SP ENERGY NETWORKS

The Kendoon to Tongland 132kV Reinforcement Project

Environmental Impact Assessment Report (EIAR): Main Text, Figures, Visualisations and Appendices

August 2020

The Kendoon to Tongland 132kV Reinforcement Project

Environmental Impact Assessment Report

Prepared by LUC

on behalf of

SP Energy Networks

August 2020

Preface

This Environmental Impact Assessment Report (EIA Report) has been prepared by LUC in support of proposals by SP Energy Networks (SPEN) to modernise and reinforce the 132 kilovolts (kV) electricity transmission network between Kendoon and Tongland in Dumfries and Galloway, including the decommissioning and removal of the existing N and R routes. The project is referred to as 'the KTR Project'.

The EIA Report has been provided in support of five applications submitted by SPEN to the Scottish Government Energy Consents Unit (ECU) seeking consent under section 37 of the Electricity Act 1989 ('section 37 consent') for the overhead lines comprised in the KTR Project, as well as the applications seeking directions that planning permission be deemed to be granted under section 57 (2) of the Town and Country Planning (Scotland) Act 1997 for the overhead lines, ancillary works and the removal of N and R routes ("deemed planning permission").

The five connections forming part of the KTR Project are detailed below:

- A new 132kV double circuit steel tower overhead line, of approximately 10.1km in length between Polquhanity (approximately 3km north of the existing Kendoon substation) and Glenlee substation, via the existing Kendoon substation (P-G via K). The application for this connection also includes the removal of the N route towers between Polquhanity and Kendoon, and part of R route between Kendoon and Glenlee.
- A new 132kV single circuit wood pole overhead line, of approximately 2.6km in length, between Carsfad and Kendoon (C-K).
- A new 132kV single circuit wood pole overhead line, of approximately 1.6km in length, between Earlstoun and Glenlee (E-G).
- A new 132kV double circuit steel tower overhead line deviation of the existing BG route, at Glenlee substation approximately 1.2km in length (BG Deviation).
- A new 132kV double circuit steel tower overhead line, of approximately 32.3km in length, between Glenlee and Tongland (G-T). The application for this connection also includes the removal of the R route towers between Glenlee and Tongland.

The EIA Report comprises six volumes as well as a standalone Non-technical Summary (NTS):

- Volume 1: Main text;
- Volume 2: Figures;
- Volume 3: Appendices; and
- Volume 4-6: Visualisations.

In light of the current public health advice relating to the Covid-19 outbreak, parts of the EIA Regulations were amended on 24th April 2020 by The Electricity Works (Miscellaneous Temporary Modifications) (Coronavirus) (Scotland) Regulations 2020 to temporarily relax the requirements to place hardcopies of EIA Reports in the public domain during statutory application consultation periods and to make copies available electronically. On this basis, at the time of submission of the applications, hard copies are not available in public viewing locations in accordance with the Regulations.

An electronic copy (via USB) of the EIA Report documents can be obtained free of charge, and hard copies of the EIA Report may be purchased for £800, by contacting SPEN using the contact details set out below:

- Dedicated freephone number: 0800 157 7353
- Dedicated project email address: dgsr@communityrelations.co.uk
- Freepost address: FREEPOST SPEN DGSR

Representations to the applications may be submitted via the ECU portal at www.energyconsents.scot/Register.aspx, by email to the Scottish Government, Energy Consents Unit mailbox at representations@gov.scot, or by post to the Scottish Government, Energy Consents Unit, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU, identifying the proposal and specifying the grounds for representation.

Main Text

Contents

Figures

Chapter 8: Forestry

Chapter 9: Geology, Hydrology, Hydrogeology, Water Resources and Peat

Chapter 10: Ecology

Chapter 11: Ornithology

Chapter 12: Cultural Heritage

Appendices

Appendix 1.1: Statement of Expertise

Appendix 3.1 Summary of the KTR Project Scoping Opinion

Appendix 5.1: Forest Design Concept - Approach to Mitigation and Enhancement

Appendix 5.2: Embedded and Additional Mitigation and Monitoring Measures

Appendix 5.3: Example Toolbox Talk (title TBC)

Appendix 5.4: Construction and Decommissioning Environmental Management Plan

Appendix 7.1: LVIA Assessment Methodology

Appendix 7.2: ZTV Mapping and Visualisation Methodology

Appendix 7.3: Summary of Consultation and Viewpoint Selection

Appendix 7.4: Landscape Baseline

Appendix 7.5: Visual Baseline

Appendix 9.1 Watercourse Crossings

Appendix 9.2: Catchment Areas Draining to Access Tracks and Initial Sustainable Drainage Systems (SUDS) Sizing

Appendix 9.3: Private Water Supply Assessment

Appendix 9.4: Peat Survey Report

Appendix 9.5: Outline Peat Management Plan

Appendix 9.6: Peat Landslide and Hazard Risk Assessment

Appendix 9.7: Groundwater Dependent Terrestrial Ecosystem (GWDTE) Assessment

Appendix 10.1: Desk Study and Legal Context

Appendix 10.2: Phase 1 Habitat and NVC Survey Report

Appendix 10.3: Protected Species Survey Report

Appendix 10.4: **Confidential** Badger Survey Report

Appendix 10.5: Fish Survey Report

Appendix 11.1: Ornithology Technical Report

Appendix 11.2: Ornithology Collision Risk

Appendix 11.3: **Confidential** Ornithology Report

Appendix 11.4: Ornithology Shadow Appropriate Assessment

Appendix 12.1: Cultural Heritage Viewpoints

Appendix 12.2: Cultural Heritage Assets within the Inner Study Area

Appendix 12.3: Polquhanity to Glenlee (via Kendoon): Inner Study Area - Predicted Direct Effects

Appendix 12.4: Carsfad to Kendoon: Inner Study Area – Predicted Direct Effects

Appendix 12.5: Earlstoun to Glenlee: Inner Study Area – Predicted Direct Effects

Appendix 12.6: BG Deviation: Inner Study Area – Predicted Direct Effects

Appendix 12.7: Glenlee to Tongland: Inner Study Area – Predicted Direct Effects

Appendix 12.8: Characterisation of the Setting of Heritage Assets within Outer Study Area

Appendix 12.9: Detailed Setting Assessment of Key Heritage Assets within Outer Study Area

Appendix 12.10: Polquhanity to Glenlee (via Kendoon): Assessment of Effect on the Setting of Key Heritage Assets within Outer Study Area

Appendix 12.11: Carsfad to Kendoon (132kV Wood Poles): Assessment of Effect on the Setting of Key Heritage Assets within Outer Study Area

Appendix 12.12: Earlstoun to Glenlee (132kV Wood Poles): Assessment of Effect on the Setting of Key Heritage Assets within Outer Study Area

Appendix 12.13: BG Deviation (132kV Steel Lattice Towers): Assessment of Effect on the Setting of Key Heritage Assets within Outer Study Area

Appendix 12.14: Glenlee to Tongland (132kV Steel Lattice Towers): Assessment of Effect on the Setting of Key Heritage Assets within Outer Study Area

Appendix 12.15: A713 Old Polharrow Bridge: Photographic Survey and Watching Brief.

Appendix 13.1: Framework Construction Traffic Management Plan

Appendix 13.2: Construction Access Routes & Temporary Access Locations Review

Appendix 14.1: Baseline Operational Noise Survey

Appendix 15.1: Socio-economic, Tourism and Recreation Baseline

Appendix 16.1: Kendoon to Tongland 132kV Reinforcement Project Electric and Magnetic Fields Report

Glossary

Additional Mitigation: Any process, activity or activity designed to avoid, reduce or remedy adverse environmental impacts likely to be caused by a development project which is identified following assessment (distinct from Embedded Mitigation below).

Ancillary Development: Refers to any development which is necessary to the construction or operation of the overhead line e.g. access tracks and quarries.

Backclothing: is a situation which occurs where the overhead line is seen from a particular viewpoint against a solid backdrop.

Circuit: a combination of conductors (commonly three conductors) along which electricity is transmitted. Towers carry two circuits, wood poles carry one circuit.

Conductors: metallic wire strung from tower to tower or pole to pole, to carry electricity current.

Construction and Decommissioning Environmental Management Plan (CDEMP): A document management system with environmental procedures to monitor residual impacts of the construction and decommissioning phases of a development.

Construction Method Statement (CMS): a description of how the work will be carried out safely.

Cumulative Effects: effects on the environment which are caused by the combined result of past, current and future developments (see **Chapter 3: Approach to the EIA** for a fuller description of cumulative effects in relation to the KTR Project).

Earth Wire: a wire erected above the topmost conductor at the tower peak or under slung on certain types of wood pole. These are used for protection against lightning strikes but can also contain fibre optic cores for communication purposes.

Ecological Clerk of Works (ECoW): provides advice about ecological and environmental issues during the construction of a development.

Electric and Magnetic Fields (EMF): Their sources are the charged fundamental particles of matter and are associated with use of electrical power and various forms of natural and man-made lighting (i.e. high voltage power transmission equipment is a source of EMF)

Embedded Mitigation: environmental mitigation measures that are incorporated into the project design and are intended to prevent, reduce or remedy any significant adverse effects.

Environmental Impact Assessment (EIA): a formal process used to identify, predict and assess the likely environmental effects of a proposed development.

EIA Report: A report that includes such information that is reasonably required to assess the environmental effects of a development.

Design Freeze: A method used during design development stage to mitigate the risks associated with change. This organises and compiles the design process, control changes and force the completion of design stages on time.

Holford Rules: accepted guidance for routeing overhead lines in the UK.

Infrastructure Location Allowance (ILA): Ensures that final positions of the project infrastructure and associated works are not varied to a such a degree as to cause an increase in the significance of likely environmental effects.

Insulators: articulated strings made either of glass or polymeric compound. These are required to prevent electric current crossing to a tower or pole body.

Kilovolt (kV): 1,000 volts.

Magnitude of Effect: The degree and extent to which the project changes the environment.

Non-Technical Summary (NTS): A summary of the EIA Report in 'non-technical language'.

Overhead Line (OHL): an electric line installed above ground usually supported by lattice steel towers or wooden poles.

Principal Contractor: a contractor appointed by the client to control the construction phase of any project involving more than one contractor.

Residual Effects: Those effects of a development following implementation of any relevant mitigation proposals.

Route Alignment: the alignment of the route which forms the basis of the application for Section 37 consent. This is arrived at through detailed environmental impact assessment (EIA), discussions with landowners and technical ground surveys.

Route Options: a number of routes connecting two substations or node points (in some cases, there may only be one route option).

Scoping: An initial stage of the EIA in determining the nature and potential scale of environmental impacts arising from a proposed development and assessing what further studies are required to establish their significance.

Scoping Opinion: A written statement of the opinion of the relevant planning authority as to the information to be provided in the EIA Report which specifically requires a local planning authority to respond or consult with consultees within a statutory period.

Span: the section of overhead line between two towers or two wood poles.

SPEN: ScottishPower Energy Networks, responsible for the development, operation and maintenance of electricity transmission in Central and Southern Scotland on behalf of the transmission license holder for this area, ScottishPower Transmission (SPT).

Statutory Consultees: Groups or bodies that by law, must be consulted as part of the planning application process for EIA development (i.e. the planning authority, Scottish Natural Heritage, the Scottish Environment Protection Agency and Historic Environment Scotland).

Study Area: the area within which route options can be identified between the required points of connection (substations or node points on the existing network).

Substation: this controls the flow and voltage of power by means of transformers and switchgear, with facilities for control, fault protection and communications.

Sustainable Drainage Systems (SuDS): are a collection of water management practices that aim to align modern drainage systems with natural water processes.

The National Grid: The electricity transmission network system operator of Great Britain.

Underground Cable: an electric line installed below ground within a cable trench.

Volts: the international system unit of electric potential and electromotive force.

Wayleave: is a legally binding agreement between a land or property owner and a licence holder the power to install their electricity lines and associated equipment on, over or under private land to keep the electricity line there and to have access to that land for the purposes of inspecting, maintain, repairing or removing the line or equipment.

Windthrow: the uprooting and overthrowing of trees by wind.