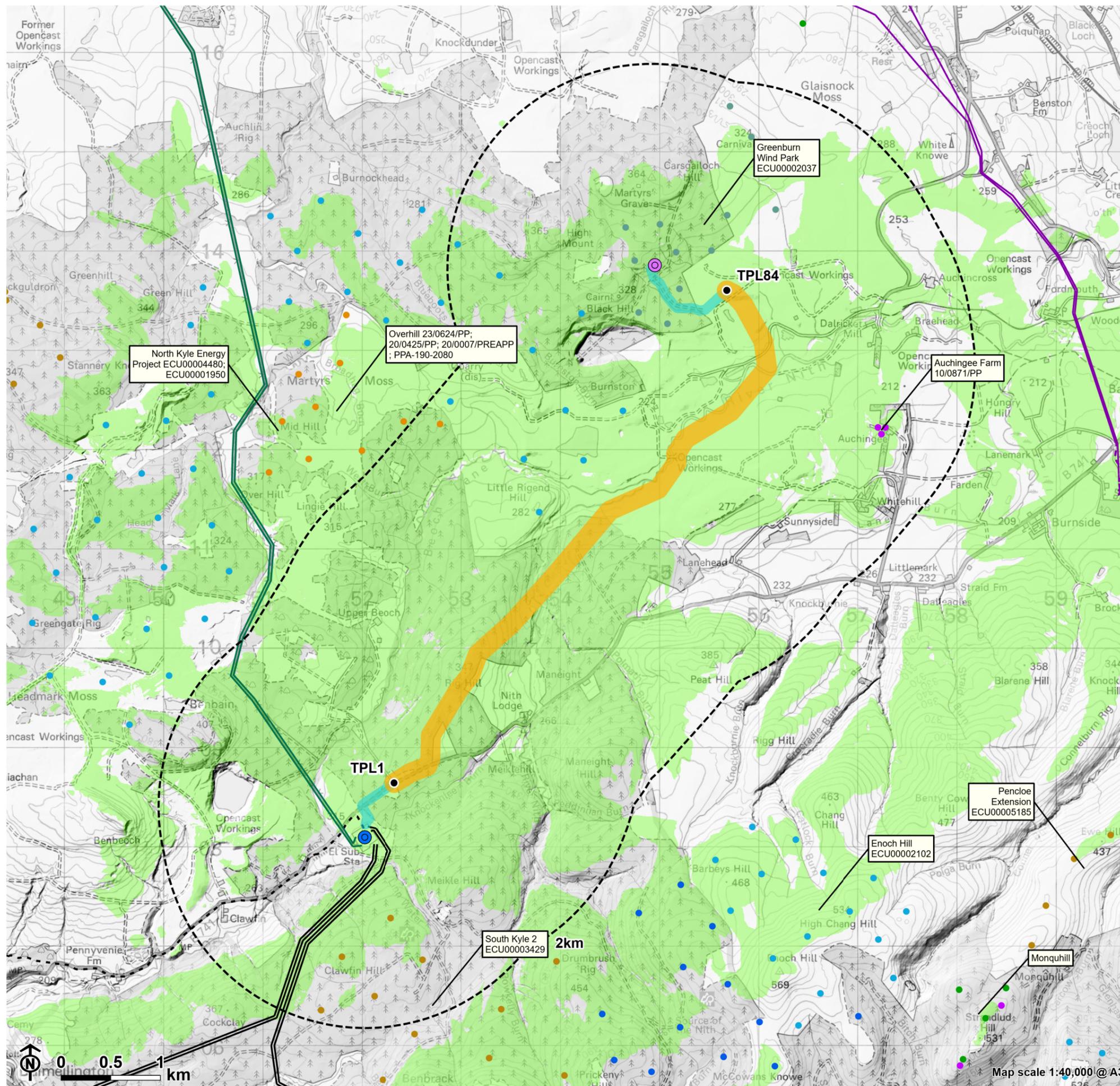
- **Suspension or Line:** Where the pole structure forms part of a straight section of line and no change in direction is required. Straight sections of wood poles include section poles where segmentation is required to contain any failure in the OHL.
- **Tension or Angle:** Where there is a horizontal or vertical deviation in line direction. The maximum allowable angle deviations on single wood pole designs is 30 degrees, with deviations up to 75 degrees being permitted on 'H' poles. All angle structures require to be back stayed.
- **Terminal:** Where the OHL terminates before entry into a substation or on to an UGC section via a cable sealing end compound or platform.
- **Terminal:** where the overhead line terminates into a substation or on to an underground cable section via a separate cable sealing end compound or platform.

2.20 The maximum allowable angle deviation on single wood pole designs is 30 degrees, with deviations up to 75 degrees being permitted on double 'H' poles. **Figure 2.2** illustrates both the single and H pole variants of the intermediate and angle poles.

Wood Pole Heights and Span Lengths

2.21 The 132kV OHL will be supported on trident wood poles. The standard height of trident poles (including steel work and insulators) varies from 10 m to 22 m. The wood poles for the Proposed Development will likely have a height above ground of 10-17 m, however, these can be extended or reduced in height, as required. Pole heights may require to be increased where circumstances dictate, e.g. over elevated land,

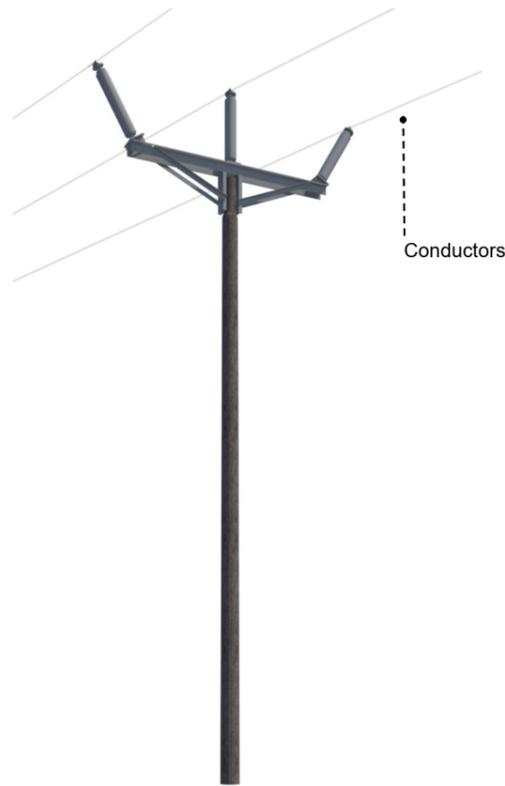
Figure 2.1: Cumulative Windfarm Developments



- Terminal pole location (TPL)
- Proposed Route (OHL 200 m wide)
- Proposed Route (UGC 100 m wide)
- ⬡ 2km Study area
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- 33kV OHL
- - - 132kV UGC
- - - 33kV UGC
- Wind Farm status**
- Operational
- Under Construction
- Consented
- Appeal/Public Inquiry
- Application Submitted
- Application Submitted (Previously Consented)
- Design/Scoping
- Zone of theoretical visibility (bare earth)**
- Proposed development visible

Note:
The ZTV is calculated to indicative individual pole heights (between 10.75m and 16.57m) along the centre line of the Proposed Route, from a viewing height of 2m above ground level. The terrain model assumes bare ground and is derived from OS Terrain 5 height data. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcGIS Pro 3.4.0 software.

Figure 2.2: Typical Wood Pole (Component Parts of 132 kV 'Trident' Design Wood Pole)



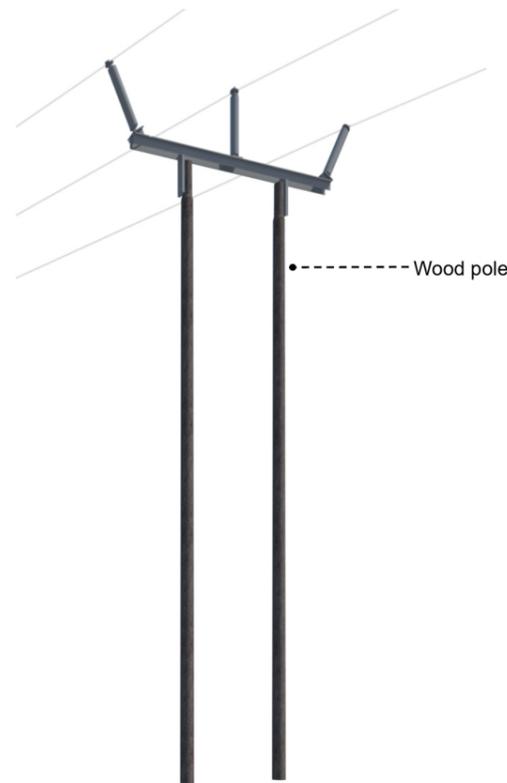
Component parts of 132kV 'Trident' design wood pole: Intermediate (H pole)



Component parts of 132kV 'Trident' design wood pole: Angle (H pole)



Component parts of 132kV 'Trident' design wood pole: Angle (H pole)



Component parts of 132kV 'Trident' design wood pole: Intermediate (H pole)



Component parts of 132kV 'Trident' design wood pole: Terminal (H pole)

structures or features. The height above ground of the wood pole also includes the length of the insulators, which are approximately 1.6 m in height (as shown in **Figure 2.2**).

2.22 The section of OHL between wood poles is known as the 'span', with the distance between them known as the 'span length'. Span lengths between wood poles average between 80 m to 100 m but can be increased if there is a requirement to span a larger distance due to the presence of a feature in the landscape such as a river or loch.

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

Wood Pole Colouring

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

2.25 The wood pole top cross-arms are galvanised steel and support the aluminium conductors on stacks of grey insulator discs. Both the steelwork and aluminium will weather and darken after a few years.

Underground Cable (UGC) Infrastructure

2.26 It is anticipated that sections of UGC will be required to facilitate entry/exit to the two substations.

2.27 The sections to be undergrounded will comprise three cables in tri-foil arrangement with a multi-celled duct laid alongside to allow for telecommunications control and monitoring cables. Each cable will comprise a copper or aluminium central conductor encased in XLPE insulation material, overlaid with a metallic sheath and final outer sheath of graphite coated polythene. The cables will be surrounded with well compacted, thermally selected sand and backfilled with suitably screened excavated material. Cable markers will be deployed approximately every 250 m along the route as a warning and indication that high voltage cable exists in the vicinity.

2.28 A typical 132 kV UGC cross-section is provided as **Figure 2.3**. Where connected to an OHL, a UGC may also involve the creation of a fenced compound for the siting of terminal supports and sealing end compounds above ground.

Construction Process

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

Wood Pole Construction

2.30 The construction of the 132 kV OHL will follow a well-established sequence of activities as outlined below:

- Preparation of accesses and felling of woodland to allow safe operation of the OHL;
- Excavation of foundations;
- Delivery of wood poles;
- Erection of wood poles;
- Delivery of conductor drums and stringing equipment;
- Insulators and conductor erection and tensioning; and
- Clearance and reinstatement.

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

2.32 Following commissioning of the OHL, all equipment and temporary access of construction areas will be removed with the land being reinstated to as similar a condition as possible prior to the works having taken place.

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

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

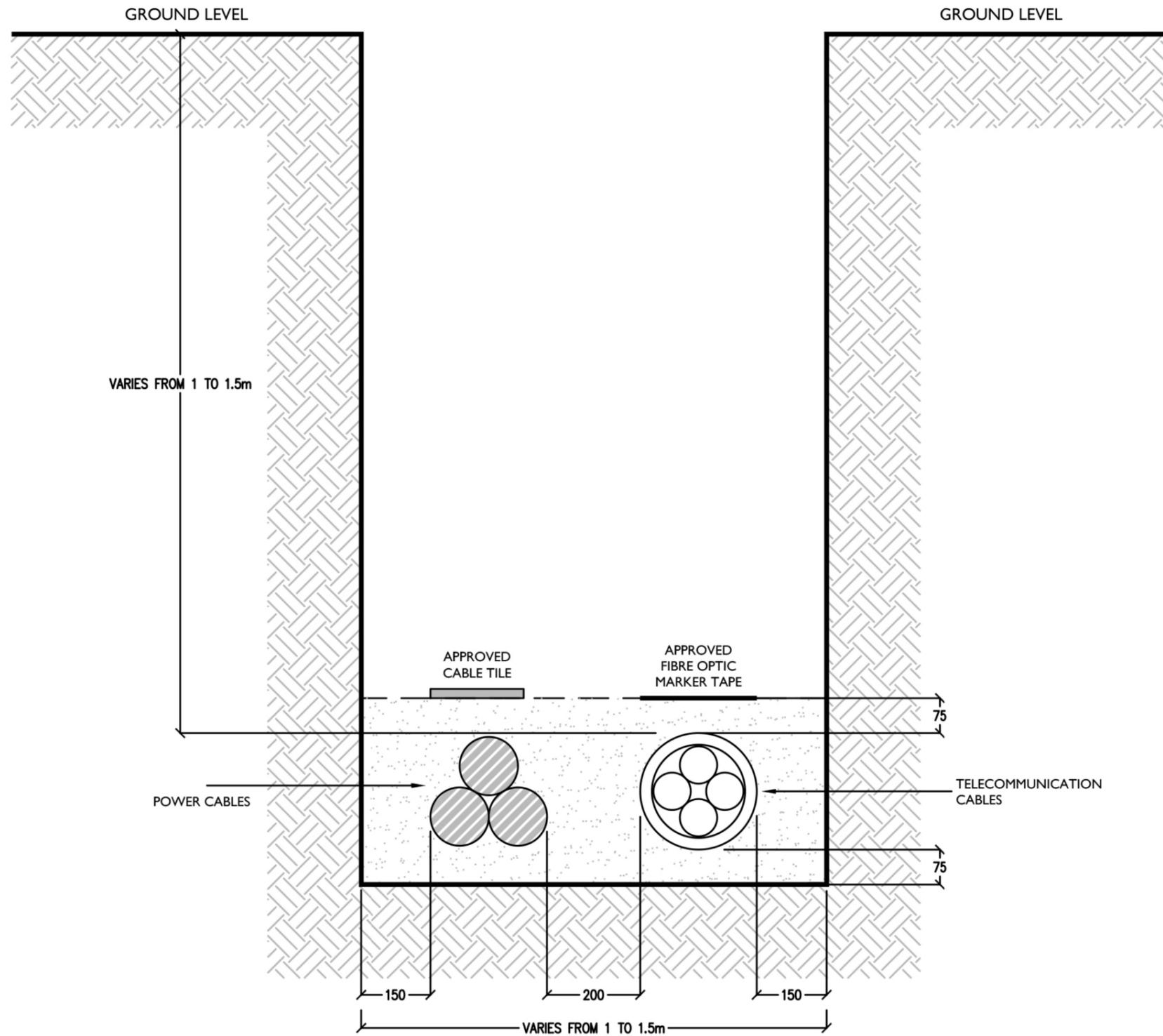
UGC Construction

2.35 Open cut trenching is most likely to be used for installation of the sections of UGC proposed for the Greenburn 132kV Connection Project. A ducted solution may however be necessary depending on ground conditions. Works commonly consist of the use of low ground pressure vehicles or trackway, the excavation of the cable trench by mechanical excavators, cable laying, the backfilling of the trench with sand and native material and surface reinstatement.

Access

2.36 Temporary accesses to all pole locations will be taken from the existing main road network wherever feasible, with

Figure 2.3: Typical 132 kV Underground Cable Trench



the use of selected unclassified roads also likely to be required. The use of existing tracks and watercourse crossings will be maximised, with the upgrading of these where necessary.

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

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

Temporary Working

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

2.40 In some cases, the shape or size of the working area will be determined by nearby environmental or land use constraints, identified prior to construction. Each working area will be taped off to delineate the area for environmental protection reasons. Hardstanding is not required for wood pole working areas but there may be some disturbance to the surrounding ground as result of worker's movements.

2.41 Installation of underground cables typically involves open-cut trenching, where a trench is excavated by mechanical diggers, cables are laid, and the trench is backfilled with sand and native material before surface reinstatement. In some cases, such as crossing watercourses or motorways, trenchless techniques like directional drilling may be used.

2.42 Temporary haul roads and construction compounds are established to support the works, usually located near the midpoint of the cable route. Cable sections are joined at jointing pits, which are installed at intervals and allow for future maintenance access.

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

Construction Timescales

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

Operation and Maintenance

2.45 Whilst most OHL components are maintenance free, exposed elements which suffer from corrosion, wear, deterioration and fatigue may require inspection and periodic maintenance. OHL conductors and supports generally require refurbishment after approximately 40 years.

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

2.47 UGC will not require regular maintenance unless a fault is identified along the line, due to the location underground and away from exposure to the weather. However, annual maintenance checks on foot are commonly required during operation.

Decommissioning

2.48 Should the Greenburn Wind Park be decommissioned, the Proposed Development will also be decommissioned and the wood poles and UGC will be removed in their entirety, with components re-used where possible. All ground disturbance will be fully reinstated. If lines are decommissioned, UGCs may be left in-situ or carefully removed by opening up the ground, this is determined on a site-by-site basis.

Infrastructure Location Allowance

2.49 The final route for the Proposed Development will be refined through the design process, informed by the desk and field based environmental surveys, and consent will be sought for it. Nonetheless, infrastructure components may require to be subject to further minor deviation to allow for unconfirmed ground conditions or unforeseen issues arising at the time of construction, including:

- Pre-construction confirmation of dynamic environmental conditions e.g. the location of protected species;
- More detailed technical survey information, particularly for unconfirmed ground conditions such as the wooded areas;
- To provide further scope for the effective mitigation of any likely environmental effects; and
- Any minor alterations requested by landowners.

2.50 Micro-siting provides scope for further mitigation of potential effects. The proposed 'infrastructure location allowance' (ILA) will form part of the application for Section 37 consent and can be anticipated to be a condition attached to any consent for the Proposed Development. Typically for a

wood pole line, this ILA is 50 m in any direction from the centre line of the infrastructure components.

Use of Natural Resources and Production of Waste

Use of Natural Resources

2.51 The Proposed Development will not require significant use of natural resources, including resources which are non-renewable or in short supply. There would be no major changes to land use within the local area, with only minimal long-term land take required for the wood poles and UGCs, although small areas of land may require to be removed from forestry use.

2.52 The construction methodology will ensure that watercourse crossings do not give rise to any reduction in water quality or impede water flow, while there would be no requirement for potable water consumption.

Production of Waste

2.53 The Proposed Development will not give rise to any significant quantities of waste as a result of the installation of the OHL and UGC. Any soils or peat excavated as part of the excavation of pole footings will be replaced in situ as per standard industry practice. Good practice waste management methods will be implemented during the construction phase. These will encourage the reduction, reuse and recycling of wastes. Mitigation measures will be put in place to further minimise the potential environmental effects associated with the storage and transportation of waste, with further details provided below:

- Waste will be generated, and will require management, at a number of construction stages including:
 - Clearance of vegetation along the route to enable access to pole locations and construction of the OHL and UGC;
 - Stripping of topsoil and excavation of materials for construction of poles and cables; and
 - Construction of ancillary works, including temporary working areas.

2.54 Measures to reduce possible environmental effects associated with the storage and transportation of waste will include:

- The careful location of stockpiles and other storage areas;
- The use of good practice in the design of waste storage areas and the use of suitable waste containers;
- The use of sheeting, screening and damping where appropriate and practicable;

- The control and treatment of runoff from soil and waste soil stockpiles;
- Minimising storage periods;
- Minimising haulage distances; and
- The sheeting of vehicles.

2.55 Any materials that cannot be reused will be disposed of according to relevant waste management legislation which will serve to address a number of possible environmental effects.

2.56 All of the above details will be enforced through a Site Waste Management Plan (SWMP) as part of the Construction Environmental Management Plan (CEMP), details of which will be further outlined in the EAR to accompany the Section 37 application.

Environmental Management

2.57 The CEMP will be developed for the Proposed Development and adopted by the Principal Contractor during the construction phase. The principal objective of this document is to provide information on the proposed infrastructure and to aid in avoiding, minimising and controlling adverse environmental effects. Furthermore, this document will define good practice as well as specific actions required to implement mitigation identified in the Environmental Appraisal Report to accompany the Section 37 application, the planning process and / or other licencing or consenting processes.

2.58 The CEMP will be updated during the pre-construction phase and form part of the contractor documents between the Applicant and the appointed construction contractor.

Forestry

2.59 The potential removal of forestry forms part of the project development description and will be considered in the topics included in the environmental appraisal accordingly. Implications for forestry are considered in detail through the design stage of the development proposals. For the purposes of considering potential implications for forestry at the screening stage, a centre line of the proposed route corridor has been used. Through the route alignment, the removal of forestry will be minimised where possible.

2.60 The Proposed Development may result in:

- Forestry loss – SPEN will be committed to deliver off site compensatory planting for the full area of tree loss in

keeping with The Scottish Government Policy on the Control of Woodland removal⁶.

2.61 Potential implications on forestry will be discussed in the project description chapter of the environmental appraisal report. All efforts will be taken through the detailed alignment design to minimise forestry removal unless it is unavoidable due to other balancing environmental factors.

⁶ Forestry Commission Scotland (2019) The Scottish Government's Policy on Control of Woodland Removal. Available at <https://www.forestry.gov.scot/publications/285-the-scottish->

[government-s-policy-on-control-of-woodland-removal/viewdocument/285](https://www.forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal/viewdocument/285) (accessed 20 June 2025).

Chapter 3

Screening Appraisal

Existing Site Conditions and Consideration of Potential for Significant Environmental Effects

3.1 This chapter presents the baseline findings of desk and field based information required by Regulation 8 Parts 2 (c) and (d) and Schedule 3 of the EIA Regulations to inform the determination of whether any effects of Proposed Development are likely to be significant. In addition, consideration has been given to the adoption of potential mitigation measures to avoid or prevent significant effects where relevant. These measures should be considered when formulating a decision on the need for EIA. Based on the findings of the screening exercise, **Chapter 4** provides details of the environmental documentation which is proposed to be submitted in support of the Section 37 application.

Landscape and Visual Amenity

3.2 A high-level landscape and visual appraisal was undertaken, using desk-based information and supplemented by site visits, to identify and appraise route options as part of the routeing process. This considered the susceptibility of the local landscape to the Proposed Development, general visual amenity, and potential visibility from residential and recreational receptors, as set out in the Greenburn 132kV Connection Project: Routeing and Consultation Report³ (January 2025). The appraisal concluded by recommending the route option which had the best potential to minimise visual effects upon receptors and to make use of topography and woodland to minimise the geographical extent of effects upon the wider landscape.

3.3 As the design process evolves, and environmental surveys influence the design of the Proposed Development, consideration of potential landscape and visual effects will continue to inform the iterative design process. There is opportunity, within technical parameters and balanced with other environmental considerations, to position individual wood poles in a way which further minimises their potential effect upon residential and wider landscape and visual receptors.

3.4 As part of the environmental information to be submitted in support of the Section 37 Application, an appraisal of the potential effects on landscape and visual receptors will be undertaken. This will be based upon the final design information and will make reference to a computer-generated

zone of theoretical visibility (ZTV) plans and visualisations (which will also be included in the EAR).

Baseline

3.5 A 2 km landscape and visual amenity study area has been identified from the Proposed Route. The extent of the study area has been informed by the ZTV and professional judgement and defined on the basis that at distances greater than 2 km significant effects on landscape character and visual amenity are unlikely to occur, in this context.

3.6 The 2 km study area is entirely within the East Ayrshire Council area; it is adjacent to the northern edge of the Carsphairn Hills and includes a section of the River Nith, approximately 3.5 km west of the settlement of New Cumnock at its closest point.

3.7 Topography within parts of the study area has been modified by opencast mining and restoration; however, it generally comprises an undulating area of foothills and broad river valley which ranges from approximately 210 m AOD near Dalricket Mill in the east, to the rounded summits of Clawfin Hill (375 m AOD), Meikle Hill (418 m AOD), Maneight Hill (423 m AOD) and Peat Hill (385 m AOD) in the south, which form foothills to the Carsphairn Hills. Rig Hill (347 m AOD) forms a more ridge-like profile, located to the north of these summits, on the opposite side of the B741.

3.8 In addition to the River Nith, there are several small tributary watercourses within the study area, including Beoch Lane and Knockenlee Burn, and areas of standing water within areas affected by opencast mining and ongoing restoration.

3.9 Former mineral extraction and restored areas have an impact on the character of the area. Ongoing restoration work of former opencast mines has resulted in the creation of a large steep-sided waterbody south of Black Hill (328 m AOD), and the landscaping and resurfacing of previously excavated areas. Wind turbines at the operational North Kyle Wind Farm are located to the west and south of this waterbody. Much of the rest of the study area is relatively rural in nature, comprising small fields of rough grazing, extensive coniferous plantation, and areas of mixed and broadleaf woodland (which include areas of open ground).

3.10 The B741 road passes through the south of the study area and there are several residential properties adjacent to it, including Maneight and Nith Lodge. There is also a property at Upper Beoch, north of the B741 and west of Rig Hill. Although there are other buildings noted within the study area, these are understood to be associated with former mineral extraction and ongoing restoration and are not inhabited.

3.11 In terms of other infrastructure, two existing OHLs supported on steel towers extend from New Cumnock substation: a 275 kV OHL forms the western edge of the study area, heading north, and a 132kV OHL heads south-west. The Dersalloch OHL connection, which is supported on wood poles, is also to the west of the study area.

Landscape Designations

3.12 There are no national landscape designations located within the study area. A small proportion of the Doon Valley Local Landscape Area (LLA) falls within the south-western extents of the 2 km study area. This is illustrated on **Figure 3.1**.

Landscape Character

3.13 The NatureScot digital map-based national Landscape Character Assessment (published in 2019) has been used as the basis for determining the Landscape Character Types (LCTs) across the study area. The LCTs are shown on **Figure 3.1** and listed below:

- Southern Uplands with Forest – Ayrshire LCT (82)⁷;
- Foothills – Ayrshire LCT (76)⁸;
- Upland Basin – Ayrshire LCT (74)⁹; and
- Southern Uplands – Ayrshire LCT (81)¹⁰.

3.14 The Landscape and Visual Appraisal as part of the EAR will consider the potential for direct effects upon LCTs within which the Proposed Development is proposed, and for indirect effects upon LCTs in the 2 km study area, and from which there is potential visibility of the Proposed Development.

Visual Amenity

3.15 Visual receptors identified during the routing process include:

- Residential receptors at scattered properties within the study area, including Upper Beoch to the north-west of Rig Hill, and Maneight, Nith Lodge, and Meiklehill adjacent to the B741;
- Recreational receptors utilising access tracks that extend along the river valley of the Nith; and
- Road users on the B741 and the minor road network in the north of the study area.

3.16 The Landscape and Visual Appraisal will consider the potential for effects upon these visual receptors, as shown on **Figure 3.2**.

⁷ [Southern Uplands with Forest - Ayrshire LCT 82 \(NatureScot 2019\)](#)

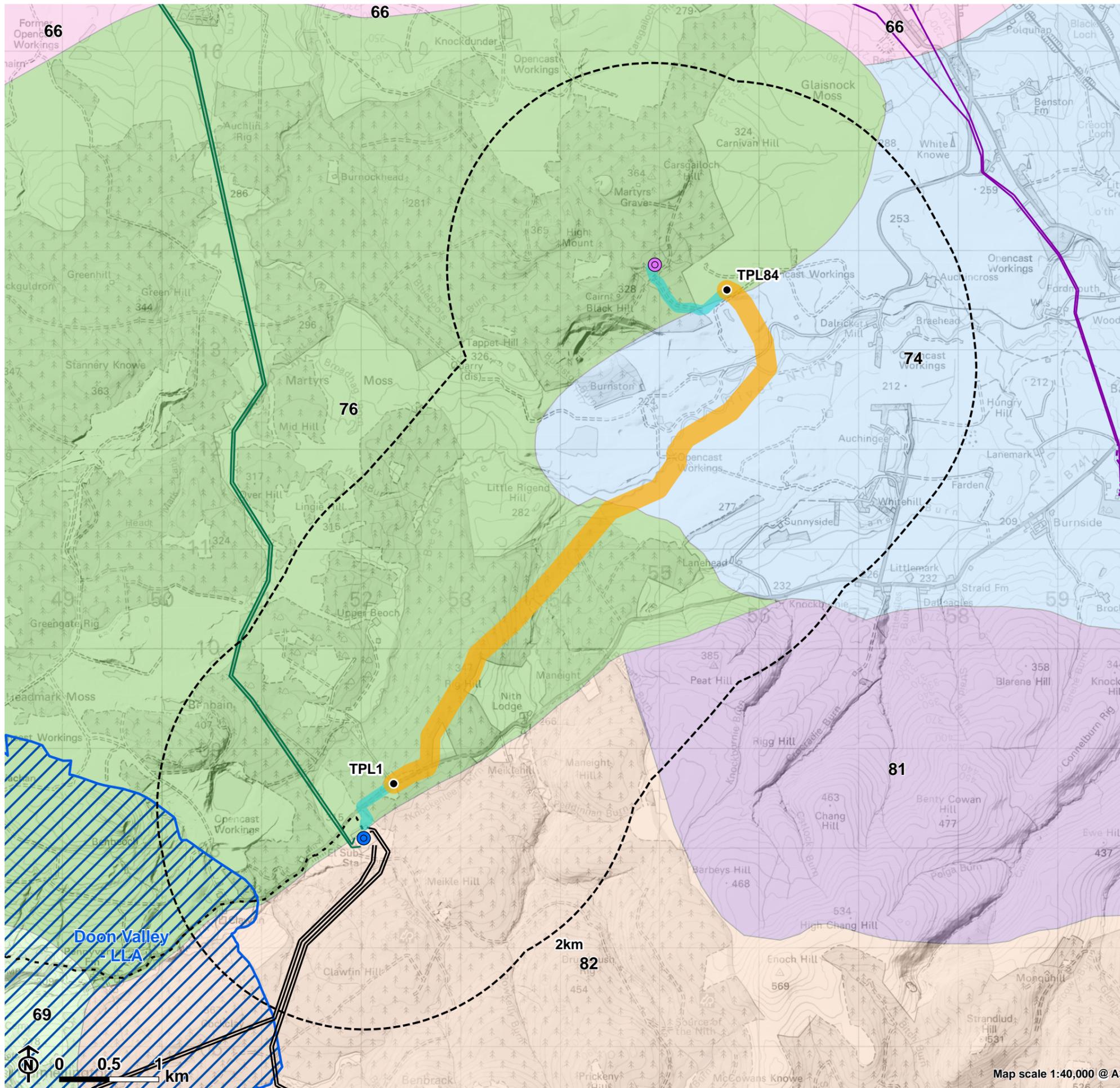
⁸ [Foothills - Ayrshire LCT 76 \(NatureScot 2019\)](#)

⁹ [Upland Basin – Ayrshire LCT 74 \(NatureScot 2019\)](#)

¹⁰ [Southern Uplands – Ayrshire LCT 81 \(NatureScot 2019\)](#)



Figure 3.1: Local Landscape Character Types and Landscape Designations

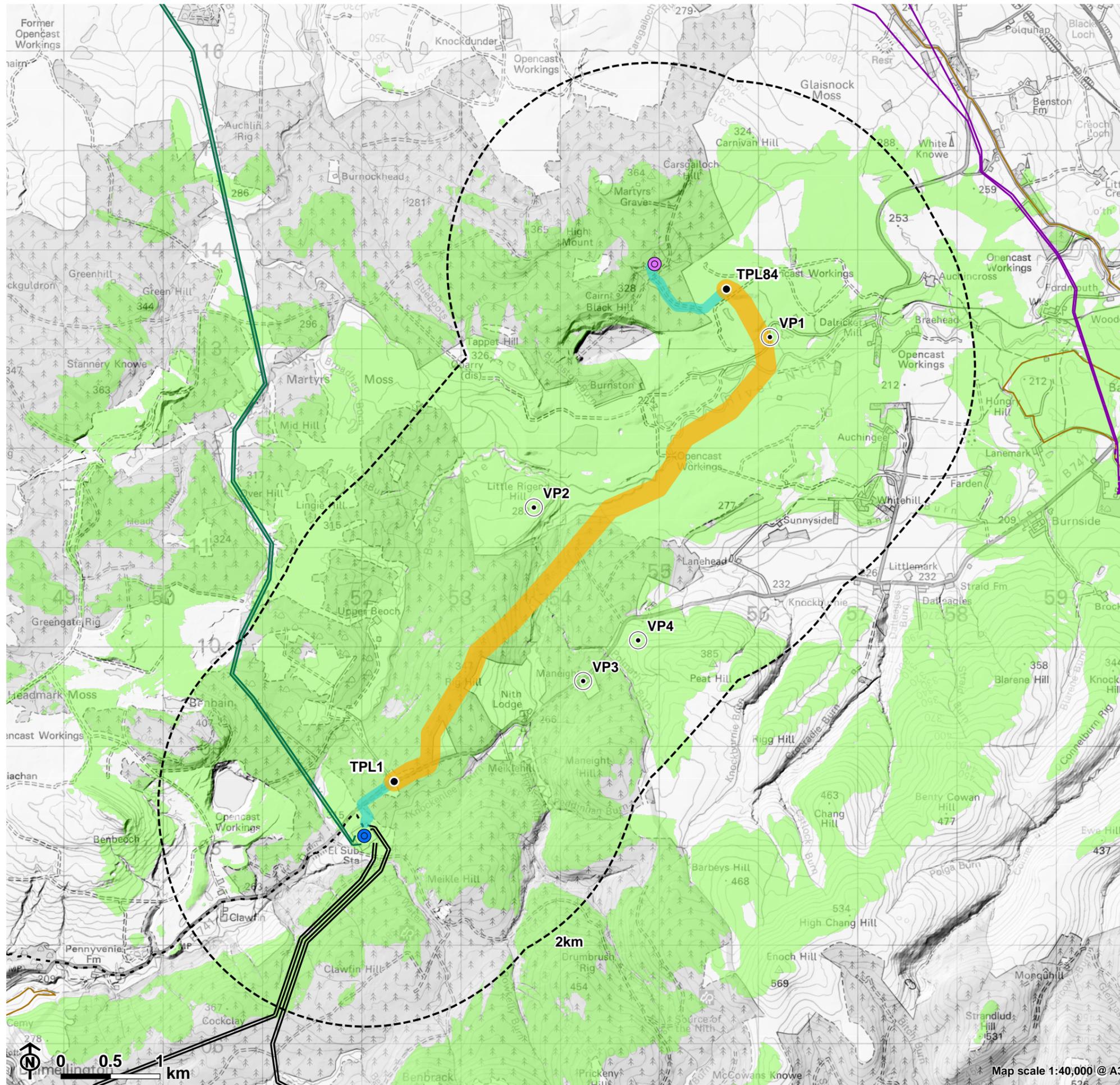


- Terminal pole location (TPL)
- Proposed Route (OHL 200 m wide)
- Proposed Route (UGC 100 m wide)
- ⊞ 2km Study area
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- 33kV OHL
- - - 132kV UGC
- - - 33kV UGC
- Designated landscapes**
- ▨ Local Landscape Area (LLA)
- Landscape Character Types (NatureScot 2019)**
- 66. Agricultural Lowlands - Ayrshire
- 69. Upland River Valleys - Ayrshire
- 76. Foothills - Ayrshire
- 81. Southern Uplands - Ayrshire
- 82. Southern Uplands with Forest - Ayrshire
- 74. Upland Basin - Ayrshire



Map scale 1:40,000 @ A3

Figure 3.2: Zone of Theoretical Visibility and Proposed Viewpoints



- Terminal pole location (TPL)
- Proposed Route (OHL 200 m wide)
- Proposed Route (UGC 100 m wide)
- ⬡ 2km Study area
- Core Path
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- 33kV OHL
- - - 132kV UGC
- - - 33kV UGC

Zone of theoretical visibility (bare earth)

■ Proposed development visible

● **Viewpoint**

- VP1. Minor Road west of Dalrickat Mill
- VP2. Little Rigend Hill
- VP3. B741, Maneight
- VP4. Peat Hill

Note:

The ZTV is calculated to indicative individual pole heights (between 10.75m and 16.57m) along the centre line of the Proposed Route, from a viewing height of 2m above ground level. The terrain model assumes bare ground and is derived from OS Terrain 5 height data. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcGIS Pro 3.4.0 software.

Appraisal

3.17 . An initial indicative bare ground Zone of Theoretical Visibility (ZTV) has been prepared for the indicative Proposed Route, as shown on **Figure 3.2**. The ZTV has been run using indicative likely pole heights (between 10.75-16.25) along the centre line of the Proposed Route.

3.18 The ZTV, in conjunction with fieldwork has been used to inform the selection of representative viewpoints to be considered in the landscape and visual appraisal. Viewpoints have been identified to represent a range of receptors, distances and viewing experiences.

3.19 The proposed viewpoint locations are listed in the table below and are shown on **Figure 3.2**.

Table 3.1 Proposed Appraisal Viewpoint Locations

VP Ref	Name	Grid Ref	Reason for selection
VP1	Minor Road west of Dalricket Mill	256116 613120	Representative of views experienced by road users and recreational receptors from a minor road west of Dalricket Mill.
VP2	Little Rigend Hill	253736 611403	Representative of views experienced by recreational receptors from an elevated location above the River Nith.
VP3	B741, Maneight	254233 609655	Representative of views experienced by road users and scattered residents along the B741.
VP4	Peat Hill	254787 610065	Representative of views experienced by recreational receptors from an elevated location south of the B741. The summit has a trig point.

Conclusion

3.20 The Proposed Route is located within a landscape which has been altered by human influences including electricity and linear transport infrastructure, large-scale wind turbines, opencast mining, commercial forestry and scattered settlement. Likely future change to the landscape of the study area and its immediate environs comprise the introduction of further large-scale wind turbines, including the consented developments of Overhill Wind Farm (20/0425/PP) and Greenburn Wind Park (ECU00002037), to which the Proposed Development will provide a grid connection (see **Figure 2.1**).

3.21 Design of the Proposed Development will seek to further minimise potential effects upon receptors within the study area as far as practicable. As such it is considered unlikely that the Proposed Development will give rise to significant adverse effects on the landscape resource or landscape character within the study area. Any visual effects will be geographically localised and seen in the context of other infrastructure, including large-scale wind turbines. As such, it is also considered unlikely that the Proposed Development will give rise to significant adverse effects on visual amenity within the study area. Furthermore, due to the type of infrastructure proposed and distance from properties (the OHL is well beyond 150m from all properties), effects on residential visual amenity will not be significant.

Ecology

3.22 The Ecology Chapter of this Screening Report has been informed by an, Extended Phase 1 Habitat Survey and National Vegetation Classification survey of habitats of conservation concern¹¹ within the 'Survey Area' and desk study within the 1 km Study Area shown on **Figure 3.3**.

3.23 The surveys were undertaken in May and July 2025, following relevant best practice guidelines^{12,13}. The surveys sought to identify the habitats present within the Survey Area, as well as to understand their potential to support protected species.

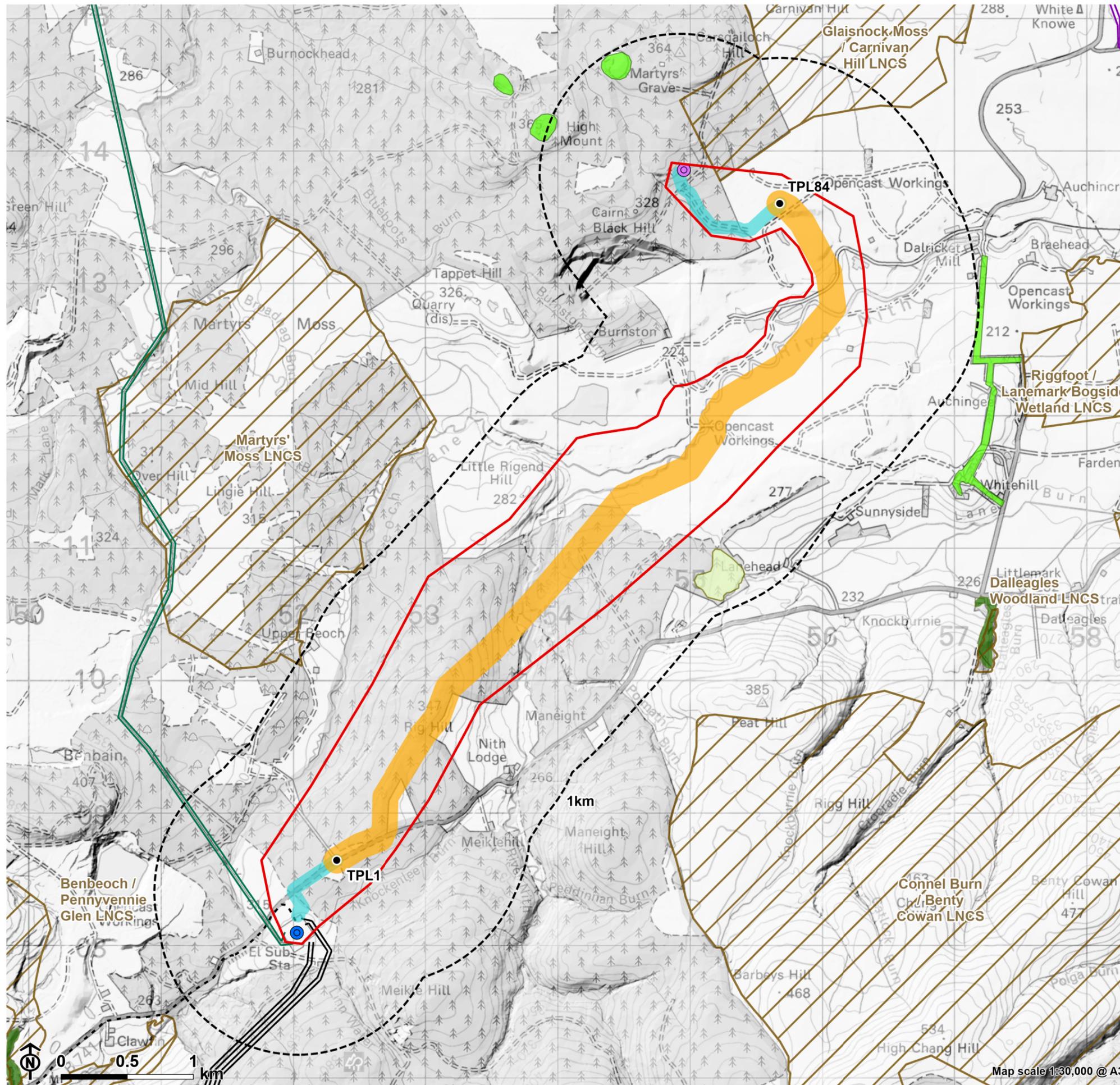
¹¹ Habitats of conservation concern include habitats considered conservation priorities in the Habitats Directive (Annex 1 habitats); habitats considered to indicate potential groundwater dependency; habitats included on the Scottish Biodiversity List; and habitats listed within Local Biodiversity Plans

¹² JNCC (2016) Handbook for Phase 1 habitat survey; A technique for environmental audit. Available online: <https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b->

<47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf>. Accessed December 2024.

¹³ Collins, J., (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition), The Bat Conservation Trust, London. Available online: <https://www.bats.org.uk/resources/guidance-for-professionals/bat-surveys-for-professional-ecologists-good-practice-guidelines-4th-edition> Accessed December 2024.

Figure 3.3: Ecologically Designated Sites within 1 km of the Proposed Route



- Survey area
- Terminal pole location (TPL)
- Proposed Route (OHL 200 m wide)
- Proposed Route (UGC 100 m wide)
- 1km Study area
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- 33kV OHL
- 132kV UGC
- Ecological designations**
- Local Nature Conservation Site
- Ancient Woodland Inventory**
- Ancient (of semi-natural origin)
- Long-Established (of plantation origin)
- Other (on Roy map)

3.24 The desk study included a search of publicly available datasets^{14,15,16} for statutory and non-statutory designated sites as well as woodlands listed on the Ancient Woodland Inventory¹⁷ within 1 km of the Proposed Development.

3.25 All ecological surveys represent a snapshot of the faunal and floral assemblages of any given site. While surveys provide an overview of the habitats and species present, they cannot be used to determine long-term trends in species and habitat populations and behaviours.

3.26 Ecological surveys to date have been completed for the southern 90% of the Survey Area, and data analysis will be undertaken upon completion. Whilst complete hydrological data is not currently available to fully determine all habitat types, broad habitat assessments and interpretations can still be made using the data available at this time. These are considered robust and sufficient to inform the conclusions of this report and to support the assessment of likely significant effects for screening purposes.

Baseline

Desk Study

Designated Sites

3.27 There are no statutory designated sites within 1 km of the Proposed Route and one non-statutory designated site which is illustrated in **Figure 3.3**. Glaisnock Moss / Carnivan Hill Local Nature Conservation Site (LNCS) is located approximately 185 m east of the very northern tip of the Proposed Route, and within the Study Area.

3.28 Martyr's Moss LNCS is located immediately adjacent to and outwith the Study Area to the northwest of the Proposed Route. This LNCS is not ecologically nor hydrologically connected to the Proposed Route and is not discussed further within this report.

Ancient Woodland Inventory

3.29 A search of the Ancient Woodland Inventory identified a total of three registered woodlands within 1 km of the Proposed Route:

- One unnamed woodland listed on the Roy Maps is located approximately 625 m southeast;

- Pappet Hill Long-Established Plantation Origin (LEPO) woodland is located approximately 760 m north; and
- High Mount LEPO is located approximately 995 m northwest of the Proposed Development.

3.30 There is connectivity to the unnamed woodland listed on the Roy Map, as the woodland within the centre of the Survey Area extends south to include the unnamed woodland. However, there is no connectivity to Pappet Hill LEPO, nor High Mount LEPO.

Habitats

3.31 The southern half of the Survey Area comprises commercial coniferous woodland plantation of varying ages and species compositions, a small area of which was being felled in the summer of 2025. The northern half of the Survey Area comprises open cast coal mine reinstatement grassland. Greenburn Wind Park (which has not yet been subject to ecological survey¹⁸), will also be located within the north of the Survey Area, with one turbine proposed within the Survey Area.

3.32 The River Nith and a main tributary, the Beoch Lane watercourse, flow through the Survey Area, and both qualify as a Scottish Biodiversity List priority habitat¹⁹.

3.33 The main habitats within the Survey Area are woodlands in the south and very north and grassland habitats between. There are a wide range of other habitats present including bogs^{11,19}, swamps^{11,19}, flushes^{11,19}, scrub and standing water.

3.34 The woodlands are predominantly coniferous woodland plantations dominated by Sitka spruce *Picea sitchensis* located in the southern half of the Survey Area. The other woodlands present included three small scattered areas of semi-natural broadleaf woodland, several stands of broadleaf woodland plantation in the centre and south, and one stand of mixed woodland plantation in the very south. Three areas of coniferous woodland plantation had been recently felled.

3.35 Several small areas of semi-improved acid grassland were scattered throughout the Survey Area. One such grassland formed a mosaic with acid flushes, a Scottish Biodiversity List priority habitat¹⁹.

3.36 A large number of grasslands scattered throughout the Survey Area were considered to be semi-natural neutral grassland or marshy grassland. A small number of the marshy

¹⁴ NatureScot's SiteLink website: <https://sitelink.nature.scot/home>. Accessed July 2025.

¹⁵ Scottish Environment Protection Agency's Scotland Environment Map: <https://map.environment.gov.scot/sewebmap/>. Accessed July 2025.

¹⁶ East Ayrshire Council (2024) Local Development Plan 2; Local Nature Conservation Sites. Available online: <https://www.east-ayrshire.gov.uk/Resources/PDF/P/planning-nspg-local-nature-conservation-sites.pdf>. Accessed July 2028.

¹⁷ NatureScot (2025) Ancient Woodland Inventory. Available online: <https://opendata.nature.scot/datasets/snh::ancient-woodland-inventory/explore>. Accessed July 2025.

¹⁸ Due to timing clashes with the commencement of the construction of the Greenburn Wind Park

¹⁹ NatureScot (2025) Scottish Biodiversity List. Note this is not currently available online as NatureScot are updating the list, but a copy downloaded in early 2025 was used to inform this Screening Report.

grasslands have the potential to be Groundwater Dependent Terrestrial Ecosystems (GWDTE), a priority habitat, or a priority habitat in their own right if on deep peat. This will be reviewed further, following completion of hydrology surveys, as part of the environmental appraisal and commented on in the EAR in due course.

3.37 Two areas of wet modified bog were identified within the south of the Survey Area, both of which are small, linear areas. Two areas of blanket bog and two areas of dry modified bog were identified within close proximity to one of the wet modified bogs in the south of the Survey Area. Bogs are priority habitats for which NatureScot has produced standard advice²⁰. Where priority habitats are identified, the standard advice will be followed throughout the design process to avoid, minimise and mitigate potential effects on priority habitats.

3.38 Three small areas of acid flush were identified within the coniferous woodland plantation in the south of the Survey Area, all of which have the potential to be GWDTEs. The design process will seek to avoid directly or indirectly impacting these features.

3.39 Several areas of standing water were identified, mostly within the north of the Survey Area where there is ongoing construction for consented wind farms.

3.40 There is the potential for more habitats of conservation concern to be identified within north of the Survey Area however the un-surveyed area is small and the Proposed Development involves wooden poles so it is anticipated that any habitats of conservation concern identified when surveys are completed will be avoidable through design. This is also discussed in the Limitations section above.

3.41 Though a small northern section of the Survey Area was not subject to survey, it is considered unlikely that reinstated grassland on previously open cast coal mines includes habitats of conservation concern greater than Local level importance and therefore no significant impact is anticipated in the context of the EIA Regulations.

3.42 Similarly, the priority habitats that were identified were typically small and not well connected, thus they are also not likely to be of greater than Local level importance following standard EIA terminology and as such, no significant impact is anticipated in the context of the EIA Regulations.

Protected Species

Otter

3.43 Both the River Nith and Beoch Lane watercourses offer good quality habitat for otter *Lutra lutra*, with a large number of

springs concentrated in three areas surveyed to date, and two resting sites identified in the centre of the Survey Area.

3.44 Otter are a highly mobile species with multiple resting sites per individual. Neither of the resting sites identified were considered suitable for extended resting periods, nor for use as natal holts due to the open structures.

3.45 While surveys are incomplete and evidence of otter including two resting sites were identified along the River Nith impacts to the otter population as a result of the Proposed Development are not likely to be greater than Local level importance following standard EIA terminology and are therefore considered not to be significant in the context of the EIA Regulations.

Bats

3.46 Two trees considered to provide potential habitat for multiple bats on a more regular basis were identified approximately 175m northwest and 195 m northwest of the Proposed Route. The remainder of the Survey Area was either commercial coniferous plantation woodland or grassland, neither of which provide suitable roosting habitat for bats, thus while surveys are presently incomplete, additional habitat with potential roost features for bats is not anticipated.

3.47 Impacts to bats are also considered not to be significant in the context of the EIA Regulations given the limited potential for this species group to be present in large numbers within the Survey Area.

Pine Marten

3.48 A small number of pine marten *Martes martes* scats were identified throughout the wooded areas in the south of the Survey Area. Most were old, but at least two were fresh indicating the presence of pine marten over an extended period of time. No dens, nor potential den sites were identified within the Survey Area and the coniferous plantation was broadly considered unsuitable for resting sites.

3.49 While surveys are incomplete, additional habitat with the potential to support pine marten is anticipated in the very north of the Survey Area. However, as this is another coniferous woodland plantation it is unlikely that this provides suitable denning opportunities for pine marten. Pine marten are present within the coniferous woodland plantation in the south of the Survey Area and are anticipated to be present in woodland in the very north of the Survey Area. However, it is not considered likely that impacts to the pine marten population as a result of the Proposed Development would be greater than Local level importance following standard EIA

²⁰ NatureScot (2025) Advising on Peatland, Carbon-rich Soils and Priority Peatland Habitats in Development Management. Available online: [https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-](https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management#:~:text=and%20peaty%20soils,-,Priority%20Peatland%20habitat,and%20fens%20in%20the%20lowlands)

[management#:~:text=and%20peaty%20soils,-,Priority%20Peatland%20habitat,and%20fens%20in%20the%20lowlands](https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management#:~:text=and%20peaty%20soils,-,Priority%20Peatland%20habitat,and%20fens%20in%20the%20lowlands). Accessed July 2025.

terminology and therefore, no significant impact is anticipated in the context of the EIA Regulations.

Appraisal

3.50 An Ecological Appraisal will be prepared as part of the planning application. The appraisal will consider, in detail, the final design and its potential effects on ecological features during the construction and operation of the Proposed Development.

3.51 The appraisal will also address potential additional mitigation where necessary which will be detailed in the project Construction and Environmental Management Plan (CEMP).

Mitigation

Designated Sites

3.52 As Glaisnock Moss / Carnivan Hill LNCS is located in the very northern part of the Survey Area, no survey data is available at the time of writing. However, aerial imagery suggests a hydrological link between the Proposed Development and the LNCS via an unnamed tributary of the Linn Burn, which lies within the Survey Area itself and is a tributary of the River Nith. Mitigation such as maintaining watercourse buffers through design and minimising the number crossings will be followed to reduce the potential impact on this LNCS.

Habitats

3.53 Habitats of conservation concern will be identified through further survey and data analysis. Following best practice guidance, priority habitats are to be avoided. Where this cannot be avoided, impacts will be minimised as far as possible. Enhancement and then compensation will be undertaken for any priority habitats impacted, as determined by NatureScot's standing guidance²⁰.

Protected Species

3.54 A number of mobile species were found to utilise the Survey Area and as such a Species Protection Plan will be prepared as part of the Ecological Appraisal. Update surveys within the 6 months immediately prior to the construction period should be undertaken to assess the trees and woodland blocks for bat roost potential as well as pine marten potential, and the watercourse for otter potential.

Conclusion

3.55 Based on the results of the Extended Phase 1 Habitat survey, the Proposed Development is considered unlikely to impact upon locally designated sites. Effects on priority habitats and protected species will be limited by design and are unlikely to be significant in the context of the EIA Regulations. Recommendations and mitigation regarding protected species identified within the Survey Area and listed above will be adhered to at all times.

3.56 In addition to mitigation and compensation measures required to address effects on sensitive ecological features, the Applicant will adhere to all NPF4 requirements, notably Policy 3 Biodiversity which requires developments to achieve meaningful biodiversity enhancement. An NPF4 Policy 3 Compliance Statement will be included within future reports for this Proposed Development and submitted with the full planning application.

Ornithology

Baseline

Desk study

3.57 A review of Ornithology survey work carried out for neighbouring wind farm Environmental Impact Assessments²¹²² has highlighted the breeding presence of specially protected species within ~10 km of the proposed route: goshawk, peregrine and barn owl. Several other notable species have such as hen harrier, red kite and short eared owl have been recorded within suitable breeding habitat but with very little evidence of breeding. An additional notable species is black grouse with recorded presence on Little Rigend hill in 2018.

Designated Sites

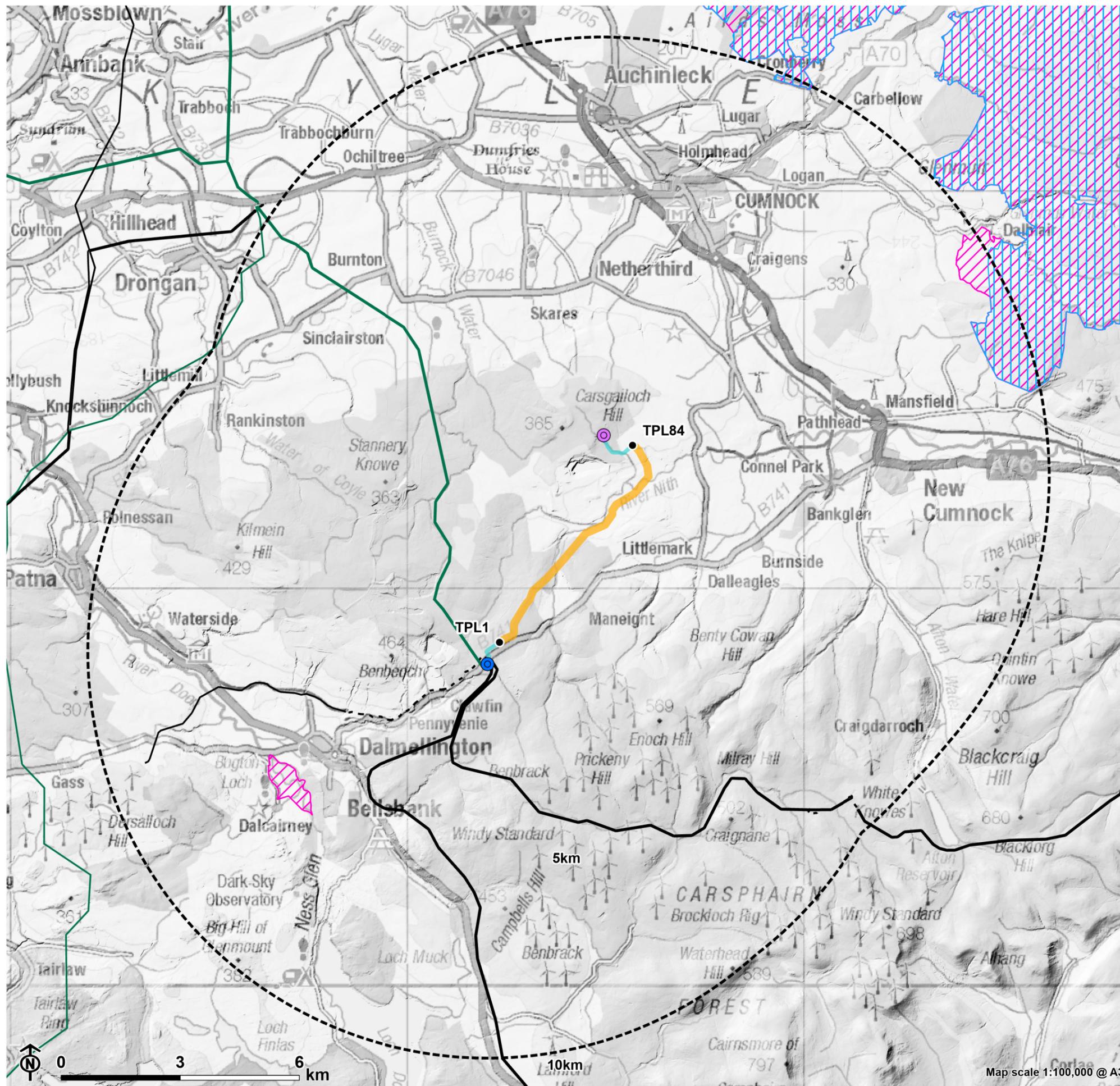
3.58 The Proposed Route does not pass through any site designated for its ornithological interest and none are present within 5 km (**Figure 3.4a**). The Muirkirk and North Lowther Uplands Special Protection Area (SPA) lies approximately 9 km to the north-east, and the nearest section of the SPA is also designated as the Muirkirk Uplands Site of Special Scientific Interest (SSSI). The SPA is designated for its breeding hen harrier, merlin, peregrine, golden plover and short-eared owl populations and its non-breeding hen harrier population. The SSSI is designated for its breeding bird assemblage but not for merlin or peregrine.

²¹ Energy Consents Unit (2020). Greenburn Wind Park. Available online at: <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00002037&T=5>

²² Energy Consents Unit (2019). North Kyle Energy Project. Available online at: <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00001950&T=5>

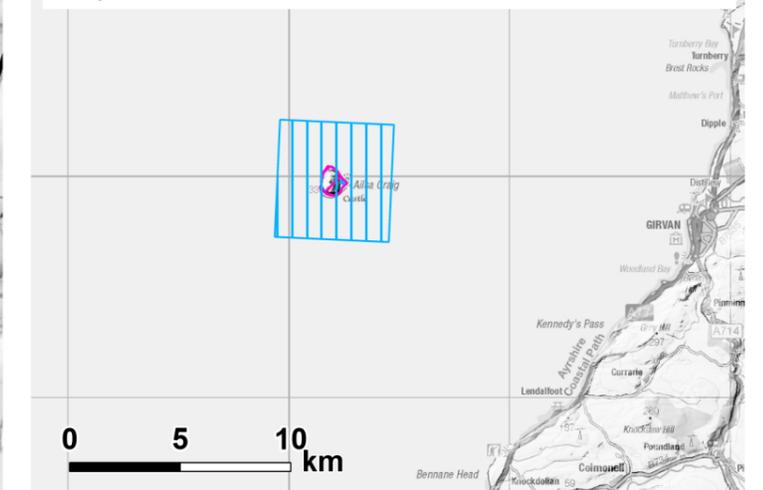


Figure 3.4a: Ornithology Designated Sites within 10 km of the Development or with Potential Connectivity



- Terminal pole location (TPL)
- Proposed Route (OHL 200 m wide)
- Proposed Underground Cable buffer (100m)
- 10km Study area
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- 275kV UGC
- 132kV UGC
- Ornithology designations**
- Special Protection Area
- Site of Special Scientific Interest

Inset displays the SSSI and SPA around Ailsa Craig, ~50 km to the west of the site. Study indicates that birds may roost here and feed within the study area.



Map scale 1:100,000 @ A3

3.59 Ailsa Craig SPA and SSSI is located approximately 50 km to the west of the Proposed Route²³. The SPA is designated for its breeding gannet, guillemot, herring gull, kittiwake and lesser black-backed gull populations and for its breeding seabird assemblage. In respect of ornithology, the SSSI is designated for its breeding gannet population and breeding seabird colony.

3.60 The Bogton Loch SSSI is located approximately 6 km to the south-west of the Proposed Route and is designated for its breeding bird assemblage, which includes occasional nesting by a colony of black-headed gulls.

3.61 There is no likely connectivity between the Muirkirk, North Lowther Uplands SPA and the Proposed Development as the core ranges of the SPA's qualifying species do not extend further than around 5 km.

3.62 Connectivity may exist between the Ailsa Craig SPA/SSSI and the Proposed Route due to the large foraging range of herring gull and lesser black-backed gull.

3.63 In respect of Bogton Loch SSSI, the foraging range of breeding black-headed gulls from the SSSI may extend as far as the Proposed Development. A map of all the aforementioned designated sites in relation to the Proposed Route is shown in **Figure 3.4a**.

Surveys

3.64 The ornithology survey area for flight activity surveys encompassed airspace within 500m of the Proposed Route. Where the OHL of the Proposed Route passes over open ground, the majority of airspace was within 2 km of a VP and in the forestry section, approximately 50% of the airspace was visible. Breeding bird surveys were undertaken on open ground within a 500m buffer of a previous alignment, but achieving coverage of the majority of habitat within 500m of the OHL of the Proposed Route (**Figure 3.4b**).

3.65 The Study Area for ornithology is a 500m buffer of the Proposed Route (**Figure 3.4c**).

Vantage Point Surveys

3.66 Vantage Point (VP) watches are being undertaken during the 2025 breeding season. To date, flight activity data has

been collected from two VPs, providing full coverage of the Proposed Route on open ground habitat and partial coverage of the woodland habitat (see **Figure 3.4b**). Recorded flight activity to date is relatively low, with target species limited to red kite (one flight), hen harrier (two flights) and greylag goose (three flights) (**Figure 3.4c**).

3.67 A single red kite passed over the Proposed Route at an estimated height in excess of 60 m (**Figure 3.4c**).

3.68 Two flights by hen harrier were recorded, both of which crossed the Proposed Route. Some flight time was at 10 – 30 m, considered to be at potential collision height (**Figure 3.4c**).

3.69 Of the three greylag goose flights, one flight by two greylag geese crossed the Proposed Route, but this was estimated to be above 60 m in height (**Figure 3.4c**).

Breeding Bird Surveys

3.70 Breeding bird surveys were undertaken on open ground habitats within up to 500 m of the Proposed Route (see **Figure 3.4b**). No breeding by specially protected birds²⁴ was recorded.

3.71 Several species from the Red List of Birds of Conservation Concern^{25 26} have been recorded. These are ringed plover (one territory), lapwing (11 pairs), common gull (one pair), cuckoo (one singing male), skylark (37 singing males), mistle thrush (one territory), song thrush (two territories), grasshopper warbler (13 singing males) and linnet (two territories).

3.72 Other notable species included common sandpiper (seven territories), black-headed gull (two individuals), oystercatcher (one individual) and snipe (two individuals).

Additional surveys

3.73 The waterbodies present at the northern portion of the Proposed Route have potential to provide roosting habitat for gulls, a species group in decline across the UK that now requires consideration under the recent March 2025 amendments to NatureScot Guidance²⁷. Flight activity surveys will be continued into the non-breeding season (September 2025 to March 2026) to determine whether gull roosting sites

²³ In their pre-application consultation response from 12/02/25, NatureScot advised that the Proposed Route was within the potential foraging ranges of herring gull and lesser black-backed gull breeding at Ailsa Craig, so potential effects on the Ailsa Craig SSSI and SPA should be considered.

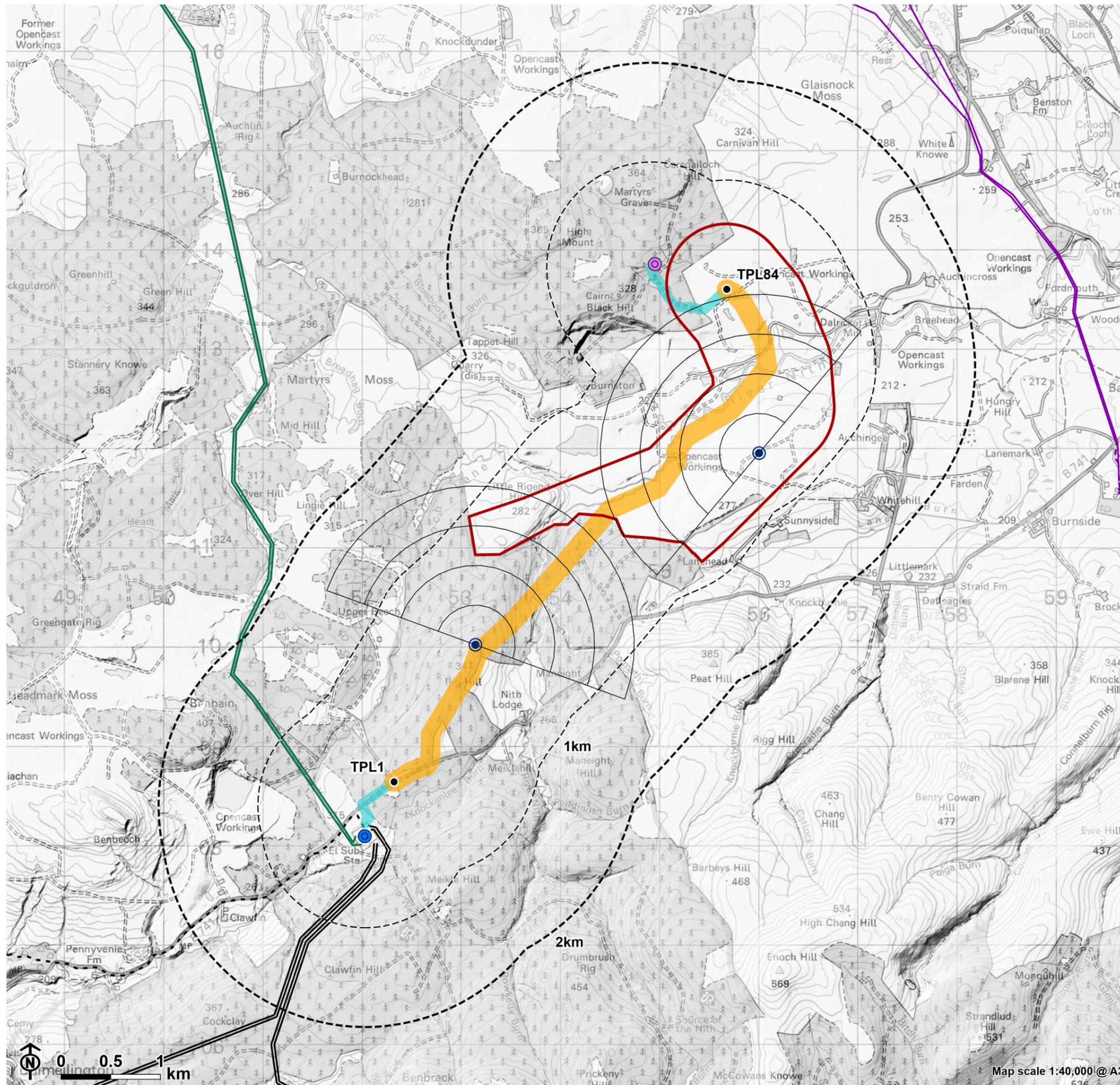
²⁴ Breeding species listed on Schedule 1 of the Wildlife and Countryside Act 1981 or Annex 1 of the EU Birds Directive.

²⁵ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723-747.

²⁶ Stanbury, A.J., Burns, F., Aebischer, N.J., Baker, H., Balmer, D.E., Brown, A., Dunn, T., Lindley, P., Murphy, M., Noble, D.G., Owens R and Quinn, L. (2024). The status of the UK's breeding seabirds: an addendum to the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds*, 117: 471-487.

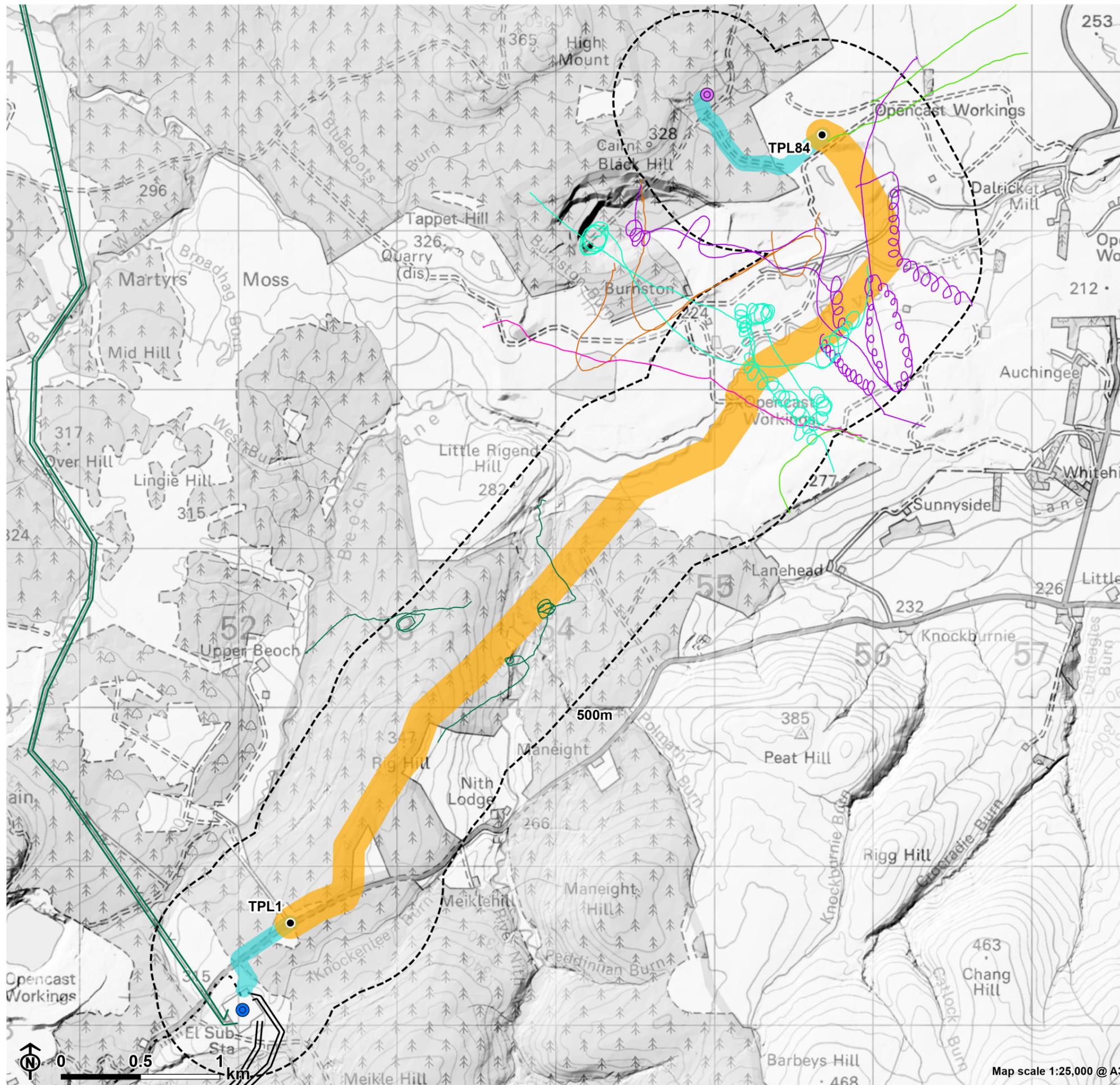
²⁷ Nature Scot (2025). Recommended bird survey methods to inform impact assessment of onshore windfarms. Available online: <https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms#7-9-coastal-species-also-includes-inland-breeding-gulls-and-terns>. Access August 2025.

Figure 3.4b: Ornithology Survey Area



- Terminal pole location (TPL)
- Proposed Route (OHL 200 m wide)
- Proposed Route (UGC 100 m wide)
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- 33kV OHL
- - - 132kV UGC
- - - 33kV UGC
- Vantage point (with view angle)
- ▭ BBS Study area

Figure 3.4c: Ornithology Study Area and Recorded Flight Activity



- Terminal pole location (TPL)
- Proposed Route (OHL 200 m wide)
- Proposed Route (UGC 100 m wide)
- ⬡ 500m Study area
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- - - 132kV UGC
- Flight path**
- CU - Curlew
- GJ - Greylag Goose
- HH - Hen Harrier
- KT - Red Kite
- LB - Lesser Black-backed Gull
- PE - Peregrine



Map scale 1:25,000 @ A3

are present and identify any habitual gull flight activity over the Proposed Route.

Appraisal

Designated sites

3.74 In relation to the Ailsa Craig SPA/SSSI, no herring gulls have been recorded, and a single lesser-black backed gull has been recorded in flight during a breeding bird survey. Hence, there is no evidence that habitats or exceptional feeding resources near to the Proposed Development are habitually used by these gull species during the breeding season.

3.75 In respect of the Bogton Loch SSSI qualifying features, the only record has been of black-headed gull, where single birds have been recorded twice.

Flight Activity

3.76 To date, the level of recorded flight activity by target species in the breeding season has been low, with most observed flight activity either seen not to cross the proposed route or where it does, above potential collision, height. Activity will be monitored over the non-breeding season since gull species may use the waterbodies around the northern portion of the Proposed Route for roosting. The flight lines and heights of these target species will be monitored to gauge requirement for Bird Flight Diverters.

Breeding Birds

3.77 The recorded breeding bird community comprises a number of Red listed species, but most are not sensitive to effects associated with the construction and operation of OHLs.

Mitigation

3.78 The results of flight activity surveys will be used to inform the requirement for mitigation to reduce collision risk. Bird Flight Diverters can be attached to sections of the OHL that may pose a relatively high risk of collision.

3.79 Embedded mitigation will include a Bird Protection Plan which will specify measures and working protocols to safeguard breeding birds and other sensitive ornithological sites during the construction phase.

Conclusion

3.80 Based on the baseline information collated to date, no significant effects on bird populations are anticipated as a result of the construction and operation of the Proposed Development.

3.81 In addition, no effects on ornithological designated sites are anticipated, as qualifying species from SPAs and SSSIs

with potential for connectivity do not make substantial use of habitats or airspace in the vicinity of the Proposed Development.

3.82 SPEN will also ensure that suitable mitigation is in place to avoid disturbance to breeding birds during construction. Consideration will be given to marking those parts of the OHL in close proximity to any identified areas of high flight activity, although baseline data does not suggest this will be required.

Cultural Heritage

3.83 The historic environment baseline has been established using Historic Environment Scotland data for designated heritage assets and information on non-designated heritage assets contained within The West of Scotland Archaeology Service's (WoSAS) Historic Environment Record (HER) database. The baseline information enabled the consideration of the presence, cultural significance, and likely sensitivity to change of the local historic environment, comprising historic buildings, archaeological remains, and historic landscapes.

3.84 The Proposed Route was informed by appraisal of the wider historic environment at routeing stage to identify the most appropriate option that would minimise effects. Consideration of potential effects to the historic environment will continue to inform iterative detailed design of the Proposed Development and associated infrastructure, managed through the environmental appraisal process.

3.85 The Historic Environment Appraisal Report will be finalised to reflect the adopted route and infrastructure design and will be submitted in support of the Section 37 application.

Existing Conditions Baseline

3.86 The existing conditions identified in Chapter 2: Project Description, are characterised by commercial forest and opencast mining (with areas of reinstatement) over a gently undulating landscape.

Study Areas

3.87 The following study areas have been used to identify the potential effects:

- Inner Study Area: land within a 1 km radius of the proposed OHL for designated and non-designated heritage assets, used to establish the known heritage resource, to inform the Historic Environment baseline and establish potential for unidentified archaeology.
- Outer Study Area: land within a 3 km of the proposed OHL for heritage assets that could potentially undergo a change to setting as a result of the introduction of grid infrastructure.

Designated Heritage Assets

3.88 There are no World Heritage Sites, scheduled monuments, listed buildings, Inventory-listed gardens and designed landscapes or historic battlefields contained within the Inventory of Historic Battlefields have been identified within the Proposed Route or within 3 km of the Proposed Route.

Non-Designated Heritage Assets

3.89 Within the Proposed Route there are nine non-designated HER entries (**Figure 3.5**). These comprise:

- Knockenlee Burn / Flush, stone setting (WoSAS Pin: 61177);
- Rig Hill, Nith Lodge, cairn/ enclosed cremation cemetery (WoSAS Pin: 7990);
- Rig Hill, Cairn (WoSAS Pin: 7991);
- House of Water, Rig (WoSAS Pin: 20189);
- House of Water / Blackfardging, Settlement (WoSAS Pin: 20190);
- The Linn, farmstead (WoSAS Pin: 66240);
- Linn Burn, enclosure (WoSAS Pin: 67834);
- Knockenlee Burn / Flush, quarry (WoSAS Pin: 61172);and
- House of Water, tracks (WoSAS Pin: 20185)

3.90 In addition to the above heritage assets, which were contained within the HER, is the previously unrecorded pre-Improvement farmstead of High Rigend (LUC1). This asset, identifiable on satellite imagery and historic OS mapping²⁸ is situated within the Proposed Route near the River Nith in what is now a small grassy clearing.

3.91 Outside of the Proposed Route, to a distance of c.1 km of it, there are 86 non-designated HER entries.

Screening Baseline

3.92 The earliest evidence of human occupation of the landscape comprises the Neolithic or Bronze Age funerary monuments of the Rig Hill cairn (WoSAS Pin: 7991), the kerbed cairn at Beoch (WoSAS Pin: 7989) and the possible enclosed cremation cemetery at Nith Lodge (WoSAS Pin: 7990). An addition to these funerary monuments, a possible stone setting near Knockenlee Burn (WoSAS Pin: 61177) may

also relate to neolithic or Bronze Age ritual/ceremonial activity in the landscape.

3.93 Evidence of Roman activity is limited to the remains of the Wiston – Patna road (WoSAS Pin: 12386-7) which runs east to west through the afforested hills north of the Proposed Route and the proposed Greenburn Wind Park substation. Given the wider distribution Roman military installations²⁹ it is unclear as to the specific strategic function of the Wiston – Patna road to the Roman military, as such, it is possible that this road instead reflects later activity.

3.94 The only heritage asset within 1 km of the Proposed Route which has a definitively medieval origin is Little Rigend castle (WoSAS Pin: 8024) located at a bend in the River Nith. Once the seat of local nobility entrusted with managing and projecting the authority of the crown, eventually becoming the Baronial residence of the Cathcart family, the castle has suffered mutilation through stone robbing and excavation and now stands c.50cm tall.

3.95 The remaining non-designated assets within 1 km of the Proposed Route are either dated to, or likely date to, the post-medieval occupation of the landscape. Nineteen of these assets are the product of extractive processes while 59 appear to relate to agricultural practices, rural settlement and rural industry. An additional two HER entries relating to post-medieval infrastructure (WoSAS Pin: 66074, 20185). An undated inclined plane also appears within the HER (WoSAS Pin: 15801).

Archaeological Potential

3.96 Although a previously unrecorded heritage asset (LUC1) has been identified during the preparation of this Screening Report, the overall archaeological potential of the Proposed Development is considered to be low.

3.97 The northern half of the Proposed Route primarily traverses the site of reinstated opencast mining activities. Such mining and subsequent reinstating is likely to have entirely removed, or substantially truncated, any surviving archaeological remains, both recorded and previously unrecorded.

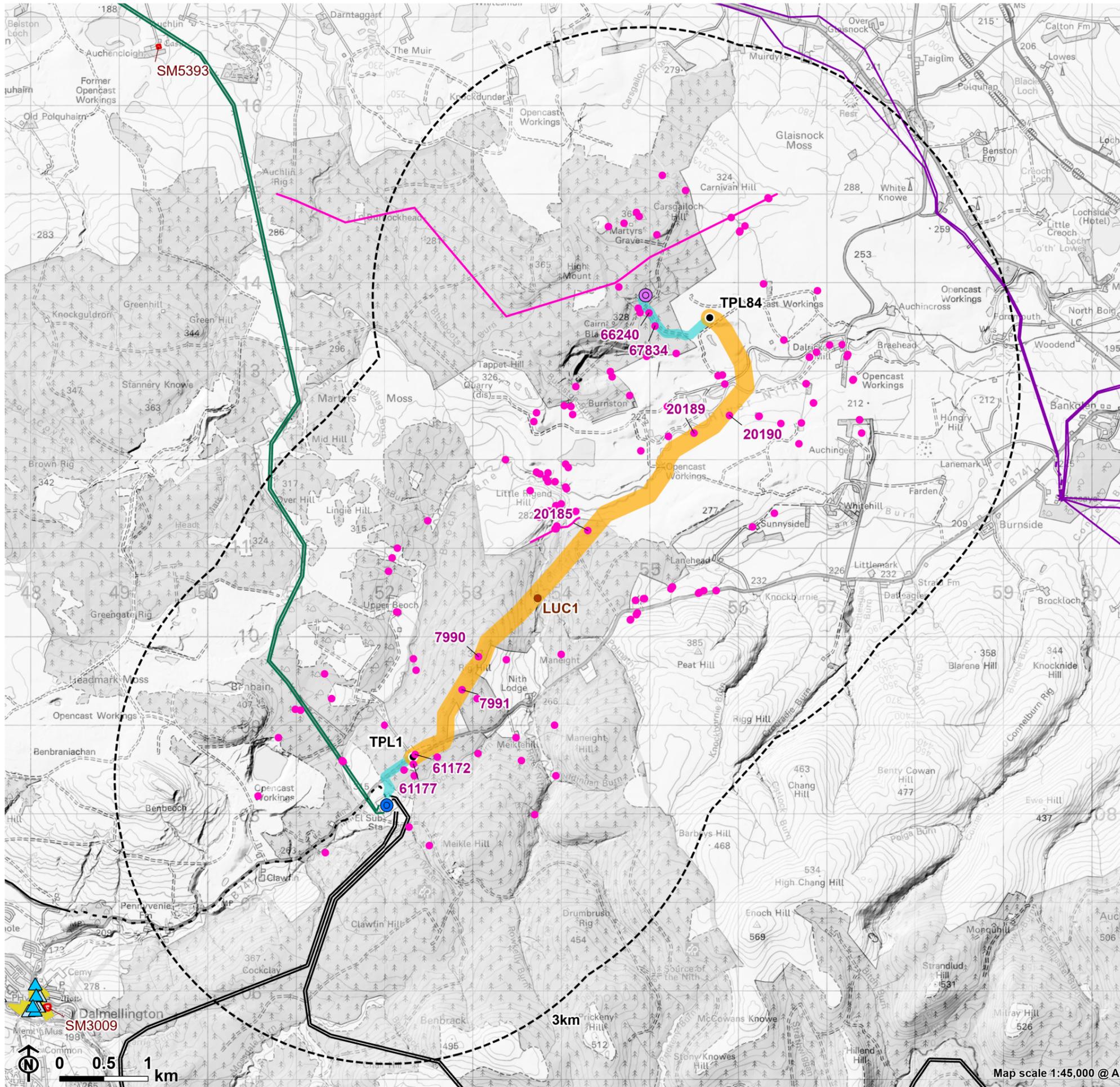
3.98 The commercial rotational forestry in the southern portion of the route, as well as at its most northern extent, is likely to have also resulted in the removal and truncation of archaeological remains through activities such as forestry ploughing. Although less destructive than mining, the survival of previously unknown heritage assets is unlikely, with any surviving archaeological remains likely to be poorly preserved.

²⁸ OS 25in to a mile Ayrshire Sheet XLVII.2 (New Cumnock) (Date surveyed: 1856, date published: 1858); OS 25in to a mile Ayrshire XLVII.2 (Date Revised 1894, date published: 1896)

²⁹ Scottish Archaeological Research Framework (2012) Roman: 3.7 Severan activity (c. AD 1208-211). Available online at:

<https://scarf.scot/national/roman-scotland-panel-report/3-the-time-and-place-of-roman-scotland/3-7-severan-activity-c-ad-208-211/> (accessed 22/07/2025)

Figure 3.5: Designated Cultural Heritage Assets within 3km



- Terminal pole location (TPL)
- Proposed Route (OHL 200 m wide)
- Proposed Route (UGC 100 m wide)
- 3km Study area
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- 33kV OHL
- 132kV UGC
- 33kV UGC
- Cultural heritage constraints**
- ▲ Listed building - Category B
- ▲ Listed building - Category C
- Scheduled Monument (SM)
- Conservation Area
- Newly identified heritage asset
- WoSAS HER Point
- WoSAS HER Line



Map scale 1:45,000 @ A3

Appraisal

Potential Physical Effects

3.99 The Proposed Development could, without mitigation, result in a direct physical effect to ten non-designated heritage assets, nine recorded in the HER and one identified in the course of this appraisal. These include a number of assets of low (local) importance (including a quarry (WoSAS Pin: 61172) and evidence of rural settlement and agricultural practices (WoSAS Pin: 20185; 20489; 20190; 67834; 6624); as well as the previously unrecorded High Rigend farmstead – LUC1). In addition, direct physical effects to assets of medium (regional) importance (including evidence for prehistoric ritual and funerary practices (WoSAS Pin: 61177; 7990; 7991) could also occur.

3.100 Many of these assets are likely to have been truncated or destroyed, through activities relating to the commercial forestry and extractive practices at the House of Water Opencast Coal Mine.

3.101 In the event of survival in previously undisturbed area and of limited forestry activity, however, it is likely that direct physical effects to known heritage assets can be avoided through the iterative detailed design process, for example through the consideration of the placement of poles along the Proposed Route and the application of construction good practice measures to avoid accidental damage to heritage assets during construction.

3.102 Where potential direct physical effects to previously unrecorded heritage assets, including buried archaeological remains, cannot be avoided following mitigation (see below), they are not predicted to result in a significant effect for the purposes of the EIA Regulations.

Potential for Direct Effects Resulting from Setting Change

3.103 One heritage asset, Little Rigend castle (WoSAS Pin: 8024), which is deemed to be of probable national importance by the WoSAS, may have the potential of experiencing setting change.

3.104 While the presence of the Proposed Development may be perceptible in views from the asset, is not anticipated that any potential change to the setting of the heritage asset resulting from the presence of the Proposed Development will result in a significant effect for the purposes of the EIA Regulations.

Mitigation

3.105 A desk-based assessment, which will include detailed review of the land use history and the former extent of former opencast mining and commercial forestry, as well as the results from a walkover survey of the Proposed Development, will be undertaken to inform an archaeological desk-based

assessment (DBA) to inform mitigation/ CEMP. This DBA will confirm the anticipated levels of effect and provide evidence in support of the Section 37 application.

3.106 A Construction Environmental Management Plan (CEMP) will be prepared to ensure that appropriate protective measures are taken to safeguard heritage assets at risk from accidental damage during construction, and to establish procedures in the event of discovery of previously unrecorded heritage assets (buried archaeological remains). Mitigation may include, but is not limited to, mitigation through design, the fencing off and clear marking of known heritage assets, and the presence of an Archaeological Clerk of Works during groundbreaking activities.

3.107 Works would be conducted by a professional archaeological organisation, and the scope of works agreed in advance WoSAS in a Written Scheme of Investigation (WSI).

3.108 It is not anticipated that any additional mitigation measures will be necessary to reduce effects as a consequence of setting change.

Conclusion

3.109 It is anticipated that the Proposed Development will result in limited effects to heritage assets. These are not predicted to be significant for the purposes of the EIA Regulations. Cultural Heritage will be presented in a DBA assessment technical appendix to the EA, in line with planning policy.

Hydrology, Geology and Peat

Baseline

3.110 The existing baseline conditions are described in **Chapter 2: Project Description**. The study area considers a 100 m buffer either side of the Proposed Route for peat depth surveys, a 1 km buffer to locate private water supplies in the area and takes into account the downstream environment of any watercourses within the Proposed Route.

Hydrology and Water Quality

3.111 Watercourses and surface water features were identified using Ordnance Survey mapping (1:10,000, 1:12,500 and 1:25,000 scale mapping) and aerial imagery and were confirmed during hydrology walkover surveys, which were undertaken on:

- 3rd September 2024;
- 6th September 2024;
- 28th – 29th May 2025 inclusive; and
- 8th July 2025.

3.112 The Proposed Route crosses several watercourses within the River Nith valley, including the River Nith, two unnamed tributaries of the River Nith, the Linn Burn and Small Burn. Additionally, two small ponds are located within the Proposed Route. The River Nith is crossed twice along the Proposed Route. Details on the watercourses are provided below with the spatial extent evident in **Figure 3.6**:

- The River Nith flows in a northerly direction in a meandering channel approximately 7m wide. The catchment area of the River Nith at the first (west) proposed route crossing is approximately 10.6 km² based on data from the Flood Estimation Handbook (FEH) Web Service³⁰. The catchment upstream of the second (east) crossing is approximately 25.3 km².
- The Polmath Burn is a small tributary of the River Nith which flows in a north westerly direction to its confluence with the River Nith which is located just within the Proposed Route. The catchment area of the burn is approximately 1.45 km² based on data from the Flood Estimation Handbook (FEH) Web Service. The watercourse flows in a meandering channel, approximately 1m wide through forestry.
- The two unnamed tributaries of the River Nith flow north into the River Nith near Castle Hill. The western-most unnamed tributary west has a catchment of approximately 0.45 km². The eastern-most unnamed tributary east has a catchment of approximately 0.46 km².
- The Linn Burn flows to the southwest in a modified channel, approximately 1m wide. The catchment area of the Linn Burn is approximately 1.85 km² based on data from the Flood Estimation Handbook (FEH) Web Service.
- The Small Burn flows south in a modified, straightened channel in a channel approximately 0.8 m wide prior to joining the Linn Burn. The catchment of the Small Burn is approximately 0.63 km² based on data from the Flood Estimation Handbook (FEH) Web Service.

3.113 The Scottish Environment Protection Agency (SEPA) has published Recommended Riparian Corridors (RRC), which define recommended buffer width around watercourses from infrastructure, scaled to the width of the watercourse, as below in **Table 3.2** (from SEPA, 2024³¹):

Table 3.2 Recommended Riparian Corridors

Channel width	Recommended buffer (each side of channel)
<2 m	10 m
2- 15 m	15 m
>15 m	30 m

3.114 SEPA's RRC are shown on **Figure 3.6**, and watercourses and waterbodies within the Proposed Route will be buffered by these as a minimum during alignment design, such that all proposed infrastructure (temporary and permanent) is outwith these buffers, where practicable.

3.115 The River Nith (upstream of New Cumnock) (Waterbody ID 10612) is the only watercourse large enough to be classified by SEPA (Scottish Environment Protection Agency) under the Water Framework Directive and registered under the River Basin Management Plan (RBMP). The River Nith was classified as having overall 'Moderate' ecological status in 2023, based on data from SEPAs Water Classification Hub³².

Flood Risk

3.116 Based on the SEPA Future Flood Maps³³, which show the 200-year plus climate change floodplain, there are flood risk areas within the Proposed Route associated with the River Nith. Evident in **Figure 3.6** the flood risk area spans the width of the Proposed Route in places (albeit with isolated areas outwith the flood extent).

3.117 Within the Proposed Route there are areas of pluvial flood risk and ponding, based on the SEPA Future Flood Maps. These areas are predominantly associated with the two small ponds and the tributary watercourses of the River Nith. Areas of predicted pluvial flooding can be avoided by the Proposed Development.

Groundwater Dependent Terrestrial Ecosystems

3.118 Ecology habitat surveys have been undertaken to record vegetation communities across the Proposed Route. Any locations noted to be a potential GWDTE due to species composition will be visited by a hydrologist to ascertain the hydrological setting and assessed. A detailed GWDTE appraisal will be provided as an appendix to the EAR if any GWDTE are identified within proximity to the Proposed Route.

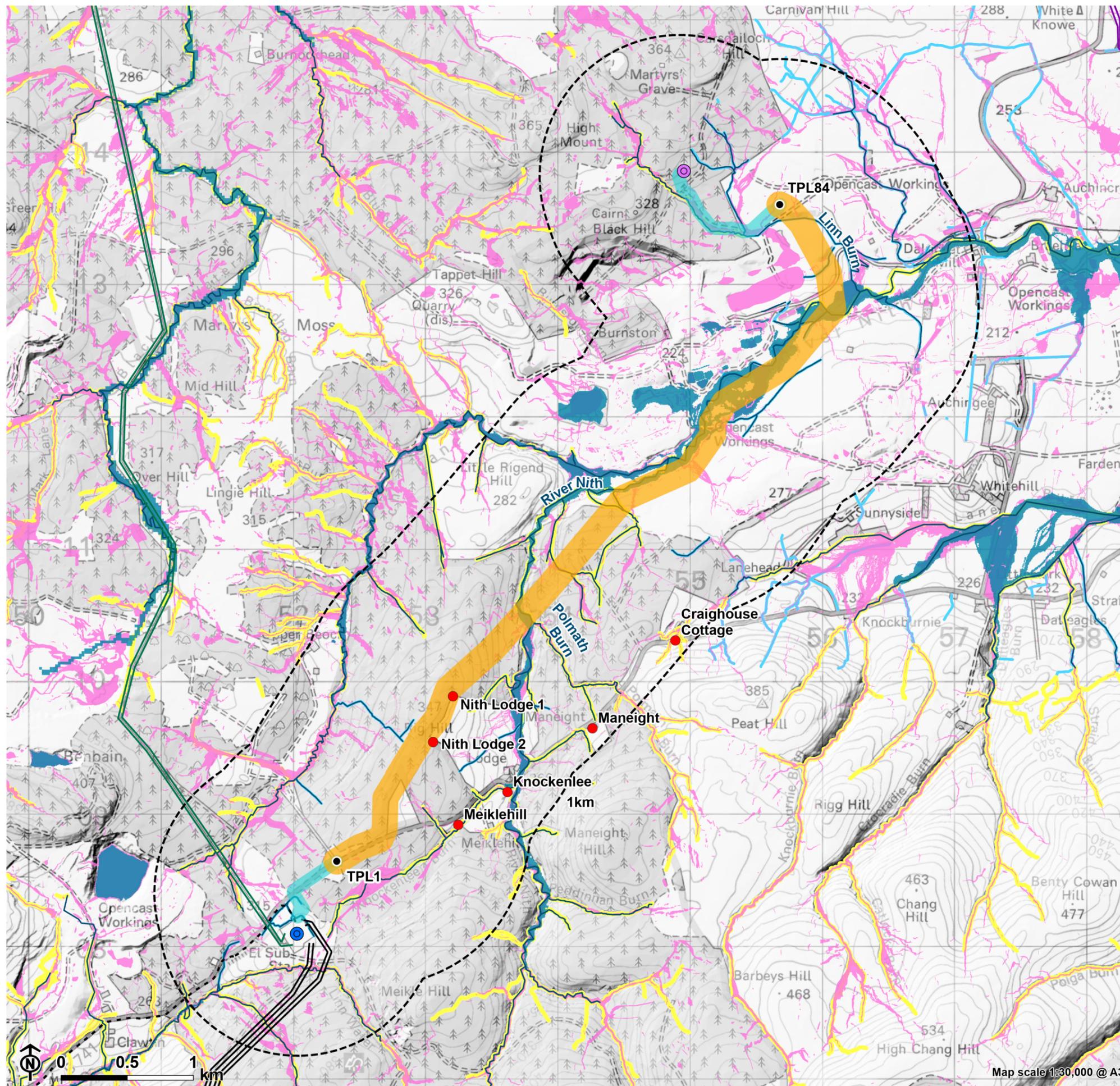
³⁰ UK Centre for Ecology & Hydrology (2025) Flood Estimation Handbook Web Service. Available at: <https://fehweb.ceh.ac.uk/Map>

³¹ SEPA (2024), Recommended Riparian Corridor Layer for use in Land Use Planning [online]. Available at: <https://www.sepa.org.uk/media/puquhuwn/recommended-riparian-corridor-note.docx>

³² SEPA (unknown) Water Classification Hub. Available at: <https://informatics.sepa.org.uk/WaterClassificationHub/>

³³ SEPA (2025) Check an area's long term flood risk. Available at: <https://map.sepa.org.uk/floodmaps>

Figure 3.6: Hydrological Constraints



- Terminal pole location (TPL)
- Proposed Route (OHL 200 m wide)
- Proposed Route (UGC 100 m wide)
- ▭ 1km Study area
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- 33kV OHL
- - - 132kV UGC
- Hydrological constraints**
- Private water supply
- Watercourse
- SEPA Future Flood Risk (River) - 200 year + Climate Change
- SEPA Future Flood Risk (Surface Water and Small Watercourses) – 200 year + Climate Change
- SEPA Recommended riparian corridor (RRC)**
- 10m Buffer
- 15m Buffer
- 30m Buffer

3.119 The hydrology surveys did not identify any groundwater upwellings likely to be GWDTE.

Geology and Soils

3.120 Based on data from the British Geological Survey (BGS)³⁴ 1:50,000 bedrock mapping, the bedrock geology of the study area is comprised of four main lithologies. From west to east these include the following:

- Western Midland Valley Westphalins to Early Permian Sills Quartz- Microgabbro- igneous, magmatic rocks of intrusive origins.
- Limestone Coal formation and upper limestone formation (undifferentiated) – sedimentary rock cycles, Clackmannan Group Type- sedimentary rocks of fluvial, palustrine and shallow marine origin.
- Limestone Coal Formation and Upper Limestone Formation (Undifferentiated)- Limestone- sedimentary rocks of shallow marine origin.
- Scottish Middle Coal Measures Formation- Sedimentary Rock Cycles Coal Measure Type- sedimentary rocks of fluvial, palustrine and shallow marine origin.

3.121 The BGS Superficial Deposits map³⁴ (1:50,000 scale) shows that the site is underlain by superficial deposits including Peat, Devensian Till and Alluvium (silt, sand and gravels).

3.122 Additionally, although not shown on the BGS 1:50,000 scale mapping it is known that areas of made ground, directly overlying bedrock, are associated with the backfilling of the former open cast coal mines within the northern area of the Proposed Route.

Hydrogeology

3.123 Consultation of the BGS Hydrogeology Map of Scotland³⁴ (1:625:000 scale) shows that the study area is underlain by three separate aquifer units. From west to east these are listed below:

- The Unnamed Igneous Intrusion, Carboniferous to Permian units is a low productivity aquifer within which flow is virtually all through fractures and other discontinuities.
- The Clackmannan Group is a moderately productive aquifer within which flow is virtually all through fractures and other discontinuities. This is a multi-layered aquifer

with low yields except where disturbed by mining. Passage Group has moderate yields up to 10 L/s.

- The Scottish Coal Measures Group is a moderately productive aquifer within which flow is virtually all through fractures and other discontinuities. Regional, cyclic multi-layered aquifer with low yields from sandstones. Higher yields where mined but poor-quality water, including high iron and fluoride content.

3.124 The Proposed Route is located within the Cumnock (Waterbody ID 150646) groundwater classification body by SEPA under the Water Framework Directive and registered under the RBMP. The overall classification of the waterbody is Poor.

Peat

3.125 The NatureScot (2016) Carbon and Peatland Map³⁵ is a GIS dataset that indicates the likely presence of carbon-rich soils, deep peat and priority peatland habitat at a broad scale across Scotland. Based on the map (see **Figure 3.7**) the Proposed Route is underlain predominantly by mineral soils but also contains the following classification of peatland:

- Class 3 - Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat.
- Class 4 - Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils.
- Class 5 - Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.

3.126 The James Hutton Institute Soil Map of Scotland³⁶ indicates that the underlying soils in the Proposed Route are comprised of non-calcareous gleys, alluvial soils, peaty gleys with dystrophic blanket peat and peat.

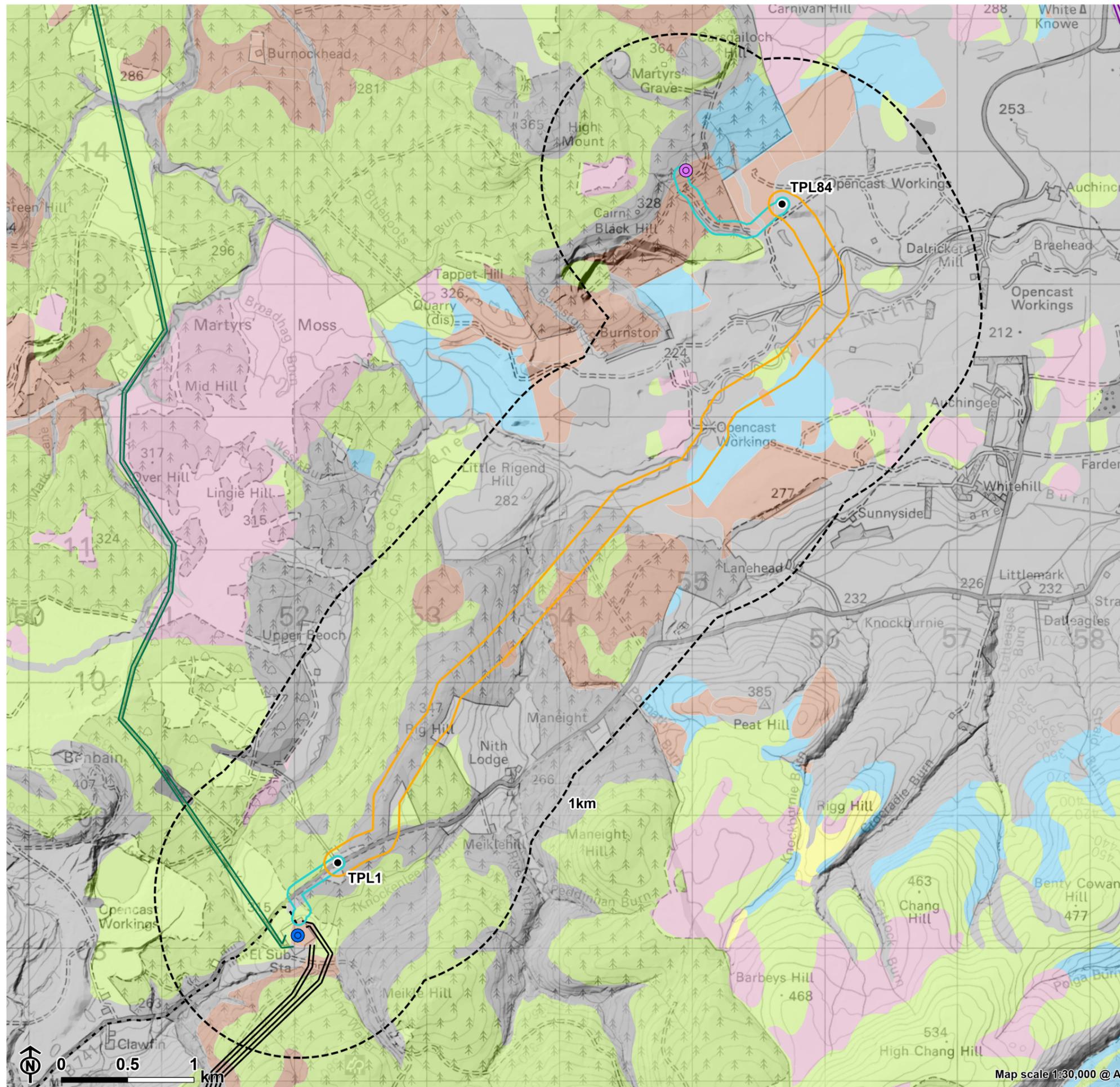
3.127 Based on the desk-based study, a peat survey was undertaken to investigate peat depth and extent along the Proposed Route. The peat survey area comprises a 100 m buffer around the Proposed Route as well as a 50 m buffer where underground cables are proposed. Only areas within these buffers that are designated as peat classes on the NatureScot Carbon and Peatland Map were surveyed. The peat survey and data are described in detail in **Appendix B**.

³⁴ BGS (2025) GeoIndex (onshore). Available at: <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/>

³⁵ Scotland's Soils (2023) Carbon and Peatland 2016 Map <https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/>

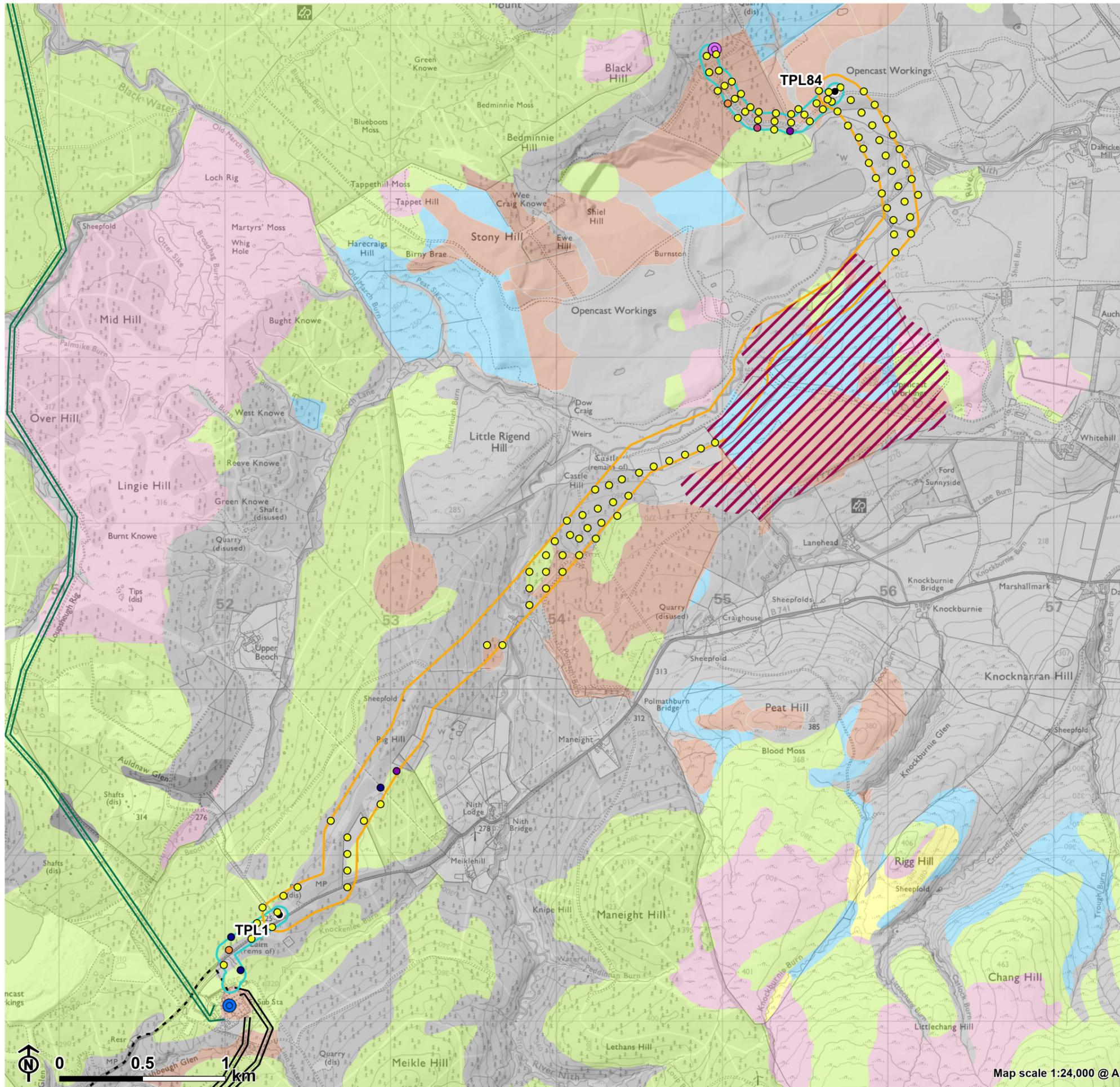
³⁶ The James Hutton Institute (2025) Soil Maps. Available at: <https://www.hutton.ac.uk/soil-maps/>

Figure 3.7: Carbon and Peatland



- Terminal pole location (TPL)
- ▭ Proposed Route (OHL 200 m wide)
- ▭ Proposed Route (UGC 100 m wide)
- ▭ 2km Study area
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- 33kV OHL
- - - 132kV UGC
- NatureScot Carbon and Peatland (2016) Classification**
- ▭ Non-soil (e.g. loch, built up area, rock and scree)
- ▭ Class 0: Mineral soil - Peatland habitats are not typically found on such soils
- ▭ Class 1: Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value
- ▭ Class 2: Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential
- ▭ Class 3: Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat
- ▭ Class 4: Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils
- ▭ Class 5: Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat

Figure 3.8: Probed Peat Depth



- Terminal pole location (TPL)
- ▭ Proposed Route (OHL 200 m wide)
- ▭ Proposed Route (UGC 100 m wide)
- Indicative substation location**
- Greenburn Wind Park Substation
- New Cumnock Collector Substation
- Existing infrastructure**
- 275kV OHL
- 132kV OHL
- - - 132kV UGC
- Probed Peat Depth (cm)**
- 0 - 30
- >30 - 50
- >50 - 100
- >100 - 200
- >200 - 300
- ▨ Inaccessible - slurry spreading
- NatureScot Carbon and Peatland (2016) Classification**
- Non-soil
- Class 0
- Class 1
- Class 2
- Class 3
- Class 4
- Class 5

Probe depths up to 2.8 m were found at the southern end of the Proposed Route (**Figure 3.8**). With the exception of this area and some isolated pockets in the north of the Proposed Route where probe depths exceeded 0.5 m, there is no peat elsewhere along the Proposed route. Note that areas of Class 3 and Class 5 in the central part of the Proposed Route were not probed due to slurry spreading associated with the restoration of the former opencast mine.

Private Water Supplies (PWS) and Groundwater Abstractions

3.128 Dumfries and Galloway Council were contacted to request private water supply data for sources within ~1 km of the Proposed Route. The council provided details of nearby properties supplied by a private water supply (**Table 3.3**). Six PWS sources are noted within 1 km of the Proposed Route. These properties and source locations (where known) are shown in **Figure 3.6**.

3.129 Of the six PWS properties identified, council data indicated that only one – Nith Farm Lodge - has a source that could lie in close proximity to the Proposed Route (i.e. within a 100 m buffer for excavations greater than 1 m, or 250 m for excavations less than 1 m³⁷).

3.130 To ascertain more detailed information a site visit was undertaken to Nith Farm Lodge on 8th July 2025 to determine the location of potential PWS sources on the property grounds. The site visit determined three springs were present; two of which were noted by the landowner as PWS sources. Both PWS sources were located within 100 m of the Proposed Route. These are listed below in **Table 3.3**.

3.131 Additional PWS questionnaires have also been sent out to nearby properties within 1 km of the route, and will inform the final PWS baseline.

Table 3.3 Private Water Supplies within 1 km of the Proposed Development Screening Corridor

Supply Name	NGR of Source	Type	No. of properties supplied	Distance from proposed route (km)
Nith Farm Lodge	253058, 609548	Groundwater Spring	1	0.08
Nith Farm Lodge	253189, 609890	Groundwater Spring	1	0.03

Supply Name	NGR of Source	Type	No. of properties supplied	Distance from proposed route (km)
Meiklehill	253261, 608916	Groundwater Spring	1	0.57
Knockenlee	253633, 609153	Borehole	1	0.76
Maneigh	254262, 609648	Unknown	Unknown	0.96
Craighouse Cottage	254891, 610300	Groundwater Spring	1	0.99

Appraisal

3.132 The study area for the appraisal comprises the Proposed Route and the watercourse catchments both upstream and downstream of it. A 1 km buffer from the Proposed Route was used as the search area for any nearby PWS sources.

3.133 Taking account of the findings of the work undertaken to date, and professional experience, whilst adopting a precautionary approach at this preliminary stage, potential effects associated with the Proposed Development are set out below.

Hydrology, Flood Risk and Water Quality

3.134 As part of the routeing process, design changes were made to reduce potential hydrological effects from the Proposed Development, including identifying the narrowest part of the River Nith to cross, to minimise siting wood poles within its flood plain. Additionally, the design will continue to evolve to take account of additional PWS data and potential GWDTE habitats (where present) to ensure impacts on water quality and hydrology are suitably understood and avoided or mitigated.

3.135 Without embedded mitigation measures (e.g. maintaining the recommended buffers from watercourses, construction SuDS, best practice site management and construction techniques), the construction of the Proposed Development has the potential to directly impact the River Nith and its tributaries via the release of sediment laden runoff from exposed sediment during excavation/construction of the wood poles or during the construction of temporary watercourse crossings, if required.

³⁷ SEPA (2024), Guidance on Assessing the Impacts of Development on Groundwater Abstractions, August 2024. Available at:

<https://www.sepa.org.uk/media/mfzpnjwb/guidance-on-assessing-the-impacts-of-developments-on-groundwater-abstractions.docx>

3.136 The proposed OHL wood pole foundation and construction work areas will affect a relatively small area (15 m by 15 m maximum, where required), having minor footprints and no concrete will be used. Thus, it is considered unlikely that the Proposed Development will have any impact on surface water runoff or hydrology during construction or operation.

3.137 The River Nith has a wide, low-lying floodplain that is predicted to flood in a 200-year plus climate change event. It is likely that some wood poles will have to be located within or be surrounded by the predicted flood extent. Given the small footprint of a wood pole base and the commitment to no land raising within flood risk areas, it is considered unlikely that any poles within the floodplain would increase flood levels downstream and the effect is considered to not be significant.

Peat

3.138 The effects on peat could include direct loss and/or indirect disturbance of peat during construction. Direct losses of peat occur where peat is excavated and cannot be appropriately re-used. Indirect peat loss occurs where temporary infrastructure (during construction) covers the vegetative peat surface or activities near the peat, such as excavation and drainage, can dry the peat out.

3.139 Most of the Proposed Route comprises mineral soil (with no peat present) (**Figure 3.7**). However, the peat survey data indicates that some small areas in the southern and northern extents of the Proposed Route are comprised of peat (**Figure 3.8**).

3.140 The construction of the UGC to the north-east and south-west is therefore likely to require some excavation in areas of peat. Any excavation of peat for the UGC will likely be reused at source to infill the cable trench and the effect of peat is considered to be not significant.

3.141 There is not expected to be any excavation associated with access tracks, as access will use low ground pressure vehicles and plant, or other less intrusive methods such as temporary steel matting or timber roadways.

Private Water Supplies and Hydrogeology

3.142 Deep excavations can affect the quality and quantity of groundwater and can have an impact on a PWS utilising groundwater resources. Further, excavation upslope of a PWS can affect the quality of groundwater recharge if within the abstraction source recharge catchment.

3.143 Excavations for the wood poles are ~2 m deep and localised (3 m²) and are considered unlikely to have an effect

on nearby PWS. There are no PWS receptors within 1 km of the UGC sections, so excavations for the UGC will not affect PWS. No excavations are proposed for temporary access tracks or other ancillary infrastructure.

3.144 Nith Lodge Farm is located approximately 590 m southeast of the Proposed Route, however it is served by two groundwater springs located within the Proposed Route. Based on SEPA³⁷ guidance, SEPA recommend a buffer of 250m from excavations greater than 1 m to groundwater abstractions. If a 250 m buffer cannot be achieved, SEPA recommend that a detailed assessment of the effects of the development on the groundwater abstraction source is required. A more detailed assessment of effects on PWS will therefore be undertaken as part of the EAR if these buffers cannot be achieved and will consider the source catchment areas and flow pathways.

3.145 There are no other PWS within 250 m of the Proposed Development.

3.146 At present it is not known if any GWDTEs are within 250m of the Proposed Development. SEPA has produced detailed guidance³⁸ on how to assess impacts of a proposed development on GWDTEs. The assessment of any GWDTEs, informed by the ecology data, will be based on this SEPA guidance. SEPA recommend a buffer of 250 m from excavations greater than 1 m to GWDTEs.

3.147 If a 250m buffer from PWS and GWDTE cannot be achieved during detailed design, a detailed assessment of effects will be included in the EAR. If significant effects are predicted, additional site specific mitigation and monitoring measures will be put in place to minimise effects to non-significant levels.

Mitigation

3.148 The Proposed Development will be located as far as reasonably practical from watercourses and other natural hydrological features and flood risk areas will be avoided, where practicable. All watercourses and surface water features will be buffered by a minimum of 10m and will use SEPA's RRC³¹ buffers of 10 m, 15 m and 30 m respectively (depending on width of watercourse) as a minimum. SEPA's RRC are shown in **Figure 3.6**.

3.149 The Proposed Development will likely cross the River Nith twice and several of its tributaries, but construction works (and wood poles) will be set back from watercourses and waterbodies by the appropriate RRC buffer as a minimum. Siting the OHL across watercourses will not affect the beds and banks.

³⁸ SEPA (2024), Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems [online]. Available at: <https://www.sepa.org.uk/media/a1yh0blq/guidance-on-assessing->

[the-impacts-of-developments-on-groundwater-dependent-terrestrial-ecosystems.docx](#)

3.150 Watercourse crossing (of access vehicles for construction) will be avoided where possible.

3.151 It is noted that it may not be possible for wood poles to fully avoid the 200-year plus climate change floodplain in parts of the Proposed Route. Mitigation measures will be put in place during construction to avoid working in high flow conditions and the pole construction will be designed to remain operational during flood events. There will be no land raising in flood risk areas.

3.152 Good practice mitigation measures will be implemented during construction to prevent pollution and minimise the impact of construction on the receiving water environment in line with the Construction Environmental Management Plan (CEMP). SEPA Guidance for Pollution Prevention (GPP) will be followed, as will SEPA's general binding rules (GBR) under the Water Environment (Controlled Activities) Scotland Regulations 2011, as amended (CAR Regulations).

3.153 Good practice pollution prevention and control measures will be put in place during construction, which will reflect best practice guidance and recognised industry standards, as well as SPEN's recent experience of constructing OHLs. Many of the measures mitigate several potential effects (e.g., mitigation to minimise sedimentation and pollution such as Sustainable Drainage Systems (SuDS) which can also serve to attenuate surface water run-off). Embedded mitigation measures that are incorporated as part of the overall good practice design will include:

- Measures to reduce effects of increased surface water runoff;
- Measures to reduce sedimentation and erosion;
- Measures to reduce pollution and accidental spillage;
- Measures to be put in place at temporary watercourse crossings (if required); and
- Measures to reduce sedimentation, erosion and pollution during forestry felling.

3.154 Peat will be avoided during detailed design, where possible. Peat management measures will be outlined in the CEMP, following best practice guidance. If it is necessary to remove any peat (for example, localised excavation at a wood pole base or for the placement of the buried cable) a Peat Management Plan (PMP) will be produced. Excavated peat will be managed following SEPA requirements and guidelines and will be reused on site wherever possible.

3.155 SPEN and the contractor will liaise with relevant landowners to help locate any supply pipework from the spring sources to the supplied PWS property at Nith Farm Lodge are ensure that they are avoided during the construction works. Monitoring of the PWS will be undertaken before, during and after construction to check there is no contamination of the

supply or change in quantity of supply. Temporary bowsers will be installed if the supply pipes are temporarily affected during construction.

3.156 Should any GWDTEs be identified following the ecology survey and subsequent hydrological assessment they will be avoided and buffered by the recommended buffer, where possible. If a 250m buffer cannot be achieved, additional site-specific mitigation measures and monitoring will be put in place following a detailed assessment of the GWDTE in the EAR, based on SEPA (2024³⁸) guidance. Best practice construction techniques will be employed to ensure that the infrastructure does not impact groundwater flow or chemistry to sensitive receptors. Additional mitigation measures and monitoring for any GWDTEs (if present) will be applied on a case-by-case basis if required.

Conclusion

3.157 With embedded mitigation, including good practice construction and pollution control measures, and with avoidance of watercourses, PWS, peat and GWDTE by relevant recommended buffers where possible during the alignment stage, it is considered that there will be no significant effects on hydrology, geology and peat during the construction or operational phases of the Proposed Development.

3.158 If the recommended buffers from sensitive receptors (e.g. watercourses, PWS, GWDTE) cannot be achieved during the alignment design, a detailed assessment of effects will be included in the EAR and additional site-specific mitigation will be put in place to minimise effects to non-significant levels.

Noise

Baseline

3.159 The Proposed Route is located in a generally rural area, with construction of the Greenburn Wind Park ongoing to the north. The B741 is also located to the south. The area is likely to be mostly characterised by 'natural' sources to the south, such as wind disturbed vegetation or animals, with some varying contribution from anthropogenic sound sources such as road traffic, forestry felling and agricultural activity. To the north, the temporary construction of the Wind Park and restoration works may be more characteristic within the daytime soundscape.

3.160 A property is located at Upper Beoch approximately 985 m to the west of the Site, as well as two properties to the north west at Rigghead and Burnston. There are also a cluster of properties along the B741, including properties at Maneight, Nith Lodge and Meiklehill.

Appraisal

3.161 Due to the short term and localised nature of the construction process, any temporary noise created during construction is likely to be minimal in extent and concentrated in small areas at any one time as the contractors progress along the course of the route. These activities are therefore unlikely to result in significant effects due to their limited extent in terms of duration.

3.162 Under dry weather conditions, 132 kV overhead lines generally do not produce any audible noise. However, in wet weather, the presence of protrusions on the conductor surface (such as water droplets) can cause electric fields to propagate in the air (so-called 'corona discharge') which can be a source of noise, albeit at relatively low level. The generation of this noise is minimised as part of modern overhead transmission line design.

3.163 Based on professional experience, levels of noise from this type of overhead line, even during worst-case conditions (wet weather), are very low (less than 20 dB(A)) which is unlikely to be perceptible and is therefore not likely to be significant at nearby noise receptors (properties).

Mitigation

3.164 SPEN is committed to implementing accepted good practice measures for controlling construction noise, which may include the following, as appropriate:

- Restricted hours of construction works to avoid sensitive periods;
- The use of equipment with appropriated noise control measures (e.g. silencers, mufflers and acoustic hoods);
- The positioning of temporary site compounds as far as practicably possible from neighbouring residential properties; and
- Additional good practice measures as set out in BS5228:2009.

Conclusion

3.165 On this basis, it is not anticipated that there will be significant noise effects during either the construction or operational phases of the Proposed Development.

Traffic and Transport

Baseline

3.166 The Proposed Development is expected to be accessed via several existing private roads, including routes through private forestry land, a restored opencast mining site, and the Greenburn Wind Park's construction and operation accesses. These existing access routes and nearby off-road tracks may

need to be upgraded to safely accommodate the largest construction vehicles required for the project. The construction access points will connect to local public roads, which are administered by East Ayrshire Council.

3.167 Construction traffic will access the local area via the strategic (trunk) road network (administered by Transport Scotland) notably including the A76, then via local public roads (including the A713, the B741 and Glaisnock Road). These routes are typically single carriageways although some sections are single track routes with regularly interspersed passing places.

3.168 These roads will define the Traffic and Transport Study Area. These routes typically operate without significant traffic congestion.

3.169 Through review of online UK road traffic collision data (<https://www.crashmap.co.uk>), covering the last five available years (ending 01/10/2020, it is evident that there have been several recorded collisions that have resulted in a personal injury along the A76 and the A713. Elsewhere within the Study Area, collision incidences appear sporadic.

3.170 Settlements in the area include Dalmellington, Cumnock and New Cumnock. There are also several isolated farmsteads throughout the Study Area. Construction traffic associated with the Proposed Development will travel through or alongside these communities.

3.171 Public bus services operate within the Study Area, on the A76, A713 and B741, but there are no high frequency services. The nearest rail station is at New Cumnock which offers daily services directly linking to Carlisle, Dumfries and Glasgow Central.

Appraisal

3.172 Any potential Traffic and Transport effects would occur during the construction phase of the Proposed Development, as operational traffic generation is expected to be limited to occasional service vehicle movements associated with monitoring and maintenance activities. Accordingly, it is proposed to scope out operational traffic effects from further consideration.

3.173 Based on an initial assessment of the scale of the Proposed Development and its local context, the traffic generated during the construction phase will not include any abnormal load traffic and is anticipated to result in, at worst, minor effects which are therefore not considered to be significant and therefore will not warrant detailed assessment as part of an EIA.

3.174 It is accordingly proposed that a concise appraisal is developed and documented, in the form of a Transport Statement (TS), within the Environmental Report, which is

proposed to accompany the planning application (if deemed non-EIA development).

Mitigation

3.175 No significant adverse impacts have been identified therefore, no specific mitigation or monitoring is proposed.

3.176 Drawing on professional experience and established industry best practices, a tailored Construction Traffic Management Plan (CTMP) will be developed. This CTMP will set out measures aimed at minimising local disruption and improving safety for all road users during the construction phase of the Proposed Development. A preliminary version of the CTMP will be prepared as a key component of the Transport Statement (TS).

3.177 A more detailed review of the interfaces between common active travel routes and public roads within the Study Area will be undertaken as a key part of the TS, alongside focused appraisal of road traffic (personal injury) collision data. The outcome of this appraisal may result in the specification of localised and specific measures to be incorporated in the preliminary CTMP.

Conclusion

3.178 Although the Proposed Development is not expected to generate significant traffic or transport impacts, a concise Transport Statement (TS) and supporting Construction Traffic Management Plan (CTMP) will be prepared as part of the Environmental Report and submitted with the Section 37 application.

3.179 The TS will assess the impact of construction-related traffic on both the local and trunk road networks. This assessment will demonstrate that traffic and transport considerations are being appropriately addressed and will help reassure the local community that construction traffic will not cause unnecessary disruption.

Climate Change

3.180 There are only likely to be limited cases in which climate change is a decisive factor in whether EIA is needed for a particular project; noting that the Project directly supports the delivery of national net zero targets, the project description chapter included in the EAR will outline any included measures to avoid/reduce greenhouse gas emissions and to seek to ensure resilience to climate change. Climate change will not be further addressed in detail within the EAR.

Major Accidents and Disasters

Mining Legacy

3.181 The Proposed Route is located within a Coal Mining Reporting Area³⁹ as set out in the Mining Remediation Authority's online mapping viewer. Additionally, the Site has been subject to historical underground and surface mining activities to the north, east and centrally, and is therefore located mostly within the Coal Authority's defined 'Development High Risk Area'.

3.182 The former opencast coal workings are located to the north-east of the corridor, across both sides of the River Nith, and are currently subject to ongoing restoration under planning consent 20/0007/PP (original consent ref. 17/0538/PP). Ongoing restoration of the former opencast mines included the creation of a number of large steep-sided waterbodies at Shiel Hill and former Dalaig Plantation, and the landscaping and resurfacing of previously excavated areas.

3.183 To address this, a Coal Mining Risk Assessment (CMRA) will be prepared which considers the possible risks to the Proposed Development. The risks assessed will be from the presence of recorded mine entries (in particular to the south of Little Rigend Hill) and the potential for any recorded or unrecorded shallow mine workings or unrecorded mine entries to be present. These have the potential to create zones of instability.

3.184 Any potential effects identified within the CMRA will be mitigated through design to ensure they are not significant and are managed appropriately.

Human Health

3.185 The construction and operation of the Proposed Development will be managed within the requirements of a number of health and safety related Regulations, including the Construction (Design and Management) Regulations 2015 and the Health and Safety at Work etc. Act 1974.

3.186 On the basis that noise, traffic and transport are not anticipated to generate significant effects and good practice measures and supporting management plans in place, it is not anticipated that there will be significant effects on human health.

³⁹ As set out in the Mining Remediation Authority's Mining Remediation Authority Map Viewer. Available at: <https://datamine-cauk.hub.arcgis.com/>

Chapter 4

Screening Conclusions

4.1 Reflecting the analysis covered under each of the environmental topic headings set out in **Chapter 3**, it has been concluded that there are no significant effects expected as a result from the Proposed Development. **Appendix A** provides further screening commentary in the form of the EIA checklist.

4.2 This Screening Report has been prepared in accordance with the requirements of Regulation 8 and the criteria set out within Schedule 3 of the EIA Regulations. It is concluded that neither the characteristics nor location of the Proposed Development are likely to give rise to significant environmental effects.

4.3 On this basis, it is considered that the Proposed Development is not EIA development, and that an EIA with accompanying Environmental Impact Assessment Report is therefore not required.

4.4 However, it is recognised that, based on the desk and field surveys, consultation findings to date and professional judgement, the following environmental topics will be considered in the EAR:

- **Landscape and Visual Appraisal;**
 - Landscape and Visual Method Statement
- **Ecology;**
 - Extended Phase 1 Habitat Survey and Protected Species Walkover
 - Biodiversity Net Gain (BNG) Report
- **Ornithology;**
 - Breeding Bird Surveys
 - Wintering (non-breeding) Bird Surveys
 - Bird Protection Plan
- **Cultural Heritage;**
 - Heritage Desk Based Assessment
- **Hydrology, Hydrogeology and Geology (including Peat);**
 - Peat Survey Report
 - Watercourse Crossing Assessment
 - GWDTE Assessment (if required)
 - Peat Management Plan (if required)

- **Transport Statement;**
 - Draft Construction Traffic Management Plan (CTMP)
- **Draft Construction Environment Management Plan (Draft CEMP)** (including standard measures to control noise from construction);
- **Forestry Report;** and
- **Coal Mining Risk Assessment (CMRA).**

Appendix A
**Environmental Screening
Checklist**

EIA SCREENING CHECKLIST

Greenburn Wind Park 132kV OHL Connection Project

LUC Recommendation: EIA not required

Project Information

Please Describe	
Address or location of proposed development	Land located between the proposed Greenburn Wind Park Project substation (consented under ECU reference ECU00002037) and the New Cumnock Station to the south, in East Ayrshire. A site location plan is provided as Figure 1.1
Site area	The Greenburn 132kV Grid Connection Project will be approximately 8.5 km in length with a 100m buffer along the overhead line section of the route, and a 50m buffer along the underground sections of the route.
Brief description of the proposed development	132 kilovolt (kV) connection from the consented Greenburn Wind Park substation (ECU reference ECU00002037) to the existing New Cumnock substation in East Ayrshire comprising approximately 6.8 km of overhead line supported on wood poles and 1.7 km of underground cable.
Type of Application (please tick)	<input type="checkbox"/> Application for planning permission
	<input type="checkbox"/> Application for planning permission in principle
	<input type="checkbox"/> Application for the approval of matters specified in conditions
	<input checked="" type="checkbox"/> EIA Screening Request followed by a consent application under Section 37 of the Electricity Act 1989

Selection Criteria for Screening Schedule 2 Development

There are two stages to this section of the checklist:

- First, identifying the potential impacts of the proposed development based upon the characteristics of the development and its location.
- Secondly, considering whether significant environmental effects are likely based upon the characteristics of the potential impacts.

The selection criteria in this section meet the requirements of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 – Schedule 3 for screening Schedule 2 development.

Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
1. Characteristics of the Development			
(a) Size and design of the development			
Will the proposed development be out of scale with the existing environment?	No	The Greenburn 132kV Grid Connection Project will be located next to existing electricity generation and transmission infrastructure including overhead lines, substations and wind turbines. The proposed wood poles will have a maximum height of 22 m above ground level. Is it not considered to be out of scale with the existing environment.	No
(b) Cumulation with other existing and/or approved development			
Will the proposed development lead to further consequential development or works?	No	The Proposed Development is required to facilitate the connection of the consented Greenburn Wind Park (ECU00002037) only. Upon decommissioning of the Greenburn Wind Park, the OHL components will be removed in their entirety, with components re-used where possible. All ground disturbance will be fully reinstated. UGCs may be left in-situ and will be determined on a site-by-site basis.	No
Are there potential cumulative impacts with other existing development, approved developments or developments the subject of valid applications?	Yes	The grid connection project will need to be considered in cumulative terms in relation to any consented developments and those subject to valid applications. This may result in the consideration of other similar infrastructure projects.	No. Whilst no significant cumulative effects are anticipated, as part of the Environmental Appraisal Report to accompany the Section 37 consent, an appraisal of cumulative effects will be undertaken based on publicly available information at the time of the preparation of the supporting environmental

			and technical studies.
Should the application for the proposed development be regarded as an integral part of a more substantial project? If so, can related developments which are subject to separate applications proceed independently?	Yes	The Greenburn 132kV Grid Connection Project is required to connect the consented Greenburn Wind Park substation to the existing New Cumnock substation. The Greenburn Wind Park was consented by Scottish Ministers in April 2023 (EECU00002037).	No. The significant effects in relation to the consented Greenburn Wind Park have been assessed separately and the Project consented by Scottish Ministers.
(c) Use of natural resources, in particular land, soil, water and biodiversity			
Will the proposed development use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or are in short supply?	No, although peat soil may need to be temporarily excavated.	The Greenburn 132kV Grid Connection Project will not require significant use of natural resources, including resources which are non-renewable or in short supply. There would be no major changes to land use within the local area as a result of the Proposed Development, with only minimal long-term land take required for the wood poles, although small areas of forestry may need to be felled. Parts of the Proposed Development will be a buried cable and may require temporary excavation in areas of peat. Excavated peat can be emplaced to backfill the excavated areas or reused elsewhere on site. The erection of the wood poles will require a small	No. Areas of deeper peat will be avoided where possible during detailed design. Peat management measures will be outlined in the CEMP, following best practice guidance. If required, any excavated peat will be managed following SEPA requirements and guidelines and will be reused on site wherever possible. Through avoidance of deeper peat where possible to minimise excavation, and application mitigation measures if required (including a peat management plan), there will not be a significant effect on peat from the Proposed Development. The excavated material will be sorted and used for backfilling purposes. No concrete is required. SPEN are committed to delivering off site compensatory planting for the full area of commercial forestry tree loss

		excavation to allow the pole brace block and/or steel foundation braces to be positioned in place. A typical pole excavation will be 3 m ² by 2m deep.	
(d) Production of waste			
Will the construction, operation or decommissioning of the proposed development produce wastes?	No	<p>Waste will be generated, and will require management, at a number of construction stages including:</p> <ul style="list-style-type: none"> - Clearance of vegetation along the route to enable access to pole locations and construction of the OHL and UGC; - Stripping of topsoil and excavation of materials for construction of poles and cables; and - Construction of ancillary works, including temporary working areas. 	<p>Measures to reduce possible environmental effects associated with the storage and transportation of waste will include:</p> <ul style="list-style-type: none"> - The careful location of stockpiles and other storage areas; - The use of good practice in the design of waste storage areas and the use of suitable waste containers; - The use of sheeting, screening and damping where appropriate and practicable; - The control and treatment of runoff from soil and waste soil stockpiles; - Minimising storage periods; - Minimising haulage distances; and - The sheeting of vehicles. - Any materials that cannot be reused will be disposed of according to relevant waste management legislation which will serve to address a number of possible environmental effects. <p>All of the above details will be enforced through a Site Waste Management Plan (SWMP) as part of the Construction Environmental Management Plan (CEMP), details of which will be further outlined in the EAR to accompany the Section 37 application.</p>
(e) Pollution and nuisances			

Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
Will the construction, operation or decommissioning phases of the proposed development release pollutants or any hazardous, toxic or noxious substances to the air?	No	No pollutants, hazardous, toxic or noxious substances will be released to the air during construction, operation or decommissioning.	No
Will the construction, operation or decommissioning of the proposed development lead to risk of contamination of land or water from releases of pollutants?	No	Without good practice mitigation measures in place, the construction of the OHL supported on wood poles does has the potential to impact the River Nith and its tributaries via the release of sediment laden runoff from exposed sediment during excavation/construction of the wood poles or during the construction of temporary watercourse crossings.	<p>No. Good practice mitigation measures will be implemented during construction to prevent pollution and minimise the impact of construction on the receiving water environment in line with the Construction Environmental Management Plan (CEMP). SEPA Guidance for Pollution Prevention (GPP) will be followed, as will SEPA's general binding rules (GBR) under the Water Environment (Controlled Activities) Scotland Regulations 2011, as amended (CAR Regulations).</p> <p>The Proposed Development will cross the River Nith twice and several of its tributaries, but construction works (and wood poles) will be set back from watercourses and waterbodies by the appropriate riparian buffers. Stringing the OHL across watercourses will not affect the beds and banks. No works will be carried out within the watercourses.</p>
Will the construction, operation or decommissioning phases of the proposed development cause noise, vibration or the release of light?	No	Under dry weather conditions, 132kV overhead lines generally do not produce any audible noise. But in wet weather, the presence of protrusions on the conductor surface (such as water droplets) can cause electric fields to propagate in the air (so-called 'corona discharge') which can be a source of noise, albeit at relatively low level. The generation of this noise is minimised as part of modern overhead	<p>Based on experience from the EIA team of 132kV overhead lines, levels of noise from this type of line, even during worst-case conditions (wet weather), are very low (less than 20 dB(A)) which is unlikely to be perceptible and not significant.</p> <p>Any temporary noise created during construction is likely to be minimal and concentrated in small areas at any one time as the contractor's progress along the route.</p> <p>It is therefore not anticipated that there will be significant noise effects during either construction or operational phases of the grid connection project.</p>

		transmission line design.	
(f) Risk of major accidents and/or disasters which are relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge			
Will there be any risk of accidents during construction, operation or decommissioning of the proposed development which could affect the environment or human health?	No	The Proposed Route is located within a Coal Mining Reporting Area. The construction and operation of the Proposed Development will be managed within the requirements of a number of health and safety related Regulations, including the Construction (Design and Management) Regulations 2015 and the Health and Safety at Work etc. Act 1974.	A coal mining risk assessment will be prepared which considers the possible risk to the proposed development. On the basis that noise, traffic and transport are not anticipated to generate significant effects and good practice measures and supporting management plans in place, it is not anticipated that there will be significant effects on human health.
(g) Risk to human health			
Will the construction, operation or decommissioning phases of the proposed development involve the use, storage, transport, handling or production of substances or materials which could be harmful to human health?	No	N/A	No

Schedule 3 Selection Criteria	Yes/No	Briefly describe potential impact	Is effect likely to result in a significant effect? Please explain
Location of the Development			
(a) Existing and approved land use			

Are there existing and/ or approved land uses in the locality of the proposed development site which could be affected by the proposed development?	Yes	Commercial coniferous woodland is located at the southern end of the survey area. The potential removal of this forestry forms part of the project development description.	SPEN are committed to deliver off site compensatory planting for the full area of tree loss in keeping with The Scottish Government Policy on the Control of Woodland removal ¹ . All efforts will be taken through the detailed alignment design to minimise forestry removal unless it is unavoidable due to other balancing environmental factors.
(b) Relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground			
Are there any areas on or around the location of the proposed development and its underground which contain important, high quality or scarce resources which could be affected by the proposed development?	No	N/A	None
(c) Absorption capacity of the natural environment			
Are there any areas on or around the application site that are protected under international or national legislation for their ecological, landscape, cultural heritage or other value which could be affected by the construction, operation or decommissioning of the proposed development?	No	There are no international or nationally designated sites within the proposed route corridor that would be impacted by the proposed development.	No
Are there any other areas on or around the location which are important or sensitive for reasons of their ecology which could be affected by the proposed development? Particular attention should be paid to the following areas: wetlands, riparian areas, river mouths; (ii) coastal zones and the marine environment; (iii) mountain and forest areas; (iv) nature reserves and parks.	No	There are no important or sensitive ecology designations that would be directly impacted by the proposed development.	No

¹ Forestry Commission Scotland (2019) The Scottish Government's Policy on Control of Woodland Removal. Available at <https://www.forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal/viewdocument/285> (accessed 20 June 2025).

Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora which could be affected by the proposed development?	Yes/No	Scottish Biodiversity Priority habitats, such as blanket bog, marshy grassland and acid flushes were identified within the Survey Area. Further survey work and design mitigation will seek to avoid or minimise impacts as far as possible. Nonetheless, these habitats are not likely to be of greater than Local level importance.	Further survey and data analysis will confirm whether there are any habitats of conservation concern. Following best practice guidance, priority habitats will be avoided. Where this cannot be avoided, impacts will be minimised as far as possible. Enhancement/compensation will be undertaken for any priority habitats impacted, as determined by NatureScot's standing guidance ² .
Are there any groundwater source protection zones or areas that contribute to the recharge of groundwater resources which could be affected by the proposed development?	No	N/A	N/A
Are there any areas on or around the location of the proposed development where environmental quality standards are already exceeded which could be affected by the proposed development?	No	N/A	No
Are there any areas on or around the location which are densely populated which could be affected by the proposed development?	No	There are several scattered inhabited properties around the Proposed Development, including a property at Upper Beoch, and a number of dwellings along the B741.	Routeing of the OHL has avoided these properties and ongoing design work will seek to further minimise potential effects upon receptors within the study area as far as practicable. Whilst visual effects may be experienced these are likely to be geographically localised and are therefore not considered to be significant in EIA terms.
Is the proposed development in a location where it is likely to be visible to many people?	No	Only likely to be visible from the scattered properties located in the vicinity of the Proposed Route and partially by road users along the B741.	The Landscape and Visual Appraisal will consider the potential for effects upon visual receptors and will include representative assessment viewpoints which will include visual receptors: <ul style="list-style-type: none"> – Residential receptors at scattered properties within the study area, including

² NatureScot (2025) Advising on Peatland, Carbon-rich Soils and Priority Peatland Habitats in Development Management. Available online: <https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management#:~:text=and%20peaty%20soils.-,Priority%20Peatland%20habitat,and%20fens%20in%20the%20lowlands>

			<p>Upper Beoch to the north-west of Rig Hill, and Maneight, Nith Lodge, and Meiklehill adjacent to the B741;</p> <ul style="list-style-type: none"> – Recreational receptors utilising access tracks that extend along the river valley of the Nith; and – Road users on the B741 and the minor road network in the north of the study area. <p>Whilst visual effects may be experienced, these are likely to be geographically localised and seen in the context of other infrastructure, including large-scale wind turbines and therefore not considered to be significant in EIA terms.</p>
Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the proposed development?	No	No	No
Are there any areas of local landscape or scenic value on or around the location which could be affected by the proposed development?	Yes	A small proportion of the Doon Valley Local Landscape Area (LLA) falls within the south-western extents of the 2 km study area.	It is considered unlikely that the Proposed Development will give rise to significant adverse effects on the landscape resource or landscape character within the study area. A landscape appraisal will be provided as part of the S37 consent application.

<p>Are there any areas of features of historic, cultural or archaeological value on or around the location which could be affected by the proposed development?</p>	<p>Yes</p>	<p>There are nine non-designated heritage assets located within the Proposed Route. These include a number of assets of low (local) importance (including a quarry (WoSAS Pin: 61172) and evidence of rural settlement and agricultural practices (WoSAS Pin: 20185; 20489; 20190; 67834; 6624); as well as the previously unrecorded High Rigend farmstead). Direct physical effects to assets of medium (regional) importance (including evidence for prehistoric ritual and funerary practices (WoSAS Pin: 61177; 7990; 7991) could also occur.</p>	<p>A desk-based assessment and walkover survey of the Proposed Development, have been undertaken to inform a historic environment assessment (HEA).</p> <p>It is anticipated that direct physical effects to known heritage assets can be avoided. The baseline information and appraisal will inform detailed design to manage the risk of accidental damage during construction and optimise opportunities to further reduce setting change to key heritage assets.</p> <p>Although the Proposed Development route may result in limited effects to un-designated heritage assets from setting change, these are not predicted to be significant with respect to the EIA Regulations.</p>
<p>Is the proposed development location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions?</p>	<p>Yes</p>	<p>Part of the Proposed Development is within the 200-year plus climate change flood extent of the River Nith (based on SEPA Future Flood maps).</p>	<p>While it may not be possible for wood poles to fully avoid the 200-year plus climate change flood risk area of the River Nith in parts of the Proposed Development, mitigation measures will be put in place during construction and poles will be set back from the watercourses and flood risk areas, as much as practicable. Construction in flood risk areas will cease during flood events, there will be no land raising in flood risk areas and the poles will be designed to remain operational during flood events.</p> <p>There will not be a significant flood risk effect from the Proposed Development.</p>

Schedule 3 Selection Criteria

3. Characteristics of the Potential Impact

(a) Magnitude and special extent of the impact (for example geographical area and size of the population likely to be affected)

Will the effect extend over a large geographical area, affecting many people and resulting in social changes, e.g. in demography, traditional lifestyles, employment?

No.
(b) Nature of impact
<i>Is the development located within or close to any other areas which are protected under international, EU, or national or local legislation for their ecological, landscape, cultural or other value, which would be significantly affected by the development?</i>
No.
(c) Transboundary nature of the impact
<i>Will there be any potential for transboundary impact?</i>
No.
(d) Intensity and complexity of the impact
<i>Is there a risk that environmental standards will be breached?</i>
No
(e) Probability of the impact
<i>Is there a high or low probability of a potentially highly significant effect?</i>
Low.
(f) Expected onset, duration, frequency and reversibility of the impact
<i>Will the effect be permanent, continuous or irreversible?</i>
The effects are considered temporary in nature as the 132 kV grid connection infrastructure will be removed and the land reinstated following the decommissioning of the Greenburn Wind Park.
(g) Culmination of the impact with the impact of other existing and/or approved development
<i>Will the Project have cumulative effects, due to its proximity to other existing or planned Projects with similar effects?</i>
Yes, the Greenburn 132kV Grid Connection Project will be viewed cumulatively with other existing OHL infrastructure in this location, however, the impacts are not considered to be significant.
(h) Possibility of effectively reducing the impact

Will there be any significant adverse effects on any aspect of the environment during the construction and operational phases of the development, has the developer included mitigation measures to avoid, prevent, repair or reduce the potential impact?

There will be no significant effects during construction or operation of the Proposed Development.

To ensure effects on the environment are avoided and/or minimised during construction, mitigation and pollution prevention measures will be employed throughout the construction process.

EIA is not required

Appendix B
Peat Survey Report

Scottish Power Energy Networks

**Greenburn Wind Park 132kV
Connection Project**

Peat Survey Report

Final

July 2025

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1 Introduction

Kaya Consulting Ltd was commissioned by Scottish Power Energy Networks through Land Use Consultants Ltd. to undertake a peat depth survey for the proposed Greenburn Wind Park 132kV Connection Project.

Figure 1 shows the Proposed Route. The corridor is located ~5.5km to the east of New Cumnock in the East Ayrshire Council area.

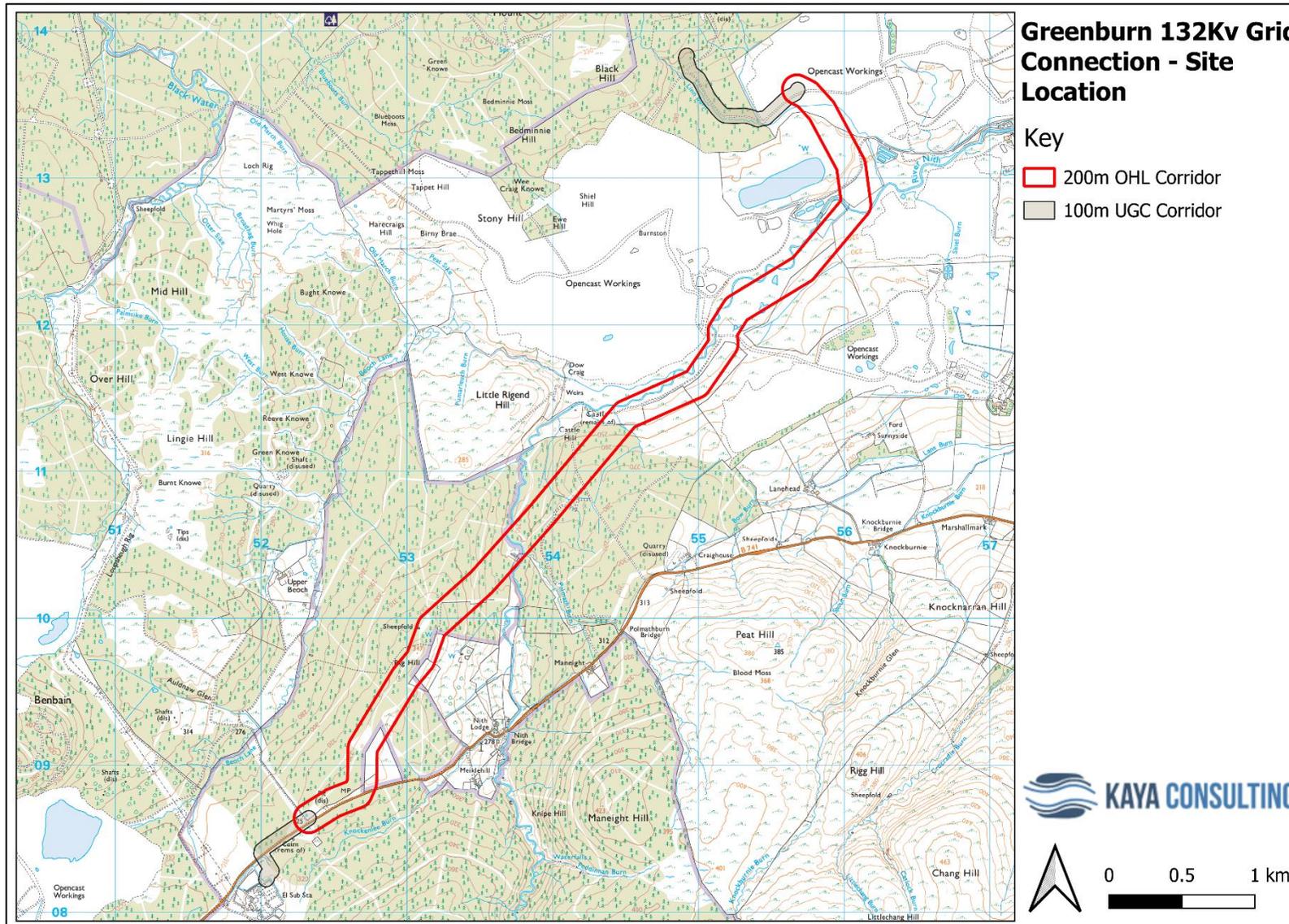
The survey area comprises a 200m wide route / corridor which has been allowed around the Proposed Route for further detailed alignment of the overhead line pole locations, as well as a 100m wide route / corridor which has been allowed for further detailed design where the proposed underground cables are proposed. The Proposed Route is comprised predominantly of commercial forestry, with an area spanning the site of a former opencast mine located at the northern end of the route.

The topography within the surveyed area varies between lows of roughly 220m AOD where the route aligns with the River Nith watercourse, to highs of roughly 320m AOD to the south and north of the route. During the survey period, sewage sludge was being spread within the former opencast mine to the north of the Proposed Route – access to these areas was not permitted/feasible and no probes were taken there (see **Photo 3, Figure 2** – see end of document). Based on site observations and probes depths of the adjacent areas, it is considered that these areas are not peat or peat soils.

This report covers the methodology and output of the peat surveys undertaken at the Proposed Route over a period spanning September 2024 to July 2025; note that the survey extent covered a wider area around the Proposed Route, not shown in this report.

The purpose of the peat survey was to establish an understanding of the peat depths at the Proposed Route to optimise route design and layout to minimise both the extent of disruption to peatlands and the quantity of peat excavated. The survey was undertaken using a 100m point spacing and a 100m offset along the designated route within the Proposed Route. Small portions of the route to the north and south of the route for the proposed underground cable connections were probed using a 50m offset.

Figure 1: Proposed Route



2 Methodology

2.1 Desk-based Initial Assessment

The Carbon and Peatland Map (NatureScot 2016) was consulted prior to the peat survey. The map contains information on the likely peatland classes present within the survey area. The Carbon and Peatland map was developed to be used as “a high-level planning tool to promote consistency and clarity in the preparation of spatial frameworks by planning authorities”.

Within the Carbon and Peatland map, Class 1 and Class 2 peatlands are identified as areas of “*nationally important carbon-rich soils, deep peat and priority peatland habitat*”. Class 1 peatlands are also “*likely to be of high conservation value*” and Class 2 “*of potentially high conservation value and restoration potential*”.

The Carbon and Peatland map for the Proposed Route is shown in **Figure 2**, which shows that the Proposed Route is predominantly comprised of Class 5 and mineral soils, with small areas of Class 3 and Class 4. The relevant Class descriptions are below:

- Class 3 - Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat. Predominantly peaty soil with some peat soil. Indicative vegetation is peatland with some heath.
- Class 4 - Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils.
- Class 5 - Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat. Peat soil, with no peatland vegetation.

The results of the desk-based assessment indicated that peat was likely to be present along the Proposed Route.

2.2 Survey Methodology

The survey methodology follows current guidance in Scotland (Scottish Government, Scottish Natural Heritage, SEPA (2017) Peatland Survey. Guidance on Developments on Peatland, on-line version only).

The field survey was undertaken by a team with the appropriate experience of assessing hydrology, hydrogeology, geology, soil, and peat for onshore windfarms in upland environments.

2.2.1 Survey Dates

The peat survey was undertaken on the following dates:

- 3rd September 2024
- 6th September 2024
- 28th and 29th May 2025
- 8th July 2025

2.2.2 Peat Survey Methodology

The following methods were employed for the peat survey:

- The Proposed Route was sampled using a 100m spacing within areas of the route that are indicated as containing peat soils on the NatureScot Carbon and Peatland Map. A small portion of the route to the north of the route for the proposed underground cable connection was probed using a 50m offset.
- A total of 113 sampling points were surveyed in the Proposed Route. A large area along the proposed route was inaccessible due to sewage sludge being spread on the former opencast mine located at the centre of the route – see **Figure 2**.
- The peat survey was carried out using an extendable fibreglass utility probe capable of sampling up to 5m depth. Probe depths over 5m were recorded as 5m.
- The peatland condition was assessed at each probing location. The peatland condition categories were based on those used in the NatureScot (2016) Peatland Condition Survey guidance. The peatland condition categories were:
 - Actively eroding
 - Drained
 - Forested / previously forested
 - Modified
 - Near natural
 - Not peatland

3 Survey Results

3.1 Probe Depths

Table 1 shows the range of results obtained during the peat survey. A total of 113 probes were collected across the survey period within the Proposed Route.

The Scottish Government guidance document on peat landslide hazard and risk assessment (Scottish Government, 2017) defines peat as a soil greater than 50cm in depth, with an organic matter content of more than 60%. Soils of less than 50cm depth are classified as organo-mineral soils. This is further evidenced by JNCC (2011), SNH (Bruneau, et al, 2014) and the James Hutton Institute (2019).

Guidance from NatureScot (2023) defines carbon-rich soils as peat soils and peaty soils. Peat soils in Scotland are defined as soil with a surface peat layer with more than 60% organic matter and of at least 50cm thickness. Peaty soils have a shallower peat layer (<50cm) at the surface (NatureScot, 2023).

The results of the survey were:

- 92.9% of probes were recorded as having a depth of less than or equal to 30cm. These probes are not considered peat.
- 1.8% of probes were recorded as having a depth of between 30-50cm. These probes are not formally considered to be peat and are organo-mineral soils or peaty soils (if a peat layer is present).
- 0.9% of probes were recorded as having a depth of between 50-100cm and are peat soils.
- 2.7% of the probes were recorded as having a depth of over 100cm and are peat soils.

Figure 3 shows the spatial distribution of the peat depths from the peat survey data. The deepest probes taken within the Proposed Route were reserved to an area at the southern end of the route within a section of commercial forestry. The deepest probe depths in this area reached 280cm. With the exception of this area and some isolated pockets in the north of the Proposed Route where probe depths exceeded 50 cm, there is no peat elsewhere along the Proposed Route.

Table 1: Probe depth summary across the peat survey

Probe depth range (cm)	Number of probes	Percentage of total probes
<= 30	105	92.9
> 30-50	2	1.8
> 50 - 100	1	0.9
> 100 - 200	2	1.8
> 200 - 300	3	2.7
> 300 - 400	0	0
Total	113	100

3.2 Peatland Condition

Table 2 show the results of the peatland condition assessment obtained during the peat survey.

The Proposed Route was assessed to be split between two categories, with 54.9% of the assessed locations classified as 'Forested / previously forested' peatland (see **Photo 1** and **Photo 4**) and 45.1% classified as 'Not peatland' (**Photo 2**). No 'Modified', 'Near Natural' or 'Drained'/'Actively eroding' peatland was found at the Proposed Route. **Photo 3** shows the inaccessible area of Class 3 where slurry was being spread.

The majority of the Proposed Route comprises commercial forestry. Non-forested areas consist of open grassland with no indication of peatland habitat.

Figure 4 displays the distribution of the peatland condition assessment.

Table 2: Peatland condition assessment based on the survey

Peatland Condition	Number of probes	Percentage of total probes
Actively eroding	0	0.0
Drained	0	0.0
Forested / previously forested	62	54.9
Modified	0	0.0
Near natural	0	0.0
Not peatland	51	45.1
Total	113	100

Photo 1: Example of commercial forestry



Photo 2: Example of non-peatland grassland at the Proposed Route



Photo 3: Sewage sludge spreading in progress at the north of the Proposed Route



Photo 4: An example of a previously forested location at the south of the Proposed Route



4 Summary

Kaya Consulting Ltd was commissioned by Land Use Consultants Ltd on behalf of Scottish Power Energy Networks to undertake a peat depth survey for the proposed Greenburn Wind Park 132kV Connection Project.

This report covers the methodology and output of the survey undertaken within the Proposed Route. The purpose of the survey was to establish an understanding of the peat depths at the Proposed Route to optimise route design and layout to minimise both the extent of disruption to peat soils and the quantity of peat excavated.

A total of 113 probes were collected across the peat survey for the ~8.5km route. An area within the central section of the route was not surveyed due to sewage sludge spreading taking place, however based on assessment of the surrounding area and adjacent probe depths, it is not likely that peat or peat soils are present in the inaccessible area.

The results of the peat survey are summarised below:

- 92.9% of probes were recorded as having a depth of less than or equal to 30cm. These probes are not considered peat.
- 1.8% of probes were recorded as having a depth of between 30-50cm. These probes are not formally considered to be peat and are organo-mineral soils or peaty soils (if a peat layer is present).
- 0.9% of probes were recorded as having a depth of between 50-100cm and are peat soils.
- 2.7% of the probes were recorded as having a depth of over 100cm and are peat soils.

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Figure 2: NatureScot (2016) Carbon and Peatland Mapping

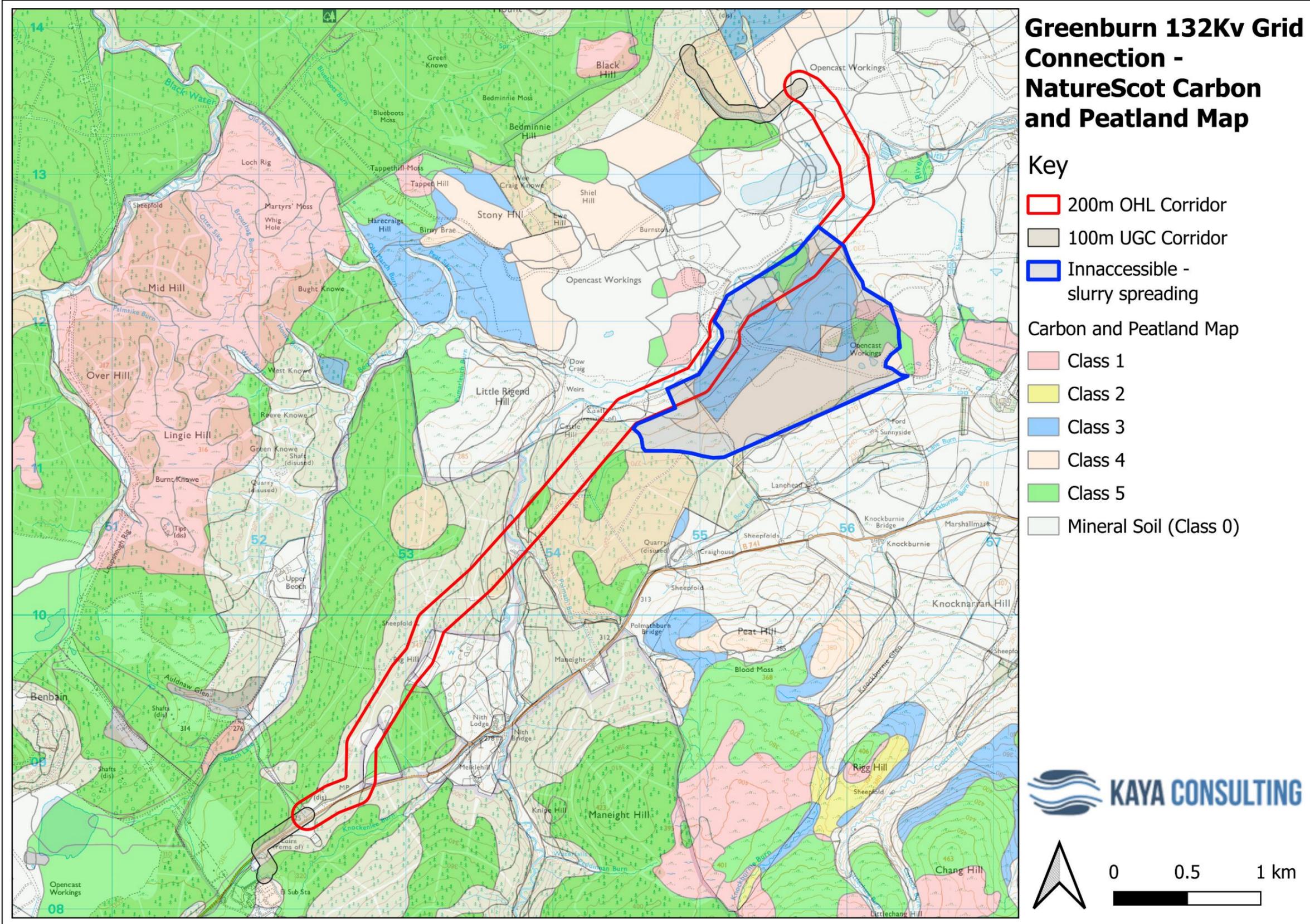


Figure 3: Peat depths within the Proposed Route

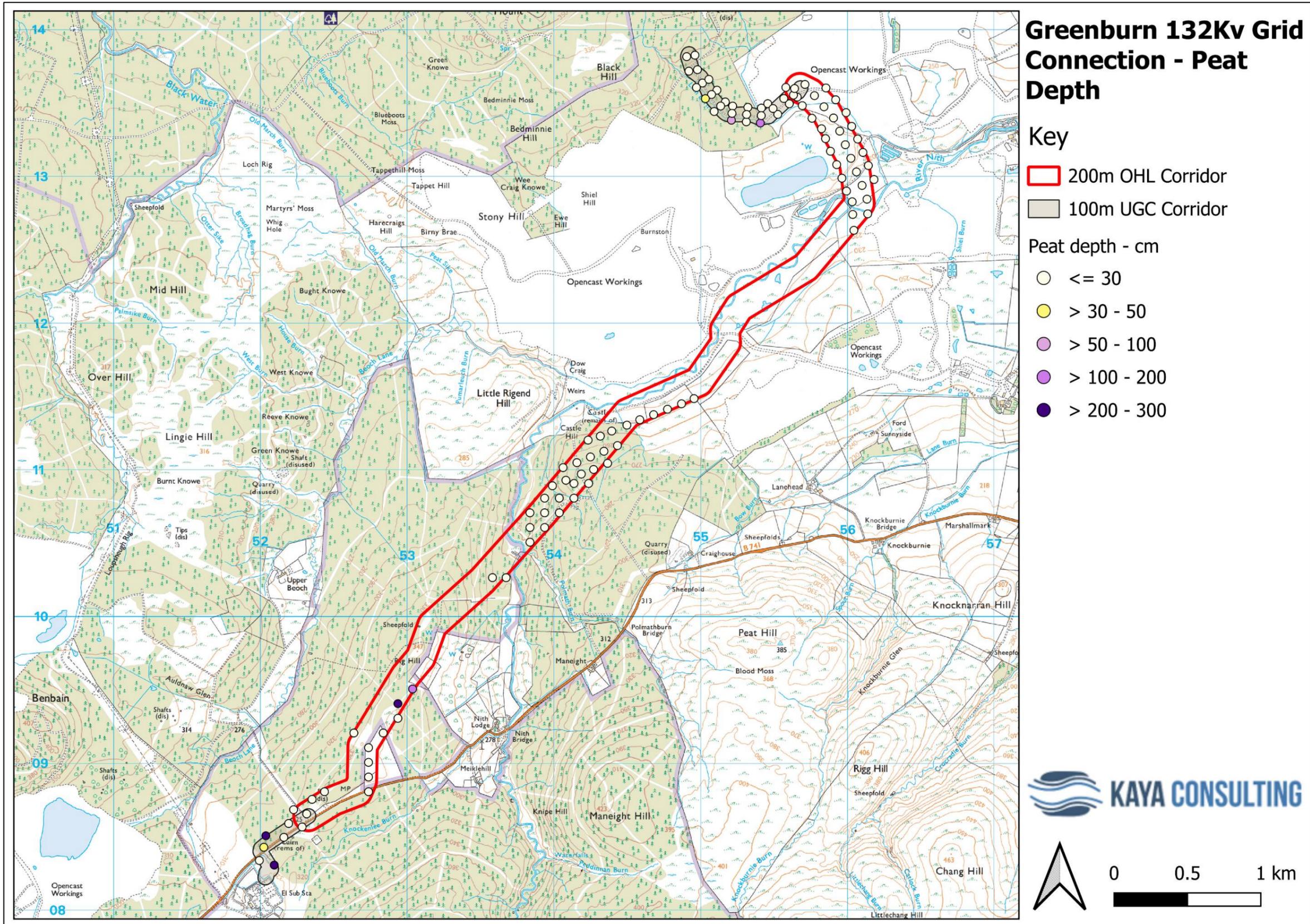


Figure 4: Peatland condition across the Proposed Route

