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2. THE ROUTEING PROCESS AND ALTERNATIVES

2.1 Introduction

2.1.1 This Chapter describes the routeing process and consideration of alternatives that have been undertaken for the Proposed Development.

2.1.2 The Proposed Development underwent a routeing appraisal process as described in Section 2.4 below, to establish an OHL route[1] and then an alignment[2] that was considered to provide an optimum balance of environmental, technical and economic factors. The programme of consultation at routeing and alignment selection stage was designed to engage with key stakeholders in order to invite feedback on the rationale for, and approach to, the selection of the final alignment of the Proposed Development.

2.1.3 At route selection stage, the Applicant produced a Consultation Document.[3] This document was distributed to both statutory and non-statutory consultees. The consultation period was from June to August 2020 and virtual public consultation events were held in July 2020. Under normal circumstances, route selection stage consultation on the project would have involved public engagement events held in the local area. However, as a result of the Covid 19 pandemic these events could not be held in person. Following the conclusion of the route selection stage consultation period, a Report on Consultation[4] was published, which provided a summary of the responses received from key stakeholders (including statutory and non-statutory consultees, local communities, landowners and individual residents) during consultation. The feedback at route selection stage informed which route option was taken forwards to alignment selection stage.

2.1.4 At alignment selection stage, the Applicant produced a further Consultation Document[5] to seek feedback on their proposals. As with the route selection stage document, the alignment selection stage document was distributed to both statutory and non-statutory consultees. The consultation period was from September to October 2021, and included both in-person and virtual consultation events. As a result of the consultation feedback received, further alignment variants were developed. These were reviewed between September 2021 and November 2022, and led to the publication of the Report on Consultation[6] which confirmed the selection of the final alignment for the Proposed Development.

2.1.5 The following stages are described in this Chapter in further detail, along with their respective outcomes:

- Design solutions considered;
- The approach to the routeing and alignment selection stages of the project;
- The route options process and consultation responses;
- The alignment selection stage process and consultation responses; and
- Other considerations to avoid or reduce potential effects.

[1] A linear area of approximately 1 km width (although this may be narrower/wider in specific locations in response to identified constraints), which provides a continuous connection between defined connection points.

[2] A centre line of an overhead line, along with the location of key angle structures.

[3] SSEN Transmission (2020), *Consultation Document: Route Options – Elchies (Rothes III) Wind Farm Grid*, Online, available at: https://www.ssen-transmission.co.uk/globalassets/projects/projects/elchies-rothes-iii-wind-farm-grid-connection-downloads/elchies-rothes-wf-grid-connection-consultation-document.pdf, [Accessed: 22/02/2023].

[4] SSEN Transmission (2020), *Report on Consultation: Route Options – Elchies (Rothes III) Wind Farm Grid Connection*, Online, available at: https://www.ssen-transmission.co.uk/globalassets/projects/projects/elchies-rothes-iii-wind-farm-grid-connection-downloads/elchies-report-on-consultation-routeing.pdf, [Accessed: 22/02/2023].

[5] SSEN Transmission (2021), *Consultation Document: Alignment Options - Elchies (Rothes III) Wind Farm Grid Connection*, Online, available at: https://www.ssen-transmission.co.uk/globalassets/projects/projects/elchies-rothes-iii-wind-farm-grid-connection-downloads/119012-r-cd-100-elchies-wf-connection-alignment-consultation-document.pdf , [Accessed: 22/02/2023].

[6] SSEN Transmission (2022), *Report on Consultation – Elchies (Rothes III) Wind Farm Grid Connection – Alignment Options*, Online, available at: https://www.ssen-transmission.co.uk/globalassets/projects/elchies-alignment-report-on-consultation/report/elchies-rothes-iii-wind-farm-connection-report-on-consultation---alignment-options.pdf , [Accessed: 22/02/2023].

2.2 Development Considerations

2.2.1 SSEN Transmission has obligations under section 9 of the 1989 Act to 'develop and maintain an efficient, co-ordinated and economical system of electricity transmission'.

2.2.2 SSEN Transmission, under the 1989 Act, 'when formulating proposals to generate, transmit, distribute or supply electricity' is required, under Schedule 9 to:

- "*have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest*"; and
- "*do what* [it] *reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects*".

2.2.3 Furthermore, the requirements of the Construction (Design and Management) Regulations 2015[7] (CDM regulations) require that the project design aims to minimise hazards and reduces risks during construction.

2.2.4 Taking account of these obligations, SSEN Transmission has considered technical, economic and environmental factors in evaluating the reasonable alternatives to the Proposed Development, with the objective of identifying a proposed alignment and associated Limit of Deviation (LOD) which is 'technically feasible and economically viable' and 'which causes the least disturbance to the environment and to the people who live, work, visit and recreate within it'.

2.3 Design Solution

2.3.1 SSEN Transmission has determined that a trident pole is the preferred technological solution for the Proposed Development and would make use of this type of support structure for the OHL where possible. It is considered that trident poles provide the lowest cost solution whilst being suitable to provide the required capacity of electricity export for this project, whilst minimising environmental effects where possible.

2.3.2 Early in the design process, it was established that the final part of the connection into Blackhillock substation would be routed by way of UGC to avoid technical constraints and conflicts with other grid infrastructure. Furthermore, to avoid the potential impact of 'wake effect' on the OHL from wind turbines on approach to the Rothes III Wind Farm on-site substation, a section of UGC cable was also proposed.

2.3.3 The route from Rothes III Wind Farm on-site substation through to Blackhillock substation therefore comprises UGC for approximately 450 m, transitioning to 132 kV trident pole OHL for approximately 24.3 km, and then transitioning to UGC for an additional approximate 1.1 km to complete the alignment.

2.4 Approach to Route and Alignment Selection

2.4.1 Guidelines for the routeing of new high voltage overhead transmission lines have been established within the electricity supply industry. These guidelines are known as the 'Holford Rules'[8] and have been widely used throughout the UK since the 1960s. The 'Holford Rules' set out a hierarchical approach to routeing which advocates avoiding areas of high amenity value, minimises changes in direction, takes advantage of topography and minimises visual interaction with other transmission infrastructure.

2.4.2 SSEN Transmission has developed its own guidance, based on the principles set out in the Holford Rules, but broadening the basis for routeing decisions to reflect contemporary practice, and providing a framework to ensure environmental, technical and economic considerations are identified and appraised at each stage of the routeing process.

[7] UK Government (2015), *Construction (Design and Management) Regulations 2015*, Online, available at: http://www.legislation.gov.uk/uksi/2015/51/contents/made [accessed 23/02/2023]

[8] 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*

2.4.3 The approach to route and alignment selection has therefore been informed by SSEN Transmission's guidance[9]. The guidance splits the routeing stage of a project into four principal stages, as follows:

- Stage 0: Routeing Strategy Development;[10]
- Stage 1: Corridor Selection;
- Stage 2: Route Selection; and
- Stage 3: Alignment Selection.

2.4.4 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 to achieve 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.

2.4.5 At routeing strategy development stage (Stage 0), a range of factors to determine the most appropriate technical solution were considered. The most appropriate solution for the operation and maintenance of the network and in the best interest of the consumer was considered to be OHL over UGC wherever possible as described in Section 2.5.

2.4.6 Corridor selection stage (Stage 1) was combined with route selection stage in this project.

2.4.7 At route selection stage (Stage 2) the following consultation reports were produced:

- Consultation Document: Route Options – Elchies (Rothes III) Wind Farm Grid (July 2020)[3]; and
- Report on Consultation: Route Options – Elchies (Rothes III) Wind Farm Grid Connection (September 2020)[4];

2.4.8 At alignment selection stage (Stage 3) the following consultation reports were produced:

- Consultation Document: Alignment Options - Elchies (Rothes III) Wind Farm Grid Connection (September 2021)[5]; and
- Report on Consultation – Elchies (Rothes III) Wind Farm Grid Connection – Alignment Options (November 2022)[6].

2.4.9 In accordance with the steps outlined in the Holford Rules and SSEN Transmission guidance, the following principles have been taken into account during the route (where practicable) and alignment stages of the project:

- 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 pole structures required;
- Avoid skylining the route in key views and where necessary, cross ridges obliquely where a dip in the ridge provides an opportunity;
- Target the route towards open valleys and woods where the scale of poles or towers 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; and
- Approach urban areas through industrial zones and consider the use of undergrounding in residential and valued recreational areas.

[9] SSEN Transmission (March 2018), Procedures for Routeing Overhead Lines of 132kV and above (updated in September 2020 to include underground cables of 132 kV and above)

[10] Setting out the proposed strategy for the routeing stage of a particular project.

2.5 Routeing Strategy Development (Stage 0)

2.5.1 At routeing strategy development stage, the most appropriate solution for the operation and maintenance of the network and in the best interest of the consumer was considered to be OHL over UGC wherever possible. This was primarily as:

- Maintenance of a line in the future must be considered. In the event of a fault on a line, the fault can be detected and rectified in a matter of days with OHL. However, if a fault occurs in an UGC, the time needed to locate and rectifying the fault increases and could potentially take months to fix and cause ongoing disruption to the land. This could result in the potential requirement for servitude on cable to ensure access. The servitude is usually 15 m wide and may require a degree of sterilisation.
- Undergrounding a line would result in increased impact to the surrounding ground, as well as the overall footprint of the project. The installation of UGC would require a cable trench, a 30 m construction zone with an approximately 6 m wide and 1.5 m deep trench to be dug. It is considered that this would increase potential to damage local environments during construction.
- The costs for UGC would also be approximately 4-6 times more expensive than an OHL option therefore not representing the best value for the consumer.
- SSEN Operations teams also require permanent access to be maintained to the sealing end compounds, which enable the transition between OHL and UGC. These often cannot be easily located adjacent to an existing access, so permanent access may need to be created causing further disruption.

2.6 Corridor Selection (Stage 1)

2.6.1 A Corridor was identified which encompassed a range of feasible route options between the two connection points at Rothes III Wind Farm on-site substation and Blackhillock substation (see **Figure 2.1**). This stage was combined with route selection stage in this project.

2.7 Route Selection (Stage 2)

2.7.1 The route selection stage of the project involves the identification of route options (circa 1 - 2 km wide), and an appraisal of the environmental, technical and economic constraints of the route options, prior to arriving at a preferred route for the purposes of consultation and a proposed route to take forward to the alignment selection stage (Stage 3).

2.7.2 Route options were identified following desk-based review and site walkovers, giving due consideration to the principles set out in the Holford Rules and SSEN Transmission guidance, as described in Section 2.4 of this Chapter.

2.8 Summary of Route Option Appraisal (Stage 2)

2.8.1 The route options identified and appraised during the route options stage of the project are described below and shown on **Figure 2.1: Route Options**.

Route Option A and Sub Options A1 and A2

2.8.2 Route Option A represented the most northerly of the route options identified, and it travelled generally in an easterly direction between Rothes III Wind Farm on-site substation via Rothes, Boat O' Brig and Mulben before heading southeast to Blackhillock substation prior to reaching Keith. Two sub-options to Route Option A were identified at the western extent of the route which provided alternative route options to consider upon leaving the wind farm on-site substation and the approach to and around Rothes. These two sub-options were referred to as Route Option A1 and Route Option A2.

2.8.3 Route Option A travelled in a south-easterly direction from Rothes III Wind Farm on-site substation passing through an area of commercial forestry before turning eastward for approximately 3 km where it then turned north-eastward, descending into the valley to cross the A941 south of Rothes.

2.8.4 Route Option A1 left the on-site substation in an easterly direction through commercial forestry and then to the north of Hunt Hill and Cairn Cattoch before turning north-eastward to begin its descent towards Rothes. The route widened to nearly 2 km as it circled around the northern edge of the settlement to Auchinroaths. It then continued eastward following the B9015.

2.8.5 Route Option A2 travelled north-eastward from the on-site substation across the Burn of Rothes towards the Moss of Rothes. It skirted around Ardcanny Wood along the edge of the moss before turning southward towards Rothes along the A941. From there it joined Route Option A1 passing to the north of Rothes.

2.8.6 To the east of Rothes the three options converged and continued to the northeast across the broad floodplain of the River Spey and the B9015 toward Boat o' Brig. After Boat o' Brig the routes joined and turned in an eastward direction narrowing for a short stretch along the B9103 before widening again on approach to the A95 and Mulben. From the A95 and Mulben the routes travelled in a generally south-eastward direction, narrowing to 1 km as they turned eastward and followed the A95, railway and Burn of Mulben. Approximately 2 km from Keith, the routes turned to the southeast again toward Blackhillock substation.

Route Option B

2.8.7 This route option travelled south-east from Rothes III Wind Farm on-site substation through an area of commercial forestry before turning eastward and over the A941 towards the River Spey and Craigellachie. This upland area passed over, was initially comparable to Route Option A, in that it was characterised by conifer plantations, grazing land and numerous scattered properties. However, it crossed the Spey Valley within the vicinity of Craigellachie (to the north). The eastern slopes of the Spey Valley in this location were considered particularly steep and wooded. After crossing the Spey Valley, the route option curved north-eastward around the lower slopes of Ben Aigan to roughly follow the A95. From the A95 the route curved around the northern edge of Hill of Towie Windfarm and headed eastward through an area of forestry plantation before crossing Strath Isla and connecting in to Blackhillock substation.

Route Option C

2.8.8 This route option left Rothes III Wind Farm on-site substation in a south-easterly direction, crossing the B9102 before heading towards the Macallan distillery. This option crossed the Spey Valley between the settlements of Craigellachie and Charlestown of Aberlour. After crossing the Spey Valley, the route followed the A95 in a north-easterly direction before crossing the River Fiddich. From the River Fiddich the route heads in a south-easterly direction, passing through Drummuir Estate land to the south of the proposed Hill of Towie II Wind Farm Extension development area. It then turned in a north-easterly direction at Loch Park and ran roughly parallel to the B9014 and the Keith & Dufftown Railway, passing through an area of commercial forestry. It then turned eastward to connect into Blackhillock substation around the Mains of Auchindachy.

Conclusions of Route Options Appraisal

2.8.9 From the route options appraisal, Route Option B and Route Option C were considered the least preferred route options. They were constrained in relation to proximity to dwellings, potential impacts on forestry and tree removal, and terrain, particularly around Craigellachie. Route Option A2 had challenges in relation to terrain and was also a lesser preferred route option.

2.8.10 The route options appraisal therefore concluded that both Route Options A and A1 provide advantages over Route Options A2, B and C and could each offer a viable route and solution for the project from an environmental, engineering and cost perspective.

2.8.11 However, on balance it was considered that **Route Option A1 is the preferred option** as it crosses the Spey Valley for less distance compared with Route Option A, thereby reducing potential impacts on the Special Area of Conservation (SAC), Drinking Water Protected Area (DWPA), Areas of Greater Landscape Value (AGLV) and Candidate Special Landscape Area (CSLA). It also has greater opportunities to minimise felling and avoid sensitive habitats.

2.9 Reporting of Route Option Stage and Consultation

2.9.1 The route options appraisal was set out in the route selection stage Consultation Document,[11] published in July 2020. The route selection stage Consultation Document provided a summary of project need, the route option process that had been undertaken and a description of the route options appraised. The route selection stage Consultation Document sought comments from stakeholders and members of the public on the route option studies undertaken, as well as the rationale for, and approach to, the selection of the preferred route.

2.9.2 As noted in **Chapter** 1 and above, virtual consultation events took place via the project website www.ssen-transmission.co.uk/projects/elchies-rothes-iii-wind-farm-grid-connection/ at the following times:

- 8th July 2020; 13:00 – 15:00 and 17:00 – 19:00; and
- 9th July 2020; 14:00 – 16:00 and 18:00 – 20:00

2.9.3 Comments received from stakeholders in response to the route selection stage Consultation Document, or following virtual consultation events, were documented in a route selection stage Report on Consultation, published in September 2020.[12]

2.9.4 Following consultation, it was confirmed that the Route Option 1A would be taken forward as the proposed route for the consideration of alignment options at Stage 3.

2.10 Alignment Selection (Stage 3)

2.10.1 The alignment selection stage of the project sought to determine an alignment, subject to a LOD of 100 m (approximately 50 m either side of the alignment centreline) within the Proposed Route identified during the route options stage (Route Option 1A), typically including the location of terminal and angle support structures and sealing end compounds for underground cables.

2.10.2 SSEN Transmission engaged an experienced OHL construction consultant to provide specialist technical input into the alignment stage to identify and explore the advantages, disadvantages and constructability of OHL alignment options and design solutions.

2.10.3 Subsequently, a 'base' alignment was developed by the OHL consultant 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. Alternative OHL alignment options and design solutions (referred to as 'variants')[13] were also considered by the OHL consultant and project environment and engineering teams as part of the iterative alignment selection process. These can be seen on **Figure 2.2** and **Figure 2.3**.

2.10.4 In considering the potential environmental constraints of the base alignment and variants, the following tasks were undertaken during the alignment selection stage:

- 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 micrositing opportunities for positioning of poles and indicative construction access;

[11] SSEN Transmission (2020), Consultation Document: Route Options – Elchies (Rothes III) Wind Farm Grid, Online, available at: https://www.ssen-transmission.co.uk/globalassets/projects/projects/elchies-rothes-iii-wind-farm-grid-connection-downloads/elchies-rothes-wf-grid-connection-consultation-document.pdf, [Accessed: 22/02.2023].

[12] SSEN Transmission (2020), Report on Consultation: Route Options – Elchies (Rothes III) Wind Farm Grid Connection, Online, available at: https://www.ssen-transmission.co.uk/globalassets/projects/projects/elchies-rothes-iii-wind-farm-grid-connection-downloads/elchies-report-on-consultation-routeing.pdf, [Accessed: 22/02.2023].

[13] SSEN Transmission (2021), Consultation Document: Alignment Options - Elchies (Rothes III) Wind Farm Grid Connection, Online, available at: https://www.ssen-transmission.co.uk/globalassets/projects/projects/elchies-rothes-iii-wind-farm-grid-connection-downloads/119012-r-cd-100-elchies-wf-connection-alignment-consultation-document.pdf, [Accessed: 22/02.2023].

- Targeted Phase 1 / National Vegetation Classification (NVC) habitat surveys 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, including landowners during the route options;
- Workshops with SSEN Transmission, the OHL consultant and environmental consultants to discuss alignment options and variants, prior to the identification of a preferred alignment and design solution; and
- Site reconnaissance visits by the SSEN Transmission engineering team and environmental consultants to review alignment options.

2.11 Summary of Alignment Selection Appraisal

2.11.1 The following part of this Chapter summarises the alignment options and design solutions appraised during the alignment selection stage of the routeing process (Stage 3). A description of the base alignment and all the considered variants[14] is provided, together with the main environmental and technical conclusions. Confirmation of the preferred alignment and design solution is also provided. As a result of the alignment stage consultation feedback, further alignment variants were developed to address consultee concerns. The appraisal of these led to the confirmation of the proposed alignment (i.e. taken to the EA stage).

Alignments Presented at Alignment Stage Consultation

2.11.2 The alignment options assessed and presented at alignment stage consultation as shown in the September 2021 Consultation Documentare shown in Table 2.1 below (see also **Figure 2.2**). Please note, the Baseline Alignment was called the Preferred Alignment in the Consultation Document.

Table 2.1: Alignment Variants Presented at Alignment Stage Consultation

Alignment Option	Description
Baseline Alignment	The Baseline Alignment would leave Rothes III Wind Farm on-site substation in an easterly direction. It would not pass directly through the town of Rothes, but would cross the A941 to circle around the north of the town. It would cross the River Spey south of Boat o' Brig. The Baseline Alignment would then cross the B9103 and extend northeast to pass around the northern side of Mulben, before curving in a south-easterly direction crossing the railway line and the A95. Approximately 2 km from Keith, Baseline Alignment would turn toward Blackhillock Substation crossing a minor road and the B9014 prior to reaching Blackhillock Substation.
Alignment Variant P1	Alignment Variant P1 was proposed to be a mix of OHL and HDD/Cable. It would depart from Baseline Alignment to the west of Rothes, then transitioning to HDD/Cable, it would travel north then east through the town. After leaving Rothes, the variant would pass under the River Spey then transition back to an OHL close to the eastern banks. It would remain on the southern side of the river without crossing it again, travelling northeast to re-join the Baseline Alignment to the south of Boat o' Brig.
Alignment Variant P2	Alignment Variant P2 was proposed to be an OHL. It would depart from the Baseline Alignment to the north and west of Rothes. It would extend generally east and crosses arable fields to the west of Rothes before turning northeast to cross the A941 and Broad Burn to the southeast of the Speyburn Distillery, rather than circling around Auchinroaths and the Speyburn Distillery as the Baseline Alignment would. It would remain to the south of these and would cross the A941

[14] An alternative alignment or design solution proposed to avoid localised constraints.

Alignment Option	Description
	at a more southern point. Alignment Variant P2 would then re-joins the Baseline Alignment shortly after crossing Broad Burn remaining north of the B9015.
Alignment Variant P3	Alignment Variant P3 was proposed to be HDD/Cable and would begin to the northeast of Rothes before crossing the broad floodplain of the River Spey south of the B9015. It would cross the River Spey twice on the river's northern meander as a HDD/Cable. After this, to the south of the B9015 around Dundurcas Farm, the alignment would re-join the Baseline Alignment.
Alignment Variant P4	Alignment Variant P4 was proposed to be a combination of OHL and HDD/Cable. It would travel south-eastward from the Baseline Alignment as an OHL before curving around the northern bank of the prominent meander in the River Spey that lies to the east of Rothes as an underground cable. It would re-join the Baseline Alignment to the east of the northern tip of the meander south of the B9015 and west of Kirkhill Farm.
Alignment Variant P5	Alignment Variant P5 was proposed to be an OHL. It would diverge from the Baseline Alignment near Dundurcas Farm travelling in a north-easterly direction to the south of Kirkhill Farm following the existing 33 kV OHL to the B9013. It would continue to follow the existing OHL across the River Spey passing just south of Boat o' Brig. It would then follow the alignment of Alternative Alignment A starting west of Auchroisk Distillery then cross the Burn of Mulben, remaining to the north, past Auchroisk Distillery to re-join the Baseline Alignment to the northwest of Mulben.
Alignment Variant P6	Alignment Variant P6 was proposed to be an OHL. It would diverge from the Baseline Alignment to the southeast of Bridgeton. It would travel to the south of the Baseline Alignment through a large conifer plantation consisting of Cummings Wood and the Woods of Knockmore in a generally eastern direction for approximately 1.5 km before re-joining the Baseline Alignment directly south of Auchroisk Farm and Distillery.
Alignment Variant P7	Alignment Variant P7 was proposed to be an OHL. It would diverge from the Baseline Alignment to the southeast of Auchroisk Distillery. It would then extend southeast and east to pass around the south of Mulben. It would crosse the A95 to the east of Balnabreich and then travel northeast crossing the A95 again and the railway line to the south of The Tam to re-join the Baseline Alignment.
Alignment Variant P8	Alignment Variant P8 was proposed to be an OHL. It would depart from the Baseline Alignment to the north of Mulben and to the south of the Spey Valley Brewery, Malcolmburn Bond Warehouses and Shandston. The variant would follow the field boundaries across Gallow Hill in a south-easterly direction before turning sharply south for approximately 500 m to re-join the Baseline Alignment to the north of the A95 and the railway line.
Alternate Alignment A	Alternate Alignment A would diverge from the Baseline Alignment at the River Spey's northern meander to the east of Rothes traveling southeast. It would cross the River Spey twice across the river's prominent northern meander then continue in a northeast direction where it would cross the River Spey for a third time. It would cross the railway before turning east and passing through woodland to the north of Auchroisk Distillery. It would re-join the Baseline Alignment to the north of Mains of Mulben. Alternate Alignment A would then follow the Baseline Alignment until after it had passed through Rosarie. It would then diverge from the Baseline Alignment

Alignment Option	Description
	again west of Keith to the south of Hillockhead on the south side of the A95, it would re-join the Baseline Alignment leading to Blackhillock substation.
Alignment Variant A1	Alignment Variant A1 would diverge from the Baseline Alignment, as with Alternate Alignment A. However, it would also diverge from the Alternative Alignment A west of Rosarie and Glentauchers Distillery. It would travel generally east remaining to the north of Rosarie and the A95. After passing Rosarie, the variant would then travel directly south crossing the railway line and the A95 before turning to travel southeast and re-join the Alternate Alignment A.

Alignments Generated Post Alignment Stage Consultation

2.11.3 As stated previously, following feedback on the alignment stage consultation activities a further series of alignment options were generated. The previously identified Preferred Option based on alignment options presented at consultation in September 2021 is henceforth referred to as **Preferred Option 1**.

2.11.4 Table 2.2 below describes Preferred Option 1 and each of the Alignment Variants identified for environmental appraisal, post alignment stage consultation along with the reason for the additional alignment option's generation. They are displayed on **Figure 2.3**. Alignment options were defined as centrelines; however, it was assumed that a LOD of 100 m (approximately 50 m either side of the alignment centreline) would be applied to the Proposed Alignment, and this was been considered where relevant.

Table 2.2: Alignment Variants Generated Post Alignment Stage Consultation

Alignment Option	Description	Reason for Alignment Option
Preferred Option 1	Preferred Option 1 represented the post alignment stage consultation preferred 'base' alignment from which all other subsequent options deviated.	N/A
Alignment Variant P-V1	P-V1 would leave Rothes III Wind Farm on-site substation as UGC through commercial forestry before transitioning to OHL. Rather than leaving the on-site substation in a directly eastward direction though, P-V1 would travel in a more south-eastern direction before transitioning to OHL, before travelling to the west of the town of Rothes in a fairly straight line. P-V1 would pass over Back Burn at a more northerly point than Preferred Option 1 then follow a field boundary northeast and cross the A941. It would re-join Preferred Option 1 after crossing the A941 on its east side.	Generated to address consultee feedback and due to further engineer investigation works in the Rothes Estate west of the town of Rothes, and on the agricultural land to the northeast of the town of Rothes.
Alignment Variant P-V2	P-V2 would deviate from Preferred Option 1 to the north of the River Spey's prominent northern meander east of Rothes. It would remain closer to the river than Preferred Option 1 and turn south to cross the B9015 more to the west than Preferred Option 1, after which it would re-join it.	Generated to address consultee feedback and due to further engineer investigation works to the north and northeast of the River Spey's prominent northern meander and the properties at Kirkhill.

Alignment Option	Description	Reason for Alignment Option
Alignment Variant P-V3	P-V3 would deviate from Preferred Option 1 in forestry to the southeast of Auchroisk Distillery. Initially it would remain south of Preferred Option 1, but then it would turn north to follow the treeline up until the B9103, where it would turn east to follow the B9103 on its southern side without crossing it. It would re-join Preferred Option 1 on the south side of the road.	Generated to address consultee feedback and due to further engineer investigation works to the southeast of Auchroisk Distillery.
Alignment Variant P-V4	P-V4 would deviate from Preferred Option 1 north of the B9103 but south of the railway. It would curve slightly north of Preferred Option 1 before turning to travel southeast remaining south of the railway but north of the B9103. Towards the crossroads at the Mains of Mulben P-V4 would turn northeast, crossing the railway. It would turn east crossing the minor road that goes north towards the Malcolmburn Bond Warehouses. It would then turn southeast and travel along the northern side of the railway before re-joining Preferred Option 1.	Generated to address consultee feedback and due to further engineer investigation works through Mulben.
Alignment Variant P-V5	P-V5 would deviate from Preferred Option 1 south-east of the Malcolmburn Bond Warehouses to the east of Glentauchers Distillery, south of the A95. It would remain on the south side of the access track to Hill of Towie Wind Farm, but then cross it to join P-V6.	Generated to address consultee feedback and due to further engineer investigation works through Rosarie.
Alignment Variant P-V6	P-V6 would deviate from Preferred Option 1 by Rosarie south of the railway and the A95, but north of the access track to Hill of Towie Wind Farm. It would remain more to the south than Preferred Option 1 and would travel southeast then generally east where it would re-join Preferred Option 1.	Generated to address consultee feedback and due to further engineer investigation works through Rosarie.
Alignment Variant P-V7	P-V7 would deviate from Preferred Option 1 by Rosarie south of the railway and the A95. It would turn north to cross the A95 and run along its north side, following it northeast past some properties, before turning southeast to cross the A95. It would continue in this direction for approximately 500 m until the recreational railway line, where it would turn and take a more southernly direction to join Preferred Option 1 prior to the diverging point for Cable Option A and Cable Option B.	Generated to address consultee feedback and due to further engineer investigation works through Rosarie.
Alignment Variant P-V11	P-V11 would deviate from Preferred Option 1 after the northern edge of Auchinroaths. P-V11 would travel generally east, through forestry to the northeast of Speyburn Distillery on a slightly more southern line than Preferred Option 1. P-V11 would then turn southeast to	Generated to address consultee feedback and due to further engineer investigation works passing through Sourden Wood, and to the north of the River

Alignment Option	Description	Reason for Alignment Option
	cross the B9015 at a more western point than Preferred Option 1 and cut through the field to the east of the River Spey's prominent northern meander. It would then re-join Preferred Option 1 to the southwest of Dundurcas Farm.	Spey's prominent northern meander.
Alignment Variant P-V12	P-V12 would deviate from Preferred Option 1 east of Dundurcas Farm to the east of Collie Farm after it would travel north-eastward over arable fields. P-V12 would run alongside the B9103 in a southeast direction. Upon reaching the River Spey it would drop slightly south, away from the road to cross the River Spey at Boat o'Brig .	Generated to address consultee feedback and due to progressing works assessments in the area to the west of the crossing point of the River Spey, west of Boat o' Brigg.
Alignment Variant P5-V1	P5-V1 would branch off from P-V12 after it would cross the River Spey by Boat o'Brig. It would travel southeast then south to join Preferred Option 1 to the east of the property at Bridgeton Mains but to the west of the forestry strip that lies west of Auchroisk Distillery.	Generated to address consultee feedback and due to further engineer investigation works in the area passed over after the crossing of the River Spey near to Boat o' Brig.
Alignment Variant P5-V2(A/B)	P5-V2(A/B) would branch off from P-V12 after P-V12 would cross the River Spey by Boat o'Brig. P5-V2(A/B) would travel generally southeast across farmland to the east of the property at Bridgeton Mains. P5-V2(A/B) would then become either P5-V2A or P5-V2B west of the northern reaching strip of the Woods of Knockmore that lies west of Auchroisk Distillery. P5-V2A would travel generally south, close to the west of the forestry strip that lies west of Auchroisk Distillery. It would then cross a local access road before joining into the Preferred Option 1. P5-V2B would travel east for approximately 500 m crossing the northern reaching strip of the Woods of Knockmore that lies west of Auchroisk Distillery at a more northern point than Preferred Option 1, before turning to travel southeast over agriculture land east of Auchroisk Distillery and re-joining Preferred Option 1.	Generated to address consultee feedback due to further engineer investigation works in the area passed over after the crossing of the River Spey near to Boat o' Brig.
Alignment Variant P5-V3	P5-V3 would branch off from P-V12 after it would cross the River Spey by Boat o'Brig. It would travel generally east along the B9103 then southeast to join Preferred Option 1 to the east of the forestry strip that lies west of Auchroisk Distillery, and Auchroisk Distillery itself.	Generated to address consultee feedback and due to further engineer investigation works in the area passed over after the crossing of the River Spey near to Boat o' Brig.
Cable Option A	Cable Option A would diverge from Preferred Option 1 as an OHL after crossing to the east side of the B9014 and the railway line west of Blackhillock substation. Cable Option A would skirt around the south side of a property, along the existing access road/path. On the west side of the	Generated to address consultee feedback and due to further engineer investigation works around Blackhillock substation.

Alignment Option	Description	Reason for Alignment Option
	road, the OHL would transition into UGC before crossing the road. After crossing the road, the cable alignment would turn sharply to the southeast then follow the existing road into Blackhillock station.	
Cable Option B	Cable Option B would diverge from Preferred Option 1 as an OHL after crossing to the east side of the B9014 and the railway line west of Blackhillock substation. It would remain more to the south than Preferred Option 1, transitioning into UGC northwest of Blackhillock substation, passing across agricultural land. It would turn sharply to the north before turning again to enter the substation from a western direction.	Generated to address consultee feedback and due to further engineer investigation works around Blackhillock substation.

Conclusions of Alignment Selection Stage

2.11.5 From an **environmental perspective**, on balance it was considered that the Preferred Alignment was **Preferred Option 1**, with the addition of **P-V1**, to the west and northwest of Rothes to aim to reduce visual, agriculture and forestry constraints, **P-V11**, to the northeast of Rothes to aim to reduce visual, proximity to dwelling and forestry constraints, **P5-V2B**, to the east of Boat o'Brig to aim to reduce visual, recreational and forestry constraints, **P-V4**, in Mulben to aim to reduce agricultural constraints and **Cable Option A** or **Cable Option B**, into Blackhillock substation.

2.11.6 From an **engineering perspective**, the alignment options were generally comparable. However, marginal benefits for some constraints over **Preferred Option 1** and other alignment variants were found. **P-V1** offered advantages over **Preferred Option 1** including a more favourable crossing of Back Burn. This would also have improved access. In relation to terrain, **P-V6** was also preferable to **Preferred Option 1** and other alignment variants.

2.11.7 From a **cost perspective**, there was generally no preference when it came to operational costs. However, from a capital cost perspective, alignment variants which required less felling were preferred due to reduced tree felling costs, giving slight preference to **P-V11**, **P5-V2B** and **P-V6** over **Preferred Option 1** and other alignment variants.

2.11.8 Thus, the Proposed Alignment, from west to east was **Preferred Option 1, with the addition of P-V1, P-V11, P-V12, P5-V2B, P-V4, P-V6, then Cable Option A or Cable Option B** for final approach into Blackhillock substation. This alignment underwent further review and formed the basis of the Proposed Development.

2.12 Reporting of Alignment Selection Stage and Consultation

2.12.1 The appraisal of the alignment selection stage of the project was set out in an alignment stage Consultation Document, published in September 2021. The alignment stage Consultation Document sought comments from stakeholders and members of the public on the alignment selection studies undertaken.

2.12.2 Public consultation events explaining the alignment selection process and identification of a preferred alignment were held at the following times:

- 28th September 2021; 14:00-19:00 – at Boharm Public Hall, Mulben
- 29th September 2021; 14:00-19:00 – at The Grant Hall, Rothes

2.12.3 Virtual consultation events were also held via the project website https://www.ssen-transmission.co.uk/projects/elchies-rothes-iii-wind-farm-grid-connection/ at the following times:

- 30th September 2021; 13:00-15.00 and 17:00-19:00

2.12.4 Comments received from stakeholders in response to the alignment stage Consultation Document (September 2021), or following consultation events, were documented in an alignment stage Report on Consultation, published in November 2022[15] which confirmed that the Preferred Alignment should be taken forward as the Proposed Alignment for the purposes of progressing the EA and section 37 application.

2.12.5 The alignment stage Report on Consultation also confirmed how SSEN Transmission have responded to comments received by stakeholders during the alignment selection stage of the project, which included reviewing and appraising additional alignment variants. These are shown on **Figure 2.3**. Ultimately, as captured in the alignment selection stage Report on Consultation, a combination of the latter alignment options that were generated post consultation, as described in paragraphs 2.11.3 -2.11.4 that became the Proposed Alignment.

2.12.6 Other comments that were raised by consultees were taken forward and addressed during the EA stage of the project, where relevant.

2.13 Further Consideration of Alternatives during the EA Process

2.13.1 The work that was undertaken during the route and alignment stages of the Proposed Development enabled a rigorous consideration of reasonable alternatives with respect to route options, alignment selection and the consideration of design solutions available for the project. Further review of the Proposed Alignment during the EA stage of the project by the engineering and environmental teams has resulted in some minor adjustments to the alignment. The Proposed Development is discussed further in **Chapter 3** and presented in **Figure 3.1**.

[15] SSEN Transmission (2022), Report on Consultation – Elchies (Rothes III) Wind Farm Grid Connection – Alignment Options, Online, available at: https://www.ssen-transmission.co.uk/globalassets/projects/elchies-alignment-report-on-consultation/report/elchies-rothes-iii-wind-farm-connection-report-on-consultation---alignment-options.pdf, [Accessed: 22/02.2023].