

1. APPENDIX 1: APPROACH TO ROUTE AND ALIGNMENT SELECTION

1.1 Methodology

1.1.1 The approach to route and alignment selection was informed by SSEN Transmission's guidance 'Procedures for Routeing Overhead Lines and Underground Cables of 132 kV and above'¹. The guidance sets out SSEN Transmission's approach to selecting a route and 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 a 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.

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

1.1.3 The guidance splits the routeing stage of a project into four principal stages, as follows:

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

1.1.4 Each stage is an iterative process and involves an increasing level of detail and resolution, bringing cost, technical and environmental considerations together in a way which seeks the best balance at each stage. The stages that are carried out can vary depending on the type, nature of and size of a project and consultation is carried out at each stage of the process.

1.2 Selection of a Proposed Route

1.2.1 The route selection stage of the project involves the identification of route options, and the environmental, technical and economic analysis of these route options to arrive at a preferred route. The route option stage is documented within the Consultation Document (March 2020)² and Report on Consultation (November 2020)³.

1.2.2 The Report on Consultation (SSEN Transmission, November 2020) confirmed that the preferred route in Sections 0, 1, 4, 5 and 6 is being taken forward as the proposed route for the consideration of alignment⁴ options. In Sections 2 and 3, given the consultation responses received and the sensitivities and challenges present within these sections, further engineering and environmental review of the options available was deemed to be required prior to identifying a proposed route, preferred alignment and design solution.

1.2.3 This work has been undertaken and is reported within this Consultation Document.

¹ SSEN Transmission (March 2018), Procedures for Routeing Overhead Lines of 132kV and above (updated in September 2020)

² Skye Reinforcement Project: Consultation Document: Route Options (March 2020), produced by SSEN Transmission

³ Skye Reinforcement Project: Report on Consultation (November 2020), produced by SSEN Transmission

⁴ A centre line of an overhead line, along with the location of key angle structures.

1.3 Alignment Identification and Selection Methods

1.3.1 SSEN Transmission has engaged an experienced OHL construction contractor to carry out a detailed desk-based and site walkover survey to explore the advantages, disadvantages and constructability of OHL alignment options within the proposed route (and preferred and alternative routes (where relevant) within Sections 2 and 3). Subsequently, an alignment has been identified by the OHL contractor on the basis of it being the most technically feasible and economically viable alignment, giving due consideration to a range of technical and cost criteria over the construction and operation phases of a new OHL. This is referred to in this report as the Baseline Alignment. Alternative OHL alignment options and design solutions (referred to as 'variants') have also been considered by the OHL contractor and project environment and engineering teams as part of the iterative alignment selection process.

1.3.2 In considering the potential environmental constraints of the Baseline Alignment identified by the contractor, as well as alternative alignment options, the following tasks have been undertaken:

- Desk-based review and targeted site survey by project landscape architects, ecologists, ornithologists, archaeologists, geologists and hydrologists to review alignment options and provide advice on variants or micro-siting opportunities for positioning of towers and indicative construction access;
- Targeted phase 1 / NVC habitat and protected species surveys to supplement existing data;
- Review of ornithological survey data and records for the area, including requests for data held by RSPB, and targeted bird surveys to supplement existing survey data;
- Review of comments received from stakeholders following publication of the Skye Reinforcement Project Consultation Document², as detailed within the Report on Consultation³;
- Workshops with SSEN Transmission, the OHL contractor and environmental consultants to discuss alignment options and variants, prior to the identification of a preferred alignment and design solution;
- Site reconnaissance visits by the SSEN Transmission engineering team and environmental consultants to review alignment options; and
- Workshops with statutory consultees to present the preferred alignment and design solution, and seek preliminary feedback.

1.3.3 The steps outlined in the Holford Rules⁵ and SSEN Transmission's guidance 'Procedures for Routeing Overhead Lines and Underground Cables of 132 kV and above'¹, have been taken into account as far as is practicable in establishing the alignment options:

- Avoid if possible major areas of highest amenity value (including those covered by national and international designations and other sensitive landscapes).
- Avoid by deviation, smaller areas of high amenity value.
- Try to avoid sharp changes of direction and reduce the number of larger angle towers required.
- Avoid skylining in key views and where necessary, cross ridges obliquely where a dip in the ridge provides an opportunity.
- Target the alignment towards open valleys and woods where the scale of poles will be reduced and views broken by trees (avoid slicing through landscape types and try to keep to edges and landscape transitions).
- Consider the appearance of other lines in the landscape to avoid a dominating or confusing wirescape effect.
- Approach urban areas through industrial zones and consider the use of undergrounding in residential and valued recreational areas.

⁵ Scottish Hydro Electric Transmission Limited (SHETL). (October 2004). *The Holford Rules: Guidelines for the Routeing of New High Voltage Overhead Transmission Lines with NGC 1992 and SHETL 2003 Notes; Revision 1.01*

1.4 Appraisal Method

1.4.1 Appraisal of alignment options has involved systematic consideration against the environmental topic areas included in **Table 1.1**:

Table 1.1: Environmental Topic Areas Considered

Category	Sub-Topic
Natural Heritage	Designations
	Protected Species
	Habitats
	Ornithology
	Hydrology Hydrogeology and Geology
Cultural Heritage	Designations
	Cultural Heritage Assets
People	Proximity to Dwellings
Landscape and Visual	Designations
	Character
	Visual
Land Use	Agriculture
	Forestry
	Recreation
Planning	Policy
	Proposals

1.5 Rating of Alignment Options

1.5.1 At Stage 2, a RAG rating was applied to each topic area within each section, indicating potential constraint to development. The RAG rating approach is considered too broad at Stage 3 as it could generally result in similar ratings for all options. Instead, a more descriptive appraisal is adopted, allowing for more detailed considerations of the differences in constraint to development between each option.

1.6 Identification of a Preferred Alignment

1.6.1 The overall objective throughout the appraisal of alignment options has been to take full consideration of all factors to minimise any potential adverse impacts on the environment whilst taking into account technical and cost considerations. Following review and consideration of the potential alignment options, a preferred alignment was arrived at.