

Consultation Document – Corridor Selection

Beauly to Blackhillock to New Deer to
Peterhead 400 kV Connection

REF: LT37 and LT359



CONTENTS

GLOSSARY	III
PREFACE	VI
EXECUTIVE SUMMARY	VII
1. INTRODUCTION	1
1.1 Purpose of the Document	1
1.2 Document Structure	1
1.3 Next Steps	1
2. THE PROPOSALS	2
2.1 The Need for the Project	2
2.2 Project Overview	2
2.3 Alternative Options Considered	3
2.4 Proposals Overview	3
2.5 Construction Activities	4
2.6 Programme	5
3. CORRIDOR SELECTION PROCESS	6
3.1 Introduction	6
3.2 Methodology	6
4. POTENTIAL CORRIDORS	10
4.1 Identification of Corridor Options	10
5. COMPARATIVE ANALYSIS OF POTENTIAL CORRIDORS	12
5.1 Introduction	12
5.2 Section 1	12
5.3 Section 2	19
5.4 Section 3	24
5.5 Section 4	30
5.6 Section 5	35
6. PREFERRED CORRIDOR	37
7. CONSULTATION ON THE PROPOSALS	39
7.1 Questions for Consideration by Consultees	39
7.2 Next Steps	39
APPENDIX A – HEAT MAP DATA	40

GLOSSARY

Term	Definition
Alignment	A centre line of an overhead line OHL, along with location of key angle structures.
Amenity	The natural environment, cultural heritage, landscape and visual quality. Also includes the impact of SSEN Transmission's works on communities, such as the effects of noise and disturbance from construction activities.
Ancient Woodland	In Scotland, Ancient Woodland are areas of woodland that have existed since 1750 and are relatively undisturbed by human development. They are considered irreplaceable and have complex biodiversity that have accumulated over hundreds of years.
Birds of Conservation Concern	Birds of Conservation Concern (BoCC) provides the status of all regularly occurring birds in the UK, Channel Islands and Isle of Man. The current version is BoCC 5. Birds of highest conservation concern will appear on the Red List.
Class 1 and Class 2 Peatland	Class 1 – Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value. Class 2 – Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential.
Consultation	The dynamic process of dialogue between individuals or groups, based on a genuine exchange of views and, normally, with the objective of influencing decisions, policies or programmes of action.
Corridor	A linear area which allows a continuous connection between the defined connection points. The corridor may vary in width along its length; in unconstrained areas it may be many kilometres wide.
Drinking Water Protected Areas	The water in ditches, streams, lochs and possibly groundwater in these areas is protected and likely to be taken to Water Treatment works, where it is treated and provided to the public as drinking water.
Effect	The direct or indirect physical consequence(s) of the proposed corridor option on receptors, under each of the various topic headings.
Electricity System Operator (ESO)	National Grid is the Electricity System Operator (ESO) for Great Britain. The ESO balances electricity supply and demand to ensure the electricity supply.
Environmental Impact Assessment (EIA)	Environmental Impact Assessment. A formal process codified by EU directive 2011/92/EU, and subsequently amended by Directive 2014/52/EU. The national regulations are set out in The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. The EIA process is set out in Regulation 4(1) of the regulations and includes the preparation of an EIA Report by the developer to systematically identify, predict, assess and report on the likely significant environmental impacts of a proposed project or development.
Gardens and Designed Landscapes (GDLs)	The Inventory of Gardens and Designed Landscapes lists those gardens or designed landscapes which are considered by a panel of experts to be of national importance.
Gigawatt (GW)	One billion watts.
Ground Water Dependent Terrestrial Ecosystem (GWDTE)	Wetlands which critically depend on groundwater flows. They are safeguarded by the Water Framework Directive (WFD) and are sensitive to hydrological and ecological changes.
Habitat	Term most accurately meaning the place in which a species lives, but also used to describe plant communities or agglomerations of plant communities.
High Voltage Direct Current (HVDC)	A high voltage, direct current (HVDC) electric power transmission system uses direct current for electric power transmission, in contrast to the more common alternating current systems. Most HVDC links use voltages between 100 kV and 800 kV.
Kilovolt (kV)	One thousand volts.

Term	Definition
Landscape Character Type (LCT)	A distinct, recognisable and consistent pattern of elements in a landscape that differentiate the area from another.
Level of Impact	The outcome of a comparative appraisal of the combination of effects within a specific topic along a specific corridor option after a consideration of the potential for mitigation, using professional judgement based on experience.
Listed Building	Building included on the list of buildings of special architectural or historic interest and afforded statutory protection under the 'Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997' and other planning legislation. Classified categories A – C(s).
Local Nature Reserve	Areas of natural heritage that are locally important.
Micrositing	The process of positioning individual structures to avoid localised environmental or technical constraints.
Mitigation	Term used to indicate avoidance, remediation or alleviation of adverse impacts.
National Nature Reserve	Areas of natural heritage that are nationally important.
National Scenic Area (NSA)	A national level designation applied to those landscapes considered to be of exceptional scenic value.
Network Options Assessment (NOA)	The National Grid's Network Options Assessment (NOA) provides their recommendation for which network reinforcement projects should receive investment, and when.
Overhead line (OHL)	An electric line installed above ground, usually supported by lattice steel towers or poles.
Plantation Woodland	Woodland of any age that obviously originated from planting.
RAG Rating	A Red, Amber, Green rating provided to assess the potential impact of the proposed OHL.
Route	A linear area of approximately 1 km width (although this may be narrower/wider in specific locations in response to identified pinch points / constraints), which provides a continuous connection between defined connection points.
Routeing	The work undertaken which leads to the selection of a Proposed Alignment, capable of being taken forward into the consenting process under Section 37 of the Electricity Act 1989.
Schedule 1 Species	Birds listed on the Schedule 1 of the Wildlife & Countryside Act 1981, of which it is an offence to intentionally or recklessly disturb at, on or near an 'active' nest.
Scheduled Monument	A monument which has been scheduled by the Scottish Ministers as being of national importance under the terms of the 'Ancient Monuments and Archaeological Areas Act 1979'.
Semi-natural Woodland	Woodland that does not obviously originate from planting. The distribution of species will generally reflect the variations in the site and the soil. Planted trees must account for less than 30% of the canopy composition
Sites of Special Scientific Interest (SSSI)	Areas of national importance. The aim of the SSSI network is to maintain an adequate representation of all natural and semi-natural habitats and native species across Britain.
Span	The section of overhead line between two structures.
Special Area of Conservation (SAC)	An area designated under the EC Habitats Directive to ensure that rare, endangered or vulnerable habitats or species of community interest are either maintained at or restored to a favourable conservation status.
Special Landscape Area (SLA)	Landscapes designated by councils, which are considered to be of regional/local importance for their scenic qualities.
Special Protection Area (SPA)	An area designated under the Wild Birds Directive (Directive 74/409/EEC) to protect important bird habitats. Implemented under the Wildlife and Countryside Act 1981.

Term	Definition
Stakeholders	Organisations and individuals who can affect or are affected by SSEN Transmission works.
Study Area	The area within which the corridor, route and alignment study takes place.
The National Grid	The electricity transmission network in the Great Britain.
Volts	The international unit of electric potential and electromotive force.
Wild Land Area (WLA)	Those areas comprising the greatest and most extensive areas of wild characteristics within Scotland.

PREFACE

This Consultation Document has been prepared by WSP UK Ltd. on behalf of Scottish and Southern Electricity Networks Transmission (SSEN Transmission) to seek comments from all interested parties on the Preferred Corridor identified for an overhead line (OHL) to connect Beauly, Blackhillock, New Deer and Peterhead substations.

The Consultation Document is available online at the project website:

<https://www.ssen-transmission.co.uk/projects/beauly-blackhillock-new-deer-peterhead-400kv/>

Over the coming months SSEN Transmission will be actively engaging with Statutory Consultees and stakeholders across the study area to further understand constraints and identify potential opportunities. Public consultation events detailing the proposals described in this document will be held at the following times:

20 th September 2022 (2-7pm) Inverness – Kingsmill Hotel	27 th September 2022 (2-7pm) Turriff – Baden Powell Centre
21 st September 2022 (2-7pm) Forres Town Hall	28 th September 2022 (2-7pm) New Deer Public Hall
22 nd September 2022 (2-7pm) Elgin – Moray University	29 th September 2022 (2-7pm) Peterhead – Balmoor Stadium
26 th September 2022 (2-7pm) Keith – Longmore Hall	5 th October 2022 (2-7pm) Beauly – Kilmorack Hall

Comments on this Consultation Document should be sent to:

Ryan Davidson

Community Liaison Manager

Scottish and Southern Electricity Networks

E: ryan.davidson@sse.com

M: +44(0)7901133919

1 Waterloo Street, Glasgow, G2 6AY

All comments are requested by **28th October 2022**.

EXECUTIVE SUMMARY

In order to support the continued growth in onshore and offshore renewables across the North of Scotland, supporting the country's drive towards Net Zero, further investment in infrastructure is needed to connect this renewable power and transport it from source to areas of demand across the country.

Beaully to Peterhead has been identified by SSEN Transmission as a key corridor in establishing this required reinforcement, connecting into existing substation sites at Blackhillock and New Deer along the way.

This project requires new 400 kV connection infrastructure, which is expected to be overhead line (OHL). Following the establishment of the new 400kV connection, the existing 132 kV OHL from Beaully to Knocknagael will be removed.

The Proposed Development is in line with SSEN Transmission's commitment and licence obligation to facilitate the connection of renewables generators to the grid through an economical, efficient and coordinated approach to transmission reinforcement.

Corridor options were identified, which provided feasible areas for the OHL to be developed, and from which a Preferred Corridor has been selected that provides an optimum balance of environmental, technical and economic factors. This Consultation Document invites comments from all interested parties on the Preferred Corridor.

Moving forward, confirmation of the Preferred Corridor will be informed by this consultation exercise and through detailed surveys, which may identify any as yet unknown engineering, environmental or land use constraints. Subject to the outcome of the consultation, the Preferred Corridor will be referred to as the Proposed Corridor. We will identify potential route options within the Proposed Corridor, which will then be subject to further appraisal and consultation to reach a Proposed Route. Following this, potential alignment options will be explored within the Proposed Route, and again further appraisal and consultation will be carried out. On identification of a Proposed Alignment, Section 37 consent under the Electricity Act 1989 will be sought from the Energy Consents Unit of the Scottish Government for proposed new OHL infrastructure.

When providing comments and feedback on this Consultation Document, SSEN Transmission would be grateful for your consideration of the questions below:

- Have we explained the need for this Project adequately?
- Have we explained the approach taken to select the Preferred Corridor adequately?
- Are there any factors, or environmental features, that you consider may have been overlooked during the Preferred Corridor selection process?
- Do you feel, on balance, that the Preferred Corridor selected is the most appropriate for further consideration at the route selection stage?

1. INTRODUCTION

1.1 Purpose of the Document

This Consultation Document has been prepared by WSP UK Ltd on behalf of Scottish and Southern Electricity Networks Transmission (SSEN Transmission). SSEN Transmission, operating under licence held by Scottish Hydro Electric Transmission plc, owns, operates and develops the high voltage electricity transmission system in the north of Scotland and remote islands. This Consultation Document invites comments from all interested parties on the Preferred Corridor identified for a new 400 kilovolt (kV) overhead line (OHL) to connect Beauly, Blackhillock, New Deer and Peterhead substations.

This Consultation Document describes the corridor options identified, the options appraisal undertaken, the alternatives considered during the selection of corridor options and the identification of the Preferred Corridor. Comments are now sought from statutory authorities, key stakeholders, elected representatives and the public on the corridor selection process and the Preferred Corridor identified.

All comments received will inform further consideration of the Preferred Corridor, and subsequent route options therein.

1.2 Document Structure

This report is comprised of seven sections as follows:

1. Introduction – setting out the purpose of the Consultation Document and document structure.
2. The Proposals – describes the need for the proposals, the strategic alternatives considered, the proposed technology solution, a description of the proposals and the typical construction methods.
3. Corridor Selection Process – sets out the corridor selection process and methodology that has been applied to date to derive a Preferred Corridor.
4. Potential Corridors – summarises the potential corridors.
5. Comparative Analysis of Potential Corridors – summarises the key considerations of each corridor from an environmental, engineering and economic perspective, and provides a comparative appraisal of each corridor option in order to select a Preferred Option.
6. Preferred Corridor – summarises the overall Preferred Corridor.
7. Consultation on the Proposals – invites comments on the corridor assessment process and identification of the Preferred Corridor.

1.3 Next Steps

As part of the consultation exercise, comments are sought from members of the public, statutory consultees and other key stakeholders on the Preferred Corridor option put forward in this report.

A Report on Consultation will be produced which will document the consultations received, and the decisions made in light of these responses.

Following the identification of a Proposed Corridor, further technical and environmental surveys will be undertaken to identify a Preferred Route within the Proposed Corridor. Consultation on a Preferred Route will be undertaken in a similar manner to the identification of a Proposed Corridor, in Spring 2023.

2. THE PROPOSALS

2.1 The Need for the Project

In order to support the continued growth in onshore and offshore renewables across the north of Scotland, supporting the country's drive towards Net Zero, further investment in network infrastructure is needed to connect this renewable power and transport it from source to areas of demand across the country.

Extensive studies completed to inform the Electricity System Operator' (ESO)'s 'Pathway to 2030' Holistic Network Design (HND) study¹ have identified the need to reinforce the onshore corridor from Beaully to Peterhead, via Blackhillock and New Deer. Providing a 400 kV connection between these locations enables the significant power transfer needed to take power from large scale onshore and offshore low carbon renewable generation connecting from the Western Isles (via a 1.8 GW subsea high voltage direct current (HVDC) link) and from connections north of Beaully (via a new Spittal to Loch Buidhe to Beaully 400 kV OHL), to the east at Peterhead and offshore via two subsea HVDC links to England. The additional connection points into Blackhillock and New Deer are also needed to pick up power on route from additional large scale onshore and offshore low carbon renewable generation required to connect into the north-east of Scotland.

This need was supported by instruction to 'proceed' in National Grid's Network Options Assessment (NOA) Refresh Report 2021/22².

2.2 Project Overview

To meet the required reinforcements of SSEN Transmission's onshore infrastructure between Beaully and Peterhead, the following projects are to be taken forward (see **Figure 2.1** for locations):

Beaully to Blackhillock 400 kV

Construction of a new 400 kV double circuit OHL between Beaully and Blackhillock, comprising:

- construction of approximately 110 kilometres (km) of new 400 kV double circuit OHL between Beaully substation and Blackhillock substation; and
- following the establishment of the 400 kV OHL, dismantling the existing 132 kV double circuit OHL from Beaully to Knocknagael.

Blackhillock to Peterhead via New Deer 400 kV

There is a separate requirement to construct a new 400 kV double circuit OHL from Blackhillock to Peterhead via New Deer, which is necessary to facilitate a second eastern high-voltage, direct current (HVDC) link from Peterhead. This project will comprise:

- construction of approximately 60 km of 400 kV double circuit OHL between Blackhillock substation and New Deer substation; and
- construction of approximately 22 km of 400 kV double circuit OHL between New Deer substation and Peterhead substation.

Additional infrastructure will also be required to facilitate connection of the Proposed Development into the transmission network at Beaully, Blackhillock, New Deer and Peterhead substations. The scope of works required at each substation location is still to be determined and does not form part of the Proposed Development at this stage.

¹ National Grid ESO (July 2022). Pathway to 2030: A holistic network design to support offshore wind deployment for net zero. Available: <https://www.nationalgrideso.com/future-energy/the-pathway-2030-holistic-network-design>

² National Grid ESO (July 2022). Network Options Assessment 2021/22 Refresh. Available: <https://www.nationalgrideso.com/research-publications/network-options-assessment-noa>

2.3 Alternative Options Considered

In the initial identification of the requirement for this project, many onshore and offshore reinforcement options were assessed by the ESO in the HND study. The Spittal to Peterhead 2 GW HVDC subsea link was an offshore solution proposed by SSEN Transmission for significant west to east power transfer. Onshore solutions proposed by SSEN Transmission included a Spittal to Loch Buidhe to Beaully 400 kV connection, a Beaully to Blackhillock 400 kV connection and a Blackhillock to New Deer to Peterhead 400 kV connection. The HND study identified the need for both the offshore solution, as well as the onshore reinforcement options between Spittal and Peterhead. This is because, in order to fully utilise offshore subsea links, the onshore network is also required to be strengthened. There is therefore a requirement for this project to progress using an onshore technology (i.e., either underground cable (UGC) or OHL).

To inform early development of this project, a Strategic Connection Options Appraisal was completed to inform selection of a preferred technology. Considering the onshore technology options currently available, the Strategic Connection Options Appraisal concluded that, given the high voltage and relatively long distances to be covered by the connection, an OHL was favoured over a UGC solution, with the following key factors contributing to this conclusion:

- **Cost:** The cost of UGCs is approximately 4-6 times more expensive than an OHL option, therefore not representing the best value for the consumer.
- **Community impact (visual and noise):** UGCs are often considered to be favourable from a visual and noise impact perspective. However, long distance UGC solutions require additional equipment to maintain stability of the network (for high voltage alternating current (HVAC) cable connections) or to convert power from direct current (DC) to AC (for HVDC cable connections), creating potential additional visual and noise impacts at points along the route.
- **Land-Use:** To allow sufficient insulation and cable spacing for a 400 kV UGC double circuit, a land width of approximately 50 m is required. Once reinstated, land-use restrictions may apply to this width to avoid risk of cable damage. In comparison, upon completion of the OHL, land use beneath could be returned to low growing vegetation or utilised for agricultural purposes, although an operational corridor is to be kept clear of trees to prevent the likelihood of tree strikes damaging the OHL resulting in a fault. The operational corridor for an OHL depends on the species of trees surrounding the line, but typically a total width of up to 80 m (40 m from centre) would be required.
- **Environment (land take):** For an OHL, the temporary and permanent impacts of the towers themselves are limited in extent due to the minor ground works required at the footings, with the maximum tower base being approximately 15 m by 15 m. The requirement for additional equipment to support a UGC solution, detailed above, creates additional land requirements in comparison to an OHL. There would also be potential for more significant impacts to geology, soils and sensitive habitats associated with a 50 m construction width for cable installation.
- **Operation and maintenance:** The ease of access to identify and address faults for an OHL is a key benefit in comparison to a UGC option. An OHL also provides improved flexibility and ability to adapt to change if network requirements change in the future (e.g., new conductor technologies provide opportunities to increase capacity on the existing line without creating new routes).

2.4 Proposals Overview

The Proposed Development would comprise steel lattice towers from the SSEN Transmission SSE400 tower suite. The typical height for the SSE400 tower suite is approximately 50 m, with a maximum height of up to 68 m.

The size of towers and span lengths is generally dependent on three main factors: altitude; weather; and the topography of the route. Towers are typically closer together at high altitudes to withstand the effects of greater exposure to high winds, ice and other weather events. Higher towers may be required in certain locations to maintain the required ground clearance heights, such as at road, river and rail crossings.

The proposed steel lattice towers would support six conductor bundles (2 or 3 wires per bundle) on six cross-arms (three on each side) and an earth wire between the peaks. Typical tower designs can be seen in **Plate 2.1**.



Plate 2.1 – Typical SSE400 steel lattice tower design

2.5 Construction Activities

The main construction elements associated with the Proposed Development are anticipated to include:

- establishment of temporary construction compound(s);
- establishment of permanent stoned access to pulling positions and temporary access to all other tower positions;
- establishment of suitable laydown areas for materials and working areas for tower foundations and erection equipment;
- delivery of components and materials to site;
- undergrounding of distribution overhead lines that cross or are in close proximity to the route;
- construction of approximately 200 km of 400 kV double circuit OHL;
- dismantling of existing 132 kV double circuit OHL from Beauly to Knocknagael;
- remedial works would be carried out to reinstate the immediate vicinity, and any ground disturbed to pre-existing condition; and
- inspections and commissioning.

All construction activities will be undertaken in accordance with a Construction Environmental Management Plan (CEMP) which will define specific methods for environmental survey, monitoring

and management throughout construction. A CEMP will be produced by the Principal Contractor and agreed with statutory stakeholders prior to the commencement of construction.

2.6 Programme

Subject to gaining the necessary consents, it is anticipated that construction would commence in 2026, with an estimated completion date of October 2030.

3. CORRIDOR SELECTION PROCESS

3.1 Introduction

The approach to corridor selection has been informed by SSEN Transmission's guidance 'Procedures for Routeing OHLs and Underground Cables of 132kV and above'³. This guidance considers within it the Holford Rules⁴, which sets out a hierarchical approach to routeing which advocates avoiding areas of high amenity value, minimises changes in direction, and takes advantage of topography to minimise visual interaction with other transmission infrastructure.

The guidance document sets out SSEN Transmission's approach to selecting a corridor, route or alignment for an OHL. This document helps SSEN Transmission to meet its obligations under Schedule 9 of the Electricity Act 1989, which requires transmission license holders:

- 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 interests; and
- to do what they reasonably can to mitigate any effect that the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.

The guidance develops a process which aims to balance these environmental considerations with technical and economic considerations throughout the corridor option selection process.

The guidance splits a project into the following key stages:

- Stage 0: Routeing Strategy Development;
- Stage 1: Corridor Selection;
- Stage 2: Route Selection;
- Stage 3: Alignment Selection; and
- Stage 4: EIA and consenting.

The stages that are carried out can vary depending on the type, nature of and size of a project and consultation is usually carried out at each stage of the process.

The project is currently at Stage 1 Corridor Selection, which seeks to identify a series of linear areas (corridors) capable of providing a continuous connection between the defined connection points and delivering the required transmission connection. This study has involved the following four key tasks:

- identification of the baseline situation;
- identification of alternative corridor options;
- environmental analysis of corridor options; and
- identification of a preferred corridor option.

3.2 Methodology

3.2.1 Area of Search

The extent of the area of search, hereafter referred to as the study area, has primarily been defined by the coast to the north and east, as well as the need to avoid the Cairngorms National Park and a crossing of Loch Ness to the south.

³ SSEN Transmission (September 2020). Procedures for Routeing Overhead Lines and Underground Cables of 132 kV and above. Revision 2.

⁴ Holford Rules: Guidelines for the Routeing of New High Voltage Overhead Transmission Lines with NGC 1992 and SHETL 2003 Notes.

3.2.2 Baseline Conditions

A series of desk-based studies have been undertaken to identify a broad range of potential constraints and opportunities within the study area, which may be constraints to routeing. This has involved the following activities:

- identification of environmental designated sites and other constraints, utilising GIS datasets available via NatureScot Site Link;
- identification of archaeological designations and other recorded sites, utilising GIS datasets available via Historic Environment Scotland Data Services and Local Historic Environment Teams;
- review of SEPA interactive Flood Risk Mapping;
- review of relevant Local Development Plans (The Highland Council, Moray Council and Aberdeenshire Council) to identify further environmental constraints and opportunities, such as regional level designations or other locations important to the public;
- review of landscape character assessments of relevance to the study area;
- review of Ordnance Survey (OS) mapping (1:50,000 and 1:25,000 and online GIS data sources from OS OpenData) and aerial photography (where available) to identify other potential constraints such as settlement, properties, walking routes, cycling routes etc.;
- extrapolation of OS Vectormap GIS data to identify further environmental constraints including locations of watercourses and waterbodies, roads classifications and degree of slope;
- review of other local information through online and published media such as tourism sites and walking routes;
- identification of existing OHL transmission infrastructure, roads and railway lines within the study area;
- identification of existing and proposed wind farm developments and other third-party infrastructure within the study area; and
- review of existing terrain, soil and ground conditions.

3.2.3 Corridor Options Identification and Selection Methods

A digital routeing and alignment toolkit was used to help identify corridor options to connect the four substations at Beauly, Blackhillock, New Deer and Peterhead.

The steps to the digital approach were as follows:

- Confirm Study Area – the study area for the project has primarily been influenced by the topography of the coastal areas, as well as the need to avoid the Cairngorms National Park and crossing Loch Ness, through the preliminary application of the Holford Rule 1 '*Avoid altogether if possible, major areas of highest amenity value, by so planning the general route of the line in the first place, even if the total mileage is somewhat increased in consequence*'.
- Initial Data Gathering – constraints data sets were gathered, reviewed and assessed, and initial sensitivity weightings were applied to each data set by the specialists in the different disciplines. The sensitivity weightings reflect how each constraint affects the project specifically.
- Development of a Heat map – the constraints were layered onto a map so they could be viewed as a composite 'heat map' and weightings and buffers applied depending on the sensitivity of the constraint, or opportunity. In addition to constraints, some data sets provide opportunities to OHL routeing in line with the Holford Rules, such as running parallel to existing OHLs or roads; these are also built into the heat-map. The weightings and parameters were refined following site visits and sensitivity analysis to verify the outputs. The list of constraints, buffers and weightings is presented in Appendix A. The weighting categories are as follows:

SUITABILITY SURFACE

	OPPORTUNITY HIGH
	OPPORTUNITY MEDIUM
	OPPORTUNITY LOW
	NEUTRAL
	CONSTRAINT LOW
	CONSTRAINT MEDIUM
	CONSTRAINT HIGH
	OVERLAPPING CONSTRAINTS
	EXCLUSION AREA

- Potential Corridor Development - A 'Least Impact Path' analysis was run to determine potential corridors across the constraints surface, identifying ways to route the OHL so as to have the least "environmental impact" and interaction with environmental constraints. This information was provided to the topic environment leads and professional judgement was applied in developing preliminary corridors, taking into account less tangible aspects of the Holford Rules which cannot be digitised.
- The output is a number of corridor options to be taken forward to the appraisal stage.

3.2.4 Appraisal Method

Environmental Criteria

A series of high-level site appraisals were carried out by experienced professionally qualified individuals in the various specialist fields to enable an informed combined opinion on how the potential environmental effects identified during the baseline studies could influence potential corridor options. Appraisal of corridor options has involved systematic consideration against the following environmental topic areas:

- Natural Heritage – designations, protected species, habitats, ornithology, hydrology, geology and hydrogeology.
- Cultural Heritage – designations and cultural heritage assets.
- Proximity to Dwellings – residential properties and other sensitive receptors.
- Landscape and Visual – designations, landscape character and visual amenity.
- Land Use – agriculture, forestry and recreation.

Engineering Criteria

Appraisal of route options has involved systematic consideration against the following engineering topic areas:

- Infrastructure Crossing – major crossings and road crossings.
- Environmental Design – elevation, atmospheric pollution, contaminated land and flooding.
- Ground Conditions – terrain.
- Construction/ Maintenance – access.
- Proximity – windfarms, communication masts, urban environments and metallic pipelines.


Economic Criteria

Appraisal of route options has involved systematic consideration against the following economic topic areas:

- Capital – construction.
- Operational – inspections and maintenance.

3.2.5 Comparative Appraisal

A Red-Amber-Green (RAG) rating has been applied to each topic area within each section, indicating potential impacts. This rating is based on a four-point scale as follows:

Performance	Comparative Appraisal	
	No Impact	Negligible, or no potential effects
	Lower Impact	Potentially minor effects, with little or no requirement for mitigation
	Moderate Impact	Potentially moderate effects subsequent to appropriate mitigation
	Higher Impact	Potentially major effects which may be difficult to mitigate
Least Preferred		

Using the terminology of SSEN Transmission's Routeing Guidance and as adapted specifically for this document, the following definitions have been used:

Effect - the direct or indirect physical consequence(s) of the proposed corridor option on receptors, under each of the various topic headings.

Level of Impact - the outcome of a comparative appraisal of the combination of effects within a specific topic along a specific corridor option after a consideration of the potential for mitigation, using professional judgement based on experience.

4. POTENTIAL CORRIDORS

4.1 Identification of Corridor Options

In line with the methodology presented in Section 2.2, a heat map was produced that was used to identify corridor options as illustrated in **Figure 4.1 – 4.6**. Many designations/sensitive receptors are treated as exclusion areas within the heat map and therefore, although potentially located within the identified corridor options, the OHL alignment will need to be routed to avoid these areas. There are some deviations to this for linear features, such as river Special Areas of Conservation (SAC) for example, such as the River Spey SAC, where it would be possible to span them without any towers being located within the designated site. The exclusions are presented in **Appendix A** and can be seen on the heat map as clear areas. From this, a 'Least Impact Path' analysis was run to determine potential corridors across the constraints surface, identifying ways to route the OHL which have the least "environmental impact" and interaction with environmental constraints.

This project is of sufficient length for it to be necessary to subdivide the study area into sections to ease description and comparison of the different corridor options.

4.1.1 Section 1

Corridor 1A – This option routes in an easterly direction from Beauly, avoiding the urban centre of Inverness to the north. Upon traversing the A9 carriageway, Corridor 1A routes north avoiding an area of hilly/ mountainous land with an AOD of over 450 m, covering a wide area of agricultural land with numerous villages and townships within.

Corridor 1B – Similarly to Corridor 1A, this option routes in an easterly direction from Beauly avoiding the urban centre of Inverness to the north. Upon reaching the A9 carriageway, this corridor option routes south, avoiding the hilly/ mountainous land with an AOD of over 450 m between the two corridors, before following the direction of the River Findhorn.

4.1.2 Section 2

Corridor 2A – This option covers a narrower area in comparison to Corridor 2B and is located to the north of section 2. Included within the boundary of Corridor 2A is the A96 carriageway as well as the population centre of Forres. There are large areas of exclusion within Corridor 2A, which include Findhorn Castle Garden and Designed Landscape (GDL), Darnaway and Lethen Forest Special Protection Area (SPA), and residential dwellings within and around Forres.

Corridor 2B – This option covers a wide area to the south of section 2, which contains both the A939 and A940 carriageways as well as several waterbodies, small towns and villages, including Ferness and Relugas. There are large areas of exclusion within Corridor 2B, which include areas of Class 1 Peatland and wind turbines in the south, and Darnaway and Lethen Forest SPA and Relugas GDL in the north.

4.1.3 Section 3

Corridor 3A – This option covers the area to the north of section 3, containing numerous towns and villages throughout but avoiding the population centre of Elgin. The A96 and A941 carriageways, waterbodies and agricultural land sit within this corridor option. There are large areas of exclusion to the south of the corridor due to windfarms and Class 1 Peatland, and Gordon Castle GDL is excluded in the north.

Corridor 3B – This option encompasses the southern region of section 3, containing large sections of agricultural land, as well as the A941 and A95 carriageways and Charlestown of Aberlour. There are large areas of exclusion in the corridor due to windfarms in the north and Class 1 Peatland in the north and west.

4.1.4 Section 4

Corridor 4A – This option covers the area to the north of section 4, with the corridor coinciding with Corridor 4B before separating close to Milltown of Rothiemay. Several carriageways including the A95, A97 and A947 as well as numerous townships and villages, agricultural land and water courses are contained within this corridor. There are large areas of exclusion in the corridor due to windfarms and two GDLs.

Corridor 4B – This option covers the southern extent of section 4 and, similarly to Corridor 4A, encompasses several carriageways including the A95, A97 and A947 as well as numerous townships and villages, agricultural land and water courses. Both corridors merge again prior to the A947 carriageway and end at New Deer. Areas excluded within the corridor include Hatton Castle GDL in the east, and wind turbines in the south.

4.1.5 Section 5

This single corridor option contains within it road carriageways including the A948, A952 as well as the A90 towards Peterhead. There are numerous townships, villages and watercourses within this section. Section 5 ends at the outskirts of Peterhead. Scattered residential properties are excluded throughout the corridor.

5. COMPARATIVE ANALYSIS OF POTENTIAL CORRIDORS

5.1 Introduction

The following is a summary of the key considerations of each corridor option per section (1 to 5) from an environmental, engineering and economic perspective, and provides a comparative appraisal of each corridor section in order to select an overall Preferred Option. The following figures accompany the text in this section and illustrate potential environmental baseline constraints identified under each topic.

Figure 5.1 – Ecology Constraints with Corridor Options

Figure 5.2 – Key Woodland Constraints with Corridor Options

Figure 5.3 – Hydrology and Peat Constraints with Corridor Options

Figure 5.4 – Cultural Heritage Constraints with Corridor Options

Figure 5.5 – Landscape Constraints with Corridor Options

Figure 5.6 – Land Use Constraints with Corridor Options

Figure 5.7 – Agricultural Constraints with Corridor Options

5.2 Section 1

Table 1 below shows a comparative analysis of Corridor 1A and 1B in Section 1. The table splits each Corridor into the topics discussed in SSEN Transmission's 'Procedures for Routeing OHLs and Underground Cables of 132kV and above' guidance.

Table 1 – Comparative Analysis of Section 1 Corridors

Topic	Corridor 1A	Corridor 1B
Natural Heritage	Of the internationally designated sites for Natural Heritage within the Beauly to Blackhillock Study Area, Loch Ashie Special Protection Area (SPA), Moniack Gorge Special Area of Conservation (SAC), Moray Firth SAC, Cawdor Wood SAC, Carn nan Tri-tighearnan SAC, and Inner Moray Firth Ramsar all overlap Corridor 1A. In addition, there are ten national designations that overlap with Corridor 1A. Whilst placement of the corridors and excluded areas indicates that direct habitat loss may be avoided within the designated areas, there is the potential	Of the international designated sites within the Study Area, Loch Ashie SPA, Moniack Gorge SAC, Moray Firth SAC, Inner Moray Firth Ramsar and Carn nan Tri-tighearnan SAC are all within Corridor 1B. Additionally there are nine national designations within the corridor. Many of these designated sites qualify because of ornithology interests, providing suitable habitats for a range of Schedule 1 bird species and Birds of Conservation Concern (BoCC).

Topic	Corridor 1A	Corridor 1B
	<p>for loss of connectivity between these sites, particularly those that support woodland habitats at lower elevations. Many of these designated sites qualify because of ornithology interests, providing suitable habitats for a range of Schedule 1 bird species and Birds of Conservation Concern (BoCC).</p> <p>The presence of bats, pine martens, badgers, otters and red squirrels is likely within this corridor. Stronghold locations for red squirrels generally align to suitable habitats such as Caledonian forest but are not exclusively associated with these habitats. Reptiles, amphibians, and aquatic species will likely be present.</p> <p>Ancient Woodland is present throughout the corridor, which is a considerable natural heritage constraint for Corridor 1A. These areas are principally associated with river valleys that could be spanned or are within designated sites and/or ancient woodland areas.</p> <p>NatureScot's Carbon and Peatland Mapping Class 1 and Class 2 peatland is present in Corridor 1A to the south.</p> <p>There is a complex network of rivers, streams and burns throughout the corridor, along with several waterbodies. There is the potential to compromise the quality or quantity of surface waters or groundwaters, in relation to public or private water supplies (shown in Figure 4.3), or Groundwater Dependent Terrestrial Ecosystems (GWDTE). However, subsequent surveys will establish specific receptors considered to be at risk.</p>	<p>The presence of bats, pine martens, badgers, otters and red squirrels is likely within this corridor. Stronghold locations for red squirrels generally align to suitable habitats such as Caledonian forest but are not exclusively associated with these habitats. Reptiles, amphibians, and aquatic species will likely be present. Salmonids form part of the designated features of some sites.</p> <p>Similarly to Corridor 1A, the primary constraint for Corridor 1B is in its crossing of areas that contain woodland habitat including old sessile oakwood and Caledonian forest. These areas are scattered throughout the corridor, and principally associated with river valleys that could be spanned; or are within designated sites and/or ancient woodland areas.</p> <p>Class 1 and Class 2 peatland are both present in Corridor 1B and is unavoidable at routeing and alignment stages around Ruthven and Daless where the corridor narrows significantly.</p> <p>There is a complex network of rivers, streams and burns throughout Corridor 1B, along with several waterbodies. There is the potential to compromise the quality or quantity of surface waters or groundwaters, in relation to public or private water supplies, or GWDTE.</p>
Cultural Heritage	<p>There are a number of designations identified within Corridor 1A:</p> <ul style="list-style-type: none"> • 70 Scheduled Monuments • six Inventory Garden and Designed Landscapes (GDL) • two Inventory Battlefields 	<p>There are no Inventory Battlefields, World Heritage Sites or Marine Protected Areas within Corridor 1B. However there a number of other designations identified:</p> <ul style="list-style-type: none"> • 38 Scheduled Monuments • four Inventory GDL

Topic	Corridor 1A	Corridor 1B
	<p>There are also a number of Cultural Heritage Assets identified within Corridor 1A:</p> <ul style="list-style-type: none"> • 210 Listed Buildings • two Conservation Areas <p>Overall there is the potential for settings impacts on all of the above, most notably the Battle of Culloden which has a dual designation as a conservation area, and may be difficult to avoid at routeing and alignment stage.</p>	<p>There are a number of Cultural Heritage Assets identified within Corridor 1B:</p> <ul style="list-style-type: none"> • 144 Listed Buildings • one Conservation Area <p>Overall there is the potential for settings impacts on all of the above.</p>
<p>Landscape and Visual</p>	<p>Corridor 1A is not considered likely to create any significant effects on the special qualities of SLAs or GDL within or adjacent to the corridor.</p> <p>The corridor passes through several Landscape Character Types (LCT)s, several of which already include existing OHL infrastructure and several windfarm developments. The majority of Corridor 1A passes through the less sensitive areas of low-lying coastal farmland and forestry. The areas of the corridor that pass through the more sensitive open upland are to the west of Loch Ness, south of Inverness, and the south-eastern extents of the corridor. Due to the location of Beauly and Blackhillock substations, it is unavoidable that this corridor passes through a number of sensitive landscapes. Some of these areas cannot be avoided due to cutting through the corridor in a north - south direction, but there is the potential to develop alignments that cross the least sensitive points of these areas.</p> <p>Potential visibility of the proposed OHL from within Corridor 1A would generally be from the A96 to the north of the corridor, the A9 and A939, local residents, and people visiting the area for recreational and tourist purposes. Views from the Great Glen Way long distance footpath and National Cycle Network Route 1 (NCN 1) would be to the more open areas of the trail, although views of the corridor would be viewed in the context of other OHL infrastructure.</p>	<p>There are several SLAs within or adjacent to Corridor 1B. The eastern extents of Corridor 1B fall within the Drynachan, Lochindorb and Dava Moors SLA, cutting the SLA in half. Corridor 1B would be perceptible from high ground in the eastern extents of the SLA and would introduce a new incongruous man-made feature, currently not present.</p> <p>The corridor is broadly sectioned into three types of landscape character, and is notably split into two halves to the east and west by the River Nairn, which is mainly open farmed valley floors and a central meandering river contained within steep, forested and wooded slopes. Due to the location of the Beauly and Blackhillock substations, it is unavoidable for this corridor to pass through a number of sensitive landscapes, namely the Broad Steep-Sided Glen of Loch Ness, the farmed Strath of the River Nairn, and the upland valley and narrow-wooded valley of the River Findhorn.</p> <p>Potential visibility of the proposed OHL within Corridor 1B would generally be from the A9 and a short stretch of the A939, local residents and people visiting the area for recreational and tourist purposes. There would be higher potential for visibility of the proposed OHL in Corridor 1B, from the areas of high ground due to its elevated nature, although the proposed OHL would be viewed in the context of existing OHL infrastructure in the west half of the corridor. Views of the proposed OHL as it passes through the more sensitive recreational areas</p>

Topic	Corridor 1A	Corridor 1B
		<p>such as near Loch Ness, the Spey Valley and upland valley would be limited to close views due to the high proportion of woodland in these areas. Views from the Great Glen Way long distance footpath and NCN 1 would be to the more open areas of the trail, mostly limited to the western half of the corridor, and viewed in the context of other OHL infrastructure.</p>
People	<p>There are numerous settlements, individual dwellings and farms scattered across the Corridor, although there are large parts of the corridor that do not contain any dwellings, they are generally located in areas of dense forestry or towards the southern extents where the uplands start to emerge from the lower lying farmland areas. Particular pinch points are located along the northern extents of the corridor, towards the coast and with the river valleys that dissect the corridor in a north south direction.</p>	<p>There are numerous settlements, individual dwellings and farms scattered across the corridor, although there are large parts of the corridor that do not contain any dwellings. These areas are generally located in areas of dense forestry or towards the southern extents where the uplands start to emerge from the lower lying farmland areas.</p>
Land Use	<p>The western extent of the corridor around Beaulieu and Inverness is particularly concentrated with the highest quality agricultural land, which will be unavoidable.</p> <p>Corridor 1A is host to significant areas of commercial coniferous woodland, with limited potential to avoid in the routeing/alignment stages.</p> <p>There are areas within Corridor 1A with core paths and NCN Routes present, and Corridor 1A may interact with these recreational features.</p>	<p>The western extent of the corridor around Beaulieu and Inverness is particularly concentrated with the highest quality agricultural land, which will be unavoidable.</p> <p>Corridor 1B is host to significant areas of commercial coniferous woodland, with limited potential to avoid in the routeing/alignment stages.</p> <p>There are areas within the corridor with core paths and NCN Routes present and Corridor 1B may interact with these recreational features.</p>
Engineering	<p>Corridor 1A is the shortest of the Section 1 corridors at approximately 49 km.</p> <p>Corridor 1A contains major crossings in the form of other OHLs, railways and rivers/loch crossings. It is highly likely to cross the existing Beaulieu to Knockngael 132 kV and Beaulieu to Blackhillock 275 kV OHLs. Corridor 1A contains several A and B category road crossings including the A82 near Lagnalean, A862 at couple of locations, A9 near Bogbain, B862, B861 and B851.</p>	<p>Corridor 1B is the longest route of Section 1, at approximately 54 km.</p> <p>Corridor 1B contains major crossings in the form of other OHLs, railways and rivers/loch crossings. It is highly likely to cross the existing Beaulieu to Knockngael 132 kV and Beaulieu to Blackhillock 275 kV OHLs. Corridor 1B contains several A and B category road crossings including the A82 near Lagnalean, A862 at couple of locations, A9 near Scatraig, B862, B861 and B851.</p>

Topic	Corridor 1A	Corridor 1B
	<p>It also includes a single-track railway near Castleton and the River Beaully, Caledonian Canal, River Ness, River Findhorn and River Nairn.</p> <p>Corridor 1A is not considered to have elevated atmospheric pollution levels, however it does have an increased risk of contaminated land due to more urban populations and coastal infrastructure. There is a small risk from Unexploded Ordnance (UXO) due to coastal infrastructure having been Luftwaffe targets in World War II. There is a risk of flooding around the River Findhorn and River Nairn, and approximately 2-5% of the corridor has more than 80% of corridor width within a 1 in 200-year flood zone.</p> <p>Steep or mountainous slopes present a significant difficulty for routeing, access, construction and maintenance. Options with a large proportion of steep or mountainous slopes are more likely to be constrained and thus more difficult and costly to build and maintain. The initial corridor from Beaully to Knocknagael comprises predominantly undulated terrain, with multiple sections of steeper gradients in the surrounding land. Corridor 1A follows the same corridor as the existing 275 kV OHL, and the terrain is expected to be challenging in some sections due to steep slopes.</p> <p>Construction of temporary access for construction is a significant project cost and an option that is remote from existing tracks and the public road network has the potential to incur large access costs. Corridor 1A passes through more developed agricultural land and near coastal regions and has a reasonable density of existing roads or tracks. New access development would be expected to be minimal, and the existing road network could be used where possible.</p> <p>Corridor 1A has good clearance from metallic pipelines and windfarms, although scattered individual turbines are present within the corridor. Corridor 1A is located in proximity to Beaully and Inverness and has high numbers of dispersed dwellings and hamlets throughout.</p>	<p>It also includes crossing of a single-track railway near Moy, and crossing of the River Beaully, Caledonian Canal, River Ness, River Findhorn, and River Nairn.</p> <p>Corridor 1B is considered to have low atmospheric pollution levels, however it does have an increased risk of contaminated land due to more urban populations and coastal infrastructure. There is a small UXO risk due to coastal infrastructure having been Luftwaffe targets in World War II. Corridor 1B crosses the River Findhorn near Forres, and the River Nairn near Daviot. It is likely that approximately 2-5% of the corridor has more than 80% of corridor width within a 1 in 200-year flood zone.</p> <p>As with Corridor 1A, the initial corridor from Beaully to Knocknagael comprises predominantly undulated terrain with multiple sections of steeper gradients in the surrounding land. The maximum elevation within Corridor 1B is 515 m as it approaches the Cairngorms, with associated mountainous terrain and steep slopes of up to 31.7% between Ruthven and Dulsie, making this section extremely challenging for access and constructability.</p> <p>Corridor 1B is highly isolated and has a limited number of access roads. Extensive access development would be needed to build and maintain an OHL in this corridor.</p> <p>Corridor 1B is in close proximity to a number of windfarms, however there is a low risk of encountering and impacting metallic pipes. Corridor 1B is located in proximity to Beaully and Inverness and has high numbers of dispersed dwellings and hamlets throughout the corridor.</p>

Topic	Corridor 1A	Corridor 1B
Economic	Corridor 1A is the shortest length, and therefore the least costly option.	<p>Corridor 1B is 5 km longer than Corridor 1A, creating an estimated increase of ~10% for construction, inspections and maintenance costs for this section. This is within the 120% allowance and so considered low impact.</p> <p>It is noted from the engineering appraisal that access may create a greater challenge for Option 1B, the cost associated with public road improvements shall be considered in more detail at the Routeing stage.</p>

Table 2 below shows the RAG Ratings for this section. Environmentally, Corridor 1A is the preferred corridor within Section 1. Although Corridor 1A shows a higher impact to cultural heritage due to its proximity to Culloden Battlefield and Conservation Area, it presents a more favourable alternative to Corridor 1B in all landscape and visual sub-disciplines, and peatland habitat, whilst providing the opportunity to avoid close proximity to Culloden. Corridor 1A offers the possibility to avoid the Drynachan, Lochindorb and Dava Moors Scenic Landscape Areas, which cannot be avoided on Corridor 1B, as well as the possibility to avoid peatland habitats.

For engineering considerations Corridor 1A is the preferred corridor within Section 1. Although Corridor 1A has a higher level of atmospheric pollution, it presents a more favourable alternative to Corridor 1B in all other categories. Corridor 1B reaches significantly higher elevations of up to 515 m as it nears the Cairngorms, with more mountainous terrain and steeper slopes within a narrow corridor, which would be challenging for construction. Corridor 1B's road network is limited in comparison to 1A, which makes it less favourable for access. When considering the proximity to windfarms, Corridor 1A has no major developments constraining the corridor whereas Corridor 1B has several larger operational and proposed developments, which would restrict the potential route options. Additionally, Corridor 1A contains existing steel lattice tower OHLs and presents the opportunity to keep such infrastructure together if aligned appropriately.

Economically Corridor 1A is preferred due to having the shortest length, however both options are considered low impact.

Table 2 – RAG Ratings for Section 1 Corridors

	Parameter	Sub-Parameter	Section 1 Corridor Options	
			Option 1A	Option 1B
Environment	Natural Heritage	Designations	M	M
		Protected Species	M	M
		Habitats	M	H
		Ornithology	M	M

	Parameter	Sub-Parameter	Section 1 Corridor Options	
			Option 1A	Option 1B
		Geology, Hydrology, Hydrogeology	M	M
	Cultural Heritage	Designations	H	M
		Cultural Heritage Assets	H	M
	People	Proximity to Dwellings	M	M
	Landscape and Visual	Designations	L	H
		Landscape Character	M	H
		Visual	M	H
	Land Use	Agriculture	H	H
		Forestry/ Woodland	H	H
		Recreation	M	M
	Planning	Proposals	M	M
Engineering	Infrastructure Crossings	Major Crossings	M	M
	Topography	Elevation	M	H
		Atmospheric pollution	M	L
		Contaminated land	M	M
		Flooding	M	M
	Ground Conditions	Terrain	M	H
	Construction / Maintenance	Access	L	H
	Proximity	Windfarms	M	H
		Communication masts	M	M
		Urban environments	L	M
Metallic pipelines		L	L	
Route Length		L	M	
Cost	Capital	Construction	L	L
	Operational	Inspections	L	L
		Maintenance	L	L

5.3 Section 2

Table 3 below shows a comparative analysis of Corridor 2A and 2B in Section 2.

Table 3 – Comparative Analysis of Section 2 Corridors

Topic	Corridor 2A	Corridor 2B
Natural Heritage	<p>Lower Findhorn Woods SAC and SSSI is located within Corridor 2A. Additionally, Culbin Bar SAC, Moray Firth SAC, Moray and Nairn Coast Ramsar Site, the Culbin Sands, Culbin Forest and Findhorn Bay SSSI and Findhorn Bay Local Nature Reserve (LNR) are all hydrologically connected to Corridor 2A. Corridor 2A also overlaps with the southern third of Darnaway and Lethan Forest SPA. Many of these designated sites have habitats that support Birds of Conservation Concern and Schedule 1 species under the Wildlife & Countryside Act 1981.</p> <p>The presence of bats, pine martens, badgers, otters and red squirrels is likely within this corridor. Reptiles, amphibians, and aquatic species will also be present. Red squirrel strongholds also exist at Culbin.</p> <p>Outwith designated sites, the primary habitats within Corridor 2A are woodlands, particularly those associated with the Findhorn valley. Woodland listed in the Ancient Woodland Inventory (AWI) is present within the corridor. Class 1 and Class 2 peatland is also present in small quantities across Corridor 2A, but is not likely to be a significant constraint.</p> <p>There is a complex network of rivers, streams and burns throughout Corridor 2A. The main water course is the River Findhorn, which passes through the centre of the corridor in a southwest - northeast-alignment. Corridor 2A may compromise the quality or quantity of surface waters or groundwaters, in relation to public or private water supplies, or GWDTE.</p>	<p>Two SACs, Lower Findhorn Woods SAC and Moidach Mor SAC, are located within Corridor 2B. Lower Findhorn Woods SSSI and Moidach Mor SSSI overlap with these SACs. Additionally, Culbin Bar SAC, Moray Firth SAC, Moray and Nairn Coast Ramsar Site and the Culbin Sands, Culbin Forest and Findhorn Bay SSSI are all hydrologically connected to Corridor 2B. Many of these designated sites have habitats that support Birds of Conservation Concern and Schedule 1 species under the Wildlife & Countryside Act 1981.</p> <p>Many of the protected species constraints for Corridors 2A are also relevant to Corridor 2B, with particular focus on woodland and riverine habitats that support bats, red squirrels, pine martens, otters and (potentially) water voles, and any waterbodies that can support amphibians of conservation concern. However there are no specific strongholds for the above mammals noted in this corridor.</p> <p>Outwith designated sites, the primary habitats within Corridor 2B are woodlands, particularly those associated with the Findhorn valley. Woodland listed in the AWI is present within the corridor. Class 1 and Class 2 peatland is present in large quantities across Corridor 2B, particularly in the south. Blanket bogs, heaths and species-rich grasslands are present within the corridor.</p> <p>There is a complex network of rivers, streams and burns throughout Corridor 2B. The main water course is the River Findhorn, which passes through the centre of the corridor in a southwest - northeast-alignment. The corridor may compromise the quality or quantity of surface waters or groundwaters, in relation to public or private water supplies, or GWDTE.</p>

Topic	Corridor 2A	Corridor 2B
Cultural Heritage	<p>There are no Inventory Battlefields, World Heritage Sites or Marine Protected Areas within Corridor 2A. There are a number of Designations identified:</p> <ul style="list-style-type: none"> • nine Scheduled Monuments; and • three Inventory GDL <p>There are a number of Cultural Heritage Assets identified within Corridor 2A:</p> <ul style="list-style-type: none"> • 277 Listed Buildings • one Conservation Area <p>Overall, there is the potential for adverse impacts on the setting of a number of sensitive assets, in particular to the GDL in the corridor.</p>	<p>There are no Inventory Battlefields, World Heritage Sites or Marine Protected Areas within Corridor 2B. There are a number of Designations identified:</p> <ul style="list-style-type: none"> • two Scheduled Monuments; and • one Inventory GDL <p>There are no Conservation Areas within Corridor 2B. There are a number of Cultural Heritage Assets identified:</p> <ul style="list-style-type: none"> • 50 Listed Buildings <p>Overall, there is the potential for adverse impacts on the setting of a number of sensitive assets.</p>
Landscape and Visual	<p>Three SLAs have been identified within Corridor 2A. Due to the nature of the intervening landform, vegetation and built form within the corridor, views from the SLAs will be limited and will generally only occur if the alignment is located immediately adjacent to the SLAs' boundary.</p> <p>The corridor passes through several LCTs, all of which include existing OHL infrastructure.</p> <p>With Corridor 2A, the proposed OHL may be visible from residents in Forres, and surrounding housing, the A96 to the north of the corridor, the A939, A940, and people visiting the area for recreational and tourist purposes. In these areas the proposed OHL would be partially screened in places by local landform, forestry and built form. Views of the Proposed OHL as it passes through the more sensitive recreational areas such as the Findhorn Valley and upland valley would be limited to close views, due to the high proportion of woodland in these areas. Views from the Dava Way long-distance footpath and NCR 1 would be limited to a relatively short stretch of this trail and would be limited to within</p>	<p>Two SLAs are identified within or adjacent to Corridor 2B. Although a very small slither of Drynachan, Lochindorb and Dava Moors SLA falls within Corridor 2B, the majority of this SLA will lie adjacent to the southern boundary of the corridor, and likely to be perceptible from high ground to the south.</p> <p>The corridor passes through several LCTs, and several of the western LCTs include existing OHL infrastructure and windfarm development. The corridor is broadly sectioned into three types of landscape character and notably split into two halves to the east and west by the River Findhorn. Although the northern extents of Corridor 2B pass through less sensitive areas of low-lying farmland and forestry, a vast amount if this forestry is ancient woodland, particularly in the River Findhorn valley. The southern extents of the corridor pass through more sensitive open upland areas. Due to the location of the Beauy and Blackhillock substations, it is unavoidable that this corridor passes through a number of sensitive landscapes, namely part of the narrow-wooded valley of the River Findhorn.</p> <p>Potential visibility of the proposed OHL from within Corridor 2B would generally be from the A939, A940, local residents and people visiting the area</p>

Topic	Corridor 2A	Corridor 2B
	<p>a relatively close proximity due to local topography, woodland cover and built form.</p>	<p>for recreational and tourist purposes. In these areas the corridor would be partially screened in places by local landform, forestry and built form. Views from the Dava Way long-distance footpath would be to the more open areas of the trail.</p>
People	<p>There are numerous settlements and individual dwellings and farms throughout the corridor as shown in Figure 4.6. The largest settlement and most densely populated area is the town of Forres in the centre of the corridor.</p>	<p>There are numerous settlements and individual dwellings and farms scattered across the corridor as shown in Figure 4.6, although there are large parts of the corridor that do not contain any dwellings. These areas are generally located in the southern extents where the uplands start to emerge from the lower lying farmland areas. Particular pinch points of dense properties are located in the central extents of the corridor, in the River Findhorn valley.</p>
Land Use	<p>Corridor 2A contains some of the best quality Agricultural land, including Class 2, Class 3.1 and Class 3.2.</p> <p>Corridor 2A is host to significant areas of commercial coniferous woodland, with limited potential to avoid in the routeing/alignment stages.</p> <p>There are areas within the corridor area with core paths and NCRs present and Corridor 2A may interact with these recreational features.</p>	<p>The highest quality agricultural land within this corridor is classed as 3.2 – Land capable of average production though high yields of barley, oats and grass can be obtained.</p> <p>Corridor 2B is host to significant areas of commercial coniferous woodland, with limited potential to avoid in the routeing/alignment stages.</p> <p>There are areas within the corridor area with core paths present and Option 2B may interact with these recreational features.</p>
Engineering	<p>Corridor 2A is approximately 26 km long.</p> <p>Corridor 2A contains several road crossings including the A939 and A940. There are no railways crossings but the Inverness-Aberdeen line enters the middle of the corridor.</p> <p>Corridor 2A has average levels of atmospheric pollution, but an increased risk of contaminated land due to more urban populations and coastal infrastructure. There is a small UXO risk due to coastal infrastructure having been Luftwaffe targets in World War II. Corridor 2A is the least elevated of the two options, with a maximum elevation of 252 m. Flooding is not a major constraint, with less</p>	<p>Corridor 2B is the shortest corridor in Section 2, at approximately 19 km.</p> <p>Corridor 2B contains major crossings in the form of other OHLs and roads. It is likely to cross the existing Beauly to Blackhillock 275kV OHL, as well as the A939, A940 and B9007.</p> <p>Corridor 2B is considered to have average atmospheric pollution levels, with no known areas of contaminated land or UXOs. Corridor 2B is of higher elevation than Corridor 2A, and the maximum elevation is 303 m. Flooding is not a</p>

Topic	Corridor 2A	Corridor 2B
	<p>than 2% (approx.) of the corridor having more than 80% of corridor width within a 1 in 200-year flood zone.</p> <p>Corridor 2A has gradients of up to 24%, which could present some challenges with respect to constructability in some sections. Superficial ground conditions vary but are predominantly till with small areas of alluvium, glacial sands and gravels on the northern side towards coast.</p> <p>Corridor 2A is a well developed corridor, with a high number of existing roads and tracks, therefore access is not considered to be a significant challenge.</p> <p>Corridor 2A has good clearance from metallic pipelines and windfarms, although scattered individual turbines are present within the corridor. Corridor 2A passes near coastal areas which contain a number of dispersed dwellings and hamlets. The corridor includes the town of Forres.</p>	<p>considerable constraint, with less than 2% (approx.) of the corridor having more than 80% of corridor width within a 1 in 200-year flood zone.</p> <p>Corridor 2B shares the same corridor as the existing Beauty to Blackhillock 275 kV OHL and has relatively less access challenges, with gradients up to 13% as compared to Corridor 2A. Corridor 2B has a well developed corridor with a high number of existing roads and tracks that may be used for access.</p> <p>Corridor 2B is in close proximity to a number of windfarms. There is a low risk of encountering and impacting metallic pipes.</p>
Economic	Corridor 2A is 7 km longer than Corridor 2B, creating an estimated increase of ~37% for construction, inspections and maintenance costs for this section.	Corridor 2B is the shortest length, and therefore the least costly option.

Table 4 below shows the RAG Ratings for this section. Environmentally, Corridor 2B is the preferred corridor within Section 2. This is because Corridor 2B has a reduced number of cultural heritage designations and assets in comparison to Corridor 2A, therefore reducing the possibility of settings impacts. Corridor 2B is also favourable for landscape designation and visual impacts, as it is further from settlements (Forres in particular), and is also less constrained by SLAs and GDLs. Corridor 2B does not contain any agricultural land of the highest quality, therefore it offers opportunity to avoid significant agricultural impacts. Furthermore, Corridor 2B offers the opportunity to avoid high density dwellings, which would be unavoidable around Forres for Corridor 2A.

For engineering considerations, although Corridor 2B has a medium likelihood of requiring major crossings and is constrained in places by windfarm developments, it presents a more favourable alternative to Corridor 2A in all other categories, such as terrain, access and contaminated land. Corridor 2B also allows for increased separation from heavily populated residential areas (such as Forres) and avoids the possibility of a railway crossing. Both corridors have good access through an existing network of public roads and access tracks, although Corridor 2A is slightly more challenging as the terrain has steeper gradients.

Economically, Corridor 2A is 7 km longer than Corridor 2B, creating an estimated increase of ~37% for construction, inspections and maintenance costs for this section. As a result, Corridor 2B is favoured at this stage from a cost perspective.

Table 4 – RAG Ratings for Section 2 Corridors

	Parameter	Sub-Parameter	Section 2 Corridor Options	
			Option 2A	Option 2B
Environment	Natural Heritage	Designations	M	M
		Protected Species	M	M
		Habitats	M	M
		Ornithology	M	M
		Geology, Hydrology, Hydrogeology	M	M
	Cultural Heritage	Designations	H	M
		Cultural Heritage Assets	H	M
	People	Proximity to Dwellings	H	M
	Landscape and Visual	Designations	M	L
		Landscape Character	M	M
		Visual	M	L
	Land Use	Agriculture	H	M
		Forestry/ Woodland	H	H
		Recreation	M	M
	Planning	Proposals	M	M
	Engineering	Infrastructure	Major Crossing	L
Topography		Elevation	M	M
		Atmospheric pollution	M	L
		Contaminated land	M	L
		Flooding	L	L
Terrain		Terrain	H	M
Construction / Maintenance		Access	M	L
Proximity		Windfarms	L	M
		Communication masts	M	M
		Urban environments	M	L
	Metallic pipelines	L	L	

	Parameter	Sub-Parameter	Section 2 Corridor Options	
			Option 2A	Option 2B
		Route Length	M	L
Cost	Capital	Construction	M	L
	Operational	Inspections	M	L
		Maintenance	M	L

5.4 Section 3

Table 5 below shows a comparative analysis of Corridor 3A and 3B in Section 3.

Table 5 – Comparative Analysis of Section 3 Corridors.

Topic	Corridor 3A	Corridor 3B
Natural Heritage	<p>Lower River Spey – Spey Bay SAC and River Spey SAC are both international designations within Corridor 3A. There are also 11 national designations located within the corridor, and further nationally and locally designated sites in the surrounding area, that are hydrologically linked to the corridor. Many of these designated sites have habitats that support Birds of Conservation Concern and Schedule 1 species under the Wildlife & Countryside Act 1981. Whilst the above sites are avoided by the more suitable areas identified in the heat mapping for Corridor 3A, the removal of vegetation from any surrounding areas (especially within 200 m), notably in spanning any of the designated rivers, will result in increased isolation and fragmentation of habitats that connect these sites to the wider landscape.</p> <p>The presence of bats, pine martens, badgers, otters and red squirrels is likely within this corridor. Reptiles, amphibians, and aquatic species will also be present. Of particular note is the ‘Ordiequish, Whiteash, Ben Aigan’ red squirrel stronghold and the Strathbogie Wildcat Priority Area. There may also be sea</p>	<p>The River Spey SAC is the only international designation within Corridor 3B, and there are five nationally designated sites present within the corridor. There are a number of internationally and nationally designated sites that are hydrologically connected to the corridor. Some of these designated sites have habitats that support Birds of Conservation Concern and Schedule 1 species under the Wildlife & Countryside Act 1981. Whilst these sites are excluded from potentially suitable areas of the corridor by the heat mapping, there is the potential for fragmentation and isolation of these sites due to placement of the OHL through adjacent habitats. The more upstream location of Corridor 3B relative to Corridor 3A also makes for more complex river crossings, particularly of the Spey, thereby potentially leading to more complex challenges with regard to avoiding loss of irreplaceable habitats, avoiding water pollution in construction, and fragmentation of habitats connecting the designated areas of the Spey to the wider landscape.</p> <p>The presence of pine marten, bats, red squirrels, wildcat, beavers and otters is likely within this corridor, particularly in woodlands associated with or in valleys</p>

Topic	Corridor 3A	Corridor 3B
	<p>lamprey and freshwater pearl mussels within the Spey SAC, and Salmonids form part of the designated features of some sites.</p> <p>Outwith designated sites, the primary habitats of ecological importance that are likely to be impacted by any route within Corridor 3A are woodlands. As with the more westerly corridors, these woodlands are generally associated with river valleys and comprise a mix of Caledonian forest in more elevated locations, with beech woodlands along the Spey valley. Class 1 and Class 2 peatland is present in small quantities in Corridor 3A.</p> <p>There is a complex network of rivers, streams and burns throughout Corridor 3A, along with several waterbodies. The main water course is the River Spey which passes through the centre of the corridor, on a southwest - northeast-alignment. The corridor may compromise the quality or quantity of surface waters or groundwaters, in relation to public or private water supplies, or GWDTE.</p>	<p>and hills above the amin river corridors. Of particular note is the 'Ordiequish, Whiteash, Ben Aigan' red squirrel stronghold and the Strathbogie Wildcat Priority Area. Reptiles, amphibians, and aquatic species will be present. Salmonids form part of the designated features of some sites.</p> <p>Outwith designated sites, the primary habitats of ecological importance within Corridor 3B are woodlands. There are also areas of alluvial forest in small patches. East of the Spey valley, the conifer plantations and agricultural habitats that begin to dominate the landscape offer greater opportunities for enhancement than those to the west. Class 1 and Class 2 peatland is present in the west of Corridor 3B and may be difficult to avoid around Carn na Cailliche and Upper Knockando.</p> <p>There is a complex network of rivers, streams and burns throughout Corridor 3B, along with several waterbodies. The main water course is the River Spey which passes through the centre of the corridor, again on a southwest - northeast-alignment. The corridor may compromise the quality or quantity of surface waters or groundwaters, in relation to public or private water supplies, or GWDTE.</p>
Cultural Heritage	<p>There are no Inventory Battlefields, World Heritage Sites or Marine Protected Areas within Corridor 3A. However, a number of designations have been identified:</p> <ul style="list-style-type: none"> • eight Scheduled Monuments; and • three Inventory GDLs <p>There are a number of Cultural Heritage Assets identified within Corridor 3A:</p> <ul style="list-style-type: none"> • 281 Listed Buildings • three Conservation areas 	<p>There are no Inventory Battlefields, World Heritage Sites or Marine Protected Areas within Corridor 3B. However, there are a number of designations identified:</p> <ul style="list-style-type: none"> • eight Scheduled Monuments; and • three Inventory GDLs <p>There are a number of Cultural Heritage Assets identified within Corridor 3B:</p> <ul style="list-style-type: none"> • 159 Listed Buildings • three Conservation areas

Topic	Corridor 3A	Corridor 3B
	<p>Overall, there is the potential for adverse impacts on the setting of a number of sensitive assets however there is the potential to reduce these during alignment. The relationship between the GDLs and numerous Listed Buildings will play a key role in routeing and alignment stages.</p>	<p>There is the potential for adverse impacts on the setting of a number of sensitive designations and assets, however there is the potential to reduce these during the route and alignment stages.</p>
<p>Landscape and Visual</p>	<p>There are three SLAs within Corridor 3A which will need to be considered further at the routeing stage, the Lower Spey and Gordon Castle Policies SLA, The Spey SLA and Pluscarden Valley SLA, many of which include existing OHL infrastructure and several windfarm developments. It is unavoidable that this corridor passes through a number of sensitive landscapes, namely the narrow-wooded valley of the River Spey, but there is the potential to develop alignments that avoid the more enclosed sensitive valley landscape and focus on the broader lower valley.</p> <p>Potential visibility of the proposed OHL from within Corridor 3A would generally be from the A96 to the north of the corridor, the A941 and A95, local residents and people visiting the area for recreational and tourist purposes. In these areas the proposed OHL would be partially screened in places by local landform, forestry and built form. Views from the Speyside Way long-distance footpath would be limited to a relatively short stretch of this trail but would be in close proximity due to need to cross the Spey and its local topography, woodland cover and built form.</p>	<p>Two SLAs have been identified within Corridor 3B. Of particular concern is the Spey SLA, which passes through the centre of the corridor in a north south direction, cutting the corridor in half. The corridor would introduce a new feature to the SLA and would cut across its entire width, and it would be a completely new type of structure in this part of the SLA.</p> <p>The corridor passes through several LCTs, several of which include existing OHL infrastructure and several windfarm developments. The majority of the corridor passes through the more sensitive upland moorland with forests and farmed uplands. The Spey valley in the centre of the corridor is also a sensitive area due to its narrow and intimate nature. To the east the landscape is also more sensitive due to its upland nature.</p> <p>Potential visibility of the proposed OHL from within Corridor 3B would generally be from the A941 and A95, local residents and people visiting the area for recreational and tourist purposes. In these areas the proposed OHL would be partially screened in places by local landform, forestry and built form. Views from the Speyside Way long-distance footpath would be limited to a relatively short stretch of this trail and would generally be limited to views towards the west and within a relatively close proximity due to local topography, woodland cover and built form.</p>
<p>People</p>	<p>There are several particularly densely populated areas within Corridor 3A, including the town of Keith and the villages of Lhanbryde, Mosstodloch and Fochabers, all located along the A96 in the north of the corridor. Due to the location of the connecting substation near Keith, there is little opportunity to</p>	<p>There are several particular densely populated areas within Corridor 3B, including the town of Keith and a number of small villages within the Spey Valley in the centre of the corridor. Due to the location of the connecting substation near Keith, and the Spey Valley cutting through the centre of the</p>

Topic	Corridor 3A	Corridor 3B
	<p>avoid some dwellings in this area. Although it is considered that there are some opportunities to minimise the potential effects on the majority of these dwellings at routeing and alignment stage.</p>	<p>corridor, there is little opportunity to avoid dwellings in these areas. Although, it is considered that there are some opportunities to minimise the potential effects on some of the dwellings near Keith, there is little opportunity to avoid the dwellings within the Spey Valley.</p>
<p>Land Use</p>	<p>The agricultural land within Corridor 3A contains wide areas of Class 2, 3.1 and 3.2.</p> <p>Corridor 3A is host to significant areas of commercial coniferous woodland, with limited potential to avoid in the routeing/alignment stages.</p> <p>There are areas within the corridor area with core paths and NCRs present, and Option 3A may interact with these recreational features, including the Speyside Way.</p>	<p>The agricultural land within Corridor 3B contains wide areas of Class 2, 3.1 and 3.2.</p> <p>Corridor 3B is host to significant areas of commercial coniferous woodland, with limited potential to avoid in the routeing/alignment stages.</p> <p>There are areas within the corridor area with core paths present and Option 3B may interact with these recreational features, including the Speyside Way.</p>
<p>Engineering</p>	<p>Both corridors in Section 3 are of equal length, approximately 36 km.</p> <p>Corridor 3A contains major crossings in the form of other OHLs, railways and rivers/loch crossings. It is highly likely to cross the existing Beauly to Blackhillock 275 kV OHL and the Elgin to Keith 132 kV OHL. Corridor 3A contains road crossings including the A95 and A941. It also includes crossing of the single track Inverness to Aberdeen railway line around Lhanbryde to Inchberry. Corridor 3A also crosses the River Spey.</p> <p>Corridor 3A is not considered to have high levels of atmospheric pollution (with respect to pollutants that can affect the performance of OHLs) and has no known areas of contaminated land, however there is a small UXO risk due to coastal infrastructure having been Luftwaffe targets in World War II. Corridor 3A has a lower elevation than Corridor 3B, with the maximum elevation at 238 m. Flooding is not considered a major constraint.</p>	<p>Corridor 3B contains major crossings in the form of other OHLs, railways and rivers/loch crossings. It is highly likely to cross the existing Glenfarclas to Keith 132 kV OHL. Corridor 3B contains road crossings including the A95 and A941. It also includes crossing of the single track railway heritage railway line from Keith to Dufftown, which cuts the entire corridor. Corridor 3B also crosses the River Spey.</p> <p>Corridor 3B is considered to have low atmospheric pollution levels, and there are no known areas of contaminated land or UXOs. Corridor 3B is made up almost exclusively of hilly terrain with steep slopes and the maximum elevation is 333 m. Flooding is not considered to be a major constraint.</p> <p>Corridor 3B passes through some slightly steep gradients in sections, thus making it more challenging to construct. The soil types for the corridor are mainly made up of till and some glacial sands and gravel. Corridor 3B also has some small areas of peat which can cause challenges with respect to gaining access during construction.</p>

Topic	Corridor 3A	Corridor 3B
	<p>Corridor 3A passes through areas of challenging terrain, with a variation of gradients. The soil types of Corridor 3A are mainly made up of till and some glacial sands and gravel.</p> <p>Corridor 3A is a well-developed corridor, with a high number of existing roads and tracks.</p> <p>Corridor 3A passes the proposed Meikle windfarm and proposed Rothes windfarm, however there is a low risk of encountering and impacting metallic pipes.</p>	<p>Corridor 3B is a well-developed corridor, with a high number of existing roads and tracks.</p> <p>Corridor 3B passes in closer proximity to a number of operational and proposed windfarms, however there is a low risk of encountering and impacting metallic pipelines.</p>
Economic	<p>There is no difference in the average route length between the two options so, for the level of detail considered at this stage, the construction, inspections and maintenance costs are considered to be similar for both options.</p>	

Table 6 below shows the RAG Ratings for this section. Environmentally, Corridor 3A is the preferred Corridor within Section 3. This is because Corridor 3A is less likely to compromise the designation status of natural heritage designated sites, whereas the more upstream location of Corridor 3B promotes added complexity in crossing the River Spey SAC/SSSI, thereby potentially leading to more complex challenges with regard to seeking to avoid loss of irreplaceable habitats, water pollution, and fragmentation of habitats. The complexity of crossing the River Spey for Corridor 3B may also lead to a greater need for survey and mitigation for particularly sensitive protected species such as freshwater pearl mussel and wildcat, whereas Corridor 3A offers greater opportunity for mitigation. Whilst landscape RAG ratings for designation and visual amenity are the same, Corridor 3A is preferred from a landscape perspective due to the potential to develop alignments to avoid the more sensitive upland and steep areas, whereas this cannot be avoided for Corridor 3B. Despite Corridor 3B presenting as preferred for cultural heritage designations, overall the benefits of Corridor 3A for all other disciplines together outweigh this.

For engineering considerations, Corridor 3A is the preferred corridor. Although Corridor 3A is less favourable in terms of atmospheric pollution and urban environments, it scores evenly or better than Corridor 3B in all other categories. Both corridors require crossings of OHLs, A roads, and single track railways. Both corridors have similar ground types and soils, however Corridor 3B has some areas of peat which can cause more challenges with respect to gaining access during construction. Corridor 3A has a lower maximum elevation, and also more gradual gradients which are preferable in terms of practicality and cost of construction.

Economically there is no difference in the average route length between the two options so, for the level of detail considered at this stage, the construction, inspections and maintenance costs are considered to be similar for both options.

Table 6 – RAG Ratings for Section 3 Corridors

	Parameter	Sub-Parameter	Section 3 Corridor Options	
			Option 3A	Option 3B
Environment	Natural Heritage	Designations	L	M
		Protected Species	M	H
		Habitats	L	M
		Ornithology	M	M
		Geology, Hydrology, Hydrogeology	M	M
	Cultural Heritage	Designations	M	L
		Cultural Heritage Assets	M	M
	People	Proximity to Dwellings	M	M
	Landscape and Visual	Designations	H	H
		Landscape Character	M	H
		Visual	M	M
	Land Use	Agriculture	H	H
		Forestry/ Woodland	H	H
		Recreation	M	M
	Planning	Proposals	M	M
	Engineering	Infrastructure	Major Crossing	M
Topography		Elevation	M	H
		Atmospheric pollution	M	L
		Contaminated land	L	L
		Flooding	M	M
Terrain		Terrain	M	M
Construction / Maintenance		Access	L	L
Proximity		Windfarms	M	M
		Communication masts	L	L
		Urban environments	M	L
	Metallic pipelines	L	L	

	Parameter	Sub-Parameter	Section 3 Corridor Options	
			Option 3A	Option 3B
		Route Length	L	L
Cost	Capital	Construction	L	L
	Operational	Inspections	L	L
		Maintenance	L	L

5.5 Section 4

Table 7 below shows a comparative analysis of Corridor 4A and 4B in Section 4.

Table 7 – Comparative Analysis of Section 4 Corridors

Topic	Corridor 4A	Corridor 4B
Natural Heritage	<p>There is one internationally designated site for natural heritage in Corridor 4A, Reidside Moss SAC, three nationally designated sites, and five locally designated sites. Corridor 4A is considered to have a low likelihood of birds associated with designated sites in the wider surrounding area using habitats within this route corridor.</p> <p>Whilst this corridor can support a range of protected species such as bats, badgers, pine martens, otters, water voles and beavers, it is more dominated by agricultural land and, where there is woodland, conifer plantation, than more westerly corridors. Reptiles, amphibians and aquatic species will also be present. Habitats in the corridor have the potential to support a range of other protected and notable species which may be sensitive to the proposed OHL, including medium to large raptors as well as other breeding and wintering species of conservation concern.</p> <p>Corridor 4A is largely comprised of common and widespread habitats, primarily agricultural land and plantation woodland of relatively low distinctiveness, however, small pockets of habitat of conservation interest are present. Class 1</p>	<p>Mortlach Moss SAC is the only internationally designated site in Corridor 4B, however there are five nationally designated and three locally designated sites within the corridor. Corridor 4B is considered to have a low likelihood of birds associated with designated sites in the wider surrounding area using habitats within this route corridor.</p> <p>As with Corridor 4A, Corridor 4B can support a range of protected species, but it is more dominated by agricultural land. However, its location overlaps with the Strathbogie Wildcat Priority Area; and badger activity, notably in woodland edge and field margins. Spanning of Strath Isla and the Deveron means otters, water voles, beavers, aquatic invertebrates and fish may be present. Habitats within the corridor have the potential to support a range of protected and notable bird species which may be sensitive to the proposed OHL, including medium to large raptors as well as other breeding and wintering species of conservation concern.</p> <p>Very similarly to Corridor 4A, Corridor 4B is largely comprised of common and widespread habitats primarily agricultural land and plantation woodland of</p>

Topic	Corridor 4A	Corridor 4B
	<p>and Class 2 peatland is present in small quantities and not considered to be a significant constraint.</p> <p>There is a complex network of rivers, streams and burns throughout Corridor 4A, along with several waterbodies. The main water courses are the River Deveron and the River Isla. An OHL in Corridor 4A may compromise the quality or quantity of surface waters or groundwaters, in relation to public or private water supplies, or GWDTE.</p>	<p>potentially low distinctiveness, however, small pockets of habitat of conservation interest are present within the corridor option including Annex I habitats. Class 1 and Class 2 peatland is present in very small quantities within Corridor 4B, and would be easy to avoid through design at routeing and alignment stages. Habitats have the potential to support a range of other protected and notable species which may be sensitive to the proposed OHL, including medium to large raptors as well as other breeding and wintering species of conservation concern.</p> <p>There is a complex network of rivers, streams and burns throughout Corridor 4B, along with several waterbodies. The main water courses are the River Deveron and the River Isla. Corridor 4B may compromise the quality or quantity of surface waters or groundwaters, in relation to public or private water supplies, or GWDTE.</p>
Cultural Heritage	<p>There are no World Heritage Sites or Marine Protected Areas within Corridor 4A. However, there are a number of Designations identified:</p> <ul style="list-style-type: none"> • seven Scheduled Monuments; • three Inventory GDLs; and • one Inventory Battlefield <p>There are a number of Cultural Heritage Assets identified within Corridor 4A:</p> <ul style="list-style-type: none"> • 177 Listed Buildings • two Conservation areas. <p>Overall, there is the potential for adverse impacts on the setting of a number of sensitive assets however there is the potential to reduce these during routeing and alignment.</p>	<p>There are no World Heritage Sites, Inventory Battlefields, or Marine Protected Areas within Corridor 4B. There are a number of Designations identified:</p> <ul style="list-style-type: none"> • nine Scheduled Monuments; and • two Inventory GDL <p>There are a number of Cultural Heritage Assets identified within Corridor 4B:</p> <ul style="list-style-type: none"> • 112 Listed Buildings • one Conservation Area <p>Overall, there is the potential for adverse impacts on the setting of a number of sensitive assets however there is the potential to reduce these during routeing and alignment.</p>

Topic	Corridor 4A	Corridor 4B
Landscape and Visual	<p>The corridor traverses Deveron Valley SLA to the west of Turriff, which is considered to be sensitive to transmission infrastructure.</p> <p>The corridor passes through several LCTs, several of which include existing OHL infrastructure particularly towards the east of the corridor. Energy infrastructure is extensive in this area, in the form of Blackhillock substation and a number of OHLs radiating from it. The northern section of the corridor passes through more sensitive, smaller scale landscapes, where energy infrastructure is quite scarce.</p> <p>Potential visibility of the proposed OHL from within corridor 4A would generally be from local residents, people visiting the area for recreational and tourist purposes and people travelling along the A95, the A97, A947 and A981 or many of the minor roads across the corridor. To the west, the proposed OHL would be viewed in the context of existing OHL infrastructure. To the north, the corridor passes through the tightly rolling topography around Aberchirder and across the highly recreational Deveron Valley. However, due to the enclosed nature and woodland cover of these areas, there is potential to develop alignments with opportunities for backdropping and mitigation. To the east, the proposed OHL would be visible in a more open landscape where there is existing energy infrastructure. The presence of shelterbelts around farms and of occasional hedges and drystone walls along roads and tracks, together with the topography which encloses views or provides backdrops, would limit views of the proposed OHL for the majority of receptors.</p>	<p>The corridor traverses Deveron Valley SLA in two sections. Development of renewable energy technologies (e.g. onshore wind turbines and associated infrastructure) has been identified in the SLA as one of the 'Forces for Change' that could affect the special qualities of the SLA, such as that of a continuous valley landscape, from the hills to the sea, which forms a contained setting for the settlements, estates and houses found along its length.</p> <p>The corridor passes through a number of LCTs, several of which include existing OHL infrastructure particularly towards the east of the corridor. The corridor is broadly sectioned into four types of landscape character; the more westerly section is of an open and low rolling agricultural landscape, with broad rectilinear fields and limited tree cover. Energy infrastructure is extensive in this area, in the form of Blackhillock substation and a number of OHLs radiating from it. To the north, the corridor encounters the smaller scale, tightly rolling landscape of The Low Hills and Basins LCT, with a strong degree of containment and seclusion, as well as naturalness, although occasional wind turbines are located in farmland. The corridor then crosses the River Deveron to the west of Turriff, within the Farmed and Wooded River Valleys LCT, a meandering river that lies in harder schist geology where the river consequently is also accommodated within a deeper valley. Windfarm development and other forms of infrastructure are scarce in this smaller scale landscape. To the east, the corridor lies across the Undulating Heartlands LCT, an expansive, gently undulating agricultural landscape with large geometrical fields. Energy infrastructure is present in the form of OHLs connecting to New Deer substation. The northern section of the corridor passes through more sensitive, smaller scale landscapes, where energy infrastructure is quite scarce.</p> <p>Potential visibility of the proposed OHL from within Corridor 4B would generally be from local residents, people visiting the area for recreational and tourist purposes and people travelling along the A95, the A97, and A947 or many of the minor roads across the corridor</p>

Topic	Corridor 4A	Corridor 4B
People	<p>There are numerous settlements and individual dwellings and farms evenly scattered across Corridor 4A, as well as the villages of Aberchirder and Cuminestown. The larger settlements of Keith and Turriff both lie on the edge of this corridor. Proximity and views to the proposed OHL will be unavoidable for many residents.</p>	<p>There are numerous individual dwellings and farms evenly scattered across Corridor 4B. The larger settlements of Keith and Turriff both lie on the edge of this corridor. Proximity and views to the proposed OHL will be unavoidable for many residents.</p>
Land Use	<p>The agricultural land within Corridor 4A contains wide areas of Class 2, 3.1 and 3.2.</p> <p>The corridor is host to significant areas of commercial coniferous woodland, with minimal potential to avoid in the routeing/alignment stages.</p> <p>There are areas within the corridor area with core paths and an NCR present and Option 4A may interact with these recreational features.</p>	<p>Corridor 4B contains large areas of Class 3.1 Agricultural land.</p> <p>The corridor is host to significant areas of commercial coniferous woodland, with very limited potential to avoid in the routeing/alignment stages.</p> <p>There are areas within the corridor area with core paths and an NCR present and Option 4B may interact with these recreational features.</p>
Engineering	<p>Both corridors in Section 4 are of equal length, approximately 42 km.</p> <p>There are a number of existing OHL around Blackhillock and New Deer substations, although there is potential to avoid crossing these in Corridor 4A. Corridor 4A has a number of road crossings including A95, A96, A97 and A947. Corridor 4A also crosses the single track Inverness to Aberdeen railway line.</p> <p>Corridor 4A is considered to have high atmospheric pollution levels, however it has no known areas of contaminated land or UXOs. Flooding is not considered a major constraint. The elevation of Corridor 4A is lower than Corridor 4B, with a maximum elevation of 234 m.</p> <p>Corridor 4A is a well-developed corridor, with a high number of existing roads and tracks.</p> <p>Corridor 4A is not in close proximity to any windfarms, but has scattered individual turbines. There is also a potential risk of encountering and impacting metallic pipelines.</p>	<p>Corridor 4B is highly likely to cross the existing Blackhillock to Rothienorman 275 kV OHL and Rothienorman to New Deer 275 kV OHL, both of which are currently being upgraded to operate at 400 kV. Corridor 4B also has road crossings of the A95, A96, A97 and A947, and a railway crossing of the single track line from Inverness to Aberdeen.</p> <p>Corridor 4B is considered to have high atmospheric pollution levels, however it has no known areas of contaminated land or UXOs. Flooding is not considered a major constraint. The elevation of Corridor 4B is higher than 4A, with a maximum elevation of 311 m.</p> <p>Corridor 4B is a well-developed corridor, with a high number of existing roads and tracks.</p> <p>Corridor 4B is in close proximity to two windfarms and there is also a potential risk of encountering and impacting metallic pipelines.</p>

Topic	Corridor 4A	Corridor 4B
Economic	There is no difference in the average route length between the two options so, for the level of detail considered at this stage, the construction, inspections and maintenance costs are considered to be similar for both options.	

Table 8 below shows the RAG Ratings for this section. Environmentally, whilst the RAG Ratings for Corridor 4A and 4B have been rated the same, aside from forestry, overall Corridor 4A is marginally preferred. Forestry is present in both corridors, however there is more scope for avoidance within Corridor 4A. The Deveron Valley Scenic Landscape Area is a key consideration for both corridor options. For cultural heritage designations Corridor 4B is marginally preferred due to reduced setting effects on Forglen GDL, however all three landscape sub-disciplines for Corridor 4A are marginally preferred as Corridor 4A has a slightly more low-lying, large scale open landscape with extensive energy infrastructure, which would help to reduce setting and visual impacts. On balance Corridor 4A is marginally preferred.

For engineering considerations, the RAG Ratings for Corridor 4A and 4B have been rated the same for all categories excluding major crossings. Overall, both corridors are considered acceptable options but there is a slight preference for Corridor 4A as there is a lower likelihood of requiring major OHL crossings.

Economically there is no difference in the average route length between the two options so, for the level of detail considered at this stage, the construction, inspections and maintenance costs are considered to be similar for both options.

Table 8 – RAG Rating for Section 4 Corridors

	Parameter	Sub-Parameter	Section 4 Corridor Options	
			Option 4A	Option 4B
Environment	Natural Heritage	Designations	L	L
		Protected Species	L	L
		Habitats	L	L
		Ornithology	L	L
		Geology, Hydrology, Hydrogeology	M	M
	Cultural Heritage	Designations	M	M
		Cultural Heritage Assets	M	M
	People	Proximity to Dwellings	M	M
	Landscape and Visual	Designations	M	M
		Landscape Character	M	M
		Visual	M	M

	Parameter	Sub-Parameter	Section 4 Corridor Options	
			Option 4A	Option 4B
	Land Use	Agriculture	H	H
		Forestry	M	H
		Recreation	M	M
	Planning	Proposals	M	M
Engineering	Infrastructure	Major Crossing	L	M
	Topography	Elevation	M	M
		Atmospheric pollution	H	H
		Contaminated land	L	L
		Flooding	L	L
	Terrain	Terrain	L	L
	Construction / Maintenance	Access	L	L
	Proximity	Windfarms	L	L
		Communication masts	M	M
		Urban environments	L	L
		Metallic pipelines	M	M
Route Length		L	L	
Cost	Capital	Construction	L	L
	Operational	Inspections	L	L
		Maintenance	L	L

5.6 Section 5

Table 9 shows the analysis of Corridor 5 in Section 5. There is no comparative analysis as there is only one corridor option in Section 5.

Table 9 – Analysis of Corridor 5 in Section 5

Topic	Corridor 5
Natural Heritage	<p>There are no international designated sites in Corridor 5, however there are two nationally designated and two locally designated sites within the corridor. There is potential for qualifying species associated with designated sites in the nearby and wider surrounding area to use habitats within the corridor option.</p> <p>Whilst this corridor has the potential to support a wide variety of protected mammals, many of the habitats that can support pine marten, red squirrel, bats, otters and water voles are isolated in an agricultural landscape. Any chosen route and alignment within this corridor should avoid these habitats and so reduce the likelihood of risk to these species. Badgers and reptiles would be the key focus of surveys in Corridor 5, given the dominant habitats. There is also potential, albeit low risk of breeding seabirds, particularly herring gulls, associated with Buchan Ness and Collieston Coast SPA, which is located within 500 m of the eastern end of this corridor option, to be impacted by the proposed OHL should it be located in close proximity to this site.</p> <p>Corridor 5 is largely comprised of common and widespread habitats primarily agricultural land and plantation woodland, however, small pockets of habitat of conservation interest are present within the corridor, including Annex I woodland habitats and ancient semi-natural woodland. Class 1 and Class 2 peatland is present in small quantities across Corridor 5, with particular concentrations to the east around Nether Kinmundy, and could most likely be avoided through design at routeing and alignment stages.</p> <p>There is a complex network of rivers, streams and burns throughout the Study Area. The main watercourse is the River Ugie, which traverses the north of the corridor. The South Ugie Water is the main tributary of the River Ugie, following a west-east alignment from the north of Maud to the east of Longside, where it flows into the main river.</p>
Cultural Heritage	<p>There are no World Heritage Sites, Inventory GDL, Inventory Battlefields, or Marine Protected Areas within Corridor 5. The following Designations have been identified:</p> <ul style="list-style-type: none"> • seven Scheduled Monuments. <p>There are a number of Cultural Heritage Assets identified within Corridor 5:</p> <ul style="list-style-type: none"> • 28 Listed Buildings • one Conservation Area within Corridor 5. <p>There is the potential for impact on settings to cultural heritage assets.</p>
Landscape and Visual	<p>The corridor passes through a number of LCTs, several of which include existing OHL infrastructure particularly towards the south of the corridor. The corridor is broadly sectioned into three types of landscape character; the westernmost and easternmost sections share key characteristics of an open, low rolling agricultural landscape where fields are sometimes bound by drystone walls and occasional hedges. With New Deer substation to the west and Peterhead</p>

Topic	Corridor 5
	<p>substation to the east, energy infrastructure is extensive in the area, mainly as OHLs connecting both substations. The central section of the corridor traverses the more sensitive Farmland and Wooded Policies LCT, a more tightly rolling landscape with a more diverse woodland cover, where infrastructure is scarcer. Within the corridor, and especially towards its southern edge, there is potential to develop alignments that would avoid the least sensitive points of the landscape, although potential cumulative effects when seen in conjunction with existing OHLs in the area should be considered.</p> <p>Potential visibility of the proposed OHL from within Corridor 5 would generally be from local residents, people visiting the area for recreational and tourist purposes and people travelling along the A981, A948, A952, A950 and A90, or many of the minor roads across the corridor.</p>
People	<p>The corridor is well settled with several villages and farm towns scattered in and around the corridor, namely New Deer to the far west, Maud, Auchnagatt, Old Deer and Stuartfield to the far east. Between the main settlements there are numerous individual properties, farms and hamlets evenly distributed across the corridor.</p> <p>It is considered that there are some opportunities to minimise the potential effects on the majority of these dwellings.</p>
Land Use	<p>Agricultural land use is a considerable constraint in this Corridor as there are widespread areas of the highest quality agricultural land.</p> <p>Commercial Forestry is present within Corridor 5, however there would be the opportunity during the OHL Alignment Selection Stage to avoid some of these areas.</p> <p>There are areas within the corridor area with core paths and an NCR present and Corridor 5 may interact with these recreational features.</p>
Engineering	<p>Corridor 5 is approximately 30 km long.</p> <p>Corridor 5 is likely to cross the existing Peterhead to New Deer 275 kV OHL, which is currently being upgraded to operate at 400 kV. Corridor 5 is also likely to cross the A948 and A952. It may also cross underground gas pipelines near Peterhead.</p> <p>Corridor 5 is considered to have high atmospheric pollution levels and an increased risk of contaminated land due to more urban populations and coastal infrastructure. There is a small UXO risk due to coastal infrastructure having been Luftwaffe targets in World War II. Elevation and flooding are not considered significant constraints.</p> <p>The terrain of Corridor 5 is relatively gradual with occasional steeper sections, however it may be possible to design out these slightly more challenging sections at routeing stage. The land is mainly arable and open ground with soil types of till and glacial sands/gravels.</p> <p>Corridor 5 is a well-developed corridor, with a high number of existing roads and tracks that could be utilised for access.</p>

Topic	Corridor 5
	Corridor 5 is in close proximity to one windfarm, and there is a high risk of encountering and impacting metallic gas pipes.
Economic	As there is only one corridor option within Section 5, there is no RAG Rating comparison and so without an alternative option to provide a cost comparison, cost impact by default is low.

Table 10 below shows the RAG Ratings for this section. Only Corridor 5 is present in Section 5, therefore there is no comparative appraisal.

The key environmental considerations are:

- There are some settlements and scattered dwellings throughout the corridor; however there is potential to develop alignments that would minimise visual effects.
- There is high quality agricultural land throughout.

Although there are other environmental considerations present, such as natural heritage designated sites, protected species and cultural heritage assets, they are likely to be avoidable or manageable through the implementation of mitigation measures.

The key engineering considerations are that of atmospheric pollution and urban environments due to proximity of Peterhead to the coast, and the likely presence of metallic pipelines.

Economically, as there is only one corridor option within Section 5, there is no RAG Rating comparison and so without an alternative option to provide a cost comparison, cost impact by default is low.

Table 10 – RAG Rating for Section 5 Corridor 5

	Parameter	Sub-Parameter	Corridor 5
Environment/Consenting	Natural Heritage	Designations	L
		Protected Species	L
		Habitats	L
		Ornithology	M
		Geology, Hydrology, Hydrogeology	M
	Cultural Heritage	Designations	M
		Cultural Heritage Assets	M

	Parameter	Sub-Parameter	Corridor 5	
	People	Proximity to Dwellings	M	
	Landscape and Visual	Designations	L	
		Landscape Character	M	
		Visual	M	
	Land Use	Agriculture	H	
		Forestry	M	
		Recreation	M	
	Planning	Proposals	M	
	Engineering	Infrastructure	Major Crossing	M
		Topography	Elevation	L
Atmospheric pollution			H	
Contaminated land			M	
Flooding			L	
Terrain		Terrain	L	
Construction / Maintenance		Access	L	
Proximity		Windfarms	L	
		Communication masts	M	
		Urban environments	H	
	Metallic pipelines	H		
	Route Length	L		
Cost	Capital	Construction	L	
	Operational	Inspections	L	
		Maintenance	L	

6. PREFERRED CORRIDOR

Following on from the comparative analysis carried out in Section 4, the Preferred Corridor can be seen on **Figure 6.1** and comprises Corridor 1A, 2B, 3A, 4A, 5. The RAG Ratings for each of the Preferred Corridor sections can be seen in Table 11.

It is important to note that the Preferred Corridor is preferred based on the outcome of the environmental, engineering and cost analysis, and does not take consultation into account. Once the Public Exhibition events have been held, consultee comments will be considered, which may alter the Preferred Corridor in Table 11 before it is taken forward to routeing as the Proposed Corridor.

Table 11 – Preferred Corridor RAG Ratings

	Parameter	Sub-Parameter	Corridor 1A	Corridor 2B	Corridor 3A	Corridor 4A	Corridor 5	
Environment	Natural Heritage	Designations	M	M	L	L	L	
		Protected Species	M	M	M	L	L	
		Habitats	M	M	L	L	L	
		Ornithology	M	M	M	L	M	
		Geology, Hydrology, Hydrogeology	M	M	M	M	M	
	Cultural Heritage	Designations	H	M	M	M	M	
		Cultural Heritage Assets	H	M	M	M	M	
	People	Proximity to Dwellings	M	M	M	M	M	
	Landscape and Visual	Designations	L	L	H	M	L	
		Landscape Character	M	M	M	M	M	
		Visual	M	L	M	M	M	
	Land Use	Agriculture	H	M	H	H	H	
		Forestry	H	H	H	M	M	
		Recreation	M	M	M	M	M	
	Planning	Proposals	M	M	M	M	M	
	Engineering	Infrastructure	Major Crossing	M	M	M	L	M
		Topography	Elevation	M	M	M	M	L
Atmospheric pollution			M	L	M	H	H	
Contaminated land			M	L	L	L	M	
Flooding			M	L	M	L	L	
Terrain		Terrain	M	M	M	L	L	
Construction / Maintenance		Access	L	L	L	L	L	
Proximity		Windfarms	M	M	M	L	L	
		Communication masts	M	M	L	M	M	
		Urban environments	L	L	M	L	H	
		Metallic pipelines	L	L	L	M	H	
	Route Length	L	L	L	L	L		

TRANSMISSION

	Parameter	Sub-Parameter	Corridor 1A	Corridor 2B	Corridor 3A	Corridor 4A	Corridor 5
Cost	Capital	Construction	L	L	L	L	L
	Operational	Inspections	L	L	L	L	L
		Maintenance	L	L	L	L	L

7. CONSULTATION ON THE PROPOSALS

SSEN Transmission places great importance on, and is committed to, consultation and engagement with all parties, or stakeholders, likely to have an interest in proposals for new projects such as this. Stakeholder consultation and engagement is an essential part of an effective development process.

7.1 Questions for Consideration by Consultees

When providing your comments and feedback, SSEN Transmission would be grateful for your consideration of the questions below:

- Have we explained the need for this project adequately?
- Have we explained the approach taken to select the Preferred Corridor adequately?
- Are there any factors, or environmental features, that you consider may have been overlooked during the Preferred Corridor selection process?
- Do you feel, on balance, that the Preferred Corridor selected is the most appropriate for further consideration at the route selection stage?

7.2 Next Steps

Consultation events will be held as detailed in the preface of this document. The responses received from these consultation events, and those sought from statutory consultees and other key stakeholders, will inform further consideration of the corridor options put forward, and the confirmation of the Proposed Corridor to take forward to the next stage in the routeing process (route selection).

All comments are requested by 28th October 2022. A Report on Consultation will be published after the consultation period has ended, which will document the consultation responses received, and the decisions made in light of these responses

Following the identification and confirmation of a Proposed Corridor, further technical and environmental surveys (e.g. Phase 1 Habitat / National Vegetation Classification (NVC) surveys, Protected Species Surveys and further input by landscape, ecology, cultural heritage, hydrology and forestry specialists) will be undertaken to identify a Preferred Route.

Consultation on a Preferred Route is expected to take place in Spring 2023.

APPENDIX A – HEAT MAP DATA

	Exclusion
	High
	Medium
	Low

SSE Themes	Name	Additional Information	Weighting
Natural Heritage	Special Areas of Conservation (SAC)	Reduce to HIGH if unavoidable Can go over constraint if less than 350 m wide	Exclusion
Natural Heritage	SAC 200 m buffer		M
Natural Heritage	Special Protection Areas (SPA)	Reduce to HIGH if unavoidable	Exclusion
Natural Heritage	SPA 200 m buffer		H
Natural Heritage	SPA 500 m buffer		M
Natural Heritage	Ramsar	Reduce to HIGH if unavoidable	Exclusion
Natural Heritage	Ramsar 200 m buffer		H
Natural Heritage	Ramsar 500 m buffer		M
Natural Heritage	National Nature Reserves	Reduce to HIGH if unavoidable	Exclusion
Natural Heritage	National Nature Reserves 200 m buffer		M
Natural Heritage	Sites of Special Scientific Interest (SSSI)		H
Natural Heritage	SSSI 200 m buffer		M
Natural Heritage	Local Nature Reserves		M
Natural Heritage	Local Nature Reserves 100 m buffer		L
Natural Heritage	Local Nature Conservation Site		M
Natural Heritage	Local Nature Conservation Site 100 m buffer		L
Natural Heritage	RSPB Reserves	Reduce to HIGH if unavoidable	H
Natural Heritage	RSPB Reserves 500 m buffer		M
Natural Heritage	Important Bird Areas		H
Natural Heritage	Important Bird Areas 500 km buffer		M
Natural Heritage	Native Woodland		H
Natural Heritage	Native Woodland 50 m Buffer		M
Natural Heritage	Nearly Native Woodland		M
Natural Heritage	Ancient Woodland (Planted Ancient Woodland Site)		Exclusion
Natural Heritage	Ancient Woodland (Semi-Natural Origin)		Exclusion
Natural Heritage	Ancient Woodland (Semi-Natural Origin) Beauly		H
Natural Heritage	Ancient Woodland (Semi-Natural Origin) 50 m Buffer		M

SSE Themes	Name	Additional Information	Weighting
Natural Heritage	Ancient Woodland (LEPO and Other Roy)		M
Natural Heritage BNG	NatureScot Priority Peatland Habitat - Class 1	Reduce to HIGH if unavoidable. Can go over constraint if less than 350 m wide	Exclusion
Natural Heritage BNG	NatureScot Priority Peatland Habitat - Class 2	Can go over constraint if less than 350 m wide	H
Cultural Heritage	Scheduled Monuments (Scotland)		Exclusion
Cultural Heritage	Scheduled Monuments (Scotland) 250 m Buffer		M
Cultural Heritage	Listed Buildings Grade A and 10 m buffer		Exclusion
Cultural Heritage	Listed Buildings Grade A 250 m buffer		M
Cultural Heritage	Listed Buildings Grade B & C and 10 m buffer		M
Cultural Heritage	Listed Buildings Grade B & C, 250 m buffer		L
Cultural Heritage	"Properties in Care" and 10 m buffer		Exclusion
Cultural Heritage	"Properties in Care", 250 m buffer		M
Cultural Heritage	Gardens and Designed Landscapes		Exclusion
Cultural Heritage	Gardens and Designed Landscapes 250 m Buffer		M
Cultural Heritage	Battlegrounds		Exclusion
Cultural Heritage	Battlegrounds 250 m Buffer		M
Cultural Heritage	Conservation areas		M
People	Settlements buffer of 200 m	Settlement definition based on property density	H
People	Residential dwelling, Educational, medical & worship & buffer 100 m		Exclusion
People	Residential dwelling, Educational, medical & worship & buffer 170 m		M
Landscape	National Scenic Areas		Exclusion
Landscape	NSA 2 km buffer		L
Landscape	NSA 1 km buffer		M
Landscape	National Park		Exclusion
Landscape	National Park 2 km buffer		L
Landscape	National Park 1 km buffer		M
Landscape	Wild Land		Exclusion
Landscape	Local landscape Areas (Special Landscape Areas)		M
Land use	Airports		Exclusion
Land use	Airports including buffer provided by NATS		H
Land use	Wind Turbines (Aberdeenshire)	Data-set uses boundaries of windfarms applications not turbine locations	Exclusion

SSE Themes	Name	Additional Information	Weighting
Land use	Wind turbines and 3x rotor diameter buffer (Highland and Moray)	Data-set uses turbine locations	Exclusion
Land use	Solar Farms (Existing), 250 m buffer		H
Land use	Agricultural land - BMV (Grades 1,2,3.1,3.2)		L
Land use	Golf Courses		M
Land use	Country Parks		M
Land use	Buildings (other than dwellings e.g. retail, industrial estates) and buffer 100 m	Sub-category is 'Retail' or 'Industrial Applicable to manufacturing, engineering, maintenance, storage / wholesale distribution and extraction sites'	L
Land use	Inland waterways	Can go over constraint if less than 350 m wide	Exclusion
Engineering	Land over 150 m AOD		L
Engineering	Land over 250 m AOD		M
Engineering	Land over 350 m AOD		H
Engineering	Land over 450 m AOD		Exclusion
Engineering	Slopes steeper than 20% over 100 m	Can go over constraint if less than 350 m wide	H
Engineering	Slopes steeper than 10% over 100 m	Can go over constraint if less than 350 m wide)	M
Engineering	Existing transmission network 400 kV and 75 m buffer from OHL centreline		H
Engineering	Existing transmission network 275 kV 75 m buffer from OHL centreline		H
Engineering	Existing transmission network 132 kV 50 m buffer from OHL centreline		M
Engineering	Roads	Can go over constraint if less than 350 m wide	H
Engineering	Railway Stations		H
Engineering	Rail Network 75 m buffer	Can go over constraint if less than 350 m wide	H
Engineering	Coastal offset of 10 km		L
Engineering	Landfill, 100 m buffer	Can go over constraint if less than 350 m wide	H
Opportunities	Attractors - parallel to existing 275 / 400 kV OHL routes at a distance of 75 to 150 m,	Visual and bird strike benefits. For benefits the towers need to be in line otherwise visually confusing.	H
Opportunities	Attractor - Dual carriageway roads at a distance of 75 m to 150 m from the road	visual and benefits	M