

01.

Introduction

1 Introduction

1.1 Introduction

- 1.1.1 This Environmental Impact Assessment Report (EIA Report) has been prepared by AECOM on behalf of SP Transmission plc (‘the Applicant’) in respect of the Denny Wishaw Network Upgrade (DWNO, also referred to as the ‘Project’). The Project comprises multiple components including increasing the operating voltage of existing overhead lines (referred to as ‘uprating’) from 275 to 400 kilovolts (kV), the construction of a new 400kV overhead line as well as extensions to existing substations.

Overview of the Project

- 1.1.2 In summary, the Project comprises the following components:
- The construction of approximately 19km of a new 275/400kV double circuit overhead line (to be known as WB route), including temporary access tracks, tower compounds, site compounds, pulling positions and associated works. This is hereafter referred to as the ‘New Build Overhead Line’.
 - Uprating the eastern circuit of three existing overhead line routes from 275kV to 400kV, hereafter referred to as the ‘Uprated Overhead Lines’, including temporary access tracks, tower compounds, site compounds, pulling positions, tower foundation upgrades and associated works:
 - ZG Route – uprating of approximately 4km of the eastern circuit of existing overhead line between Denny North and Bonnybridge Substations;
 - XX Route – uprating of 15km of existing overhead line between Easterhouse and Newarthill Substations. Part of XX Route is located to the north of Glenmavis where the ‘New Build Overhead Line’ shall tee into XX Route, involving the dismantling of existing towers XX020 and XX021, and the construction of towers XX019A, XX019B, XX020A and XX021A. In addition, one new tower (XX048A) is proposed to the north-east of Newarthill Substation; and
 - XR Route – uprating of approximately 16km of existing overhead line between Newarthill and Wishaw Substations, including one new tower (XR001A) and span of overhead line between towers XR001A and XX048A. In addition, one temporary tower (XR001T) and two temporary span of overhead line between XR001 – XR001T and XR001T - XR002.
 - Works to the existing ZD Route including the installation of two new towers, two new spans of overhead line between new towers and one new span of overhead line between existing towers, as part of reconfiguration of connections to Denny North Substation
 - Works at the existing Denny North, Bonnybridge, Cumbernauld, Newarthill and Wishaw Substations to facilitate the above overhead line works. These are hereafter collectively referred to as the ‘Substation Works’.

- There are also ancillary works which form part of the Project, these are hereafter referred to as the 'Ancillary Works', and comprise the following:
 - The removal of existing CB Route 132kV overhead line, measuring approximately 11km between Bonnybridge and Cumbernauld, referred to as the 'CB Route Removal';
 - The undergrounding of two short sections of existing 132kV overhead line known as the 'AA Route' referred to as the 'AA Route Undergrounding'; and
 - Diversions to other SP Distribution plc (SPD) infrastructure are required as part of the Project, referred to as the 'Distribution Line Diversion Works'.
- 1.1.3 Consent will be sought under section 37 of the Electricity Act 1989 ('section 37 consent') for the New Build Overhead Line and Upgraded Overhead Lines. The Applicant will also apply for deemed planning permission under section 57 (2) of the Town and Country Planning (Scotland) Act 1997 for the Substation Works (except the Cumbernauld Substation works) and the Ancillary Works and associated works (such as temporary infrastructure and access tracks) ('deemed planning permission'). This is hereinafter referred to as the Electricity Act Application.
- 1.1.4 Planning permission for the Cumbernauld Substation works will be sought from North Lanarkshire Council under the Town and Country Planning (Scotland) Act 1997 ('TCPA'). This is hereinafter referred to as the Cumbernauld Substation Application. The Electricity Act Application and Cumbernauld Substation Application are together referred to as the 'Applications'.
- 1.1.5 A standalone application for Cumbernauld is required as it is necessary to begin construction works ahead of the new overhead line to ensure that new plant is installed and commissioned, securing supplies into the existing Cumbernauld substation. This will allow the removal of the existing 132kV infrastructure, construction of the circuit to the north of Cumbernauld and the installation of the second 275kV transformer.
- 1.1.6 Works to modify the electricity distribution network (referred to as the SPD works) are required at 36 no. locations in the vicinity of DWNO. These are typically where lower voltage distribution overhead lines are crossed by or in proximity to DWNO. The SPD works are small-scale relating to moving or underground short sections of wood pole lines. The scale and location of the SPD works is such that they are not likely to result in significant environmental effects and have been scoped out of the assessment for the following chapters:
 - Biodiversity;
 - Ground Conditions;
 - Traffic and Transport;
 - Socioeconomics and recreation; and

However, notwithstanding this, all relevant mitigation measures proposed by SP Transmission in relation to DWNO will be applied to the SPD works to ensure appropriate management and control measures are in place during their construction.

- 1.1.7 This EIA Report identifies and assesses the likely significant environmental effects of the Project and enables consultees and decision makers to consider these, alongside other factors, as part of the determination of the Applications.

1.2 About the Applicant

- 1.2.1 SP Energy Networks 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.
- 1.2.2 As the Transmission Owner (TO) and holder of a transmission licence under the Electricity Act 1989, the Applicant 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 the Applicant to provide connections 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.
- 1.2.3 In addition, in formulating any relevant proposals for electricity transmission infrastructure, the Applicant is subject to duties under Schedule 9 of the Electricity Act: "*(a) to have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and, (b) to do what [it] reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.*" In addition, in exercising any relevant functions, the Applicant is under a duty to "*avoid, so far as possible, causing injury to fisheries or to the stock of fish in any waters*".
- 1.2.4 The Applications have been prepared and made by SP Transmission plc taking into account its statutory duties and licence obligations including under the Electricity Act 1989 as outlined above.

1.3 Background to the Project

Background to the Project

- 1.3.1 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 respectively¹.
- 1.3.2 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

¹ All legislation is 'as amended' unless specifically stated otherwise.

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.

- 1.3.3 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. Originally 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. 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.
- 1.3.4 The Applicant, the 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 Scottish Hydro Electric Transmission's (SHE Transmission) 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.
- 1.3.5 As described in the previous section, SP Transmission has a number of statutory duties and licence obligations which underpin the need for the Project. The Project is an integral part of planned network reinforcements which will help to increase the capacity of the transmission system.

Need for the Project

- 1.3.6 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 electricity transmission system. This includes the Network Options Assessment (NOA), an economic assessment of projects proposed by TOs including the Applicant 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.
- 1.3.7 SP Transmission worked with NESO to identify that, for the UK to meet its net-zero carbon emissions targets, there is a requirement to reinforce the electricity network between Denny and Wishaw. This led to the development of the Denny to Wishaw Network Optimisation (DWNO) project
- 1.3.8 DWNO was given a 'proceed' signal meaning that it was considered appropriate to be taken forward, in successive NOA publications in 2019/20², 2020/21³ and 2021/22⁴ as well as the NOA Refresh published in 2022⁵ in parallel with the publication of the Holistic Network

² Network Options Assessment (January 2020), NGESO <https://www.neso.energy/document/162356/download>

³ Network Options Assessment (January 2021), NGESO <https://www.neso.energy/document/185881/download>

⁴ Network Options Assessment (January 2022), NGESO <https://www.neso.energy/document/233081/download>

⁵ Network Options Assessment Refresh (July 2022), NGESO
<https://www.neso.energy/document/262981/download>

Design (HND)⁶. 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 the DWNO. The recommendations in NOA highlight the need for the DWNO to be developed to ensure an economic and efficient electricity transmission system and to support meeting UK and Scottish Government targets regarding climate change.

- 1.3.9 In addition to upgrading existing infrastructure, DWNO would include a new 275kV/400kV overhead line (to be known as WB route) from Bonnybridge Substation to a point near Glenmavis. This enables the rationalisation of existing infrastructure including the removal of an existing 11km 132kV overhead line between Bonnybridge and Cumbernauld (known as CB Route). However, this requires the existing Cumbernauld Substation to be extended to enable the proposed new WB route to be connected into it.

1.4 EIA and Consenting Requirements

Applications under the Electricity Act 1989

- 1.4.1 The Environmental Impact Assessment (EIA) regulations applicable to the [Electricity Act Application(s)] are the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (hereafter referred to as the 'Electricity Works EIA Regulations').
- The New Build Overhead Line requires the construction of a new overhead line route and therefore is 'Schedule 1 Development' under Schedule 1(3) of the Electricity Works EIA Regulations as it comprises construction of overhead electrical power lines with a voltage of 220kV or more and a length of more than 15 kilometres (km). EIA is a mandatory requirement for Schedule 1 Development;
 - The Upgraded Overhead Lines require replacement conductors ('wires') and insulators to be fitted to the existing towers. The Upgraded Overhead Lines comprise a mix of Schedule 1 and Schedule 2 development under the Electricity Works EIA Regulations, XX route and XR route are Schedule 1 development under Schedule 1(2) and ZG is Schedule 2 under Schedule 2(2). All of the upgraded overhead lines have been subject to EIA.
 - The Substation Works and Ancillary Works are to be also subject to EIA as these works are in connection with a Schedule 1 and / or Schedule 2 Development.

Cumbernauld Substation

- 1.4.2 The EIA Regulations applicable to the Cumbernauld Substation Application are the Town and Country Planning (Environmental Impact Assessment Regulations) (Scotland) 2017 (hereafter referred to as the 'TCPA EIA Regulations').
- 1.4.3 The Electricity Works EIA Regulations and TCPA EIA Regulations are together referred to as the 'EIA Regulations'. The requirements under both EIA Regulations are substantively the same and all requirements have been addressed.

⁶ NGESO (2022). *Pathway to 2030: A holistic network design to support offshore wind deployment for net zero*. Available at: <https://www.neso.energy/document/262676/download>

- 1.4.4 The Scoping Opinion To inform the scope of this EIA Report, a Scoping Opinion request was made to ECU (Energy Consents Unit) on 13 July 2025 in relation to the DWNO project. A Scoping Opinion was received on 7 October 2025.

Changes to the scope of the Project

- 1.4.5 The design of the Project has evolved since the request for a Scoping Opinion stage. The Project previously included an extension to Easterhouse substation, to facilitate the installation of the new line Circuit Breaker within the existing footprint. This work is now removed from the scope of DWNO, as it is required independently of the Project and has therefore been removed from the EIA Report. Internal works at Wishaw and Newarthill substations, are no longer assessed within this EIA Report as these works are also required independently of the Project. The internal works proposed at Denny North substation are removed from scope as these works were approved under extant Planning Permission Ref: 05/0913/FUL (Falkirk Council).
- 1.4.6 The addition of the proposed two new towers at Denny North substation has been included into the EIA Report post the EIA scoping report and opinion. The two new ZD towers are required to facilitate the reconfiguration of existing circuits as they connect into the substation. The ZD towers will be captured within the works proposed at Denny North substation and be included within the Section 37 application to uprate ZG route.

1.5 Structure of the EIA Report

EIA Report Structure

- 1.5.1 The EIA Report is published in three volumes:
- **Non-Technical Summary (NTS):** this contains a non-technical summary describing the Project as well as the findings of the EIA process.
 - **Volume 1. Main Report:** this comprises the following chapters:
 - **Ch01. Introduction:** provides a brief overview of the Project including its EIA and consenting requirements as well as an outline of the structure and content of the EIA Report.
 - **Ch02. Approach to EIA:** describes the general approach to the EIA process and how the requirements of the EIA Regulations have been addressed as well as setting out feedback from the Scoping Opinion and how it has been addressed.
 - **Ch03. Evolution of Design and Alternatives:** describes the approach to and consideration of alternative sites in line with the Applicant's statutory duties under the Electricity Act 1989 and the EIA Regulations.
 - **Ch04. Project Description:** provides a description of the Project including its design, construction, operation and maintenance.
 - **Ch05. Planning Policy Context:** provides an overview of relevant national and local planning policies.
 - **Ch06. Landscape and Visual:** describes the results of the assessment of the Project's likely significant effects on landscape and visual amenity.

- **Ch07. Cultural Heritage:** describes the results of the assessment of the Project's likely significant effects on cultural heritage and archaeology.
- **Ch08. Biodiversity:** describes the results of the assessment of the Project's likely significant effects on ecology including designated sites, habitats and protected species.
- **Ch09. Water Environment:** describes the results of the assessment of the Project's likely significant effects on the water environment.
- **Ch10. Ground Conditions:** describes the results of an assessment of the Project's likely significant effects on ground conditions.
- **Ch11. Traffic and Transport:** describes the results of an assessment of the likely significant effects resulting from the Project.
- **Ch12. Noise and Vibration:** describes the results of the assessment of likely significant effects from noise resulting from the of the Project.
- **Ch13. Socio-Economics and Recreation:** describes the results of the assessment of the Project's likely significant effects on Socio-Economic aspects.
- **Ch14. Forestry:** describes the results of the assessment of the Project's likely significant effects on Forestry.
- **Ch15. Other Environmental Matters:** provides an overview of other environmental aspects which were scoped out of the EIA at scoping stage.
- **Ch16. Cumulative effects:** describes the results of cumulative effects arising from other projects in the vicinity of the Project including proposed overhead line modifications as well as other approved and planned developments.
- **Ch17. Schedule of Mitigation:** describes the measures proposed as part of the design, construction and operation of the Project to prevent, avoid, reduce or offset adverse environmental effects.
- **Ch18. Summary and Conclusions:** provides an overall summary of the results of the EIA and identifies whether effects are likely to be significant or not.
- **Volume 2. Figures:** this contains supporting figures associated with the specialist assessment chapters contained within Volume 1.
- **Volume 3. Technical Appendices:** this contains supporting technical information to the specialist assessment chapters contained within Volume 1.

Statement of Expertise

- 1.5.2 Regulation 5(5) of the TCPA EIA Regulations and Regulation 17(5) of the Electricity EIA Regulations requires developers to ensure that EIA Reports are prepared by competent experts and accompanied by a statement outlining the relevant expertise or qualifications of such experts.
- 1.5.3 As noted in the introduction this EIA Report has been prepared by AECOM. AECOM is a founding member of the Institute of Sustainability and Environmental Professionals' (ISEP), previously known as Institute of Environmental Management and Assessment, Quality Mark scheme. This is a voluntary scheme, operated by ISEP, through which AECOM's EIA activity is

reviewed including an annual independent review of EIAs undertaken. The Quality Mark demonstrates that AECOM's EIAs and wider EIA-related practices are independently rated and regularly monitored to high standards.

- 1.5.4 Details of the EIA team including their relevant qualifications and experience are contained in **Volume 3, Appendix 1.1** Statement of Competence.

Other Reports Accompanying the Applications

- 1.5.5 The EIA Report will be supported by the following reports in respect of the Applications:

Electricity Act 1989 Applications:

- Planning Statement (PS);
- Biodiversity Net Gain (BNG) Report;
- Gate Check Reports 1 & 2;
- Peat Management Plan & Peat Landslide Hazard Risk Assessment (To be completed and submitted following main submission);
- Pre-application Consultation (PAC) report;

Cumbernauld Substation Planning Applications

- Planning Statement;
- Design and Access Statement;
- Badger Species Protection Plan;
- Biodiversity Net Gain Report (BNG); and
- Pre-Application Consultation (PAC) Report.