T ROUTE REBUILD PROJECT

ROUTEING AND CONSULTATION DOCUMENT

VOLUME 1: MAIN REPORT

SP ENERGY NETWORKS

JUNE 2022

T Route Rebuild Project

Routeing and Consultation Document

Volume 1: Main Report

June 2022

GILLESPIES	Project Title	Document Title		Client
	T Route Rebuild Project	T Route Rebuild Project: **Routeing & Consultation Document** **Volume 1 Main Report** P11571-00-000-700		SP Energy Networks

Rev.	Date	Detail	Made By	Checked By	Approved By
00	August 2019	DRAFT	JAG	KL	SG
01	March 2020	DRAFT	JAG	KL	SG
02	April 2021	DRAFT	LR	SG	SG
03	September 2021	DRAFT	LR	SG	SG
04	October 2021	DRAFT	LR	SG	SG
05	November 2021	DRAFT	LR	SG	SG
06	November 2021	DRAFT	LR	SG	SG
07	Jan 2022	DRAFT	LR	SG	SG
08	April 2022	REVISED CONSULTATION DETAILS	LR	SG	SG
09	MAY 2022	REVISED CONSULTATION DETAILS	LR	SG	SG
10	JUNE 2022	REVISED CONSULTATION DETAILS	LR	SG	SG
11	JUNE 2022	FINAL	LR	SG	SG

Preface

This Routeing and Consultation Document has been prepared on behalf of SP Energy Networks Holdings Limited (SP Energy Networks) and relates to proposals to upgrade the electricity transmission network in the Dumfries and Galloway Region between Annan and the license boundary with National Grid Energy Transmission (NGET) in the Solway Firth near Gretna. The upgrading is referred to as the T Route Rebuild Project (the Project).

SP Energy Networks is part of the ScottishPower Group of companies. SP Energy Networks owns three regulated electricity network businesses in the UK. These businesses are 'asset-owner companies' holding the regulated assets and Electricity Transmission and Distribution Licenses of ScottishPower. SP Transmission plc (SPT) owns the transmission network in central and southern Scotland and is responsible for the delivery of this project on behalf of SP Energy Networks. SPT takes electricity generated from power stations, windfarms and various other utilities and transports it through the transmission network, which comprises over 4000km of overhead lines and 320km of underground cables. SPT also has 132 grid substations on the transmission network where the high voltage supply is reduced to a lower voltage for distribution to customers.

The Routeing and Consultation Document presents the methodology and findings of the routeing study, which has been undertaken to inform the consultation process for the project. It is divided into the following two volumes:

- Volume 1: Main Report (this volume)
- Volume 2: Technical Appendices and Figures

The Routeing and Consultation Document has been prepared on behalf of SP Energy Networks by Gillespies LLP, with support from EnviroCentre Ltd and Headland Archaeology.

Due to Covid-19 restrictions, hard copies of the documents will not be available to view in council run offices.

Electronic copies of the all the documents can however be downloaded free of charge via the Project website: https://www.spenergynetworks.co.uk/pages/trouterebuild.aspx. High resolution electronic copies of the Routeing and Consultation Document on USB stick may be purchased for £15 and hard copies for £90 by contacting SP Energy Networks using the contact details set out below, which can also be used to make comments or raise questions:

Dedicated Project Email address: TRoute@spenergynetworks.co.uk

Postal address:

Brendan Tinney

T Route Rebuild,
Land and Planning,
SP Energy Networks,
55 Fullarton Drive,
Cambuslang,
Glasgow
G32 8FA

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

CONTENTS

TECHNICAL APPENDICES AND FIGURES (VOLUME 2):

1. INTRODUCTION

Purpose of the Routeing and Consultation Document

1.1. To comply with the obligations of its transmission licence, SP Transmission plc (SPT), on behalf of SP Energy Networks needs to rebuild approximately 13.5km of the existing 132kV overhead line (T Route), which currently extends between tower AK008 on the AK Route north of Annan to the shared license boundary with National Grid Energy Transmission (NGET) in the Solway Firth, south of Gretna. T137A is currently the last tower on this connection before the license boundary. The span of electric line crossing the license boundaries will be retained at its existing location and angle.

1.2. The existing steel lattice tower line forming T Route will be rebuilt as a wood pole line between a point close to tower AK007 and T137A. Additionally, a new terminal steel lattice tower will be needed adjacent to the AK Route near Annan and two new towers at the NGET boundary south of Gretna on the same angle as the existing electric line. Tower AK008 will be removed and land restored to a similar condition as its surroundings.

1.3. The existing 132kV steel lattice towers along the redundant section of the route will be dismantled, removed and the ground restored following construction of the replacement overhead line.

1.4. The rebuild will allow an increase in the thermal rating of both the AK and T Routes, which will mean they can carry the additional power necessary for the increased level of generation in the area. This will be done by using a different conductor type.

1.5. The location of the existing AK and T Routes and the section to be dismantled to allow for the rebuild are shown on **Figure 1**.

1.6. The purpose of the Routeing and Consultation Document is to:

- Describe the methodology undertaken in identifying a preferred route for the new line, making reference to any relevant guidelines that have been taken into consideration during the routeing process;
- Present and appraise the findings of the routeing study; and
- Identify a 'preferred route' and present it within this document.

1.7. The Routeing and Consultation Document will be used to inform and provide an opportunity for interested parties to comment on the preferred route, and/ or any other issues relating to the proposal and the next stages of the project. Following consideration of the responses to the consultation process, a proposed route will be identified which will then be refined to determine pole locations. The plan of the route with pole locations will form the core part of an eventual section 37 application to the Scottish Government.

Need for the Project

1.8. The existing electricity transmission network in Dumfries and Galloway was developed between the 1930s and 1970s. As illustrated in **Diagram 1**, an existing 132kV overhead line (T Route) runs from Chapelcross substation towards the Solway Firth south of Gretna and then continues south across the border into England, where it connects into the NGET substation at Harker, near Carlisle.

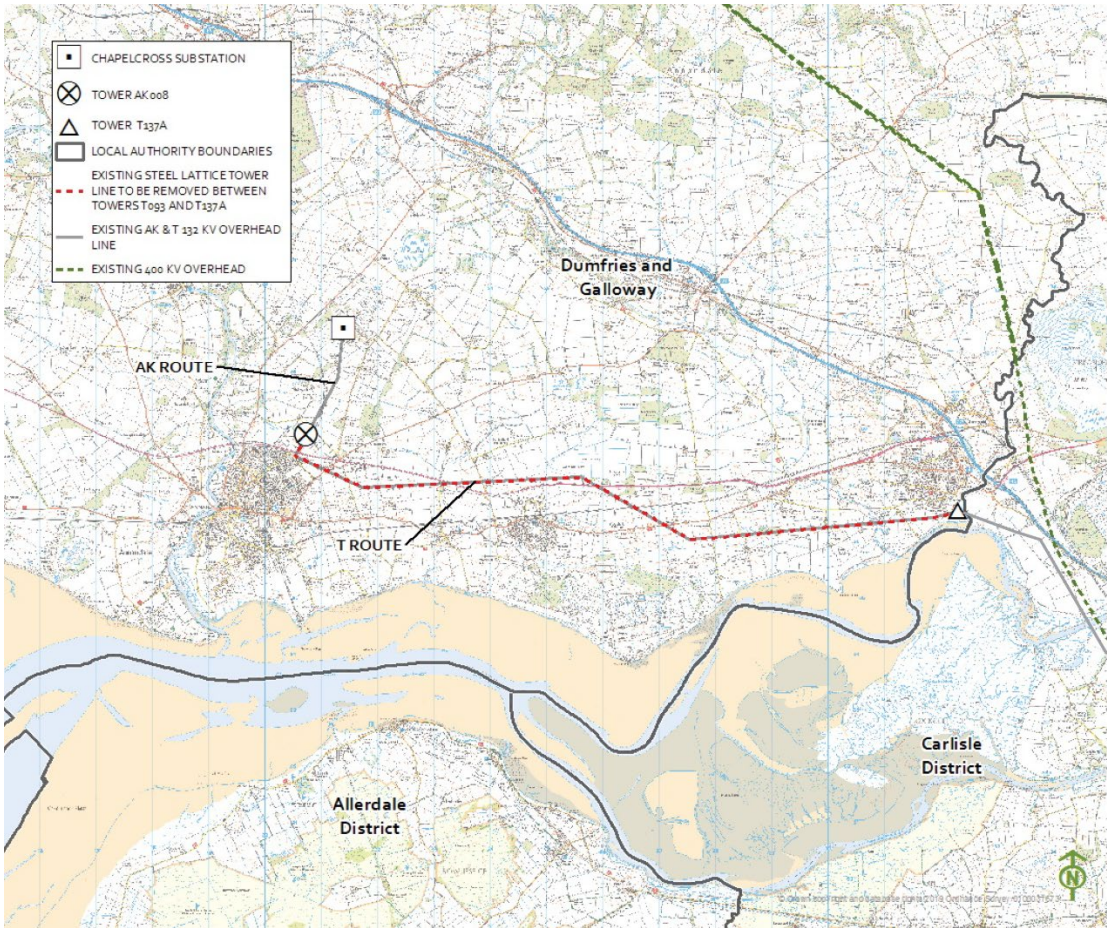

Diagram 1.1 Existing network

1.9. SPT own and operate the 17.5km section between Chapelcross 132kV substation and tower T137A (this includes the section known as the AK Route). NGET own and operate 8.6km of the T Route from tower T137A to Harker 132kV substation.

1.10. When SPT assessed the network as part of its asset replacement programme in the Chapelcross/ Gretna/ Ewe Hill/ Faw Side area, it was found to be running at full capacity. It is also getting older, which means the need for maintenance work becomes more critical and more difficult, and there is an increased risk from unplanned outages (faults). The existing line is therefore in need of replacement to cope with the additional generation and ensure secure and reliable supplies to existing and future customers.

1.1. SPT are therefore proposing to rebuild a section of the existing T Route. Towers on AK Route remain in good condition and can be reused and hence it is proposed to re-conductor this section rather than replace it. However, for reasons relating to technical and routeing requirements, one tower will be removed from AK Route (tower AK008) and 46 towers will be removed from T Route, including towers T93 to T137A. The T Route will therefore be rebuilt between a point south of AK007 near Annan and T137A in the Solway Firth on the Scotland/ England border. The rebuild will comprise a new 132kV single circuit wood pole overhead line around 13.5km long. In addition to the removal of tower AK008 on the AK Route, a new terminal tower will also be required at the western end of the route adjacent to the AK Route. Two new towers will be required at the Gretna end of T Route to transition to the NGET connection, one of which will be a tension tower.

1.2. The work will increase the pre-fault summer continuous rating from 89MVA to a minimum 227MVA. The existing overhead line between towers AK008 and T137A will be dismantled

and removed following construction of the replacement overhead line. This will include removal and ground reinstatement of the existing concrete foundations to approximately one metre depth.

1.3. The Government, Ofgem and the electricity industry, including SP Energy Networks, have reviewed their positions on overhead lines. They remain of the view that the need to balance economic, technical and environmental factors, as a result of statutory duties and licence obligations, continues to support an overhead line approach in most cases.

1.4. It is therefore SP Energy Network's view that, wherever practical, an overhead line approach is taken when planning and designing new transmission lines. However, SP Energy Networks accepts that there are specific circumstances in which an undergrounding approach should be considered. This is because overhead lines are considered preferable to underground cables, which have several technical, environmental and economic disadvantages including:

- Higher cost to project and ultimately to the consumer and bill payer (broadly 3x that of the equivalent overhead line);
- The physical extent of land required to accommodate cables;
- The fault repair time;
- Difficulties associated with general maintenance;
- Greater ground disturbance from excavating trenches; and
- The restriction of development and some types of planting within the cable corridor.

Routeing Objective

1.5. The objective of route selection is to identify a technically feasible and economically viable overhead line route, between AK Route and the license boundary with NGET, which causes the least disturbance to the environment and to people who live, work and enjoy recreation within it and which takes opportunities to achieve no net loss of biodiversity as well as seeking to include biodiversity net gain where possible.

Routeing Strategy

1.6. To deliver the routeing objective the following routeing strategy has been developed based on SP Energy Network's Approach to Routeing and EIA guidance and statutory duties under the Electricity Act 1989, as well as an understanding of the technical and environmental constraints and opportunities within the study area.

1.7. *'To limit the visual effects of the proposed overhead line, seek to develop a route which takes account of the existing infrastructure context, avoids higher ground and follows the grain of the landscape wherever possible, subject to avoiding areas which have highest amenity value and sensitivity and taking opportunities to consider biodiversity. The routeing study area is relatively well populated and the potential effects on residential areas and visual amenity experienced by occupants of individual properties will be considered with the aim of avoiding areas of highest environmental value and/ or limiting wider visibility through screening or placement of supports. As NGET are not proposing changes to the position of supports within their license area, at the point where the proposed overhead line meets the existing NGET tower, the angle between the existing and proposed line cannot be altered, i.e., it must remain on its current alignment. The route within the estuary is constrained by this requirement, and therefore cannot be moved to avoid this designated area on the edge of the Solway Firth.'*

1.8. The requirement to maintain the existing overhead line angle south of Gretna means that it is not possible for the route to entirely avoid the environmental designations, through which the existing 132kV overhead line currently passes, namely the environmental designations

associated with the Solway Firth (Ramsar, SPA, SSSI and SAC), and the site of the Battle of Sark.

1.9. Where the characteristics of the routeing study area were such that a balance had to be achieved to enable the overarching routeing objective to be met, the preferred route was identified using professional judgement, informed by both desk studies and field work, and also reflecting the Holford Rules.

Planning Policy and Legislation

National Planning Framework for Scotland

1.10. At national level, planning policy of relevance to the proposed development is currently set out in the Third National Planning Framework (NPF3) and Scottish Planning Policy. NPF3 highlights the importance of place and identifies where the national priorities for investment should take place to support the core aim in the Government's Economic Strategy for sustainable economic growth. SPP focuses on how development should be delivered if this aim is to be satisfied.

1.11. NPF3 is a long-term plan for Scotland that explains where development and infrastructure is needed to support sustainable and inclusive growth over the plan period of 20 to 30 years, with a focus on a transition to a low carbon economy. NPF3 was published in 2014 and will remain in place until NPF4[1] is adopted by Scottish Ministers.

1.12. NPF3 identifies national developments and other strategically important development opportunities in Scotland.

1.13. The classes of development considered to be national development are defined in NPF3: paragraph (2) (a) of Annex A's fourth development priority statement:

'Description of Classes of Development: Development consisting of…new and/ or upgraded onshore sub stations directly linked to electricity transmission cabling of or in excess of 132 kilovolts.'

1.14. Chapter 3 of NPF3 focuses on the promotion and achievement of a low carbon economy and the ambition to reduce greenhouse gas emission by 80% by 2050. NPF3 acknowledges that:

'Electricity grid enhancements will facilitate increased renewable electricity generation across Scotland. An updated national development focusing on enhancing the high voltage transmission network supports this……Distribution Network Operators (DNOs) also have plans to make essential upgrades to the distribution networks. This will be vital, particularly for enabling areas that are remote from the main grid to realise their renewable energy potential. The environmental impacts of this type of infrastructure require careful management.' (NPF3, para 3.28)

'Strengthening the electricity grid will be essential in unlocking renewable resources, both onshore and offshore.' (NPF3, para 3.40)

1.15. On the basis of the above, the proposed development is considered as a 'National Development' within NPF3 as it will operate at 132kV. The need for the T Route Rebuild Project is therefore established.

Scottish Planning Policy

[1] Once adopted (anticipated 2022), NPF4 will incorporate Scottish Planning Policy (SPP), which contains detailed national policy on a number of planning topics. For the first time, spatial and thematic planning policies will be addressed in one place and NPF4 will form part of the statutory development plan.

1.16. SPP, which was published in 2014, sits alongside NPF3 and is a statement of Scottish Government policy on how nationally important land use planning matters should be addressed across the country. In general terms, it seeks to direct the right development to the right place, and guide new infrastructure to appropriate locations. It is non-statutory.

1.17. With regards to the proposed development, SPP notes that:

'Our spatial strategy facilitates the development of generation technologies that will help to reduce greenhouse gas emissions from the energy sector.' (SPP, para 152)

'Efficient supply of low carbon and low cost heat and generation of heat and electricity from renewable energy sources are vital to reducing greenhouse gas emissions…' (SPP, para 153)

1.18. SPP sets out a series of Policy Principles by which these aims can be can be delivered, including:

'The planning system should:

- *support the development of a diverse range of electricity generation from renewable energy technologies - including the expansion of renewable energy generation capacity…;*
- *guide development to appropriate locations and advise on the issues that will be taken into account when specific proposals are being assessed; and*
- *help to reduce emissions and energy use…..from new infrastructure by enabling development at appropriate locations that contributes to:*
  - *Energy efficiency;*
  - *Heat recovery;*
  - *Efficient energy supply and storage; and*
  - *Electricity and heat from renewable sources….*' (SPP, para 154)

'Development plans should seek to ensure an area's full potential for electricity and heat from renewable sources is achieved, in line with national climate change targets, giving due regard to relevant environmental, community and cumulative impact considerations.' (SPP, para 155)

'Strategic development plans should support national priorities for the construction or improvement of strategic energy infrastructure, including generation, storage, transmission and distribution networks.' (SPP, para 156)

Scottish Power's Statutory and Licence Duties

1.19. There are a number of legal provisions which apply to the development of electricity transmission and distribution lines, and their associated infrastructure. The principal legislation which applies in the UK is the Electricity Act 1989.

1.20. As the licence holder, SPT is required under Section 9(2) of the Electricity Act 1989:

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

1.21. All transmission licence holders are required under Paragraph 3 (Preservation of amenity and fisheries: Scotland) of Schedule 9 and Section 38 of the 1989 Electricity Act, to take account of the following factors in developing proposals for the installation of overhead transmission lines:

- 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;

- To do what it reasonably can to mitigate any effects which the proposals will have on the natural beauty of the countryside or any such flora, fauna, features, sites, buildings or objectives; and
- To avoid, so far as possible, causing injuries to fisheries or to the stock of fish in any waters.

1.22. SP Energy Networks has a 'Schedule 9 Statement' which sets out how it will meet the duty placed upon it under Schedule 9. The Statement also refers to the application of best practice methods to assess the environmental impacts of proposals and to identify appropriate mitigation measures.

1.23. As a result, SPT is required to consider and then balance technical, economic and environmental issues to identify a proposed route for the new line.

Stakeholder Engagement

1.24. SP Energy Networks attaches great importance to the effect that its works may have on the environment and on local communities. In seeking to achieve 'least disturbance', SP Energy Networks is keen to engage with key stakeholders including local communities and others who may have an interest in the project. This engagement process begins at the early stages of development of a project and continues into construction once consent has been granted.

1.25. Under the Electricity Act 1989, SP Energy Networks is required to consider environmental, technical and economic matters, and reach a balance between them. This means that the proposed route will be the one, selected after an appraisal of a number of route options, which balances technical feasibility and economic viability with the least disturbance to people and the environment. Following engagement with relevant stakeholders, including local communities, reasoned professional judgement is used to establish the balance.

1.26. In Scotland, the requirements for public consultation in relation to applications for consent are not prescriptive. However, SP Energy Network's approach is to consult with all parties who have an interest in the project in accordance with accepted good practice. This includes preparation of a Consultation Feedback Report, which sets out the feedback received throughout the process and how the company has responded to this.

1.27. SP Energy Networks' approach to stakeholder engagement for major electrical infrastructure projects is outlined in 2.3 of the document 'The Approach to Routeing and Environmental Impact Assessment'[2]. This document sets out the following four key stages in the consultation process:

1. Pre-project notification and engagement;
2. Information gathering;
3. Obtaining feedback on emerging route options and substation sites; and
4. The EIA Stage.

1.28. The pre-project notification and engagement stage, of which this Routeing and Consultation Document forms part, allows consultees to inform the project design, provide advice on routeing and assessment methodologies, and make suggestions on how to effectively engage

[2] SP Energy Networks (2021) *Approach to Routeing and Environmental Impact Assessment.*

with other interested parties and local communities. It also provides consultees with an early understanding of the likely programme to submission of the application for consent, which will help ensure that they are able to engage effectively and in a timely manner as the project progresses.

1.29. The consultation targets information gathering to inform the detailed design of the new overhead line. Information on relevant environmental and planning considerations within the routeing study area is requested from statutory consultees and other relevant organisations. At the same time, consultations will be carried out to gather feedback on proposed data gathering techniques (such as seasonal bird surveys).

1.30. After the consultation period, suggestions from the consultees are reviewed by the design and environmental team, and then implemented if considered feasible and preferable, taking into consideration the approach to routeing.

1.31. These changes result in the 'proposed route' which is presented in the scoping and EIA stages.

1.32. A list of statutory consultees is provided at **Appendix A.**

Planning Legislation and Consenting Requirements

1.33. As noted above, the principle legislation which applies in the UK is the Electricity Act 1989. Under section 37 of the Electricity Act 1989, SP Energy Networks is required to seek consent to be granted by the Scottish Ministers for the construction of any overhead line operating at a voltage greater than 20kV. This 'section 37 consent' gives approval to install, and keep installed, an overhead electricity line. All applications for consent for overhead lines are processed on behalf of Scottish Ministers by the Energy Consents Unit (ECU).

1.34. On granting consent under section 37, Scottish Ministers may also direct that planning permission for that development shall be deemed to be granted in terms of section 57(2) of the Town and Country Planning (Scotland) Act 1997[3]. The consent and deemed planning permission may be subject to conditions.

1.35. The relevant planning authority in this case is Dumfries and Galloway, which means that development control decisions are based on the Dumfries and Galloway Local Development Plan 2 (LDP2), adopted in October 2019. Therefore, although consent for this project is being sought under section 37 of the Electricity Act 1989, consideration will also be given to the relevant policies in the LDP2 for consent for the proposed development where they would not constitute permitted development, as follows:

- The proposed 132kV wood pole overhead line and three steel towers between towers on the AK Route and T137A; and
- Facilitation works including felling of trees for 'wayleave' corridor, pole construction working areas, 'pulling areas' for winch sites, new temporary tracks and upgrading of existing permanent access tracks, temporary scaffolding for construction over public roads, temporary bridges for watercourses, and temporary compounds with soils, materials and vehicle storage areas and drainage.

3 There is a distinction to be drawn between the grant of an application for a section 37 consent and deemed planning permission under Section 57 of the 1997 Act. Deemed planning permission under Section 57 (2) of the 1997 Act can only be given upon the granting of a consent under section 37 of the 1989 Act. It is matter for the discretion of the Scottish Ministers as to whether they consider it appropriate to make such a direction in addition to the consent which is sought under section 37. The decision to grant consent under the 1989 Act is the principal decision.

EIA Development and Environmental Impact Assessment

1.36. Part 2 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017[4] (the EIA Regulations) provides guidance on 'screening', which is the process used to determine whether an environmental impact assessment (EIA) is required for a proposed development.

1.37. Schedules 1 and 2 of the EIA Regulations specify developments, which require, or may require that an EIA be undertaken. If the proposed development falls within Schedule 1 of the Regulations, an EIA is required in every case. If the proposed development falls within Schedule 2, the local planning authority considers whether it is likely to have significant effects on the environment by virtue of factors such as its nature, size or location. If this is the case then an EIA is required. Any section 37 application for development that falls under these categories must comply with the EIA Regulations and should be accompanied by an Environmental Impact Assessment Report (EIA Report).

1.38. Until the assessment has been undertaken, it cannot be confirmed whether or not the development would result in significant effects on the environment. However, as an electric line installed above ground with a voltage of 132kV, it falls under part (2) of Schedule 2 of the EIA Regulations. It is also located close to the Solway Firth, which is covered by several international and national nature conservation designations including Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), Special Protection Area (SPA) and RAMSAR.

1.39. Due to the sensitive nature of the area along sections of the route, the proposed development is considered by SP Energy Networks to fall within the requirements of the EIA Regulations and therefore SP Energy Networks proposes to undertake an EIA, without submitting a screening request. The likely effects resulting from the proposed development will be presented in the EIA Report, which will accompany the section 37 application.

1.40. The EIA approach and purpose of this Routeing and Consultation Document is explained under the consenting process below.

The Development and Consenting Process

1.41. As explained below, the development and consenting process requires five key stages of work – routeing, screening, scoping and preparation of the EIA/ EIA Report.

Stage 1: Routeing

1.42. Routeing uses established methodology and guidelines to identify and assess alternative routes against a set of environmental, technical and economic criteria, before identifying a preferred route for the new line. The routeing process is set out in this Routeing and Consultation Document, which plays an important role in the consultation process, as it provides an opportunity for stakeholders, the public and other interested parties to comment on the proposals as they are being developed. The culmination of this process is a proposed route for the new overhead line.

Stage 2: Screening

1.43. Screening is the process under the EIA Regulations by which Scottish Ministers determine whether a proposed project falls within the remit of the EIA Regulations, i.e., whether it is likely to have a significant effect on the environment and therefore requires formal assessment. In this case, SP Energy Networks has chosen not to seek a screening opinion and

[4] The Stationary Office Limited under the authority and superintendence of Carol Tullo, the Queen's Printer for Scotland (2017) The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017

will proceed to prepare and submit an EIA Report.

Stage 3: Scoping

1.44. Scoping is the process under the EIA Regulations by which Scottish Ministers determine those matters to be included within an environmental impact assessment. By engaging in meaningful scoping discussion, applicants can develop an early understanding of Scottish Ministers' and consultees' views on a proposed development. Scoping is essential to ensure that applications are both proportionate and comprehensive at the point of submission, thereby avoiding the requirement for the submission of supplementary environmental information and associated consultation processes.

1.45. SP Energy Networks will request a scoping opinion from the Scottish Ministers seeking their view on the issues that should form the focus of the environmental impact assessment. Compilation of a scoping opinion involves the Scottish Ministers consulting with a range of statutory (and non-statutory, as appropriate) consultation bodies in order to ensure that the scoping opinion is fully informed by their respective remits.

1.46. The request for a scoping opinion will be accompanied by a Scoping Document. This document will describe the proposed development and alternatives considered, outline the issues likely to require assessment in the EIA and the methodologies proposed to do this, and will make a request for indication of any issues/ concerns that need to be addressed.

Stage 4: Environmental Impact Assessment

1.47. Once a scoping opinion has been received, SP Energy Networks will undertake the environmental impact assessment and prepare the EIA Report. The EIA Report will include the information reasonably required to assess the likely significant environmental effects of the proposed development and must address to the issues raised in the scoping opinion. It will be prepared by competent experts and will be accompanied by a statement outlining the relevant expertise, or qualifications of such experts, sufficient to demonstrate that this is the case.

Stage 5: Application for Consent

1.48. Following completion of the EIA Report, SP Energy Networks will apply for consent, under section 37 of the Electricity Act 1989, to install, and keep installed, the proposed line. In conjunction with this, SP Energy Networks will apply for deemed planning permission for the new line, under Section 57(2) of the Town and Country Planning (Scotland) Act 1997.

1.49. The removal of the existing overhead line and supporting steel towers between tower T93 and T137A, as well as the removal of tower AK08 on ‘AK Route’ will be subject to the same Environmental Impact Assessment but are not subject to S.37 or planning consent requirements.

The Structure of the Routeing and Consultation Document

1.50. This report contains 9 chapters:

- Chapter 1: Introduction
- Chapter 2: Project Description
- Chapter 3: Approach to Routeing
- Chapter 4: The Routeing Study Area
- Chapter 5: Routeing Considerations
- Chapter 6: Route Options

- Chapter 7: Appraisal of Route Options
- Chapter 8: Selection of a Preferred Route
- Chapter 9: The Consultation Process

1.51. The report is supported by the figures and appendices listed on page 6 and contained within Volume 2.

2. PROJECT DESCRIPTION

Introduction

2.1. This chapter briefly describes the key components of the AK Route to T137A Rebuild project and forms the basis of the subsequent route appraisal.

2.2. At this early stage of the project, the details of the individual pole designs cannot be confirmed. However, the parameters set out below are considered appropriate for the purpose of informing the overhead line routeing.

The Proposed Development

2.3. A new overhead line supported on wood pole structures of the Trident design and accommodating a maximum voltage of 132kV is required to replace a section of the existing 132kV overhead line supported on steel lattice towers (AK and T Routes) between the AK Route near Annan and the NGET connection in the Solway Firth. NGET will be retaining their existing tower positions, which dictates that the replacement towers adjacent to the SP license boundary must remain on the same alignment.

2.4. A new terminal tower will be required close to the A75 near Annan to facilitate a connection to the AK Route. Two new steel towers will be required at the eastern end of T Route to transition from the wood pole overhead line to the existing steel towers at the NGET boundary. The two new towers at the eastern end of the connection will comprise one terminal and one tension tower.

2.5. The development of the project will also enable the section of the steel lattice tower line from T093 to T137A, as well as tower AK08 to be removed following construction of the replacement 132kV wood pole line.

Overhead Line Design

Wood Poles

2.6. The proposed design for the overhead line is to use wood pole support structures of the 'Trident' design with an UPAS conductor and fibre optic cable. Wood pole structures can be single or double (H-pole), depending on the location. Single wood poles will be used to support the proposed route apart from at the east and west ends of the route where two H-poles will be required respectively in order to transition onto the steel lattice towers. Four double (H-poles) will therefore be required in total.

2.7. Wood poles are fabricated from pressure impregnated softwood, treated with a preservative to prevent damage to structural integrity. This results in a dark brown appearance, which weathers to a silver/ grey colour over a period of approximately five years following installation.

2.8. Galvanised steel stay wires ('stays') are installed to resist the lateral mechanical forces acting on the pole structures in order to keep the structures vertical. These stay wires are used where the line changes direction and at terminal positions. Stay wires are attached near to the top of the structures and anchored in the ground by a below ground timber foundation block.

2.9. Trident wood pole support structures are easily screened by trees and are less likely to be visible from the surrounding landscape than steel lattice towers. They are also flexible in terms of routeing around obstacles, thereby enabling a good landscape 'fit'. Wood poles have a further advantage in that they only rarely need concrete foundations and so construction

methods are less intrusive.

2.10. The wood used for the poles is selected from sustainable sources and is seasoned and pressure treated with a prescribed wood preservative.

Types of Wood Pole Structure

2.11. There are three types of wood pole structure both of which are found as single and 'H' pole structures as shown in **Photos 2.1** and **2.2** below.

2.12. The structure used at each location will be selected to accommodate the design factors at that location such as span length, landform and angles of deviation:

- Intermediate – where the wood pole forms part of a straight line section;
- Angle: where the overhead line requires a change in direction. All angle structures require back stays; and
- Terminal: where the overhead line transitions onto steel towers at the east and west of the route.

2.13. The maximum allowable angle deviations on line using single wood pole support structures is 30°, with deviations up to 75° being permitted on line using 'H' pole section supports.

2.14. The images below show a typical single trident wood pole (**photo 2.1**) and a typical double (H-Pole – **photo 2.2**) wood pole which would be used at the east and west of the route in order to transition onto the steel lattice towers. **Photo 2.2** also illustrates the use of back stays.

Photo 2.1: Typical Trident Wood Pole

Photo 2.2: Typical H - Pole

Wood Pole Heights and Span Length

2.15. While Trident wood pole structures have a typical standard height above ground of 11m to 16m (this includes the steel work and insulators to support the conductors or wires), individual pole heights are determined to meet statutory clearance requirements. For example, pole heights may be increased where circumstances dictate, e.g. road and rail crossings. Conversely, pole sizes may be reduced where there are short spans or localised

changes in landform. Trident wood poles are typically 10 m – 22m long. Once foundation depth (2.5 m) is subtracted and insulator height (1.6 m) included, the range of pole heights above ground is 9.1 m – 21.1 m.

2.16. The selection of individual pole sizes follows a detailed site survey, which is undertaken once a proposed route has been identified.

2.17. The section of overhead line between poles is known as the 'span', with the distance between them known as the 'span length'. Span length is dependent on the same criteria as line height. On average, the span length for wood pole lines is 80 – 110m.

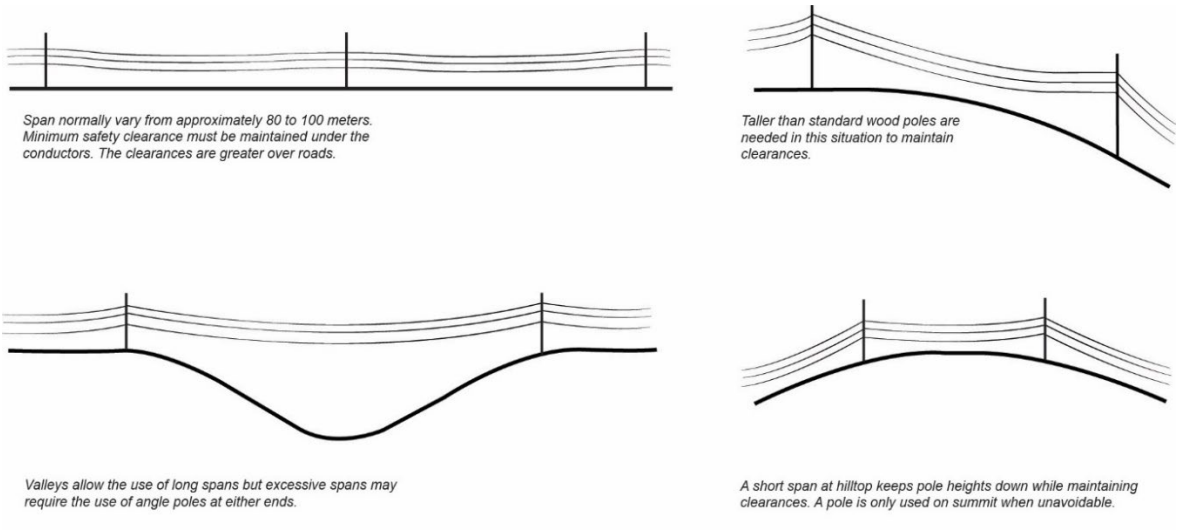

Diagram 2.1: Overhead Line Span Lengths

Wood Pole Overhead Line Components

2.18. The line will carry 3 UPAS conductors with an Optical Phase Conductor (OPPC) fibre wire around the middle phase. Each conductor is made of aluminium alloy with a diameter of 22.6mm2. The Trident design has no earth wire, being earthed at either end.

2.19. Insulators attached to the pole cross arms support the conductors and prevent the electrical current from crossing to the pole body. The insulators are likely to be made from a grey polymeric compound (plastic). The steelwork and insulators are approximately 1.76m in height.

Steel Lattice Towers

2.20. As noted previously, in addition to the wood pole overhead line, three steel lattice towers will be required – two at the eastern end of the route and one at the western end. These will be of a steel lattice construction fabricated from high tensile steel, which is assembled using galvanised high tensile steel bolts with nuts and locking devices. An example of a typical steel lattice tower annotated to show the different components is shown in **Photo 2.3**.

2.21. As the new overhead line will be single circuit, only one side of the tower will carry conductors as shown in **Photo 2.4**, which is an existing steel lattice tower (PL16 type) on the AK route.

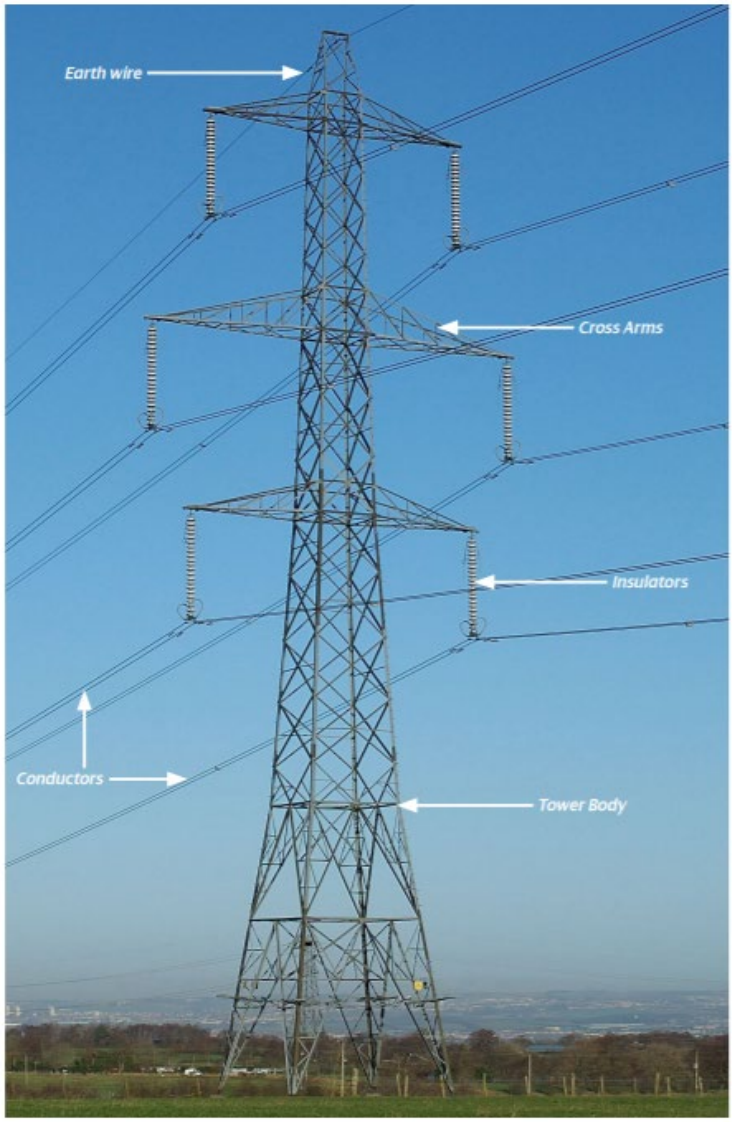

Photo 2.3: Typical Steel Lattice Tower (double circuit with conductors on either side)

Photo 2.4: Single Circuit Steel Lattice Tower with conductors only on one side

2.22. There will be a new terminal tower at the western end of the route and a tension and terminal tower at the eastern end. These different types of tower are described below:

- Suspension or Line: where the tower is part of a straight line section;
- Tension or Angle: where there is a horizontal or vertical deviation in line direction of a specified number of degrees. There are three main types of angle tower 30°, 60° and 90°; and
- Terminal: where the overhead line terminates into a substation or on to an underground cable section via a separate cable sealing end compound or platform.

Tower Heights and Span Length

2.23. Span lengths between towers average between 250m and 350m but can go up to 400m if there is a requirement to span a feature such as a river or a loch.

2.24. Tower height is used to regulate the statutory clearances required for conductor height, which is determined by the voltage of the overhead line (the higher the voltage, the greater the required safety clearance) and the span length required between towers. The average height for 132kV towers ranges between 20m and 30m.

Tower Colour

2.25. Steel lattice towers are painted grey.

2.26. It is not possible to colour towers to camouflage them for all times of day or all seasons. However, the colour of towers can only be recognised from a short distance. Beyond this distance, the colour is not distinguishable and 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. Towers normally turn a dull grey colour after about 18 months.

Ancillary Development

2.27. The components listed above are considered to be permanent for the purposes of applying for section 37 consent and deemed planning permission and the EIA process. Other ancillary components are only required during the felling and construction/ dismantling phases.

2.28. Deemed planning consent will be sought for these temporary ancillary components, which include:

- Stone access tracks to pole/ towers;
- Watercourse crossings;
- Hardstanding for working areas around wood poles/ towers;
- Construction compounds/ laydown areas; and
- Winching/ pulling areas.

2.29. The design of these ancillary components will be developed as the project progresses, but is not considered in detail during the routeing and siting stage of the project.

2.30. Outside of forestry/ woodland, SPT seek to ensure land agreements protect the resilience of the overhead line and that nothing that could injuriously affect the safe operation and maintenance of the infrastructure is located in such proximity in future. For connections crossing forestry/ woodland a standard wayleave width of 60m (30m each side of the overhead line) is typically sought, although this may be altered depending on the likely growth height of the trees.

Infrastructure Location Allowance

2.31. As the project progresses and a proposed route is identified, the EIA process will be used in combination with technical design work to develop the detailed pole design/ locations upon which the assessment will be based. There are instances, however, where post-consent, it may be necessary and desirable to refine the final vertical and horizontal profile of pole positions and heights, as well as the routes of access tracks. This is to reflect for example the following:

- Pre-construction confirmation of dynamic environmental conditions, e.g. the location of protected species;
- More detailed technical survey information, particularly for unconfirmed ground conditions such as peat; and
- To provide further scope for the mitigation of environmental effects.

2.32. To ensure that the final positions of the overhead line and associated works are not varied to such a degree as to cause an increase in the significance of likely environmental effects, an Infrastructure Location Allowance (ILA) is proposed. This will permit the siting of a pole/ tower to be adjusted within a 25m radius of the consented pole/ tower positions and within 50m either side of the indicative track locations.

2.33. Implementation of the ILA will be controlled through the proposed detailed Construction and Decommissioning Environmental Management Plan (CDEMP). Should a request to vary a pole/ tower or access track position within the ILA be required, the relevant environmental baseline will be reviewed in correspondence with the project's Ecological Clerk of Works in the first instance, as the environmental surveys extend beyond the proposed 50m ILA tolerance. Should this review identify any potential issues, further environmental advice will then be sought from retained specialists as appropriate. A procedure for notifying relevant statutory consultees of the proposed ILA movements will also be agreed with these bodies

prior to construction commencing and a revised landowner agreement will be sought in the first instance.

Construction Enabling Works

2.34. Construction of new overhead lines follows a well-established sequence of events, which is typically shorter for wood poles than for steel lattice towers. The first stage is the preparation of accesses and felling of woodland and trees as described below.

Accesses

2.35. Delivery of construction materials to the construction compounds and individual pole/ tower locations will be achieved by access from the existing public road and track network. This may require widening of field gateways, removal (and subsequent replacement) of hedges and fences, and the provision of temporary plain and stockproof fences.

2.36. During construction, vehicular access will be required to each pole/ tower location along the route. The type of access will depend on a variety of factors, including the sensitivity of the location, type of land use and the ground conditions, with the latter confirmed through pre-construction ground investigations. The overall design objective for the temporary construction access tracks will be to avoid and/ or reduce any potential impacts upon natural and cultural heritage assets, while causing the least disturbance to current land use, and land management practices.

2.37. The initial preference when taking temporary access is to use low ground pressure vehicles and plant. However, depending on plant requirement and local ground conditions at the time of construction, temporary tracks capable of supporting heavy plant safely may need to be constructed. These tracks will be formed primarily of stone. Where access is required to be taken through any sensitive areas identified during the EIA process, other less intrusive methods such as temporary steel matting, or timber roadways would be employed as shown in Photos 2.5 and 2.6.

Photos 2.5 and 2.6: Temporary steel matting and timber roadway

2.38. All temporary tracks will be removed after commissioning with land being restored to its former condition.

2.39. In negotiation of these arrangements, all efforts will be made to minimise damage to the landholder's interests. Land for temporary set-down areas and other construction activities may also be required from landowners. SP Energy Network's Land Officers seek to reach agreement on mutually acceptable arrangements for the above with landowners and/ or any other relevant interested parties. Once a line or associated infrastructure has been constructed, access is only required periodically for routine maintenance and occasionally for emergency repairs.

Watercourse Crossings

2.40. The preferred 132kV overhead line route has been designed to minimise watercourse crossings, however, where a new temporary access track is required to cross a watercourse crossing options will include use of temporary bridges, overbridging and culvert installations. All water crossings would be compliant with SEPA requirements and

Temporary Construction Compounds, Laydown Areas and Working Areas

2.41. It is likely that temporary construction compounds will be required, the location of which will be determined as the project develops. These will be lit as required during normal working hours and for site security reasons they will also be fitted with electrical sensors to activate the compound lighting during the hours of darkness should movement be detected. The compounds will be fenced off during construction and the land will be restored once construction is complete.

2.42. In addition to the temporary construction compounds, a series of laydown areas will be required to construct the new overhead line. Measuring approximately 20m x 20m, these will be covered with crushed stone to provide a durable surface to facilitate safe access and egress from the public road. The location of laydown areas will be identified as the project develops.

2.43. Temporary working areas measuring approximately 30m x 15m will be required for foundation excavation and pole erection. This area will be increased to approximately 30m x 30m at the tower locations.

Tree Felling and Trimming

2.44. Although the need for this will be limited by careful routeing, there will be a requirement to fell some woodland and individual trees both to physically construct the line and also to maintain the statutory clearances required for its safe operation and maintenance. . To achieve this the minimum wayleave through commercial forestry is 60m (30m either side of the line), however, where the new 132kV overhead line is routed through areas of broadleaf woodland, the extent of tree clearance or trimming within the wayleave will be determined based on a detailed assessment of the type, age and condition of trees in that location to minimise loss of trees. Should micro-siting under the infrastructure location allowance be required once at site, an assessment would be required by a qualified arboriculturist to determine which trees could be retained.

2.45. There is an ongoing requirement to ensure that any trees within the wayleave corridor do not impact on safety clearances, with trees being surveyed and cut back where necessary on a three-yearly inspection cycle to ensure that no clearance infringements occur. Should these be identified then SP Energy Networks will undertake the necessary assessments to ensure that clearance works are in line with their statutory and licence duties.

Constructing the Overhead Line

2.46. A brief description of the construction process for wood poles and steel lattice towers is provided below.

Wood Poles

2.47. The erection of the wood poles will require an excavation to allow the pole brace block and/ or steel foundation braces to be sorted and stored in the appropriate layers and used for backfilling purposes, as shown in **Photo 2.7**. No concrete is used. Any excavated material which is not used, will be removed from site and treated in accordance with the Site Waste Management Plan (SWMP).

Photo 2.7: Wood pole foundations

2.48. Techniques for construction of wood poles across areas of peat can include the use of 'floating' foundations or soil mixing techniques, which stabilise peat.

2.49. Intermediate poles are erected in sections, i.e. between angle support poles and/ or terminal poles. The insulator fittings and wood poles forming the pole support will be assembled locally to excavate the foundations. The pole foundation holes will then be backfilled and the pole stay wire supports attached to the ground in preparation for conductor stringing. Erection of an intermediate pole is shown in **Photo 2.8.**

Photo 2.8: Erection of an intermediate pole

2.50. Once several poles have been erected, conductor stringing can be commenced. This requires temporary 'pulling' (or 'stringing') areas at certain pole locations along a line approximately every 3 – 4km or where deviation of the route occurs. In some cases the temporary pulling areas overlap with the temporary working areas. The typical pulling area measures around 25 x 15m for wood poles and where ground conditions require, the temporary pulling area will be formed using wood/ steel matting. All temporary surfacing materials will be removed once stringing operations are complete.

2.51. At each pole pulling location, a winch will be set up at one end of the stringing section, with a 'tensioner' set up at the opposite end of the stringing section. Pilot wires will be placed in blocks which will be fitted to the top of the insulator strings on the poles and connected around the winch and tensioner at either end. Using the winch to pull the pilot wires, the conductor will then be drawn through the section, using the tensioner to maintain a constant tension. This allows the conductor to be controlled without touching the ground, avoiding damage to both the conductor and the underlying ground.

Steel Lattice Towers

2.52. The foundation type and design for each of the three steel lattice towers will be confirmed following detailed ground investigations at each tower location.

2.53. The foundations of each tower leg are likely to be of a concrete pyramid type. However, depending on particular geological conditions, there may be a requirement to use mini-piled, auger or rock foundations, which generally requires less ground disturbance but greater volumes of concrete. These require the drilling or auguring of several holes for each leg of the tower. These holes are then reinforced with steel and concreted or grouted. The tower steelwork connection points to foundations are known as 'stubs' and these are located and fixed by means of a pile cap at each leg position.

2.54. Excavations will be undertaken for each leg of the tower. The dimensions of the excavation will vary depending on the tower type to be constructed. A typical L4 leg excavation will be 14m2 by 3.5m deep for the line towers, increasing up to approximately 20m2 by 4.55m deep for angle

towers. Some breaking of rock using a hydraulic pecker may be required to achieve the required depths for the tower foundations. The excavated material will be sorted into appropriate layers and used for backfilling.

2.55. Once the excavations are formed, the tower legs will be fixed in accordance with the foundation design before assembling the 'pyramid' formwork around the stub as shown in **Photo 2.9**. The foundation will then be concreted.

Photo 2.9: Typical Steel Lattice Tower Foundation

2.56. Steelwork for each tower will be delivered to site in sections using a heavy goods vehicle (HGV). Tower assembly will commence by either setting up a derrick crane and building up the tower in steel sections or, alternatively, assembling the tower in part at ground level and lifting the tower in sections by crane to complete assembly. Erection of a steel tower is shown on **Photo 2.10**.

Photo 2.10: Tower under Construction

2.57. Once a sufficient number of sequential sections of towers have been erected, a winch will be set up at one end of the stringing section, with a 'tensioner 'set up similarly at the other end of the section. Pilot wires will be placed in blocks hanging from the insulators on the towers and connected around the winch and tensioner at either end. Using the winch to pull the pilot

wires, the conductor will then be drawn through the section, using the tensioner to maintain a constant tension. This allows the conductor to be controlled without touching the ground, avoiding damage to both the conductor and the underlying ground. The stringing of a tower is shown on **Photo 2.11**.

Photo 2.11: Stringing of a tower

Crossing of Existing Overhead Lines and other Infrastructure

2.58. The preferred route crosses several existing lower voltage lines (11kV and a proposed new 33kV line), roads and the Glasgow South Western railway. It will also pass under the existing SP Energy Network's T Route. This will require a series of mitigation measures which will be explored as the project develops.

Timescales for Construction Works

2.59. Construction and erection of standard single pole typically takes around half a day depending on the ground conditions and location, i.e. it may take longer if the ground is soft or if shallow rock is encountered. Angle poles and H-Poles can take longer due to the need for the wire stays to stabilise the poles in the ground. It is anticipated that the contractor will use four construction staff at each pole site.

2.60. The duration of construction activity at any single tower site is approximately two 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 typically spread over about four months, with periods of inactivity between, or longer if construction difficulties are experienced elsewhere along the line or ground conditions prevent normal progress.

Maintenance of the Overhead Line

Wood Pole/ Steel Lattice Tower Maintenance

2.61. Most overhead line components generally require very little maintenance, although periodic painting of the tower steelwork may be required and components are regularly inspected for corrosion, wear, deterioration and fatigue. Towers which have deteriorated significantly may be dismantled carefully and replaced.

2.62. Wood poles are usually visually inspected on foot every two years to check for any corrosion, wear, deterioration or fatigue of their metal parts. They are also inspected on a bi-annual basis by helicopter. Overhead lines supported on wood pole structures typically require refurbishment or replacement after approximately 30 – 40 years.

Maintenance Inspection

2.63. It is likely that there will be periodic inspections of the wayleave corridor on a two yearly inspection cycle, with one inspection on foot and the alternate year by helicopter.

2.64. Appropriate tree clearance prior to construction will minimise any major secondary undergrowth in the wayleave corridor. However, should secondary growth be identified during the inspection visits, a maintenance team will be required to re-establish the statutory clearances to the line.

2.65. Temporary tracks should not be needed for maintenance, as access is likely to be by tracked or low pressure vehicles. The wayleave will then be walked and mechanical saws used to clear the secondary growth. The volume of timber generated will be such that it could be left to decay naturally.

Decommissioning of the Proposed Overhead Line

2.66. When the operational, life of the 132kV wood pole section of the proposed overhead line comes to an end (30 – 40 years), the line may be re-equipped with conductors and insulators and the wood poles replaced. Alternatively the wood pole line may be decommissioned. On this basis the effects of the wood pole overhead line are considered to be long term.

2.67. When the operational life of the three steel lattice towers (two at the eastern end of the route and one at the western end) comes to an end (also 30-40 years), the line may be re-equipped with conductors and insulators or again, it may be decommissioned. the process would be the same as that described below regarding the removal of the existing steel lattice towers, with materials being recycled where possible. On this basis the effects of the three steel lattice towers are also considered to be long term.

Removal of the Existing Steel Lattice Towers

2.68. The new 132kV overhead line on wood pole support structures will replace the T Route, which is supported on steel lattice towers. To avoid disruption to essential power supplies currently provided by the existing line between towers AK008 and T137A, it will be decommissioned and removed following commissioning of the new overhead line. The decommissioning will be completed immediately after commissioning of the new 132kV overhead line. Wherever possible, components will be re-used.

2.69. The removal of the steel lattice towers will involve attaching a steel bond wire between the earth wire peak and a mobile winch (typically attached to a tractor) after which the steel legs of the tower will be cut (using a disc saw) above the concrete foundations. The tractor winch will then be used to fell the tower in a controlled manner. Towers will be cut into sections on the ground and removed from site.

2.70. Foundations will be removed to a minimum depth of one metre below ground level using a

tracked excavator which will dig around the concrete footings to a depth of approximately 1m. The excavator will then be used to break the concrete around the steel 'raker' bar within the concrete. All concrete will then be removed from the excavation and the remaining steel raker bar cut with a disc saw to approximately 1m. This action will be repeated for the remaining tower legs, following which the area will be cleared and the ground reinstated to its former use. Wherever possible, access for tower removal will be undertaken using low pressure plant and vehicles to avoid the requirements for stone roads.

2.71. As per construction of the wood pole overhead line, 20m X 20m temporary laydown areas will be established at suitable intervals and appropriate locations along the existing line between the AK Route and T137A. These will be surfaced with crushed stone, which will be removed and the area reinstated following completion of the works.

2.72. The removal of a steel lattice tower and its foundations typically requires approximately 4 – 5 days, although the exact timings are dependent on contractor's methods, weather conditions and ground conditions during the removal process. The activities may also not happen in one continuous process.

Reinstatement Works

2.73. As soon as possible after completion of the construction and decommissioning works, the temporary tracks, and other areas of temporary hardstanding, including laydown areas and accesses will be removed and the ground reinstated. This will enable the subsoil to be sealed preventing sediment run-off. Topsoil will be stripped and stored adjacent to the works in a manner which ensures that soil quality is retained. Restoration of moorland, arable farmland and pasture will aim to achieve original soil profiles. The topsoil will then be transported from the topsoil storage locations to the works and will be placed by a tracked excavator. The area may be seeded if considered appropriate.

Biodiversity Net Gain

2.74. Assessment and delivery of Biodiversity Net Gain in Scotland follows an emerging approach and is subject to review and change as the process evolves and policies are introduced, such as NPF4. With no formal metric in place for developments in Scotland at the time of drafting, the Scottish and Southern Electricity Networks (SSE) Biodiversity Project Toolkit v3[5] is taken as the best guidance at present. SPEN have also set out targets within the current T2 business plan to facilitate the delivery of no net loss, moving to net gain by the end of the T2 business plan period.

2.75. SP Energy Networks will seek opportunities for Biodiversity Net Gain (BNG) in accordance with the company's commitments and in consultation with stakeholders including Nature Scot. This will involve a desk based review of opportunities from the Phase 1 Habitat Survey for this project, as well as a review of opportunities presented at our other sites.

2.76. This work will be supported through discussion with stakeholders to identify potential enhancement projects within the wider study area. The existing baseline will be assessed using the Defra Biodiversity 3.0 Metric (published 7th July 2021). This will quantify the habitats impacted by the project and the mitigation required as part of the application. We would then use the Defra Metric to provide scenarios of BNG that could be delivered on the project. Examples may include using biodiversity diverse seed mixes on existing sites and compounds, undertaking woodland management at woodlands within or adjacent to the Order Limits or using the Environmental Bank to fund offsite enhancements through for example, land

[5] Scottish and Southern Electricity Networks (2020) Biodiversity Net Gain Toolkit (v3) and User Guide

agreements.

2.77. It is important to note that irreplaceable habitats, defined in Technical Note T3 of the Practical Guide[6], (e.g. ancient woodlands and active peatlands) cannot easily be replaced and thus are excluded from the metric. A development project cannot achieve BNG if irreplaceable habitat is lost.

2.78. The metric will be used by competent ecologists who have a sound understanding of ecological processes to ensure that the key principles that underpin it are applied appropriately. Ecological expertise and judgement are required to make the most appropriate decisions for on- and off-site habitat restoration and creation to ensure these meet local biodiversity objectives, while also contributing towards nature conservation priorities at regional and national levels. The process followed is shown in the flow chart below.

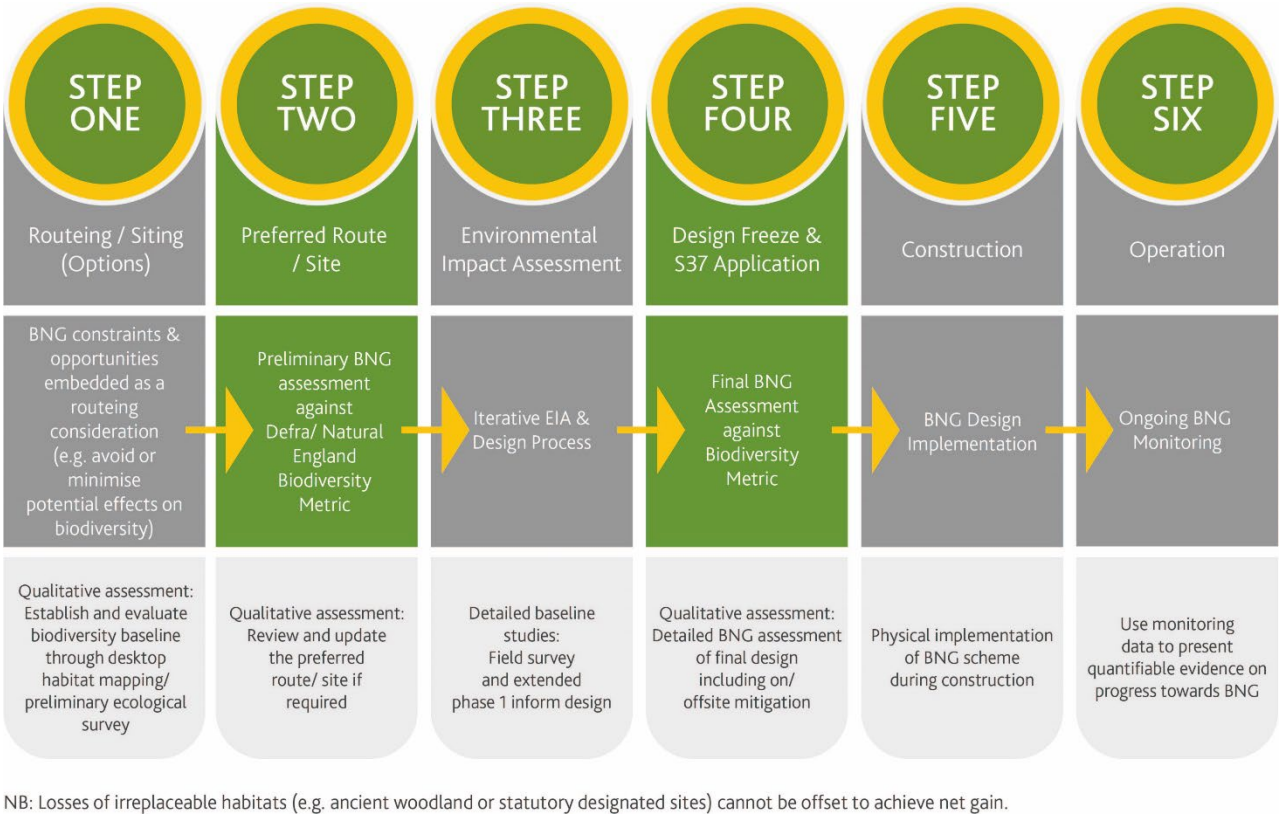

Diagram 2.2 SPEN Emerging Approach to Biodiversity Net Gain

[6] CIRIA, CIEEM, IEMA (2019) Biodiversity Net Gain: Good practice principles for development, A Practical Guide. Available at: https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-fordevelopment-a-practical-guide/

3. APPROACH TO ROUTEING

Introduction

3.1. This chapter describes the process, which SP Energy Networks follows to select a proposed route for an overhead line. This process is important because the most effective method of causing 'least disturbance' is by careful routeing.

3.2. The UK Government and the Electricity Industry, including SP Energy Networks, constantly review their positions on the routeing of major electrical infrastructure projects. The evidence available, including economic, technical and environmental factors, specifically statutory duties and licence obligations, will support an overhead line approach in most cases. It is therefore SP Energy Network's view that, wherever practical, an overhead line approach is taken when planning and designing major electrical infrastructure projects.

3.3. Having established the need for a project, the starting point is therefore always to identify an overhead line route. Underground cable is only considered when all overhead line options have been exhausted, or if a developer unilaterally chose to cover the additional cost for a connection. If an underground cable is required for a section of an overhead line route, the objective is to minimise the length of underground cable necessary to overcome the constraint to overhead line routeing, consistent with a balance between technical, economic viability, and environmental considerations.

SP Energy Network's Approach to Routeing Overhead Lines

3.4. SP Energy Network's approach to routeing overhead lines is set out in their guidance document, 'Approach to Routeing and Environmental Impact Assessment'[7]. The approach is in line with the company's commitment to limiting disturbance to people and the environment in accordance with its statutory and licence duties.

3.5. The approach to routeing an overhead line is based on the premise that the most common effect of an overhead line is visual, as a result of its scale relative to objects in the vicinity such as buildings and trees, and that there is no technical way of reducing this other than the choice of pole or tower, and only limited ways of achieving screening through planting. The most effective way of causing the least visual disturbance is therefore by careful routeing. A reduction in visual intrusion can be achieved by routeing the line to fit the topography, by using landform and trees to provide screening and/ or background, and by routeing the line at a distance from settlements and roads. In addition, a well-routed line takes into account other environmental and technical considerations and avoids, wherever possible, the most sensitive and valued natural and man-made features.

3.6. Key features of the approach are that it:

- It is an iterative process;
- Incorporates feedback from stakeholders; and
- Establishes a balance between engineering requirements, economic viability, land use and the environment.

3.7. Professional judgement and engagement with relevant stakeholders, including local communities help to establish the balance.

[7] SP Energy Networks (2021) *Approach to Routeing and Environmental Impact Assessment.*

Established Practice for Overhead Line Routeing

The Holford Rules

3.8. It is generally accepted across the electricity industry that the guidelines developed by the late Lord Holford in 1959 for routeing overhead transmission lines, 'The Holford Rules', should continue to be employed as the basis for routeing high voltage overhead lines. The Holford Rules were reviewed circa 1992 by the National Grid Company (NGC) plc (now National Grid Transmission (NGT)) as owner and operator of the electricity transmission network in England and Wales, with notes of clarification added to update the Rules.

3.9. A subsequent review of the Holford Rules (and NGC clarification notes) was undertaken by Scottish Hydro Electric Transmission Limited (SHETL) and SP Transmission Ltd (SPT) in 2003. This review concluded that the Holford Rules should be used as originally formulated but with the NGC's notes of clarification modified and expanded to meet Scottish circumstances. Given the similarities between the Scottish and Welsh landscapes, the SHETL and SPT approach is considered relevant as the basis for this routeing study. References to the Holford Rules throughout this document therefore mean the Holford Rules (with NGC and SHETL notes).

3.10. The Rules are based on the principle that the major effect of an overhead line is visual and that the degree of visual intrusion can be reduced through careful routeing, by avoiding prominent ridges and skylines, following broad wooded valleys, avoiding settlements and residential properties and maximising opportunities for backclothing[8] and the screening of infrastructure.

3.11. It is important to note that the Holford Rules are guidelines only and can be adapted to reflect the characteristics of the area in question, provided that this is justified fully.

3.12. The Holford Rules and NGC and SHETL clarification notes are included as **Appendix B**.

Determination of Likely Effects

3.13. Overhead lines are large linear elements in the landscape. They are likely to affect, to varying degrees, environmental aspects of the area through which they run, including:

- Landscape and visual amenity;
- Biodiversity and geological conservation (including ornithology, woodlands/ trees and peat;
- Historic environment (including archaeology); and
- Flood risk.

3.14. The scale of an overhead line relative to objects in close proximity, such as houses and trees, is such that the most common effect is usually the visual intrusion of the poles or towers on the area through which the line is routed. The towers/ poles and conductors may be visible from houses, roads, tourist attractions and other important locations and may alter the character of the landscape in which they are sited.

3.15. Towers and to a lesser extent, poles, occupy a ground area and require below ground construction which may disturb, for instance, archaeological remains or sites of nature conservation interest. Construction of the line may require temporary access tracks to be

[8] The term 'backcloth' tends to be used in landscape architecture to describe what is seen within the background of a view. It is often used interchangeably with the terms 'backdrop' and 'background', but tends to be associated more commonly with visual effect rather than landscape effect. The visibility and perception of an object is influenced by the effects of backclothing.

built. Conductors strung between poles or towers require clearance from trees and other objects.

Key Steps in the Routeing Process

3.16. The approach to routeing the T Route Rebuild broadly follows the well-established and sequential step-by-step process outlined below and summarised in **Diagram 3.1**. Steps are undertaken sequentially, with one step informing the next step, culminating in the confirmation of a preferred route and ultimately a proposed route for the new overhead line.

3.17. Whilst presented as a linear process for simplicity, the approach is iterative and the steps may be re-visited several times. The outcome of each step is subject to a technical and, where relevant, consultation, 'check' with key stakeholders and the public, prior to commencing the next step. Professional judgement is used to establish explicitly the balance between technical, economic and environmental factors.

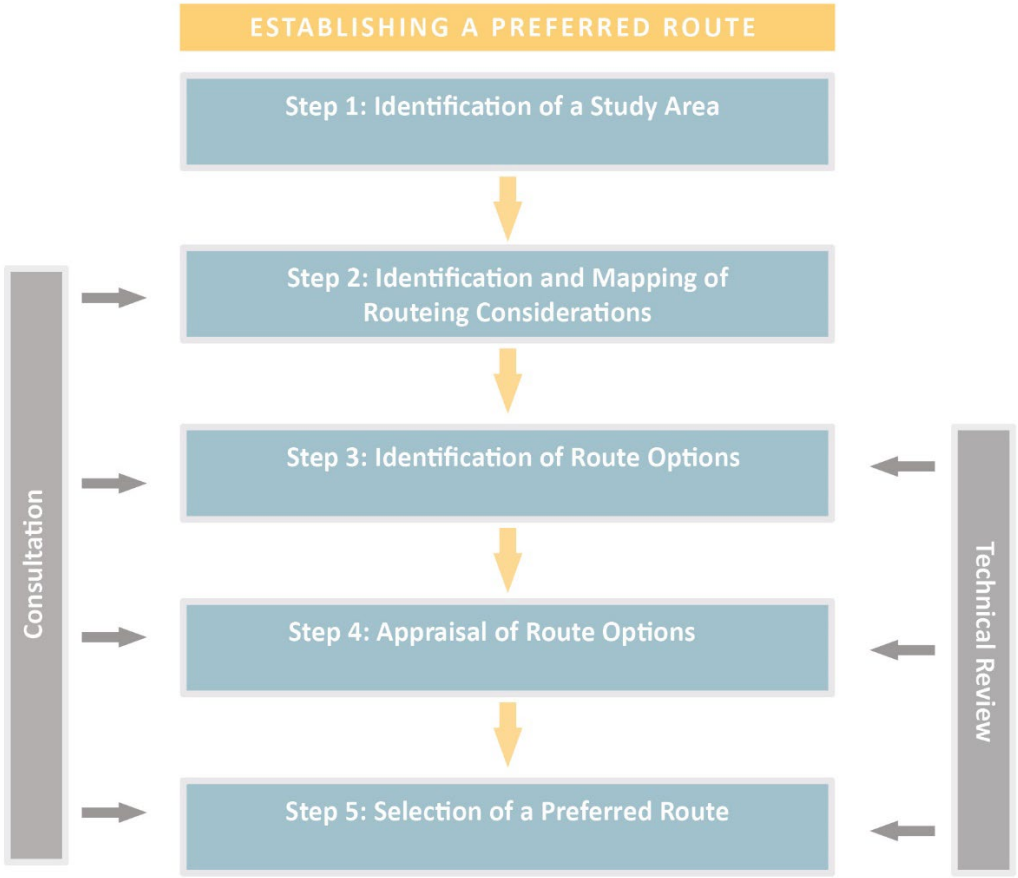

Diagram 3.1: Key Steps in the Identification of a Preferred Route for the T Route Rebuild

Identification of a Routeing Study Area and Identification and Mapping of Routeing Considerations (Steps 1 and 2)

3.18. The main environmental (Holford Rule 1 and 2 constraints) and technical considerations which should be taken into account in routeing an overhead line with least visual intrusion and least disturbance to people and the environment are determined from a study of potential effects and established routeing practice. These 'routeing considerations' include topography, landscape character and areas of environmental value and historical interest.

3.19. A routeing study area is defined and information on the main environmental considerations within it is gathered. In addition, information is gathered on the technical considerations

which apply such as slope, altitude and the presence of watercourses. Consultations are undertaken to obtain additional, up-to-date information on relevant considerations. The routeing study area needs to be large enough to accommodate all likely options, reflecting the project design requirement, taking account of factors such as topography and land mass.

3.20. Considerations which are likely to constrain routeing are mapped together on a 'constraints map' which allows an overview to be taken of the routeing issues, with all major environmental constraints in their relative locational context. The landscape character of the routeing study area is also mapped. This can be based on general published studies, but requires refinement for the detail of the route selection.

3.21. The resulting constraints map gives an overview of areas to be avoided and areas where there may be opportunities to find a route that achieves a good landscape fit (following Holford Rules 3 – 7).

Development and Appraisal of Route Options (Steps 3 and 4)

3.22. Considerations identified in the routeing strategy are applied to the routeing study area to establish a number of possible 'route options'. This process involves the avoidance wherever possible of designated areas of highest environmental value (Holford Rules 1 and 2). These areas generally include sites of natural and cultural heritage value designated at a national, European or international level as these are afforded the highest levels of policy protection.

3.23. As each route option is developed, its effect on the routeing considerations is recorded. At this stage, a route option may be rejected, modified or studied in more detail. In conjunction with the collection of relevant data and the evaluation of route options, the routeing considerations may be re-appraised and updated as more information becomes available. Route options may then be rejected or modified, or new route options developed. By definition, the route of the line must be continuous and as a consequence, the environmental advantages for routeing in one area may be offset by the disadvantages of routeing through an adjoining area.

3.24. The best performing route options continue to be refined and re-appraised. The objective of this process is to identify the 'preferred route' which cause the least likely disturbance to people and the environment of the options considered whilst being technically feasible and economically viable.

3.25. Routes are also appraised in terms of their technical and economic feasibility, including likely effects on landowners. Technical considerations in routeing generally comprise buildability and factors such as altitude, slope angle, flood risk, crossing of particular physical features such as bridges, main roads and railways. SP Energy Networks does not regard these technical and economic considerations as absolute constraints, but instead sees them as a guide to routeing, in that such features may present particular engineering challenges.

Selection of a Preferred Route (Step 5)

3.26. After the comparative appraisal of route options, SP Energy Networks selects a preferred option. This is then taken forward for stakeholder and public consultation.

4. THE ROUTEING STUDY AREA

Initial Identification of Broad Study Area

4.1. As part of the routeing methodology, a broad study area was identified around the connection points, and relevant constraints to routeing were mapped. This equated to a 5km offset around the existing line between Chapelcross substation and tower T137A, as shown in **Figure 2** and extends across the Scottish-English border into Cumbria, where it encompasses the local districts of Allerdale and Carlisle. Chapelcross and tower T137A are located only in Scotland and designations to the north of the Solway Firth are therefore more likely to be affected than those to the south. However, designations relevant to Cumbria still need to be taken into consideration, including views across the Solway Firth from these locations.

4.2. **Figure 2** shows that the existing steel lattice tower line extends from Chapelcross substation southwards towards the north of Annan, crossing the A75 and B721 to the north of Eastriggs before following the Solway Firth to the south of Gretna. The topographical context is shown in **Figure 3**. The existing line crosses the site of the Battle of Stark as shown in **Figure 4** and also crosses sites designated for their nature conservation value as shown in **Figure 5**.

4.3. Much of the broad study area is rural in nature, low-lying and has strong associations with the marshy areas surrounding the Solway Firth. The towns of Annan, Eastriggs and Gretna are the largest settlements and, together with the many dispersed properties and small villages and hamlets, are a constraint to routeing and are shown in **Figure 6**.

4.4. For some projects, where the length of line is considerable, it can be helpful to identify and appraise a number of broad route corridor options prior to developing and evaluating route options. The initial identification of environmental and technical constraints and the mapping of land use in the broad study area made it apparent that the area available for initial routeing was constrained by the presence of the designated sites and land uses, including peat extraction and settlement, particularly the densely dispersed pattern of individual properties. Therefore this stage was not undertaken and the information gathered during the development of the broad study area was used to identify a more focussed routeing study area as explained below.

Identification of the Routeing Study Area (Step 1)

4.5. The limited area available for routeing options resulted in the establishment of the routeing study area shown on **Figure 8**. This routeing study area was used purely for routeing purposes. As with the broad study area, information on hydrology and soils, ecological and cultural heritage designations and landscape and visual considerations was mapped and is shown in **Figures 4, 5, 6, 7, 8a and 8b**.

4.6. The northern boundary of the routeing study area is defined by the A74(M). Crossing this road would be technically challenging and routeing to the north of it would create an unnecessarily long route, which would conflict with Holford Rule 3, which states that '*other things being equal, the most direct line should be chosen*'.

4.7. The eastern boundary of the routeing study area is defined by the Scotland/ England border as SP Energy Network's licence obligations do not extend into England.

4.8. The western boundary of the routeing study area is defined by the River Annan and an unnamed road connecting Brydekirk within the A74(M). Routeing to the west of the river and unnamed road would create an unnecessarily long and convoluted route. This would conflict with Holford Rule 3, which states that '*other things being equal, the most direct line should be chosen*'.

4.9. The southern boundary of the routeing study area is defined by the Solway Firth, which is an

area of high environmental and historic value and would ordinarily be excluded from the study area on environmental grounds. However, because existing tower T137A is located within the Solway Firth, avoidance of this sensitive area is not possible. The alignment with the existing towers in the NGET license area needs to be maintained, as these towers are not being re-built.

Description of the Routeing Study Area

4.10. The underlying geology is composed of interbedded sandstone, siltstone and mudstones of the Permian and Triassic geological periods. Overlying this is a landscape of coastal flats and shallow valleys, which provides opportunities and constraints for the routeing of the overhead line. There is a localised high point of 157m AOD to the north-west of the routeing study area near Brownmoor Wood. From here the land slopes gradually down in a south-easterly direction towards the estuary, where the River Annan and Kirtle Water and many small streams meander across the low-lying coastal plain.

4.11. The Solway Firth borders the southern edge of the routeing study area. The special qualities of the Solway Coast include the low lying landscape and narrow coastal strip with its dunes, salt marshes, raised mires, range of wildlife habitats, cultural heritage and historical sites and settlements. The area is important for wildlife and habitats and is covered by several locally, nationally and internationally important designations. The landscape around the Solway Firth is strongly influenced by proximity to the sea, and yet has considerable variation within it which creates local diversity and distinctiveness. The southern edge of the estuary is designated as an Area of Outstanding Natural Beauty (AONB), a designation which is not applicable to Scotland.

4.12. The main land use is farming, mostly pasture with some arable cultivation providing variations in field colours and textures. Fields are medium sized and are bounded by hedges or fences and less commonly by drystone walls. Many hedges are incomplete, and their loss to fences is quite apparent. Close to the estuary, the strength of onshore winds can be seen in the bend and shear of trees. At Creca Moss, Nutberry Moss and Solway Moss, there are localised areas of peat extraction.

4.13. Woodland is scattered across the routeing study area and comprises small to medium blocks and belts of deciduous trees with occasional small coniferous plantations. There are some areas of ancient woodland. These are mainly concentrated in the north and west of the routeing study area where they typically comprise small clusters or linear belts.

4.14. The existing electricity transmission network across the routeing study area is generally concentrated along the low lying southern coastline. Whilst much of the network pre-dates the introduction of the Holford Rules, it still appears to follow similar key principles (i.e. generally avoiding the most prominent ridges and skylines, following broad wooded valleys, avoiding settlements and residential properties and maximising opportunities for backclothing and screening of infrastructure). It comprises 132kV overhead lines supported on steel lattice towers, including the AK and T Routes between Chapelcross and the NGET connection south of Gretna, and several lower voltage wood pole lines. The existing electricity transmission network, and other physical and technical constraints within the routeing study area, are shown in **Figure 10**.

4.15. The main transport routes are the A74(M), B7076 and West Coast Main Line railway which form a corridor across the north and east of the routeing study area. A further transport corridor, comprising the A75, B721 and Glasgow South Western Line railway, runs east-west through the centre of the routeing study area, connecting Annan with Gretna. These transport corridors meet near Gretna Green, creating a dense cluster of infrastructure. The A74(M) turns into the M6 as it enters England. On the longer distance routes, including the A74(M),

the heavy traffic moving between England and the Scottish cities such as Glasgow and Edinburgh is visible and audible in the landscape. The transport infrastructure detracts from the otherwise relatively tranquil rural character of the landscape across much of the routeing study area.

4.16. The population within the routeing study area is mainly concentrated in the settlements, the largest of which are Annan, located in the south-west, Gretna in the east and Eastriggs, which is in the central part of the routeing study area. Smaller settlements include Creca, Dornock, Rigg, Kirkpatrick-Fleming, Springfield, Gretna Green and Brydekirk. These settlements and the pattern of dispersed residential properties and farmsteads are shown in **Figure 6**.

4.17. South of Eastriggs is the decommissioned ammunitions factory of HM Factory Gretna. Although part of the site has been reclaimed by scrub and woodland, the tracks and sheds remain. A second site of the HM Factory Gretna, DMC Longtown, is still in use as munition storage and lies just outside the eastern edge of the routeing study area in England to the west of Longtown.

4.18. Beck Burn Wind Farm at Solway Moss is widely visible across much of the routeing study area.

Planning Policy Context

4.19. Development Plans set out the vision for their respective regions and will be material considerations in determining the section 37 application.

4.20. The adopted Development Plans of relevance to the Project are:

- The Dumfries and Galloway Council Local Development Plan (adopted October 2019)[9];
- The Carlisle District Local Plan 2015 – 2030 (adopted November 2016)[10]; and
- Allerdale Local Plan (Part 1) (Adopted July 2014)[11]
- Allerdale Local Plan (Part 2) (adopted July 2020)[12].
- Eden Local Plan 2014 to 2032[13]

The Dumfries and Galloway Council Adopted Local Development Plan 2

4.21. The Dumfries and Galloway Local Development Plan (LDP) supports the Scottish Government's overarching aim and vision to foster sustainable economic growth and enhance the natural environment and the sustainable use and enjoyment of it. Whilst electricity infrastructure is not mentioned specifically, the LDP recognises that the delivery of supporting infrastructure is important in mitigating the impact of development and helping to create balanced and sustainable communities, noting on page 66, that '*the provision of infrastructure is fundamental to the deliverability of a development proposal and in many circumstances development will not be allowed to proceed if the infrastructure and service improvement requirements cannot be met*'.

Carlisle District Local Plan 2015 - 2030

4.22. The Carlisle District Local Plan seeks to deliver sustainable development in accordance with policies in the National Planning Policy Framework (NPPF) and to protect and enhance the provision of the green and blue infrastructure across the district. There are specific policies in place relating to development, which is likely to affect the Outstanding Universal Value of

[9] Dumfries and Galloway Council (October 2019), Local Development Plan
[10] Carlisle District Council (November 2016), Carlisle District Local Plan 2015 – 2030
[11] Allerdale Borough Council (July 2014), Allerdale Local Plan
[12] Allerdale Borough Council (July 2020), Allerdale Local Plan
[13] Eden District Council (Adopted 2018), Eden Local Plan 2014 to 2032

Hadrian's Wall World Heritage Site (Policy HE 1) and for development likely to the Solway Coast AONB (Policy GI 2). This includes any indirect effects on views arising from development.

Allerdale Local Plan Parts 1 and 2

4.23. Part 1 of the Allerdale Local Plan forms a key element of the development plan for the area of Allerdale outside the Lake District National Park. It sets out the strategic and development management policies that will guide development up to 2029. There are specific policies in place for the development likely to affect the Outstanding Universal Value of Hadrian's Wall World Heritage Site (Policy S28) and for development in the Solway Coast AONB (Policy S34). This includes any indirect effects on views arising from development.

4.24. Part 2 of the Allerdale Local Plan sets out the strategic and development management planning policies for the district up to 2029 and Part 2 identifies or 'allocates' land to deliver the strategy and contains additional supporting policies to guide development.

Eden Local Plan 2014 to 2032

4.25. The Eden Local Plan 2014 to 2032 was adopted in 2018 and provides a clear planning framework to enable the council to deliver its vision and objectives, to include the types of development which are acceptable and therefore giving guidance for developers.

Solway Coast Area of Outstanding Natural Beauty Management Plan 2020-2025

4.26. The Solway Coast AONB provides advice to the local planning authorities on any planning application which occurs within the boundaries of the Solway Coast AONB. Whilst the project does not fall within the AONB, it does fall within its setting. All planning applications which have the potential to affect the special qualities of the AONB and its setting will be considered in order to ensure they accord with the principles of the management plan.

5. ROUTEING CONSIDERATIONS

Identification and Mapping of Routeing Considerations (Step 2)

5.1. Once a routeing study area had been identified, the next step in routeing process was the identification and mapping of the areas of highest environmental value in order to identify constraints and opportunities to the routeing of the T Route Rebuild. This approach reflects the Holford Rules (Holford Rule 1 and 2) and SP Energy Network's routeing guidance. The Holford Rules are included as Appendix B.

5.2. The Holford Rules are broadly hierarchical, with Rule 1 deemed the first rule to be considered in routeing. Rule 1 relates to the avoidance, where possible, of '*major areas of highest amenity value*'.

5.3. The Rules do not identify which designated areas constitute areas of highest amenity[14] value. However, SHETL[15] clarification note b) states that areas of highest amenity value '*require to be established on a project-by-project basis considering Schedule 9 of the Electricity Act, 1989*'.

5.4. Holford Rule 2 makes the following recommendation: '*avoid smaller areas of high amenity value or scientific interest by means of deviation*' and a SHETL clarification note a) states that '*small areas of highest amenity value not included in Rule 1 as a result of their spatial extent should be identified*'.

5.5. As the Holford Rules do not define what constitutes a major area (Rule 1) and the importance of an area is irrespective of size, all areas considered to be of 'highest environmental value' regardless of their spatial extent were identified and mapped as Step 2, reflecting both Rule 1 and Rule 2 in relation to importance and spatial extent. This included large areas of natural and cultural heritage value such as the designations covering the Solway Firth or national level but also included smaller geographical areas of highest amenity value and areas of regional or local high amenity value identified from development plans.

5.6. The mapped information was taken from available GIS data sets and 1:25,000 Explorer Ordnance Survey (OS) maps, and informed by feedback from key stakeholders. Where possible, this information was verified in the field supplemented by the use of aerial photography and Google Earth Pro.

5.7. The mapping allowed identification of land within, and in the vicinity of the routeing study area, which was less constrained by technical or environmental considerations, and was therefore more favourable for identification of route options.

Areas of Highest Environmental Value

5.8. The following areas of highest environmental value are present within the broad study area and are shown on **Figures 4, 5 and 7**:

- Area of Outstanding Natural Beauty (AONB) (England);
- RAMSAR sites;
- Special Protection Areas (SPA);

[14] In this routeing study, the term 'environmental' has been used in place of 'amenity' to reflect more recent thinking which also seeks to recognise the intrinsic value of such areas.

[15] Electricity transmission development proposals in Scotland. The Scottish Hydro-Electric Transmission Limited (SHETL) approach. A guidance document outlining the SHETL approach to the routeing of high voltage steel lattice tower transmission lines. This guidance recommends applying the Holford Rules to Scotland, but with notes of clarification modified to meet Scottish circumstances.

- SPAs with 'marine components';
- Important Bird and Biodiversity Areas (IBA);
- Special Areas of Conservation (SAC);
- SAC with 'marine components';
- SAC, together with Special Protection Areas (SPAs), are the UK's contribution to the Bern Convention's Emerald Network of protected areas, known as Areas of Special Conservation Interest (ASCIs);
- Nature Conservation Marine Protected Areas (MPA);
- Marine Conservation Zones (MCZ);
- Sites of Special Scientific Interest (SSSI);
- Geological Conservation Review sites (GCR);
- Woodland including Ancient Woodland;
- World Heritage Sites (WHS);
- Scheduled Monuments (SM);
- Category A/ I, B/ II* and C/ II Listed Buildings (LB);
- Archaeologically Sensitive Areas
- Conservation Areas;
- Inventory of Historic Battlefields (IHB);
- Non-Inventory Gardens and Designed Landscapes; and
- Promoted scenic tourist routes.

5.9. In identifying options for the overhead line route, these areas of highest environmental value were avoided wherever possible. Some of the Holford Rule 2 considerations where mapped but treated as 'avoid where possible', or 'where not possible, balanced with other considerations'.

5.10. An exception, however, was the Solway Firth area where the location of existing tower T137A in an area of high environmental value meant that routeing through this area was unavoidable. Note a) on Rule 1 and Noted) on Rule 2 of the Holford Rules states that '*If there is an existing transmission line through a major area of highest*[16] *amenity value and the surrounding land use has to some extent adjusted to its presence…….then the effect of remaining on this route must be considered in terms of the effect of a new route avoiding the area*'.

5.11. In addition to the above, Supplementary Note a) of the Holford Rules states 'avoid routeing close to residential area as far as possible on the grounds of general amenity'. At this stage in the routeing methodology, settlements were identified and avoided wherever possible in the identification of route options. Settlements are defined as those areas identified within Local Development Plans. Individual properties were mapped using OS AddressBase Plus® data.

5.12. For clarity, the following national level heritage designations were not included, as they are not present within the study area:

[16] Note d) on Rule 2 states 'high'.

- National Scenic Areas;
- National Parks;
- Wild Land;
- Dark Sky Reserves;
- Registered Parks and Gardens;
- National Nature Reserves;
- Heritage Coasts.

Technical Review

5.13. In addition to the mapping of areas of highest environmental value, a review was undertaken by SP Energy Networks to identify any technical considerations which should inform the identification of route options as part of Step 2. These are briefly explained below and are shown on **Figure 10**.

Windfarms and Wind Turbines

5.14. All operational and consented turbines within the study area were mapped and a distance of 3x the rotor diameter applied to each turbine as a 'trigger for consideration'[17] as part of Step 2 of the routeing methodology. The locations of turbines is shown in **Figure 10**. There are currently no existing or planned wind farms within the routeing study area.

Slope Angle and Altitude

5.15. Slope angles of greater than 20° present a technical constraint to routeing, particularly for construction purposes. Altitude also presents a technical constraint to routeing with H-section wood poles required at altitudes greater than 200m AOD. For this project, SP Energy Network's technical team confirmed that slope angle or altitude will not be an issue as most of the area is relatively flat and low lying (below 200m AOD).

Flood Risk

5.16. In relation to potential conflicts with policy relating to flooding and to avoid potential increase to flood risk, online SEPA flood zones were considered[18]. When identifying route options, the ability to span the flood zone (average span of 250m for steel towers and 100m for wood pole) was considered. The appraisal considered the potential to cross the flood zone at the narrowest point, all other environmental/ technical considerations being equal. Flood considerations are set out within Appendix E Evaluation of Route Options and Alternative Links and Appendix F Technical Review.

Peat

5.17. Areas of peat were mapped in GIS using the Carbon and Peatland 2016 map produced by Scottish Natural Heritage (SNH)[19]. This mapping shows where the top two classes of peat (Class 1 and Class 2) can be found as these are considered to be a nationally important resource. While there were no areas of Class 2 peat within the study area, a number of areas of Class 1 peat were identified and these are shown on **Figures 5 and 10**. These are identified by SNH as nationally important carbon-rich soils, deep peat and priority habitat and areas

[17] Energy Networks Association (2012) Separation between Wind Turbines and Overhead Lines Principles of Good Practice
[18] Sepa.org.uk. interactive mapping available to view online at https://www.sepa.org.uk/environment/water/flooding/flood-maps/
[19] Map available to view online at https://map.environment.gov.scot/Soil_maps/?layer=10

likely to be of high conservation value.

Physical Constraints

5.18. Physical constraints are shown on **Figure 10**. Any potential route option would have to cross the A75 and B721, Glasgow South Western Line railway and Kirtle Water. The A75, B721 and Glasgow South Western Line railway are broadly parallel to each other, and cross the study area in an east-west direction.

5.19. Similarly, a crossing of Kirtle Water is unavoidable, as this small river flows in a north-south.

5.20. These physical constraints cannot be avoided and safety clearances will have to be maintained to ensure compliance with electrical industry safety standards.

Existing Electricity Networks

1.11. Any potential route option will have to cross some of the existing overhead lines within the routeing study area. This infrastructure includes an existing 132kV steel lattice tower line (AL Route) (CHAP-GRNA), which extends west to east across the study area, many 11kV lines and a new 33kV rebuild from Chapelcross, which is proposed within the study area and will have additional technical impacts. All of the options will cross the existing 132kV steel lattice tower line titled T Route, which will be removed as part of this project after the new overhead line has been installed. These existing networks and other physical constraints are shown in **Figure 10**.

Additional Technical Issues

5.21. Additional technical issues, including wood pole design, construction techniques, operational life and maintenance, and compliance with government guidelines, such as for Electro Magnetic Fields (EMF), will be considered reported on in the EIA Report.

Economic Considerations

5.22. In compliance with Section 9 of the Electricity Act 1989, the routeing objective requires the proposed solution to be 'economically viable'. This is interpreted by SP Energy Networks as meaning that as far as is reasonably possible, and other things being equal, the line should be as direct as possible and the route should avoid areas where technical difficulty or compensatory requirements would render the scheme unviable on economic grounds. A Technical Review can be found at **Appendix F.**

Agricultural Land

5.23. Given the very limited land take associated with overhead lines, at this routeing stage level, the use of the land for agricultural production was not considered.

Peat Extraction

5.24. There are areas of commercial peat extraction at Nutberry Moss and Creca Moss, which were mapped and taken into account when identifying route options.

Committed Development and Allocations

5.25. Areas of committed development were mapped[20] and avoided wherever possible when identifying route options. These are shown on **Figure 14**.

[20] A 'cut-off' date of 29 August 2021 was applied as whilst this information remains in a state of constant potential change, it is important to 'freeze' the constraints data for the purpose of identifying route options.

5.26. Areas allocated within the LDPs for strategic scale housing and industrial or business use are mainly located within or close to settlements. This includes land on the edges of Annan, Gretna and Eastriggs, which has been allocated for housing, mixed use and business and industry uses. Land surrounding Chapelcross substation and the former power station has been allocated for business and industry.

5.27. Minerals extraction areas were also considered at this stage on the basis that construction and operation of the overhead-line is not be compatible with minerals extraction operations. A desk-based minerals assessment was carried out to determine the location and extent of minerals extraction sites, both operational and those allocated for development within the routeing study area.

5.28. A preliminary assessment indicated that operational mining activities are limited to the Dumfries and Galloway part of the Study Area. 'Search Areas' for minerals extraction were mapped within the superseded Dumfries and Galloway Structure Plan, however the Dumfries and Galloway Local Development Plan Minerals Extraction Technical Paper (2013) indicated 'there was adequate supply of each mineral without any deficiencies and therefore it was not necessary to identify search areas in the LDP', therefore no allocations for future minerals extraction were considered likely in this area.

5.29. Where minerals areas were considered smaller areas of high amenity value, which could be avoided by deviation, these will be considered at the detailed routeing stage.

5.30. A further key economic consideration is the potential to underground the line. As a guide, SP Energy Networks would consider undergrounding a line under the following circumstances where no suitable route for an overhead line can be identified:

- Within a National Scenic Area or National Park;
- Within areas of local character and amenity not subject to a landscape or scenic designation which are considered to have no capacity to accommodate an overhead line;
- Where the likely visual impact on residential areas or areas of historic importance or other areas is very significant;
- Where the likely visual impact on a publicly accessible and recognised view or prospect visited and enjoyed by a large number of people is very significant. This could be within an area of importance for its scenic beauty, character, amenity or historical importance, that may include such features as listed buildings and conservation areas;
- Where from a review of the relevant environmental information it is concluded that the combination of likely adverse effects is very significant and that this cannot be satisfactorily avoided, reduced or offset; and/ or
- Where technical and/ or environmental constraints are such that no suitable overhead line route can be identified.

5.31. Under these circumstances, SP Energy Networks would make a clear and transparent decision on the undergrounding of a section of line. This would take into account feedback from consultations with stakeholders and the public in relation to the protection of a particular resource in terms of the benefits/ disbenefits of underground cable as an alternative to an overhead line. This decision would consider the benefit, in planning terms that could be achieved from undergrounding, without incurring excessive cost. It would also take into account the effects of the technical issues associated with undergrounding on the overall reliability and availability of the grid connection, the risks to economic viability, including

capital and maintenance costs, and the deliverability of the project.

5.32. For the purposes of routeing the intention is to find an acceptable, continuous, overhead line route. Consideration will only be given to undergrounding should one of the above situations arise.

6. ROUTE OPTIONS

Identification of Route Options (Step 3)

6.1. The main effect of an overhead transmission lines is typically visual, whether on the visual component of landscape character or on the visual amenity people experience. The best way to limit adverse effects on landscape and visual amenity is through careful routeing in accordance with the Holford Rules. This includes Rule 3 which states that, 'other things being equal, the most direct line should be chosen, with no sharp changes in direction'.

6.2. The process should be led by qualified and experienced landscape architects applying their professional judgement.

6.3. With consideration of the areas of highest environmental value and the technical considerations identified in Step 2, and informed by topography, potential route options were identified using the approach outlined in the following paragraphs.

Width of Route Options Identified

6.4. A wood pole line requires a wayleave (clearance) corridor approximately 60m wide (30m on each side) through commercial forestry. This is to ensure that the conductors and wood pole support structures are far enough away from falling trees. Outside of forestry/woodland SPT would seek to ensure land agreements protect the resilience of the overhead line by controlling future development or planting which could conflict with the safe operation and maintenance of the infrastructure.. Based on this requirement, the aim during this initial routeing stage was to identify 100m wide route options in order to accommodate the width of the wayleave corridor and also ensure flexibility for detailed routeing during subsequent detailed pole location spotting.

Application of Routeing Considerations

6.5. Considerations identified in the routeing strategy were applied to the routeing study area to establish a number of possible 'route options'. This process involved the avoidance wherever possible of designated areas of highest environmental value. These areas generally include areas of natural and cultural heritage value designated at a national, European or international level as these are afforded the highest levels of policy protection.

6.6. In addition to seeking to avoid the identified Holford Rule 1 and 2 constraints, consideration was given to Holford Rules 3 to 6[21].

6.7. Consideration was given to the 'fit' of the overhead line within the topography and the pattern of the predominantly agricultural farmland. Key objectives were as follows:

- Avoid the higher ground, ridges and skylines (Holford Rules 4 and 5);
- Follow the grain of the landscape, running within valleys, in parallel with woodland edges, field boundaries etc. wherever possible;
- Use woodland and topography as a backdrop to the line, or as a foreground screen (Holford Rule 4);
- Minimise the number of crossings of linear features (e.g. roads and rivers), and when appropriate cross at a perpendicular angle;

[21] Holford Rule 7 relates to urban areas and is not relevant to this project.

- Minimise the exposure of the line over prominent ridges and skylines (Holford Rule 4);
- Avoid creating wirescape with existing infrastructure (Holford Rule 6);
- Avoid residential areas as far as practicable, including individual properties which could be adversely affected, particularly by steel towers (Holford Supplementary Note a);
- Other things being equal, prefer the shortest and/ or most direct alignment (Holford Rule 3).

6.8. Routes were identified using the desk-based mapping supplemented by knowledge of the area gathered during field work. The findings from the initial application of the desk-based criteria were verified and refined where necessary to more accurately reflect the local conditions and characteristics observed in the field. The identification of route options included understanding the principal/ primary view(s) from residential properties, which were considered pertinent to routeing; including consideration of the potential screening provided by local landform, woodland and hedgerows; and identifying important views/ locally sensitive landscape characteristics. Modifications were made to the route options, where required, to reflect the findings of the site-based field work and identify suitable route options to take forward for appraisal.

SP Energy Network's Technical Review

6.9. At this stage, a technical review was undertaken by SP Energy Networks to confirm that the route options were technically feasible prior to being progressed to the appraisal step.

Description of Identified Route Options

6.10. Six main routes were identified from north to south (1 - 6), together with a series of alternate links between those routes. The identified routes and links are described below and identified on **Figure 12**. For each route the description commences at tower AK008 near Annan and ends at tower T137A in the Solway Firth south of Gretna.

Route 1

6.11. Route 1 departs from the AK Route in an easterly direction before heading north-eastwards to pass to the east of Preston Hall. It then turns east, running parallel to an existing 33kV overhead line as it passes through a narrow section of ancient woodland at Gill Wood. The route then turns to the north-east, crossing farmland and skirting west of Crow Wood, heading eastwards at Scotsfield and running parallel to an existing 132kV overhead transmission line and crossing it twice. From here it turns in a south-easterly direction, passing north of Broats, crossing the B6357 and passing north of the peat working area at Nutberry Moss. South of Riggheads, Route 1 follows the same route as Routes 2 and 3. The combined routes head in an easterly direction, crossing Kirtle Water and then heading south, passing to the east of Stonehouse. The route crosses the Glasgow South Western railway and the A75 in quick succession, before continuing south and then south east past Old Graitney and Kirtle Water, to the south-west of Gretna. The route then joins Routes 4 and 6, heading north-east and terminating at tower T137A on land adjacent to the Solway Firth and River Esk at Gretna.

Route 2

6.12. Route 2 heads east from AK Route towards Morningside, where it turns to the south-east and crosses the B6357. This is the same alignment followed by Routes 3, 4 and 5. Heading east and then south of Woodhead, Route 2 then swings north east, crossing farmland and broadly running parallel to the B6357 before turning south-east to cross Dornock Burn and the peat working area at Nutberry Moss, eventually joining Route 1 south of Riggheads as described for Route 1 above.

Route 3

6.13. Route 3 follows the same alignment as Route 2, heading east from AK Route towards Morningside and south-east across the B6357, but then continues further east until reaching a point north of Lowthertown. The route then heads north-east, passing to the south of Tulliesfield Holdings and Todholes Holdings, and skirting along the north-western edge of the peat workings at Dornock Flow and Nutberry Moss. Route 3 then converges with Route 2 south of Nutberry Moss. Both routes head directly east crossing a minor road and joining the same alignment as Route 1 south of Riggheads. Route 3 then follows the same alignment as Routes 1 and 2, before terminating near Gretna at tower T137A as described for Route 1 above.

Route 4

6.14. Route 4 follows the same path as Routes 2 and 3, heading east from AK Route towards Morningside and south-east across the B6357. From here it continues to follow the same alignment as Route 3, running parallel and to the north of the A75, crossing Dornock Burn and running parallel to the alignment of the existing T Route. At Lowthertown, Route 4 continues eastwards, passing south of Dornock Flow and Nutberry Moss. The route then heads south-east, crossing the A75 to the north of Irvington and the Glasgow, South Western railway south of Redroad Woods. The route continues south-east, crossing the B721 to the west of Nivenhill and passing close to the course of Birkhill Burn for approximately 1km. East of Redkirk Holdings, the route heads north-east towards Gretna, just inland from the Solway Firth. The line crosses Kirtle Water and an unnamed road to the south of Old Graitney. Route 4 then follows the same path as Routes 1, 2 and 3, terminating near Gretna at tower T137A as described for Route 1 above.

Route 5

6.15. Route 5 follows Route 4 until the approximate midway point just before crossing the A75 near Irvington. Having crossed the A75, Route 4 runs broadly south-east and parallel to the alignment of the existing T Route, crossing the Glasgow South Western railway and the B721 to the east of Eastriggs. Route 5 turns eastwards and continues to broadly follow the alignment of the existing overhead line until it crosses Birkhill Burn and reaches a small area of woodland south of Rigg. The route heads slightly south to avoid the woodland, then continues eastwards between Rigfoot and Redkirk, crossing Kirtle Water and an unnamed road to the south of Old Graitney. Route 5 then follows the same alignment as Routes 1, 2 and 3, terminating at Gretna at T137A as described for Route 1 above.

Route 6

6.16. Route 6 is the southernmost route, heading south from AK Route near Bellsprings, and crossing the A75, before turning south-east and crossing the B6357 to the north-east of Annan. Continuing south-eastwards the route runs between Morrispark and Topping Hall towards Swordwell Rig then diverts to the south, crossing the Glasgow South Western railway and the B721 in quick succession to the west of Dornock. Route 6 skirts south of Dornock and heads eastwards to the north of Butterdale Holdings and to the south of Eastriggs. The route continues eastwards towards Westhills, where it turns north-eastwards, running broadly parallel to the B72. At Rigg Cottage the route continues south-eastwards passing to the south of Rigfoot and north of Redkirk before crossing Kirtle Water and an unnamed road to the south of Old Graitney. Route 6 then follows the same alignment as Routes 1, 2 and 3, terminating near Gretna at tower T137A as described for Route 1 above.

Consideration of an Alternative Route to T138

6.17. The eastern end of the existing T Route crosses the Upper Solway Flats and Marshes SSSI and Ramsar and the Solway Firth SPA and SAC. Tower T137A is currently located in this area. Consideration was therefore given as to whether it was possible to rebuild the T-Route so as to avoid this environmentally sensitive area whilst still connecting to tower T138 to the east.

6.18. In view of the distances involved, it will not be possible to span over the ecologically designated area. Consideration was therefore given as to whether it was possible to avoid the designation by routeing around and to the north, and connecting into tower T138. This alternative route was marginally preferred on ecological grounds as it avoided the designations and could potentially slightly reduce avian collision risk as a result of shorter, tauter and more visible wire spans. It was not, however. considered to have substantial benefits as it would require more poles in the ground, thereby potentially impacting terrestrial mammals, amphibians and reptiles. On heritage considerations, the route would increase the length of new overhead line within the site of the Battle of Sark and introduce new overhead lines into the Frontiers of the Roman Empire World Heritage Site Buffer Zone located to the east of the routeing study area. It was therefore considered to be acceptable but not preferred. In landscape and visual terms, the alternative route was considered more convoluted and would bring the overhead line closer to properties to the north and north-west and the existing 11kV and 33kV overhead lines located to the north of T137A, thus resulting in views of multiple overhead lines close to these properties. It was therefore considered to be more likely to have greater landscape and visual effects than the route to tower T137A.

6.19. Overall therefore, the alternative routeing option to tower T138 was least preferred than the route to tower T137A and was discounted.

Alternate Links between Route Options

6.20. Five link routes were created which provide potential alternative sections for the main routes in order to navigate areas constrained by environmental designations or physical and technical features.

Link 1

6.21. Link 1 provides an alternative route around the properties at Morningside for Routes 2, 3, 4 and 5. It follows the edge of woodland, crossing the B6357 to the south-west of the properties at the same location as an existing 11kV line.

Link 2

6.22. Link 2 provides an alternative option for Route 4, allowing the route to approach Gretna from the north, eventually joining with Option 1, 2 and 3.

Link 3

6.23. Route 5 crosses the existing T Route at Woodfield in order to avoid a Scheduled Monument. Link 3 provides an alternative which is more direct and is further from properties as it crosses the B721 but in doing so crosses over the Scheduled Monument.

Link 4

6.24. Link 4 provides an alternative option for Route 6 in order to avoid Annan. It would allow Route 6 to head east from AK Route, crossing the A75 further east but at a technically difficult oblique angle.

Link 5

6.25. A road embankment on the B721, which crosses the Glasgow South Western railway line requires Route 6 to pass either east or west of it to avoid technical constraints. This link route provides an alternative alignment to the west of the embankment.

Consideration of Exemption Regulations

6.26. If a proposed overhead line accords with the limitations and provisions set out within The Overhead Lines (Exemption) (Scotland) Regulations 201322 it is not necessary to make a section 37 planning application.

6.27. In exploring whether the AK and T Routes could meet the requirements of the 'Exemption Regulations', a potential route running broadly parallel to the existing AK and T Routes was identified for consideration in this context. This would restrict the effects of the proposed overhead line to an area that is already affected by the presence of high voltage overhead lines. To comply with these regulations, the proposed wood poles would need to be located within 100m of the existing steel towers which they would replace and no part of the proposed line could be in a sensitive area. As wood pole structures require shorter spacing than steel towers and part of the replacement line would be in an SSSI, complying with the Exemptions Regulations was not possible and is not therefore explored further in this report. Whilst this exercise ruled out the possibility of using the Exemption Regulations to find an alternative route, Option 5, which follows part of the existing route, reflects this routeing exploration and was retained as an option.

[22] The Stationary Office Limited under the authority and superintendence of Carol Tullo, the Queen's Printer for Scotland (2013) The Overhead Lines (Exemption) (Scotland) Regulations 2013

7. APPRAISAL OF ROUTE OPTIONS

Approach to Appraisal of Route Options (Step 4)

7.1. Having identified a series of route options, these were then appraised with the objective of examining each route in a comparable, documented and transparent way to identify a preferred route option. As outlined in the routeing strategy, where the characteristics of the routeing study area were such that a balance had to be achieved to enable the overarching routeing objective to be met, the preferred route was identified using professional judgement, informed by both desk studies and field work, and also reflecting the Holford Rules.

7.2. The process sought to:

- Continue to reflect the overall routeing objective set out in Chapter 3, which is to *'identify technically feasible and economically viable routes for electrical overhead lines that meet the technical requirements of the electricity network and cause, on balance, the least disturbance to the environment and the people who live, work and enjoy recreation within it'*;
- Continue to reflect SP Energy Network's 'Approach to Routeing and Environmental Impact Assessment' document[23];
- Continue to reflect the Holford Rules; and
- Draw out distinctions between the routes to enable the relative strengths and weaknesses of each to be identified.

7.3. In addition, Holford Rule 3 states that '*other things being equal choose the most direct line*'. Whilst this rule primarily relates to avoiding sharp changes in direction, and therefore the need for more visually intrusive angle poles/ towers, choosing the most direct route may result in fewer adverse effects, than a longer, less direct route (taking due consideration of other constraints).

7.4. The appraisal was undertaken in the following stages:

- Identification of appraisal criteria, together with the reasoning for their inclusion;
- Application of appraisal criteria to each route following the appraisal methodology;
- SP Energy Network's Technical review; and
- Comparative appraisal of each of the five route options (including links between the options), to identify a preferred route.

Appraisal Criteria

7.5. Based on the preliminary findings of Steps 1 – 3, knowledge of the routeing study area and previous overhead line routeing experience, appraisal criteria were proposed in relation to the following:

- Length of route;
- Landscape and visual amenity;

[23] SP Energy Networks (2021) Approach to Routeing and Environmental Impact Assessment.

- Biodiversity and geological conservation;
- Historic environment;
- Hydrology and soils; and
- Technical constraints.

7.6. The reasoning for the proposed inclusion of the above criteria and an outline of the methodology for appraising each route against the criteria is set out below.

Length of the Route

7.7. Holford Rule 3 states that '*other things being equal choose the most direct line'*. Whilst this rule primarily relates to avoiding sharp changes in direction, and therefore the need for more visually intrusive angle poles, choosing the most direct route may result in fewer adverse effects, than a longer, less direct route (taking due consideration of other constraints). The length of each route option was calculated as part of the appraisal.

Landscape and Visual Amenity

7.8. The following landscape and visual amenity considerations were taken into account during the route option appraisal and are shown on **Figure 7 and Figures 8a and 8b**:

- Landscape designations – to minimise effects on areas designated for their landscape value;
- Landscape character/ sensitivity – to find the best possible landscape 'fit'. To avoid landscapes with greatest potential sensitivity to change from overhead lines;
- Visual amenity and residential visual amenity - to minimise effects on peoples' views and general visual amenity. This includes routeing as far as possible away from settlements and residential properties and any other locations where there are likely to be sensitive visual receptors; and
- Length of corridor – all things being equal, to keep the route as short as possible, to minimise impacts on the landscape.

Designated Landscapes

7.9. This involves the avoidance wherever possible of designated areas of high environmental value. These areas generally includes areas of natural and cultural heritage value designated at a national, European or international level as these are afforded the highest levels of policy protection.

Landscape Character/ Sensitivity

7.10. Landscape Character Types (LCT) are tracts of landscape which have a unity of character due to particular combinations of landform, land cover and a consistent and distinct pattern of constituent elements at a regional scale. The broad study area crosses Scottish LCT in Dumfries and Galloway and English LCT in Cumbria. For the part of the study area which falls within Scotland, landscape sensitivity was assessed with reference to the existing landscape characteristics and attributes of the landscape as set out in the Scottish Landscape Character Types Map and associated LCT descriptions produced by Nature Scot in 2019[24], referred to

hereafter as the 'NatureScot LCT'. These LCT are shown on **Figure 8a**. Consideration was also given to the LCT defined within the 2017 Dumfries and Galloway Wind Farm Landscape Capacity Study[25]. While this latter study concerns the capacity for the landscape to accommodate onshore windfarm development, it also considers the sensitivity of the landscape to vertical infrastructure associated with such development including overhead lines. These LCT are mapped on **Figure 8b**. This enabled an overall sensitivity of the NatureScot LCT to be assessed in terms of their landscape sensitivity to the type of development proposed.

7.11. For the part of the study area which falls within England, the Cumbria Landscape Character Assessment Guidance and Toolkit (Cumbria County Council 2011)[26] was used. This assessment maps and describes the LCT (hereafter referred to as the Cumbria LCT) across the area and provides guidance on how to maintain their distinctiveness. These areas are shown in **Figure 8a**. Consideration has also been given to a number of assessments which consider the landscape sensitivity or capacity to accommodate vertical infrastructure. This includes The Solway Coast Area of Outstanding Natural Beauty (AONB) Landscape and Seascape Character Assessment[27] , the Cumbria Wind Energy Supplementary Planning Document, Part 2 Landscape and Visual Considerations[28] and Cumbria County Council Cumulative Impacts of Vertical Infrastructure (Cumbria County Council, 2014)[29]. An overall assessment of the sensitivity of the relevant Cumbria LCT to the proposed overhead line was made.

7.12. The NatureScot LCT and Cumbria LCT which would potentially be affected by a route option have been appraised on their ability to accommodate an overhead line of the type proposed, and categorised using a five point scale from high to low in terms of landscape sensitivity. The appraisal also drew on the Holford Rules and provided a detailed consideration of how a route option would affect, or fit within, the landscape, and the degree to which potentially adverse effects could be avoided or reduced.

7.13. Whilst it is recognised that the presence of existing overhead line infrastructure is likely to reduce the sensitivity of the receiving landscape to further overhead line development this has to be carefully balanced against any potential cumulative effects arising from multiple lines in close proximity.

7.14. The methodology and findings of the landscape sensitivity appraisal are presented as **Appendix C**.

---

[24] NatureScot (2019). Scottish Landscape Character Type Map and Descriptions. Available online at https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/landscape-character-assessment-scotland.

[25] Dumfries and Galloway Council (2017) Part 1 Wind Energy Development: Development Management Considerations. Appendix C Dumfries and GallowayWind Farm Landscape Capacity Study

[26] Cumbria County Council (2011). Cumbria Landscape Character Guidance and Toolkit

[27] The Solway Coast Area of Outstanding Natural Beauty (AONB) Landscape and Seascape Character Assessment (LUC for the Solway Coast AONB Partnership, 2010)

28 Cumbria Wind Energy Supplementary Planning Document, Part 2 Landscape and Visual Considerations (Coats Associates, 2006)

29 Cumbria County Council Cumulative Impacts of Vertical Infrastructure (Cumbria County Council, 2014)

Visual Amenity and Residential Visual Amenity

7.15. Visual amenity is defined in the Glossary of GVLIA3 as '*the overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area'* (Page 158).

7.16. Where it was not possible to avoid settlements in identifying route options, the location and geographical distribution of settlements was identified and opportunities to avoid routeing through, or close to, settlements appraised.

7.17. General visual amenity is partly considered when determining landscape sensitivity (i.e. horizons, skylines, and general distribution of residential receptors). However, views from key viewpoints (e.g. recognised mapped viewpoints), tourist routes (including National Cycle Routes, scenic routes and long distance footpaths), major roads and population densities (and associated spread of residential receptors) were also taken into consideration when appraising route options.

7.18. It is important to consider the interaction between existing high and low voltage overhead lines. On this basis, the high voltage 132kV, 275kV and 400kV network was mapped to identify potential areas of constraint, or opportunity, in relation to landscape sensitivity and general visual amenity.

7.19. Where there are existing overhead lines the sensitivity of the receiving landscape to further overhead line development should be reduced as they are already a feature of the landscape. However, should the existing overhead line infrastructure be kept in place then the cumulative effects of two lines in closer proximity needs to be considered. Where the existing section of the T route on steel lattice towers is to be removed then the positive effects of locating new less prominent infrastructure should be recognised.

7.20. Occupants of residential properties are often judged to be most susceptible to changes in visual amenity, therefore all settlements identified in the Dumfries and Galloway Local Development Plan 2 and individual residential properties across the routeing study area were identified.

7.21. During the comparative route evaluation stage, the purpose was to broadly consider the route options in terms of the potential effects on residential amenity. The objective was to provide an approximate comparative evaluation of the route options in terms of their proximity to properties and settlements. Previous work undertaken independently by Gillespies established that significant effects are deemed more likely if a structure (for example, a wood pole) appears 7.5 cm high (or greater) at arm's length from the viewer. Based on this work, a 15m wood pole has an apparent height of 7.5cm when seen from a distance of 122m.

7.22. Individual residential properties were mapped using OS AddressBase Plus® data, and a 120m and 200m radius was applied around each property. This was used in order to determine the settlement pattern along each route option in order to enable route options to be mapped to avoid properties where possible.

7.23. During the appraisal stage, GIS was used to calculate the number of properties (as contained within OS AddressBase Plus® data), which are located within 120m of the centre line of each route option. A further calculation was made to ascertain the number of properties within

200m in order to give a further indication of proximity to properties. The proximity of the route option to larger settlements was also considered as was the likely effects on principal views from individual properties in key locations.

Biodiversity and Geological Conservation (Including Ornithology)

7.24. In relation to biodiversity and geological conservation, areas of highest environmental value, in accordance with Holford Rule 1 and 2 were mapped regardless of geographic size. This included European designated sites and pockets of trees listed on the Ancient Woodland Inventory (AWI). There are no Local Nature Conservation Sites within the routeing study area.

Ornithology

7.25. In relation to ornithology, a desk-based study of existing data has been used to identify potentially sensitive areas in addition to the designated Solway Firth Special Protection Area (SPA). The desk study focussed on assessing areas which may be sensitive to overhead line development, primarily on the grounds of collision risk to wildfowl (swans and geese), but also through disturbance and displacement from preferred areas of foraging, roosting or nesting. The species that constitute the qualifying features of the SPA use the wider area for foraging or roosting through the winter months, and many other species of conservation concern forage and nest within the wider area through the summer months. Targeted field surveys will be undertaken to inform the latter stages of the route selection process.

7.26. Much of the wider routeing study area comprises open agricultural land. Winter flocks of foraging Pink-footed Goose (*Anser brachyrhynchus*) and Barnacle Goose (*Branta leucopsis*) are known to feed in these fields and are highly mobile and dependent on the sward height within each field.

7.27. It is assumed that many areas within the routeing study area will contain breeding numbers of wading species that appear in the highest level of conservation concern (e.g. Lapwing (*Vanellus vanellus*). Further ornithological field surveys of the preferred route will therefore be undertaken.

7.28. Further ornithological survey will take into account the presence and behaviour of birds along the entire length of the preferred route with an aim to minimise the overall effects on birds as areas currently supporting infrastructure are assumed to be already disturbed and local bird populations may be habituated to the presence of this infrastructure.

7.29. Should any sensitive areas be present along the preferred route, micrositing of infrastructure and redesign of the route alignment will be implemented in the first instance prior to other avoidance measures being recommended. If necessary, implementation of a construction management plan, employment of an Ecological Clerk of Works (ECoW) and other practical mitigation measures will be used to minimise any potential adverse impacts.

Woodland

7.30. In accordance with Holford Rule 5, and accompanying notes, woodland was avoided where possible in identification of route options. Routes were identified which avoided ancient woodland, and minimised the loss of native woodland wherever possible. Due to the scattered and broken nature of natural woodland, there is frequently the opportunity to

avoid areas through careful consideration of the line alignment, particularly with wood poles. There is no commercial woodland within the routeing study area.

Peat

7.31. NatureScot (formerly Scottish Natural Heritage (SNH)) produced the Carbon and Peatland Map (Scotland) 2016, showing the distribution of carbon and peatland based on information collection for the Peatland Action restoration program between 2012 and 2019. Class 1 and 2 are areas of nationally important carbon-rich soils, deep peat and priority peatland habitat areas potentially or likely to be of high conservation value. These are shown on **Figure 5**.

7.32. The areas of peat which could potentially be affected by the location of poles/ towers was included in the appraisal of route options. The extent of the route crossing peatland (particularly Class 1 and Class 2 Peatland) was minimised as part of the route selection process. Avoidance of Nutberry Moss – a large-scale commercial peat digging area – classified as Class 1 and 2 on the 2016 Carbon and Peatland Map, was a particular consideration during the routeing and comparative evaluation stages.

Water Environment

7.33. In order to minimise potential impacts on the water environment the number of watercourse crossings was minimised when identifying route options and a 50m buffer zone applied to watercourses included where possible.

Historic Environment

7.34. The historic environment considerations taken into account during the route option appraisal are shown on **Figure 4**.

7.35. In relation to the historic environment and in accordance with Holford Rules 1 and 2, the areas of highest value were mapped regardless of geographic size. These include World Heritage Sites, Scheduled Monuments, Inventory Gardens and Designed Landscapes and sites on the Inventory of Historic Battlefields.

7.36. All categories of listed buildings were mapped at this stage. All category A and B buildings were avoided as these are of national or regional importance. Where locally important category C buildings are located in clusters, these were avoided wherever possible in the identification of route options. As individual category C buildings can typically be avoided by local deviation of the line, they were not of concern at this high level routeing stage.

7.37. Unscheduled archaeology considered to be of likely national Importance is recorded within Local Authority Historic Environment Records (HERs) (sometimes referred to as Sites and Monument Records (SMRs). Within the routeing study area, these are recorded in the HER maintained by Dumfries and Galloway Council. They were considered within the Cultural Heritage Appraisal within **Appendix D**.

7.38. Non-Inventory Gardens and Designed Landscapes are considered to be of regional importance. As areas of regional high amenity value, these were avoided in the identification of route options.

7.39. When appraising the route options, where a route was not able to avoid category C listed buildings, Non-Inventory Gardens and Designed Landscapes or HER sites[30], or where the route was located within proximity to these assets, the implications were highlighted within the Cultural Heritage Appraisal at **Appendix D.** Due to the large number of HER throughout the routeing study area, particularly to the west and south of Gretna, it has not been possible to avoid all HER. This is considered within the Evaluation of Route Options at **Appendix E.**

Technical Review

7.40. The technical considerations taken into account during the route options appraisal are shown on **Figure 10.**

7.41. Following the environmental appraisal of options, the route options were reviewed by SP Energy Networks in relation to the system/ network design requirements and also the existing overhead line network (in relation to required clearance distances and the crossing of the existing network). This review was undertaken to ensure that, based on the level of detail available, the route options are within the technical parameters required to construct overhead lines, including in combination with each other, and with existing overhead lines.

7.42. The technical review in relation to the overhead line corridors comprised consideration of:

- Altitude;
- Topography/ slope angle;
- Buildability and access constraints;
- Proximity/ crossings of existing electricity infrastructure;
- Mine working areas;
- Ground conditions;
- Deep peat deposits
- Public service utilities
- Watercourses and/ or waterbodies shown on 1:25,000 OS maps;
- Road and rail crossings;
- Windfarms;
- Residential/ industrial areas
- Existing windfarms; and
- Pollution;

7.43. Of these considerations, the transport corridor of the A75, B721 and Glasgow South Western Line railway, and Kirtle Water are common to all route options.

[30] A list of Listed Buildings and heritage assets within 1km of route options is provided as Appendix D Cultural Heritage Appraisal)

7.44. The findings of the technical review for each corridor are presented within the appraisal table at **Appendix F**.

Land Use and Technical Considerations

7.45. As explained in Chapter 5, in terms of the routeing objective for this project, where all the potential routes considered are broadly crossing the same landscape, Holford Rule 3 is important to consider, i.e., '*other things being equal, the most direct line should be chosen*'. This is interpreted by SP Energy Networks as meaning that as far as is reasonably possible, and other things being equal, the line should be as short as possible and the route should avoid areas where technical difficulty or compensatory requirements would render the scheme unviable on economic grounds.

7.46. Other considerations include the length of each option, buildability in terms of access and remoteness, additional cost of crossing transport corridors, watercourses, public service utilities, and the presence of commercial peat and any mine workings or quarries. For example, any route option will have to cross the A75 and B721, Glasgow South Western Line railway, which run broadly parallel to each other, and cross the routeing study area in an east-west direction.

7.47. Areas susceptible to flooding were reviewed using SEPA/EA 200 year flood data but were not found to be a technical risk, with all watercourses being possible to cross using wood pole structures.

Application of Appraisal Criteria

7.48. For each of the identified route options the criteria were considered assuming that most of the line will comprise a combination of single and double Trident wood pole support structures with one steel lattice tower at the western end of the route and two steel lattice towers at the eastern end of the route.

7.49. The appraisal process applied the professional judgement of ecologists, landscape experts and archaeologists to comment on biodiversity, landscape and visual impacts and historic environments respectively. Where expert professional judgement could be supported by data/ information in a quantitative format this was included.

7.50. When considering the landscape and visual criteria for each route option, the proximity to each route or link was considered. A judgement was then made as to the likelihood of the criteria being susceptible to change as a result of the introduction of an overhead line on wood pole support structures. A judgement of ***high*** indicated that a particular aspect was likely to be adversely affected by the line if it were placed along this route, and a judgement of ***low*** indicated that the route option would most likely avoid adverse effects on this criteria. A judgement of ***none*** meant that the criteria was not of concern, for example if there were no residential properties close to a route.

7.51. For biodiversity and geological conservation, nature conservation designations were considered in relation to their proximity to the route options and the reason for their designation. Consideration was also given to historic records, likely habitat and species distribution, and ecological value along the route options.

7.52. For flood risk, the number of watercourses and the proximity to water bodies was considered. The SEPA flood maps were used to identify areas at risk of fluvial and surface

water flooding. The Scottish Wetland Inventory was used to map any designated wetland areas.

7.53. For the historic environment, the number of Scheduled Monuments close to the preferred route option was considered, together with archaeological potential. This is considered within the Cultural Heritage Appraisal at **Appendix D.**

Appraisal Findings

7.54. A table containing the detailed evaluation of the routes is attached as **Appendix E**. The table provides a summary of the likely effects resulting from each of the route options. Potential technical concerns and land issues are also referenced.

7.55. The table is not a definitive statement of likely effects resulting from each of the route options, but does provide relevant likely information as to the most likely effects which could occur.

8. SELECTION OF A PREFERRED ROUTE

Selection of a Preferred Route (Step 5)

Initial Appraisal

Environmental Considerations

8.1. Following the appraisal of the route options and the alternative links, the following conclusions were drawn based on the evaluation comments in **Appendix E**. With respect to the main route options:

- Routes 4 and 5 are the most direct. Routes 1 and 6 are the longest and require the most number of directional changes. Routes 2 and 3 are comparable.
- The biodiversity and geological conservation evaluation did not discount any of the route options but concluded that Routes 2, 3, 4 or 5 were preferred. A definitive assessment of the preferred route from an ecological perspective will only be possible following winter bird surveys, but early indications suggest Options 2, 3, 4 or 5 are likely to require fewer potential mitigation measures to avoid sensitive habitats;
- The hydrology and soils evaluation did not discount any of the options and concluded that all of the options were similar. Route 1 , however, would result in fewer watercourse crossings and is least likely to be affected by coastal flooding. This route also avoids areas of Class 1 peat. Route 1 was therefore preferred;
- The historic environment evaluation concluded that Routes 4, 5 and 6 should be discounted due to either their proximity to Scheduled Monuments or because they crossed more of the site of the Battle of Sark than Routes 1, 2 and 3. The evaluation concluded that Routes 1, 2 and 3 were viable, with Route 3 marginally preferred due to increased distance from Scheduled Monuments; and
- The landscape and visual amenity evaluation did not discount any of the options but Route 3 was preferred overall. The routes located primarily to the north of the A75 were considered generally less sensitive, being further from the Solway Firth and generally less populated. Routes 1 and 6 avoid areas of Class 1 and 2 peat at Nutberry Moss but in doing so are the longest and both are considered more convoluted. Route 6 would potentially have greater effects on residential visual amenity. The evaluation concluded that Routes 2 and 3 were similar but that Route 3 was favoured as it passes through a landscape which is less sensitive to the introduction of an overhead line. Route 3 follows the more developed A75 road corridor and a longer section of the existing T Route than Route 2. Route 3 is also lies further from properties and follows the pattern of field boundaries better as it skirts the peat working area at Nutberry Moss, thus minimising likely impacts on Class 1 peat deposits. The route also crosses the A75 and the Glasgow South Western Line railway line at a perpendicular angle, which is technically preferred since it shortens the length of the crossing and lies further from properties to the west of Gretna.

8.2. With respect to the alternative links between the main route options:

- The biodiversity and geological conservation evaluation did not discount any of the alternative links;
- The flood risk evaluation concluded that Link 2 should be eliminated due to peat and hydrological related constraints and need for increased micro-siting;
- The historic environment evaluation discounted Link 3 and 5 due to potential impacts on Scheduled Monuments;
- The landscape and visual amenity evaluation did not discount any of the alternative links; and
- Technical constraints and the need to maintain a wayleave of 60m between properties and the Ancient Woodland at Morningside discounted Link 1.

Technical Considerations

8.3. Following the appraisal of the main route options by SP Energy Networks and based on the evaluation comments in Appendix E, it was concluded that Routes 2, 3 and 4 were preferred as they had less risk in terms of the number and type of crossings required of existing overhead line infrastructure.

Summary of Initial Appraisal of Options

8.4. The results of the comparative route options appraisal as summarised within Appendix E discounted Route 4, 5 and 6 due to their potential effects on the historic environment. Whilst Routes 1, 5 and 6 were similar in terms of their environmental appraisal, the technical appraisal identified more challenges for these routes because of the type and number of required crossings of existing overhead line infrastructure. This left Routes 2 and 3 as the remaining most viable options, which were therefore taken forward for further consideration. These route options are shown on **Figure 12**.

Evaluation of Route 2 and Route 3

8.5. To assist in differentiating between Route 2 and Route 3, detailed consideration was given to the likely landscape and visual impacts resulting from the introduction of a 132kV Trident overhead line along each route.

Preferred Route 2

8.6. Preferred Route 2 is approximately 13.1km in length. It heads east from AK Route near Bellsprings, crossing a minor road and turning south-east in order to cross the B6357 between properties at Morningside and Gill Wood. This is the most constrained part of the route due to the proximity to properties and the network of 11kV overhead lines in the area. Properties at Morningside are, however, well screened by vegetation along property boundaries and the B357, which would help mitigate potential visual effects. To the south-east of Morningside, the route runs broadly parallel and north of the A75 for a short distance before swinging north-east in order to pass east of Woodhead. By passing to the north of Nutberry Moss and between properties located to the north-west of the Moss this minimises the area of peat, which would have to be crossed. In order to do so, Route 2 runs broadly runs parallel to the B6357 but is at a sufficient distance (approximately 215m at its closes point) not to have significant effects on users of the Robert Bruce scenic route, which follows the B6357 at this location. The angles required to turn north-east after Woodhead

take the route close (approximately 125 m from) to a property located north-east of Round Bush. Occupants of this property would have open views towards the new overhead line which would be seen alongside several existing overhead lines. The orientation of Route 2 also runs against the existing field pattern and crosses more open countryside than Route 3 as it heads north-eastwards, before turning south-eastwards approximately 300m south of Westlands Country Park. Here the route passes north of properties at Todholes Holdings in order to cross an area of Class 1 peat within Nutberry Moss at the narrowest point (crossing approximately 380m) before heading eastwards. This section of Route 2 is generally less populated and the alignment follow the pattern of the field boundaries and avoids properties, heading east and crossing a further local road north of West Scales before turning north-eastwards towards Kirtle Water.

8.7. From here, the distance between properties allows the route to turn south-eastwards. This part of the route was chosen in order to avoid properties as far as possible and still cross the transport corridor formed by the Glasgow South Western Line railway, the A75 and the B721 to the west of Gretna at a perpendicular angle which is preferable on technical and visual grounds.

Photo: Glasgow South Western Line railway

8.8. To the west of Gretna, the route becomes more constrained by residential properties. It passes within 120m and 200m of several small clusters of properties lying outside of Gretna and again, within 200m of properties at Cherry Tree Park to the south of Gretna where the route swings north-east to approach tower T137A. At its closest the route would pass within 120m of residential properties, which would be unlikely to give rise to significant visual effects. This is because at this distance the poles would appear less than 8cm high[31] and they

[31] Gwynedd Council, Isle of Anglesey County Council and Snowdonia National Park Authority (2015), Wind Turbines and Pylons: Guidance on the Application of Separation Distances from Residential Properties

would also be partially screened by intervening vegetation. The removal of the existing steel lattice towers and their replacement by a wood pole overhead line would overall lead to a beneficial effect on views from these properties.

8.9. Route 2 continues to follow the western edge of Gretna, running broadly parallel and to the east of Kirtle Water. It then crosses Graitney Road just north of a dismantled railway and a sewage works. Graintney Road marks the northern boundary of the site of the Battle of Sark, which the route (in common with the other options) is required to cross for some 1.6km. From the battlefield the route crosses under the existing T Route south-west of Old Graitney and north of Stormont before turning north-eastwards in order to approach tower T137A from the south-west, retaining the same connection alignment as the existing overhead line. This last section of Route 2 crosses multiple European, national and local environmental designations, including SAC, SSSI, RAMSAR and SPA, which lie to the south of Gretna. This is for a distance of approximately 130m and is unavoidable due to the fact that tower T137A is located within these sensitive designations.

8.10. The key issues associated with Route 2 are:

- Effects on residential visual amenity in the vicinity of the properties at Morningside where it would be seen alongside existing 11kV overhead lines;
- Crosses approximately 380m of Class 1 Peat to the north-west of Nutberry Moss;
- Several recorded sightings (see Appendix E: Evaluation of Route Options and Alternative Links) of recorded species within the locality and the potential for natterjack, toad, red squirrel, otter and water vole.;
- Crosses 4 named watercourses; and
- Crosses the transport corridor, containing the A75 and B721, and Glasgow South Western Line railway at a perpendicular angle.

Preferred Route 3

8.11. Preferred Route 3 follows the same route as Route 2 apart from one short section to the north-west of the peat works at Nutberry Moss. Route 3 is approximately 12.9km in length.

8.12. As with Route 2, Route 3 extends eastwards from the T Route. To the south-east of Morningside, where Route 2 swings north-east to cross open countryside, Route 3 continues eastwards, running parallel and north of the A75, crossing Dornock Burn before continuing eastwards where it also runs parallel and north of the existing T Route. This section of the route therefore runs through an area already influenced by infrastructure for longer than Route 2 and which will ultimately benefit from the removal of the steel lattice tower line and its replacement with a visually less intrusive wood pole overhead line.

8.13. North of Lowthertown, Route 3 swings north-east in order to avoid as far as possible the areas of Class 1 peat at Nutberry Moss. In doing so, the route closely follows the field boundaries to the north-west of Nutberry Moss which are comprised of a mix of hedgerow and trees. The route will therefore benefit from some backclothing provided by these trees when viewed by the properties (Tullisfield and Todholes Holdings) located along a local road to the north-west. To the north of the peat workings, the route is required to cross a short section (approximately 680m) of Class 1 peat before swinging eastwards once again and

connecting to the route taken by Route 2. From here, Route 2 and 3 follow the same alignment.

Photo: View from A75 towards Nutberry Moss

8.14. The key issues associated with Route 3 are:

- Effects on residential visual amenity in the vicinity of the properties at Morningside where it would be seen alongside existing 11kV overhead lines;
- Crosses 680m of Class 1 Peat to the north West of Nutberry Moss.;
- Several recorded sightings (see Appendix E: Evaluation of Route Options and Alternative Links) of recorded species within the locality and the potential for natterjack, toad, red squirrel, otter and water vole;
- Crosses 3 named watercourses; and
- Crosses the transport corridor, containing the A75 and B721, and Glasgow South Western Line railway at a perpendicular angle.

The Preferred Route

8.15. Routes 2 and 3 are very similar, there being only one short section to the west of the peat working area at Nutberry Moss where they diverge. Both routes are comparable in terms of likely effects on biodiversity and geological conservation, historic environment, flood risk and technical constraints. In terms of length, Route 2 is approximately 200m shorter than Route 3. Route 2 crosses approximately 300m less Class 1 peat in comparison to Route 3. Route 2 crosses four named watercourses in comparison to Route 3 which crosses three named watercourses. Landscape and visual considerations were therefore the determining factors between the two routes options.

8.16. As discussed above, on balance Route 3 is considered preferable. This is because it follows the A75 and the existing T Route for a longer distance and is therefore in a landscape already influenced by infrastructure but which will also benefit from the dismantling of the existing

steel lattice line and its replacement with a wood pole line. Route 3 also follows field boundaries more closely as it heads north-east in order to avoid the peat working area at Nutberry Moss. This is in contrast to Route 2 which is required to cross open countryside to the north-west of Nutberry Moss. Route 3 is also further away from properties at this section of the route and therefore less likely to result in significant effects on their visual amenity. Route 3 was therefore recommended as the preferred route and is shown on **Figure 14**.

Ongoing Development of the Preferred Route

8.17. Route 3 is the preferred route for the new 132kV overhead line between AK Route and tower T137A at this stage in the routeing process. The final design will ultimately be informed by consultation and ongoing environmental surveys and assessment work. Views will be sought from a range of statutory and non-statutory stakeholders. Feedback and any suggested changes will be scrutinised and evaluated and may lead to changes along the preferred route.

8.18. Once this process of refinement has been completed, a 'proposed route' will be established and taken forward in to the Scoping and EIA stage.

9. THE CONSULTATION PROCESS AND NEXT STEPS

The Legislative Process

9.1. As set out in Chapter 1, SP Energy Networks will be required to apply to Scottish Ministers for consent for the T Route Rebuild. This is under Section 37 of the Electricity Act 1989 for consent to install and keep installed the overhead electricity line. SP Energy Networks will also apply for deemed planning permission for the lines and associated works, including the removal of an existing steel lattice tower line between towers T093 and T137A and tower AK08, under Section 57(2) of the Town and Country Planning (Scotland) Act 1997 ('the 1997 Act').

9.2. While there are no formal pre-application requirements for consultation in seeking section 37 consent/ deemed planning permission, SP Energy Networks attaches great importance to early engagement with stakeholders and the public in advance of such applications being made. This is to help it develop its projects in the best way and ensure that all parties with an interest in the T Route Rebuild Project continue to have access to up to date information and are given clear and easy ways in which to shape and inform the proposals as they develop during the pre-application stage.

9.3. Due to the location of the T Route Rebuild close to the border with England, SP Energy Networks must consult stakeholders and the public in line with the requirements of the different consenting regimes in Scotland and England. To ensure that local communities are treated in the same way, SP Energy Networks is adopting a consistent approach to consultation on both sides of the border despite the different consenting regimes.

9.4. On the 24th April 2020, in view of the Coronavirus pandemic, The Electricity Works (Miscellaneous Temporary Modifications) (Coronavirus) (Scotland) Regulations 2020[32] (the Coronavirus Regulations) came into effect. This acknowledged that it was not currently possible to hold public meetings without unavoidably posing a significant risk to public health. There is currently a temporary modification to the usual requirements placed on developer companies to make physically available application and EIA documentation for public inspection in named places within the locality of the proposed developments under section 37 of the Electricity Act 1989. There is also a temporary suspension of requirements for a 'public event'. This is in place until the 30 September 2022[33]. Applicants are to make documentation available electronically until this time.

9.5. Prior to the section 37 submission, SP Energy Networks will carry out the following two rounds of consultation with stakeholders and the public:

- Round One: Public consultation on the preferred route to be carried out in Summer 2022; and
- Round Two: Public consultation on the proposed route and detailed route alignment, which is anticipated to be carried out in late 2022/ early 2023.

[32] The Electricity Works (Miscellaneous Temporary Modifications) (Coronavirus) (Scotland) Regulations 2020 – SSI was laid in parliament on 14 April 2020 and came into force on 24 April and has been extended until the 30 September 2022 https://www.legislation.gov.uk/ssi/2020/123/contents/made

[33] The Coronavirus (Scotland) Acts (Amendment of Expiry Dates) Regulations 2022

9.6. Following the submission of applications for Section 37 consent and deemed planning permission, the Scottish Government Energy Consents Unit will, on behalf of Scottish Ministers, carry out further consultation with the public and stakeholders.

9.7. The consultation includes the statutory and non-statutory consultees, as well as the homes and businesses within the consultation zone, community and parish councils, Members of Parliament (MPs) and Members of the Scottish Parliament (MSPs), identified local interest groups, and the public in general.

9.8. Information leaflets are to be sent to the elected members of the planning committees in Dumfries and Galloway Council, Allerdale Borough Council, Eden District Council and Carlisle City Council during the consultation period.

9.9. Meetings are to be offered to the Scottish Community Councils and the English Civil Parish councils which fall within 5km of the proposed development as shown in **Figure 15**. Meeting invites are to be sent during the consultation period.

The First Round of Consultation

9.10. This report presents the findings of the routeing process for the T Route Rebuild. The company is using this as the basis for undertaking consultation with statutory stakeholders including the Scottish Government, Nature Scot, Natural England, the Scottish Environment Protection Agency, the Environment Agency, Historic Environment Scotland, Historic England (formerly part of English Heritage) and the Dumfries and Galloway Council within which the T Route Rebuild Project is proposed. Carlisle City Council, Cumbria County Council, Eden District Council and Allerdale District Council will also be consulted as the relevant planning authorities within Cumbria. In addition, a number of English statutory and non-statutory consultees, are also being consulted as there may be potential for some effects within these authority areas. A full list of all consultees are found in Volume 2, Appendix A.

9.11. To ensure all residents and stakeholders potentially affected by the proposals are consulted, SP Energy Networks has defined a consultation zone for the purposes of a leaflet drop in June 2022, prior to the consultation. This zone includes all residential and business addresses along and close to the proposed development. This is defined as an area extending 200m either side of the existing T Route which is to be dismantled between towers AK008 and T137A. It also includes an area 200m from the preferred route corridor. 279 number of properties within this consultation zone were identified for the purposes of a leaflet drop using OS AddressBase Core® data. The consultation zone is shown on **Figure 15**.

9.12. All community and parish council located within the 5km of the preferred route were contacted to see if they could assist with advertising the consultation. The following community/ parish councils agreed to assist the consultation by displaying a printed consultation information poster within local community notice boards:

9.13. Community Councils – Dumfries and Galloway:

- Royal Burgh of Annan
- Gretna and Rigg
- Springfield and Gretna Green
- Kirkpatrick Fleming and District
- Hoddom and Ecclefechan

- Canonbie and District

9.14. Town and Parish Councils - Cumbria

- Rockcliffe Civil Parish
- Kirkandrews-on-Esk Civil Parish
- Westlinton Civil Parish

9.15. Notwithstanding the consultation zone, any member of the public is welcome to participate in the consultation or make a comment using one of the channels outlined within this document.

Consultation Launch and Duration

9.16. The first round of consultation will run for 30 days between 11th July to 9th August 2022.

9.17. Prior to the consultation, adverts will appear in local weekly newspapers . With assistance from local community councils in Dumfries and Galloway and parish councils in Cumbria, a printed poster explaining the project and the consultation will be displayed on public notice boards with a news release displayed on community/ parish council social media pages where available and also on the ScottishPower Twitter and Facebook sites A leaflet drop will also take place for those properties located within the 200m consultation zone as explained above.

9.18. All consultation material confirms that comments made to the applicant does not remove the right or need to comment on the final application once it is made to the Scottish Ministers.

The Focus of the First Round of Consultation

9.19. The focus of the first round of consultation will be to request people's views on:

- The T Route Rebuild Project as a whole;
- The preferred route;
- The removal of the section of the existing overhead line;
- Any other factors they would like SP Energy Networks to consider, including alternative routes; and
- Any local issues or concerns that people wish to draw to our attention.

Sources of Information about the Consultation

9.20. A map showing the consultation zone is provided as **Figure 15**. This is one of the main sources of information about the consultation, which also includes this Routeing and Consultation Document, the T Route Rebuild Project leaflet, consultation information poster, project information boards and T Route Rebuild Project website where all documents are available for download:

https://www.spenergynetworks.co.uk/pages/trouterebuild.aspx

Consultation Information Leaflet and Poster:

9.21. The project leaflet will be mailed to every home and business within the consultation zone. A poster will be displayed on public notice boards within the local area which have been identified by the community and town and parish councils. Both the consultation poster and leaflet will include a map showing the preferred route, details of the scheme and consultation process, how to find out more about the project and how to submit comments by post or email.

Project Website:

9.22. As it is not currently possible to hold face to face consultation events, members of the public will be able to find more information on the project website which will expand on that presented within the leaflet, poster and newspaper adverts with publicly available consultation documents available for download. Although it will go live in June 2022, with the consultation period being open for 30 days from the 11th July to the 9th August 2022, the documents will remain available for download after this date.

9.23. The Project website can be found at:

https://www.spenergynetworks.co.uk/pages/trouterebuild.aspx

9.24. All consultation documents can be downloaded free of charge from the website. High resolution electronic copies of the Routeing and Consultation Document on USB stick may be purchased for £15 and hard copies for £90 by contacting SP Energy Networks using the contact details set out below, which can also be used to make comments or raise questions:

Dedicated Project Email address: TRoute@spenergynetworks.co.uk

Postal address:

Brendan Tinney

T Route Rebuild,
Land and Planning,
55 Fullarton Drive,
Cambuslang,
Glasgow
G32 8FA

How People can Comment

9.25. The different ways people can make comments are listed below, although the Coronavirus Regulations recommend that members of the public making representations in connection with Electricity Act applications do so electronically rather than in paper form at this time. SPEN would particularly like to receive views on the following:

- The preferred route for the connection;
- Any of the alternative route options considered during the routeing process; and
- Any other issues, suggestions or feedback for SPEN to consider.

Post

9.26. People can comment by writing to the postal address above. Correspondence must be

returned by 9th August 2022. Please allow up to 7 days for these to be received. It may not be possible to consider written responses received after this date.

E-Mail

9.27. SP Energy Networks will also accept comments relating to the specific focus of this first round of consultation by e-mail to:

TRoute@spenergynetworks.co.uk.

Report of the First Round of Consultation

9.28. The responses received in the first round of consultation will be evaluated by SP Energy Networks and reported back in the form of a Consultation Feedback Report in Autumn/ Winter 2022. This report will be available to view and download from the project website.

Next Steps in the Routeing Process

9.29. The responses received from the consultation process will be considered in combination with the findings of the consultation feedback to enable SP Energy Networks to decide on the proposed route to be progressed to the Second Round of consultation and EIA stage.