

# Denny-Wishaw Network Upgrade

*Bonnybridge to Glenmavis 400 kV Overhead Line*

*Preferred Route Option Update Report*

*December 2024*



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**01.**

# **Introduction**

# 1. Introduction

## 1.1 Introduction

In 2021 SP Energy Networks (SPEN) consulted on its preferred route option for a new 400 kilovolt (kV) overhead line between Bonnybridge Substation, west of Falkirk and an existing 275kV overhead line (known as ‘XX route’), north of Glenmavis. This new overhead line forms part of a wider upgrade of the existing electricity transmission system in central Scotland referred to as the Denny to Wishaw Network Upgrade (‘the Project’). The Project, an overview of which is contained in Figure 1 comprised the following key components:

- The increase in voltage (referred to as ‘uprating’) from 275 to 400kV of an existing overhead line (known as ‘ZG route’) between Denny North and Bonnybridge Substations,
- The construction of a new 400 kV overhead line between Bonnybridge Substation and an existing overhead line (known as ‘XX route’) north of Glenmavis,
- The uprating of an existing overhead line (known ‘XX route’) between Easterhouse and Newarthill Substations from 275 to 400kV, and
- The uprating of an existing overhead line (known ‘XR route’) between Newarthill and Wishaw Substations from 275 to 400kV.

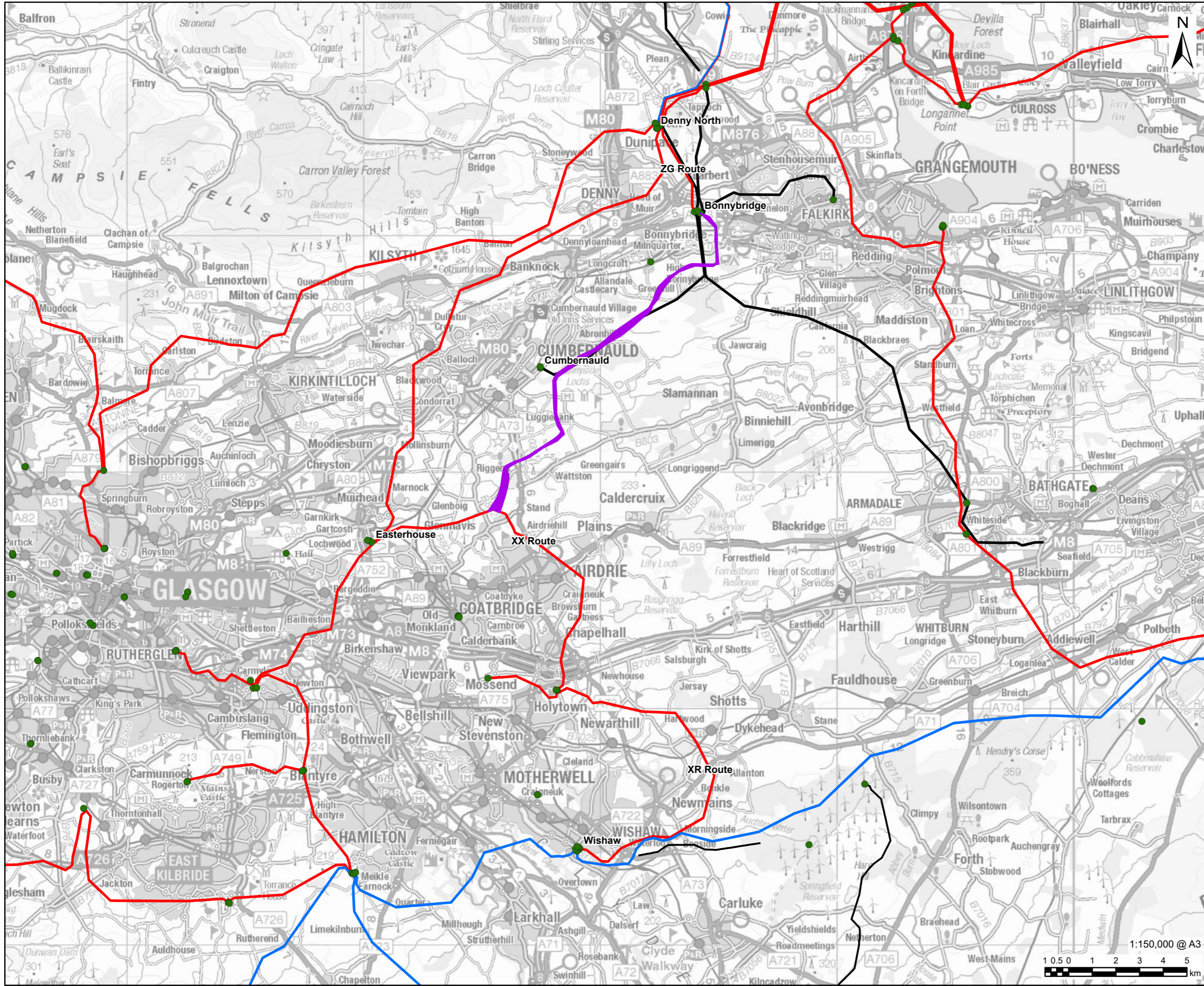
Since the consultation which ran from May until June 2021, SPEN has been reviewing feedback on the preferred route option as well as undertaking further environmental and technical studies. This has led to some changes to the preferred route option for the new overhead line between Bonnybridge and Glenmavis as well as modifications to the wider Project.

This Preferred Route Option Update Report (PROUR) has been prepared by AECOM on behalf of SPEN. It describes the Project and relevant background information and explains the modifications made to the preferred route option for the new overhead line between Bonnybridge and Glenmavis as well as additional works identified since 2021. It sets out how the preferred route option (referred to as the ‘2021 preferred route option’) has evolved since the previous consultation in 2021 taking into account consultation feedback, and the results of further environmental and technical reviews of the Project.

Note that the PROUR should be read with reference to and complements the previous Routeing and Consultation Document (RCD)<sup>1</sup> published as part of the 2021 consultation. The PROUR has been published in parallel with the launch of an additional round of consultation (referred to as Additional Phase 1 Consultation) on the preferred route option (referred to as the ‘modified preferred route option’) for the new overhead line inviting interested parties to comment on it.

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<sup>1</sup> Denny-Wishaw Network Upgrade: Bonnybridge to Glenmavis 400kV Overhead Line, Routeing and Consultation Document (AECOM) 2021  
[https://www.spenergynetworks.co.uk/userfiles/file/Denny\\_to\\_Wishaw\\_Network\\_Upgrade\\_Routeing\\_and\\_Consultation.pdf](https://www.spenergynetworks.co.uk/userfiles/file/Denny_to_Wishaw_Network_Upgrade_Routeing_and_Consultation.pdf)



**PROJECT**  
 Denny Wishaw Network Upgrade

**CLIENT**  
 SP Energy Networks

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**LEGEND**

- 2021 Preferred Route Option
- Substation Location
- SPT Network
  - 132kV
  - 275kV
  - 400kV

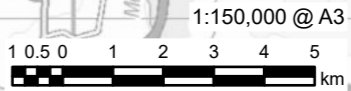
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**ISSUE PURPOSE**  
 ADDITIONAL ROUND 1 CONSULTATION

**PROJECT NUMBER**  
 60635450

**FIGURE TITLE**  
 Overview of Denny-Wishaw Network Upgrade

**FIGURE NUMBER**  
 Figure 1



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## 1.2 About SP Energy Networks

SP Energy Networks (SPEN) is the trading name for Scottish Power Energy Networks Holdings Limited. SPEN owns and operates the electricity transmission and distribution networks in central and southern Scotland through its wholly-owned subsidiaries SP Transmission plc and SP Distribution plc. These businesses are ‘asset-owner companies’ holding the regulated assets and Electricity Transmission and Distribution Licences. SP Transmission plc is the Transmission Licence holder under the Electricity Act 1989.

As the holder of a transmission licence under the Electricity Act 1989, SP Transmission is subject to a number of statutory duties and licence obligations. These include requirements “to develop and maintain an efficient, coordinated and economical system of electricity transmission” and “to facilitate competition in the generation and supply of electricity”. This requires SP Transmission to provide for new electricity generators such as wind farm developers wishing to connect to the transmission system in its licence area; to make its transmission system available for these purposes and to ensure that the transmission system is fit for purpose through appropriate reinforcements to accommodate the contracted capacity.

In addition, in formulating proposals for electricity transmission infrastructure, SP Transmission is subject to duties under Schedule 9 of the Electricity Act 1989: “(a) to have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and, (b) to do what it reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.”

SPEN, acting on behalf of SP Transmission, has undertaken further studies to inform the development of the Project. This work has been undertaken in accordance with SP Transmission’s statutory duties and licence obligations with the objective of ensuring that the new overhead line route between Bonnybridge and Glenmavis is technically feasible, economically viable and on balance, causes the least disturbance to both the environment and the people who live, work and enjoy recreation within it.

## 1.3 Background to the Proposed Development

### **Background to the Proposed Development**

The UK and Scottish Governments have set legally binding targets to reach net zero in greenhouse gas emissions and end their contributions to climate change by 2050 and 2045 in the Climate Change Act 2008 and Climate Change (Scotland) Act 2009 respectively.

Decarbonisation of the energy sector is a central pillar of both governments’ net zero strategies meaning the way in which energy is generated, transported and used is undergoing transformational change. Traditional fossil fuel-based forms of generation are being retired and replaced by renewable and low carbon sources of energy generation including onshore and offshore wind as well as being supported by increased interconnection with Europe.

Offshore wind is a critical component of the UK Government’s energy strategy with targets to increase installed capacity from around 10 gigawatts (GW) today to 40GW by 2030 originally

being set in the Energy White Paper (2020)<sup>2</sup>, and then increased to 50GW by 2030 in the British Energy Security Strategy (2022)<sup>3</sup>. Similarly in Scotland, the Scottish Government's Offshore Wind Policy Statement (2020)<sup>4</sup> identifies a target of up to 11 GW of installed offshore wind capacity in Scottish Waters by 2030. The scale of the offshore wind development pipeline is also reflected in the most recent seabed leasing rounds; Round 4 (2021) overseen by The Crown Estate (TCE) as well as ScotWind (2022) and INTOG (2023) overseen by Crown Estate Scotland (CES) have awarded seabed leasing rights for approximately 8 GW of offshore wind capacity in English Waters and approximately 30 GW of offshore wind capacity in Scottish Waters respectively.

More recently, in 2023 the Scottish Government consulted on its draft Energy Strategy and Just Transition Plan<sup>5</sup>. The draft Strategy sets out objectives for Scotland to increase production of renewable energy including the aforementioned 8-11GW of installed offshore wind capacity by 2030 and an additional 12GW of installed onshore wind capacity by 2030. This is consistent with the Scottish Government's Onshore Wind Policy Statement (2022)<sup>6</sup> which also sets out a target to achieve a minimum of 20GW of installed capacity of onshore wind in Scotland by 2030. These onshore and offshore wind targets were most recently reaffirmed in the Scottish Government's Green Industrial Strategy<sup>7</sup> published in September 2024.

### **Need for the Proposed Development**

To facilitate renewable forms of generation supported by UK and Scottish Government policy and targets for offshore and onshore wind, new electricity transmission network infrastructure is needed to ensure that energy can be transported from where it is generated to where it is used. Traditionally the electricity transmission system was developed to transport electricity in bulk from power stations to cities and towns where it is transported via the electricity distribution network, but as renewable energy sources such as onshore and offshore wind are typically located in more geographically remote locations this requires new electricity network infrastructure both to connect it to the network as well as to transport it to areas of demand.

SP Transmission, the Transmission Owner (TO) and Licence Holder responsible for the electricity transmission network in central and southern Scotland therefore has a crucial role to play. Its transmission network enables the bulk transfer of renewable energy generated within its licence area as well as that generated within SSEN Transmission's (SSENT) licence area to the north. This allows electricity to be transmitted and distributed within central and southern Scotland and also for it to be transported southwards to National Grid Electricity Transmission's (NGET) licence area and large centres of demand.

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<sup>2</sup> Energy White Paper (2020), UK Government <https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future/energy-white-paper-powering-our-net-zero-future-accessible-html-version>

<sup>3</sup> British Energy Security Strategy (2022), UK Government <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

<sup>4</sup> Offshore Wind Policy Statement (2020), Scottish Government <https://www.gov.scot/publications/offshore-wind-policy-statement/>

<sup>5</sup> Draft Energy Strategy Just Transition Plan (2023), Scottish Government <https://www.gov.scot/publications/draft-energy-strategy-transition-plan/>

<sup>6</sup> Onshore Wind Policy Statement (2022), Scottish Government <https://www.gov.scot/publications/onshore-wind-policy-statement-2022/>

<sup>7</sup> Green Industrial Strategy (2024), Scottish Government <https://www.gov.scot/publications/green-industrial-strategy/>



National Grid Electricity System Operator (NGESO), now known as National Energy System Operator (NESO), is responsible for the planning and operation of high voltage electricity transmission system across Great Britain. They undertake a number of activities on an annual basis to ensure the economic and efficient operation of the transmission system. This includes the Network Options Assessment (NOA), an economic assessment of projects proposed by TOs including SP Transmission to provide network capacity and meet the future needs of the electricity transmission network. The analysis in NOA allows recommendations to be made as to which projects will be economic and efficient to develop and the optimal timing of those projects.

The Project, identified as DWNO, was given a ‘proceed’ signal meaning that it was considered appropriate to be taken forward in successive NOA publications in 2019/20<sup>8</sup>, 2020/21<sup>9</sup> and 2021/22<sup>10</sup> as well as the NOA Refresh published in 2022<sup>11</sup> in parallel with the publication of the Holistic Network Design (HND). The latter which set out a blueprint for the electricity network upgrades required to enable connection of offshore wind needed to meet the Government's 2030 targets (also referred to as the ‘Pathway to 2030’), also recommended the development of ‘DWNO’.

## 1.4 Development and Consenting of the Project

SPEN typically take a three-phase approach to the development of its major infrastructure projects comprising Phase 1. Routeing, Phase 2. Environmental Impact Assessment (EIA) and Phase 3. Application for Consent with two rounds consultation undertaken; one in Phase 1 on a preferred route option (Phase 1 Consultation) and one in Phase 2 on a detailed route design (Phase 2 Consultation). Give the time that has lapsed since the Phase 1 Consultation and the modifications made to the preferred route option, SPEN is undertaking a further round of consultation (referred to as ‘Additional Phase 1 Consultation’) on the modified preferred route option and wider Project before progressing to subsequent phases.

An overview of each of the phases is set out below:

- **Phase 1. Routeing.** Phase 1 comprises a routeing study in which alternative route Options for the new overhead line between Bonnybridge Substation and Glenmavis have been identified and assessed taking into account a range of environmental, technical and economic routeing considerations. It concludes with the identification of a preferred route option which is then subject to consultation (referred to as Phase 1 Consultation). Responses to the consultation will be evaluated and inform confirmation of a proposed route to be taken forward to Phase 2. As noted above due to the time that has lapsed since the Phase 1 Consultation in 2021 a further round of consultation is being undertaken.
- **Phase 2. Environmental Impact Assessment (EIA).** The Project, including the new overhead line as well as upgraded overhead lines and related substation works will require to be subject to EIA. Specifically, the Project will be subject to EIA under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

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<sup>8</sup> Network Options Assessment (January 2020), NGESO <https://www.neso.energy/document/162356/download>

<sup>9</sup> Network Options Assessment (January 2021), NGESO <https://www.neso.energy/document/185881/download>

<sup>10</sup> Network Options Assessment (January 2022), NGESO <https://www.neso.energy/document/233081/download>

<sup>11</sup> Network Options Assessment Refresh (July 2022), NGESO <https://www.neso.energy/document/262981/download>

Through Phase 2 the EIA process seeks to identify, assess and mitigate the likely significant adverse effects of the Project on the environment. The EIA process comprises several steps starting with scoping and concluding with the production of an EIA Report (EIAR) which will accompany the application for consent. During this phase SPEN will also undertake a second round of public consultation (referred to as Phase 2 Consultation) on the detailed design of the Project.

- **Phase 3. Application for Consent.** SPEN will be applying to the Scottish Ministers for consent under Section 37 of the Electricity Act 1989, as amended, to install, and keep installed, the new overhead line. Additional section 37 applications will also be required for the uprating of the ZG, XX and XR routes. The EIAR will accompany the applications for Section 37 consent. At the same time, SPEN will also apply to Scottish Ministers for deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997, as amended, for the Project including ancillary development. While the Scottish Ministers will be responsible for the decision to approve the Project or not, in reaching their decision they will consult with statutory stakeholders, relevant Local Planning Authorities (LPAs) and members of the public.

## 1.5 The Preferred Route Options Update Report

The primary purpose of this PROUR is to provide an update on Phase 1 of the Project; in particular how the 2021 preferred route option has been modified since the original Phase 1 Consultation in 2021 as well as provide information about the wider works required as part of the Project. The PROUR has been published in parallel with the start of Additional Phase 1 Consultation on the modified preferred route option for the new overhead line between Bonnybridge and Glenmavis and the wider Project. The objective of this is to seek feedback on the modified preferred route option and wider Project from statutory and non-statutory consultees as well as local communities and other interested parties and use this feedback to inform subsequent stages of the Project. The structure and content of the PROUR is summarised below in Table 1.

**Table 1 Preferred Route Option Update Report Structure**

Section	Description of Content
<b>1. Introduction</b>	Provides an introduction to the Project and an overview of why it is needed, SP Transmission’s statutory obligations and an outline of the purpose and structure of the PROUR.
<b>2. Description of the Project</b>	Provides an overview of the Project and the key physical components which it comprises including details of construction requirements.
<b>3. Approach to Routeing</b>	Outlines the approach to developing and assessing route options with reference to SP Transmission’s statutory duties and established routeing practices.

Section	Description of Content
<b>4. Preferred Route Option (2021)</b>	Describes the preferred route option which was identified and consulted on in 2021 as well as the key factors influencing its selection.
<b>5. Modified Preferred Route Option</b>	Identifies and describes the modified preferred route option explaining key changes that have been made and why.
<b>6. Next Steps</b>	Provides an outline of the consultation activities being undertaken and how to provide feedback as well as the next steps in the development and consenting of the Project.

**02.**

# **Description of the Project**

## 2. Description of the Project

### 2.1 Introduction

The Project comprises three main components, namely the uprating of existing overhead lines from 275 to 400kV, the construction of a new 400kV overhead line as well as works at five existing substations. This section provides information on the design and construction of the new overhead line, however, it should be noted that this information is not confirmation of a final design. This section also outlines the approach to uprating existing overhead lines as well as providing details of the substation upgrades which are required as part of the Project.

### 2.2 Overview of a Typical Overhead Line

Overhead lines transmit electricity by conductors (often also referred to as ‘wires’) which are suspended at a specified height above ground and carried by wood poles or steel lattice towers (also referred to as pylons) which are located at regularly spaced intervals. The conductors can be made of aluminium or steel strands. Most overhead lines operating at 132kV and above carry two 3-phase circuits, with one circuit strung on each side of a steel tower as shown in the image in Figure 2 over the page. The conductors are strung from insulators which are attached to the cross arms of the towers and prevent the electric current from crossing to the tower. Insulators are made of material with a high resistance to electricity flow, for example glass or porcelain. An earth wire may also be required to provide protection from lightning strikes.

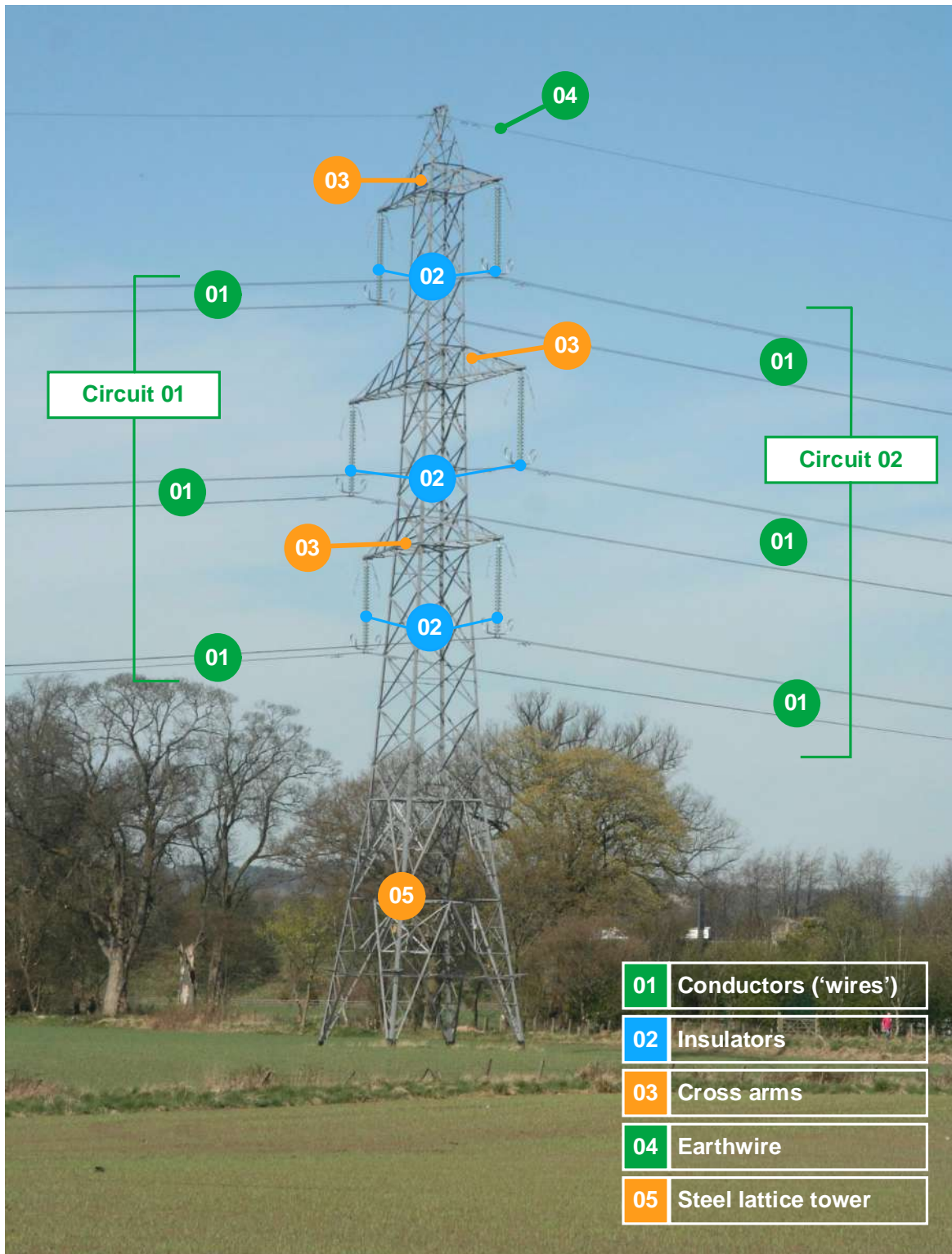
### 2.3 The New Overhead Line

#### Overview

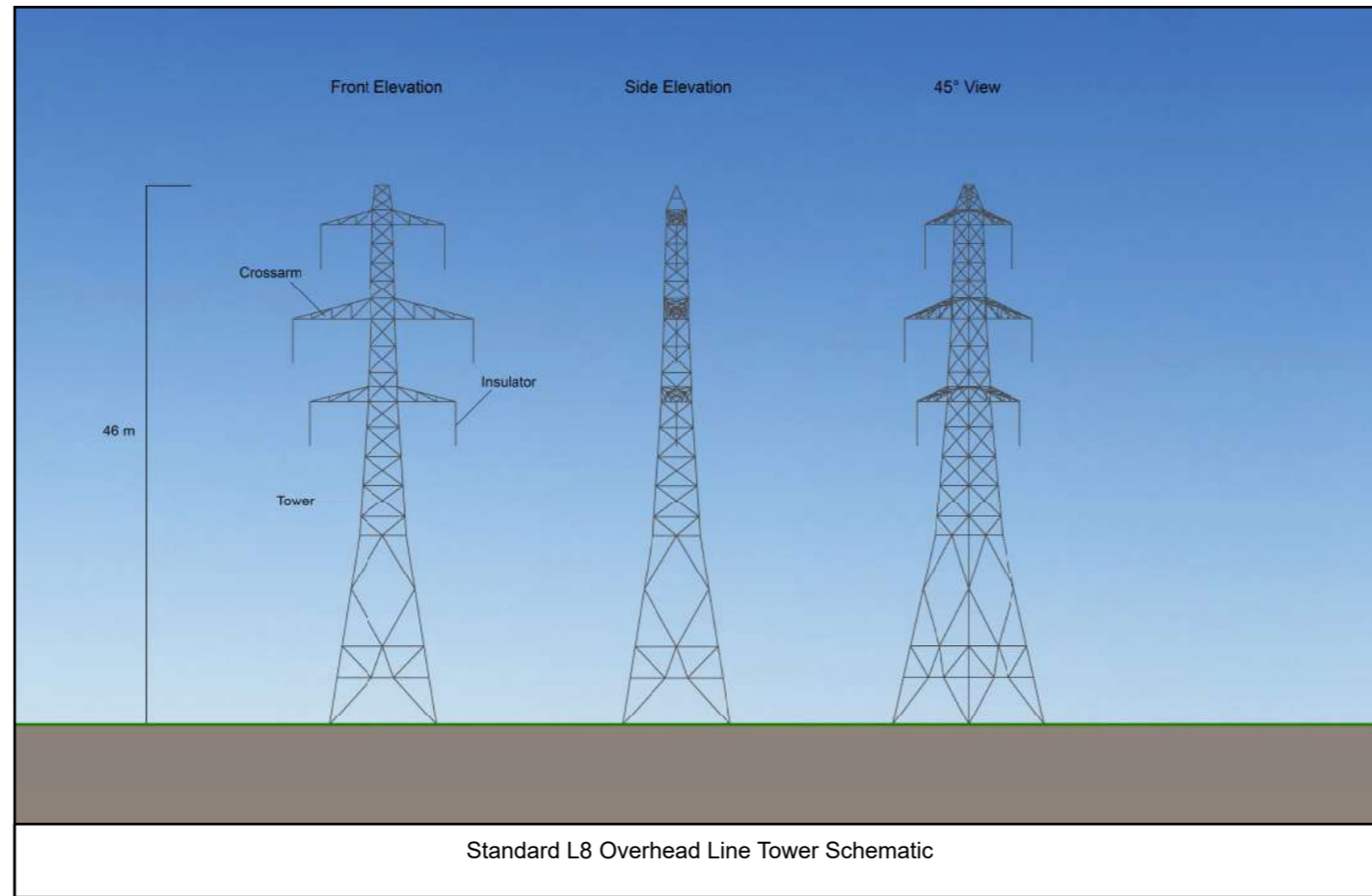
The Project will be carried on steel lattice towers. The precise tower type to be used is subject to detailed design but it is anticipated that L8 towers would be utilised. Figure 3 provides a schematic overview of L8 towers as well as images of in-situ towers near Bonnybridge Substation. There are broadly three types of tower which may be required along the new overhead line route subject to detailed design as set out in Table 2.

**Table 2 Overhead Line Tower Types**

Tower Type	Description
<b>Suspension or Line Tower</b>	These typically form most of an overhead line route and are used where the tower is part of a straight-line section of the overhead line route.
<b>Tension or Angle Tower</b>	These are used where an overhead line route changes direction where there is a horizontal or vertical deviation.
<b>Terminal Tower</b>	These are used when an overhead line route terminates at a substation or on to an underground cable section via a separate cable sealing end compound or platform.



**Figure 2 Typical Operational 400kV Double Circuit OHL**



View of existing L8 Overhead Line Tower near Bonnybridge



View of existing L8 Overhead Line Tower near Bonnybridge

**ISSUE PURPOSE**

ADDITIONAL ROUND 1  
CONSULTATION

**PROJECT NUMBER**

60635450

**FIGURE TITLE**

Overview of L8 Tower Designs

**FIGURE NUMBER**

Figure 3

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### **Overhead Line - Tower Design Details**

L8 towers have a standard design height of 46m, however, this can vary up to approximately 63m according to the electrical safety clearance to the ground, which may be a factor when crossing areas such as roads or raised areas of ground.

The distance between adjacent towers, known as the 'span length', is approximately 300m but this can be increased where there is a requirement to span obstacles or decreased where a route traverses higher altitudes. The exact span distance will depend on site specific constraints or obstacles, however, in general there would typically be 3-4 steel towers per kilometre.

Steel towers are constructed from galvanised steel and typically grey in colour which becomes duller over time (approximately 18 months). The shade of grey is not distinguishable at distance and normally appears as grades of light and dark. Where towers are viewed against the sky, colour cannot be relied upon to diminish visibility, since the lighting characteristics of the sky vary greatly.

### **Overhead Line – Construction**

The construction of new overhead lines follows a well-established process. As well as the overhead line itself, it also requires additional temporary land-take and infrastructure; for example temporary accesses to steel tower locations and temporary construction compounds to store materials. Key phases of construction comprise the following activities:

- Tree felling or lopping (where required) to establish wayleaves or clearances;
- Preparation of temporary construction accesses;
- Excavation of foundations;
- Tower delivery;
- Erection of steel towers;
- Delivery of conductors and stringing equipment;
- Insulator and conductor fitting and tensioning; and
- Clearance and reinstatement.

The total duration of construction activity at any single tower site is approximately four to six weeks for tower foundations, one to two weeks for tower construction, and up to four weeks for conductor erection and stringing depending on the size of the tower and the number of the conductors to be strung. These periods are spread over approximately four months, with periods of inactivity between, or longer if construction difficulties are experienced elsewhere along the route or ground conditions prevent normal progress.

Prior to constructing the overhead line, temporary accesses will be constructed, as necessary, and laydown/storage areas established. Any trees which may impact on safety clearances will be removed or lopped. Following commissioning of the overhead line, all equipment and temporary access to construction areas will be removed with the land being reinstated to its former use/condition.



### **Overhead Line – Operation and Maintenance**

Overhead lines require minimal maintenance. The condition of tower steelwork and foundations is monitored regularly. Periodic painting of the tower steelwork may be required, and components are regularly inspected for corrosion, wear and deterioration. Towers which have deteriorated significantly may be dismantled carefully and replaced. There is also an ongoing requirement to ensure that any vegetation within proximity to the overhead line does not impact on safety clearances.

### **Overhead Line – Decommissioning**

The requirement to decommission an overhead line depends on a number of factors. At the end of its operational life, if an overhead line was required to it could be repaired or refurbished in order to extend its operational life. If an overhead line is to be decommissioned, steel towers will be removed with components re-used where possible. Foundations are removed to a minimum depth of approximately 1m below ground level, the area around the base of the tower is cleared and the ground reinstated.

## **2.4 Upgrading Existing Overhead Lines**

### **Overview**

In addition to the new overhead line, the ZG, XX and XR routes will require to be updated from 275 to 400kV. The existing towers carry twelve conductors and an earth wire. Each conductor is joined to the tower cross arm via an insulator string (comprising glass/polymer dishes). The conductors, earth wire and insulators will require to be replaced as part of the upgrading of ZG, XX and XR routes.

### **Overhead Line – Upgrading**

The upgrading of the existing overhead line will comprise of the following activities:

- Delivery of conductors and stringing equipment;
- Insulator and conductor fitting and tensioning;
- Steel strengthening and foundation upgrades; and
- Clearance and reinstatement.

Prior to upgrading the overhead line, temporary accesses will be constructed, as necessary, and laydown /storage areas established, usually mid-way along the route.

Linesmen will climb each tower and attach a pul-lift from tower crossarm to conductors. This allows the existing insulator to be unbolted before being lowered to the ground using a tractor and winch. The tractor and winch are then used to lift the new insulator on to the tower cross arm before being attached to the cross arm and conductors. Once the new insulator is in place, the pul-lift is removed. This process is then repeated for the remaining insulators on the tower.

Following commissioning of the upgraded overhead line, all equipment and temporary access of construction areas will be removed with the land being reinstated to its former use/condition.

## 2.5 Upgrading of Existing Substations

Substations play a key role in the electricity transmission system helping to manage and control electricity flows as well as connecting generators such as wind farms and/or connecting to the electricity distribution network at grid supply points (GSPs). As part of the Project, works are required at five existing substations to facilitate the increase in operating voltage to 400kV. The following sections summarise the works required at each substation.

### **Denny North Substation**

Denny North Substation is located approximately 1.7km north of Denny. Works at Denny North Substation are required due to the upgrading of the existing ZG route to 400kV. These comprise works at the northern side of the existing substation including the installation of a new bay containing air insulated switchgear and an overhead line gantry tower. As part of the works the existing security fence would be extended.

### **Bonnybridge Substation**

Bonnybridge Substation is located between Bonnybridge and Camelon. Works at Bonnybridge Substation are required due to the upgrading of the existing ZG route as well as the New-build Overhead Line. These comprise an extension to the southwest of the existing substation and installation of new electrical equipment including circuit breakers, inter-bus transformers and shunt reactors. The existing substation platform and associated security fencing would be extended as part of the works.

### **Cumbernauld Substation**

Cumbernauld Substation is located to the east of Cumbernauld and south of Abronhill. Palacerigg Country Park is located to the south of the substation. Works at Cumbernauld Substation are required due to the removal of existing CB route and connection of the New-build Overhead Line. These comprise works to the south of the existing substation to extend the substation platform and installation of new electrical equipment including transformers and circuit breakers. As part of the extension, existing security fencing would be extended.

### **Easterhouse Substation**

Easterhouse Substation is located south of Gartcosh to the east of the M73. Woodend Loch Site of Special Scientific Interest (SSSI) is located to the south of the substation. Works at Easterhouse Substation are required due to the upgrading of the existing XX route. The works are located on the southeast of the existing substation and comprise the installation of new electrical equipment including a circuit breaker.

### **Wishaw Substation**

Wishaw Substation is located to south of Wishaw between the B574 and railway line. Works at Wishaw Substation are required due to the upgrading of the existing XR route. These include an extension of the existing substation platform and associated security fencing as well as installation of three new bays containing gas insulated switchgear and circuit breaker.

**03.**

# **Approach to Routeing**

## 3. Approach to Routeing

### 3.1 Introduction

The approach to routeing of new overhead lines and how this was applied to the identification and assessment of route options between Bonnybridge Substation and the XX route at Glenmavis was described in detail in the Routeing and Consultation Document which was published as part of the Phase 1 Consultation in 2021. This section provides a summary of the approach previously taken and more specifically the approach that has been applied to the modification of the preferred route option.

### 3.2 SPEN's Approach to Routeing

#### Overview

The basic premise of SPEN's approach is that the main effect of an overhead line is visual and that the degree of visual impact can be reduced by careful route selection; for example by using topography and trees to provide screening and/or background to the overhead line and by routeing the overhead line at a distance from settlements and roads. In addition, overhead line routeing takes into account other environmental and technical considerations and will avoid, wherever possible, the most sensitive and valued natural and man-made sites, areas or features.

In line with SP Transmission's statutory duties and licence obligations under the Electricity Act 1989 and drawing upon established practice such as the Holford Rules, routeing considerations comprise environmental, technical and economic factors. The routeing considerations inform the identification and assessment of route options ensuring that it is robust and transparent. These include:

- **Environmental factors:** route options must take account of their potential environmental impact. Following SP Transmission's statutory obligations this is interpreted as seeking to preserve features of natural and cultural heritage interest and to mitigate as far as possible any effects route options may have on such features as well as more widely taking account of potential impact of route options on the environment and people including on:
  - Landscape including landscape designations and landscape character;
  - Visual amenity;
  - Biodiversity including ecology and ornithology;
  - Cultural heritage including archaeology;
  - Forestry and woodland including ancient and native woodland;
  - Water resources and ground conditions such as peat;
  - Land use; and
  - Tourism and recreation.

- **Technical factors:** route options must be technically feasible. This is interpreted by SP Energy Networks as it must be possible to build, operate and maintain route options. Technical considerations include matters which would affect these aspects for example existing electricity transmission or distribution infrastructure, topography, side slope gradients, altitude, ground conditions and accessibility as well as proximity to wind farms.
- **Economic factors:** route options must be economically viable. This is interpreted by SP Energy Networks as meaning that as far as is reasonably practicable, and all other routeing considerations being equal, route options should be as direct as possible and should avoid areas where technical constraints would render route options unviable on economic grounds.

### 3.3 Approach to identifying and modifying the Preferred Route Option

The approach to identifying and assessing alternative route options is illustrated below in Figure 4. It follows SPEN’s approach and draws upon established practice ensuring that it is robust and transparent. It is a systematic and iterative approach in which an increasing level of detail is applied at each step.



**Figure 4 Approach to Routeing**

There were broadly three key stages to the identification of a preferred route option from Bonnybridge Substation to Glenmavis, all of were completed in the original routeing study. Firstly, informed by steps 1 to 3, the definition of a Project Routeing Strategy specific to the

new overhead line and its study area, then in steps 4 to 7 the identification and assessment of route corridors and route options within them. Route corridors were necessarily larger taking account of strategic routeing considerations while route options were defined taking account of detailed routeing considerations. Steps 4 to 7 ensured that route corridors and options are tested and refined taking into account the Project Routeing Strategy as well as feedback received from consultation with key stakeholders during the study. Finally, this concluded with the identification of the 2021 preferred route option which was then subject to Phase 1 Consultation in step 8.

Steps 9 and 10 have informed this Preferred Route Option Update Report. While the modification of the preferred route option has not involved substantive routeing or re-routeing it has involved some further consideration or re-appraisal of environmental, technical and economic factors in line with SP Transmission's statutory duties and licence obligations. Where feedback from the 2021 consultation or other matters have resulted in a potential change to the 2021 preferred route option or wider Project, those changes have been reviewed having regard to environmental, technical and economic factors including those identified in the previous Project Routeing Strategy set out in the Routeing and Consultation Document (2021). This included landscape character, settlement pattern, sites of the highest or high environmental value designated for cultural heritage or ecological reasons including the Antonine Wall and Slamannan Plateau as well as locally important features such as Palacerigg Country Park.

**04.**

**2021 Preferred  
Route Option**

## 4. 2021 Preferred Route Option

### 4.1 Introduction

This section provides a summary of the routeing work that was previously undertaken and which resulted in the identification of the preferred route option consulted on in 2021 (referred to as the '2021 preferred route option'). It provides an overview of the study area, identifies key constraints and route options considered as well as describes the reasons for the selection of the 2021 preferred route option.

### 4.2 Study Area

The extents of the Study Area in which route options were considered is illustrated in Figure 4. The northern and southern boundaries of the Study Area are defined by the existing infrastructure into which the new overhead line will connect. As such the northern boundary was defined by the existing Bonnybridge Substation where potential route options would start. The southern boundary was defined by the section of the existing XX overhead line route which is routed west to east (north of Coatbridge and Airdrie) where potential route options would end. The eastern boundary of the Study Area was defined by the southwest edge of the settlements of Falkirk and Shieldhill and consideration of the potential length and directness of potential route options. The western boundary of the Study Area has been defined by the settlements of Cumbernauld and Glenboig.

Strategic routeing considerations which informed the identification of route corridors comprised large, designated sites of international or national importance as well as larger settlements. These were considered to be areas of the highest or high environmental value within the study area. This included:

- The Antonine Wall World Heritage Site (WHS) and Scheduled Monument which extends east to west across the north of the Study Area,
- The Battle of Falkirk Inventory Battlefield site to the north of the Study Area immediately south of Falkirk and Camelon,
- The Slamannan Plateau Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) which occupies a significant area in the centre of the Study Area, and
- The larger settlements of Bonnybridge, Camelon, Cumbernauld and Glen Mavis which are located to the north, west and south of the Study Area.

In addition to the above, there were a number of other designated sites as well as scattered residential properties which were considered to be of highest or high environmental value within the study area, however, these tend to be smaller in size and more widely dispersed. Such constraints were not considered in developing route corridors given their scale and distribution but were a key consideration in the identification of route options within the route corridors. This included:

- West Fannyside Moss, Blacklaw Moss and Blawhorn Moss all designated as Special Area of Conservations (SACs) and SSSIs;



- Howierig Muir, Darnrig Moss, Longriggend Moss and North Bellstane Plantation all designated SSSIs;
- Smaller settlements and scattered rural properties or cluster of properties present within the countryside.
- A number of scheduled monuments including Roughcastle Fort, Thieves Hill and Avonhead Colliery and Drumbowie Farm; and
- A number of listed buildings including Lochgreen Farmhouse, Fannyside Mill, Luggiebank Bridge, Cleddans House and Glenboig Farm.

### 4.3 The Preferred Route Option (2021)

For the purposes of identifying and assessing route options the study area was split into three sections Bonnybridge Substation to Slamannan Plateau North, Slamannan Plateau North to Slamannan Plateau South and Slamannan Plateau South to the XX route. Table 3 provides an overview of the route options considered within each the preferred option which was identified. These are also illustrated in Figure 5.

**Table 3 Summary of Routeing Study Outcomes**

Section	Route Options	Preferred Route Option
Bonnybridge Substation to Slamannan Plateau North	<ul style="list-style-type: none"> <li>• Option 1A</li> <li>• Option 1B</li> <li>• Option 1C</li> <li>• Option 1D</li> </ul>	<ul style="list-style-type: none"> <li>• Route Option 1A</li> </ul>
Slamannan Plateau North to Slamannan Plateau South	<ul style="list-style-type: none"> <li>• Option 2A</li> <li>• Option 2B</li> <li>• Option 2C</li> <li>• Option 2D</li> <li>• Option 2E</li> <li>• Option 2F</li> <li>• Option 2G</li> </ul>	<ul style="list-style-type: none"> <li>• Route Option 2D</li> <li>• Route Option 2G</li> </ul>
Slamannan Plateau South to the XX overhead line route	<ul style="list-style-type: none"> <li>• Option 3A</li> <li>• Option 3B</li> <li>• Option 3C</li> <li>• Option 3D</li> <li>• Option 3E</li> <li>• Option 3F</li> <li>• Option 3G</li> <li>• Option 3H</li> <li>• Option 3I</li> <li>• Option 3J</li> </ul>	<ul style="list-style-type: none"> <li>• Route Option 3E</li> <li>• Route Option 3I</li> </ul>

***Figure 5 Route Options and 2021 Preferred Route Option***

Same as Figure 9 Sheet 1 from the original RCD but with key constraints added:

World Heritage Site

Scheduled monuments

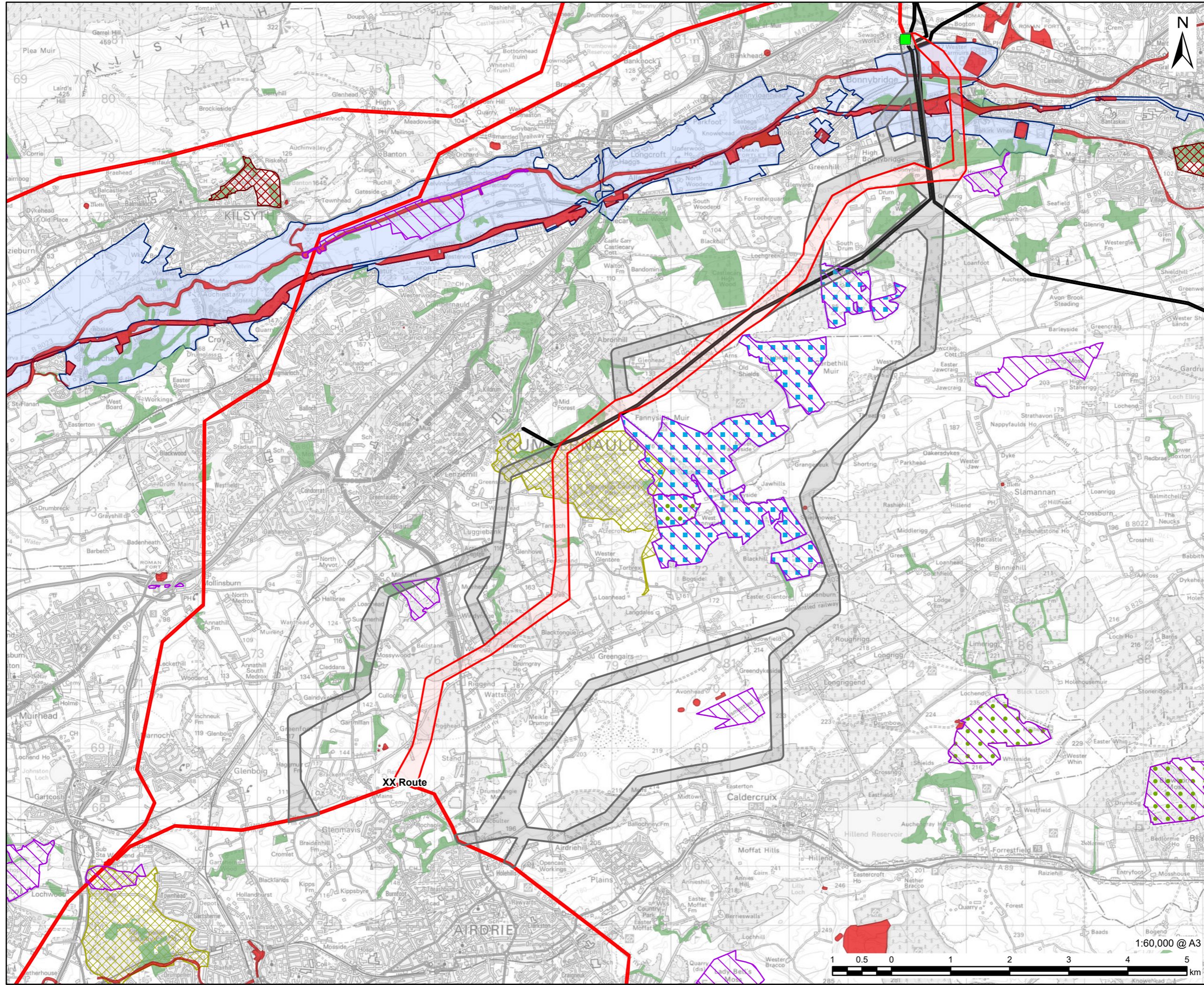
Special Protection Area

Special Area of Conservation

Sites of Special Scientific Interest

Ancient Woodland

Palacerigg Country Park



**PROJECT**  
 Denny Wishaw Network Upgrade

**CLIENT**  
 SP Energy Networks

**CONSULTANT**  
 AECOM Limited  
 One Trinity Gardens  
 Newcastle  
 NE1 2HF  
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- LEGEND**
- Bonnybridge Substation
  - 2021 Preferred Route Option
  - Discounted Route Option
  - Special Protection Area
  - Special Area of Conservation
  - Site of Special Scientific Interest
  - Ancient Woodland Inventory Site
  - Country Park
  - Garden and Designed Landscape
  - Scheduled Monument
  - World Heritage Site
  - Discounted Route Option
- SPT Network**
- 132kV
  - 275kV

**NOTES**

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**ISSUE PURPOSE**  
 ADDITIONAL ROUND 1 CONSULTATION

**PROJECT NUMBER**  
 60635450

**FIGURE TITLE**  
 Route Options and 2021 Preferred Route Option

**FIGURE NUMBER**  
 Figure 5

**05.**

**Modified  
Preferred  
Route Option**

## 5. Modified Preferred Route Option

### 5.1 Introduction

This section describes how the 2021 preferred route option and wider Project has evolved since the Phase 1 Consultation in 2021. It describes the key modifications made and the underlying reasons for these changes, for example in response to feedback and other environmental, technical and economic factors taking account of any changes within the study area, for example new development which has occurred in the intervening period.

### 5.2 Review of the 2021 Preferred Route Option

The review of the 2021 preferred route considered feedback from the 2021 consultation as well as other environmental and technical factors specific to the 2021 preferred route option and the wider study area, for example changes within the study area that might influence or affect the feasibility of the 2021 preferred route option as well as modifications to it.

#### Review of Feedback from the Phase 1 Consultation

The Consultation Feedback Report includes a summary of the Phase 1 Consultation activities undertaken in 2021 as well as the main themes raised by stakeholders and how they have or will be addressed in the development of the Project. Table 4 below provides a summary of key issues raised in relation to the 2021 preferred route option, and where appropriate how they have been addressed in the identification of the modified preferred route option.

**Table 4 Summary of Key Issues raised from 2021 Consultation**

Issues Raised	Summary of Consultee Feedback
Slamannan Plateau Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI)	A number of respondents raised the Slamannan Plateau SPA and SSSI highlighting the susceptibility of the SPA's qualifying species, Taiga bean geese, to collisions with overhead lines. The 2021 preferred route option was developed to avoid the designated site and was routed to the west of it. This was informed by bird surveys as well as available records which indicated use of the site and surrounds by Taiga geese was predominantly to the east of the designated area. The modified preferred route option also avoids the SPA and includes proposals to remove an existing 132kV overhead line route which slightly encroaches on a part of the SPA.
Antonine Wall World Heritage Site	Route selection across the Antonine Wall, part of the Frontiers of the Empire World Heritage Site (WHS) was a key focus of consultation feedback provided by Historic Environment Scotland (HES). They noted the alternative options considered and agreed with the conclusion that alternatives to the 2021 preferred route option would be more likely to have a greater impact on the WHS as well as the setting of the scheduled monuments. In order to reduce potential impacts on the WHS, including cumulative

Issues Raised	Summary of Consultee Feedback
	<p>impacts with existing overhead lines HES also highlighted opportunities for mitigation with regard to tower positioning and rationalisation of existing overhead lines. As noted above it proposed to remove an existing 132kV overhead line which spans the WHS in order to reduce potential wirescape related effects on the designation.</p>
<p>Woodland (including Ancient Woodland Inventory sites and native woodland)</p>	<p>A small number of respondents highlighted that the 2021 preferred route option crosses areas identified on the Ancient Woodland Inventory as well as areas of native woodland per the Native Woodland Survey of Scotland. There are approximately seven Ancient Woodland sites within or adjacent to the 2021 preferred route; five sites between Bonnybridge Substation and Drum Wood, one site west of Fannyside Muir and one site south of Palacerigg Country Park. The modified preferred route option has been narrowed in some sections to avoid or reduce potential impacts on woodland but in some sections, particularly between the Forth and Clyde Canal and Howierigg woodland cannot be completely avoided.</p>
<p>Palacerigg Country Park</p>	<p>North Lanarkshire Council highlighted the potential to impact on Palacerigg Country Park. The location of the Park and wider constraints including sites of the highest environmental value (the Slamannan Plateau SPA and SSSI as well as West Fannyside Moss Special Area of Conservation (SAC) and SSSI) significantly influence route selection. As noted above and within the original routing study, routes to the east of the SPA were considered less preferable due to their potential impact on its qualifying bird species. On balance, the constraints which are present, mean that a route through the Country Park is considered preferable to one through or to the east of the statutory designated sites which has greater potential to affect the qualifying species of the SPA.</p> <p>The modified preferred route option largely follows the 2021 preferred route option but has been narrowed in places through the country park. It seeks to make best use of existing woodland and shelterbelts to reduce the impact as much as possible. The removal of the existing 132kV overhead line route provides some opportunity for the modified preferred route option to repurpose the existing wayleave through the Country Park and reduce some impacts within it.</p>
<p>Wildlife Sites or Site of Interest for Nature Conservation</p>	<p>North Lanarkshire Council noted the potential to impact on a number of Sites of Interest for Nature Conservation (SINCs). A number of SINCs are present and overlap with Palacerigg Country Park and, as set out above on balance it is preferable to route</p>

Issues Raised	Summary of Consultee Feedback
	<p>within or closer to these sites than the Slamannan Plateau SPA and SSSI as well as West Fannyside Moss Special Area of Conservation (SAC) and SSSI to the east. A number of these SINC's are also crossed by the existing 132kV overhead line. By removing it and replacing it with the new 400kV overhead line as part of the modified preferred route option, the overall impact on these SINC's can be reduced. South of Palacerigg Country Park there are approximately five SINC's close to or crossed by the 2021 preferred route option. As far as possible the modified preferred route option has been re-routed or narrowed to avoid encroaching upon these, however, the distribution of these sites as well as other constraints (in particular rural properties) means some SINC's are unavoidable.</p>

**Review of the Study Area since the Phase 1 Consultation**

There have been no significant environmental changes within the study area such as new or changes to existing areas of the highest or high environmental value such as statutory designated sites. At the time of the Phase 1 Consultation there were proposals for a new masterplan for Palacerigg Country Park and in the intervening period there has been some upgrades within the Country Park itself as well as the development of proposals to improve and strengthen the woodlands as part of the renewal of its Long Term Forest Plan (LTFP). The modified preferred route option would cross woodland within the Country Park including areas of proposed thinning as well as felling and restocking. There may be an opportunity to reduce potential impacts on woodland within the Country Park in developing a detailed route alignment taking account of the LTFP.

In planning terms the main changes relate to the adoption of Local Development Plans (LDPs); the adoption of LDP2 in Falkirk in August 2020 covering the northern part of the 2021 preferred route option, and in North Lanarkshire adoption of its current LDP in July 2022 covering the southern part of the 2021 preferred route option. Both of the LDPs identify locally designated sites or areas of regional or local environmental value including Wildlife Sites and Sites of Importance for Nature Conservation (SINC's) as well as confirming areas allocated for development such as Community Growth Areas (CGAs). As the LDPs were in preparation at the time the 2021 preferred route option was identified, they have generally been taken into account but are considered further in relation to relevant modifications below.

In addition to the adoption of the LDPs, there have been a small number of planning applications for developments made, determined or implemented within the vicinity of the 2021 preferred route option. These are summarised in Table 5. The majority of these are sufficiently far enough away from the 2021 preferred route option that they have not required or resulted in any changes, however, there are a small number of developments located in the Cumbernauld and Glenmavis areas which have influenced the modification of the 2021 preferred route option.

**Table 5 Relevant Planning Applications (identified from north to south)**

Reference	Description	Status
P/22/0436/FUL	Installation of a solar array at Roughmute Water Treatment Works to the west of Bonnybridge Substation. The site is also spanned by the upgraded ZG route.	Approved
P/21/0456/PEAT	Peatland restoration project involving restoration at a number bogs, one of which at Loanfoot lies under the existing 132kV route known as CB route.	Prior approval
P/24/0076/FUL	Change of use to a holiday and rural enterprise site lying to the south of the modified preferred route option and north of CB route.	Pending
24/00044/FUL	Development of tourist accommodation including five accommodation pods lying approximately 2km east of the modified preferred route option/CB route.	Approved
22/01051/MSC	Residential development comprising 300 dwellings and associated infrastructure lying adjacent to the north/northeast of the modified preferred option, CB route and Cumbernauld Substation.	Approved
24/00230/PPP	Residential led mixed use development and associated infrastructure lying to the southwest of Cumbernauld Substation and approximately 800m west of the modified preferred route option.	Pending
22/01225/FUL	Holiday lodges and residential development as well as associated infrastructure lying approximately 1 km to the north of the modified preferred route option.	Refused (inc. appeal)
20/00752/FUL	Development of tourism accommodation comprising five static units and office building approximately 525m to the north of the modified preferred route option.	Approved
23/00211/FUL	Development of tourist accommodation comprising 10 units lying immediately north of the modified preferred route option.	Approved
23/00698/FUL	Residential development comprising five dwellinghouses and access road lying approximately 300m to the north of the modified preferred route option.	Pending



Reference	Description	Status
22/00430/MSC	Residential-led mixed-use development and associated infrastructure lying approximately 400m to the east of modified preferred route option/	Approved
24/00732/PPP	Mixed use development comprising residential, commercial uses and associated infrastructure lying approximately 400m to the east of modified preferred route option/upgraded XX route.	Pending
23/01203/FUL	Installation of a single wind turbine to supply the Albert Bartlett Factory with electricity approximately 250m to the east of the modified preferred route option/upgraded XX route.	Pending
24/00139/CLP	Extension to industrial building, external alterations and additional hard surfacing at the Albert Bartlett Factory to the east of the modified preferred route option/upgraded XX route.	Permitted development

## 5.3 Summary of Key Modifications

### Overview of Key Modifications

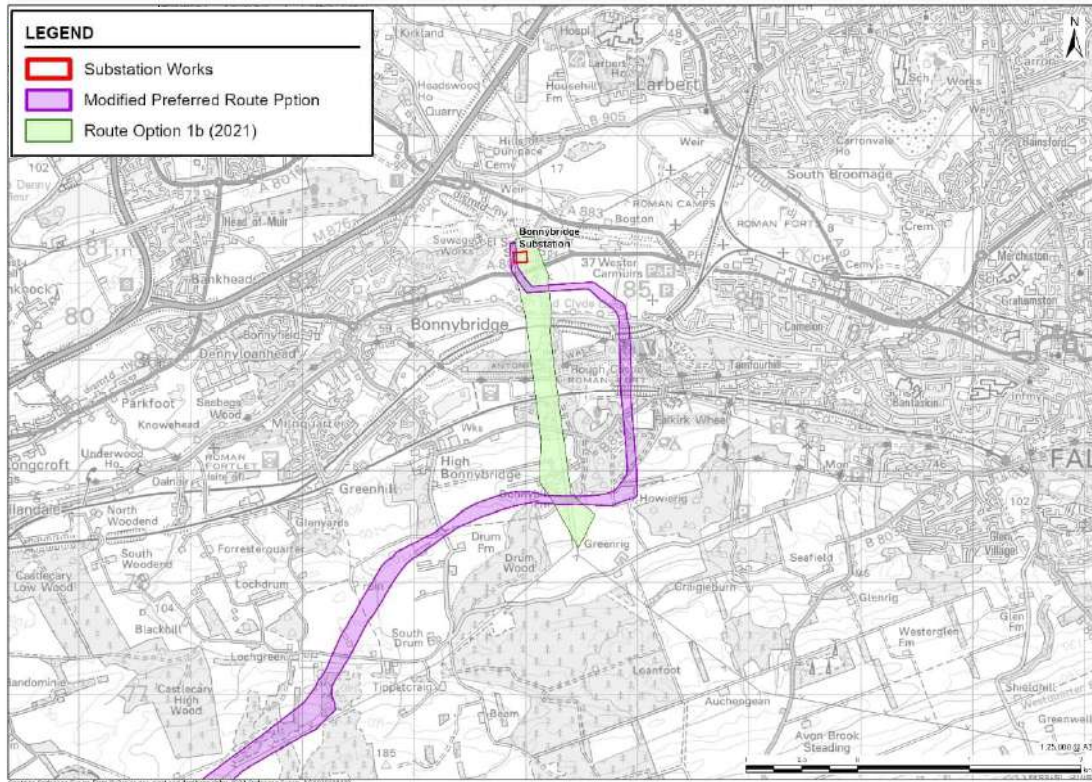
There are a small number of modifications that have been made to the 2021 preferred route option and the wider Project in response to a combination of feedback from the previous consultation as well as further technical design development. These changes, which have resulted in the modified preferred option to be subject to further consultation, are in some cases interrelated but are described individually in subsequent sections for completeness. In summary the modifications are:

- A change to the 2021 preferred route option taking account of where it starts within Bonnybridge Substation and the uprating of ZG route.
- Changes to and rationalisation of other existing overhead lines in the vicinity of the 2021 preferred route option.
- A change to the 2021 preferred route option to connect it to an extension at the existing Cumbernauld Substation including an extension of the substation.
- A change to where and how the 2021 preferred route option connects to the XX route in the Glenmavis area as well as modifications of XX route.

### Bonnybridge Substation

At Bonnybridge Substation the 2021 preferred route option was routed southeast from the eastern side of the substation, however, the 'start' point for the new overhead line requires to be moved to the western side of the substation where ZG route connects to it. As a result there are two options as shown on Figure 6.

- Taking a more direct, southern route from the west side of Bonnybridge Substation across the Forth and Clyde Canal similar to that previously considered and discounted, or
- Taking a less direct route around the perimeter of Bonnybridge Substation towards the start point of the 2021 preferred route option.



**Figure 6 Routes Options from Bonnybridge Substation**

There are a number of constraints in this location which influenced the selection of the 2021 preferred route option including a planning allocation in the Falkirk LDP2 for a mixed-use development as well as a crossing of the Antonine Wall, part of the Frontiers of the Empire WHS and scheduled monuments including the Antonine Wall and Rough Castle.

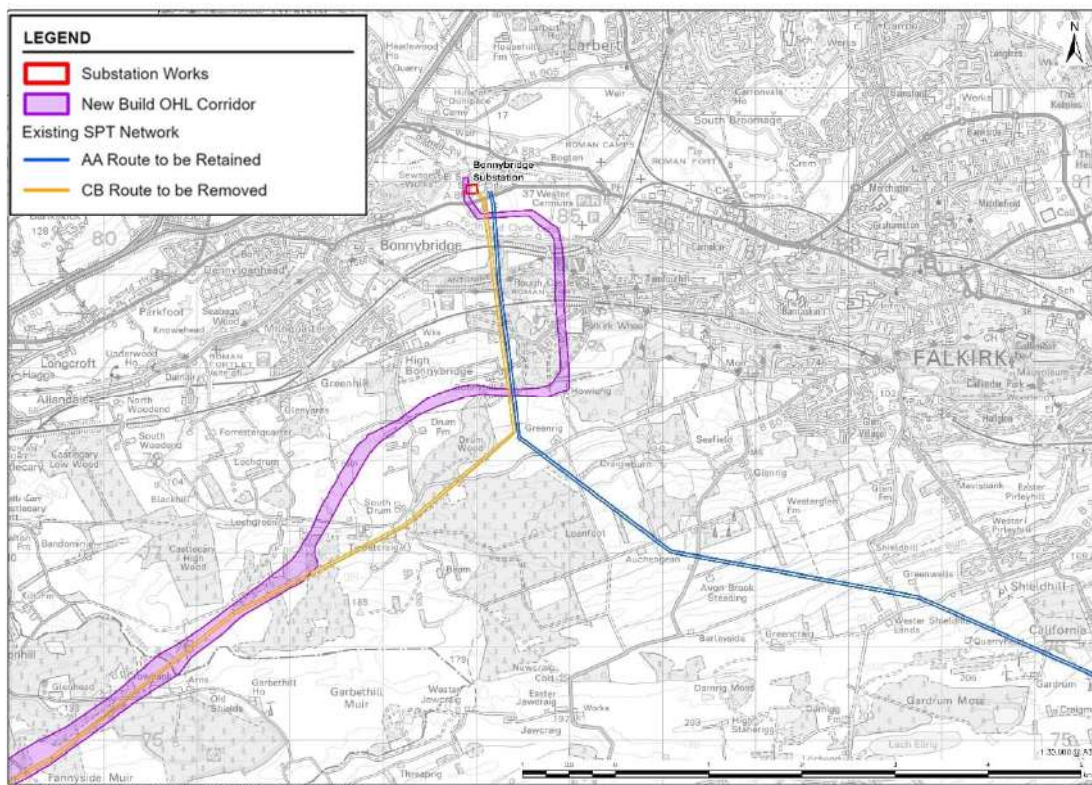
The Falkirk LDP2 was adopted in 2020 so the mixed-use development allocation (reference MU20) was considered in the identification of the preferred route option. The allocation relates to potential mixed-use development including housing, sport and recreation opportunities and green network enhancement. The allocation site occupies agricultural land extending west from Bonnybridge towards the existing substation as far as a watercourse which marks the field boundary. Any direct route option from the west of the substation would cross part of the allocation site and potentially prevent or limit future development of the site and therefore it is preferable to avoid it, or cross it with as direct and short a route as possible.

A key consideration within this area is the potential impact on the Antonine Wall WHS and its Outstanding Universal Value (OUV), as well as the potential impact on up to four scheduled monuments including the Antonine Wall and Rough Castle Fort as well as their settings. The 2021 preferred route option was selected because it was considered less impacting than a more direct route crossing such as that illustrated in Figure 6. A direct route option crossing the WHS to the west was considered more likely to impact the setting of heritage assets due

to the comparatively more open nature of the landscape in this section as well as the existing 132kV overhead lines which are also present. The modified preferred route option utilises the same crossing of the WHS as the 2021 preferred route option by routing within a more enclosed area where woodland provides some separation. Historic Environment Scotland (HES) were consulted extensively on route options within this area and in their feedback agreed with the 2021 preferred route option on balance, while highlighting some impacts would remain and should be considered in the development of the detailed design, in particular the location of overhead line towers in proximity to the Antonine Wall. While the modified preferred route option increases the length of new overhead line route within the WHS buffer zone and closer to Wester Carmuir's scheduled monument to the south of the substation, this is not considered to alter the preference to cross the WHS to the east. This is still considered to be the least impacting location in which to cross the WHS and there are additional opportunities to reduce the amount of existing electricity transmission infrastructure within the WHS setting through the rationalisation of lower voltage overhead lines including in the vicinity of Bonnybridge Substation.

### Existing Overhead Line Rationalisation

There are two existing 132kV overhead lines routed south from Bonnybridge Substation as illustrated below in Figure 7.



**Figure 7 Existing Overhead Lines**

These routes head south to Drum Wood where they diverge southwest to Cumbernauld (known as 'CB route') and southeast to Bathgate (known as 'AA route'). The 2021 preferred route option crossed both of the existing 132kV overhead lines to the north of Drum Wood. The modified preferred route option would also cross them to the immediate south of Bonnybridge Substation where it parallels the southern boundary of the substation.

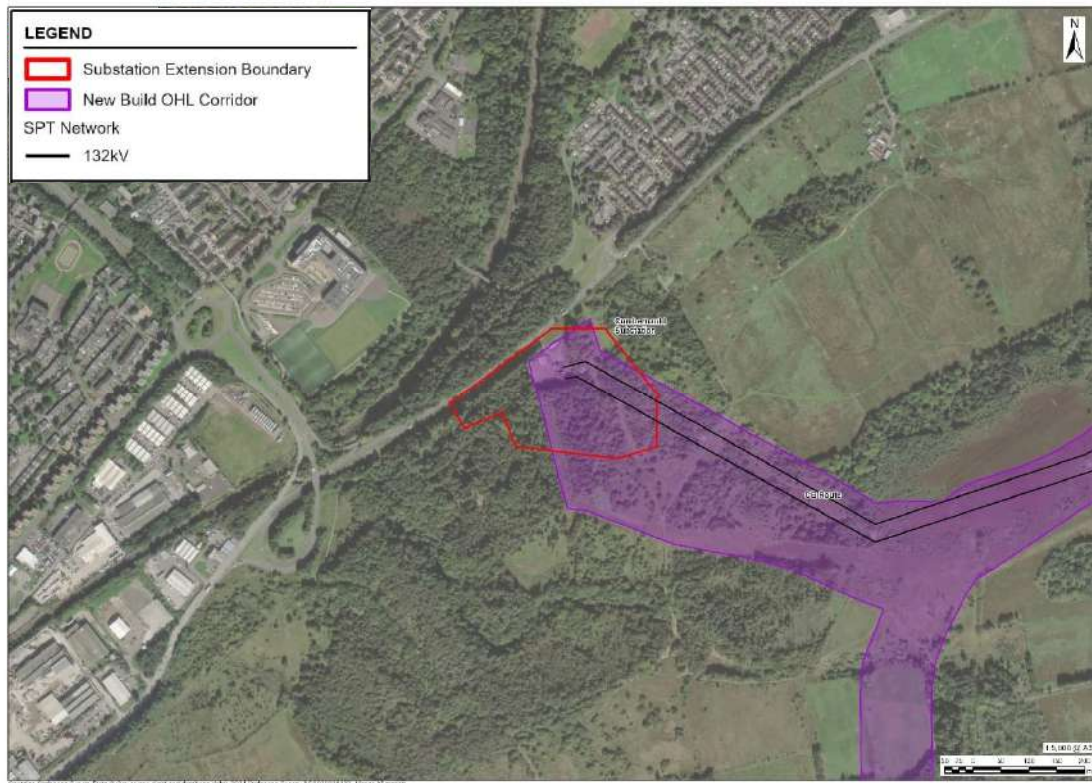
As part of the development of the Project it is proposed to remove CB route in its entirety (approximately 11km of overhead line route) between Bonnybridge and Cumbernauld Substations while AA route would be undergrounded for two short sections, south of Bonnybridge Substation and north of Drumwood, where it would be crossed by the modified preferred route option. As noted above this rationalisation of existing infrastructure helps to reduce impacts on the WHS and scheduled monuments. In addition to this removing CB route, the modified preferred route option can largely follow the existing wayleave. There is a small section of the existing CB route which crosses a small part of the Slamannan Plateau SPA north at Tippet Craigs. The removal of CB route within this area has the potential for some beneficial impacts by removing infrastructure from within the designated site. Additionally, there is a section of the existing CB route which is routed through an area identified in the Falkirk LDP2 as a Wildlife Site and an area with potential to create new bog and wetland habitat (referred to as GN15). While the towers required for new 400kV overhead line are larger (typically 46m compared to around 33m), following the existing CB route wayleave, with the possible exception of the area which coincides with the Slamannan Plateau SPA, would potentially reduce some impacts including reducing the amount of woodland removal required.

### **Cumbernauld Substation**

As part of the removal of CB route outlined above, the modified preferred route option includes an approximate 750m long spur of new 400kV overhead line which connects it to Cumbernauld Substation which would also be extended. This additional section of overhead line is required to enable the removal of the existing CB route and maintain supply of electricity to Cumbernauld Substation. Approximately 300m of the spur connecting to Cumbernauld Substation would cross Palacerigg Country Park and part of a housing allocation (reference NLCN0490B1 and NLCN0490B2) which is part of the Cumbernauld CGA identified in the North Lanarkshire LDP.

The housing allocation is already crossed by the existing CB route with Cumbernauld Substation located just outside of it. At the time of the routeing study the allocation site was subject to an approved application for planning permission in principle for housing (reference 16/00698/PPP) and since the 2021 preferred route option was identified, a subsequent application for matters specified in conditions (reference 22/01051/MSC) has also been approved. The application does not use all of the allocation site and extends up to the field boundary adjacent to the existing CB route only. The modified preferred route option is located to the south of the existing CB route which would be removed and would be further away from the housing development. As above while the towers are larger, it is considered that the overall impact would be limited as the CB route would be removed and a new overhead line installed slightly further south.

As part of this, an extension would be required at Cumbernauld Substation to install new electrical equipment and connect the modified preferred route option to the substation. The extension is located within the western most extent of the housing allocation site but outside of approved housing.

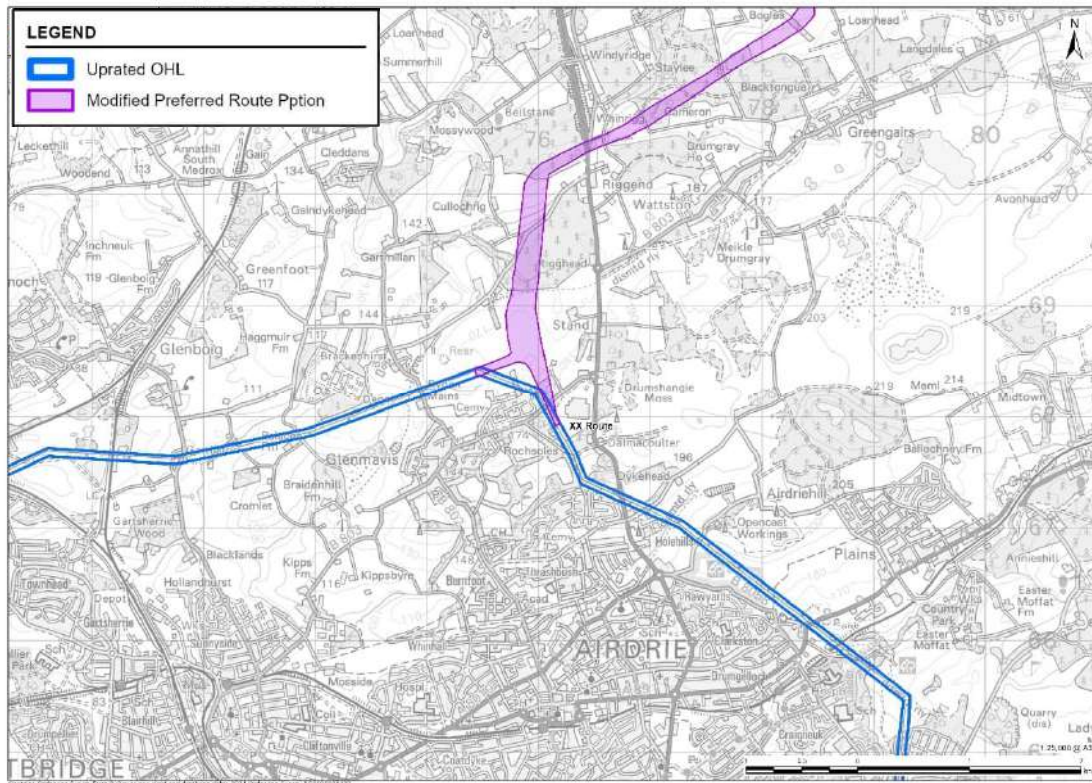


**Figure 8 Cumbernauld Substation**

**XX Route Tee-in**

The new-build overhead line is required to connect to the existing XX route which will also be upgraded to 400kV. The 2021 preferred route option connected to XX route via a tee-in to the north of Glenmavis, north of a housing development that has been constructed since the 2021 consultation. In this area a combination of the more recently constructed properties and existing housing which is spanned by the XX route has resulted in a change of the proposed tee-in arrangement as illustrated in Figure 9.

The XX route is currently routed in a southeastern direction to the north of Glenmavis and spans existing housing at Grantown Gardens before turning in a slightly more southern direction as it crosses the B803 at Raebog Road to the west of the Albert Bartlett factory. As part of the modification of the Project it is proposed to divert the XX route in an eastern/northeastern direction slightly away from Glenmavis and form a t-shape with the modified preferred route option. This will prevent the updated XX route oversailing the existing housing development with it being modified and continuing southwards to the east of Glenmavis within Laverock Knowe Quarry SINC. The new build overhead line would be moved approximately 500m east from where the 2021 preferred route option finished and instead finish at the new tee-arrangement. A small section of the existing XX route would require to be removed including part which is routed through Laverock Knowe Quarry SINC. The modified XX route would cross Raebog Road re-joining the existing XX route to the west of the Albert Bartlett factory.



**Figure 9 XX Route Tee-in**

## 5.4 Description of the Modified Preferred Route Option

The end-to-end modified preferred route option and associated wider works to dismantle CB route and divert XX route are illustrated in Figure 10. For completeness and to allow for some comparison, the extents of the 2021 preferred route option are also shown in Figure 10. The following sub-sections described the modified preferred route option and wider works using the same section-splits in the previous routeing study (Bonnybridge Substation to Slamannan Plateau North, Slamannan Plateau North to Slamannan Plateau South and Slamannan Plateau South to the XX overhead line route).

### **Bonnybridge Substation to Slamannan Plateau North**

The modified preferred route option now starts on the west side of Bonnybridge Substation where the upgraded ZG route will connect. It is routed around the substation turning east to the south of A803 and continuing east for approximately 600m until it reaches the ‘start’ point of the 2021 preferred route option. This section is located within the setting of the Frontiers of the Empire (Antonine Wall) WHS and also parallels the Forth and Clyde Canal scheduled monument (SM6768). There are four scheduled monuments within the vicinity of or crossed by the modified preferred route option including Wester Carmuir’s ring ditch (SM6413) which lies to the south of the modified preferred route option paralleling Bonnybridge Substation, Wester Carmuir’s Roman camp (SM3188) which lies to the east of the modified preferred route option as well as the Forth and Clyde Canal (SM6768) and the Antonine Wall and Rough Castle (SM8244) which are both crossed by the modified preferred route option. The change made to the modified preferred route option results in it being closer to the ring ditch, however, overall the change is not considered to result in significantly different or additional impacts compared to those from the 2021 preferred route option.

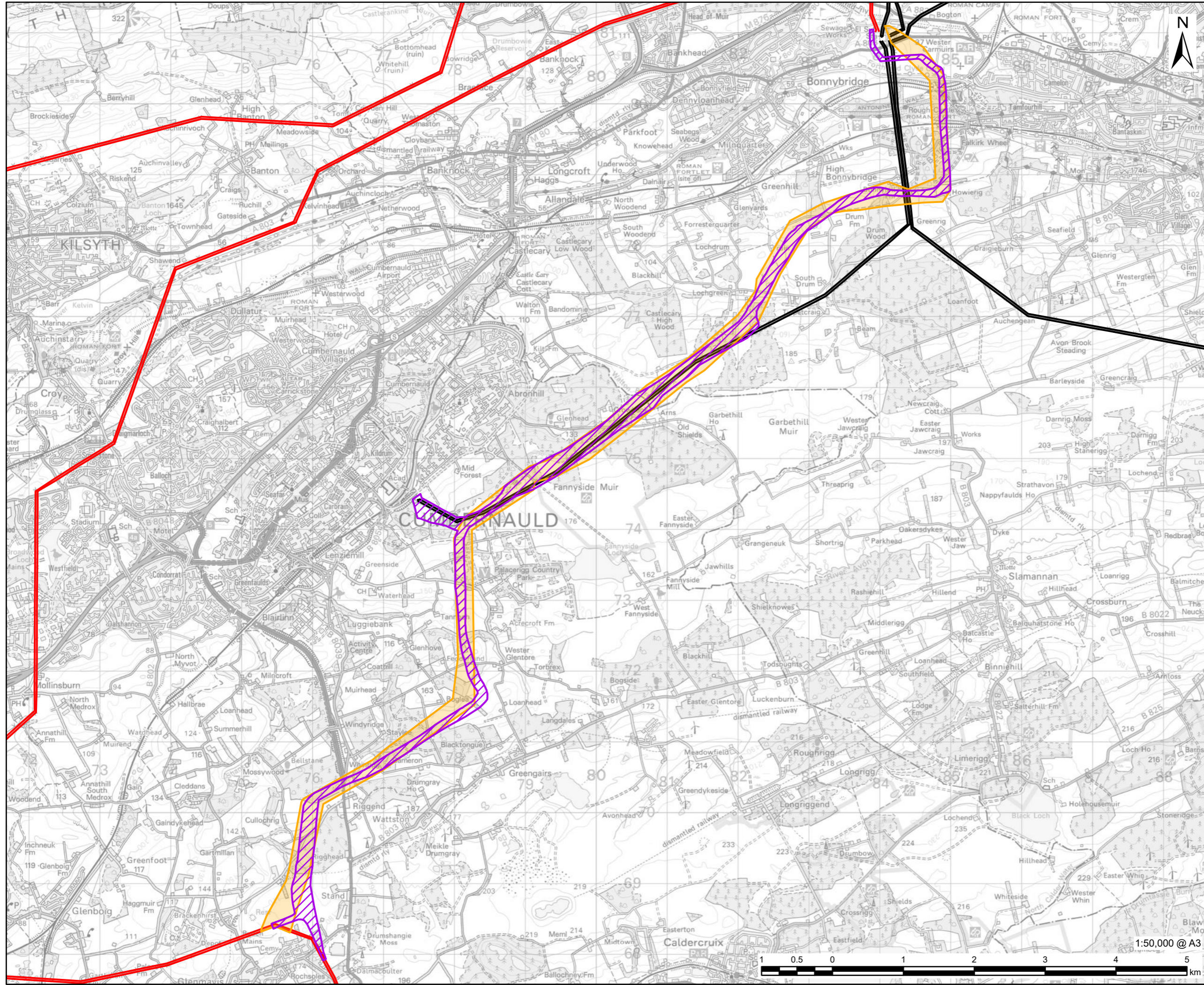
The modified preferred route option largely follows the 2021 preferred route option south crossing the Forth and Clyde Canal, railways lines and the Antonine Wall scheduled monument (SM8244). It continues south ascending the hillslope through Howierigg Wood, an Ancient Woodland Inventory site. The modified preferred route option has been narrowed through this section, however, some woodland removal would be required. Within this section the modified preferred route option crosses or is close to two existing 132kV overhead lines, CB route which goes to Cumbernauld and AA route which goes to Bathgate. As part of the Project, CB route will be removed in its entirety while sections of AA route will be undergrounded where it is crossed by the new-build overhead line. These works will help to rationalise existing overhead line infrastructure and reduce the potential for cumulative setting impacts on heritage assets such as the Antonine Wall.

### **Slamannan Plateau North to Slamannan Plateau South**

From north of the Slamannan Plateau SPA and SSSI the modified preferred option follows the 2021 preferred route option repurposing sections of the existing CB route wayleave to reduce overall impacts. The modified preferred route option continues in a southwestern direction following the CB route wayleave across Fannyside Muir towards Palacerigg Country Park. As a result of the removal of CB route, the 400kV overhead line between Bonnybridge and the XX route requires to be turned in and connected to Cumbernauld Substation. The substation, itself also requires to be extended to install transformers to enable this connection. Part of the route crosses an area identified as Forest Woods, an Ancient Woodland Inventory site, however, observations on site and from areal imagery indicate trees have been removed. The section crosses open moorland until it splits with a short spur connecting to Cumbernauld Substation. This is routed through the margins of a housing allocation which is part of the Cumbernauld South Community Growth Area. Since the 2021 preferred route option was identified a planning application for residential development has been approved. This appears to have been designed to avoid the existing CB route which the spur will replace and ensures that there is separation between new housing and the modified preferred route option.

### **Slamannan Plateau South to the XX Overhead Line Route**

At the point where the modified preferred route option forms a connection to Cumbernauld Substation it also continues southwards to XX route. This section largely follows the 2021 preferred route option, however, it has been narrowed and re-routed where possible to avoid scattered SINCS which are present. North of Greengairs, the modified preferred route option turns southwest crossing a mix of farmland and woodland until it crosses the A73 to the north of Riggend. The crossing point of Brackenhurst Road to west of the A73 also coincides with where the latest designs for the proposed East Airdrie Link Road (EALR) meet the existing road network, however, this is not considered to present a significant constraint. From here the modified preferred route option continues southwards. The main change in this section relates to where the new 400kV overhead line will connect to XX route. This was originally intended to be where XX route is located to the north of Glenmavis, however, in order to avoid the uprated XX route crossing housing which has been constructed underneath it, it will be diverted. A new tee-shape arrangement would be formed to the northwest of Glenmavis with the XX route diverted to form a dogleg which would continue south over the B803 before connecting to the existing XX route to the west of the Albert Bartlett factory.



**AECOM**

**PROJECT**  
Denny Wishaw Network Upgrade

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**LEGEND**

- 2021 Preferred Route Option
- Modified Preferred Route Option
- SPT Network**
- 132kV
- 275kV

**NOTES**  
Contains Ordnance Survey Data © Crown copyright and database rights 2024  
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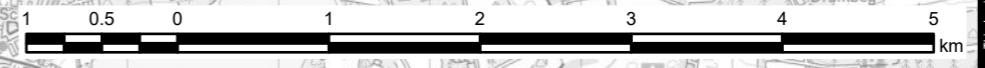
**ISSUE PURPOSE**  
ADDITIONAL ROUND 1  
CONSULTATION

**PROJECT NUMBER**  
60635450

**FIGURE TITLE**  
Modified Preferred Route Option

**FIGURE NUMBER**  
Figure 10

1:50,000 @ A3



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**06.**

**Next Steps**

## 6. Next Steps

### 6.1 Consultation on the Project

As set out in section 1 there are three key phases to the development and consenting of the Denny Wishaw Network Upgrade. Phase 1 was originally completed in 2021 with public consultation, referred to as Phase 1 Consultation, undertaken on the preferred route for the new overhead line between Bonnybridge and Glenmavis. However, due to the time that has lapsed since then and the modifications made to the preferred route option and wider Project, SPEN is undertaking a further round of consultation, 'Additional Phase 1 Consultation' on the modified preferred route option before progressing to subsequent phases. SPEN is inviting affected and interested parties to provide feedback on the Project, illustrated in Figure 11 at the end of this section and comprising (from north to south):

- Works at the existing Denny North Substation.
- Upgrading of the existing ZG route between Denny North and Bonnybridge Substations from 275 to 400kV.
- Works at the existing Bonnybridge Substation.
- Construction of a new 400kV overhead line route from Bonnybridge Substation to the northeast of Glenmavis.
- Reconfiguration of the XX route to the northeast and east of Glenmavis to establish a new tee-in arrangement connecting the new 400kV overhead line to XX route.
- Removal of the existing CB route between Bonnybridge and Cumbernauld Substations and extension of the new 400kV overhead line route to connect to Cumbernauld.
- Works at the existing Cumbernauld Substation.
- Upgrading of the existing XX route between Easterhouse and Newarthill Substations from 275 to 400kV.
- Works at the existing Easterhouse Substation.
- Upgrading of the existing XR route between Newarthill and Wishaw Substations from 275 to 400kV.
- Works at the existing Wishaw Substation.

It should be noted that a further round of consultation will be undertaken later in 2025 prior to making consent applications.

### 6.2 Approach to and Objective of Consultation

SPEN attaches great importance to the effect that its works may have on the environment and local communities and is very keen to hear the views of local people to help it inform the development of the Project in the most effective way. The overall objective of the consultation process is to ensure that all parties with an interest in the Project have access to accurate and up to date information and are provided with the opportunity to inform SPEN's

proposals during the pre-application stage. In addition, it is intended that the key issues identified through this process can be recorded and presented to decision makers in order to assist the planning process.

SPEN has taken steps to identify stakeholders and interested parties prior to this consultation and is committed to continuing engagement with all stakeholders and communities to share our plans, and this will continue to take place at all levels, both during and outside consultation periods.

### 6.3 Consultees

To ensure that all other residents and other stakeholders potentially affected by the Project are consulted, SPEN has defined a consultation zone which includes all residential and business addresses within 1km of the Preferred Option. However, any member of the public (whether living within or outside the consultation zone) is welcome to participate in the consultation and comment using one of the channels outlined within this document.

The consultation will include the following broad groups:

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

### 6.4 Additional Phase 1 Consultation Launch and Duration

The Additional Phase 1 Consultation will run from Monday 27 January 2025 to Friday 28 February 2025. Prior to the consultation, adverts will appear in local weekly newspapers at least seven days before the first exhibition. A press release will be issued to local media announcing the impending start of the consultation. Information explaining the Project will be posted out to homes, businesses, and known local interest and community groups within the local area, making them aware of the start of the Additional Phase 1 Consultation and inviting them to take part.

### 6.5 Sources of Information about the Consultation

In addition to this Preferred Route Option Update Report, a Project Leaflet has been prepared which provides a summary of the Project and how to participate in the Additional Phase 1 Consultation. The Project website has also been updated and provides information about the Project from the original Phase 1 Consultation as well as this Additional Phase 1 Consultation:

[https://www.spenergynetworks.co.uk/pages/denny\\_wishaw.aspx](https://www.spenergynetworks.co.uk/pages/denny_wishaw.aspx)

A consultation feedback form can also be completed or downloaded on the website.

### 6.6 Providing feedback

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

- At one of the in-person consultation events;
- Online, using the feedback form on the website;
- By post, using a paper feedback form, or by letter;
- By emailing the feedback form or by providing your response in an email; or
- By phone to the SPEN Project Consultation Contact Centre.

#### **In-person events**

SPEN will hold six in-person drop-in events which will be attended by members of the Project team who will be available to answer questions about the Project.

#### **Online**

People will be able to make comments online at the Project website ([https://www.spenergynetworks.co.uk/pages/denny\\_wishaw.aspx](https://www.spenergynetworks.co.uk/pages/denny_wishaw.aspx)) using an interactive online version of the feedback form, which will be available until the close of the Additional Phase 1 Consultation on Friday 28 February 2025.

#### **Post**

A hard-copy feedback form will be available at public exhibitions, for download from the website, by request to Freephone: 0800 470 2376, or by email to [info@dennywishaw.co.uk](mailto:info@dennywishaw.co.uk). Completed forms must be returned to FREEPOST DENNY WISHAW UPGRADE by Friday 28 February 2025. If returning completed forms by post people are advised to allow up to 7 days for these to be received. It may not be possible to consider forms received after this date.

#### **Email**

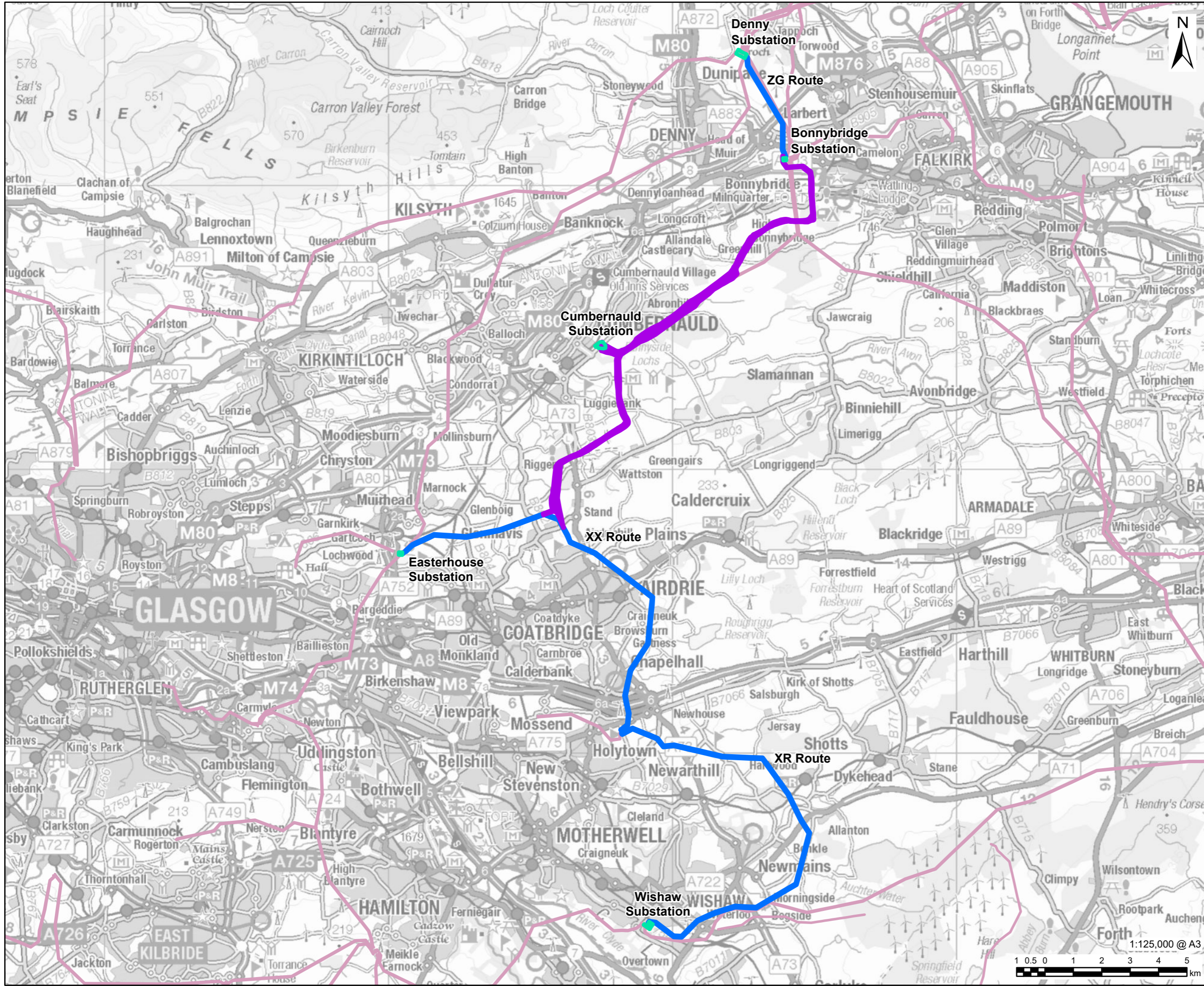
SPEN will also accept comments relating to the Additional Phase 1 Consultation by e-mail to [info@dennywishaw.co.uk](mailto:info@dennywishaw.co.uk) by Friday 28 February 2025. .

#### **Phone**

SPEN prefers to receive comments in writing as this helps avoid the risk of misinterpretation. However, where no other means are available, comments can be made via phone call free on Freephone0800 470 2376.

## **6.7 Responding to Feedback**

The responses received to the Additional Phase 1 Consultation will be evaluated by SPEN and published in the form of a Consultation Feedback Report. Although SPEN may not be able to respond to all individual comments, people will be able to request to be kept informed by email as and when there are developments in the Project, including the availability of the Consultation Feedback Report and confirmation of the Proposed Option. People interested in being kept informed in this way can register on the website or send an email to [info@dennywishaw.co.uk](mailto:info@dennywishaw.co.uk).



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